



# CITADEL

Computational Investigation of the Topographical  
and Architectural Designs in an Evolving Landscape


**Aaron Pattee**



**CITADEL**  
Computational Investigation of the Topographical and  
Architectural Designs in an Evolving Landscape

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# 1 Introduction

The CITADEL (*Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape*) project presents an interdisciplinary approach towards discovering new information and interpretations of historic architecture through the application of innovative digital methodologies. As the name indicates, it is an approach through which numerous investigations of the architecture, history, and topography of the dynamic landscape of the German Palatinate are woven together computationally via a labelled property graph database. The core of the project is rooted within architectural art history, augmented by historical analyses from the disciplines of historical studies and archaeology, and computational analyses from the disciplines of informatics and geoinformatics. The novelty of the project is found at the intersection of the historical, archaeological, and digital analyses that are combined in an innovative manner, as it does not provide new algorithms within modeling or database management procedures. The combination of these analyses yielded exciting new interpretations of four medieval sites in the heart of the German Palatinate, buttressed by empirical evidence drawn from archives, libraries, and on-site data recorded with remote sensing techniques. The evaluation of these data for the final conclusions required in-depth analyses of the history, architecture, and landscape of the German Palatinate during the period from 1152 until 1273 A.D. These investigations enhanced the quality of the project, as the integration of digital methodologies for the examination of topics in the humanities allows one to explore various avenues at high detail with the capability of empirically demonstrating hows new interpretations were achieved. The adaptation of an interdisciplinary approach made the project more conceptually holistic in its vision, providing the necessary framework to construct a novel approach for investigating historic architecture, and establishing it as a method to be replicated and adapted to other areas.

## 1.1 Project Goal and Objectives

*‘Tools built for scholarship in a digital environment allow us to take more information into account, to share it more broadly, and to analyse it with greater precision. But they require mastering new skills and making conceptual leaps.’<sup>1</sup>*

The growth of digital applications within interdisciplinary studies in the humanities has lent a hand towards the necessary streamlining and organization of various sources of information.<sup>2</sup> This was accomplished through the integration of both relational and graph-based databases,<sup>3</sup> the utilization of remote sensing devices and software to acquire photo-realistic and precise 3D models of objects,<sup>4</sup> and the application of GIS to enhance the spatial understanding of objects within their natural environment.<sup>5</sup> The main difficulty was to design a project that applied these methodologies in a novel way, while remaining firmly rooted in the humanities. The analytical involvement of the various disciplines required an understanding of their respective intellectual approaches and a familiarity with various forms of software and database management systems. It was necessary to ‘speak the language’ of the other stakeholders in the project—in this case, the researchers in architectural art history, geoinformatics, computer science, historical studies, and archaeology. Each discipline has its own research methods and glossary of terms, which can lead to misunderstandings when the same term is used by two or more disciplines, albeit with varying definitions and therefore distinctly different understandings of the same term.

The overall goal of the CITADEL project was to establish a new approach using integrated digital methodologies in order to obtain new conclusions regarding the architectural development of four German castles at the turn of the 13<sup>th</sup> century. The combination of the methodologies produced

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<sup>1</sup> Peter Bol, “How the Digital Is Changing Research and Teaching on Asia,” *ASIANetwork Exchange: A Journal for Asian Studies in the Liberal Arts* 25, no. 2 (December 21, 2018): 7, <https://doi.org/10.16995/ane.278>. Quote taken from the abstract of the paper.

<sup>2</sup> Matthias Arnold, Eric Decker, and Armin Volkmann, “Digital Humanities Strategies in Transcultural Studies,” 2017, 18.

<sup>3</sup> Andreas Kuczera, “Graphentechnologien in den Digitalen Geisteswissenschaften,” *ABI Technik* 37, no. 3 (January 26, 2017), <https://doi.org/10.1515/abitech-2017-0042>.

<sup>4</sup> P. Sapirstein, “Accurate Measurement with Photogrammetry at Large Sites,” *Journal of Archaeological Science* 66 (February 2016): 137–45, <https://doi.org/10.1016/j.jas.2016.01.002>.

<sup>5</sup> Heather Richards-Rissetto and Kristin Landau, “Movement as a Means of Social (Re)Production: Using GIS to Measure Social Integration across Urban Landscapes,” *Journal of Archaeological Science* 41 (January 2014): 365–75, <https://doi.org/10.1016/j.jas.2013.08.006>; Heather Richards-Rissetto, “An Iterative 3D GIS Analysis of the Role of Visibility in Ancient Maya Landscapes: A Case Study from Copan, Honduras,” *Digital Scholarship in the Humanities* 32, no. suppl\_2 (December 1, 2017): ii195–212, <https://doi.org/10.1093/lle/fqx014>.



new results rather than a focus on the merits of each method individually. The new findings confirm the viability of the approach in which historical hypotheses can be modeled and tested, while maintaining a schematic in which the model can be adjusted. The case studies for the project included the *Palace of Lautern* and the castles *Beilstein*, *Hohenecken*, and *Perlenberg* located in the German Palatinate. The investigation of the sites emphasized the various roles of function and the signaling of status in the architecture. Due to the limited information regarding the development of these sites prior to 1200 and their current state as archaeological ruins, it was essential to collect the remaining primary sources regarding the sites and their environment. When analyzing the construction history of a building, the primary source of information is always what remains of the object itself.<sup>6</sup> Historical documentation in charters, although considered primary sources, are secondary to the study of the object. However, it is the combination of investigations of the archival/historical documentation and of the construction history for each site that yields the most compelling results—the absence of one renders the study incomplete. Thus, multiple investigations were undertaken using digital methodologies to establish a proof of concept for the combination of these methodologies, and to achieve novel results regarding the development of these four sites at the turn of the 13<sup>th</sup> century. The following objectives describe the process towards realizing the project goal in addition to briefly describing the specific digital methodologies and associated techniques employed in this work.

The first objective—or historical component—was to investigate the historical and archival documentation of the four primary sites, the individuals who built the sites, those who inhabited the sites over the course of the 12<sup>th</sup> and 13<sup>th</sup> centuries, and those who owned and enfeoffed the sites to others. This consisted of a project corpus of 707 transcribed charters ranging from the years 882 until 1589, as well as 30 historical maps of the German Palatinate ranging from 1540 until 1799. In addition to the charters, dozens of texts regarding past investigations of the castles composed the core of the literature review of the project, augmented by a host of other historical sources providing details regarding the major events and personalities at the turn of the 13<sup>th</sup> century.

The second objective—or architectural component—of the project was to investigate the four sites *in situ* in order to provide a foundation for the interpretation of their construction history. This consisted of employing two 3D recording techniques: Structure from Motion (SfM)

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<sup>6</sup> G. Ulrich Grossmann, *Einführung in die historische und kunsthistorische Bauforschung* (Darmstadt: Wissenschaftliche Buchgesellschaft, 2010). P. 10.

photogrammetry<sup>7</sup> and Terrestrial Laser Scanning (TLS).<sup>8</sup> The purpose of the techniques was to generate 3D models that are both photo-realistic and precisely<sup>9</sup> measured, respectively. For the purpose of this project, these techniques replaced the traditional technique of recording the sites via archaeological illustration. It is necessary, especially at the beginning of this dissertation, to stress the point that the 3D models provided only the *recording* of the sites, albeit a very complete and visually appealing recording. In contrast, the *documentation* was the process which followed the recordings, consisting of on-site analyses and annotations of 2D rendered files from the 3D models for each wall—similar to the use of orthophotos by archaeologists using aerial data<sup>10</sup> during an excavation. The *interpretation* of the building phases of the sites then followed the documentation process. The 3D models tremendously assisted the research by providing photo-realism and precision, but did not replace the necessity of an on-site documentation. In absence of the on-site documentation, the models provide only the recorded data, which is the first of three steps towards understanding a site and its position both within its environment and in history.

The third objective—or geo-spatial component—was to analyze the natural landscape surrounding the primary sites in order to evaluate potential environmental reasons for their physical placement and, in turn, what impact the sites had upon the landscape. This consisted of acquiring aerial scans of the region of the German Palatinate in the form of a 25-meter resolution *Global Digital Elevation Model* (GDEM)<sup>11</sup> raster in order to conduct various spatial analyses in the *Geographic Information Systems* (GIS) regarding the relationship of the sites to their surrounding environment, and to one another. These geospatial analyses consisted of geo-referencing the maps gathered in objective one, in addition to analyses based upon the GDEM such as *Least-Cost-Paths*

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<sup>7</sup> Irmela Herzog and Undine Lieberwirth, “Einleitung,” in *3D-Anwendungen in der Archäologie: Computeranwendungen und Quantitative Methoden in der Archäologie—Workshop der AG CAA und des Exzellenzclusters Topoi 2013*, ed. Undine Lieberwirth and Irmela Herzog, 1st ed., Berlin Studies of the Ancient World 34 (Berlin: Edition Topoi / Exzellenzcluster Topoi der Freien Universität Berlin und der Humboldt-Universität zu Berlin, 2016), 11–16. P. 12. Sapirstein, “Accurate Measurement with Photogrammetry at Large Sites.” P. 137.

<sup>8</sup> Nicola Lercari, “Terrestrial Laser Scanning in the Age of Sensing,” in *Digital Methods and Remote Sensing in Archaeology*, ed. Maurizio Forte and Stefano Campana, Quantitative Methods in the Humanities and Social Sciences (Cham: Springer International Publishing, 2016), 3–33. P. 3. TLS is a primary remote sensing technique for disciplines related to archaeology, architecture, built heritage, earth science, metrology, and land survey.

<sup>9</sup> Precision refers to the finest measurement possible as defined by Sapirstein 2016. Sapirstein, “Accurate Measurement with Photogrammetry at Large Sites.” P. 138.

<sup>10</sup> Jakob Kainz, “An Integrative Archaeological Prospection and Excavation Approach at a Middle Neolithic Circular Ditch Enclosure in Austria,” in *Digital Methods and Remote Sensing in Archaeology*, ed. Maurizio Forte and Stefano Campana, Quantitative Methods in the Humanities and Social Sciences (Cham: Springer International Publishing, 2016), 371–404. P. 382.

<sup>11</sup> Howard Tan, “ASTER: Advanced Spaceborne Thermal Emission and Reflection Radiometer,” Informative, NASA Jet Propulsion Laboratory at the California Institute of Technology, 2004, <https://asterweb.jpl.nasa.gov/gdem.asp>.

and *Viewsheds*. These analyses were instrumental in determining the relation between particular building types located at the four sites and their neighboring environments. The results were primarily analyzed in association to the architectural analyses in order to provide evidence and strengthen the arguments regarding the interpreted functions with regard to the landscape.

The fourth objective, or database component, was to integrate all of the results of the analyses of the three previous components into a single graph database management system (or graph database)<sup>12</sup> in order to query information drawn from the following datasets: the charters from component one, the architectural documentations from component two, and the geo-spatial analyses from component three. The graph database was essentially the ‘glue’ of the project as it was the main mechanism into which the results of the investigations of the archival documentations and construction histories were added. It was not only the driving force behind the combination of the various data, but also a highly efficient and robust organizational tool for the volumes of information composing the project dataset. This latter point is especially important as the graph database unified the data via unique identifiers that would otherwise remain separated in a variety of file formats, making it more difficult to discover convergences between different formats. It must be underlined that the interpretations and conclusions regarding the four primary sites of the CITADEL project were not accomplished by simply consulting the graph database. Rather, it was the combination of the on-site experience, and the application of the digital methodologies that led to novel interpretations and conclusions.

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<sup>12</sup> Ian Robinson, Jim Webber, and Emil Eifrem, *Graph Databases: New Opportunities for Connected Data*, 2nd ed. (Sebastopol, CA: O’Reilly Media, Inc., 2015). P. 5. They are normally optimized for transactional performance, and engineered with transactional integrity and operational availability in mind.

### 1.1.1 Previous Work and Project Timeline

The project began in September of 2016, thematically continuing where my master's thesis had ended, by focusing upon the architectural analysis of castles neighboring Castle Hohenecken using both SfM and TLS recording techniques. The outlook of my master's thesis consisted primarily of conducting geo-spatial analyses in order to determine the relationship of Castle Hohenecken to nearby sites as well as within its natural environment.<sup>13</sup> As a result, the beginning of the doctoral project developed a strong orientation towards understanding the spatial relationship between the royal Palace of Lautern and five nearby castles, emphasizing the development of a GIS-based analysis of the landscape. By the time of the first presentation for the *Bauforschung und Baugeschichte Kolloquium*<sup>14</sup> in the Winter Semester of 2016-2017, I had identified the main sites that I wished to focus upon by expanding my master's thesis regarding Castle Hohenecken<sup>15</sup> to include the royal Palace of Lautern, the Teutonic Knight Commandry at Einsiedel, and the hilltop castles of *Beilstein*, *Perlenberg*, and *Wilenstein*. The primary goal at that stage was to understand the relationship of the six sites to one another as well as their role in the defense of the royal Palace of Lautern. The first results of the project were presented at the Kainua 2017 conference<sup>16</sup> and published as a work in progress in the archaeological journal *Archeologia e Calcolatori* in 2017.<sup>17</sup> During this time, I began to search for other data sources besides the SfM and TLS models, including historical maps of the German Palatinate and historical charters—some of which I had accumulated for the master's work. From the summer of 2017 until the summer of 2018, the emphasis of the project shifted towards the historical analyses of the charters, focusing upon the role of the *ministeriales* who inhabited some of the castles, more so than the architectural and landscape analyses.

The charters were chosen based upon the mention of the six case study sites and the *ministerialis* inhabitant families *von Beilstein*, *von Lautern*, and *von Wilenstein*. This selection

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<sup>13</sup> Aaron C Pattee, "Integrative 3D Recording Methods of Historic Architecture: Burg Hohenecken from Southwest Germany" (A Thesis Presented to the Faculty of The Graduate College at the University of Nebraska In Partial Fulfillment of Requirements For the Degree of Master of Arts, Major: Anthropology, Lincoln, Nebraska, University of Nebraska-Lincoln, 2016), <http://digitalcommons.unl.edu/anthrotheses/43/>. P. 161.

<sup>14</sup> This is the weekly seminar for the research group of Prof. Dr. Untermann, translated as the Colloquium for Architectural Research and Architectural History.

<sup>15</sup> Pattee, "Integrative 3D Recording Methods of Historic Architecture: Burg Hohenecken from Southwest Germany."

<sup>16</sup> "Kainua 2017," accessed June 14, 2022, [https://www.kainuaproject.eu/\\_\\_index.php/kainua2017/kainua17](https://www.kainuaproject.eu/__index.php/kainua2017/kainua17).

<sup>17</sup> Aaron Pattee, Armin Volkmann, and Matthias Untermann, "Integrative GIS-Based Investigation of the Medieval Fortress Architecture of the Pfalz, Incorporating Photogrammetry, Geoinformatics and Landscape Analysis," *Archeologia e Calcolatori* 28, no. 2 (2017): 521–30, <https://doi.org/10.19282/AC.28.2.2017.42>.

concentrated on the buildings and their respective families, resulting in a large chronological span ranging from the mid-9<sup>th</sup> until the late 16<sup>th</sup> centuries. In contrast, the search for relevant historical maps was more limited, as the only maps that could effectively be used for geo-analyses were those which had been designed to provide a spatial overview beginning in the mid-16<sup>th</sup> century, rather than the maps of the Middle Ages, which were often designed with an emphasis to shown biblical history.<sup>18</sup> An interesting chronological discrepancy arose between the charters and the maps, in which the number of charters began to dwindle and eventually end, as the number of maps began to increase. The maps fit neatly into the previous focus of the project upon geo-spatial analyses in GIS, though how exactly the charters were to be effectively analyzed remained elusive at that point.

The assembly of both historical corpora (maps and charters) occupied the majority of the second half of 2017, at which time I searched for a methodology to explore the charters. In January of 2018, I attended the conference/workshop ‘*Modellierung des Zweifels*’—*Schlüsselideen und –konzepte zur graphbasierten Modellierung von Unsicherheiten* at the Academy of Sciences and Literature in Mainz. The focus of the event was the application of graph databases to explore uncertainties primarily within humanities projects.<sup>19</sup> The event introduced me to the use of such databases which would become the foundation for the analyses of the charters and eventually provide the ‘glue’ combining all components of the project.

During the first third of 2018, I focused all attention toward extracting information from the charters into a large spreadsheet (or authority file) consisting of the names of each person mentioned, all relevant attributes, locations, and social status titles. The details of this procedure are located in Section 6.2. During these first months of 2018, it also became clear to me that studying the inhabitant families of the sites would be the key to unlocking the early history of the sites themselves. I began concentrating on the strategies they pursued in developing the sites, expanding their regional influence, and demonstrating their status to both their peers and the general public. During this process, it became evermore clear that the five sites surrounding the Palace of Lautern had served a variety of functions over time, apparently pivoting in order to match the symbolism and utility their owners wished to signal. Additionally, the mystery regarding the construction of the sites at the turn of the 13<sup>th</sup> century, paired with the exciting historical events ignited my interest. This resulted in a

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<sup>18</sup> Jerry Brotton, *Great Maps - the World's Masterpieces Explored and Explained*, 2nd ed. (London: Dorling Kindersley Limited, 2015). P. 57. This concerns the *Hereford Mappa Mundi* created around 1300 in Hereford, U.K.

<sup>19</sup> Andreas Kuczera, Thorsten Wübbena, and Thomas Kollatz, “Die Modellierung des Zweifels – Schlüsselideen und –konzepte zur graphbasierten Modellierung von Unsicherheiten. Zur Einführung in diesen Band,” *Zeitschrift für digitale Geisteswissenschaften* Sonderbände, no. 4 (2019), [https://doi.org/10.17175/sb004\\_013](https://doi.org/10.17175/sb004_013).

chronological refocusing to the period between Frederick I von Hohenstaufen's election as king in 1152<sup>20</sup> and Rudolf von Habsburg's election as king in 1273<sup>21</sup>—rather than the entire 700-year span of the charters. Additionally, the charters prior to 1152 did not include any of the inhabitant families—the focus group—and the period after 1300 no longer mentioned the families as *ministeriales* whose involvement in the political environment of the late 12<sup>th</sup> and early 13<sup>th</sup> centuries became critical in understanding the construction of the six sites. The impact of these imperial *ministeriales* upon the development of the royal Palace of Lautern was the fulcrum of the emerging graph database. However, the four families that I had previously thought to be distinct clans were in fact more nebulous, though one of the four did not have quite the impact upon the development of the palace as the other three. Of the three that remained, the von Lautern family turned out not to have been a family at all, but rather more of a title for members of multiple families, though many of them were the ancestors of the *von Hoheneck* family. As a result, I narrowed my focus upon the individuals with the last names of von Beilstein, von Hoheneck, and von Lautern based upon both their relative equivalency in social status and prevalence in both imperial and royal affairs in the region surrounding the Palace of Lautern, which remained the geographic centerpiece of the architectural investigation.

The initial results of the graph database were presented at the *GI\_Forum* in Salzburg in the summer of 2018, though the publication of the conference proceeding consisted exclusively of the GIS spatial-analyses which had been nearly completed at the time.<sup>22</sup> Throughout the second half of 2018, the project became more focused upon the royal Palace of Lautern and castles Beilstein, Hohenecken, and Perlenberg—the primary sites. The Teutonic Knight Commandry at Einsiedel and castle Wilenstein remained interesting and relevant to understanding the regional politics in the area of the Palace of Lautern, but neither the buildings nor the von Wilenstein family were as instrumental in the development of the palace and its associated lands as those of the other families. Castle Perlenberg remained as one of the four primary sites due to its architectural similarities to Castle Hohenecken and the Palace of Lautern, as well as its curious position which had piqued my interest upon reading about menageries and Great Parks near royal palaces in England during the second

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<sup>20</sup> Thierry Pécout, “Frederick I of Hohenstaufen (1122-1190),” in *Encyclopedia of the Middle Ages*, ed. Andre Vauchez, trans. Adrian Walford (Cambridge: James Clarke & Co., 2000).

<sup>21</sup> Thierry Pécout, “Rudolf of Habsburg (1218-1291),” in *Encyclopedia of the Middle Ages*, ed. Andre Vauchez, trans. Adrian Walford (Cambridge: James Clarke & Co., 2000).

<sup>22</sup> Aaron Pattee et al., “Analysing the Medieval Landscape of the German Palatinate,” *GI\_Forum* 1 (2018): 39–49, [https://doi.org/10.1553/giscience2018\\_02\\_s39](https://doi.org/10.1553/giscience2018_02_s39).

half of the 12<sup>th</sup> and first half of the 13<sup>th</sup> centuries.<sup>23</sup> It was around this time that I began to approach the spatial analyses and 3D modeling once more as the graph database had matured into the fourth objective.

During the Summer Semester of 2018, I consulted computer scientists from the IWR (*Interdisziplinäres Zentrum für Wissenschaftliches Rechnen*) for assistance in constructing a schematic for the database. The interdisciplinary dialogue at this stage was reinforced by developing the graph database for the better part of 2018 and early 2019, thereby gaining an understanding of the historical context at the turn of the 13<sup>th</sup> century in the German Palatinate, against the broader spectrum of the European political and social climate of the period. This required additional investigations into the lives of the dominant monarchs of the time throughout Central and Western Europe, the complexity of understanding medieval hierarchy and chivalry,<sup>24</sup> the *Medieval Climate Anomaly* (MCA),<sup>25</sup> various church councils,<sup>26</sup> and architectural trends in both the secular and ecclesiastical realms. Identifying the limits of the various rabbit holes to pursue was provided by the chronological and architectural scope of the project which became more defined over the course of the Winter Semester of 2018/2019. By restricting the number of primary sites, as I previously mentioned, I was able to add additional sites at varying levels of detail that are both thematically

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<sup>23</sup> Robert Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500* (Oxford: Windgather Press Ltd, 2005). P. 113.

<sup>24</sup> Karl Bosl, "Die Adelige Unfreiheit," in *Ministerialität im Pfälzer Raum: Referate und Aussprachen der Arbeitstagung vom 12. bis 14. Oktober 1972 in Kaiserslautern*, ed. Friedrich Ludwig Wagner, 1st ed., vol. 64, Veröffentlichung der Verlag der Pfälzischen Gesellschaft zur Förderung der Wissenschaften (Speyer: Verlag der Pfälzischen Gesellschaft zur Förderung der Wissenschaften, 1975), 9–23; Werner Hechberger, *Adel im fränkisch-deutschen Mittelalter: Zur Anatomie eines Forschungsproblems*, 1st ed., *Mittelalter-Forschungen 17* (Ostfildern: Jan Thorbecke Verlag der Schwabenverlag AG, 2005); Werner Hechberger, *Adel, Ministerialität und Rittertum im Mittelalter*, ed. Lothar Gall, 2nd ed., vol. 72 (München, Germany: R. Oldenbourg Verlag, 2010); Andreas Bihrer, "Research on the Ecclesiastical Princes in the Later Middle Ages: State-of-the-Art and Perspectives," in *Princely Rank in Late Medieval Europe: Trodden Paths and Promising Avenues*, ed. Thorsten Huthwelker and Jörg Peltzer, vol. 1, 5 vols., RANK. Politisch-Soziale Ordnungen Im Mittelalterlichen Europa (Ostfildern: Thorbecke Verlag, 2011), 49–70; Torsten Hiltmann, "Potentialities and Limitations of Medieval Armorial as Historical Source. The Representations of Hierarchy and Princely Rank in Late Medieval Collections of Arms in France and Germany," in *Princely Rank in Late Medieval Europe: Trodden Paths and Promising Avenues*, ed. Thorsten Huthwelker and Jörg Peltzer, vol. 1, 5 vols., RANK. Politisch-Soziale Ordnungen Im Mittelalterlichen Europa (Ostfildern: Thorbecke Verlag, 2011), 157–98.

<sup>25</sup> Michael E. Mann et al., "Global Signatures and Dynamical Origins of the Little Ice Age and Medieval Climate Anomaly," *Science* 326, no. 5957 (November 27, 2009): 1256–60, <https://doi.org/10.1126/science.1177303>. P. 1258. The authors define the MCA as having occurred between the years 950 and 1250 A.D. Elena Xoplaki et al., "The Medieval Climate Anomaly and Byzantium: A Review of the Evidence on Climatic Fluctuations, Economic Performance and Societal Change," *Quaternary Science Reviews* 136 (March 2016): 229–52, <https://doi.org/10.1016/j.quascirev.2015.10.004>. P. 229. The authors studied the effect of the MCA upon the Byzantine Empire, concluding that it had affected the socio-economic changes that had taken place in the 12<sup>th</sup> century. H Goosse et al., "The Origin of the European 'Medieval Warm Period,'" *Climate of the Past* 2, no. 2 (2006): 99–113, <https://doi.org/10.5194/cp-2-99-2006>. P. 102. The authors found that the crop fraction in the region of central Europe encompassing Germany, Belgium, and France had increased linearly from 1000 until 1250, reaching a value matched two hundred years later in 1450.

<sup>26</sup> Jonathon Riley-Smith, *The Crusades: A History*, 2nd ed. (New Haven: Yale University Press, 2005). Pp. 175, 201.

and contextually linked. These additions were necessary for a more complete understanding of the involvement of the families of the ministeriales within the regional politics of at the turn of the 13<sup>th</sup> century, yet divided into two groups: the secondary and tertiary sites.

The reorganization of the project proved more efficient as the main conclusions were centered upon the Palace of Lautern, the surrounding imperial territory, and the ministeriales commissioned for the administration of both the palace and its estate. The first half of 2019 consisted of adding more charters to the graph database and finalizing the 3D models. The architectural analyses of the four primary sites were conducted during the summer and fall of 2019 elevating the previously dormant architectural component of the project back to center stage. The end of 2019 and the majority of 2020 were restricted to adding the results of the architectural investigations into the graph database, identifying the intersections between the building phases and proceedings of members of the focus group, and writing the dissertation.



### 1.1.2 Significance of the Project

An inherent component in the research of historical sites, is to assess each site as archaeologically significant, a process that requires making the best connection possible between the research questions important to scholarship and the information potential of the archaeological record.<sup>27</sup> This process is inextricably linked to the research itself as it coincides with every aspect of the project, necessitating a constant reflection of how the science of archaeology and architectural art history can benefit from the particular research under investigation. Interpretations of sites and their functions based upon the material record and mid-range questions regarding site formation processes, domestic architecture, and ancient environments,<sup>28</sup> benefit the scholarship of medieval architecture and archaeology by providing more examples of the functions exhibited at sites that still exhibit a portion of their medieval construction history. Particularly in this case, the application of digital methodologies further improves the scholarship by demonstrating their effective use within the framework of an architectural investigation. Archaeological information can be effectively categorized into three summary levels of research: level one consists of field observations of artifacts, features, and other physical remains; level two addresses the data requirements needed to answer middle-range explanations linking the archaeological context to past human activities; and level three which addresses the data requirements of research questions derived from general theories, interpretations, or symbolism.<sup>29</sup> These three levels correlate with the archival research and 3D scans of the sites, the analysis of the historical charters and models with regard to the environment and medieval society, and the implementation of the graph database for identifying congruities and convergences in the data, respectively.

The integrity of a site is also of key importance as it relates to location, design, setting, and materials. Integrity of location requires context regarding specific events that happened at a site and how the locations, i.e. the environment, affected how the site operated. Integrity of design refers to how true the building currently is, with regard to its original design. As originality is often difficult to identify at a ruin, an in-depth investigation of the building is necessary in order to determine at

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<sup>27</sup> Donald L. Hardesty and Barbara J. Little, *Assessing Site Significance: A Guide for Archaeologists and Historians*, 2nd ed. (Plymouth, U.K.: AltaMira Press, 2009). Page 69 begins with the description of what archaeological information is, by establishing three general levels of research.

<sup>28</sup> Ibid. Pages 69 and 70. The authors delve into the three levels of archaeological information and what constitutes each within the framework of archaeological research.

<sup>29</sup> Ibid. Page 70. The text is actually written for American archaeologists seeking to assess the significance of archaeological sites, though the three levels are conceptually applicable to architectural art history, archaeology, and history, regardless of its relation to the requirements of archaeological significance for the U.S. National Register.

which point in time certain elements were added or removed. The integrity of setting concerns the original character of the site, consisting of the difference between past and present conditions for which a geographical investigation can be of immense help. Integrity of materials refers to the match between the original materials and the current materials at the site. This aspect is related to the integrity of design that is studied via a stone-by-stone investigation and evaluation of the materials, their placement to one another, and estimated chronology. Two additional aspects of integrity are implicit in determining significance, namely feeling and association. Integrity of feeling refers to the sense of historical periods felt at a site—necessitating investigations that are conducted on-site—for which historical context is fundamental. Therefore, a historical investigation assists in understanding a site’s locational and felt integrity, in addition to the integrity of association. This last aspect of integrity poses the question as to why a certain site was built, why specific events took place at the site, and why the site is located where it is.<sup>30</sup>

Linking the process of assessing archaeological/historical significance and the six aspects of integrity directly into the research of the case study sites of CITADEL, effectively appended the questions of ‘why’ and ‘for what purpose’ to the central research question and mid-range questions. The middle-range questions in this regard concerned the reasons behind the construction of particular architectural elements built by the kings and their ministeriales, and how these elements corresponded to their status. The castles were selectively chosen from the hundreds of possible sites strewn throughout the German Palatinate and present fantastic examples of the demonstration of status through architecture. I applied middle-range questions to each site with respect to objectives one, two, and three regarding the builders of the sites, the remnants of the site, and the landscape in which the sites are located.

The key information provided by an analysis of the site’s builders sheds light upon the potential purpose for the structure based upon historical sources, in addition to both the historical and political context in which it was built. Castles were highly political and symbolic of their owner’s authority,<sup>31</sup> at times representing both the power of the overlord and the ambitions of the servant. As emperors, kings, and servants of varying levels entered and exited the political stage,

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<sup>30</sup> Thomas Neumann, Robert Sanford, and Karen Harry, *Cultural Resources Archaeology: An Introduction*, 2nd ed. (Plymouth, U.K.: AltaMira Press, 2010). P. 37. This references the definitions of the six types of integrity required for eligibility into the list U.S. National Register properties. Although the castles presented in this project are in Germany, the analysis of these six aspects of integrity are still relevant for understanding the archaeological and historical significance of the sites.

<sup>31</sup> Kelly DeVries, “Castles, Fortifications, and Fortresses,” in *The Oxford Dictionary of the Middle Ages*, ed. Robert E. Bjork (New York, NY: Oxford University Press Inc., 2010). P. 344.

their castellated edifices carved in the natural rock broadcasted an array of symbolic meanings over time. Thus, an accurate interpretation of the symbols these builders wished to signal at particular points in time cannot be reached in absence of the understanding of the builders' potential intent, and their positions within society.

The extant remains of a site provide physical evidence with which architectural analyses can be conducted to determine where the material originated, to identify building phases based upon a stone-by-stone investigation, to compare the building phases with analogous structures and historical construction trends, and to understand why certain architectural elements still exist in relation to their structural integrity—instrumental in determining function over time. This is the most important aspect to analyze when determining the function of a castle, as there exist particular features that are undeniably linked to defense, such as cylindrical battery towers whose walls are many meters thick, and features that unmistakably deny a castle's defensive fortitude, such as a garderobe—a privy located in a bay window on the first floor. In the event that very little remains of a castle due to a violent destruction in a past war, or its former use as a stone quarry, an architectural analysis without taking into account the political and natural environments can be difficult and run the risk of inserting fantasy where evidence is lacking. A wealth of information can still be retrieved by analyzing the masonry and identifying specific building phases. These investigations also include the description of architectural elements that are not commonly found, yet indicate an exciting area of research for understanding their development.

Landscape analyses, in turn, provide the more global information, namely the access to roads and water supplies, the physical limitations encountered by the builders during construction, and the position of a site in relation to the rest of the surrounding built and natural environments. The impact of the natural environment and the positioning of a castle cannot be understated and a simple identification of whether a castle rests atop a mountain or in a valley does not suffice. Significance must be placed upon the exact position, juxtaposed to nearby positions to understand why one was chosen over the other, taking into account the availability of stone, chalk, water wells, and a wealth of other elements. In unison, these analyses establish a process for approaching castles as archaeologically significant sites, as all three levels outlined above by Hardesty and Little are integrated.<sup>32</sup>

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<sup>32</sup> Hardesty and Little, *Assessing Site Significance: A Guide for Archaeologists and Historians*. 69-70.

### 1.1.2.1 Regional Significance

Another aspect of significance relates to the potential impact upon the local communities and regional interest. Archaeologists and Architectural Historians have a responsibility to inform the public as well as to develop the scholarship of a site. The study of archaeological and cultural heritage is a source offering fascinating historical insights that cannot be achieved by other methods.<sup>33</sup> These insights benefit the public just as much as the scholarship and therefore the public must be informed of ongoing research. This was the reason for my publication of a paper in the *Kaiserslauterer Jahrbuch* in 2015,<sup>34</sup> my public presentations at the *Institut für Pfälzische Geschichte und Volkskunde* in Kaiserslautern on 7 February 2018 and at *Der Tag der Pfalzgeschichte* in Landau on 13 October 2018, and the publication of a project synopsis in the regional *VielPfalz* magazine in December of 2018.<sup>35</sup>

The local communities living near castle ruins, no matter how substantial the ruin, often invest a tremendous amount of pride in the sites as cultural heritage monuments. Festivals, birthdays, and a host of other events link the local communities to their castles—a relationship that is passed down from generation to generation. For these communities, the sites are more than significant, they are a matter of identity. However, efforts to preserve, study, and excavate these sites are highly dependent upon the financial capacities of the German states and cities who often have jurisdiction over them. Some communities have independently applied for funding directly from the federal government to preserve their local castle.<sup>36</sup> This action often involves an official organization to represent the interests of the community, a *Förderverein*, in addition to a battalion of volunteers willing to consolidate the funds granted from the federal government for material costs alone. This means that dozens of local people, often retirees, are working thousands of hours with professional stone masons to repair and preserve the castles so dear to them. This is not to undermine the efforts of city administrators who seek available avenues to efficiently approach the issue of preserving and rehabilitating these archaeological sites. However, the persisting problem can be briefly summarized as: too many sites and too few funds. Despite the financial shortcomings in the realm of cultural

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<sup>33</sup> Ibid. P. 13.

<sup>34</sup> Aaron Pattee, “Integrative 3D Recording Methods of Historic Architecture - Burg Hohenecken Castle from Southwest Germany,” in *Kaiserslauterer Jahrbuch—für pfälzische Geschichte und Volkskunde*, ed. Jürgen Keddigkeit and Barbara Schuttpelz, vol. Band 13/14/15 (2013-2015) (Kaiserslautern: Bezirksgruppe Kaiserslautern im Historischen Verein der Pfalz e.V., 2015), 489–99.

<sup>35</sup> Michael Dostal, “Neue Wege zu alten Schätzen,” *VielPfalz: Entdecken und erleben. Das Genießer-Magazin*, 2018.

<sup>36</sup> Julia Luttenberger, “Eine Krone für die Mauer—Deutsche Stiftung Denkmalschutz, Förderverein und Stadt investieren rund 56 000 in Nordpalas der Burg Hohenecken,” *Die Rheinpfalz*, May 21, 2014, sec. Kaiserslautern.

heritage protection, opportunity still exists. City administrators and local *Fördervereine* are more than willing to support students and doctoral candidates, who are already funded from their respective institutions, in the research of the lesser known and lower impact sites, without having to financial assist them.<sup>37</sup> In turn, this allows for a substantial amount of scholarly freedom for the student when choosing which aspects of the sites to study and which methodologies to employ. The aspect that is incredibly difficult to incorporate is an official archaeological excavation, which can cost well into the hundreds of thousands—often too expensive for any party involved. Therefore, when researching lesser known and lower impact sites, it is essential to apply the methodologies that maximize the outcome of the scholarly investment. Applying digital methodologies has opened a portal into a new realm, allowing researchers to combine heterogeneous data sources to understand the architectural history and archaeology of a site prior to an excavation, or postponing an excavation entirely for a later time.

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<sup>37</sup> Pattee, “Integrative 3D Recording Methods of Historic Architecture: Burg Hohenecken from Southwest Germany.” Pages 155-157 discuss the work that was done by the Förderverein Hohenecken e.V. in 2015 to repair and preserve one of the inner walls.

## 1.2 Outline of the Chapters

The chapters of this dissertation follow the order of the objectives described in Section 1.1, beginning with an in-depth literature review of the concepts necessary for understanding the subsequent interpretations of the castles and their respective functions over time in Chapter 2. The review begins with a brief explanation of the study of architectural art history, encompassing a thorough explanation of the two components of function—namely utility and symbolism—followed by a description of the development of castle and palace studies from the 16<sup>th</sup> century until the present day. The second section of Chapter 2 concerns the medieval social structure, emphasizing the 10<sup>th</sup> to 13<sup>th</sup> centuries and the status of the ministeriales, whose role in medieval society is critical for the interpretation of the castles they inhabited, supervised, and assisted in constructing. The third section of Chapter 2 explores the idea of *Costly Signaling Theory* (CST) as applied to architecture and social structures, providing a compelling viewpoint for understanding the phenomena of constructing monuments for the representation of status—a strategy that has been identified in multiple civilizations worldwide over time. This is followed by a proposal for modeling rank in medieval society based upon an evaluation of an individual’s status or administrator position and the features identified at their respective castle. These analyses draw upon both the architectural investigations and the proceedings of the corpus of individuals over the time period from 1100 until 1350.<sup>38</sup>

Chapter 3 explores the historical component outlined in objective one in Section 1.1, with a description of the criteria for the selection of the sites and why they were partitioned into three separate groups. The primary sites found in the third section of the chapter include highly detailed descriptions of their history based upon information from the corpus of charters selected for the project, and past investigations (including archaeological excavations) of the four sites. The fourth section describes the secondary sites with regard to their historical and contextual significance for the region in which the primary sites are located as evidenced from the corpus of charters. All of the secondary sites are former monasteries located around the city of Kaiserslautern. This section also includes detailed descriptions of past investigations or excavations, which are discussed in relation to similar architectural aspects found at the primary sites, though the secondary sites were not investigated architecturally. The fifth section concerns the tertiary sites which are described in brief detail regarding only their significance for understanding the regional politics at the turn of the 13<sup>th</sup>

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<sup>38</sup> This timespan expands upon the project chronology of 1152 to 1273.

century, as they are both thematically and physically more distant than the secondary sites in relation to the primary sites.

Chapter 4 explores the architectural investigations of component two described in objective two of Section 1.1. This chapter begins with a detailed description of the 3D modeling techniques employed in the project, their respective software, and the state of research regarding the application of SfM and TLS for recording architecture. All of the raw and processed data are located in the online repository hosted by HeiDATA. The third through sixth sections of the chapter provides the entire architectural investigative process for each of the four primary sites including the digital recordings, the on-site documentations, the development of the respective roombooks, and identification of the various building phases. The annotated 2D rendered orthophotos of the walls of the castle derived from the SfM models that provided the foundation for the on-site annotations are located in the online repository hosted by HeiICON and ordered according to the roombooks of the castles located in the Appendix.

Chapter 5 deals with the geo-spatial analyses associated with the primary and secondary sites in order to understand the regional association between the sites and their natural environment. This section includes detailed descriptions of the geo-spatial analyses that were generated in GIS, the type of GIS that was used for this project, and the implications of the geo-spatial analyses in the interpretation of the sites' physical positions and features.

Chapter 6 describes the database component of objective four from Section 1.1, and the implementation of various data types into a unified database for querying information. The first section of the chapter concerns the difference between relational and graph-based databases, the state of research using databases for the organization and evaluation of data in the humanities, and why a graph database was selected for this project. The second section describes the process for extracting the information from the various data sources, emphasizing best practice techniques for efficiently organizing the data while retaining a high level of accuracy. The following section concerns the development of a project schematic in which the groups of information are connected to one another in order query the information along the pathways that were specifically tailored to the goal of the project. This includes detailed descriptions of all nodes and relationships of the graphical model, including their numerous properties and why the information was organized in the manner that it was. The fourth section of Chapter 6 explores the capabilities of querying the information across datasets focusing upon the convergences between the individuals of the focus group and the building phases of the primary sites of the project.

Chapter 7 explores the key findings made possible by the combination of the digital methodologies, focusing upon the concepts of medieval designed landscapes and networks for signaling status to all levels of society. This is followed by an analysis of the apparent strategies employed by the patriarchs of the families discussed in Chapter Three in securing, or attempting to secure, the longevity of their family and social standing. The last section of the chapter reviews the advantages and disadvantages of the digital methodologies, which aspects could have been adjusted for different results, and how the project could have been optimized. This section concludes with possible future avenues including brief explanations of exciting directions that the project could take in the future, but remained out of scope for the purpose of this doctoral dissertation. The remaining chapters include: Chapter 8, References, and Chapter 9, Appendix, wherein a list of the equations, tables, figures, and architectural plans are located. The Appendix also provides links to the data located in the online repositories of HeidICON and HeiDATA. All of the 76 full format architectural plans, the roombook and high resolution versions of the figures of the dissertation are available in HeidICON. The HeiDATA repository includes the four photogrammetric and four laser scan models of the primary sites (including all photos and raw scan data), the GIS packet (including all shapefiles, raster and vector data), and all of the materials composing the graph database.



## **2 Architecture and Medieval Society**

This chapter provides in-depth descriptions of the key terms and concepts necessary for a proper evaluation of the four primary sites. These concepts are related exclusively to the historical, archaeological, and landscape phenomena associated with the sites and the historical-cultural period at the turn of the 13<sup>th</sup> century. They are essential for understanding the development and function of medieval castles, the medieval social structure, and the perception of architecture as elements of status, in order to emphasize the importance and provide reasoning for the application of the digital methodologies in this work. The various digital and computational techniques composing the methodologies for the historical and architectural investigations are described in Chapters Four, Five, and Six.

## 2.1 Architectural Art History

The purpose of art history is to analyze and classify a work of art within its historical, cultural, and artistic context.<sup>39</sup> Although this definition represents more of a broad stroke than a finely detailed explanation, it emphasizes the importance of context when analyzing and classifying art. The various contextual factors that are woven consciously, or otherwise, into a work of art provide it with its character and a form of timestamp, allowing art historians to accurately analyze a work's meaning and classify it within a particular movement or phase. Essential to the study of art history is a corpus, or collection, of items that are similarly classified in order to determine trends over time and, particularly in the case of architecture, to determine the development of a site's function. The history of architecture has been a key topic of research within the discipline of art history since the discipline first came to be.<sup>40</sup> Studying architecture within the art historical ethos consists of categorizing the development of structures by analyzing construction phases based heavily upon historical stylistic phenomena, including unique forms of portals, windows, tracery, and ornamentation.<sup>41</sup> These factors lead to more accurate interpretations of buildings regarding their function and position/role within a historical architectural trend. Additionally, these factors lead to a more precise dating of a building, the necessity of which is excellently illustrated by Grossmann, 2010:

*'Whether the core components of the imperial castle in Nuremberg were constructed in 1180 or 1215, may not be of much meaning to the layman, especially when the building owner was a king of the Hohenstaufen dynasty. However, if one was no longer sure if the Reichsparteitagsgelände<sup>42</sup> in Nuremberg was constructed 1935-1940, ten years earlier, or ten years later, then correct historical assertions regarding its architectural form could not be made.'*<sup>43</sup>

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<sup>39</sup> Grossmann, *Einführung in die historische und kunsthistorische Bauforschung*. P. 7.

<sup>40</sup> *Ibid.* P. 7.

<sup>41</sup> *Ibid.* P. 8.

<sup>42</sup> The *Reichsparteitagsgelände* were the unfinished Nazi party rally grounds in Nuremberg, Germany.

<sup>43</sup> Grossmann, *Einführung in die historische und kunsthistorische Bauforschung*. P. 9. Translated from the German into English by Pattee. The original text is as follows: *'Ob die Nürnberger Kaiserburg in ihren Hauptbauteilen eher um 1180 oder erst um 1215 entstand, mag dem Laien heute weniger bedeutungsvoll erscheinen, zumal wenn der Bauherr im einen wie im anderen Fall ein staufischer König wäre. Doch wenn man nicht mehr sicher wüsste, ob das Nürnberger Reichsparteitagsgelände 1935-40 entstand, zehn Jahre früher oder später, ließen sich kein korrekten historischen Aussagen aus der Architekturform entwickeln.'*

This exemplifies the necessity of first analyzing every building or construction phase within its strict historical context, using the available architectural indicators and historical documentation. Clarifying the nuances of studying architecture is termed *Bauforschung*, German for ‘construction-research’ coined by Armin von Gerkan (1884-1969) in 1924, who spoke of developing ‘archaeological construction-research’ with regard to the architecture of antiquity.<sup>44</sup> As archaeology and European art history began in the interest of understanding the civilizations of antiquity, the emphasis upon developing sub-topics and methodologies that did not require a written record increased. In its current form, construction research studies the building condition and its relation from the earliest form until the modern-day, which can be augmented by an archaeological excavation. Regardless of the written record of a site, the primary source material for a building is the building itself.<sup>45</sup> This does not undermine the importance of archival work to identify historical primary sources often in the form of historical charters, illustrations, or maps contemporaneous to the construction phases of the building in question. Nor does this dismiss the importance of a literature review of secondary sources concerning previous research pertaining to a particular site or sites. Rather, all of these components make for a more holistic understanding of the historical, cultural, and artistic context of a building—as is the intention of the discipline of art history. As more case studies are researched, a more precise sequence of historical architectural trends emerges, buttressed by in-depth discussions of the case study sites themselves. Although architecture has been a component of art history since the birth of the discipline, construction research how it is presently understood, was first attributed to the discipline in the 1970s, albeit without its present-day repertoire of scientific dating and recording methods.<sup>46</sup> In essence, construction research, is a case study based verification of architectural history.<sup>47</sup>

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<sup>44</sup> Ibid. P. 9.

<sup>45</sup> Ibid. P. 10.

<sup>46</sup> Ibid. P. 12.

<sup>47</sup> Ibid. P. 10.

### 2.1.1 Utility and Representation as Components of Function

A discussion regarding the function of various architectural elements and building phases is integral to the goal of this project. Function can be utilitarian, such as a large wall for keeping out ill-wishers, or representative, such as a large tower built in order to remain visible throughout different areas of the surrounding environment. Utility and representation are both components of function and lead towards a more nuanced understanding of architecture when explored in conjunction with one another. To speak of the utility of an architectural element without discussing why that particular element was chosen amongst other potential options would be to ignore its representative nature. Likewise, referring only to the representative function of an architectural element would be to ignore its utilitarian traits. Let us take the example of a house with a front door, garage door, and back door. For the purpose of the analogy, imagine only the position and description of the doors. The front door of a house is typically the first portal readily seen beyond the premises of a house from the neighborhood street, and is typically wide enough for one person to easily access the house via a door that swings on vertically-placed hinges. The back door is typically hidden from the street, though it may have precisely the same dimensions and also swing on vertically-placed hinges. The garage door, by contrast, is much larger than the other two doors, opens on a horizontally-installed mechanical pulley system whose motor is attached to the ceiling of the garage, and is wide enough for an automobile. All three portals are readily associated with different purposes by modern-day visitors; i.e. the association of garage doors with automobiles. However, if one were to ignore the existence of automobiles and the concept of a neighborhood, or if both factors were altogether missing, then identifying the purpose of all three portals would prove more difficult. Furthermore, differentiating the back door from the front door—if both have the same dimensions—would be dependent upon the position of the street, the façade of the house, and the design of the doors, with close attention being paid to the casing and thresholds.

Understanding the difference between these three portals is strongly dependent upon cultural and environmental context. All three serve both utilitarian and representative functions—a front door is wide enough for a person and readily seen, a back door is wide enough for a person and hidden from the street, resulting in different ornamentations for the casings. A garage door is particularly interesting for the sake of the analogy, as it is large enough for an automobile, yet if the number of garage doors were to double, the interpretation from a common passerby would be that the owner of the house has the financial capacity to afford two garage doors and, potentially, two automobiles. However, if the doors remain closed, it cannot be known for sure how many

automobiles the owner of the house possesses—if any at all. In the absence of context, various interpretations could be made regarding the function of the different portals. Historical context in particular is necessary for understanding function, as both architecture and technology regularly change over time. When researching historical sites such as castles, the historical, cultural, and environmental contexts of particular periods in time must be taken into account in order to draw accurate conclusions regarding function. In turn, key determinations can be made in differentiating building types from one another based upon functional variation rather than loose association. The construction of palatial complexes, castles, and ecclesiastical sites in the High Middle Ages had both utilitarian and representative functions, often operating in concord with other buildings and environmental elements such as lakes, menageries, and forests.<sup>48</sup> The specific constellation of these elements was carefully planned by the builders of these monumental structures, to illicit specific responses from common travelers and elite visitors. Whether castles were always defensive in nature, is a matter of historical and scholarly perspective—a perspective that has fluctuated over the past centuries as will be discussed in the following section.

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<sup>48</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. Pp. 131-141. These pages provide numerous examples of English castles with their associated environmental ornamentations.

## 2.2 Medieval Castles and Palaces

*'Ask anyone to visualize the Middle Ages and they will, invariably, conjure up the image of the castle. Alongside the great cathedrals and parish churches, castles are among the most potent symbols of our medieval past. They are 'tangible' monuments, exciting to explore and exerting a powerful hold on the imagination of children, students, the general public and academics alike.'*<sup>49</sup>

This statement speaks to the profound effect that medieval castles have had upon the imagination, influenced in part by historical novels, film, and other media. Though representing only a component of the architectural legacy of the European Middle Ages that have come to define the built environment of many regions as pivotal centerpieces linking the past to the present, none have had such a lasting impression upon the *idea* of the Middle Ages as the medieval castle. In contrast to churches and cathedrals, which are strictly religious buildings, castles occupy a more nebulous interpretive position within architecture as both secular and ecclesiastical individuals constructed and resided in them. The nature of medieval castles varies from site to site and is dependent upon many intertwining variables, complicating their common interpretation as monoliths to a singular function.<sup>50</sup>

Castles are found in virtually every region of Western Europe, hidden amongst the trees, atop mountains and cliffs, nestled in valleys, or concealed within city centers by newer buildings with whom they now share their robust walls. They are a constant reminder of the medieval past, a period which ended over 500 years ago, yet has continued to captivate and remain relevant in the realm of literature, scholarship, and the arts. The research of castles, *Burgenforschung* or *castle studies*,<sup>51</sup> is an aptly termed research practice devoted to studying castles. The term *Burgenforscher*, or *castle researcher*, refers to the specific group of academics and researchers who conduct castle studies, though are often times not active members of a university. This has led some to regard it as a pseudo-science as it does not firmly fit within any single discipline, nor is it always pursued by a

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<sup>49</sup> Ibid. Page xi.

<sup>50</sup> Matthias Untermann, "Abbild, Symbol, Repräsentation—Funktionen mittelalterlicher Architektur?," in *Symbole der Macht? Aspekte mittelalterlicher und frühneuzeitlicher Architektur*, ed. Olaf Wagener, Beihefte zur Mediaevistik—Monographien, Editionen, Sammelbände 17 (Frankfurt am Main: Peter Lang GmbH, Internationaler Verlag der Wissenschaften, 2012), 15–32.

<sup>51</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. P. 2.

professor, nor is it a discipline itself. However, it is precisely this nondescript area that it occupies which allows castle studies to remain unrestrained by the rigidity of particular disciplines, often found at the intersection of art history, archaeology, and *Landeskunde* (i.e. regional studies) encompassing a variety of perspectives.<sup>52</sup> This is an essential advantage when seeking new approaches towards understanding castles, providing flexibility for the castle researcher—especially when applying innovative digital methodologies.

A fundamental question arising from the literature of castle studies regarding the function of medieval castles, posed by Robert Liddiard is as follows:

*'...are the military features of castles utilitarian in function, or were they part of an architectural style through which aristocrats attempted to demonstrate their position within society?'*<sup>53</sup>

This question addresses the false dichotomy in which castles are necessarily regarded as elements of either utility or of status. Representation and utility are fundamentally problematic as both fail to accurately describe the subtleties in the changing form and function of castles over time, when explored individually.<sup>54</sup> In an effort to display one or both of these elements, a person of elite standing would have to invest a substantial amount into constructing a castle. Liddiard appropriately points out that aristocrats needed somewhere to live and required a certain degree of personal security.<sup>55</sup> This can easily be placed within the tradition of the construction of elite houses that transcends cultures and spans thousands of years. In this regard, the construction of castles in the medieval period was by no means a unique event within the greater context of civilizations throughout history. However, a unique picture does emerge when combining the particular cultural contexts, the availability and types of building materials, and the political significance of a castle over time.

An interesting overlap between the study of English and of German castles is the presence of fortifications which tend to signify the home of an elite, although this was not always the case.

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<sup>52</sup> Fabian Link, *Burgen und Burgenforschung im Nationalsozialismus: Wissenschaft und Weltanschauung 1933-1945* (Köln: Böhlau Verlag GmbH&Cie, 2014). Pp. 20-21.

<sup>53</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. P. 39.

<sup>54</sup> *Ibid.* P. 67.

<sup>55</sup> *Ibid.* P. 41. Short-term forts and bastions during prolonged periods of siege are the exception to this rule, though these are not distinctly mentioned by Liddiard at this point.

Liddiard points out that the royal palaces of Clarendon and Woodstock in England lacked substantial defenses.<sup>56</sup> The same is exhibited at the site of the royal Palace of Lautern in the German Palatinate—one of the four primary Sites of this work—which featured a strong wall against a sea-like fishpond.<sup>57</sup> In turn, this underlines the necessity of viewing sites within their context and not within the historical tradition of the past centuries, which has made a requirement of fortifications to the overall image and understanding of the medieval castle.

Despite the geographical and cultural differences between the medieval Holy Roman Empire and the Kingdom of England, the existence of a military ethos attached to the status of the secular elite was constant,<sup>58</sup> representing an aspect of culture that manifested itself throughout the majority of Europe. By constructing a residence using architectural elements associated with martial endeavors, the patron of a castle could signal their desire to be viewed as a member of the military elite by carving it into stone. The placement of a castle within the landscape could also enhance the effect of their aspirations to both their peers and the general population. There is no definitive placement of a castle within the landscape which can be understood as the most effective, given the interregional variance of geography and population throughout Western Europe. If the patron wanted to be seen, then placing the castle atop a hill or low mountain could certainly fulfill this requirement, though the position of the hill or mountain is of utmost importance. A castle atop a hill surrounded by higher hills or mountains is less likely to be seen than one built atop a hill surrounded by water or a plain, for example. According to the Roman war treatise *Epitome Rei Militaris*, a fortification was to be built atop the highest available ground. However, Liddiard notes that many castles seem to have ignored this advice, which leads him to suggest that a military rationale for all castles is fundamentally misplaced.<sup>59</sup> Therefore, careful consideration regarding the purpose of the castle would have been necessary before embarking upon a construction project of that magnitude.

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<sup>56</sup> Ibid. P. 41.

<sup>57</sup> Bischof Otto von Freising and Rahewin, *Die Taten Friedrichs oder richtiger Cronica*, ed. Franz-Josef Schmale, trans. Adolf Schmidt, 4th ed., *Ausgewählte Quellen zur deutschen Geschichte des Mittelalters: Freiherr vom Stein-Gedächtnisausgabe*, XVII (Darmstadt: Wissenschaftliche Buchgesellschaft, 2000). P. 713.

<sup>58</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. P. 42.

<sup>59</sup> Ibid. P. 24.



### 2.2.1 The History of Castle Studies

One of the oldest statements regarding the interpretation of castles was recorded by Jakob Werner Kyllinger in the early 17<sup>th</sup> century who stated, '[i]t is consequently a castrum or castellum, a high/fortified/strong dwelling surrounded with walls or cylinders, in which the inhabitants retain against and ward off ill-wishers and enemies.'<sup>60</sup> His description mainly regarded the utilitarian function of castles by referencing their physical position and ability to fend off unwelcomed guests. However, by Kyllinger's time, many castles had been modified or destroyed in the first half of the 16<sup>th</sup> century during the events of the Knights' Revolt of 1521 until 1523 which featured the large siege on Franz von Sickingen's castle *Nanstein*,<sup>61</sup> and the Peasants' Revolt from 1524 until 1525,<sup>62</sup> during which Castle Hohenecken was partially set aflame.<sup>63</sup> Many were then used as quarries for nearby construction projects. His insight regarding castles is a reflection of their state at the turn of the 17<sup>th</sup> century and not a reflection of their state during their inception four or five hundred years prior. This provides an important point of departure for analyzing the historical perception of castles over time, as the military/protective nature ascribed to them seems to have manifested itself as early as the 17<sup>th</sup> century, possibly in response to the wide-scale construction of city fortresses, and modifications of medieval castles preceding the 30 Years War (1618-1648).<sup>64</sup>

In contrast to the anonymous nature of castle dwellers according to Kyllinger, the 18<sup>th</sup> century lexicon of *Brockhaus* defined the castle as a, '*Residence of a prince or knight*.'<sup>65</sup> Although the definition makes reference to the individuals who normally inhabited castles, it completely forgoes any description of particular utilitarian architectural elements, instead favoring a more

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<sup>60</sup> G. Ulrich Grossmann, *Die Welt der Burgen: Geschichte, Architektur, Kultur*, 1st ed. (München: Verlag C.H.Beck oHG, 2013). P. 16. Translated from the German by Pattee. The original quote in German is as follows: '*Es ist folglich ein castrum oder castellum, ein hohe/veste/starcke Behausung mit Mauern und Waltzen umgeben, in dem sich die Inwohner wider Mißgönner und Fiend erhalten und erwöhren mögen.*'

<sup>61</sup> Charles Phillips and Alan Axelrod, eds., "Knights' War (1522-1523)," in *Encyclopedia of Wars* (New York, NY: Zenda, Inc., 2005).

<sup>62</sup> Charles Phillips and Alan Axelrod, eds., "Peasants' War (1524-1525)," in *Encyclopedia of Wars* (New York, NY: Zenda, Inc., 2005).

<sup>63</sup> Jürgen Keddigkeit and Michael Losse, "Hohenecken," in *Pfälzisches Burgenlexikon*, ed. Jürgen Keddigkeit et al., 1st ed., vol. 2 F-H, 4 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 12.1 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2002), 377–89. P. 382.

<sup>64</sup> Charles Phillips and Alan Axelrod, eds., "Thirty Years' War (1618-1648)," in *Encyclopedia of Wars* (New York, NY: Zenda, Inc., 2005). P. 1140. Jürgen Keddigkeit, *Kleine Geschichte der Stadt Kaiserslautern*, 1st ed. (Karlsruhe, Germany: G. Braun Buchverlag, 2007). P. 59. See the description of the destruction of Kaiserslautern on pages 61-64.

<sup>65</sup> Thomas Biller and G. Ulrich Grossmann, *Burg und Schloss: Der Adelsitz im deutschsprachigen Raum*, 1st ed. (Regensburg: Verlag Schnell und Steiner GmbH, 2002). P. 15. Translated from the German by Pattee. The original quote in German is as follows: '*Wohnsitz eines Fürsten oder Ritters.*'

representative and associative approach by stating that they were foremost noble residences. The lack of lexical sustenance provided by *Brockhaus* clearly reflects the transitional state of the interpretation of castles during the 18<sup>th</sup> century. With regard to the castles of the Palatinate, The War of the Grand Alliance from 1688-1697<sup>66</sup> which followed the catastrophic events of the 30 Years War, left the region in a perpetual state of disrepair.<sup>67</sup> The simple *Brockhaus* definition of castles as residences of princes or knights is indicative of this chaotic state of castles, offering a glimpse into the past as to how these sites were viewed in the early 18<sup>th</sup> century.

The advent of the term *Berg-Schloss*<sup>68</sup> during the second half of the 18<sup>th</sup> century, and the development of the Romanticism at the turn of the 19<sup>th</sup> century represented a 50 year movement towards an even more representative/symbolic view of the castle. The *Berg-Schloss* associated castles with the *Schloss*—a building type in considerable use at the time—reflecting the tradition summarized by *Brockhaus*, yet the Romanticism added more symbolic elements to the castle. The setting of the medieval castle in Romantic literature necessitated an exploration into their different architectural components and position within the landscape, as had been done by Sir Walter Scott in *Ivanhoe*, and Joseph von Eichendorf in *Schloss Dürande*. The impetus for doing so was born, in part, to expand upon the representative nature of castles, particularly those overgrown with vines and drawn into nature's embrace as allegorical scenes, often paired with the concept of a forbidden but inevitable love. For the writers of the Romanticism, the castle was of interest not because of its architectural components alone, but for the constellation of these elements with the surrounding environment as a dramatic vessel for the representation of emotion. The solemn state of yearning for the past, exercised by various authors of the Romanticism, bears an interesting connection to the builders of the sites who wished to display their status through the use of imposing architectural elements such as tremendous shield walls and soaring towers. For the medieval builders, these elements represented pride, prestige, and ambition as physical manifestations of their position within society. Yet for the authors of the Romanticism, the dilapidated state of the same architectural elements represented humility, insignificance, and indifference, emulating a faded longing to rekindle the extinguished afterglow of the age of castles.

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<sup>66</sup> Charles Phillips and Alan Axelrod, eds., "Grand Alliance, War of the (Nine Years' War, War of the League of Augsburg) (1688-1697)," in *Encyclopedia of Wars* (New York, NY: Zenda, Inc., 2005). P. 531.

<sup>67</sup> Uwe Heckmann, ed., *Romantik: Schloss Heidelberg im Zeitalter der Romantik*, Schätze aus unseren Schlössern / Staatliche Schlösser und Gärten Baden-Württemberg, Band 3 (Regensburg: Verlag Schnell und Steiner GmbH, 1999). P. 9.

<sup>68</sup> Biller and Grossmann, *Burg und Schloss: Der Adelsitz im deutschsprachigen Raum*. P. 14.

This period marks the genesis of castle studies, emerging from the literary medieval fantasies of the late 18<sup>th</sup> and early 19<sup>th</sup> century Romanticism.<sup>69</sup> In fact, it would be remiss not to praise Sir Walter Scott's *Ivanhoe* as an instrumental player in breathing life into the study of castles. *Ivanhoe* represents a successful evocation of the spirit of the Middle Ages,<sup>70</sup> as interpreted at the time, brought to life in the form of a fantastic story of kings, fools, and knights. Scott's descriptions of various castles in *Ivanhoe*, clearly demonstrate that he had visited them and was acutely familiar of their various architectural elements, evidenced by his portrayal of Conisbrough Castle in South Yorkshire in Chapter 42:

*'The mode of entering the great tower of Conigsburgh Castle is very peculiar, and partakes of the rude simplicity of the early times in which it was erected. A flight of steps, so deep and narrow as to be almost precipitous, leads up to a low portal in the south side of the tower, by which the adventurous antiquary may still, or at least could a few years since, gain access to a small stair within the thickness of the main wall of the tower, which leads up to the third story of the building...'*<sup>71</sup>

This represents one detailed account of the castles in his novel which established a backdrop for the adventures of King Richard, Wamba, and Ivanhoe, creating the illusion of historicity in an otherwise fictitious story. Though his descriptions were mainly ancillary, they offer interesting glimpses into what could be seen at the various castles prior to the publishing of *Ivanhoe* in 1820. During the early 19<sup>th</sup> century period of the Romanticism, various non-scientific depictions of castles were undertaken to explore the architecture of medieval castles. Two excellent examples include the volume of plates of the Teutonic Knight castle *Marienburg* in the former province of West Prussia created by Friedrich Gilly and Friedrich Frick during the years 1799-1803, and the *Zeichnungen von der Burg Rheinstein* by W. Kuhn in 1829.<sup>72</sup> These early depictions represent some of the first attempts at

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<sup>69</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. P. 2. Biller and Grossmann, *Burg und Schloss: Der Adelsitz im deutschsprachigen Raum*. P. 14.

<sup>70</sup> Sharon Kay Penman, "Afterword," in *Ivanhoe: A Romance*, by Sir Walter Scott, 3rd ed., Signet Classic (New York City: New American Library, 2001), 508. P. 495.

<sup>71</sup> Sir Walter Scott, *Ivanhoe*, 3rd ed., Signet Classic (New York City: New American Library, 2001). P. 432. This constitutes only a portion of Scott's description of the Conisbrough castle.

<sup>72</sup> Biller and Grossmann, *Burg und Schloss: Der Adelsitz im deutschsprachigen Raum*. P. 14.

detailing castle architecture and led to more scientific undertakings in order to understand their role in the Middle Ages, their development, and downfall.

In contrast to medieval cathedrals and churches, castles were not considered a relevant topic of study until the mid-19<sup>th</sup> century in France in which castles were cast as equals,<sup>73</sup> if not direct predecessors of the 16<sup>th</sup> and 17<sup>th</sup> century bastions and Vauban-style fortresses—similar to the concept of the German *Burg* as a predecessor to the *Schloss*.<sup>74</sup> The conflation of castles with the later bastions resulted in a blanket generalization of medieval castles as having belonged to the class of ‘Military Architecture.’ However, this demonstrated an overt imbalance, possibly even hypocrisy, as many researchers of the time neglected the artisanship and symbolism of medieval castles while highlighting these exact features in ecclesiastical buildings of the same period.<sup>75</sup> This artificial separation between castles and churches, to put it bluntly, led to the creation of two paradigms regarding medieval buildings, rather than viewing secular and ecclesiastical buildings as symbiotic components of the medieval architectural infrastructure. The militaristic interpretation of castles from the 19<sup>th</sup> and 20<sup>th</sup> centuries has undeniably shaped how the current public views castles and how they are represented in media.

In the English literature, G.T. Clark’s *Mediaeval Military Architecture in England* (1884-85) was an early proponent of the militaristic perspective. Clark included a survey of castles in both England and France viewing them with the supposition that they were first and foremost military works,<sup>76</sup> specifically when mentioning those castles constructed under King Henry II<sup>77</sup> and, more generally, those between the years 1150 to 1350.<sup>78</sup> In Germany, the militaristic interpretations of castles was made in Johann Cori’s 1899 definition of the *Burg* suggesting that, ‘*in every age, the Burg generally meant a location in which someone could protect and keep custody of people and*

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<sup>73</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. Page 2.

<sup>74</sup> Ulrich Schütte, “Wenn Burg und Schloss dasselbe sind” (Vortrag mit Folien, Frühjahrstagung des Rudolstädter Arbeitskreis zur Residenzkultur: Der Schlossbau im römisch-deutschen Reich im 15. Jahrhundert als europäisches Phänomen. Architektonische Repräsentation und technische Innovation in einer Zeit des Umbruchs. Zwei Jahrzehnte neue Forschungen., Heidelberger Schloss, December 4, 2019).

<sup>75</sup> Charles L. H. Coulson, *Castles in Medieval Society: Fortresses in England, France, and Ireland in the Central Middle Ages*, 1st ed. (New York, NY: Oxford University Press Inc., 2003). P. 17.

<sup>76</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. P. 3. Liddiard notes that Clark’s sweeping interpretation of castles as military structures

<sup>77</sup> George Thomas Clark, *Mediaeval Military Architecture in England*, vol. 1, 2 vols. (London: Wyman and Sons, 1884). P. 60.

<sup>78</sup> *Ibid.* P. 179. This section of the book specifically referred to castle Alnwick in Northumbria.

things...hence the name *Bürger*.<sup>79</sup> In his definition, Cori linked castles to cities linguistically by drawing an association between the *Burg* and the *Bürger* (German for citizen). The similarity between the two words is undeniable as *Bürger* certainly contains the word *Burg*. However, the more relevant point pertaining to the CITADEL project is that Cori did not include the nobility in his definition, nor did he mention any particular types of defensive elements, i.e. fortifications, only generally referencing that these sites protected people and things. The significance of this definition should be underlined, as it links castles to protection, from which a more militaristic perspective was soon to follow.

Two volumes published in 1912 that would come to dominate castle studies— especially within the English speaking sphere of influence— until the end of the world-war period, solidified the supposed militaristic nature of castles. The first was Ella Armitage's *The Early Norman Castles of the British Isles*, who determined via ordinance survey maps and documentary sources, that the Normans had introduced the stone castle to England. The other was Alexander Hamilton Thompson's *Military Architecture in England and the Middle Ages*, which made the argument that the 'Darwinian' development of castle designs was purely military, noting that the improvement of defenses was in direct response to the improvement of attack methods. Armitage even included groundbreaking analyses of the landscape context with regard to the Norman castles. The practice of including an environmental analysis in conjunction with the architecture of a site in order to enhance the understanding of its purpose has prominently increased with more recent works such as Oliver Creighton's *Designs upon the Land: Elite Landscapes of the Middle Ages*, in which he details the methodologies involved in analyzing the landscapes surrounding castles. Creighton notes that the advent of GIS within archaeological research has enhanced this methodology by providing empirical evidence for landscape theories developed by castle researchers.<sup>80</sup> Based upon Armitage's and Thompson's texts, among others, Liddiard has interpreted the historiography of English castles at the turn of the 20<sup>th</sup> century as having reflected the reality of the British Empire, particularly prior to the First World War which began in 1914.<sup>81</sup> The militaristic and nationalistic attitudes of England,

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<sup>79</sup> Grossmann, *Die Welt der Burgen: Geschichte, Architektur, Kultur*. P. 16. Translated from the German by Pattee. The original quote in German is as follows: ‚Burg hiess vor Alters im Allgemeinen jeder zur Sicherung und Verwahrung von Menschen und Sachen dienender Ort [...] Daher auch der Name Bürger.‘ The word *Bürger* means citizen.

<sup>80</sup> Oliver Creighton, *Designs upon the Land: Elite Landscapes of the Middle Ages*, 1st ed., Garden and Landscape History (Woodbridge, U.K.: The Boydell Press, 2009). P. 222.

<sup>81</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. Pp. 3-5.

France, and Germany further stressed the impetus to draw upon the military history of their respective countries.

The phenomenon of pairing castle studies with political ideologies found contemporaries on the continent as well as in England, particularly within the former German Empire (1871-1918). This trend permeated the interwar period of the 1920s and 1930s, reaching an unprecedented height during the German National Socialist (NS) regime, which attempted to improve its argument for legitimacy by identifying continuity with previous German empires and traditions.<sup>82</sup> During the interwar period, Bodo Ebhardt's *Der Wehrbau Europas im Mittelalter*, provided an overview of the castles of the influential regions of Germany in the Middle Ages, i.e. those controlled by the Hohenstaufen dynasty (1138-1262) including sites no longer within the 1930s borders of NS Germany. In absence of the social context at the time of its production, his text may seem more innocent than abreast with the prevailing political ideology. However, a common narrative was woven throughout the text making leaps to conjoin the Holy Roman Empire (962-1806<sup>83</sup>), to the Second German Empire (1871-1918), to the Third German Empire (1933-1945)—the National Socialist Third Reich. The connections between the three entirely different regimes were fundamentally based upon the false assumption that it was self-evident. Ebhardt's intense focus on the Hohenstaufen dynasty rested upon the fact that they had built the majority of the German medieval castles under the reign of Frederick II (1211-1245<sup>84</sup>), by the year 1225.<sup>85</sup> The cult of reminiscing upon the chief emperors of the Middle Ages via the construction of monumental architecture had been invoked by German nationalists throughout the centuries preceding Ebhardt's text, including sagas devoted to the messianic return of the great emperors Charlemagne from the *Kaiser-Karlsberg*<sup>86</sup> and Frederick I *Barbarossa* from the *Kyffhäuser*.<sup>87</sup> The NS regime also included

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<sup>82</sup> Link, *Burgen und Burgenforschung im Nationalsozialismus: Wissenschaft und Weltanschauung 1933-1945*. P. 21.

<sup>83</sup> The beginning of the Holy Roman Empire is noted here as beginning with the imperial coronation of Otto I rather than Charlemagne, for the reason that Charlemagne was crowned Western Roman Emperor in 800, but the title of Holy Roman Emperor was given only those elected as German King—a title which first existed in the year 911. The term Holy Roman Emperor was not coined until the 12<sup>th</sup> century, but refers to the empire formed under Otto I, a Saxon, and not that of Charlemagne, a Frank, though a common lineage was attempted to connect the former to the latter in order to validate the dynasties.

<sup>84</sup> Helmut Neuhold, *Die Staufer* (Wiesbaden, Germany: Marixverlag, 2014). P. 187.

<sup>85</sup> Friedrich Wilhelm Krahe, *Burgen und Wohntürme des deutschen Mittelalters* (Cologne: Anaconda Verlag GmbH, 2014). P. 13.

<sup>86</sup> Heinz Rölleke, ed., "Kaiser Karl im Brunnen und im Berge," in *Das große deutsche Sagenbuch* (Mannheim: Albatros Verlag, 2012).

<sup>87</sup> Jakob Grimm and Wilhelm Grimm, "Friedrich Rotbart auf dem Kyffhäuser," in *Deutsche Sagen* (Hamburg: Nikol Verlagsgesellschaft mbH & Co. KG, 2014), 52–53.

cult admirations facilitated through the construction of monumental architecture in honor of its leader, such as the reconstruction of the *Königsplatz* in Munich in the 1930s.<sup>88</sup>

For Hitler's new empire, monuments to its might and authority were erected, mostly emulating ancient Rome.<sup>89</sup> However, Hitler believed that Germany lacked the monumental structures needed to build and maintain a sense of community, unlike the cities of ancient Rome and Greece.<sup>90</sup> Although many of the civic buildings constructed by the NS regime were based upon a neoclassical design, the movement towards stone monuments in general was paramount in their quest to establish a new cultural order atop physically solid foundations.<sup>91</sup> Considering that the castles of the Middle Ages and monumental Roman buildings still existed in many areas in Germany, Hitler's trust in the longevity of stone structures was not misplaced. Furthermore, the NS regime considered cities to have both economic and symbolic functions, as sites that would serve as 'communities of the people'.<sup>92</sup> It is worth noting that German translation of 'people' is *Volk*, but the German translation of citizen is *Bürger*. The discussion of civic centers for the German *Bürger* and new monuments built of stone are reminiscent of the late medieval castles that served as economic centers for the local people, drawing to mind Cori's 1899 definition of castles. The *Burgfrieden* between Castle Hohenecken and the city of Kaiserslautern on 19 October 1394 provides evidence for this cooperation between the castle and the townspeople, who could seek refuge in times of war and even transport livestock into the outer ward.<sup>93</sup>

The use of architecture was of utmost importance for the NS regime as it changed the way that people interacted with the built environment and conceived space. Hitler famously considered architecture as, '*the word in stone*,'<sup>94</sup> again stressing the representative or symbolic function of monumental structures, particularly those built from stone. The conquest to control the narrative

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<sup>88</sup> Joshua Hagen, "Architecture, Symbolism, and Function: The Nazi Party's 'Forum of the Movement,'" *Environment and Planning D: Society and Space* 28, no. 3 (June 2010): 397–424, <https://doi.org/10.1068/d2206>. P. 408.

<sup>89</sup> Jeffrey D Narver, "The Cultural Production of Domination in Nazi Germany: Architecture as Propaganda" (Thesis submitted in partial fulfillment of the requirements for the degree of Master of Arts in the Department of Communication, Simon Fraser University, 1990). P. 92.

<sup>90</sup> Hagen, "Architecture, Symbolism, and Function." P. 400.

<sup>91</sup> John Robert Mullin, "The Impact of National Socialist Policies Upon Local City Planning in Pre-War Germany (1933-1939) The Rhetoric and The Reality," *Journal of the American Planning Association* 47, no. 1 (January 1981): 35–47, <https://doi.org/10.1080/01944368108977088>. P. 10.

<sup>92</sup> *Ibid.* P. 9.

<sup>93</sup> Martin Dolch and Michael Münch, *Urkundenbuch der Stadt Kaiserslautern II*, vol. Teil II: 1322 bis 1450, Schriftenreihe des Stadtarchivs Kaiserslautern 4 (Otterbach: Verlag Arbogast, 1998). Pp. 349-350. Also catalogued as Charter ID 10373 in the graph database.

<sup>94</sup> Hagen, "Architecture, Symbolism, and Function." P. 400.

through architecture even went so far as to ‘renovate’ towns, such as *Rothenburg ob der Tauber*, to be more German in which the façades of the town’s buildings were effectively redesigned.<sup>95</sup> The NS regime valued the representative nature of historical buildings more than the physical structures themselves, as explained by a *Kraft durch Freude* (KdF) leader on 7 June 1937,

*‘It is not just the stones that demand attention, but rather primarily the spirit that has formed these stones. Within the walls of Rothenburg, a long ago time speaks to the visitors. And just like back then, when the spirit of community allowed great things to be raised, so it is once again today that the spirit of the national community is the highest possession of the nation.’*<sup>96</sup>

Besides renovating and altering older sites, the regime was even committed to constructing entirely new castles belonging to the then-established Order of National Socialism, such as Herman Giesler’s castle *Ordensburg Sonthofen*.<sup>97</sup> Besides their malevolent intentions, the desire of the Nazis to view stone-works as mainly representative structures marked a shift in the understanding of castles as symbolic monuments rather than purely utilitarian and militaristic residences—although militarism certainly remained a component of their interpretation.

Upon the culmination of the Second World War and the defeat of NS Germany by allied forces, many of the 1930s alterations to the medieval structures were largely left intact—if they had not already been destroyed by the bombings in the war. In the case of castle *Trifels*, the plans to reconstruct the castle as a memorial to NS ideology began in 1937 and continued until well after the end of the war—without the overt overtures to the NS regime.<sup>98</sup> These curious reconstructions remain to this day, casting a dark shadow upon the history of the structures, even though the original buildings preceded the National Socialists by centuries. Consequently, castles studies in Germany will always remain stained by the National Socialist past. Although this should be viewed as a

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<sup>95</sup> Joshua Hagen, “The Most German of Towns: Creating an Ideal Nazi Community in Rothenburg Ob Der Tauber,” *Annals of the Association of American Geographers* 94, no. 1 (March 2004): 207–27, <https://doi.org/10.1111/j.1467-8306.2004.09401011.x>. Much of the city of Rothenburg ob der Tauber was remodeled in order to reflect Nazi ideals of what was German architecture, which consisted of removing stucco to display the underlying half-timber structures, or removing arches in favor of more straight lintels.

<sup>96</sup> *Ibid.* P. 211.

<sup>97</sup> Gavriel D. Rosenfeld, “The Architects’ Debate: Architectural Discourse and the Memory of Nazism in the Federal Republic of Germany, 1977–1997,” *History and Memory* 9, no. 1/2, (1997): 189–225. P. 219.

<sup>98</sup> Bernhard Meyer, *Burg Trifels*, 2nd ed., Führungsheft 15 (Regensburg: Verlag Schnell & Steiner GmbH, 2010). P. 12.



difficult period in the history of castles, it should by no means discredit or dismiss the entire study of German castles as strictly a heritage of the Third Reich.

The post-world-war period marked an interesting shift in the literature regarding castle studies in Germany as the representative/symbolic nature that had been adopted wholesale by the NS regime was apparently abandoned altogether in favor of the utilitarian militaristic view that had been developed at the turn of the 20<sup>th</sup> century. Consequently, the military ethos of the 19<sup>th</sup> century commonly associated with castles is arguably the largest hurdle in explaining the diversity of such sites—a key point of discussion throughout this work. The reemergence of the militaristic interpretation in contrast to the representative interpretation of castles, and monumental historical structures in general, resembles the swing of a pendulum that has consistently swung between the two components of function. Unfortunately, the further the pendulum progresses in one direction, the more incomplete the interpretation of a castle becomes, due to the nature of these sites as both utilitarian and representative, albeit in varying proportions.

In 1965, the prominent castle researcher Walter Hotz described the *Burg* as ‘a location where people and values are protected.’<sup>99</sup> The definition is nearly a mirror image of Cori’s 1899 definition described above, again lending credence to the idea that the post-world-war German scholarship sought a return to the age preceding the NS regime’s symbolic interpretations of stone structures and castles. In England, a continuation of the militaristic concept prevailed in both the pre- and post-world-war periods. R. Allen Brown’s *English Medieval Castles*, first published in 1954, was based entirely upon the premise that castles were largely militaristic, a notion supported by fellow English scholars such as John Beeler.<sup>100</sup> The concept prevailed until the 1970s in which a new perspective, for which Charles Coulson served as flagbearer, suggested that architectural elements resembling militaristic functions may in fact have been intended to convey a more symbolic than utilitarian function.<sup>101</sup> With the exception of David Austin’s 1984 article, *The Castle and the Landscape*,<sup>102</sup> this new perspective remained largely unsubscribed by fellow castle researchers, favoring the traditional concept of ‘military architecture.’ The contention surrounding

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<sup>99</sup> Walter Hotz, *Kleine Geschichte der deutschen Burgen* (Darmstadt: Wissenschaftliche Buchgesellschaft, 1965). P. 1. Translated from the German by Pattee. The original quote in German is as follows: ‘Orte wo Menschen und Werte geschützt werden.’

<sup>100</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. P. 5.

<sup>101</sup> *Ibid.* P. 7.

<sup>102</sup> *Ibid.* P. 7. David Austin, “The Castle and the Landscape: Annual Lecture to the Society for Landscape Studies,” *Landscape History* 6, no. 1 (1984): 69–81, <https://doi.org/10.1080/01433768.1984.10594382>.

the interpretation of castle Bodium in Sussex in the early 1990s marked a shift in the functional pendulum, which began to steadily swing back in the direction of symbolism, based largely upon landscape analyses which found the physical position of Bodium castle suspiciously non-defensive, though the walls evoked a different story. Uniquely militaristic elements such as gun ports and murder holes could not provide solid evidence for a militaristically utilitarian function, considering that the castle is positioned lower than a neighboring hill, from which one can look into the inner court of the castle from above. The result of the investigation, undertaken by researchers of both sides of the functional debate, concluded that Bodium was a residence built in a martial style.<sup>103</sup> Thus, a strictly militaristic perspective serves largely as a hindrance to the study of medieval castles, profoundly stated by Charles Coulson in 2003,

*'Until the conflict between the diffuse reality and the narrow perception is resolved the centrality of castles (in all their manifestations) to society as a whole will remain obscured. The 'military' straightjacket falsifies them. Viewing them as adjuncts to the chivalric lifestyle is better, but still insufficient.'*<sup>104</sup>

His quote strengthens the claim that in order to analyze castles within their context, it is necessary to draw away from the prevailing military concept associated with castles, and instead seek to view them through the perception of their builders and those who lived amongst them. This requires an investigation into the networks of individuals who occupied the sites and an investigation of the sites themselves. Recent German scholarship is largely in agreement with Coulson's perspective, strengthening the idea that castles also had a residential aspect. According to Ulrich Grossmann in 2005, the castle,

*'is fundamentally a fortified livable seat of the nobility...offering him living quarters, protecting him from attacks or comprising a base of operations for his armed sovereignty, and for representing his status.'*<sup>105</sup>

<sup>103</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. P. 10.

<sup>104</sup> Coulson, *Castles in Medieval Society: Fortresses in England, France, and Ireland in the Central Middle Ages*. P. 29.

<sup>105</sup> G. Ulrich Grossmann, *Burgen in Europa*, 1st ed. (Regensburg: Verlag Schnell und Steiner GmbH, 2005). P. 14. Translated from the German by Pattee. The original quote in German is as follows: *'Die Burg ist grundsätzlich ein befestigter bewohnbarer Sitz des Adels. Sie hat mehrere Aufgaben: Sie bietet dem adeligen Bistzer Wohnraum, sie schützt ihn bei Angriffen oder bildet eine Ausgangsbasis für seine bewaffnete Herrschaft und sie repräsentiert seinen Status.'*

Implicit within this definition is the involvement of a member of the nobility, though Grossmann also notes that various exceptions exist in which castles were built or operated by non-nobles.<sup>106</sup> Grossmann's definition is closely resembled by John Goodall, as referenced by Liddiard in 2005 who stated that, '*a castle is the residence of a lord made imposing through the architectural trappings of fortification, be they functional or decorative.*' Liddiard notes that this definition is beneficial because it forgoes the necessity to measure fortifications as a requirement to be considered a castle.<sup>107</sup> In short, the development of castle studies over the course of the last few centuries demonstrates various paradigm shifts in the understanding of which objects castles were commonly associated with, and the fluctuating interpretation of their functionality be it utilitarian or representative. To claim that castles were either strictly utilitarian or representative/symbolic would be to fully ignore their multifaceted nature as they were adjusted for different purposes over time. A more holistic approach is necessary when analyzing castles, taking into account both their development as buildings, and the development of the study of castles.

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<sup>106</sup> Ibid. P. 16.

<sup>107</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. P. 68. This is the same page as the quote by John Goodall.

### 2.2.2 Defining the Castle

Provided the previous discussion, defining what constitutes a medieval *castle*, or *Burg*, across the span of the Middle Ages has been an inconclusive undertaking for the better part of the last 400 years. Variations in regional medieval architecture, feudal governments, and social hierarchies throughout Western and Central Europe—all of which had profound effects upon the association and function of these sites—has led to a convoluted concept of what these sites were across time and why they were built. Furthermore, in order to first interpret their functional diversity, it is necessary to explore the building types they are commonly associated with, in addition to the medieval social structure in order to understand these extraordinary sites through the lens of those who built and lived among them.

Throughout the last centuries, the determining factors of what was considered to be indicative of a castle has changed. This is further complicated by the direct translation of the words *castle* and *Burg*, in absence of a proper elucidation to their contextual development. The English *castle* developed in a different historical and cultural context than the German *Burg*, making it difficult to draw a direct comparison between the two terms without first describing the specific historical implications of either term. Each term can be unpacked to reveal a host of various associations over time, emphasizing the necessity of defining them in relation to specific functions determined by the architectural elements that each site exhibits.

An additional point of contention is their association with a host of other objects in historical texts and depictions. The English *castle*—derived from the Latin *castrum*—was commonly associated with objects that many now recognize as a castle, but also to churches, monasteries, town houses, city walls (both Roman and medieval), campaign forts, 16<sup>th</sup> century artillery forts, and even warships. Particularly noteworthy within this array of terms is the presence of non-military sites that are described as *castrum*.<sup>108</sup> Its association with objects which may seem obviously unrelated (e.g. warships) is due to the lack of a clear definition, requiring one to narrow the scope of what can be considered a castle based upon interpretations of specific building types, rather than interpreting anything with rudimentary fortifications as having been castles.

The German *Burg* followed a similar trend throughout history, as the word had several connotations over time, though the most notable point of confusion is the ambiguity and conflation of the terms *Burg* and *Schloss*. Furthermore, a litany of words have been used in historical charters

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<sup>108</sup> Ibid. P. 40.

to label a *Burg* including: *burg*, *schlosz*, *veste*, *haus*, *sitz*, *Behausung*, *Bürgle*, *Haus*, *Turm*, *Burgstall*, *Burgsäß*, *castrum*, *arx*, and *habitatio*.<sup>109</sup> This wide selection of terms, for oftentimes the same buildings or building types, tends to assimilate the meanings of each word and draws the mind the similar phenomenon described by Liddiard regarding the English *castle*. The association of the *Burg* with that of the *Schloss* requires a brief explanation of the difference between the two. The German *Schloss* is now understood as a different concept altogether, commonly associated with the period of the 16<sup>th</sup> to the 19<sup>th</sup> centuries.<sup>110</sup> It differs from the *Burg* in that it often lacked fortifications, and the architecture is described as being mainly representative. Due to the advent of firearms, the marriage of fortification and residence, as exhibited in the *Burg*, ceased, giving rise to independent structures for both functions.<sup>111</sup> This definition of the *Schloss* is a relatively new development and is based upon representative function, though a few centuries prior, the difference between a *Burg* and a *Schloss* was not so clear—a point excellently illustrated by a 1785 depiction of Castle Hohenecken which labelled the ruined site as the *alt Schlos*.<sup>112</sup> The use of the word *Schlos*, or *Schloss*, to refer to a brutish ruin was an interesting choice made by the artist, reflecting the historical tendency to use *Burg* and *Schloss* interchangeably. Anecdotally, the last documented mention of Castle Hohenecken in a charter from 1733 referred to it as a *castrum*.<sup>113</sup>

The simplest way to settle this linguistic contention within the context of this 1780s depiction of Burg Hohenecken would be to define a *Burg* as having been a predecessor to a *Schloss*—or *altes Schloss*.<sup>114</sup> This supports the labeling of Hohenecken as the *alt Schlos*, which can then be further interpreted as the artist's intention of drawing upon the structure's former existence as a *Burg*—a symbol and literary concept in abundant use during the period of the late 18<sup>th</sup> century German Romanticism. Indeed, within the German-speaking realm in the second half of the 18<sup>th</sup> century, castles began to be regarded as *Berg-schlössern*,<sup>115</sup> or *Mountain-Schloss*, drawing a close association between the two building types. However, not every *Schloss* was once a *Burg*, nor did

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<sup>109</sup> Schütte, "Wenn Burg und Schloss dasselbe sind." This selection by Schütte also ranges from Latin, to Middle High German, to High German, and even includes dialectal forms—*Bürgle*, for example.

<sup>110</sup> Due to the chronological focus of this project limited to the years 1152 to 1273, the concept of the *Schloss* will not be further elaborated upon, and only mentioned in the historiography of the various case study sites.

<sup>111</sup> Biller and Grossmann, *Burg und Schloss: Der Adelsitz im deutschsprachigen Raum*. Pp. 10-11.

<sup>112</sup> Keddigkeit and Losse, "Hohenecken." P. 379.

<sup>113</sup> Jürgen Keddigkeit, *Burg Hohenecken* (Kaiserslautern, Germany: Faber Druck GmbH, 2010). P. 20.

<sup>114</sup> Schütte, "Wenn Burg und Schloss dasselbe sind."

<sup>115</sup> Biller and Grossmann, *Burg und Schloss: Der Adelsitz im deutschsprachigen Raum*. P. 14.

every *Burg* exist long enough, or necessitate a repurposing to become a *Schloss*. Thus, defining the *Burg* as a predecessor to the *Schloss* may be convenient and possibly representative of how people in the 18<sup>th</sup> century viewed *Burgen*, but it fails to remain consistent throughout time. Defining castles in relation to other building types is still prevalent, provided the definition by the Oxford Dictionary of the Middle Ages, which defined the castle as, ‘*a combination of palace, which is unfortified, and fortress, which implies a purely military function...*’ The entry continues with a variety of subheadings indicating the development of the castle and its role in history.<sup>116</sup> Although the entry manages to cover the various aspects and potential functions of a castle, it does not provide a single definition encompassing these elements, instead opting for a more utilitarian approach regarding the presence of fortifications.

Defining the *Burg* based upon utilitarian function alone leads to a distortion of what can be considered a *Burg*, though still a better alternative than a definition made by association. For example, the *Burg* is defined in the *Bauhistorisches Lexikon* as,

*‘a continually fortified and inhabited site that makes use of ramparts, trenches, walls, and other things in areas of natural heights or of water, known within the Kulturkreis of virtually all ancient peoples of Europe and the Near East.’*<sup>117</sup>

This represents a utilitarian description but fails to highlight the representative function of a castle, and directly contradicts the fact that *Burgen* were not always exhibited at all times among all peoples of Europe and the Near East.<sup>118</sup> The definition from the *Bauhistorisches Lexikon* can lead to the interpretation of virtually any site that fits this broad framework as a *Burg*. Chapels atop hills such as the *Wurmlinger Kapelle* near *Rottenberg am Neckar*, or monasteries like *Kloster Lorch* near *Schwäbisch Gmünd* fit this definition of a *Burg*, but are in fact not considered *Burgen*, despite exhibiting robust walls, positions atop natural heights, and built during the medieval period. Thus, a site that happens to exhibit one or more, or even all of the factors listed in the definition may not necessarily match the lemma to which this definition is attached. Simply put, identifying a site as a *Burg* is more than the sum of its parts. The key determination when defining a site as a *Burg*, is to

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<sup>116</sup> DeVries, “Castles, Fortifications, and Fortresses.” Quote is from page 343.

<sup>117</sup> Mila Schrader and Julia Voigt, “Burg,” in *Bauhistorisches Lexikon: Baustoffe, Bauweisen, Architekturdetails* (Suderburg-Hösseringen: anderweit Verlag GmbH, 2003). Page 54.

<sup>118</sup> Grossmann, *Burgen in Europa*. P. 11.

place it within its societal and environmental context in order to understand how its utilitarian and representative functions impacted the perspective of its builders and other people at various times in history, requiring an analysis of historical documents such as medieval charters. This is essential in interpreting their function over time, as a *Burg* could be built for different purposes and most were routinely adapted and renovated to serve a different function depending upon a multitude of factors.<sup>119</sup> Despite its shortcomings, the definition provided by the *Bauhistorisches Lexikon* is not entirely ineffective regarding the complexity of the *Burg*, as it intrinsically captures the difficulty of defining the term, absent the particular historical and cultural contexts, by relying solely upon possible utilitarian features that many *Burgen* happen to share in common.

A more applicable definition of the *Burg* is provided by the *Lexikon der Bautypen*, which defines the *Burg* as, ‘a fortified, protective residence of a person or group of social prominence, typically of the nobility.’<sup>120</sup> Three components stand out in this definition as it references utility (its protective and fortified nature), representation (social prominence), and association (residence and connection to the nobility). The clear emphasis is upon the function of a *Burg*, as the association with other elite structures is only hinted at via the inclusion of the nobility. The definition is certainly an improvement over the one provided by the *Bauhistorisches Lexikon*, though it still implies that all *Burgen* were residences, which was not always the case. The lexical excerpt continues in later paragraphs to explain that the *Burg* could have multiple functions in relation to being a residence, by referencing different building typologies such as *Burgen* belonging to military orders, crusaders, or the church. This is much closer to a more holistic understanding of castles and relying upon a functional definition, encompassing both utilitarian and representative aspects helps separate the *castle* and *Burg* from objects such as monasteries or warships.

Within the French literature, the castle was defined in the *Encyclopedia of the Middle Ages* as a major phenomenon of the Middle Ages, for which a simple definition as the residence of a powerful man is inadequate when expressing the complexity of its functions. The encyclopedia also emphasized that the castles were at the heart of the reorganization efforts of power and lands by various medieval monarchs, and that is was, ‘a residence of the nobility and a centre of political, social, economic, military and sometimes even religious command, where seigniorial protection and

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<sup>119</sup> Helmut Hofrichter, “Vorwort,” in *Zentrale Funktionen der Burg*, ed. Barbara Schock-Werner and Helmut Hofrichter, vol. 6, Veröffentlichungen der Deutschen Burgenvereinigung e.V.: Herausgegeben vom Europäischen Burgeninstitut--Einrichtung der Deutschen Burgenvereinigung, Reihe B: Schriften (Braubach, Germany: Deutsche Burgenvereinigung e.V., 2001), 1.

<sup>120</sup> Martin Knauer, “Burg,” in *Lexikon Der Bautypen: Funktionen Und Formen Der Architektur*, ed. Ernst Seidl, Reclam Sachbuch (Stuttgart: Philipp Reclam jun. GmbH & Co. KG, 2012). P. 102.

*exploitation were exercised in concert.*<sup>121</sup> When compared with the previous definitions, this one clearly stands out as it attempts to capture the complexity of the representative function of a castle, while still mentioning the defensive potentials a castle may have had.

Defining the *castle* or *Burg* is an ongoing process and an essential component of castle studies. For the purpose of this project, the *Burg* will be used synonymously with the *castle*, and both will be defined as: *'Fortified structures, or structures that emulate fortifications, built by individuals or families with the financial and/or social agency to do so, as a reflection of their status or preferred status within medieval society.'*<sup>122</sup> This definition takes into account both the utilitarian and decorative potentials of a site, eliminates the inclusion of nobles as necessarily fundamental to the existence of every site, rejects the strict association with residences, and highlights the fact that these were expensive buildings that oftentimes were meant to signal an individual's position or preferred position within society.

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<sup>121</sup> Annie Renoux, "Castle, Fortification," in *Encyclopedia of the Middle Ages*, ed. Andre Vauchez, trans. Adrian Walford (Cambridge: James Clarke & Co., 2000). P. 251.

<sup>122</sup> This is an original definition that reflects upon the aforementioned definitions. The purpose of the definition here presented is not to dismiss previous attempts, but rather to maintain consistency throughout the project, and to be considered as an alternative to the assortment of definitions already in use.



### 2.2.3 Medieval Palaces

The palaces of the Holy Roman Empire were unique expressions of elite architecture, which served both as political centers and residences of the kings and emperors.<sup>123</sup> They are often described using the terms *Kaiserpfalz* or *Königspfalz*, which mean an emperor's palace and a king's palace, respectively. The use of the terms *Kaiserpfalz* (imperial palace) and *Königspfalz* (royal palace) when regarding the medieval German palaces is contingent upon the context of the German word *Reich*, most generally defined as *Realm*. Although *Reich* is often compounded with *König* or *Kaiser* to create the words *Königreich*, for kingdom, and *Kaiserreich*, for empire, this is not always the case in the medieval charters. These are endocentric compounds in which the head, *Reich*, is modified by the morphemes *König* and *Kaiser*. Both compounds denote different contexts and have a profound effect upon the interpretation of a site, as a royal site was subject to the will of the reigning king and often maintained by administrators within his jurisdiction, whereas an imperial site was subject to the will of the emperor. Throughout the Middle Ages, the succession of emperors was not always fluid and often featured periods where there was no emperor, but only a king. Furthermore, there were even periods in which a king was absent from the throne, during which stewards would steer the kingdom with the assistance of the prince electors. Nonetheless, the palace in Lautern is often referred to as both a *Kaiserpfalz* and a *Königspfalz*. In essence, both are correct, when used in regard to the proper historical context, though *Königspfalz* is the most consistent term.

Within the medieval records, a palace is regarded as a *palatium*, *palatium imperiale*, *palatium regale*, *villa*, *villa regalis*, *curtis*, *curtis regalis*, *fiscus*, *castrum*, or *castrum imperatoris*.<sup>124</sup> The variety of the terms indicates an imprecise manner of referencing medieval palaces which immediately draws to mind the same phenomenon regarding the historical descriptions of the English *castle* and German *Burg*. However, the element that each of the terms shares in common is the unmistakable association with the Roman Empire of antiquity, whose emperors labelled their residences as *palātia* (*palātium*, sing.). The decision of historical chroniclers to label the medieval palaces in such a way as to invoke the Roman Empire, followed a tradition dating back to the 6<sup>th</sup> century by Saint Gregory of Tours at the Merovingian court.<sup>125</sup> In book ten of Saint Gregory's

<sup>123</sup> Adolf Gauert, "Zur Struktur und Topographie der Königspfalzen," in *Deutsche Königspfalzen: Beiträge zu ihrer historischen und archäologischen Erforschung*, 1st ed., vol. 2, Veröffentlichungen des Max-Planck-Instituts für Geschichte 11/2 (Göttingen: Vandenhoeck & Ruprecht, 1965), 1–60; Günther Binding, *Deutsch Königspfalzen: Von Karl dem Großen bis Friedrich II. (765-1240)*, 1st ed. (Darmstadt: Wissenschaftliche Buchgesellschaft, 1996).

<sup>124</sup> Gottfried Schlag, *Die deutschen Kaiserpfalzen*, 1st ed., Großdeutsche Schriften 2 (Frankfurt am Main: Vittorio Klostermann, 1940). P. 13.

<sup>125</sup> Binding, *Deutsch Königspfalzen: Von Karl dem Großen bis Friedrich II. (765-1240)*. P. 21.

monumental work, *Libri Historiarum X*, he described the life of Abbot Aredius who served as chancellor to the Merovingian King Theudebert II during the late 6<sup>th</sup> century. At a young age, Aredius was chosen by Bishop Nicetius of Trier at the royal palace—the *regis palatio*—of King Theudebert II to serve him in Trier.<sup>126</sup> This brief description provides evidence that the palace of King Theudebert I served as a royal court, facilitating the training of young clergymen, though it is not immediately clear that the palace had also served as a royal residence. The significance of this passage in relation to this work is to illustrate the ambiguity of the word *palātium*, as it did not always refer to the same function over time, even when in reference to a king.

By the 9<sup>th</sup> century, the term *palātium* had come to represent the residences of dukes, counts, and bishops as well at which point the differentiating *regium* was attached in order to qualify a site as belonging to the king.<sup>127</sup> The less specific *curtis*, meaning court, was commonly used throughout the Carolingian period, and well into the High Middle Ages (1000-1300). Within the Ottonian period (10<sup>th</sup> and early 11<sup>th</sup> centuries), the palaces were mainly referred to as *villa*, *curtis*, *civitas*, or *castellum*, indicating a shift away from the *palātium*,<sup>128</sup> which was increasingly referring strictly to those palaces built by the former Carolingian rulers.<sup>129</sup> The seemingly interchangeable use of the words *palātium*, *villa*, *curtis*, and *castrum*—scattered about the charters in their various forms—understandably leads to a confusion as to which sites were actually residences, which were only courts, and which were both.

According to Thomas Zotz, only 15-20% of the 300 sites dating from the Merovingian until the Hohenstaufen period (~ 600-1250 A.D.) can be regarded as royal palaces that also served as residences.<sup>130</sup> The path taken by the medieval rulers towards accessing the palaces was reliant upon the road system, which had largely been adapted from the former Roman roads, and depended on the 20-30 kilometer travel distance accomplished in one day. Provided the luxury that the kings and emperors were accustomed to, mainly royal courts or imperial abbeys could accommodate them. Bishops' palaces and other sites of noblemen were used less often, though they were still accessible to the king. Preparing for the arrival of the king or emperor (or sometimes both) required a

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<sup>126</sup> Gregor von Tours, *Zehn Bücher Geschichten*, trans. Rudolf Buchner, 4th ed., vol. 2, *Ausgewählte Quellen zur deutschen Geschichte des Mittelalters: Freiherr vom Stein-Gedächtnisausgabe 3* (Darmstadt: Wissenschaftliche Buchgesellschaft, 1970). P. 393.

<sup>127</sup> Binding, *Deutsch Königspfalzen: Von Karl dem Großen bis Friedrich II. (765-1240)*. P. 22.

<sup>128</sup> Gauert, "Zur Struktur und Topographie der Königspfalzen." P. 2.

<sup>129</sup> Binding, *Deutsch Königspfalzen: Von Karl dem Großen bis Friedrich II. (765-1240)*. P. 24.

<sup>130</sup> *Ibid.* P. 22.

coordinated organization of administrators to arrange the necessary conditions for the royal guests, relayed by the steward of the palace, or *exactor palatii*.<sup>131</sup> During the 11<sup>th</sup> and 12<sup>th</sup> centuries, the imperial entourages numbered in the many hundreds, and possibly even thousands as the rulers moved from palace to palace. Binding 1996 notes that this could only have been possible at specific locations, with the proper conditions and not the more rudimentary courts serving as waypoints along the roads.<sup>132</sup>

The palaces of the 9<sup>th</sup> and 10<sup>th</sup> centuries featured separate buildings for the great hall (*aula*) and apartment (*camera*), whereas those of the Hohenstaufen period combined them into a single building. The individual living quarters of the king and his family during the Hohenstaufen period were in separate places, though less is known about these sites.<sup>133</sup> Despite the variation in associated buildings, the fundamental building types that the palaces shared in common were the royal accommodations, the *aula*, and the palace chapel—the combination of which comprised the concept of a royal palace.<sup>134</sup> In addition to these three core building types, palatial complexes could at times be coupled to a castle, as was common in the Ottonian period, exhibited in *Bad Wimpfen* and in the floor plans of the palace of *Haguenau*.<sup>135</sup> The assortment of site designs and nomenclature eventually reached a standard during the mid to late 12<sup>th</sup> century, indicated by the relatively similar structure and overall layout of the palaces of *Bad Wimpfen*, *Eger*, *Gelnhausen*, and *Haguenau* which featured a fusion of the Carolingian court and the Ottonian castellation.<sup>136</sup>

Unfortunately, the majority of the palaces and residences have been destroyed since the end of the Middle Ages, of which only remnants of their past grandeur are still beheld.<sup>137</sup> The current state of these palaces is more akin to the Greco-Roman ruins of the Mediterranean, than to the medieval fortified cities of France. Only 15 palaces renovated or built during the Hohenstaufen period still remain, albeit in various ruinous states ranging from a handful of architectural sculpture,

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<sup>131</sup> Ibid. Pp. 48-49.

<sup>132</sup> Ibid. Pp. 54-55.

<sup>133</sup> Ibid. Pp. 64-65.

<sup>134</sup> Gauert, "Zur Struktur und Topographie der Königspfalzen." P. 5.

<sup>135</sup> Ibid. Pp. 39-40. The palace of Haguenau no longer exists and therefore only floor plans can be used to evaluate its former construction.

<sup>136</sup> Ibid. Pp. 42-43. Binding, *Deutsch Königspfalzen: Von Karl dem Großen bis Friedrich II. (765-1240)*. A model of the 10th century Ottonian palatial design is shown on page 172 regarding the palace at Werla, which featured completely separate buildings for each building type.

<sup>137</sup> Walter Hotz, *Pfalzen und Burgen der Stauferzeit: Geschichte und Gestalt*, 1st ed. (Darmstadt, Germany: Wissenschaftliche Buchgesellschaft, 1981). P. 5.

to entire chapels and towers. The sites in Germany are located in Annweiler (castle Trifels), Frankfurt am Main, Gelnhausen, Goslar, the Harzburg near Goslar, Ingelheim, Kaiserslautern, Kaiserswerth, Nuremberg, Seligenstadt, Ulm, and Bad Wimpfen; the French city of Haguenau; the Czech city of Cheb (Egra); and the Dutch city of Nijmegen. The palace grounds at Gelnhausen are the most complete, still possessing its enveloping walls, gate-house, chapel, gate-tower, and palace halls.<sup>138</sup> In addition to these royal palaces, ten bishops' palaces located within the former Kingdom of Germany periodically served as residences for the kings and emperors of the Hohenstaufen dynasty, including the modern German cities of *Augsburg*, *Cologne*, *Constance*, *Regensburg*, *Speyer*, and *Worms*; the French cities of *Metz* and *Strassbourg*; and the Swiss city *Basel*. However, of these ten bishops' palaces, only the former palace in Cologne still offers any indication regarding its medieval form, whereas all of the others no longer exist. As for the Kingdom of Italy, a few traces of imperial palaces are located in the cities of *Foggia*, *Lagopesole*, *Lucera*, *Melfi*, and *Palermo*. In stark contrast to these sites, the *Castel del Monte* has been entirely preserved.<sup>139</sup>

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<sup>138</sup> Ibid. P. 6. Binding, *Deutsch Königspfalzen: Von Karl dem Großen bis Friedrich II. (765-1240)*. Pp. 223, 235, and 327.

<sup>139</sup> Hotz, *Pfalzen und Burgen der Stauferzeit: Geschichte und Gestalt*. P. 7.

## 2.2.4 The Reichsland of Lautern—the Royal Estate

The medieval palaces of the Holy Roman Empire often included accompanying lands known as *forestae* serving both as wildlife reserves and as sylvan backdrops for the palaces. The *Reichsland of Lautern* (imperial territory of Lautern) was an area of the *Königsgut* (fiscus, or royal estate) around the town of Lautern whose administrators were the royal sheriffs directly by the king.<sup>140</sup> The *Reichswald* (imperial forest) belonging to the Palace of Lautern was by no means the only such example, as the palaces at Eger, Frankfurt am Main, Gelnhausen, Haguenau, Nuremberg, and *Tribur* all included neighboring *forestae*.<sup>141</sup> An appropriate translation for the *foresta* would be a *Wildpark*, as described by Karl Hauck.<sup>142</sup> The *Wildpark* can very well be understood as the German counterpart to both the English Little and Great Parks, though it must be underlined that the various kingdoms and empires of the Middle Ages did not always possess one to one equivalencies. These *forestae* encompassed forests in addition to meadows, water sources, and mineral deposits. The diversity of the territories was determined by the area of land designated for exclusive use by the king or emperor,<sup>143</sup> and constituted an essential economic source for the kingdom as they often included fisheries, pig farming, logging, and cattle herding.<sup>144</sup> These exclusive territories date to the pre-Carolingian period in both the Frankish and the Lombardic realms, though in the Lombard Kingdom areas such as these were known as a *gahagio rēgum*.<sup>145</sup>

The imperial forest within the territory of the Reichsland of Lautern extended mainly to the west,<sup>146</sup> encircling the modern localities of Hohenecken, Ramstein, and Weilerbach.<sup>147</sup> In the 13<sup>th</sup> century, the forests and town of Lautern were regarded as a single unit, not to be partitioned in

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<sup>140</sup> Theodor Zink, *Kaiserslautern in Vergangenheit und Gegenwart: eine Ortskunde auf geschichtlicher Grundlage* (Kaiserslautern: Hermann Kaysers Verlag, 1914). P. 16.

<sup>141</sup> Karl Bosl, "Pfalzen und Forsten," in *Deutsche Königspfalzen: Beiträge zu ihrer historischen und archäologischen Erforschung*, 1st ed., vol. 1, Veröffentlichungen des Max-Planck-Instituts für Geschichte 11/1 (Göttingen: Vandenhoeck & Ruprecht, 1963), 1–29. P. 1.

<sup>142</sup> Karl Hauck, "Tiergärten im Pfälzbereich," in *Deutsche Königspfalzen: Beiträge zu ihrer historischen und archäologischen Erforschung*, 1st ed., vol. 1, Veröffentlichungen des Max-Planck-Instituts für Geschichte 11/1 (Göttingen: Vandenhoeck & Ruprecht, 1963), 30–74. P. 32.

<sup>143</sup> Bosl, "Pfalzen und Forsten." P. 2.

<sup>144</sup> *Ibid.* P. 3.

<sup>145</sup> Hauck, "Tiergärten im Pfälzbereich." P. 33.

<sup>146</sup> Zink, *Kaiserslautern in Vergangenheit und Gegenwart: eine Ortskunde auf geschichtlicher Grundlage*. P. 19.

<sup>147</sup> Daniel Häberle, *Das Reichsland Bei Kaiserslautern: Quellen Zur Förderung Der Heimat- Und Familienkunde Im Gebiet Des Bannforstes Lutra* (Kaiserslautern, Germany: Thiemische Druckverein GmbH, 1907). P. 163.

enfeoffments and transactions between local lords.<sup>148</sup> The eastern portion of the Reichsland included the *Lauterspring*—a major geographic element in the context of the 13<sup>th</sup> century—as it is the source of the Lauter River, and provided water to both the mill at *Entersweilerhof* and to the town of Lautern (including its various mills).<sup>149</sup> The most significant road transecting the Reichsland was the *via regia*,<sup>150</sup> also called the *Kaiserstrasse* or *Königstrasse* that led from Metz to *Mainz*.<sup>151</sup> The road split near the village of *Neukirchen* (part of Mehlingen), roughly eight kilometers to the east of Kaiserslautern, with one branch leading directly towards *Alzey* and then further towards *Mainz*, and the other branch leading directly towards Worms. In the west, the road remained unified between *Homburg* and Kaiserslautern, equaling approximately 37 kilometers.<sup>152</sup> The medieval roadway was built atop the previous Roman road (*strata romana*), belonging to the network presumably begun under Emperor Claudius in the early 1<sup>st</sup> century.<sup>153</sup> The importance of the road was emphasized by the lack of other major medieval roads in the area, and was placed under royal protection by the Roman-German Kings. The escort rights belonged to the lords of Hohenecken within the Reichsland,<sup>154</sup> and to the Counts of Leiningen from the eastern border of the Reichsland towards the city of Worms during the High Middle Ages.<sup>155</sup>

The area of the Reichsland of Lautern included two *forestae*, the *Forst Lutara* and the *Lutrumsforst*, both of which had been established as early as the year 653 A.D. The former belonged to the Carolingian Palace of Lautern by the 9<sup>th</sup> century, whereas the latter was located northwest of Lautern in the *Nahegau*.<sup>156</sup> However, the entire area around Kaiserslautern, including the *Nahegau*

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<sup>148</sup> Zink, *Kaiserslautern in Vergangenheit und Gegenwart: eine Ortskunde auf geschichtlicher Grundlage*. P. 32.

<sup>149</sup> *Ibid.* P. 85.

<sup>150</sup> Martin Armgart and Andreas Diener, “Einsiedel, St. Maria Deutschherrenkommende, zeitweise Kommende des Lazarusordens,” in *Pfälzisches Klosterlexikon: Handbuch der pfälzischen Klöster, Stifte und Kommenden*, ed. Jürgen Keddigkeit et al., vol. 1 A-G, 5 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern in Verbindung mit dem Institut für Europäische Kunstgeschichte der Ruprecht-Karls-Universität Heidelberg, 26.1 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2014), 338–77. P. 356.

<sup>151</sup> Zink, *Kaiserslautern in Vergangenheit und Gegenwart: eine Ortskunde auf geschichtlicher Grundlage*. P. 97.

<sup>152</sup> F. Sprater, “Karte der Funde aus der Römer- und Merowingerzeit,” in *Pfälzischer Geschichtsatlas: Im Auftrag der Pfälzischen Gesellschaft zur Förderung der Wissenschaften und des Vereins zur Herausgabe eines historischen Atlases*, ed. Wilhelm Winkler (Neustadt an der Hardt: Verlag der Pfälzischen Gesellschaft zur Förderung der Wissenschaften, 1935), 4.

<sup>153</sup> Karlwerner Kaiser, “Die Römerstraße im Universitätsgelände zu Kaiserslautern,” in *Jahrbuch zur Geschichte von Stadt und Landkreis Kaiserslautern*, vol. 8/9, 37 vols. (Otterbach: Franz Arbogast Verlag, 1971), 6–8. P. 6.

<sup>154</sup> Lorenz Eckrich, “Neue Legenden um alte Kreuz: Johanneskreuz, Torstensonkreuz, Elendkreuz,” *Pfälzer Heimat*, 1962. P. 81.

<sup>155</sup> Zink, *Kaiserslautern in Vergangenheit und Gegenwart: eine Ortskunde auf geschichtlicher Grundlage*. P. 98.

<sup>156</sup> Bosl, “Pfalzen und Forsten.” P. 24.

had belonged to the territory of the *Wormsgau* from the 8<sup>th</sup> until the 12<sup>th</sup> centuries,<sup>157</sup> under the ecclesiastical jurisdiction of the Bishopric of Worms.<sup>158</sup> The Reichsland, with its associated forests, was transferred to the Salian *Hausgut* (family estate) along with the city of Lautern by 985, which also included the hunting areas.<sup>159</sup> The Forst Lautern remained under the jurisdiction of the Roman-German King until 1322, after which the territory slowly disintegrated into the hands of various local lordships such as the 14<sup>th</sup> century lords of Hohenecken. The majority of what remained of the Reichsland was later mortgaged to the Electorate of the Rhine by 1357,<sup>160</sup> although certain portions of the territory had been endowed to local monasteries beginning in the second half of the 12<sup>th</sup> century—most notably to the Premonstratensian monastery in Lautern and the Cistercian Abbey of Otterberg.<sup>161</sup> Unfortunately, not much is known regarding the precise borders of the territory prior to the 1357 description,<sup>162</sup> when the territory was mortgaged to the Electorate of the Rhine.<sup>163</sup>

Very few charters exist documenting the boundaries of the Reichsland of Lautern, with the exception of the description from 1357, from which a map was made by Daniel Häberle in the early 20<sup>th</sup> century,<sup>164</sup> shown in Figure 2. The area contained various localities including *Wallhalben*, which was often bargained in the charters of the 13<sup>th</sup> century, in addition to the castles *Beilstein*, *Falkenstein*, *Lichtenberg*, and *Randeck*.<sup>165</sup> The forests recorded as belonging to the mark of

<sup>157</sup> Carl Pöhlmann, “Die fränkischen Gaue vom 8. bis 12. Jahrhundert,” in *Pfälzischer Geschichtsatlas: Im Auftrag der Pfälzischen Gesellschaft zur Förderung der Wissenschaften und des Vereins zur Herausgabe eines historischen Atlases*, ed. Wilhelm Winkler (Neustadt an der Hardt: Verlag der Pfälzischen Gesellschaft zur Förderung der Wissenschaften, 1935), 6.

<sup>158</sup> Wolfstein Fath, “Karte zur Kirchengeschichte der Pfalz I,” in *Pfälzischer Geschichtsatlas: Im Auftrag der Pfälzischen Gesellschaft zur Förderung der Wissenschaften und des Vereins zur Herausgabe eines historischen Atlases*, ed. Wilhelm Winkler (Neustadt an der Hardt: Verlag der Pfälzischen Gesellschaft zur Förderung der Wissenschaften, 1935), 19. Wolfstein Fath, “Die Stadt Speyer im Mittelalter mit Kirchen und Kapellen,” in *Pfälzischer Geschichtsatlas: Im Auftrag der Pfälzischen Gesellschaft zur Förderung der Wissenschaften und des Vereins zur Herausgabe eines historischen Atlases*, ed. Wilhelm Winkler (Neustadt an der Hardt: Verlag der Pfälzischen Gesellschaft zur Förderung der Wissenschaften, 1935), 23.

<sup>159</sup> Volker Rödel, “Der Lautrer Reichsgutkomplex: Eine Zwischenbilanz,” in *Deutsche Königspfalzen: Beiträge zu ihrer historischen und archäologischen Erforschung*, ed. Lutz Fenske, vol. 4 Pfalzen--Reichsgut--Königshöfe, Veröffentlichungen des Max-Planck-Instituts für Geschichte 11/4 (Göttingen: Vandenhoeck & Ruprecht, 1996), 409–45. P. 412. Rödel notes on the following page that the transfer of the region from Duke Otto to the Hohenstaufen dynasty by way of Otto’s grandson, Konrad, cannot be substantiated.

<sup>160</sup> Walter Frenzel, “Die historischen Wälder der Pfalz,” in *Pfalzatlas I*, ed. Willi Alter (Speyer, Germany: Eigenverlag der Pfälzische Gesellschaft zur Förderung der Wissenschaften, 1967), 265–76. P. 271.

<sup>161</sup> Bosl, “Pfalzen und Forsten.” Pp. 25–26. Frenzel, “Die historischen Wälder der Pfalz.” Pp. 273–274.

<sup>162</sup> Rudolf Kraft, “Das Reichsland von Kaiserslautern,” in *Das Reichsgut im Wormsgau*, vol. 16 (Darmstadt, Germany: Hessischer Staatsverlag, 1934), 59–85. P. 59.

<sup>163</sup> Frenzel, “Die historischen Wälder der Pfalz.” P. 271.

<sup>164</sup> Häberle, *Das Reichsland Bei Kaiserslautern: Quellen Zur Förderung Der Heimat- Und Familienkunde Im Gebiet Des Bannforstes Lutra*. P. 163.

<sup>165</sup> Zink, *Kaiserslautern in Vergangenheit und Gegenwart: eine Ortskunde auf geschichtlicher Grundlage*. P. 16.

*Waldfischbach* and of Wilenstein were outside of the 14<sup>th</sup> century borders according to the description, though Rudolf Kraft ascertained that they certainly would have originally belonged to the territory during the previous centuries.<sup>166</sup> This is due to two different models of Reichsland relating to the territory during the Carolingian period and that of the High Middle Ages. The exclusion of the southwestern portion in the High Middle Ages is most likely a result of the sale of the land to the monastery of *Hornbach* by the von Wilenstein ministeriales.<sup>167</sup> According to Häberle 1907, the forest directly between the villages of *Dansenberg* and Hohenecken, known as the *Berloch*, had once belonged to the hunting reserve of Emperor Frederick I,<sup>168</sup> directly to the southwest of the Palace of Lautern. The image that emerges from these descriptions is a territory encompassing the entire area around the Palace of Lautern, particularly to the east of the town where the Salian estate had accumulated many lands in the 12<sup>th</sup> century. Figure 1 depicts the model of the Reichsland around the year 800 as described by Rudolf Kraft, whereas Figure 2 depicts the Reichsland around 1357 as described by Daniel Häberle. The existence of the Reichsland is vital to the interpretation of the Palace of Lautern and the built environment.

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<sup>166</sup> Kraft, "Das Reichsland von Kaiserslautern." P. 62.

<sup>167</sup> Martin Dolch, "Wilenstein - Die Burg Und Das Sich Nach Ihr Nennende Rittergeschlecht (1174-1372)," in *Kaiserslauterer Jahrbuch Für Pfälzische Geschichte Und Volkskunde*, vol. 4 (Kaiserslautern, Germany: Franz Arbogast Verlag, 2004), 15–48. P. 29.

<sup>168</sup> Häberle, *Das Reichsland Bei Kaiserslautern: Quellen Zur Förderung Der Heimat- Und Familienkunde Im Gebiet Des Bannforstes Lutra*. P. 36.



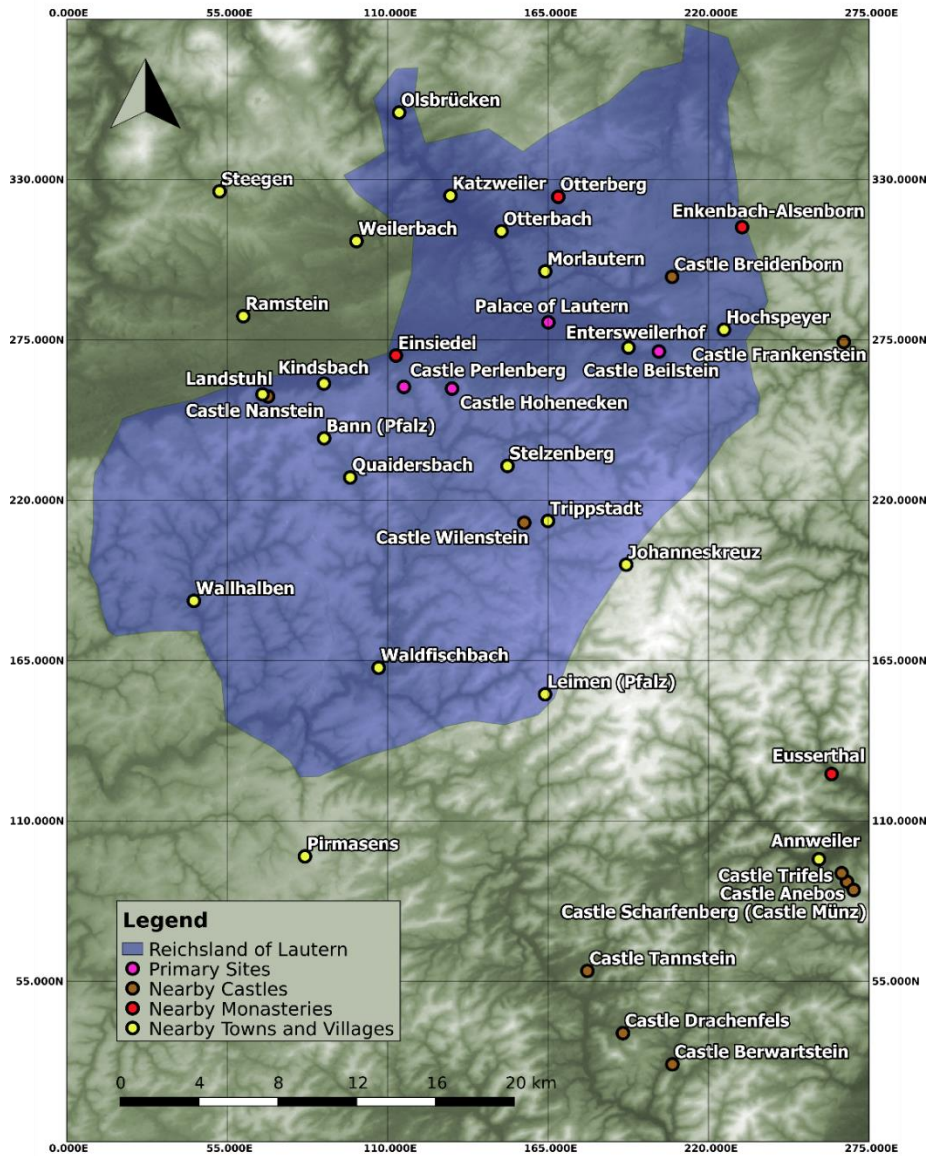


Figure 1: Reichsland of Lautern in the old Wormsgau around 800 A.D. according to Rudolf Kraft.

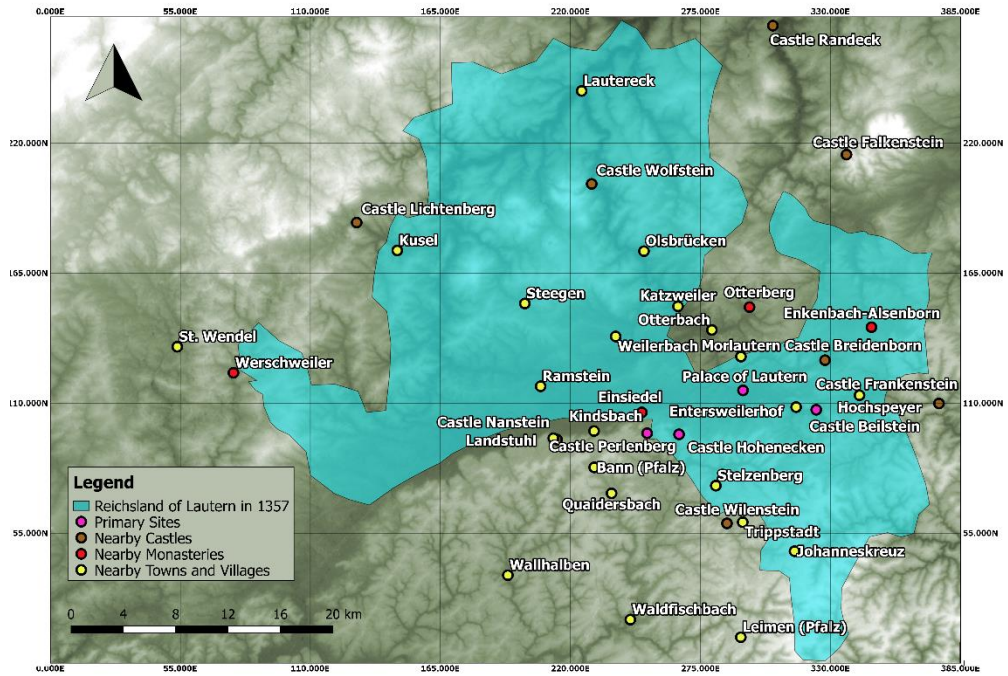


Figure 2: Reichsland of Lautern around 1357 A.D. according to Daniel Häberle.

### 2.2.5 Previous Research Regarding Castles of the Palatinate

The red sandstone castles that populated the German Palatinate (*Pfalz*) of the Middle Ages are not nearly as well-known as their medieval counterparts across the channel in England, with perhaps the exception of castle Trifels. They are located in the forest of the Palatinate, linking them to their architectural cousins in the hilly range of the *Wasgau*, which stretches from the southern edge of the Palatinate to the northern edge of the Vosges Mountains in Alsace, France. The entire area had once been politically unified during the majority of the medieval period, and as such, exhibit strikingly similar architectural features and were often built by the same individuals. The region was politically separated in the aftermath of the War of the Grand Alliance in the late 17<sup>th</sup> century, but has since fluctuated between Germany and France multiple times. French and German castle scholars have produced compelling and thorough research on the castles of the Palatinate and the Alsace catalogued in the *Pfälzisches Burgenlexikon*<sup>169</sup> and *Die Burgen des Elsass*,<sup>170</sup> respectively.

The study of the castles of the Palatinate is typically confined to local historians and nearby German university scholars. The reason for the confinement of such a rich architectural and archaeological legacy to only a small amount of researchers cannot be stated with any certainty, other than that the fascination of the medieval castle has been shaped by research in other regions. English castles, for example, occupy center stage presumably due to the wider range of English speakers worldwide, particularly within medieval studies. In contrast, German medieval castles, particularly those in more remote areas like the German Palatinate, have neither the luxury of a worldwide community dedicated to their study, nor a readily accessible transportation infrastructure to visit them, as many are found in secluded forest locations. Additionally, fictional literature based

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<sup>169</sup> Jürgen Keddigkeit et al., eds., *Pfälzisches Burgenlexikon I: A-E*, 3rd ed., vol. 1 A-E, 5 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 12.1 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2007); Jürgen Keddigkeit, Alexander Thon, and Rolf Übel, eds., *Pfälzisches Burgenlexikon II: F-H*, 1st ed., vol. 2, 5 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 12.2 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2002); Jürgen Keddigkeit, Ulrich Burkhardt, and Rolf Übel, eds., *Pfälzisches Burgenlexikon III: I-N*, 1st ed., vol. 3, 4 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 12.3 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2005); Jürgen Keddigkeit, Ulrich Burkhardt, and Rolf Übel, eds., *Pfälzisches Burgenlexikon IV.1: O-Sp*, 1st ed., vol. 4, 5 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 12.4.1 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2007); Jürgen Keddigkeit, Ulrich Burkhardt, and Rolf Übel, eds., *Pfälzisches Burgenlexikon IV.2: St-Z*, 1st ed., vol. 5, 5 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 12.4.2 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2007).

<sup>170</sup> Thomas Biller and Bernhard Metz, *Die Anfänge des Burgenbaues im Elsaß (bis 1200)*, vol. 1, Die Burgen des Elsass Architektur und Geschichte (Berlin: Deutscher Kunstverlag GmbH, 2018); Thomas Biller and Bernhard Metz, *Der spätromanische Burgenbau im Elsaß (1200-1250)*, vol. 2, Die Burgen des Elsass Architektur und Geschichte (Berlin: Deutscher Kunstverlag GmbH, 2007); Thomas Biller and Bernhard Metz, *Der frühe gotische Burgenbau im Elsaß (1250-1300)*, vol. 3, Die Burgen des Elsass Architektur und Geschichte (Berlin: Deutscher Kunstverlag GmbH, 1995).

upon the German Middle Ages beyond the realm of the 19<sup>th</sup> century Romanticism is found wanting on the international level, in stark contrast to English novels set in the medieval period. This aspect should not be readily dismissed, given the immense influence that media has on awakening a fascination for history.<sup>171</sup>

Despite the lack of international recognition, the aforementioned lexical documentations of the castles of the Palatinate and Alsace have provided a robust foundation for further research. Innovative approaches towards understanding medieval castles have been applied to the study of English construction research, particularly the Norman English castles and their context from 1066-1500<sup>172</sup> as case studies for understanding their position within the landscape.<sup>173</sup> Although mostly limited to English castles, the acute focus of researchers such as Liddiard, Creighton, and Coulson to analyze and interpret castles as products of specific contexts, and to move away from the Victorian narrative that *all* castles served a defensive function,<sup>174</sup> is leading towards a more refined understanding of medieval castles and their role within medieval society. The tendency to move away from the common narrative and more towards analyzing castles individually and within their historical and socio-political contexts is certainly not restricted to England.<sup>175</sup> The research conducted by members and affiliates of the *Deutsche Burgenverein e.V.*<sup>176</sup> and the *Wartburg Gesellschaft e.V.*<sup>177</sup> have contributed tremendously towards understanding both the utilitarian and

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<sup>171</sup> The success of Vikings on the History Channel, and the Last Kingdom on Netflix are testament to the allure of the Middle Ages in the modern society.

<sup>172</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*.

<sup>173</sup> Creighton, *Designs upon the Land: Elite Landscapes of the Middle Ages*.

<sup>174</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. Page 5.

<sup>175</sup> Carl August Lückner, "Burgen des Kälner Erzstiftes als Herrschaftsinstrumente (um 1200)," in *Zentrale Funktionen der Burg*, vol. 6, B: Schriften (Braubach, Germany: Deutsche Burgenvereinigung e.V., 2001), 7; Untermann, "Abbild, Symbol, Repräsentation—Funktionen mittelalterlicher Architektur?"; Grossmann, *Die Welt der Burgen: Geschichte, Architektur, Kultur*; Joachim Zeune, ed., *Burg Und Kirche: Herrschaftsbau Im Spannungsfeld Zwischen Politik Und Religion*, vol. 13, Veröffentlichungen Der Deutschen Burgenvereinigung e.V.: Herausgegeben Vom Europäischen Burgeninstitut--Einrichtung Der Deutschen Burgenvereinigung, B: Schriften (Braubach, Germany: Deutsche Burgenvereinigung e.V., 2013). These researchers represent only a handful of scholars who have applied a more nuanced approach towards understanding castles regarding both functions within the German scholarship.

<sup>176</sup> Hofrichter, "Vorwort."

<sup>177</sup> Mark Mersiowsky, "Zentrale Funktionen der spaetmittelalterlichen Burg im Spiegel von Rechnungen," in *Zentrale Funktionen der Burg*, ed. Barbara Schock-Werner and Helmut Hofrichter, vol. 6, Veröffentlichungen der Deutschen Burgenvereinigung e.V.: Herausgegeben vom Europäischen Burgeninstitut--Einrichtung der Deutschen Burgenvereinigung, Reihe B: Schriften (Braubach, Germany: Deutsche Burgenvereinigung e.V., 2001), 11; Han-Heinz Hartmann, "Neue archäologische Erkenntnisse zur Baugeschichte der Königspfalz Wimpfen," in *Die Pfalz Wimpfen und der Burgenbau in Südwestdeutschland*, ed. Wartburg-Gesellschaft zur Erforschung von Burgen und Schlössern e.V., 1st ed., Forschungen zu Burgen und Schlössern 15 (Petersberg: Michael Imhof Verlag GmbH & Co. KG, 2013), 38–44; Daniel Burger, "Die Frühgeschichte des Deutschen Ordens und die Anfänge seiner Wehrbauten," in *Montfort und der frühe Burgenbau des Deutschen Ordens*, ed. Thomas Biller, 1st ed., Forschungen zu Burgen und Schlössern, Sonderband 5 (Petersberg: Michael Imhof Verlag GmbH & Co. KG, 2015), 9–65.

representative functions of castles.<sup>178</sup> The application of this analytical style has been adapted to the research of the Middle Ages at Heidelberg University in recent years in a variety of working groups.<sup>179</sup> This more holistic approach towards analyzing history, architecture, and archaeology is achieved through innovative, interdisciplinary research groups which seek to interpret events, buildings, artifacts, and social networks as unique features that fit into a larger historical tradition, but are products of their time and social context. The extensive research that has already been undertaken regarding the castles of German Palatinate, paired with the support of the faculty at Heidelberg University for applying digital methodologies and analyzing castles within their regional and interregional contexts, provided an excellent foundation for The CITADEL project.

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<sup>178</sup> Mersiowsky, “Zentrale Funktionen der spätmittelalterlichen Burg im Spiegel von Rechnungen.”

<sup>179</sup> This is specifically regarding the *Baugeschichte und Bauforschung* (architectural history and construction research) research group of Prof. Dr. Matthias Untermann, and the *Vergleichende Landesgeschichte in europäischer Perspektive—Schwerpunkt Spätmittelalter* (Comparative Regional History through a European Perspective with a focus upon the late Middle Ages) research group of Prof. Dr. Jörg Peltzer. Also included in movement of trans- and interdisciplinary research at Heidelberg University are the *Interdisziplinäres Zentrum für Wissenschaftliches Rechnen* (IWR—Interdisciplinary Center for Scientific Computing) and the Cluster of Excellence “Asia and Europe in a Global Context: The Dynamics of Transculturality.”

## 2.3 Medieval Social Structure

*‘...if one takes a step back and discards the idea that observations on the development of the existing social order can be easily achieved, concentrating instead on the question of general perception over time, clear evidence for an evolution of ideas comes to light.’<sup>180</sup>*

The concept of a single medieval social structure can only be discussed on a very abstract level, further complicated by the modern differentiation between society and state, which did not apply to the medieval period.<sup>181</sup> It is necessary to keep in mind that interpretations and portrayals of the Middle Ages are heavily impacted by the specific terms used in order to describe the social structure. In his 2010 work regarding the nobility and the ministeriales in the Middle Ages, Werner Hechberger outlined six terms that are often used to describe the phenomenon of medieval society that warrant particular attention towards their implied connotations. He begins with the use of the word *caste* (German: *Kaste*), which he considers a stylistic device used in order to emphasize how one thinks about the delineations between social groups. This is followed by the term *status* (German: *Stand*) which is a more legal term used in order to convey awareness and appreciation, to which another term, *ordo* (German: *Ordo*), is often attributed as a metaphysical, theologically determined functional component. He describes the term *class* (German: *Klassen*) as referencing a group’s relationship to authority and the means of production—a Marxist term which arose only within the past two centuries. He defines *rank* (German: *Rang*) as an ethno-sociological categorization accentuating the hierarchical order of people or families based largely upon reputation or prestige. Hechberger also includes the term *group* (German: *Gruppe*) as a more neutral term, yet when regarding the nobility, a differentiation between natural (family and relations) and agreed upon communities (aristocratic societies) can be clearly drawn.<sup>182</sup> For the purpose of this work, the terms *status* and *group* are predominantly used, based upon their more legal and neutral definitions in order to avoid the modern implications of the term *class*, the more stylistic *caste*, and the highly

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<sup>180</sup> Hiltmann, “Potentialities and Limitations of Medieval Armorial as Historical Source. The Representations of Hierarchy and Princely Rank in Late Medieval Collections of Arms in France and Germany.” P. 196.

<sup>181</sup> Hechberger, *Adel, Ministerialität und Rittertum im Mittelalter*. P. 2.

<sup>182</sup> *Ibid.* P. 4. All six terms are defined on this page in this order.

ambiguous *rank*.<sup>183</sup> The term *ordo* is only be used in the related form *order*, in the discussion of religious orders, such as the Teutonic Knights.

Implicit within early medieval society were the concepts of social and legal inequalities that provided the scaffolding for what is often assumed to have been a fundamentally static hierarchical structure. Although notions of inequality were at times legitimized by medieval contemporaries with the support of Old Testament stories and allegories, such as the Fall of Man, the unrighteousness of Cain, and Noah's curse of his own son, Ham, the overall concept of inequality was regularly challenged.<sup>184</sup> Even among the lower social status groups, the idea of vertical movement through the social hierarchy, and challenging one's earthly station was very much alive. The romantic idea of the *Tugendadel* (virtuous noble) who gained nobility not by birth but by action, manifested itself in the Early Middle Ages, such as the example of William Longsword—an early 10<sup>th</sup> century count of Rouen who, although born to a pagan father, lived to be the model of a Christian prince.<sup>185</sup> The development of the virtuous noble led to the expectations of noble behavior described as *preudomme*,<sup>186</sup> from which the concept of chivalry arose, appearing first in France between the years 1170 and 1220<sup>187</sup>—nestled neatly in the middle of the chronological span of this project. The spread of chivalry provided the subject matter for the German high medieval adoration of mythic heroes in poetry by the *Minnesänger*,<sup>188</sup> such as *Parzival*.<sup>189</sup> This had the effect of romanticizing the opportunity of the virtuous noble in a system of inequality rather than a system to be fundamentally reformed. The general concept of *unfreedom* encapsulating servitude, bondage, and slavery, would prove more difficult to legitimize from a Christian perspective. However, its greatest counter-argument came from the many monastic orders who sought to lead a *brotherly* lifestyle in which each person was equal, yet performed different tasks, and opposed the oppression of particular groups of people.<sup>190</sup> The multifaceted nature of the medieval society fluctuated from region to region, was dependent upon the secular and ecclesiastical rulers, and was demonstrated through

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<sup>183</sup> The five volume RANK books address this exact issue.

<sup>184</sup> Hechberger, *Adel, Ministerialität und Rittertum im Mittelalter*. P. 1.

<sup>185</sup> David Crouch, *The Birth of Nobility: Constructing Aristocracy in England and France 900-1300* (Edinburgh Gate: Pearson Education Limited, 2005). P. 29.

<sup>186</sup> *Ibid.* P. 30.

<sup>187</sup> *Ibid.* P. 80.

<sup>188</sup> Richard Zozmann, ed., *Der deutsche Minnesang: Liebeslieder des Mittelalters* (Cologne: Anaconda Verlag GmbH, 2011).

<sup>189</sup> Wolfram von Eschenbach, *Parzival*, trans. Wolfgang Spiewok (Köln: Anaconda Verlag GmbH, 2008).

<sup>190</sup> Hechberger, *Adel, Ministerialität und Rittertum im Mittelalter*. P. 1.

music, art, and architecture. In order to analyze the effect of social status on architectural function, it is necessary to first discuss the different social groups who constructed castles and how these social groups—particularly the *ministeriales*—changed over time.



### 2.3.1 The Nobiles

The intricacies of the medieval social structure is effectively summarized into two general groups that remained constant throughout nearly all of the European territories: the nobles and the non-nobles. The term noble is derived from the Latin *nobilis* (plural: *nobiles*), meaning high-born, distinct, and celebrated.<sup>191</sup> In turn, *nobilis* is derived from another Latin word, *nōscō* (or *nōscere*), referring to a person who possesses knowledge.<sup>192</sup> In German, the *nobiles* were often described as *edel*, meaning pure, from which the term *Adel* is most likely derived, meaning nobleman in German, and *Uradel* meaning a nobleman of ancient origin.<sup>193</sup> The association of the *nobiles* with the concept of purity solidified their precedence over non-nobles as they were seen to inherit positive traits, leading to specific behaviors, through which a specific lifestyle was demonstrated.<sup>194</sup> The ancestry of the *nobiles* served as a legitimization of their status, secured continuity within society, justified a certain consciousness of tradition, and had ramifications upon marital behaviors.<sup>195</sup> Despite their more privileged status, they were also responsible for waging war in a period in which conscription of commoners was very rare.<sup>196</sup> The most general definition of a medieval *nobilis* is comprised of their ability to trace their ancestry and confirm ownership of an estate.<sup>197</sup> Given the developmental nature of the status of *nobilis* over time, the further one goes back, the more difficult it becomes to assess the status of *nobilis* with the same definition. This is especially problematic for the term *Adel*, which includes a host of additional connotations.

Of particular importance regarding the etymological development of the term *Adel*, is that a clear consensus has yet to be reached. The old-high German words *adal*, meaning origin or lineage, along with *odal*, meaning homeland or ownership, are closely related to the word *Adel* and mean something entirely different than *edel*.<sup>198</sup> It is striking that *adal*, *odal*, and *edel* each offer essential elements composing the requisites of what Hechberger defines an *Adel*—the ability to trace their

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<sup>191</sup> Langenscheidt-Redaktion, ed., “Nobiles,” in *Langenscheidt Schulwörterbuch Pro: Latein* (München: Langenscheidt GmbH & Co. KG, 2016). P. 613. Translated for this text from the German into English by the author.

<sup>192</sup> Langenscheidt-Redaktion, ed., “Nōscō,” in *Langenscheidt Schulwörterbuch Pro: Latein* (München: Langenscheidt GmbH & Co. KG, 2016). P. 616. Translated for this text from the German into English by the author.

<sup>193</sup> Langenscheidt-Redaktion, “Nobiles.” P. 613. Translated for this text from the German into English by the author.

<sup>194</sup> Hechberger, *Adel, Ministerialität und Rittertum im Mittelalter*. P. 2

<sup>195</sup> *Ibid.* P. 3.

<sup>196</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. P. 178.

<sup>197</sup> Hechberger, *Adel, Ministerialität und Rittertum im Mittelalter*. P. 3.

<sup>198</sup> Hechberger, *Adel im fränkisch-deutschen Mittelalter: Zur Anatomie eines Forschungsproblems*. P. 78.

ancestry and confirm ownership of an estate.<sup>199</sup> It is also worth noting that later understandings of what composed the German *Adel* was heavily impacted by the ideologies of the 1930s put forth by researchers, like Karl Bosl, who injected political and mythic elements into the study of the German *Adel*.<sup>200</sup> Hechberger's deconstruction of the term *Adel* essentially establishes them as a group for which a unified definition over the course of the Middle Ages does not exist, but is readily recognizable group throughout the entire period. Based upon this perspective, the status of the *nobiles* is more akin to a stock character in a play, rather than a unique character defined by non-archetypical qualities. His proposal has merit considering the thousand year length of the western European Middle Ages and the existence of peculiar groups that blurred the lines between noble and non-noble such as the *ministeriales* of the German High Middle Ages.

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<sup>199</sup> Hechberger, *Adel, Ministerialität und Rittertum im Mittelalter*. P. 3.

<sup>200</sup> Hechberger, *Adel im fränkisch-deutschen Mittelalter: Zur Anatomie eines Forschungsproblems*. P. 79.

### 2.3.1.1 Development of the Nōbiles

Contrary to common presumptions of the Middle Ages, the dominant status of the nōbiles was never a closed society. It was regularly renewed according to both political and economic factors, but also due to the involvement of the church as young men were inducted from these elite families into the clergy,<sup>201</sup> whose celibacy could end the family line. The rise of the nōbiles during the formative years of the Early Middle Ages must be analyzed with respect to the surviving documentation and the archaeological evidence of the various realms and regimes who inherited the former provinces of the Western Roman Empire. What is clear is that some of the Germanic tribes had conventions discerning kings of varying status by the late 4<sup>th</sup> century prior to the collapse of the West, particularly within the Alamannic confederation.<sup>202</sup> Additionally, the new realms and kingdoms propagated the tradition of Hero-myths giving rise to the aforementioned *Tugendadel*.<sup>203</sup> These heroes and military leaders became *nōbiles* for all intents and purposes, mixing with the Roman *nōbiles* who had existed long before. Still, it is extremely difficult to find documentation connecting the medieval *Uradel* of the 10<sup>th</sup> century to the late Roman and early Merovingian periods of the 5<sup>th</sup> and 6<sup>th</sup> centuries, for example. According to Alexander Bergengruen in 1958, the German *Adel* found its origin in the royal retinues of the Merovingian kings of the mid-6<sup>th</sup> century. His idea found few followers, though it led to other productive discussions of the transitional process between the Roman rulers and the Merovingian Franks.<sup>204</sup> Dietrich Claude proposed that the connection between the Romans and the Frankish kingdoms were the administrator positions necessary for the management and organization of the cities and realms. Although many medieval scholars did not agree fully with one another, the idea of administrator positions as the main tether between the Romans and what would become the Frankish, and later German *Adel* found much support. Reinhard Wenskus considered the proximity to the king and not necessarily the administrator positions themselves as the main determination in what established a person as an *Adel*. Thus, it was the favor of the king shown to an individual with

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<sup>201</sup> Leopold Genicot, "Recent Research Onthe Medieval Nobility," in *The Medieval Nobility - Studies on the Ruling Classes of France and Germany from the Sixth to the Twelfth Century*, ed. and trans. Timothy Reuter, Europe in the Middle Ages Selected Studies 14 (Amsterdam: North-Holland Publishing Company, 1979), 17–36. P. 18.

<sup>202</sup> Peter Heather, *Empires and Barbarians: The Fall of Rome and the Birth of Europe*, 1st ed. (New York City: Oxford University Press, 2009). Pp. 41-42.

<sup>203</sup> Felix Dahn, *Urgeschichte der germanischen und romanischen Völker*, vol. 1 (Berlin: Grote Verlag, 1881); Karl Hauck, *Zur germanisch-deutschen Heldensage* (Darmstadt: Wissenschaftliche Buchgesellschaft, 1965); Christopher B. Krebs, *Ein gefährliches Buch: die "Germania" des Tacitus und die Erfindung der Deutschen*, 1st ed. (München: Deutsche Verlags-Anstalt, 2012).

<sup>204</sup> Hechberger, *Adel im fränkisch-deutschen Mittelalter: Zur Anatomie eines Forschungsproblems*. P. 109.

an administrator position that endowed him and his family with nobility, and not the position in of itself.<sup>205</sup>

A subtle change occurred in the 1970s in which Franz Irsigler suggested that the proximity of those with administrator positions to the king was determined by their membership to the status of *Uradel*. However, the lack of supporting archaeological evidence for this claim meant that an *Uradel* would have to be determined as such based upon the law. The description of the Merovingian laws by Gregory of Tours does not verify such a status of individuals for the 6<sup>th</sup> century, though an elite status certainly existed as determined by birth.<sup>206</sup> The origins of the progenitors of the respective *Uradel* families remains elusive, considering the lack of documented evidence for the time period. By the late 1970s, the archaeological determination of an individual's membership to the elite status of *Adel* was considered to be objective, as burials and grave goods can be empirically documented. In 1979, a systematic approach for determining the *Adel* of the Early Middle Ages was provided by Karl Werner with his six points illustrating the most important types of the *Uradel* as follows:

- a) *Families whose senatorial rank is confirmed by the sources*
- b) *Other noble families of Roman origin*
- c) *Cadet lines of the Merovingian house which did not achieve kingship*
- d) *Particularly distinguished and old Frankish noble families who appear early on with a prestige almost comparable to that of the Merovingians*
- e) *Holders of those principalities which developed on the borders of the tria regia, and especially outside them, in the seventh century*
- f) *Families found holding the highest office in the Neustro-Burgundian kingdom.*<sup>207</sup>

Werner continued to explore each of the points in his list, though for the purpose of this project it will suffice to simply summarize that he claimed that the *Uradel* stemmed from the late Merovingian and early Carolingian period, and that point *f* is of particular interest regarding the later development of the *ministeriales*. The 1982 work by Heiko Steuer raised the critical point that archaeological

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<sup>205</sup> Ibid. P. 110.

<sup>206</sup> Ibid. P. 112.

<sup>207</sup> Karl Ferdinand Werner, "Important Noble Families in the Kingdom of Charlemagne," in *The Medieval Nobility - Studies on the Ruling Classes of France and Germany from the Sixth to the Twelfth Century*, ed. and trans. Timothy Reuter, Europe in the Middle Ages Selected Studies 14 (Amsterdam: North-Holland Publishing Company, 1979), 137–202. P. 149.

findings do not necessarily translate to a specific social status. The result of this determination was the eventual distancing from the term *Adel*, lending favor to the term *Adelsgruppe*, or noble group, instead.<sup>208</sup> Hechberger even suggested at one point that the term *Adel*, should either be redefined for the Early Middle Ages, or abandoned altogether.<sup>209</sup> He continued by asserting that the social and legal status of an *Adel* is merely a mental construct created from social consequences borrowed from antiquity, whose development served as part of the shaping process of society over time.<sup>210</sup> For the purpose of this project, those belonging to the ‘noble group’ will be described as belonging to the status of *nōbilis*, which serves to distance itself from the cultural paradigms inextricably linked to the terms *Uradel* or *Adel*.

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<sup>208</sup> Hechberger, *Adel im fränkisch-deutschen Mittelalter: Zur Anatomie eines Forschungsproblems*. P. 124.

<sup>209</sup> Hechberger, *Adel, Ministerialität und Rittertum im Mittelalter*. P. 3. This is in reference to Max Weber’s concept of *Idealtyp*, or ideal type, commonly applied to the nobles by Historians.

<sup>210</sup> *Ibid.* P. 3.

### 2.3.2 The Princes

The princes of the Middle Ages represented the elite group of the *nōbiles*, composed of those belonging to the higher status positions and dynasties which governed the territories, steering both the culture and politics. The term *Prince* is derived from the Latin *Princeps* (plural: *Principes*) meaning ‘leading man’ which came into use during the period of the Roman Republic.<sup>211</sup> It mirrors the German word for the same term, *Fürst* (plural: *Fürsten*) meaning ‘the first’.<sup>212</sup> Both Prince and Fürst allow for considerable flexibility when defining the terms over time, as they are very general and can refer to a litany of different statuses and people. Provided the general meaning of the term, it was not restricted to secular powers alone as bishops of the church are also considered Princes.

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<sup>211</sup> A. Pabst, “Princeps,” in *Lexikon Des Mittelalters*, Brepolis Medieval Encyclopaedias - Lexikon Des Mittelalters Online (Stuttgart: Verlag J.B. Metzler, 1999 1977), <http://apps.brepolis.net.ubproxy.ub.uni-heidelberg.de/lexiema/test/Default2.aspx>.

<sup>212</sup> “Fürst, Fürstentum, A. Begrifflichkeit, Typologie Und Grundzüge,” in *Lexikon Des Mittelalters*, Brepolis Medieval Encyclopaedias - Lexikon Des Mittelalters Online (Stuttgart: Verlag J.B. Metzler, 1999 1977), <http://apps.brepolis.net.ubproxy.ub.uni-heidelberg.de/lexiema/test/Default2.aspx>.

### 2.3.2.1 Ecclesiastical Princes

Provided the considerable involvement of ecclesiastical princes in the corpus for the historical investigation outlined as objective one of the project goal, it is necessary to briefly expand upon who they were. The number of ecclesiastical princes in the Holy Roman Empire was considerably higher than that of the secular princes.<sup>213</sup> Within the setting of a bishop's court, certain properties distinctly differentiated them from the secular courts. The most obvious difference was the lack of an inheritance passed from prince to son, as bishops were sworn to celibacy. This also meant that there was no prospect of female ruler, nor any such successor on the basis of family alone. The second crucial difference was that the bishopric was a single unit—much like the Reichsland of Lautern—which could not be divided upon the death of the bishop, as the estate of the bishopric was the property of the church.<sup>214</sup> Instead a successor would be elected from the cathedral canons, in similar fashion as the princes who elected the Roman-German Kings. Unfortunately, these elections could at times lead to lengthy periods in absence of a bishop, known as *sede vacantes*.<sup>215</sup>

Despite these clear differences, the governance within the bishoprics was modeled on the territorial lordship of secular princes. In the event of a conflict, the bishops held equal status with the laity (i.e. the secular princes) and acted accordingly in war or otherwise.<sup>216</sup> Additionally, when a new bishop was elected, extensive replacements of court personnel was uncommon as the court stabilized the ecclesiastical principality, thereby consolidating its own position.<sup>217</sup> The members of a bishop's court were composed of the court officials, the prebendaries among whom the canons belonged and were only temporarily present, other temporary visitors to the court including the relatives of influential court clerics and clergymen, followed by monks, auxiliary bishops, and household aides. The prebendaries who were not *canonici* (electors of the bishops) essentially extended the cathedral chapter to other territories and bishoprics operating in the interest of the bishopric to which they belonged.<sup>218</sup> The result of this vast network radiating from each bishop's court meant that it was exposed to many more external impacts than the secular courts. Yet similar to the secular courts, access to a bishop's court was more easily gained if a relative or close friend

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<sup>213</sup> Bihrer, "Research on the Ecclesiastical Princes in the Later Middle Ages: State-of-the-Art and Perspectives." P. 49.

<sup>214</sup> Ibid. P. 59.

<sup>215</sup> Ibid. P. 61.

<sup>216</sup> Ibid. P. 60.

<sup>217</sup> Ibid. P. 64.

<sup>218</sup> By the 1400s, secular princes and kings began to mingle into the ecclesiastical affairs by influencing prebends, which had not been done before. See Ibid. P. 68.

served there. These vast networks also facilitated links from the court to the monasteries, Teutonic Knight Commandries, and secular courts. Bihrer notes that,

*‘an interesting task for future research would be to analyze the networking of ecclesiastical corporations and the positioning of the bishop’s court within them...’* and that *‘...greater attention needs to be paid to both the conception that aristocratic clerics had of their official status and the roles they played within their own families, as well as to the self-images of the families themselves.’*<sup>219</sup>

In essence, a bishop’s court was a social venue linking both ecclesiastical and secular ways of life, offering a central location in which the political and cultural elites of the surrounding areas came into regular contact.<sup>220</sup>

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<sup>219</sup> Ibid. Pp. 62-64

<sup>220</sup> Ibid. P. 68.



### 2.3.3 The Ministeriales

In the case of the German High Middle Ages, an elusive third group existed, occupying a less distinct area between the *nobiles* and the non-*nobiles*, namely the *ministeriales*. The term *ministerialis* (plural: *ministeriales*), is derived from the Latin word *minister*, meaning attendant or servant.<sup>221</sup> During the post-classical period of Latin, the word *ministeriālis*<sup>222</sup> developed with regard to the *ministerium*, or ministry,<sup>223</sup> of the emperors. The medieval concept of a *ministerialis*, dates back to the 9<sup>th</sup> century Carolingian period referring to an administrator or servant of the king<sup>224</sup>—as described earlier in point *f* by Karl Werner in 1979. These first *ministeriales* of the 9<sup>th</sup> and early 10<sup>th</sup> centuries belonged to the status of the *nobiles*, though the *ministeriales* of the late 10<sup>th</sup> and first half of the 11<sup>th</sup> centuries were drawn from the servants of the families of the *nobiles* and therefore not *nobiles*. These *ministeriales* were indentured to the *familiae* (elite families) of powerful kings, bishops, and other influential families.<sup>225</sup> In contrast to the *nobiles*, who are determined as such based upon their ability to trace their ancestry and confirm ownership of an estate,<sup>226</sup> the *ministeriales* from the late 10<sup>th</sup> to the mid-12<sup>th</sup> centuries often lacked both of these defining qualities. Those who carried the title of *ministerialis* were regarded as belonging to the various *familiae* until 1061/62, in which a charter from the Bishopric of Bamberg established the position of a *ministerialis* as independent of the *familiae* with the benefit of passing an inheritance.<sup>227</sup> The status of an imperial *ministerialis* (*Reichsministeriale*) first appeared during the reign of Emperor Lothair II<sup>228</sup> in the first half of the 12<sup>th</sup> century, marking a major shift in the domestic policy of the Kingdom of Germany. Rather than enfeoffing members of the *nobilis* with the protection of imperial territories (*Reichsländer*), imperial *ministeriales* would instead be assigned to these lands as administrators holding important positions as chamberlains, cupbearers, and even included raising the royal

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<sup>221</sup> Langenscheidt-Redaktion, ed., “Minister,” in *Langenscheidt Schulwörterbuch Pro: Latein* (München: Langenscheidt GmbH & Co. KG, 2016).

<sup>222</sup> Langenscheidt-Redaktion, ed., “Ministeriālis,” in *Langenscheidt Schulwörterbuch Pro: Latein* (München: Langenscheidt GmbH & Co. KG, 2016).

<sup>223</sup> Langenscheidt-Redaktion, ed., “Ministerium,” in *Langenscheidt Schulwörterbuch Pro: Latein* (München: Langenscheidt GmbH & Co. KG, 2016).

<sup>224</sup> Hechberger, *Adel, Ministerialität und Rittertum im Mittelalter*; Jan Ulrich Keupp, *Dienst und Verdienst: Die Ministerialen Friedrich Barbarossas und Heinrichs VI*, 1st ed., *Monographien zur Geschichte des Mittelalters* 48 (Stuttgart: Anton Hiersemann, 2002), P.34.

<sup>225</sup> Bosl, “Die Adelige Unfreiheit.” P. 12.

<sup>226</sup> Hechberger, *Adel, Ministerialität und Rittertum im Mittelalter*. P. 3.

<sup>227</sup> *Ibid.* P. 28.

<sup>228</sup> Lothair II is known as Lothar III in German.

successors to the throne.<sup>229</sup> Despite its strong association with the High Middle Ages, the title of ministerialis owes its existence to Julius Caesar, according to the 12<sup>th</sup> century *Chronicon Ebersheimense*,<sup>230</sup> which described the reform of the social structure instituted by Caesar during his conquest of Germania, noting that, ‘*In contrast to other peoples, the knights of Germania were named fiscales regni and ministeriales principum*’.<sup>231</sup>

The social connotations linked to the title of ministerialis varied over the course of the Middle Ages, with regard to the fluctuating semantic context of the title. The two most common associations made by medieval scholars describe the ministeriales either with servile undertones or as relating to a specific status in the social structure.<sup>232</sup> This is largely due to the unspecific nature of the term ministerialis particularly during the period preceding the Salian dynasty (1024-1125<sup>233</sup>), in which it had only generally referred to those who occupied an administrator position, as both free and unfree individuals could be appointed to such a post. Therefore, the distinction is made between the ministerialis who served a commission upon appointment, and the ministerialis who is described as such in relation his status in the social structure.<sup>234</sup> By the late 11<sup>th</sup> century, the connotation regarding their status often invoked honorable station, seen so by members of the social circles of the nōbilis and ministeriales alike. It is at this point in which the term became predominantly perceived as pertaining to an economic and somewhat elite legal status moreso than in reference to the servile undertones of the preceding years.<sup>235</sup>

The transformation of the term progressed through the charters of the Salian emperors beginning with Conrad II, in which the term *servus* appeared with a respectable connotation regarding the individual’s overall standing in society. The charters of Conrad’s successor, Henry III,

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<sup>229</sup> Hechberger, *Adel, Ministerialität und Rittertum im Mittelalter*. Pp. 28-29.

<sup>230</sup> “Chronicon Ebersheimense,” Repertorium “Geschichtsquellen des deutschen Mittelalters,” July 1, 2019, [https://www.geschichtsquellen.de/repOpus\\_01047.html](https://www.geschichtsquellen.de/repOpus_01047.html). The chronicle was produced by the Benedictine monastery of Ebersmünster in two parts: part one from the years 1101-1200, and part two in the year 1237. The text reports on the period from 600-1235 with a focus upon the upper Rhineland and Alemannia.

<sup>231</sup> Keupp, *Dienst und Verdienst: Die Ministerialen Friedrich Barbarossas und Heinrichs VI*. P. 31. This is an excerpt from the *Chronicon Ebersheimense*. The original Latin text is as follows: *Deinde cum Roman redire disponeret, conventum in Germania celebravit omnibusque valedicens, minors milites principibus commendavit, ut non quasi servis as famulis uterentur, sed quasi domini as defensores ministerial ipsorum reciperent. Inde accidit, quod preter nationes ceteras Germani milites fiscales regni et ministeriales principum nuncupantur*. The last sentence was translated by Keupp into German, and then by Pattee into English for this text. Keupp mentions that the chronicle seems to convey a positive notion towards the *ministeriales* by relating them back to Caesar.

<sup>232</sup> Ibid. P. 33.

<sup>233</sup> Lenelotte Möller and Hans Ammerich, *Die Salier* (Wiesbaden: Marixverlag, 2015). P. 11.

<sup>234</sup> Keupp, *Dienst und Verdienst: Die Ministerialen Friedrich Barbarossas und Heinrichs VI*. P. 35.

<sup>235</sup> Ibid. Pp. 35-36.

referred to the term *servientes*, in conjunction with the words *cliens* and *minister* to describe a respectable person in the service of the emperor.<sup>236</sup> Eventually, the diversity of terms referring to the same significance of an individual was replaced by the more general *ministerialis*,<sup>237</sup> which had hitherto encapsulated the more insignificant, servile connotation previously discussed. This tradition was maintained by the remaining Salian emperors Henry IV and Henry V, by the succeeding Supplinburg Emperor Lothair II, and by the Hohenstaufen rulers beginning with King Conrad III.<sup>238</sup> In the case of the Hohenstaufen dynasty, the *ministeriales* represented more than just an institution within the administration of the royal estates or of the bishoprics, but as individuals in the entourage of specific rulers. They were also differentiated by *ministeriales regni* or *ministeriales imperii* referring to their position in the king's entourage or the emperor's, respectively.<sup>239</sup> This is particularly relevant for the *ministeriales* covered by this work, which features those who were commissioned by the Hohenstaufen kings and emperors, and at times switched between the two.

It is necessary to elaborate upon the finer details of the evolution of the term *ministerialis*, given its translation into Middle High German during the 13<sup>th</sup> century as *dienestman*, and the semantics of the descendent word *Dienstmann* in High German. The Middle High German word *dienestman* or *dienestliute*<sup>240</sup> can be broken down into the terms *dienest*, meaning service, and *man*, meaning man. Both words exist in the modern High German as *dienst* and *Mann*, though the modern connotation towards the term *dienst* is more in-line with the indentured/servile notion that was essentially abandoned by the late 12<sup>th</sup> century when referencing a *ministerialis*. Therefore, in the context of *dienestman* referencing a *ministerialis* in the 13<sup>th</sup> century, the Middle High German word *dienest* most likely did not have the strictly servile connotation that it does in High German. This subtle semantic shift has had a ripple effect through the literature surrounding the study of the *ministeriales*, in which the linguistics have been often overlooked. The problem is amplified when the terms are translated into another language in absence of the historical context. If careful consideration is not taken with regard to historical linguistics, the nuances of the term *ministerialis* from the 11<sup>th</sup> to 13<sup>th</sup> centuries can be missed altogether. The characteristics of the *ministeriales* as administrators, the ambiguity regarding their general freedom, and their capacity to hold titles

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<sup>236</sup> Ibid. P. 36.

<sup>237</sup> Ibid. P. 37.

<sup>238</sup> Ibid. P. 37.

<sup>239</sup> Ibid. P. 40.

<sup>240</sup> Ibid. P. 37. Keupp offers two versions of the same term derived from the Middle High German Dictionary.

roughly equivalent to those typically designated for the nōbiles, speaks to their extraordinary role within the society and politics of the High Middle Ages in the Holy Roman Empire. All three aspects will be elaborated upon in the following sections in order to discuss the curious nature of the ministeriales.

### 2.3.3.1 The Social Status of the Ministeriales

The lack of a comparative status of the ministeriales from areas outside of the Holy Roman Empire during the Middle Ages,<sup>241</sup> makes them a unique feature of the time period and, consequently, often overlooked. The ministeriales of the German Kingdom were often given additional titles, including those typically reserved for the *nobiles*. Markward von Annweiler, a ministerialis who served under the emperors Frederick I and Henry VI, was named Margrave of Ancona, Duke of Romagna and Ravenna, and Count of Abruzzo and Molise, in addition to his administrator position as imperial steward by the year 1198.<sup>242</sup> Markward's accumulation of titles was a result of his services rendered to the German kings and emperors and, with the exception of his administrator position, were all based in the Kingdom of Italy which the Hohenstaufen rulers treated more as conquered territory than as a kingdom equivalent to their native Germany.

The so-called *unfree noble* in reference to the ministeriales made traction in the 20<sup>th</sup> century based largely upon their servitude to the *familiae* of kings and bishops, as well as the presumed demographics of the Middle Ages of having consisted of 90 to 95 percent serfs.<sup>243</sup> The discussion of their freedom is further complicated due to limited research regarding ministeriales in general, and that they were restricted to the Kingdom of Germany during the High Middle Ages. The unfree origin of the *Dienstmann* was only generally discussed prior to 1950, although a text by E. F. Otto in 1937 had raised an important question: there was a difference in social status between the ministeriales *utriusque dignitatis* and the ministeriales *conditionis*<sup>244</sup>—those who had merited the status of ministerialis and those who had inherited the status. According to Karl Bosl, the answer at the time was ultimately more harmful to the research because it sought to explain the advancement into the status of *Niederadel* (lower *nobiles*) of the late 13<sup>th</sup> to early 14<sup>th</sup> centuries, by ascertaining without evidence that the unfree ministeriales families had done so *en masse*. The assumption of the merge between the two groups was based entirely upon the observation that the ministeriales and the *Niederadel* were regarded as approximately the same status by the early 14<sup>th</sup> century. Additionally, it had been overlooked that the entire status of a ministerialis had not necessarily

<sup>241</sup> Bosl, "Die Adelige Unfreiheit." P. 11.

<sup>242</sup> P. Prinz, *Markward von Anweiler; Truchsess des Reiches, Markgraf von Ancona, Herzog der Romagna und von Ravenna, Graf von Abruzzo und Molise*, 1st ed. (Emden: Druck von Theodor Hahn Wittwe, 1875).

<sup>243</sup> Bosl, "Die Adelige Unfreiheit." P. 9. This is in reference only to the demographics.

<sup>244</sup> Karl Bosl, *Die Reichsministerialität Der Salier Und Staufer: Ein Beitrag Zur Geschichte Des Hochmittelalterlichen Deutschen Volkes, Staates Und Reiches*, 1st ed., vol. 1, *Schriften Der Monumenta Germaniae Historica* (Deutsches Institut Für Erforschung Des Mittelalters) 10 (Stuttgart: Hiersemann Verlag GmbH, 1950). P. 26

grown into the status of knighthood, which had existed long before and had a structured system of property and marital rights more associated with the *nōbiles*.<sup>245</sup> Instead, certain members of the *ministeriales* had become knights and therefore only certain families were regarded as knightly. The social equivalency between the knights and the *ministeriales* assumed by the researchers of the early 20<sup>th</sup> century was based solely on the economic level during the period of the Hohenstaufen dynasty, though the two actually developed independently.<sup>246</sup>

The misconception that the status of *ministerialis* was essentially replaced by the status of *Niederadel* is not altogether unwarranted. Many *ministerialis* families began as servile members of the *familiae* of kings or bishops, were given more rights over the course of the 11<sup>th</sup> and 12<sup>th</sup> centuries progressing to the status of *ministerialis*, and ultimately did become members of the *nōbiles* by the late 13<sup>th</sup> century.<sup>247</sup> However, the progression from members of the *familiae* to independent members of the *nōbiles* occurred at different rates. Some forefathers of *ministerialis* families, such as *Heinrich Haupt* from whom the *von Pappenheim* family stemmed, had established themselves as advisors to the king by the early 12<sup>th</sup> century.<sup>248</sup> Other families led by larger-than-life characters like Markward von Annweiler, who were even mentioned ahead of the *nōbiles* in the witness lists of medieval charters,<sup>249</sup> seemed destined for political prominence yet disappeared into obscurity by the mid-13<sup>th</sup> century. While other families quietly progressed through all three stages only to be erased shortly after becoming *nōbiles*, such as the von Beilstein family. In the case of families, such as the von Pappenheim or *von Bolanden* families, an additional level of misconception persists in which they are sometimes regarded as *Uradel* (ancient nobility), due to the actions of their descendants, despite their more humble origins as *ministeriales*.<sup>250</sup>

The study of the *ministeriales* gained traction during the first decades of the 20<sup>th</sup> century in the fields of medieval jurisdiction and constitutional history,<sup>251</sup> whose focus upon the legal aspects

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<sup>245</sup> Ibid. P. 27.

<sup>246</sup> Ibid. P. 28.

<sup>247</sup> Bosl, "Die Adelige Unfreiheit." P. 11.

<sup>248</sup> Ibid. P. 13.

<sup>249</sup> Ibid. P. 13.

<sup>250</sup> Ibid. P. 11. Bosl does not provide the families *von Pappenheim* or *von Bolanden* as examples in this capacity, though both are good examples. Bosl later mentions the *von Bolanden* family as an example of a *ministerialis* family that developed a territory of their own.

<sup>251</sup> Keupp, *Dienst und Verdienst: Die Ministerialen Friedrich Barbarossas und Heinrichs VI*. P. 4.

resulted in an acute interest in the method of social elevation in medieval hierarchy.<sup>252</sup> The topic that soon emerged considered whether it had been via military service, administrator positions, or court offices that paved the way for the social progression of the families whose members were ministeriales. The question was strikingly similar to the question regarding the development of the nōbilis in the early medieval transitional phase after the collapse of the Western Roman Empire. The answer, according to Bosl and his contemporaries, was that the service in of itself, not the type of service was the deciding factor.<sup>253</sup> This essentially meant that once commissioned for a position within the administration of a king or emperor, one had the opportunity to establish oneself and one's family within the social circles of the elite. By 1950 it had become ever clearer that the *ministeriales imperii* were the pillars of the individual imperial territories (*Reichsländer*) that composed the core of the political organization of the Hohenstaufen dynasty.<sup>254</sup> The following section provides a more detailed account of the development of the ministeriales and their commissions as administrators of the royal estates which began in the 11<sup>th</sup> century under the first Salian emperor Conrad II.<sup>255</sup>

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<sup>252</sup> This was certainly influenced by the desire to link the Holy Roman Empire to the Second German Empire and ultimately to the NS Empire, as had been done in the study of architecture.

<sup>253</sup> Bosl, *Die Reichsministerialität Der Salier Und Staufer: Ein Beitrag Zur Geschichte Des Hochmittelalterlichen Deutschen Volkes, Staates Und Reiches*. P. 29.

<sup>254</sup> *Ibid.* P. 31.

<sup>255</sup> Möller and Ammerich, *Die Salier*. P. 37.

### 2.3.3.2 The Development of the Ministeriales

Emperor Conrad II (royal reign: 1024-1039, imperial reign: 1027-1039)<sup>256</sup> sought to manage unclaimed land in the various realms of the empire by appointing individuals dedicated to his political agenda. He was capable of pursuing this policy because there did not yet exist a clear demarcation between the Hausgut, i.e. the lands, estates, and goods belonging to the families of the nobiles, and the Königsgut, i.e. the lands, estates, and goods connected to the office of the king. Gathering up lands increased the stability of a one's influence and helped secure one's family standing by establishing ownership independent of another lord. This could at times be progressed via deforestation, which was particularly intense from the years 1000 until 1250.<sup>257</sup> Clearing the forest would make land available that had been otherwise off limits, not only due to the physical barrier of trees but also due to the fact that the forest often belonged to the king. The desire to do so was borne of the intense competition between the Salian dynasty and the bishopric dynasties who were pursuing a similar policy well before the Investiture Controversy<sup>258</sup>—the crisis between the church and the empire that lasted nearly 50 years from 1077 until 1122 that restructured who could appoint bishops<sup>259</sup>

In order to secure the fulfillment of his policy, Conrad II conscripted vassals of lower social status to fill these posts.<sup>260</sup> In contrast to the ministeriales of the later Hohenstaufen rulers, very few of the ministeriales in the early phase of the Salian dynasty were ever mentioned by name in the royal charters, which instead referred to them in general terms such as *servi*, *famuli*, and *clientes*. One particular exception is found in a charter issued by *Pezili*, the son of a royal *servus* named *Uamanni*, in which he transferred five assets of the royal estate north of the River Danube by Regensburg, to a commissioner of the Bishop of Freising.<sup>261</sup> This charter provides evidence that the

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<sup>256</sup> Ibid. P. 25.

<sup>257</sup> Goosse et al., "The Origin of the European 'Medieval Warm Period.'" P. 102.

<sup>258</sup> Bosl, *Die Reichsministerialität Der Salier Und Stauffer: Ein Beitrag Zur Geschichte Des Hochmittelalterlichen Deutschen Volkes, Staates Und Reiches*. Pp. 32-33.

<sup>259</sup> Wilfried Hartmann, *Der Investiturstreit*, 3rd ed., Enzyklopädie Deutscher Geschichte 21 (München: R. Oldenbourg Verlag, 2007). P. 5.

<sup>260</sup> Bosl, *Die Reichsministerialität Der Salier Und Stauffer: Ein Beitrag Zur Geschichte Des Hochmittelalterlichen Deutschen Volkes, Staates Und Reiches*. P. 34. Walter Janssen, "Siedlungsgeschichtliche und siedlungsarchäologische Beobachtungen zum Haus- und Reichsgut der Salier," in *Siedlungen und Landesausbau zur Salierzeit*, ed. Horst Böhme, vol. Teil 2: In den südlichen Landschaften des Reiches, Römisch-Germanisches Zentralmuseum Forschungsinstitut für Vor- und Frühgeschichte. Monographien 28 (Sigmaringen: Jan Thorbecke Verlag, 1991), 7–13. P. 13.

<sup>261</sup> Bosl, *Die Reichsministerialität Der Salier Und Stauffer: Ein Beitrag Zur Geschichte Des Hochmittelalterlichen Deutschen Volkes, Staates Und Reiches*. P. 35.



policies of the king and of the bishops during the 11<sup>th</sup> century were being carried out by their *servi* vassals. Another reference to a specific *servus* exists from the year 1034, in which Conrad II gave his *servus*, *Pabo*, a parcel of land known as a *nobilis viri mansum* (German: *Edelmannshufe*; English: noble man's farm) in addition to eight bonds-people as an enfeoffment,<sup>262</sup> indicating that the unfree *servi* of the king could rule over unfree people of their own. It is also evident from this time period that Conrad II was assigning *servi* originally commissioned by the various bishoprics to his own tasks.<sup>263</sup> This highlights an interesting area for future research regarding the trade of *servi* between the kings and the bishops during the rule of the Salian dynasty, but is out of scope for this work. The undefined position of the ministeriales at that time is well described by Benjamin Arnold, who considered them, '*vassals in law, knights in function, and unfree in status*.'<sup>264</sup>

Throughout the reign of Conrad II, many of his *servi* were operating as warriors in his military campaigns, and were receiving lands on a lifetime basis.<sup>265</sup> According to Hechberger 2010, the ownership of land would fulfill one of two general requirements to be considered a member of the *nobilis* group.<sup>266</sup> However, Bosl mentioned that the lands were for the period of the individual's lifespan and not to be inherited by the descendants of the specific *servus* enfeoffed with the land.<sup>267</sup> The increasing importance of the *servi* under Conrad II and the various bishops of the empire necessitated official documentation outlining how they were to be considered within the context of the 11<sup>th</sup> century social structure. The judiciary text of the Bishopric of Worms, the *Lex familiae Wormatiensis ecclesiae*, issued by Bishop Burchard in 1025 outlined how one could become a ministerialis and which tasks one would have to fulfill in order to do so. Bosl considered this a credible outline for the development of the later imperial ministeriales, considering the storied history of Worms as a *palatium regis*, or royal palace.<sup>268</sup> A variety of terms were used in order to reference the ministeriales in the *Lex familiae Wormatiensis ecclesiae* including *minister* or *magister loci*. The text also spoke to their legal empowerment, in which they were largely responsible for

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<sup>262</sup> Ibid. P. 35.

<sup>263</sup> Ibid. P. 35.

<sup>264</sup> Benjamin Arnold, "German Bishops and Their Military Retinues in the Medieval Empire," *German History* 7, no. 2 (1989): 161–83, <https://doi.org/10.1093/gh/7.2.161>. P. 172.

<sup>265</sup> Bosl, *Die Reichsministerialität Der Salier Und Staufer: Ein Beitrag Zur Geschichte Des Hochmittelalterlichen Deutschen Volkes, Staates Und Reiches*. P. 36.

<sup>266</sup> Hechberger, *Adel, Ministerialität und Rittertum im Mittelalter*. P. 3.

<sup>267</sup> Bosl, *Die Reichsministerialität Der Salier Und Staufer: Ein Beitrag Zur Geschichte Des Hochmittelalterlichen Deutschen Volkes, Staates Und Reiches*. P. 36.

<sup>268</sup> Ibid. Pp. 38-39.

overseeing more minor contentions and punitive proceedings.<sup>269</sup> Paragraph 29 of the aforementioned text stated that the bishop developed his model of how to become a ministerialis based upon the tradition of the king's men, known in the text as *fiscalini*, who belonged to a higher status of unfree people and were not allowed to take *servitium* (servitude) other than that of *camerarius* (chamberlain), *pincera* (cupbearer), *infertor* (*dapifer*, *seneschal*, or steward), or *agaso* (marshal).<sup>270</sup>

These four elite positions would continue as the definitive ministeriales positions well into the 13<sup>th</sup> century. According to the tradition referred to by the *Lex familiae Wormatiensis ecclesiae*, a ministerialis not commissioned with a task by the king was allowed to serve another lord, as was also the case for the *Dienstmannschaftrecht* of the palace of *Weissenburg* outlined 45 years later.<sup>271</sup> In this regard, the bishop effectively adopted the royal system of using ministeriales for his own court and for the administration of his bishopric. Emperor Conrad II's predecessor, Saint Henry II of the Ottonian dynasty, even included a compensation of 10 Pounds for servientes who regulated the punishments following a struggle between members of the ecclesiastical foundations of Worms and Lorsch (*Stiftsleute*) in 1023, which had led to multiple deaths.<sup>272</sup> The Salian Emperor Conrad II expanded upon his predecessor's use of the servientes, as did Bishop Burchard of Worms, which led to the development of the *servi* by Conrad, and the *ministeri* by Burchard. They were essentially the same group under different names, yet indicated a shift in political action on both the secular and ecclesiastical avenues. However, the status of the imperial *servi*<sup>273</sup> and that of the bishop's *minister* or *magister loci*, would develop in slightly different capacities over the course of the 11<sup>th</sup> century.

The linguistic shift from *servi* back to servientes within the setting of the royal court occurred during the reign of Conrad II's successor and son, Henry III (royal reign: 1028-1056, imperial reign: 1046-1056).<sup>274</sup> Their numbers experienced a drastic increase following the many

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<sup>269</sup> Christian Henkes, "Lex familiae Wormatiensis ecclesiae: Das Hofrecht des Bischofs Burchard von Worms" (Inauguraldissertation zur Erlangung des akademischen Grades des Doktors der Rechte der Universität Mannheim, Singapur, Universität Mannheim, 2012). P. 29.

<sup>270</sup> Bosl, *Die Reichsministerialität Der Salier Und Staufer: Ein Beitrag Zur Geschichte Des Hochmittelalterlichen Deutschen Volkes, Staates Und Reiches*. Pp. 38-39. The term *fiscalini* calls to memory the description of the *fiscales regni* from the *Chronicon Ebersheimense* mentioned earlier.

<sup>271</sup> *Ibid.* P. 39.

<sup>272</sup> *Ibid.* P. 40.

<sup>273</sup> Keupp, *Dienst und Verdienst: Die Ministerialen Friedrich Barbarossas und Heinrichs VI.* P. 36. Keupp notes that Conrad II continued to use the term *servi* despite their exceptional status within his court.

<sup>274</sup> Möller and Ammerich, *Die Salier*. P. 47.

Italian campaigns under Conrad II, the tense situation on the eastern border of the empire,<sup>275</sup> and in the west along the Rhine.<sup>276</sup> It is also clear that the *servientes* were filling the ranks of Henry III's personal army and were distinguishing themselves as warriors, according to the *Annals of Altaich*.<sup>277</sup> Their inclusion in military campaigns did not begin with Henry III or the 11<sup>th</sup> century Bishops of Bamberg. Rather, those later belonging to the status of *servi* and *servientes* had already composed a portion of the *loricati* partaking in Otto II's Calabrian campaign in the late 10<sup>th</sup> century.<sup>278</sup> Henry III commissioned his *servientes* in the regions of the royal estate, specifically the imperial territories, along the Rhine and west of the Rhine. They were given forestry rights and were responsible for the administration of the various royal palaces, such as those in Nijmegen and Kaiserswerth,<sup>279</sup> and likely also in Lautern. The Rhine River and its riparian cities were of immense importance for the Salian dynasty, because the territory also included the imperial cathedrals of Mainz, Speyer, and Worms.<sup>280</sup>

The ecclesiastical *Dienstmannschaftrecht* of the Bishopric of Bamberg from the years 1057 to 1064, and the secular *Dienstmannschaftrecht* (rights of the *servientes*<sup>281</sup>) of the royal court of *Weissenburg* from the years 1070 to 1080, marked a decisive progression regarding the status of the *ministeriales*. The latter included rights for all members of a *ministerialis*' family including the sons, who were allowed to serve another lord when not commissioned by the king, and for daughters who were never to be forced into becoming a lady's maid. However, in the event of campaign to Rome, or on the eve of a military excursion, the daughters were to sew and mend the garments of the warriors—presumably those of their own family members and of others serving the royal

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<sup>275</sup> Bosl mentions that the security of the eastern border was of utmost importance for Henry III. However, it should be noted that Bosl's perspective of the east, specifically in regarding its relationship with Germany is doubtlessly tainted by his research during the Second World War while under commission of the *SS Ahnenerbe* project.

<sup>276</sup> Bosl, *Die Reichsministerialität Der Salier Und Staufer: Ein Beitrag Zur Geschichte Des Hochmittelalterlichen Deutschen Volkes, Staates Und Reiches*. P. 48.

<sup>277</sup> *Ibid.* P. 58.

<sup>278</sup> Arnold, "German Bishops and Their Military Retinues in the Medieval Empire." P. 172.

<sup>279</sup> Bosl, *Die Reichsministerialität Der Salier Und Staufer: Ein Beitrag Zur Geschichte Des Hochmittelalterlichen Deutschen Volkes, Staates Und Reiches*. P. 63.

<sup>280</sup> Clemens Kosch, *Die romanischen Dome von Mainz, Worms und Speyer: Architektur und Liturgie im Hochmittelalter*, 1st ed. (Regensburg: Schnell und Steiner, 2011).

<sup>281</sup> The term *servientes* is used in this particular case rather than *ministeriales* due to the historical context. The discussion preceding this section regarding the linguistic connotations of *Dienstmann* outlined by Keupp is a result of research from the last 20 years, long after the publication of Bosl's work in 1950.

household.<sup>282</sup> Of particular interest for this project is the inclusion of hunting rights, fishing rights, and hay production rights for the ministeriales of the royal court in Weissenburg in the imperial forest.<sup>283</sup> The duty of the ministeriales to serve as foresters was also a component in the Bishopric of Bamberg among the positions of chamberlain, butler, marshal, and seneschal (steward).<sup>284</sup>

The inclusion of their military service to the emperor is also indicated by the payments they received during a martial excursion. Each ministerialis accompanying the emperor on an Italian campaign was given 10 Talents, the shoeing of five horses, two goat hides, one mule, two more mules carrying weapons and armor, and two servants each with one horse and a wage of one Talent. However, the monetary payment was only to be given once the emperor had crossed the Alps.<sup>285</sup> In the event of an expedition into other lands, each ministerialis was to be paid five Talents, given one burden-less horse, the shoeing of five horses, and two goat hides. Bosl noted that these amounts dictated by the Weissenburg Dienstmannschaftrecht were substantially larger than those granted by the Bishop of Bamberg, and were perhaps the reason as to why Conrad II's imperial successors continually sought to gain control of the wealthy Italian cities and the various silver mines near Goslar in order to pay the wages due to the ministeriales.<sup>286</sup> The Dienstmannschaftrecht of Bamberg also addressed military excursions, describing the wage of a ministerialis to include one horse and three Pounds for each Italian campaign;<sup>287</sup> a considerably smaller amount than that granted by the emperor. Additionally, in the event of a campaign north of the Alps, the ministeriales were expected to pay their own preparatory costs and await a subsidy from the bishop at a later point.<sup>288</sup> However, the Dienstmannschaftrecht of Bamberg clearly indicated the hereditary legacy of the ministeriales and their knightly character,<sup>289</sup> fulfilling one requirement set by Hechberger regarding the heritage

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<sup>282</sup> Bosl, *Die Reichsministerialität Der Salier Und Staufer: Ein Beitrag Zur Geschichte Des Hochmittelalterlichen Deutschen Volkes, Staates Und Reiches*. P. 41.

<sup>283</sup> *Ibid.* P. 41.

<sup>284</sup> Arnold, "German Bishops and Their Military Retinues in the Medieval Empire." P. 171.

<sup>285</sup> Bosl, *Die Reichsministerialität Der Salier Und Staufer: Ein Beitrag Zur Geschichte Des Hochmittelalterlichen Deutschen Volkes, Staates Und Reiches*. P. 41.

<sup>286</sup> *Ibid.* P. 42.

<sup>287</sup> *Ibid.* P. 45.

<sup>288</sup> Arnold, "German Bishops and Their Military Retinues in the Medieval Empire." P. 171.

<sup>289</sup> Bosl, *Die Reichsministerialität Der Salier Und Staufer: Ein Beitrag Zur Geschichte Des Hochmittelalterlichen Deutschen Volkes, Staates Und Reiches*. P. 42.

of a *nōbilis*,<sup>290</sup> in stark contrast to the *Dienstmannschaftrecht* of Weissenburg, which did not include this aspect.

The rights of the *ministeriales* issued by the Bishop of Bamberg coincided with the reign of Emperor Henry IV (royal reign: 1056-1105, imperial reign: 1084-1105),<sup>291</sup> the son and successor of Henry III. Under Henry IV, the numbers of the *ministeriales* were expanded even further as administrators within the empire and were referred to as *minister regis* by the year 1066.<sup>292</sup> The Investiture Controversy between Pope Gregory VII and Henry IV that began in 1076 resulted in the limitation of the emperor's influence in the ecclesiastical realm, specifically regarding the elections of bishops outlined at the Concordat of Worms in 1122 during the reign of Henry V.<sup>293</sup> The controversy also featured the infamous humbling of Emperor Henry IV at Canossa in January of 1077 in which he begged Pope Gregory VII to rescind his excommunication. Henry IV's opposition to the papacy drew him into conflict with the ecclesiastical princes and *nōbiles* of the empire. It was during this time that the *servientes* loyal to the emperor were commissioned to execute a territorial policy of the empire which ran parallel to the policy conducted by the bishops and *nōbiles*.<sup>294</sup> This policy also included the reconstruction of destroyed castles in the year 1076, which stood in the various imperial territories of the empire. The extent of the decision making power of the *servientes* in the reconstruction of the castles would be an interesting area of research for the late 11<sup>th</sup> and early 12<sup>th</sup> century Salian period, although out of scope for this work. However, the involvement of the *ministeriales* in the development and construction of castles during the late 12<sup>th</sup> and early 13<sup>th</sup> centuries is of key importance for this work and will be discussed in later chapters. As the *servientes* were the ones on site more often than Henry IV, it seems highly likely that they were at the very least involved in the dialogue with the architects and builders and may have served as spokespeople on behalf of the king. As Liddiard notes in *Castles in Context* regarding castle patrons, the *nōbiles*—or in this case the *servientes* or *ministeriales*—had too much interest to make mistakes in the castles, given their financial and social investment.<sup>295</sup> The castles were administrative centers which

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<sup>290</sup> Hechberger, *Adel, Ministerialität und Rittertum im Mittelalter*. P. 3.

<sup>291</sup> Möller and Ammerich, *Die Salier*. P. 77.

<sup>292</sup> Bosl, *Die Reichsministerialität Der Salier Und Staufer: Ein Beitrag Zur Geschichte Des Hochmittelalterlichen Deutschen Volkes, Staates Und Reiches*. P. 76.

<sup>293</sup> Hartmann, *Der Investiturstreit*. P. 94.

<sup>294</sup> Bosl, *Die Reichsministerialität Der Salier Und Staufer: Ein Beitrag Zur Geschichte Des Hochmittelalterlichen Deutschen Volkes, Staates Und Reiches*. P. 74.

<sup>295</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. P. 43.

organized and oversaw the development of agricultural lands, and the use of meadows and forests. Bosl noted that the castles were the basis for Henry IV's territorial policies and were therefore despised by the *nobiles* who ruled over neighboring lands.<sup>296</sup> Based upon these findings, Henry IV essentially had a *Burgenpolitik* at precisely the same time as King William I of England's expansion of Norman-built castles throughout the newly conquered Anglo-Saxon lands after 1066. The Norman castle-building strategy consisted of three phases beginning with the construction of royal castles first, followed by granting lordships to magnates allowing them to construct their own castles, and lastly, enfeoffing knightly tenants to build their own residences.<sup>297</sup> The first phase bears a striking similarity to the rise of castles within the Holy Roman Empire whereby *servientes* were appointed as administrators in the royal palaces and castles. An interesting point of departure for future research would be to explore the similarities between the castles sanctioned by King William I and those sanctioned by Emperor Henry IV, in addition to investigating any potential discourse between vassals of the two monarchs or between the monarchs themselves.

The construction and expansion of castles through the various imperial territories introduced the position of *Burgmann* (castellan) occupied by a *minister regis*. Bosl theorized that most of these administrators and castellans had at least one parent who belonged to the *nobiles*,<sup>298</sup> presumably to bridge the ever widening gap between the *nobiles* and that of the *ministeriales*, and to bring about some sort of consensus between the two groups. The conflict between Henry IV and the *nobilis* resulted in the increase of administrators in the courts and the general implementation of his expansion policy. This led many *nobiles* to renounce the royal *ministrī* through open statements of disdain, particularly against the Swabian administrators placed in Saxony during the Saxon uprising of 1073.<sup>299</sup> It seems as though Henry IV relied almost exclusively upon his *ministeriales* to accompany him on his military campaigns and carry out his imperial agenda, which was supported by the lucrative payments given to the *ministeriales* as described in the *Dienstmannschaftrecht* of Weissenburg. While on his Italian campaign of 1081, his army was almost entirely composed of *ministeriales* and mercenaries. This is primarily due to their success and martial experience during

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<sup>296</sup> Bosl, *Die Reichsministerialität Der Salier Und Staufer: Ein Beitrag Zur Geschichte Des Hochmittelalterlichen Deutschen Volkes, Staates Und Reiches*. P. 86.

<sup>297</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. P. 102.

<sup>298</sup> Bosl, *Die Reichsministerialität Der Salier Und Staufer: Ein Beitrag Zur Geschichte Des Hochmittelalterlichen Deutschen Volkes, Staates Und Reiches*. P. 86.

<sup>299</sup> *Ibid.* Pp. 87-88.

the Saxon Wars of the previous decade.<sup>300</sup> Henry IV's policy ultimately lost him the support of the *nobiles* and ecclesiastical princes, requiring him to solicit the support of the unfree citizens and peasants. This is particularly striking when compared to the general warfare throughout the Middle Ages which was the preserve of the elites,<sup>301</sup> i.e. that of the *nobiles*. This was primarily due to the expense of equipping a single armored soldier and the war horses, which was a costly endeavor—as indicated by the *Dienstmannschaftrechte* of Bamberg and Weissenburg. Citizen armies are generally a product of more recent centuries, calling to mind the period from the Wars of Reformation to both the First and Second World Wars. However, in the 11<sup>th</sup> century, warfare was the *raison d'être* of the *nobiles*.<sup>302</sup> Therefore, Henry's establishment of an army of individuals of whom very few actually belonged to the status of *nobilis*, would have been viewed at best as unorthodox and at worst as a blatant insult to society at large. This does not come as a surprise given his general animus for the *nobiles*, thereby drawing the ire of his opponents, but also making a statement that he alone had the power to change the rules. By changing the rules of warfare, which defined society, he changed society itself. He even appointed titles of Margrave of Ancona and Margrave of Spoleto to a certain minister regis by the name of *Werner* during the Italian campaign of 1093 to 1094.<sup>303</sup> This immediately calls to mind the similarly empowered Markward von Annweiler who had been given the same title of Margrave of Ancona by Emperor Henry VI exactly 100 years later.<sup>304</sup> However, Henry IV did not only enfeoff ministeriales with important positions, he also rewarded loyal members of the *nobiles*, evidenced by his formation of the Duchy of Swabia under Frederick I of Swabia in 1079, to whom Henry IV also married his daughter, Agnes.<sup>305</sup>

In the following decades until 1100, various bishoprics began granting their ministeriales additional rights. Of particular relevance for this project was the right of free marriage granted by Bishop Udo of Hildesheim to all of his *servientes legitimi* (lawful ministeriales), in line with the same right granted to the *servientes regnum pertinentes* (the most splendid royal ministeriales), and

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<sup>300</sup> Ibid. P. 90.

<sup>301</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. P. 78.

<sup>302</sup> Ibid. P. 78.

<sup>303</sup> Bosl, *Die Reichsministerialität Der Salier Und Staufer: Ein Beitrag Zur Geschichte Des Hochmittelalterlichen Deutschen Volkes, Staates Und Reiches*. P. 91.

<sup>304</sup> Prinz, *Markward von Anweiler; Truchsess des Reiches, Markgraf von Ancona, Herzog der Romagna und von Ravenna, Graf von Abruzzo und Molise*; Bosl, *Die Reichsministerialität Der Salier Und Staufer: Ein Beitrag Zur Geschichte Des Hochmittelalterlichen Deutschen Volkes, Staates Und Reiches*. P. 92.

<sup>305</sup> Bosl, *Die Reichsministerialität Der Salier Und Staufer: Ein Beitrag Zur Geschichte Des Hochmittelalterlichen Deutschen Volkes, Staates Und Reiches*. P. 98.

those of the Archbishopric of Mainz.<sup>306</sup> Henry IV actively recruited disgruntled servientes commissioned by the bishoprics to join his cause,<sup>307</sup> indicating that even the ecclesiastically employed ministeriales wielded enough power and influence as political pawns to be desired by the emperor. Based upon the Dienstmannschaftrechte of Weissenburg and Bamberg, and upon the political climate of the second half of the 11<sup>th</sup> century, the ministeriales had developed into a group of administrators and warriors well versed in the nature of politics and the maintenance of the empire. They were even entrusted with the protection and supervision of the imperial regalia, which had briefly been stored in the monastery of Limburg belonging to the Salian estate until 1065, after which they were transferred to the imperial cathedral in Speyer where they remained until the end of the Salian dynasty in 1125. The tradition of commissioning ministeriales with the supervision of the imperial regalia continued beyond 1125 when they were transferred to castle Trifels until 1273.<sup>308</sup> The last of the ministeriales to oversee the regalia until they were moved yet again by King Rudolf von Habsburg in 1273,<sup>309</sup> was Reinhard III von Lautern-Hoheneck—a person of key importance for this work.

The period around 1100 also sheds more light upon the personal relationship between the ministeriales and the emperor, notably demonstrated in the events surrounding the imperial diet of 1104 in Regensburg in which Count Sigihard von Burghausen was murdered by a group of ministeriales for allegedly slandering their status in society. Rather than to condemn their actions and discipline those responsible, Henry IV decided to do nothing.<sup>310</sup> His inaction brought the ire of the nobiles upon his head yet again, which would plague him for the brief remainder of his reign.<sup>311</sup> Count Sigihard had arrived with the largest armed entourage present at the diet, either in order to dictate the outcome of the decisions under threat of an incursion of his men, or because he feared for his life. Whatever the reason for bringing the largest contingent of warriors, the ministeriales of

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<sup>306</sup> Ibid. P. 95.

<sup>307</sup> Ibid. P. 96.

<sup>308</sup> Ibid. P. 97.

<sup>309</sup> Keupp, *Dienst und Verdienst: Die Ministerialen Friedrich Barbarossas und Heinrichs VI.* P. 310.

<sup>310</sup> Bosl, *Die Reichsministerialität Der Salier Und Staufer: Ein Beitrag Zur Geschichte Des Hochmittelalterlichen Deutschen Volkes, Staates Und Reiches.* P. 96. Karl Bosl records his name as Sieghard, when in fact his name was written as Sigihard according to the 12<sup>th</sup> century chronicler Ekkehard von Aura.

<sup>311</sup> Peter Schmid, “Die Regensburger Reichsversammlungen im Mittelalter,” *Historischer Verein für Oberpfalz und Regensburg: Verhandlungen des Historischen Vereins für Oberpfalz und Regensburg* 112 (1978): 31–130, <https://www.heimatforschung-regensburg.de/1978>. P. 78.



the emperor attacked Sigihard in his hostel while his entourage was away and murdered him.<sup>312</sup> Besides the catastrophic effect that the murder had upon Henry IV's image, reputation, and overall character, the description of the men as *ministerialis ordinis hominibus* by Ekkehard von Aura,<sup>313</sup> is the most relevant portion of the event for this work. Ekkehard was a contemporary of Henry IV who chronicled the event, thus providing insight as to how the men were seen by the community at large, namely as men belonging to the *ordo* of ministeriales, and not as servientes or royal ministri. This clearly indicates that they were perceived as belonging to a group of their own. It must also be added that Ekkehard was well familiar with the ministeriales, as he was the abbot of the Benedictine monastery of *Aura an der Saale* founded in 1108 by Bishop Otto von Bamberg, the former chancellor of Emperor Henry IV.<sup>314</sup> Ekkehard's association with the Bishopric of Bamberg and his partaking in the First Crusade suggests that he had encountered members of the ministeriales while in the Kingdom of Germany, or abroad—possibly even Henry IV's imperial marshal, Konrad von Pappenheim.<sup>315</sup>

Henry IV's resignation as Roman-German King and Emperor in 1105 and his death in 1106,<sup>316</sup> marked a brief standstill in the previously rapid ascension of the ministeriales to a status of their own. The charters of his son and successor, Henry V (royal reign: 1099-1125, imperial reign: 1111-1125<sup>317</sup>), during the beginning of his tenure as sole Roman-German King, rarely mentioned any ministeriales, which Bosl considered a strategic move on Henry V's behalf.<sup>318</sup> The more Henry V could officially distance himself from the controversial policy of his father to openly favor the ministeriales, the more likely he was to regain support amongst the *nobiles* and, consequentially, secure his coronation as emperor—a task in which he succeeded. After his imperial coronation, Henry V proceeded to enact a territorial policy similar to that of his father's in which he commissioned ministeriales within the various prefectures (*Vogteien*) of the empire, mainly along the Rhine. This included an expansion of the construction of castles in the Alsace and Palatinate,

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<sup>312</sup> Ibid. P. 79.

<sup>313</sup> Ibid. P. 79.

<sup>314</sup> Klaus Guth, "Otto, Bischof von Bamberg," in *Biographisch-Bibliographisches Kirchenlexikon*, ed. Friedrich Wilhelm Bautz (Berlin: Verlag Traugott Bautz, 1993). P. 1368.

<sup>315</sup> Bosl, *Die Reichsministerialität Der Salier Und Staufer: Ein Beitrag Zur Geschichte Des Hochmittelalterlichen Deutschen Volkes, Staates Und Reiches*. P. 98.

<sup>316</sup> Möller and Ammerich, *Die Salier*. Pp. 130-131.

<sup>317</sup> Ibid. P. 135.

<sup>318</sup> Bosl, *Die Reichsministerialität Der Salier Und Staufer: Ein Beitrag Zur Geschichte Des Hochmittelalterlichen Deutschen Volkes, Staates Und Reiches*. P. 101.

which would later become a core region of the Hohenstaufen territory,<sup>319</sup> and of key importance for this work. Throughout this process, Henry V routinely enfeoffed his ministeriales with administrator positions within the imperial territories, and only occasionally gifted anything to the church. The direct effect of this policy, according to Bosl, was the increasing stability of the status of the ministeriales and their standing within society.<sup>320</sup>

The end of the Henry V's reign in 1125 led to a power vacuum which was fought over between the Salian-Hohenstaufen alliance along the Rhine and the opposing Saxon houses of the northern and eastern regions of the empire. As the administration changed hands in favor of the Saxons, so too did many of the ministeriales who were differentiated for the first time as *ministeriales regni* in a diploma from 1128. Bosl interpreted this as a clear indication of the attempt to separate the ministeriales who were commissioned as administrators in the familial estate (Hausgut) and those who were commissioned as administrators in the royal estate (Königsgut).<sup>321</sup> At the same time, this clearly suggests that a differentiation between the two types of ministeriales had already been established by the time of the diploma. After this point, a host of ministeriales were mentioned also by name, albeit only their first name, marking yet another change in the way in which they were regarded by 12<sup>th</sup> century lords and chroniclers. The fact that their names were being recorded also indicates that very specific ministeriales were being referred to rather than simply referencing their titles in general, under which a variety of different individuals of various social backgrounds could have belonged. The Saxon Emperor Lothair II, who succeeded Henry V, continued the tradition of commissioning ministeriales as administrators throughout the kingdom as his royal and imperial predecessors had done. As the majority of ministeriales had hitherto been centralized around the Salian and Hohenstaufen lands, Lothair II appointed ministeriales of his own within the Saxon estate, specifically the Duchy of Saxony.<sup>322</sup> Many of the forefathers of later famous ministerialis families were mentioned by name during the brief reign of Lothair II,<sup>323</sup> though an elucidation into their genealogies is out of scope for this work.

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<sup>319</sup> Ibid. P. 105.

<sup>320</sup> Ibid. P. 107.

<sup>321</sup> Ibid. P. 113.

<sup>322</sup> Ibid. P. 119.

<sup>323</sup> Ibid. Pp. 114-116.

The return of the throne of the Roman-German King to the Salian-Hohenstaufen alliance under King Conrad III on 22 May 1138,<sup>324</sup> brought with it a return of the political power to the region of the Rhine. The new king continued the tradition of commissioning ministeriales as his predecessors had over the century prior to his reign.<sup>325</sup> The Saxon opposition to his family had consolidated itself under the House of Welf, who had established themselves as the premier antagonist to the Hohenstaufen House<sup>326</sup> and as a counterbalance to the power struggle for the kingdom and empire. In the early 1140s, prominent ministerialis families began to be mentioned with both their given and family names, most notably the families *von Rothenburg* and *von Schipf*,<sup>327</sup> in contrast to those mentioned in the diplomas and charters of Lothair II, who were mentioned by first name only. Some of these families included key members of the entourages of the Hohenstaufen rulers such as the steward family *von Schüpf-Limpurg*,<sup>328</sup> the marshal family *von Pappenheim*,<sup>329</sup> and the loyal *von Lautern-Hoheneck* family<sup>330</sup>—each of whom extended beyond the 14<sup>th</sup> century. The seeds of familial longevity were thus sown in the first half of the 12<sup>th</sup> century for many of the ministerialis families. During his reign, Conrad III appointed ministeriales throughout the entire kingdom, yet focused particularly upon the areas of the Harz Mountains (controlled by the Saxons),<sup>331</sup> the region around Nuremberg,<sup>332</sup> and the *Egerland* in the northwestern region of Bohemia.<sup>333</sup> The reason for developing his power in these regions was in order to successfully quell rebellion stemming from the Houses of Welf and Babenberg, and in the process, to colonize the areas with his castles and ministeriales.<sup>334</sup> This policy is remarkably similar to the construction projects undertaken by King William I in England after the conquest of 1066 in which he sought to actively and formidably signal his seigneurial power to the areas previously under Anglo-Saxon

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<sup>324</sup> Neuhold, *Die Staufer*. P. 25.

<sup>325</sup> Bosl, *Die Reichsministerialität Der Salier Und Staufer: Ein Beitrag Zur Geschichte Des Hochmittelalterlichen Deutschen Volkes, Staates Und Reiches*. P. 122.

<sup>326</sup> *Ibid.* P. 129.

<sup>327</sup> *Ibid.* P. 130.

<sup>328</sup> Keupp, *Dienst und Verdienst: Die Ministerialen Friedrich Barbarossas und Heinrichs VI.* P. 310.

<sup>329</sup> *Ibid.* P. 306.

<sup>330</sup> *Ibid.* P. 311.

<sup>331</sup> Bosl, *Die Reichsministerialität Der Salier Und Staufer: Ein Beitrag Zur Geschichte Des Hochmittelalterlichen Deutschen Volkes, Staates Und Reiches*. P. 129.

<sup>332</sup> *Ibid.* P. 131.

<sup>333</sup> *Ibid.* P. 135.

<sup>334</sup> *Ibid.* P. 136.

control during the initial decades following the conquest,<sup>335</sup> and of Emperor Henry IV around the same time as William I. The similarities between the Norman policy in England and both the Salian and Hohenstaufen policies in Germany are striking, indicating an exciting area of research that is relevant for this work but will be limited to the exploration of castle building as a means to control and signal power. Much like the first Norman castles constructed in England under Edward the Confessor prior to the conquest of 1066 as indicated in the *Anglo-Saxon Chronicle*,<sup>336</sup> Liddiard notes that these early Norman castles had castle-men who interfered with the local Anglo-Saxon administrations prior to the conquest. Ruling from fortified positions was highly abnormal for Anglo-Saxon England.<sup>337</sup> These castle-men are remarkably similar to the *Burgmänner* (castellans) commissioned as administrators by the Salian emperors in the royal palaces and castles of the 12<sup>th</sup> century—ministeriales who had established themselves as the enforcers of royal and imperial policy within the imperial territories during the reign of the Hohenstaufen dynasty.<sup>338</sup> This indicates that the process of constructing castles to pacify areas antagonistic to the rule of a reigning dynasty was an inter-European phenomenon, which presumably began on the continent considering the origin of the Normans in northern France and that of the Salians nearby along the Lower Rhine.

Commissioning ministeriales in areas intended to be tamed by the ruling dynasty or in areas that were to become centerpieces of the dynasty's architectural legacy continued throughout the reign of the Hohenstaufen kings and emperors. This was specifically important in the case of the reign of Frederick I, whose political ambitions were predicated upon the involvement and success of his ministeriales.<sup>339</sup> The *Burgenpolitik* of the Hohenstaufen family began already during the Salian period under Duke Frederick II of Swabia who had included the castles *Guttenberg*, *Meistersel*, *Berwartstein*, and *Scharfenberg* into his network of control, which extended into the southern Palatinate.<sup>340</sup> Castles represented one avenue towards colonizing and pacifying an area, whereas ministeriales represented another, ideally combined with the former. The method of appointing administrators was not unique to Germany at the time, as Emperor Frederick I also

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<sup>335</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. P. 31.

<sup>336</sup> *Ibid.* P. 37.

<sup>337</sup> *Ibid.* P. 37.

<sup>338</sup> Bosl, *Die Reichsministerialität Der Salier Und Staufer: Ein Beitrag Zur Geschichte Des Hochmittelalterlichen Deutschen Volkes, Staates Und Reiches*. P. 138.

<sup>339</sup> Hans Werle, "Wald und Herrschaft: Studien zur Geschichte der Reichswaldgenossenschaft Kaiserslautern," in *Jahrbuch zur Geschichte von Stadt und Landkreis Kaiserslautern*, vol. 8/9, 37 vols. (Otterbach: Franz Arbogast Verlag, 1971), 35–66. P. 55.

<sup>340</sup> Hotz, *Pfalzen und Burgen der Stauferzeit: Geschichte und Gestalt*. Pp. 159-160.

appointed *podestae* in the city of Florence in 1162 who ruled alongside the consuls. These *podestae* were non-natives of the city and were expected to oversee the internal security and justice of the city<sup>341</sup>—drawing a direct parallel to the ministeriales commissioned in the German Kingdom, some of whom would later rule in Italy as well. Within the Reichsland of Lautern, the first ministerialis to be mentioned by name was Gottfried von Lautern, in 1162.<sup>342</sup> Although only sparse records exist regarding the political involvement of the ministeriales of Lautern prior to the extensive activities of Heinrich I von Lautern beginning in 1184,<sup>343</sup> the ministeriales occupied an important role within the written record. In fact, their prominence as administrators of the royal and dynastic estates during the Salian and Hohenstaufen periods is substantial considering that nearly 80 percent of the witness lists of issued charters were composed of ministeriales by the late 1150s.<sup>344</sup>

The development of specific ministeriales of the second half of the 12<sup>th</sup> century and the majority of the 13<sup>th</sup> will be discussed in Chapter 3, with regard to the development of the palace in Lautern in order to weave the narrative of the ministeriales directly into the history of Lautern and the construction history of the primary sites of this project. The spectacular story of the ministeriales provides an exciting perspective on medieval society during the High Middle Ages, specifically along the Rhine and in the German Palatinate, for which different aspects of their political and social involvement must be analyzed. One such component was the construction, supervision, and habitation of castles whose symbolism is explored in the following section.

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<sup>341</sup> Michael Church, “Florentine Palaces, Costly Signaling, and Lineage Survival” (Doctor of Philosophy Anthropology, Albuquerque, University of New Mexico, 2012). P. 60.

<sup>342</sup> Keupp, *Dienst und Verdienst: Die Ministerialen Friedrich Barbarossas und Heinrichs VI.* P. 220.

<sup>343</sup> *Ibid.* P. 222.

<sup>344</sup> Thomas Zotz, “Fürsten und Ministerialen am Stauferhof,” in *König, Reich und Fürsten im Mittelalter*, ed. Oliver Auge, Beiträge zur Geschichte der Universität Greifswald 12 (Stuttgart: Franz Steiner Verlag, 2017), 75–90. P. 80.

## 2.4 Architecture, Landscapes, and Social Status

The previous section discussed the development of the ministeriales from the 9<sup>th</sup> to the mid-12<sup>th</sup> centuries highlighting their social progression and perception in society. As administrators of the imperial and dynastic estates, they were entrusted with the most valuable lands belonging to the reigning monarchs. The significance of these lands was found not only in the fact that the emperors and kings frequented them with their large entourages. Rather, these territories communicated specific messages from the monarchs in their absence. The sort of message depended upon the region and was intended for specific audiences. The suppression of the Saxon lands by the Salian Emperors Conrad II, Henry III, and Henry IV was achieved by constructing castles and placing foreign administrators in the heartland of their opposition. This not only served to communicate to the Saxons and defectors within the *nobiles* who was in charge, but also to the common folk via the construction of castles and their administration by ministeriales from loyalist lands along the middle Rhine. The architectural elements exhibited at the castles in the service of the monarchs served specific purposes by communicating a control of resources, and establishing a stone monument to their hegemony. This use of architecture as a system of signs is a form of ‘language’ that was readily understood by medieval contemporaries in which specific building types served as the rhetoric of the builder.<sup>345</sup> As the monarchs were not always present, their buildings and administrators served as their surrogates, maintaining the policies of the absent monarch. Thus, the rhetorical effect of the castles and other buildings erected by the monarchs not only signaled the statements they wished other to perceive, but also elevated the ministeriales inside these buildings as extensions of their hegemony.

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<sup>345</sup> Matthias Untermann, *Der Zentralbau im Mittelalter: Form, Funktion und Verbreitung*, 1st ed. (Darmstadt: Wissenschaftliche Buchgesellschaft, 1989). P. 47.

### 2.4.1 Medieval Construction

In order to properly explain the connection between architecture, landscape, and status it is important to first discuss medieval construction practices. As the architectural investigations are of foremost importance in this project, this section will explore the various methods and techniques associated with wood and stone construction of the 11<sup>th</sup> to 13<sup>th</sup> centuries, with an emphasis upon those features exhibited at the four primary sites.

#### 2.4.1.1 Building with Wood

Wood construction in the Middle Ages often calls to mind the iconic half-timber (*Fachwerk*) buildings scattered throughout Western Europe, but these represent just a portion of the different styles of medieval wooden architecture. Provided the multitude of forests in the HRE, wood was a readily available resource for the construction of both secular and ecclesiastical building types. The two most commonly used sorts were oak and fir, whereas spruce, pine, and larch were rarely used for the construction of weight bearing elements.<sup>346</sup> During the High Middle Ages, the most plentiful tree types within the region of Southwest Germany—encompassing both the former Duchy of Swabia and the Palatinate—were red beech and oak, though around the year 1300 A.D. both populations had been drastically reduced.<sup>347</sup> The deforestation of the period between 1000 A.D. and 1250 A.D. was particularly intense,<sup>348</sup> due in part to the changes in climate but also to the many building projects. As the kings and emperors of the HRE traveled from palace to palace rather than stay at a single capital city, these buildings had to be constantly adapted and maintained. Additionally, the royal and familial estates were augmented with other buildings such as castles and monasteries, especially in the 12<sup>th</sup> and 13<sup>th</sup> centuries—the specific cases will be described in the following chapter.

Due to the many construction projects, wood needed to be transported to the sites both as integrated building material and as material for constructing tools, such as pulleys and scaffolds.<sup>349</sup>

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<sup>346</sup> Matthias Untermann, “I. Holzbau,” in *Handbuch Der Mittelalterlichen Architektur* (Darmstadt: Wissenschaftliche Buchgesellschaft, 2009).

<sup>347</sup> Manfred Rösch and Marion Heumüller, *Vom Korn der frühen Jahren: Sieben Jahrtausende Ackerbau und Kulturlandschaft*, Archäologische Informationen aus Baden-Württemberg, Heft 55 (Esslingen: Landesamt für Denkmalpflege, 2008). Pp. 56-57.

<sup>348</sup> Goosse et al., “The Origin of the European ‘Medieval Warm Period.’” P. 103.

<sup>349</sup> Hildegard Höfer, “V. Holzbearbeitung,” in *Der mittelalterliche Baubetrieb nördlich der Alpen in zeitgenössischen Darstellungen*, ed. Günther Binding and Norbert Nussbaum (Darmstadt: Wissenschaftliche Buchgesellschaft, 1978), 50–57. P. 50.

The transportation of wood was conducted by floating the logs down a river, or tributary, in order to avoid the high-energy process of transporting them wagon over long distances. This process of floating the wood was especially common for fir trees, though oak could only be transported over short distances. Sometimes rafts were constructed using more flexible wood, such as hazelnut, to bind the fir logs to one another.<sup>350</sup> The transportation of wood along water routes was also the preferred method for transporting stone, yet in both cases, the materials had to be brought from the water to the construction sites. For this process, the medieval builders used two-axeled wagons drawn by horses as detailed in numerous depictions from the 11<sup>th</sup> to 16<sup>th</sup> centuries. Once at the site, the materials were brought by hand using various carrying techniques to optimize each trip.<sup>351</sup> An important piece of information regarding the use of wood is that the sawmill had only been invented in the 13<sup>th</sup> century<sup>352</sup> in France and was introduced into the HRE around 1320 A.D. Thus, all processing of the wood was previously done by hand with axes, saws, and hatchets, requiring skilled craftsmen who operated as carpenters and cabinet makers. These craftsmen were at times even monks or lay brothers of monasteries, as indicated in manuscript from the year 1111 A.D. in Citeaux, France.<sup>353</sup>

Although different types of wooden buildings existed in the Middle Ages, such as log cabins and houses with boarded walls, the prevailing type was the half-timber construction. These half-timbered buildings are very economical and even replaced stone construction in France by the 6<sup>th</sup> century.<sup>354</sup> An astounding number of such buildings have been dated to the 11<sup>th</sup> and 12<sup>th</sup> centuries, which were said to have been built in a high quality fashion throughout the HRE. They could be built atop stone base, or free standing. In either case, the half-timber buildings could contain two to three floors, and included regional differences in design. They consisted of a sort of scaffold of beams in various sizes bound together using chalk-mortar or a mix of mud and straw known as *Lehm*. These inner portions of mortar or *Lehm* were then held in place by a lattice of wooden sticks,<sup>355</sup> known as *wattle and daub* in English.

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<sup>350</sup> Untermann, "I. Holzbau." P. 246.

<sup>351</sup> Peter Detusch and Norbert Nussbaum, "VII. Materialtransport," in *Der mittelalterliche Baubetrieb nördlich der Alpen in zeitgenössischen Darstellungen*, ed. Günther Binding and Norbert Nussbaum (Darmstadt: Wissenschaftliche Buchgesellschaft, 1978), 62–79. Pp. 62-68.

<sup>352</sup> Untermann, "I. Holzbau." P. 247.

<sup>353</sup> Höfer, "V. Holzbearbeitung." Pp. 50-51.

<sup>354</sup> Untermann, "I. Holzbau." Pp. 250-251.

<sup>355</sup> *Ibid.* Pp. 252-256.



The use of wooden scaffolding is well documented for the Middle Ages and the holes (*Rüstloch*) in which the wooden scaffolds were placed within the stone edifices of medieval buildings can still be seen. These are at times confused with putlog holes (*Balkenloch*), where beams holding the floorboards were placed. By the second half of the 12<sup>th</sup> century, construction projects were using projecting scaffolding (*Auslegergerüst*) that stood in front of the building and were only attached at certain points. By the late 14<sup>th</sup> century, rod scaffolding (*Stangengerüst*) was being used as indicated in numerous depictions dating from the Late Medieval Period. Both types were placed using pre-made holes in the masonry to anchor the scaffolds. Other methods for scaffolding such as the use of trestles (*Bockgerüst*) and dropped ceilings (*Hängeboden*) were only seldom documented.<sup>356</sup>

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<sup>356</sup> Günther Binding, "VI. Baugerüste," in *Der mittelalterliche Baubetrieb nördlich der Alpen in zeitgenössischen Darstellungen*, ed. Günther Binding and Norbert Nussbaum (Darmstadt: Wissenschaftliche Buchgesellschaft, 1978), 58–61. P. 58.

### 2.4.1.2 Building with Stone

Stone was the dominant material for elite structures—both secular and ecclesiastical—guaranteeing longevity and allowing patrons to build higher than with wooden structures. However, the pecuniary and energy expenditures were considerably higher for such buildings than for those made of wood and clay. Due to the sheer weight of stone, quarries needed to be nearby in order to reduce both costs and the time required for the construction.<sup>357</sup> Provided the domination of stone buildings during the High Middle Ages, wood was primarily used for constructing roofs, bridges, and engineering equipment.<sup>358</sup> The four primary sites of this project are located in the forested hills of the German Palatinate, punctuated with large rock outcrops that at times form elevated platforms. It was atop one of these outcrops that Castle Hohenecken was built, using the stone from the rock outcrop as the main source of material for construction. The same applied to Castle Beilstein, though the outcrop is not positioned on such an elevated height as at Castle Hohenecken. Castle Perlenberg is more similar to Castle Beilstein in terms of position as it is not nearly as high up as Castle Hohenecken, yet does not share the protruding axe-shaped rock formation as seen at Castle Beilstein. Even the Palace of Lautern was built upon one of the four rock plateaus in the town and certainly some of the rock was quarried for the site as there are subterranean levels dating from the 11<sup>th</sup> century and before. The rock plateaus in the town were transected by the Lauter River, over which multiple bridges had to be built in order to traverse the river and gain access to the different parts of the town. Additionally, the monastery of Lautern was under construction at the same time as the palace<sup>359</sup> indicating the use of the Lauter River—which flows between the two sites—as an important transportation route for wood, but also for stone.

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<sup>357</sup> Matthias Untermann, “II. Steinbau,” in *Handbuch Der Mittelalterlichen Architektur* (Darmstadt: Wissenschaftliche Buchgesellschaft, 2009). Pp. 269-270.

<sup>358</sup> Höfer, “V. Holzbearbeitung.” P. 50.

<sup>359</sup> Jürgen Keddigkeit, Martin Wenz, and Matthias Untermann, “Kaiserslautern, St. Maria Hospital, später Premonstratenserstift bzw. -kloster, dann Kollegiatstift St. Marien und St. Martin,” in *Pfälzisches Klosterlexikon: Handbuch der pfälzischen Klöster, Stifte und Kommenden*, ed. Jürgen Keddigkeit et al., 1st ed., vol. 2 H-L, 5 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern in Verbindung mit dem Institut für Europäische Kunstgeschichte der Ruprecht-Karls-Universität Heidelberg, 26.2 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2014), 370–413. P. 386.

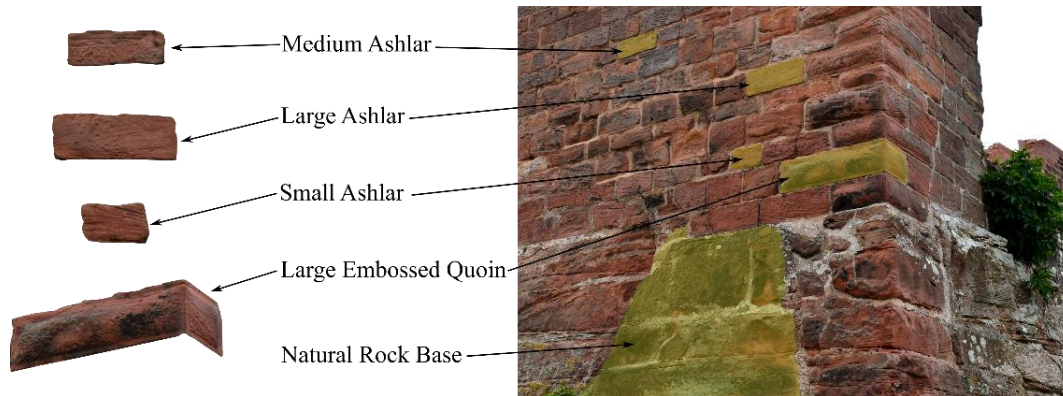


Figure 3: Common stone sizes found at the primary sites.

Something that three of the primary sites have in common, is a rather plentiful presence of embossed ashlars (*Buckelquader*), shown in Figure 3. Castle Beilstein is the only exception as embossed ashlars are normally found on the facades of buildings, of which nothing remains at the site. These types of ashlars were common in the 12<sup>th</sup> and 13<sup>th</sup> centuries, beginning in the western portions of the HRE and later extending eastwards. However, these were not the only types of stones in use. Others include large, medium, and small ashlars (*Quader*), quarry stone (*Bruchstein*), corner ashlars (quoins), and even megalithic ashlars.<sup>360</sup> This latter group was discovered at the Palace of Lautern as discussed Section 3.3.1.3. Placing these large stones in the courses constituting the walls required powerful pulley systems, but also special techniques for attaching or latching the pulleys to the stones. These pulley systems made use of large walking wheels to draw heavy stones to the apical courses of walls.<sup>361</sup>

A number of techniques existed for lifting heavy stones to the desired position, including stone pincers (*Steinzange*), which operated essentially as large pliers to lift the stone using its own weight to close the pliers into premade holes on opposite sides of the stone. Two other techniques existed involving metal wedges called *Wolf* (Lewis) and *Spreizwolf*,<sup>362</sup> in which a trapezoid-shaped hole was meticulously carved into the top of the stone at its center, with the small side of the trapezoid forming the hole (Lewis Hole). This allowed for two metal wedges to be placed in the hole that then splayed into the angles of the trapezoid when a third wedge was placed between them, locking the pulley to the stone. Such techniques date back to the 1<sup>st</sup> century A.D. as described by

<sup>360</sup> Untermann, "II. Steinbau." Pp. 272-274.

<sup>361</sup> Detusch and Nussbaum, "VII. Materialtransport." P. 70.

<sup>362</sup> Untermann, "II. Steinbau." P. 272.

Heron of Alexandria, and can lift astounding weights. For example, a 2800 kilogram cubed-capital dating to the 11<sup>th</sup> century discovered at the ruins of the Benedictine Monastery of Limburg in the German Palatinate exhibited a Spreizwolf hole.<sup>363</sup> Getting the smaller stones to a construction site was still conducted by men wearing v-shaped backpacks made of wood in which quarry stone and mortar could be brought on site.<sup>364</sup> Other techniques of carrying stone included stretchers with which stones could be taken by two men.<sup>365</sup>

Although many sites used stone specifically quarried for the purpose of the construction efforts particular to the site, stones were sometimes re-used from other places. These recycled objects, known as *spolia*, usually had forms that were typical to other periods but were nevertheless used for a multitude of purposes.<sup>366</sup> A clear example of this is presented in Section 3.4.2 regarding the Cistercian Abbey of Otterberg that reused embossed ashlar from the nearby Castle Otterburg that had been razed simultaneously to the abbey's construction. The spolia from the former castle were used purely in a utilitarian fashion as they formed the bases the stone piers in the central nave of the abbey. The embossed surfaces of the exteriors of the stones had been finely worked for the former castle but were then hidden by the floor.<sup>367</sup> The use of spolia from other places for reuse was discovered and catalogued during the architectural analyses of the excavation of the Palace of Lautern from 2010-2011.<sup>368</sup> There are some peculiarities associated with the working of the stones at Castle Perlenberg that will be discussed in Section 4.6

Another important feature regarding stone construction are the mason's marks (*Steinmetzzeichen*) indicating specific masons or workshops who operated at a site. However, these are often rather cryptic and numerous masons had similar marks despite representing different

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<sup>363</sup> Dieter Barz, "Hebewerkzeugspuren an Burgen mit Buckelquader Mauerwerk im Elsass und in der Pfalz," in *Etudes Medievales: Archeologie et Histoire*, vol. IV 1986-1987, Societe d'histoire et d'archeologie de saverne et environs (Saverne: Societe d'histoire et d'archeologie de saverne et environs, 1987), 127-57. P. 131.

<sup>364</sup> Detusch and Nussbaum, "VII. Materialtransport." P. 66.

<sup>365</sup> Norbert Nussbaum, "IX. Katalog," in *Der mittelalterliche Baubetrieb nördlich der Alpen in zeitgenössischen Darstellungen*, ed. Günther Binding and Norbert Nussbaum (Darmstadt: Wissenschaftliche Buchgesellschaft, 1978), 86-279. 10<sup>th</sup> century example on P. 91, Z25, Nr. 1a. 12<sup>th</sup> century example on P. 105, Z 39, Nr. 18. 13<sup>th</sup> century example on P. 157, Z 89, Nr. 114.

<sup>366</sup> Untermann, "II. Steinbau." P. 271.

<sup>367</sup> Jürgen Keddigkeit et al., "Otterberg, St. Maria Zisterzienserabtei Otterburg," in *Pfälzisches Klosterlexikon: Handbuch der pfälzischen Klöster, Stifte und Kommenden*, ed. Jürgen Keddigkeit et al., 1st ed., vol. 3 M-R, 5 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern in Verbindung mit dem Institut für Europäische Kunstgeschichte der Ruprecht-Karls-Universität Heidelberg, 26.3 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2015), 524-87. P. 564.

<sup>368</sup> Aquilante De Filippo, "Bezeichnung und Kategorisierung der Quadern," Spolienkatalog, Kaiserpfalz Kaiserslautern, Ausgrabung 2010-2011 (Universität Heidelberg: Institut für Europäische Kunstgeschichte, January 14, 2012).

workshops.<sup>369</sup> Furthermore, some buildings had dozens if not hundreds of mason's marks—560 unique marks were discovered at the Abbey of Otterberg by researcher Michael Werling.<sup>370</sup> In any event, these marks indicated the presence of skilled craftsmen on site who worked hand in glove with the construction managers and architects.

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<sup>369</sup> Untermann, "II. Steinbau." P. 275.

<sup>370</sup> Keddigkeit et al., "Otterberg, St. Maria Zisterzienserabtei Otterburg." P. 565.

### 2.4.1.3 Planning and Managing the Construction of a Castle

Vital to any building project is a plan of how to conduct the construction process, as architecture is dependent upon design. Castles were no exception, and plans needed to be well-developed due to a number of obstacles such as the locations of the sites, the size of the potential building area, the access to building materials, and the availability of workers. Although these are obstacles mostly associated with the utilitarian aspect of function, there were other obstacles to be overcome, such as access to specific workshops, the availability of imported stone types, and the intended effect of the architecture upon those who see it. However, detailed plans regarding the floor plans and vertical projections of a building were not introduced until the early 13<sup>th</sup> century in northern France. Thus, medieval construction projects progressed in piecemeal fashion, often beginning with the central component, such as the inner castle (*Kernburg*), before radiating outwards. Additional components would be added as construction continued, bearing in mind the aforementioned obstacles. This is a particularly poignant point with regard to the cathedrals and larger buildings, such as palaces and town fortifications, as the plans were often subject to change.<sup>371</sup>

A number of factors could impact a change in design, including a shift in the desired function of a building, a new patron, the death of the patron, etc. In any event, a change in design is often recognizable, especially when the style of architecture changes along the same wall.<sup>372</sup> Certain architectural features such as balconies or portals could be altered or closed based upon changes in the weather or alterations required for more defensive purposes. These indicate a change in design but also have an impact upon the how the site is received by visitors or passers by. This is an important aspect to consider, as castles and palaces were elite buildings

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<sup>371</sup> Untermann, "II. Steinbau." Pp. 282-284.

<sup>372</sup> Ibid. Pp. 284-285.

### 2.4.2 Introduction to Costly Signaling Theory (CST)

Costly Signaling Theory was originally developed by biologists and economists to explain specific behaviors and attributes communicated by organisms that have high costs in terms of energy, time, and other resources, yet may lack any apparent benefits.<sup>373</sup> Within biology, the theory was used to assess mating and alliances in competitive situations. A biological signal is an attribute—typically genetic or phenotypic—that may be difficult to assess individually, but the ramifications of the signal upon others has important effects on the social interactions with the signaler.<sup>374</sup> Costly signaling could provide a mechanism for cooperation between groups, or within a group, which is independent of repeated interaction.<sup>375</sup> In other words, a constant interaction or previous knowledge of the individual is not necessary for another individual to favor a cooperation with the signaler—in this case the builder of a castle or the ministerialis in charge of the castle. In contrast, a poor signal could lead a receiver to avoid any cooperation with the signaler, requiring an exploration into what differentiates a poor signal from a good signal.

Within economics, CST was applied to the direct cooperation between employers and employees, focusing on which signals people give to potential employers regarding their skillsets and experience in a specific area of work. In turn, the employer then decides whether or not to take a risk in hiring and providing the person with a wage. In absence of any direct information transmitted by the applicant, the process resembles more of a lottery.<sup>376</sup> Once hired, certain observable traits are recognized by the employer resulting in a continuation of trust, an advancement, or firing. In this regard, CST is more applicable to the direct relationship between the ministeriales in service of the kings and emperors. Provided their lack of nōbilis heritage, trust had to be gained based upon their individual and observable qualities rather than those of their ancestors. Both the biological and economic applications of CST are useful for understanding the construction research of the primary sites administered by the ministeriales, as their access to resources that facilitated the construction of elaborate castles was a direct consequence of their relationship with the kings and emperors.

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<sup>373</sup> Church, “Florentine Palaces, Costly Signaling, and Lineage Survival.” P. 4. Claudia Glatz and Aimée M Plourde, “Landscape Monuments and Political Competition in Late Bronze Age Anatolia: An Investigation of Costly Signaling Theory,” *Bulletin of the American Schools of Oriental Research* 361 (2011): 33–66. P. 35.

<sup>374</sup> Herbert Gintis, Eric Alden Smith, and Samuel Bowles, “Costly Signaling and Cooperation,” *Journal of Theoretical Biology* 213, no. 1 (November 2001): 103–19, <https://doi.org/10.1006/jtbi.2001.2406>. P. 104.

<sup>375</sup> *Ibid.* P. 116.

<sup>376</sup> Michael Spence, “Job Market Signaling,” *The Quarterly Journal of Economics* 87, no. 3 (August 1973): 355, <https://doi.org/10.2307/1882010>. P. 357.

Within anthropology, CST has been analyzed on a single level, i.e. the level of individuals or families.<sup>377</sup> The signaling that occurred between ministeriales of this project was at multiple levels, including individual-group signaling. Signals can take many forms, yet always advertise hidden capabilities such as access to resources, knowledge, or kin groups. The quality of these signals are assessed by the receivers with regard to these hidden capabilities that may be of interest. Additionally, it is in the best interest of the signaler to project themselves as wealthier and stronger than they actually are which constitutes an act of deception if left unchecked—similar to the analogy of the double garage-door described in Section 2.1.1. It is therefore also in the best interest of the receiver to check the authenticity or quality of the signal in order to determine honesty or deception.<sup>378</sup> This is applicable to external signals, such as the castles of the nobiles or ministeriales, when attempting to forge alliances or impress upon an outsider one’s own control of resources. The application of CST to construction research is particularly helpful in the circumstance where specific historical documentation is lacking. The utilitarian function of an architectural feature may be more apparent, such as a large wall for keeping out unwanted guests—as interpreted by Werner Kyllinger the early 17<sup>th</sup> century, though the exact dimensions of the wall may have other, non-utilitarian functions. As discussed in Section 2.1.1, utility and representation are intertwined, though one of the two aspects may not be immediately apparent at first glance, perhaps even requiring a closer investigation of the landscape and any available historical documentation. Identifying both functions of a site is dependent upon interpretations supported by evidence, produced by architectural, spatial, and historical analyses, which in turn allows for a more accurate interpretation of how CST applies to a specific site.

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<sup>377</sup> LuAnn Wandsnider, “Public Buildings and Civic Benefactions in Western Rough Cilicia: Insights from Signaling Theory,” in *Rough Cilicia: New Historical and Archaeological Approaches*, ed. Michael C. Hoff and Rhys F. Townsend (Oxford: Oxbow Books, 2013), 176–88, <https://doi.org/10.2307/j.ctvh1dhr3>. P. 180.

<sup>378</sup> *Ibid.* P. 180.



### 2.4.2.1 CST in Archaeology and Architectural History

In the 1990s, the theory began to gain traction in the field of archaeology regarding research of stelae during the Terminal Period of the Central American Maya culture.<sup>379</sup> Since then, the theory has been applied to various other cultures in an effort to understand the organization of buildings, their position within the landscape, and their functions within society. Three projects published within the last decade are particularly relevant for this project regarding the application of CST to architecture. The first is a 2011 article on landscape monuments and political competition in late Bronze Age Anatolia, focusing upon monuments built by the Hittites;<sup>380</sup> the second is a 2012 dissertation regarding Florentine palaces and lineage survival during the Late Middle Ages and early Renaissance periods;<sup>381</sup> and the third is a 2013 article regarding public buildings and civic benefactions in Rough Cilicia, Turkey during the Hellenistic-Roman period.<sup>382</sup> All three texts bear striking similarities to this research with regard to the construction of elite buildings and landscapes, emphasizing their inception, the builders of the sites, their functions, and their environmental positions.

The case of the Hittite monuments is similar to the castles of the German Palatinate, because many of the Hittite monuments in the landscape were located in remote but strategic areas along communication routes and topographic boundaries.<sup>383</sup> This same phenomenon is exhibited in the Palatinate, particularly regarding the location of the palace in the *Lauterer Senke* (Lauterer Depression) atop a rock plateau north of the Lauter River,<sup>384</sup> between the mountainous Palatinate forest to the south and the flatter *Nahegau* to the north, and along the road leading from Metz to Mainz.<sup>385</sup> Another feature that the Hittite monuments share in common with the CITADEL case study sites are the diversity of political voices that are represented. Not only were the kings and emperors interested in the development of the palace and neighboring castles as physical

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<sup>379</sup> Glatz and Plourde, "Landscape Monuments and Political Competition in Late Bronze Age Anatolia: An Investigation of Costly Signaling Theory." P. 38.

<sup>380</sup> Ibid. P. 33.

<sup>381</sup> Church, "Florentine Palaces, Costly Signaling, and Lineage Survival." P. iv-v. Abstract.

<sup>382</sup> Wandsnider, "Public Buildings and Civic Benefactions in Western Rough Cilicia: Insights from Signaling Theory."

<sup>383</sup> Glatz and Plourde, "Landscape Monuments and Political Competition in Late Bronze Age Anatolia: An Investigation of Costly Signaling Theory." P. 35.

<sup>384</sup> Dieter Barz et al., "Kaiserslautern," in *Pfälzisches Burgenlexikon*, ed. Jürgen Keddigkeit, Ulrich Burkhart, and Rolf Übel, 3rd ed., vol. 3 I-N, 4 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 12.3 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, n.d.), 102–21. P. 103.

<sup>385</sup> Keddigkeit, *Kleine Geschichte der Stadt Kaiserslautern*. P. 15.

manifestations and symbols of their dynasty, so too were the ministeriales who lived among and administered the sites. Furthermore, the construction of monuments represented a medium for political competition regarding a ruler's control of resources.<sup>386</sup> Glatz and Plourde view the investment of valuable materials as a guarantor for the honesty of the message, emphasizing that the construction of expensive monuments indicated an unsettled political environment requiring statements of strength. The authors continue by stating that,

*'...signaling one's strength within the confines of one's capital may not guarantee the desired target audience or elicit the desired response from subordinates or opponents,'* and that such monuments were, *'a way of indicating to their competitors the amount of labor and other resources relevant to political and military contests that they commanded in order to potentially solicit submission or at least deter aggression.'*<sup>387</sup>

Thus, the specific signal and the intended audience are of immense importance when determining the effectivity of the representative functions of a building. A factor which complicates an otherwise straight forward question, regards the potential incentive of the various parties involved to lie to one another regarding their control of resources, as well as economic, political, and military strength.<sup>388</sup> In Lautern, this issue does not seem to have concerned the kings and emperors as much as the ministeriales who continued to build their castles well into the first half of the 13<sup>th</sup> century. In the case of castles Hohenecken and Beilstein, a competition is apparent at multiple levels. Members of both families were royal or imperial administrators at the palace at certain points in time, while simultaneously competing for regional influence. However, the von Lautern-Hoheneck family had a decisive advantage due to their recurring loyalty to the more successful rulers at the turn of the 13<sup>th</sup> century and ability to remain loyal to the senior monarch in the midst of a filial insurrection.

A 2012 dissertation regarding CST and Florentine palaces also draws similar conclusions regarding the construction of palaces to represent one's control of resources. The work maintains that it is important to take into account cultural, economic, and political context when comparing

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<sup>386</sup> Glatz and Plourde, "Landscape Monuments and Political Competition in Late Bronze Age Anatolia: An Investigation of Costly Signaling Theory." P. 35.

<sup>387</sup> Ibid. P. 36.

<sup>388</sup> Ibid. P. 37-38.

monuments across time.<sup>389</sup> Thus, the comparison between the Florentines of the 13<sup>th</sup> century and the ministeriales in Lautern during the same phase is a more reliable comparison given the similar political events that affected both regions concurrently. Another important contribution from the work is the factor of time—namely, that the costly signal may change over time.<sup>390</sup> The fact that membership to the Florentine elite from 1282 until 1532 was more fluid and open to change, is another key similarity to the ministeriales of Lautern—a factor for which Michael Church considers to make it extremely likely for CST to be relevant.<sup>391</sup> An important observation regarding the spending of resources was noted by Thorstein Veblen in the late 19<sup>th</sup> century regarding the difference between those of ‘old money’ and the *nouveau riche*. Veblen maintained that wasteful expenditures of time, money, and conspicuous displays of a lack of interest in economic profit could enhance the social status for those whose wealth was not already common knowledge.<sup>392</sup> The analogous groups of the 12<sup>th</sup> to 13<sup>th</sup> centuries, were the *nōbiles* who represent the ‘old money’, and the ministeriales who were the *nouveau riche* of the High Middle Ages in the Kingdom of Germany. Regardless whether a signaler was of the ‘old’ or ‘new money’, a requirement was the consistency of the signal and whether or not the signal fulfilled its purpose, as such efforts could be misinterpreted due to perception errors.<sup>393</sup> Therefore, the strategy behind the specific building types functioning as architectural signals at a castle had to be unequivocally designed to illicit a specific response from the target audience. This could be extended in which one element could be used to target multiple audiences, eliciting different, yet expected, responses from each group.

The article regarding Rough Cilicia from 2013 extends the analysis of signals between elites and non-elites, and the support of various public institutions on behalf of certain signalers.<sup>394</sup> This is particularly relevant for this project as the ecclesiastical realm—consisting of bishoprics and monasteries—had a vested interest in forging alliances with specific elites. The activities of the various monasteries with the secular powers represented an interaction of many layers of the social

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<sup>389</sup> Church, “Florentine Palaces, Costly Signaling, and Lineage Survival.” P. 3.

<sup>390</sup> *Ibid.* P. 5.

<sup>391</sup> *Ibid.* P. 6.

<sup>392</sup> Rebecca Bliege Bird and Eric Alden Smith, “Signaling Theory, Strategic Interaction, and Symbolic Capital,” *Current Anthropology* 46, no. 2 (April 2005): 221–48, <https://doi.org/10.1086/427115>. P. 222. For more information on Veblen’s theory see: Thorstein Veblen, *The Theory of the Leisure Class*, Oxford World’s Classics (Oxford: Oxford University Press, 2007).

<sup>393</sup> Church, “Florentine Palaces, Costly Signaling, and Lineage Survival.” P. 16.

<sup>394</sup> Wandsnider, “Public Buildings and Civic Benefactions in Western Rough Cilicia: Insights from Signaling Theory.” P. 176.

fabric of the Reichsland of Lautern. As the abbots and their brothers represented ecclesiastical institutions independent of the bishoprics, their activities did not need approval from the bishops of Worms and of Speyer who controlled the ecclesiastical interests of the area outside the control of the monasteries. The prebendaries of the bishoprics included members of the ministerialis and nōbilis families, whose patriarchs were engaged in business with the monasteries. Additionally, the laypeople working at the monasteries were relatives of those living in the neighboring villages located within the enfeoffed lands of the ministeriales, who were in turn responsible for the patronage of the local churches mandated by the bishops. Furthermore, the ministeriales were commissioned by the kings and emperors, who also provided protection for the monasteries, granted final approval for the trade of lands within the Reichsland of Lautern, and approved of the election of the bishops—some of whom were members of ministeriales families. Therefore, the monarchs were the supreme benefactors and the area around the Palace of Lautern served as a forum for all levels of society. Their imperial processions and hosting of feasts are not unlike the actions of the monarchs of the Hellenistic eastern Mediterranean who also contracted large forums.<sup>395</sup> The success of these events and the construction of these areas were to the benefit of the monarchs but also to the ministeriales who facilitated their success, in contrast to the bishops, abbots, and other nōbiles who were largely visitors. This represents a piggy-back effect as has been seen in the development of forums in the Hellenistic Period between the local lords and the monarchs. Historically, the phenomenon of the ministeriales and their involvement in the signaling abilities of some of the most powerful European monarchs is not restricted to them alone. Yet in contrast to the study of the Hellenistic Period, a vast amount of written documentation still exists for the ministeriales and their societal endeavors. This article also stresses the importance of the landscape, as the article concerning the Hittite monuments had done. The neighboring environment could have a significant effect upon what could be seen and how populations—or in this case audiences—physically approached a site. Therefore, it is important to also consider the landscape as an essential component of an architectural analysis of this nature.

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<sup>395</sup> Ibid. P. 177.

### 2.4.3 Identifying Elite Landscapes

Areas that displayed an individual's sovereignty were not only defined by the architectural features they exhibited, but also by the actions that occurred within the realm of their jurisdiction. In the studies of art history and architectural history, the focus on castles and palaces is based upon the perception of their specific location and their ability to represent an individual's, or a group's, intended portrayal of sovereignty.<sup>396</sup> This area of research has been exceptionally well studied for the Early Modern Period, encompassing the Renaissance to Baroque periods, and the results of this research have come to define how the architectural representation of status is to be interpreted. However, it is necessary to take a different approach when analyzing the castles and palaces of the High Middle Ages,<sup>397</sup> as they were products of a different time and instrumental in the interpretation of their contemporaneous society. Applying interpretations of architectural features from later periods, or altogether ignoring the representative functions of the medieval structures serves only to isolate them from their fascinating historical and architectural context. Instead, the entire location of a site must be analyzed in order to understand the placement of a building in order to interpret its architectural function.

The placement of a castle, and likewise of a palace, was of immense importance due to the strategies and patterns associated with landholding. Analyzing the immediate surroundings of a site, in absence of an investigation of the landholding strategies, cannot be described as holistic.<sup>398</sup> After all, the kings and emperors of the 11<sup>th</sup> and 12<sup>th</sup> centuries made modifications to the royal estates as well as their own dynastic estates, as though the two were interchangeable. The agents of this change were the ministeriales, as outlined in the rights attributed to them in Bamberg, Weissenburg, and Worms discussed in Section 2.3.3.2. Ideally, at least two sites should be compared to one another following the same process of analyzing the social networks from the charter proceedings, the architecture of the sites, and the surrounding landscapes. This process is especially useful when

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<sup>396</sup> Matthias Untermann, "Die architektonische Inszenierung von Orten der Herrschaft im Mittelalter," in *Deutsche Königspfalzen: Beiträge zu ihrer historischen und archäologischen Erforschung*, vol. 8 Places of Power-Orte der Herrschaft-Lieux du Pouvoir, Veröffentlichungen des Max-Planck-Instituts für Geschichte 11/8 (Göttingen: Vandenhoeck & Ruprecht, 2007), 17–33. P. 17.

<sup>397</sup> Ibid. P. 18.

<sup>398</sup> Oliver Creighton, "Castle, Landscape and Townscape in Thirteenth-Century England: Wallingford, Oxfordshire and the 'Princely Building Strategies' of Richard, Earl of Cornwall," in *Rank and Order: The Formation of Aristocratic Elites in Western and Central Europe, 500-1500*, ed. Jörg Peltzer, 1st ed., vol. 4, 4 vols. (Ostfildern: Jan Thorbecke Verlag, 2015), 309–41. P. 310.

applied to sites built by the same rulers at roughly the same time.<sup>399</sup> Investigations of the surrounding landscapes yield compelling results that both enhance the interpretation of the extent of a location's broadcasting power—i.e. the visibility and symbolism of a site within the surrounding landscape—as well as the landholding strategies that may not have been recorded in medieval proceedings. As with all things mentioned thus far in this project, different investigations may produce new results, yet when combined, a more convincing interpretation can emerge.

The existence of *forestae* and parks associated with the estate of a castle or palace was mentioned in Section 2.2.4, primarily referring to the parks near the royal palaces. This was an inter-European phenomenon among the elite architectural endeavors of the *nobiles*, as was excellently described in the case of Wallingford castle, whose deer park lay 10 kilometers away.<sup>400</sup> This correlated to anywhere from a third to a half-day journey for the kings and their entourages. In the case of the Reichsland of Lautern, a 10 kilometer journey from the palace would include the immediate environs around castles Beilstein, Hohenecken, and Perlenberg, and multiple monasteries. Besides the various types of parks associated with the palace, the road and water infrastructures also played major roles. Waterways, meadows, fishponds, and gardens were essential to the overall image of a castle, representing symbols of privilege and demonstrating the working apparatus of the management of the estate.<sup>401</sup> All of these additions and earthworks necessitated a considerable cost to realize them, requiring an economic input from some source. The exact source of funds necessary for such endeavors varied, dependent upon the factors associated with the builder's status and access to resources.

Particularly in the case of the *nobiles*, economic success was bound to the general knowledge and perception of their status, which manifested itself in the acquisition of inherited lands, gifts from other lords, and the bequeathal of property in the aftermath of a feud. However, the enhancement of social perception and access to resources followed an altogether different trajectory for the *ministeriales*, who could neither inherit lands, nor were gifted anything other than an *enfeoffment* on the duration of an individual's lifespan prior to the mid-13<sup>th</sup> century. Thus, long-term strategies of *ministeriales* were inextricably linked to the policies of the reigning monarchs, who could *enfeoff* them with rights and properties, in addition to clever positioning as

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<sup>399</sup> *Ibid.* P. 310. This process is described with the example of the construction of castle Wallingford under the Richard of Cornwall.

<sup>400</sup> *Ibid.* P. 324.

<sup>401</sup> *Ibid.* P. 325.

commissioners of building projects and as members of the imperial entourages. Provided this dependency upon both the monarch and his royal and dynastic estates, the projection of status by the kings and emperors was also a representation of the status of the ministeriales who inhabited and administered the same buildings and estates. The right of jurisdiction over the estates in the absence of the king or emperor, or access to their intimate inner circle of advisors required a high degree of confidence in the abilities of those enfeoffed with such privileges. In turn, the demonstrable abilities of the ministeriales to succeed in their endeavors both confirmed the confidence of the monarchs and gained them additional favors. It is therefore necessary to model how these different factors were woven together and how the constellation of status, administrator positions, and architecture impacted an individual's position in society.

#### 2.4.4 Modeling the Components of Rank

*'In general terms rank can be defined as creating the relation between an order, i.e. the common frame of reference, and the particular position of the individual in that order. Rank can be defined on two levels: firstly, as membership of a certain group and thus a relationship of equality. Secondly, rank can be defined as a hierarchical relationship and consequently in terms of difference and inequality.'*<sup>402</sup>

This statement highlights two important aspects above all else when analyzing the rank of an individual: their relationship to a group as a result of equality or of inequality. Both aspects should be taken into consideration when evaluating a specific individual's, or a group's, position in medieval society as they could at once be equal to second individual, while still subservient to a third. In the case of the ministeriales, the interpreted ambiguity of their position in society is amplified when compared to other individuals belonging either to the *nōbiles* or to the non-*nōbiles* common folk. The slow progression of the title of ministerialis from denoting administrators of the Early Middle Ages connected to the group of the *Uradel*, to the indentured servant administrators of the Ottonian and early Salian periods, to the elevated status enjoyed under the Hohenstaufen dynasty provides an implicit oscillation within the very title between unfree and free service to the kings and emperors. The manner in which they were stabilized as an identifiable group at the turn of the 13<sup>th</sup> century was only in part due to the favor of the kings and emperors, as families were able to establish strategies of their own in the transitional periods between the imperial dynasties. To discuss their rank at any point in time would therefore necessitate a closer examination of their relation to the imperial dynasties as well as their personal proceedings, emphasizing that rank was a product of a multitude of components predicated upon the various interwoven factors that impacted an individual's standing in society in relation to other groups. These factors included the title of their status, the obligations required of their commission, their social network, their affiliation with the clergy, and certainly not least of all, the building type and size of their residence.

Social status played an enormous role in medieval society—as has already been extrapolated upon—yet there lacks a general consensus of how to distinctly differentiate rank across time and region. This was the topic for many of the contributions in the six volume work entitled

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<sup>402</sup> Jörg Peltzer, "Introduction," in *Rank and Order: The Formation of Aristocratic Elites in Western and Central Europe, 500-1500*, ed. Jörg Peltzer, 1st ed., vol. 4, 4 vols. (Ostfildern: Jan Thorbecke Verlag, 2015), 13–28. P. 14.



*Rank*, in which the authors from volume one of the series posed challenges for future research concerning rank. Their ideas are uniquely suited this project's objective of interpreting the status, or desired status, of the builder of a castle. One concept in particular helped form the process of modeling the social order and elevation of rank for this project found in *Rank: Volume 1*,

*'...if one takes a step back and discards the idea that observations on the development of the existing social order can be easily achieved, concentrating instead on the question of general perception over time, clear evidence for an evolution of ideas comes to light.'*<sup>403</sup>

The statement stresses the importance of first making more general conclusions about rank and then focusing in on more detailed interpretations over time. In turn, the detailed interpretations then assist in adjusting the overall general conclusions. This mirrors what Hechberger said about describing the *nōbiles* as described in Section 2.3.1.1, in which he advocated for either a new definition to adjust for their changing character over time, or an abandonment of the term altogether. I am of the opinion that a consensus can be reached through the use of a flexible model that incorporates both status and administration positions. This also harkens back to point *f* by Werner in Section 2.3.1.1 regarding the development of Frankish court administrators into later medieval *nōbiles*, in that administrator positions were regarded as essential for the evaluation of rank.

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<sup>403</sup> Hiltmann, "Potentialities and Limitations of Medieval Armorial as Historical Source. The Representations of Hierarchy and Princely Rank in Late Medieval Collections of Arms in France and Germany." P. 196.

#### 2.4.4.1 Organizing Status and Administrator Positions

After consultation with professors of history and fellow doctoral students at Heidelberg University regarding the meaning of rank and its multiplicity of connotations, I was convinced that it is a term that—when applied absent a distinct definition—can lead to tremendous disagreement. These discussions also elucidated the necessity for new perspectives in order model rank more effectively with an empirical basis. The model described in this section is neither dismisses previous work on the topic of rank, nor is it rigidly confined to the specific case study of the four primary sites. Instead, it presents a new method of modeling rank during a specific time period through the lens of historical, architectural, and geo-spatial investigations. I first created a rudimentary model for illustrating the meaning of titles over time by separating hierarchical status from commissioned administrator positions. These directly translate to the *Status* and *AdminPosition* node types in the graph database, as described in Sections 6.3.7 and 6.3.8 (respectively). The model consists of a table in which titles, belonging to both secular and ecclesiastical realms, were ordered into ten status categories (called *SuperStatus*), and three administrator categories (called *SuperAdminPosition*) serving to organize the titles given to many of the people mentioned in the charters, as shown in the *CITADEL Rank Schematic* in the Appendix. Each title was drawn directly from the text corpus referring to specific individuals who were described in relation to their respective status or administration position. The tabular model is by no means static, as its purpose is to establish a basis for approximate comparisons to be made and adjusted accordingly. The ten secular super-statuses involve everyone from emperors to unspecified individuals, and the ten ecclesiastical super-statuses include everyone from popes to *conversi*. The status groupings are ordered relative to one another as it is readily acknowledged that a king was superior to a count, absent any additional titles and a specification of the kingdom and county in question. However, the administrator positions represent an entirely different scenario as they could elevate individuals from a lower hierarchical status directly into the intimacy of the kings and emperors, yet were not permanent positions.

At the inception of modeling rank in this project, I was conflicted on whether to place the ministeriales somewhere in the status groupings or in the administrator groupings. I first placed them as administrators, though the ministeriales were commissioned with administrator positions that had distinct titles and not generally referred to as ministeriales. I then switched the ministeriales to the SuperStatus group 5. *Local Lord* given their actions during the majority of the 13<sup>th</sup> century as having been roughly equivalent to a count—in fact, Reinhard III von Lautern-Hoheneck was married to the daughter of a count, as is described in Section 3.2.1. I placed them in this group ahead of the

SuperStatus group 6. *Entitled*, in which knights are located, in order to avoid the assumption that the *ministeriales* had evolved into the status of knights by the late 13<sup>th</sup> century—a concept that was readily debunked as described in detail in Section 2.3.3.2. To solve the issue, I created a column in the *Entities* table from which the *Person* nodes are derived, referring to a person’s heritage for which only three categories exist: either as a *Nōbilis*, *Ministerialis*, or *Not Available* (NA). This turned out to be the best choice as it also eliminated the confusion regarding the term ‘noble’ from the status groupings, and applied to a large contingent of the individuals in the graph database—the *Entities* table composed the first step towards realizing the graph database and will be described in Chapter 6. Additionally, some *ministeriales* such as Markward von Annweiler had numerous other titles located in the status groupings including duke and count, making it repetitive and unnecessary to also have a nebulous third status as *ministerialis*, especially when it often referred to their origin, as did the term *nōbilis*. For the purpose of remaining focused upon the development of rank, the property of *Heritage* of an individual is in no way linked to their presumed ethnicity. The only ethnic group, specifically referred to in relation to their ethnicity, were the Jews who periodically appeared in the charters. Provided their marginalized status in the social hierarchy and overall lack of agency outside the financial sector of medieval society, I placed them in super-status group ten, referring to subordinates which also included servants. This categorization takes into account that the Jews were often not treated with respect and their interlocutors frequently lacked common decency towards them. Due to their status as non-Christians in the medieval society, they were not allowed to occupy positions of elite power and were required to wear a distinctive pointed hat within the Holy Roman Empire beginning around the year 1270 A.D.<sup>404</sup>

Among the other titles mentioned in the charters that require a specific explanation is the title of Prince-Elector, which was specific to the Holy Roman Empire. The secular Prince-Electors—including the Count Palatine of Heidelberg—appeared at increasing rates towards the year 1300 in the text corpus. However, all three ecclesiastical Prince-Electors—the Archbishops of Mainz, Cologne, and Trier—appeared at regular intervals throughout the entire corpus. Provided the chronological range of the project limited between the years 1152 and 1273, the ecclesiastical Prince-Electors are both the most prevalent and the most involved in the proceedings in which the focus group members also appeared. Nevertheless, the secular Prince-Electors are also categorized in the status groupings as equivalent to the ecclesiastical Prince Electors only with regard to the

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<sup>404</sup> Kenneth Stow, *Alienated Minority: The Jews of Medieval Latin Europe* (Cambridge, Mass.: Harvard University Press, 1992), P. 249.

position of Prince Elector, because the title also has the peculiarity of combining multiple statuses and administration positions. Take, for example, the Archbishop of Mainz who was not only a Prince-Elector and Archbishop—both of which are distinct statuses—he was also at times commissioned as chancellor of the empire—an administrator position. Thus, certain individuals could have more than one status and administrator position according to this model.

The topic of women within the charters is also intriguing, because women appeared fairly regularly over time and often regarding the same topics. Women were categorized generically as *Lady* if no specific mention was made to their title (e.g. countess), or if they were mentioned in association with their husband, father, or brother in SuperStatus group six. This is due to the fact that women were not allowed to occupy administrator positions, though they did wield a fair amount of power in the Reichsland of Lautern, especially as widows of ministeriales who had been commissioned with a high level administrator position; see the discussion of Kunigund von Lautern-Hoheneck in Section 3.2.1. The women belonging to the focus group were often involved in the economic proceedings regarding the control of resources in the Reichsland of Lautern, indicating that they were both informed of the political climate and familiar with the process whereby resources were traded and sold. This reinforces the concept that the ministeriales families orchestrated familial strategies in which all members were involved.

Among the administrator positions, I established a general three-part categorization relating to commissions on the basis of state, regional, and district/city activities. This simple hierarchy served mainly to partition the activities of the ministeriales on behalf of the monarchs and bishops—as described in Section 2.3.3.2 regarding the development of the ministeriales. The emperors and kings were mainly involved in interregional events including war campaigns in Italy and the crusades, as well as traveling about the empire visiting the multitude of palaces and granting an audience the grievances of the local princes and lords. As a result, the ministeriales who accompanied the monarchs in these endeavors were identified as having been commissioned with state administrator positions—such as Heinrich I von Lautern—though not only ministeriales filled these positions. The regional administrators include those who were more localized, yet still operated at a level of power that spanned multiple districts and cities, though in the case of this project, it mainly refers to the ministeriales who were commissioned by the monarchs to remain in charge of the Reichsland of Lautern, such as Siegfried II von Lautern-Hoheneck. The district/city administrators include those who were commissioned as judges or elected as councilmen, or as servants to the various monasteries such as the members of the von Wilenstein family as is described in Section 3.5.1.1.

#### 2.4.4.2 A New Determination of Rank

The organization of the statuses and administrator positions allows for individuals from both secular and ecclesiastical realms to be compared based upon relative power structures as well as the addition of administrator positions which often elevated the power of the appointed person. The SuperStatus groups are specifically numbered in which the lower numbers indicate higher status, whereas the SuperAdminPosition groups are organized alphabetically from A to C in which A represents the highest administrator positions. With the exception of SuperStatus groups *1. Supreme* and *2. Eminent*, all status could also be paired with an administrator position. Thus, rank can be modeled as a combination of status and administration positions in which the higher rank is denoted by the combination of a lower number and letter. However, there are many other factors to take into account, which will be expanded upon in the following paragraphs.

A particularly poignant example to initiate a discussion of modeling rank in this manner would be Konrad III von Scharfenberg, who was member of a ministeriales family based in castle *Scharfenberg* near the town of Annweiler, was a carrier of many titles, and appeared in 40 charters in the graph database. Not only was he Bishop of both Metz and Speyer, he was an advisor to Kings Philip of Swabia, Otto IV, and Frederick II, and even accompanied both Otto IV and Frederick II to their imperial coronations; after the coronation of Frederick II as emperor, Konrad was named imperial chancellor.<sup>405</sup> His status as bishop places him in SuperStatus group *5. Local Lord*, in the ecclesiastical division, and his administrator position as imperial chancellor places him in SuperAdminPosition group *A. State Administrator*, for which his rank would then be 5A. A rank of 5A is higher than only 5, or 6A, due to the addition of an important administrator position and a lower number in the SuperStatus groupings. The importance of his administrator position was due to his proximity to the emperor, for which the general rule of this project is as follows: the closer one was to the emperor, the more prestige one had in society. However, his double appointment as Bishop of Metz and Speyer does not mean that his total status number would equal ten, because that would place him as a lower status than that of the other local lords of SuperStatus group 5. Instead, his rank is modeled as 5(II)A, indicating a double status within the same group, and representing his *Primary Rank*. However, more examples are necessary for a more complete understanding of this model.

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<sup>405</sup> Hans Martin Schaller, "Konrad von Scharfenberg," *Deutsche Biographie* (Bayerische Staatsbibliothek), accessed August 5, 2020, <https://www.deutsche-biographie.de/sfz53466.html>.

The construction of a rank is more difficult for such historical actors as Markward von Annweiler, who served under the emperors Frederick I and Henry VI, and held the titles of Margrave of Ancona, Duke of Romagna and Ravenna, and Count of Abruzzo and Molise, in addition to his administrator position as imperial steward. In this case, it is necessary to take the highest status in addition to the highest administrator position as his rank, equaling 4(III)A, indicating his three statuses in SuperStatus group 4. *Territorial Lord*, and his commission in SuperAdminPosition group A. *State Administrator*. His other titles within SuperStatus group 5. *Local Lord*, are from a lower status, though when combined with his rank of 4(III)A, they specify a wider perception of an individual's rank requiring an even further differentiation of what composes rank. In other words, a vertical and horizontal trajectory are included in this model of rank. The vertical trajectory follows the combination of the lowest numerical value associated with the SuperStatus groups, and the lowest alphabetical value associated with the SuperAdminPosition groups to establish a Primary Rank. The horizontal trajectory relates more to the overall expanse of an individual's prestige, indicated by the amount of territories under one's control. In the case of *Markward*, his other statuses as Count of Abruzzo and Molise provides a *Secondary Rank* of 5(II). Thus, the combination of a Primary Rank and Secondary Rank equals the *Perceived Rank* of an individual.

However, another component is of key importance when considering an individual's overall rank, namely one's type and position of residence. A residence could demonstrate an individual's or family's prestige within a region during events in their presence *or* in their absence. In fact, making the residence visible and including certain architectural features increased the opportunity to be known, representing the application of CST in modeling rank. For example, the existence of a large tower at Castle Hohenecken is more readily seen than the tower at Castle Beilstein, due to both the taller height and because Castle Hohenecken was built upon the spur of 376 meter high hill<sup>406</sup> visible from all areas of the surrounding valley and approximately two kilometers south of the *via regia*. In contrast, Castle Beilstein was built on a 313 meter high hill<sup>407</sup>—63 meters shorter—in an area roughly three kilometers to the south of the *via regia*. When applying only the topographical position and the Viewsheds from Chapter 5, the perception of Castle Beilstein was empirically lower than that of Castle Hohenecken as seen in Figures 87 and 88 described in Section 5.2.2.

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<sup>406</sup> Keddigkeit and Losse, "Hohenecken." P. 377.

<sup>407</sup> Jürgen Keddigkeit, "Beilstein," in *Pfälzisches Burgenlexikon*, ed. Jürgen Keddigkeit et al., 3rd ed., vol. 1 A-E, 5 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 12.1 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2007), 226–32. P. 226.

The inclusion of the castles into the construction of rank is a delicate topic as it is difficult to know exactly how a residence (either castle or palace) appeared at its pinnacle, as well as its various building types and components that no longer exist. Therefore, their inclusion is based upon the known construction research and geo-spatial analyses. When combined with the Perceived Rank of their inhabitants, a clearer picture emerges as to the prestige of a site, which in turn effected the ranks of the individuals who built, inhabited, or were commission at such a site. For this reason, I have included another component into the equation of rank, namely *Architectural Rank*, which is classified with regard to whether the individual built or did not build a site. This applies to the divisions of the status and administration positions as both secular and ecclesiastical individuals could build castles, palaces, cathedrals, monasteries, or other sites. Thus, the combination of the Perceived Rank and the Architectural Rank results in the *Temporal Rank* of an individual at a particular point in time.

The spatial component of rank is also highlighted by the elite events in which multiple people of varying overall ranks were in contact with one another, oftentimes at palaces or castles. A terrific case study encapsulating the proposed three elements presenting the CITADEL concept of rank (i.e. Official, Auxiliary, and Architectural), is one of the key actors from the ministeriales of the Reichsland of Lautern—Eberhard I von Lautern. Throughout his 66 appearances in the charters composing the graph database, Eberhard had assumed two distinct statuses and five administrator positions. His highest status was as Count of Siena in 1186,<sup>408</sup> and he occupied three different administrator positions in SuperAdminPosition group *A. State Administrator* over the course of his service. These included positions such as imperial legate,<sup>409</sup> imperial lieutenant,<sup>410</sup> and imperial envoy—a commission he held seven times from 27 December of 1209<sup>411</sup> until 27 April of 1222.<sup>412</sup>

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<sup>408</sup> Martin Dolch and Michael Münch, *Urkundenbuch der Stadt Kaiserslautern I*, vol. Teil I: bis 1322, Schriftenreihe des Stadtarchivs Kaiserslautern 2 (Otterbach: Verlag Arbogast, 1994). P. 62. Also catalogued as Charter ID 10752 in the graph database.

<sup>409</sup> Akademie der Wissenschaften und der Literatur, Mainz, “RI V,2,4 n. 12358, Italische Und Burgundische Reichssachen, 1210,” Regesta Imperii Online, accessed August 5, 2020, [http://www.regesta-imperii.de/id/1210-00\\_2\\_0\\_5\\_2\\_4\\_2124\\_12358](http://www.regesta-imperii.de/id/1210-00_2_0_5_2_4_2124_12358). Also catalogued as Charter ID 10500 in the graph database.

<sup>410</sup> Akademie der Wissenschaften und der Literatur, Mainz, “RI V,2,4 n. 12699, Italische Und Burgundische Reichssachen, 1221 Mai 3, Prope Portam S. Miniatis Sive Casseri,” Regesta Imperii Online, accessed August 5, 2020, [http://www.regesta-imperii.de/id/1221-05-03\\_1\\_0\\_5\\_2\\_4\\_2505\\_12699](http://www.regesta-imperii.de/id/1221-05-03_1_0_5_2_4_2505_12699). Also catalogued as Charter ID 10521 in the graph database.

<sup>411</sup> Akademie der Wissenschaften und der Literatur, Mainz, “RI V,2,4 n. 12357, Italische Und Burgundische Reichssachen, 1209 Dec. 27, Senis,” Regesta Imperii Online, accessed August 5, 2020, [http://www.regesta-imperii.de/id/1209-12-27\\_1\\_0\\_5\\_2\\_4\\_2122\\_12357](http://www.regesta-imperii.de/id/1209-12-27_1_0_5_2_4_2122_12357). Also catalogued as Charter ID 10499 in the graph database.

<sup>412</sup> Akademie der Wissenschaften und der Literatur, Mainz, “RI V,2,4 n. 12828, Italische Und Burgundische Reichssachen, 1222 Apr. 27, Prope Portam Castri S. Miniatis,” Regesta Imperii Online, accessed August 5, 2020, [http://www.regesta-imperii.de/id/1222-04-27\\_1\\_0\\_5\\_2\\_4\\_2636\\_12828](http://www.regesta-imperii.de/id/1222-04-27_1_0_5_2_4_2636_12828). Also catalogued as Charter ID 10569 in the graph database.

From 9 March 1219<sup>413</sup> until 25 November 1220,<sup>414</sup> he was recorded as the Governor of Etruria (classified in SuperAdminPosition group *B. Regional Administrator*), and in 1217 he was castellan in *San Miniato*<sup>415</sup> (classified as belonging to SuperAdminPosition group *C. District/City Administrator*). He is also the presumed builder and first inhabitant of castle *Montfort*, as described in Section 3.5.2, which became the home of his direct descendants. According to his background information, Eberhard I von Lautern fulfilled all three components of what constituted one's rank. Over the course of his life, his Primary Rank would be 5A(III), referring to his status as Count of Siena and the three state level administration positions he held. His Secondary Rank would be 6B(II)C(I), referring to his status as a knight, his two regional level administration positions, and his one city level administration position. Provided Eberhard's activity as one of the presumed builders of Castle Montfort, his Architectural Rank would be more simply classified as *Castle Builder*. Thus, the Temporal Rank was a combination of the aforementioned ranks as shown in the following equations:

$$\textit{Primary Rank} + \textit{Secondary Rank} = \textit{Perceived Rank}$$

Equation 1: Formula for modeling the perceived rank of an individual.

$$\textit{Perceived Rank} + \textit{Architectural Rank} = \textit{Temporal Rank}$$

Equation 2: Formula for modeling the temporal rank of an individual.

The resulting Temporal Rank is not a numerical value. Instead, it provides an avenue for compiling the rank of various people, who can then be compared based upon a standardized system. Although the three examples of Konrad III von Scharfenberg, Markward von Annweiler, and Eberhard I von Lautern were all ministeriales of the German Palatinate, they were some of the most elite individuals in the Holy Roman Empire at the turn of the 13<sup>th</sup> century. When compared to one another they are as follows:

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<sup>413</sup> Akademie der Wissenschaften und der Literatur, Mainz, "RI V,4,6 n. 157, Friedrich II., 1219 III. 9," Regesta Imperii Online, accessed August 5, 2020, [http://www.regesta-imperii.de/id/1219-03-09\\_1\\_0\\_5\\_4\\_6\\_166\\_157](http://www.regesta-imperii.de/id/1219-03-09_1_0_5_4_6_166_157). Also catalogued as Charter ID 10510 in the graph database.

<sup>414</sup> Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,1 n. 1223, Friedrich II., 1220 Nov. 25, in Monte Malo," Regesta Imperii Online, accessed August 5, 2020, [http://www.regesta-imperii.de/id/1220-11-25\\_3\\_0\\_5\\_1\\_1\\_1901\\_1223](http://www.regesta-imperii.de/id/1220-11-25_3_0_5_1_1_1901_1223). Also catalogued as Charter ID 10459 in the graph database.

<sup>415</sup> Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,1 n. 897a, Friedrich II., 1217," Regesta Imperii Online, accessed August 5, 2020, [http://www.regesta-imperii.de/id/1217-00-00\\_1\\_0\\_5\\_1\\_1\\_1521\\_897a](http://www.regesta-imperii.de/id/1217-00-00_1_0_5_1_1_1521_897a). Also catalogued as Charter ID 10507 in the graph database.



Eberhard I von Lautern: [5A(III) + 6B(II)C(I)] + Castle Builder = First

Konrad III von Scharfenberg: 5(II)A + Cathedral Builder = Second

Markward von Annweiler: 4(II)A + 5(II) = Third

Markward's perceived rank as first among the three examples is due to the three statuses he possessed within a higher SuperStatus group than the others, considering that a status represented a more stability than an administrator position. His Secondary Rank was also higher than both Eberhard I and Konrad III. In contrast to the other two, Markward did not explicitly build any castles or cathedrals. What makes this comparison even more interesting is that Markward had a rather sudden decline from fortune as described in Section 3.2.1, whereas neither Eberhard nor Konrad suffered similar fates. However, castle Montfort was eventually destroyed and Eberhard's grave is nowhere to be found. Konrad III, on the other hand, initiated the construction of the gothic cathedral of Metz—which still stands—and he was buried in the crypt the Cathedral of Speyer.<sup>416</sup> Nevertheless, both Eberhard and Konrad III occupied elite positions and are known to have been involved in the construction of either castles or cathedrals. Thus, both have an architectural rank, allowing for a temporal rank to be attributed to them. This model provides an effective way to evaluate rank within short periods of time *and* with regard to an individual's legacy over longer stretches of time. Considering the importance of ancestry within marriage policies and political appointments, the temporal rank of an influential member was incredibly important. These equations provide an avenue to empirically evaluate the application of CST to the actions of the ministeriales, with regard to the castles they built and their administration of the imperial estate.

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<sup>416</sup> Jürgen Keddigkeit et al., "Speyer, St. Maria, Domstift," in *Pfälzisches Klosterlexikon: Handbuch der pfälzischen Klöster, Stifte und Kommenden*, ed. Jürgen Keddigkeit et al., vol. 4 S-Speyer, 5 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern in Verbindung mit dem Institut für Europäische Kunstgeschichte der Ruprecht-Karls-Universität Heidelberg, 26.4 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2017), 133–238. P. 209.

## 2.5 Summary

The purpose of Chapter 2 was to provide an overview of the cultural and historical background necessary for a more precise description of the ministerialis families, castles, and monasteries in Chapter 3. The order of the key terms and concepts followed a structure in which each one built upon the other, while relating each term and concept to the project theme of investigating the primary sites and their builders. The final section of Chapter 2 introduced the evaluation of rank based upon the combination of statuses, administrator positions, architecture, and landscape. Its purpose is to provide an avenue for interpreting the social standing of the key figures of the von Lautern-Hoheneck and von Beilstein families discussed in the following chapter. The framework of evaluating Temporal Rank introduces a standardized mode of thinking about the interactions, proceedings, and consequences of the activities of the ministeriales associated with all of the case study sites. In this manner, direct comparisons can be made based upon empirical evidence drawn from the extant charters and construction research. The concept will be revisited in Chapter 7 regarding the main conclusions of the project due to the necessity of first discussing the four objectives outlined in Section 1.1 that correlate with Chapters 4, 5, and 6. Thus, Chapter 2 laid the conceptual groundwork for the historical, architectural, and geo-spatial investigations with regard to their role in determining the relationship between the architecture of the primary sites and the social perception of their builders.

### 3 Historical Investigation

This chapter provides extensive literature reviews of the history and historiography of the primary sites, as well as the associated ministerialis families. The purpose of pairing the review of the ministeriales families and the various sites is to emphasize the importance of describing the families in relation to the castles they inhabited, or in which they were commissioned as administrators, thereby highlighting how the ministeriales of this project were inextricably bound to these sites. Their proceedings catalogued in the medieval charters were examined in relation to relevant previous historical and archaeological research. Section 2.3.3 of the previous chapter provided a description of the evolution of the ministeriales from the Early Middle Ages until Emperor Frederick I in the mid-13<sup>th</sup> century, focusing upon the development of their position within the medieval social structure and which tasks they were responsible for. The development of castles and the commissioning of ministeriales over the course of the 11<sup>th</sup> and 12<sup>th</sup> centuries were highlighted, specifically with regard to their implementation in the German Palatinate during the reign of the Salian and Hohenstaufen dynasties. The section concluded with the intention of continuing the story of the ministeriales through the lens of the focus families of this project and more importantly, how they relate to the various sites discussed in this chapter.

The data for this chapter is derived from previous archaeological excavation reports, historical secondary sources, and 707 transcriptions of medieval charters sourced from 34 sources (Table 1). The ministeriales were part and parcel of the policies of the reigning kings and emperors, and the development of their castles demonstrated a physical reminder of that role. The architectural representation of status projected the policy of the kings, whose ministeriales represented their authority among the various audiences of the region and whose castles maintained a lasting image of their sovereignty. The legacy and story of the ministeriales is not only to be found in the registers of charters, but also in the architecture of the castles themselves, insofar as the castles still exist. This chapter will build upon the foundation of the historical context from Chapter 2 by providing detailed descriptions of specific ministeriales, their roles within medieval proceedings, and the strategies they employed in order to maintain or improve their standing in society. This provides the information necessary for interpreting the results of the architectural investigations in Chapter 4.

Table 1: Distribution of Sources

Source	Count
Urkundenbuch der Stadt Kaiserslautern: Volume I	422
DFG Regesta Imperii RI Opac	145
Die Urkunden des Zisterzienserklosters Otterberg 1143-1360	29
Urkundenbuch der Stadt Kaiserslautern: Volume II	26
Mainzer Ingrossaturbücher	12
Jahrbuch zur Geschichte von Stadt und Landkreis Kaiserslautern 1966	11
Not Available (NA)	11
Die Regesten des Kaiserreiches unter Heinrich VI 1165(1190)-1197	6
Regesten der Pfalzgrafen am Rhein 1400-1508: Volume II	5
Regesten der ehemaligen Benediktiner-Klosters Hornbach	4
Regesten der Lehenurkunden der Grafen von Veldenz	4
Wilenstein unknown	3
Die Regesten des Kaiserreiches unter Heinrich IV. 1056 (1050)-1106	2
Geschichte der Grafschaft Saarwerden: Volume I	2
Mittelrheinische Regesten: Volume IV	2
Regesten der Prämonstratenserabtei Wadgassen bis zum Jahre 1571	2
Urkunden Lehmann (1151-1865)	2
Urkundenreihe 1 U (1182-1789)	2
Urkundenbuch zur Geschichte der Bischöfe zu Speyer: Volume I	2
Landeshauptarchiv Koblenz	1
Deutscher Orden: Ballei Lothringen	1
Deutschordenszentralarchiv (DOZA) Urkunden	1
Die Regesten des Kaiserreiches unter Friedrich I 1152(1122)-1190	1
Petrus de Ebulo: Liber ad honorem Augusti sive de rebus Siculis Codex 120 II, Burgerbibliothek Bern	1
Die Regesten der Mainzer Erzbischöfe	1
Regesten der Grafen von Zweibrücken	1
Regesten des Archivs der Grafen von Sponheim: Volume I	1
Regesten des Archivs der Grafen von Sponheim: Volume II	1
Regesten des Archivs der Grafen von Sponheim: Volume III	1
Staatsarchiv Mainzer Ingrossaturbücher	1
Stadtarchiv Worms	1
Urkundenbuch der Stadt Kaiserslautern: Volume III	1
Urkundenbuch der Stadt Worms: Volume I	1
Urkundenbuch des Klosters Otterberg in der Rheinpfalz	1

### 3.1 Criteria for Selection

The core of the discussions in this chapter concern the four primary sites and their associated ministeriales. An additional five monasteries compose the secondary sites, and seven neighboring castles in the vicinity of Kaiserslautern compose the tertiary sites, thematically linked to the primary and secondary sites. In total, 16 sites are covered in three levels of detail in this chapter, partitioned into the following hierarchical categories in order of importance: the primary sites which include the Palace of Lautern and the three hilltop castles Hohenecken, Beilstein, and Perlenberg; the secondary sites which include the Teutonic Knight Commandry at *Einsiedel*, the Cistercian monastery in Otterberg, and the three Premonstratensian monasteries in Lautern, *Münsterdreisen*, and *Enkenbach*; and the tertiary sites which include castles *Wilenstein*, *Montfort*, *Wartenberg*, *Randeck*, *Löwenstein*, *Nanstein*, and *Trifels*. The hierarchy of the sites is based upon a combination of factors including their proximity to the Palace of Lautern, their connection to the involvement of ministerialis families in prestigious administrator positions within the palace, and the architectural significance of the sites regarding the political and societal developments between the years 1152 to 1273. All of the sites fulfill at least one of these requirements, though only the primary sites fulfill all three.

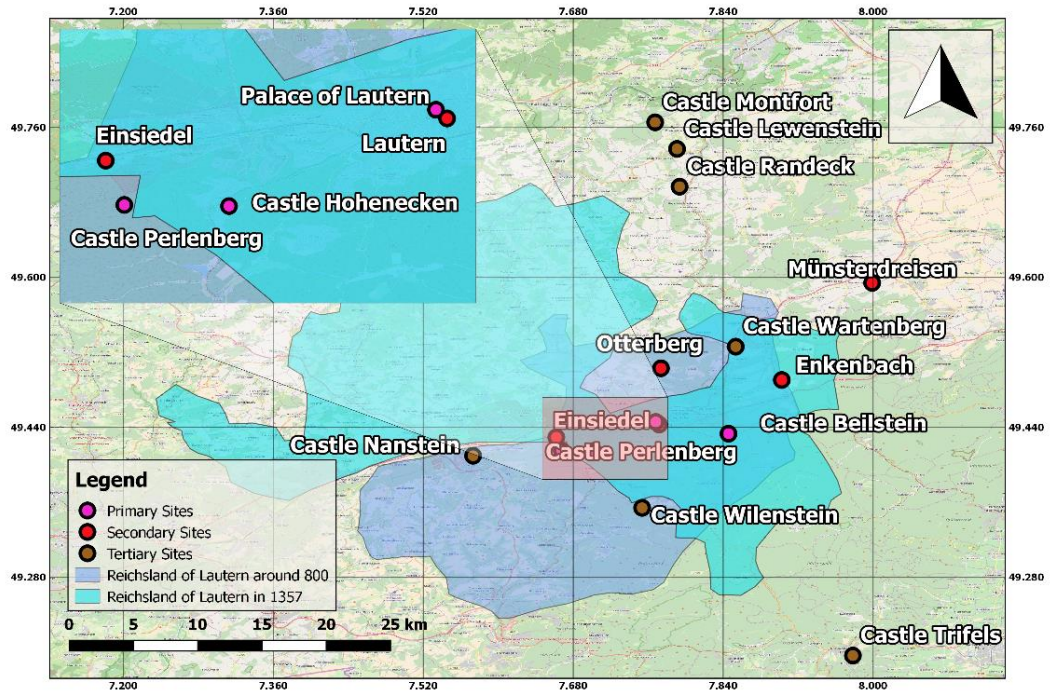


Figure 4: Primary, Secondary, and Tertiary Sites of the project.

### 3.1.1 The Historical Charters

The historical data pertaining to the inhabitants, owners, administrators, and residents of the case study sites were extracted from 707 transcriptions of charters which I had collected from both online and hard-copy sources. The online resources included the *Regesta Imperii OPAC* hosted by the *Academy of Sciences and Literature in Mainz*, and *Monasterium.net* hosted by the *International Centre for Archival Research* (ICARUS). The hard-copy resources were retrieved from the library of the *Institut für pfälzische Geschichte und Volkskunde* (IPGV) in Kaiserslautern, from the university library at Heidelberg University, and from the libraries of the institutes for European Art History and Historical Studies at Heidelberg University.

All of the texts are transcriptions of the original charters, recorded in 19<sup>th</sup> and 20<sup>th</sup> century registers in Latin, Middle High German, High German, and dialectal German of the Palatinate. They primarily consist of the charters regarding Lautern and the surrounding sites catalogued in three parts under the title *Urkundenbuch der Stadt Kaiserslautern*,<sup>417</sup> the charters regarding the Abbey of Otterberg,<sup>418</sup> and the charters regarding the activities of the kings and emperors of the Holy Roman Empire catalogued in the monumental *Regesta Imperii*.<sup>419</sup> The other sources that I used, albeit less

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<sup>417</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*; Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern II*; Martin Dolch and Michael Münch, *Urkundenbuch der Stadt Kaiserslautern III*, vol. Teil III: 1451 bis 1592, Schriftenreihe des Stadtarchivs Kaiserslautern 6 (Otterbach: Kulturamt der Stadt Kaiserslautern, 2001).

<sup>418</sup> Michael Frey and Franz Xaver Remling, eds., *Urkundenbuch des Klosters Otterberg in der Rheinpfalz*, Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, Band 8.1 (Kaiserslautern: Verlag des Instituts für pfälzische Geschichte und Volkskunde, 1995); Martin Dolch and Michael Münch, *Die Urkunden des Zisterzienserklosters Otterberg 1143-1360*, 1st ed., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, Band 8.2 (Kaiserslautern: Institut für pfälzische Geschichte und Volkskunde, 1995).

<sup>419</sup> Johann Friedrich Böhmer, Engelbert Mühlbacher, and Johann Lechner, *Die Regesten des Kaiserreiches unter den Karolingern 751-918*, ed. Österreichische Akademie der Wissenschaften, 2nd ed., J.F. Böhmer, *Regesta Imperii*, I (Innsbruck: Verlag der Wagner'schen Universitäts-Buchhandlung, 1908); Johann Friedrich Böhmer, Emil von Ottenthal, and Hans H. Kaminsky, *Die Regesten des Kaiserreiches unter Heinrich I. und Otto I. 919-973*, ed. Österreichische Akademie der Wissenschaften, 2nd ed., vol. I, J.F. Böhmer, *Regesta Imperii*, II: Sächsisches Haus (Innsbruck: Verlag der Wagner'schen Universitäts-Buchhandlung, 1908); Johann Friedrich Böhmer, Gerhard Lubich, and Daniel Brauch, *Die Regesten des Kaiserreiches unter Heinrich IV. 1056 (1050) - 1106*, vol. IV: 1086-1105/06, J.F. Böhmer, *Regesta Imperii*, III: Salisches Haus (Köln: Böhlau Verlag, 2016); Johann Friedrich Böhmer, *Die Regesten des Kaiserreiches unter Friedrich I 1152(1122)-1190*, ed. Kommission für die Neubearbeitung der Regesta Imperii bei der Österreichischen Akademie der Wissenschaften und Deutschen Kommission für die Bearbeitung der Regesta Imperii bei der Akademie der Wissenschaften und der Literatur in Mainz, 3rd ed., vol. IV, J.F. Böhmer, *Regesta Imperii*, II: Ältere Staufer (Wien: Böhlau Verlag GmbH&Cie, 2001); Johann Friedrich Böhmer, *Die Regesten des Kaiserreiches unter Heinrich VI 1165(1190)-1197*, ed. Kommission für die Neubearbeitung der Regesta Imperii bei der Österreichischen Akademie der Wissenschaften und Deutschen Kommission für die Bearbeitung der Regesta Imperii, J.F. Böhmer, *Regesta Imperii*, IV: Ältere Staufer (Köln: Böhlau Verlag, 1972); Johann Friedrich Böhmer, *Die Regesten des Kaiserreichs unter Philipp, Otto IV, Friedrich II, Heinrich (VII), Conrad IV, Heinrich Raspe, Wilhelm und Richard 1198-1272*, J.F. Böhmer, *Regesta Imperii*, V (Innsbruck: Verlag der Wagner'schen Universitäts-Buchhandlung, 1892); Oswald Redlich, ed., *Die Regesten des Kaiserreichs unter Rudolf, Adolf, Albrecht, Heinrich VII 1273-1313*, 1st ed., vol. 1, *Regesta Imperii*, VI (Innsbruck: Verlag der Wagner'schen Universitäts-Buchhandlung, 1898); Johann Friedrich Böhmer, *Die Urkunden Kaiser Ludwigs des Baiern, König Friedrich des Schönen und König Johann von Böhmen*, *Regesta Imperii* 1314-1347 (Frankfurt am Main: Sigmund Schmerber, 1839).

often, included registers of charters regarding the monastery of *Hornbach*,<sup>420</sup> the Archbishops of *Mainz*,<sup>421</sup> the Prince Electors of the Rhine,<sup>422</sup> the Counts of *Saarwerden*,<sup>423</sup> the Bishops of *Speyer*,<sup>424</sup> the Counts of *Sponheim*,<sup>425</sup> the Counts of *Veldenz*,<sup>426</sup> the Abbey of *Wadgassen*,<sup>427</sup> the city of *Worms*,<sup>428</sup> and the charters of the Counts of *Zweibrücken*.<sup>429</sup>

As this list does not include original copies of the charters, I had to trust the authenticity of the translations and transcriptions from the registers. It must be underlined that this project does not include an attempt to conduct a digitization or paleographical analysis of the original charters. The information extracted from these charters are therefore dependent upon the veracity of those who translated and transcribed them. Although this certainly can be interpreted as a leap of faith, it is a faith well placed in the hands of accomplished paleographers and historians of the last two centuries. Two discrepancies exist in the list of charters, namely the 22 labelled as ‘NA’ and three labelled as ‘Wilenstein unknown.’ These 25 charters were retrieved from research binders for the Pfälzische Burgenlexika series at the IPGV in Kaiserslautern. Unfortunately, a handful of pages were copied without a citation preventing me from citing these charters properly. However, their contents mainly

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<sup>420</sup> A. Neubauer, *Regesten der ehemaligen Benediktiner-Klosters Hornbach*, 1st ed., Mitteilungen des Historischen Vereins der Pfalz 27 (Speyer: H. Gilardone’schen Buchdruckerei, 1904).

<sup>421</sup> Adam Goerz, ed., *Mittelrheinische Regesten oder chronologische Zusammenstellung des Quellen-Materials für die Geschichte der Territorien der beiden Regierungsbezirke Coblenz und Trier in kurzen Auszügen*, 1st ed., vol. IV vom Jahre 1273-1300 (Coblenz: Buchhandlung von Wilhelm Groos, 1886); Goswin Frhr. von der Ropp, ed., *Regesten der Erzbischöfe von Mainz von 1289 - 1396*, vol. 2 1354-1374 (Leipzig: Veit, 1913).

<sup>422</sup> Graf L. von Oberdorff, *Regesten der Pfalzgrafen am Rhein 1400-1508*, 1st ed., vol. 2, Regesten der Pfalzgrafen am Rhein 1214-1508 (Innsbruck: Verlag der Wagner’schen Universitäts-Buchhandlung, 1912).

<sup>423</sup> Hans-Walter Herrmann, *Geschichte der Grafschaft Saarwerden bis zum Jahre 1527*, 1st ed., vol. 1, Veröffentlichungen der Kommission für saarländische Landesgeschichte und Volksforschung 1 (Saarbrücken: Minerva-Verlag, 1957).

<sup>424</sup> Franz Xaver Remling, ed., *Urkundenbuch zur Geschichte der Bischöfe zu Speyer*, vol. 1, 2 vols. (Aalen: Scientia Verlag, 1970).

<sup>425</sup> Johannes Mötsch, *Regesten des Archivs der Grafen von Sponheim 1065-1437*, 1st ed., vol. Teil I: 1065-1370 (Regesten Nr. 1-1514), Veröffentlichungen der Landesarchivverwaltung Rheinland-Pfalz 41 (Koblenz: Verlag der Landesarchivverwaltung Rheinland-Pfalz, 1987); Johannes Mötsch, *Regesten des Archivs der Grafen von Sponheim 1065-1437*, 1st ed., vol. Teil II: 1371-1399 (Regesten Nr. 1515-2992), Veröffentlichungen der Landesarchivverwaltung Rheinland-Pfalz 42 (Koblenz: Verlag der Landesarchivverwaltung Rheinland-Pfalz, 1988); Johannes Mötsch, *Regesten des Archivs der Grafen von Sponheim 1065-1437*, 1st ed., vol. Teil III: 1400-1425 (Regesten Nr. 2993-4239), Veröffentlichungen der Landesarchivverwaltung Rheinland-Pfalz 43 (Koblenz: Verlag der Landesarchivverwaltung Rheinland-Pfalz, 1989).

<sup>426</sup> Carl Pöhlmann, *Regesten der Lehenurkunden der Grafen von Veldenz*, 1st ed., Veröffentlichung der Verlag der Pfälzischen Gesellschaft zur Förderung der Wissenschaften 3 (Speyer: Pfälzische Gesellschaft zur Förderung der Wissenschaften, 1928).

<sup>427</sup> Josef Burg, ed., *Regesten der Prämonstratenserabtei Wadgassen bis zum Jahre 1571*, 1st ed. (Saarbrücken: Verlag Die Mitte GmbH, 1980).

<sup>428</sup> Heinrich Boos, ed., *Urkundenbuch der Stadt Worms*, 1st ed., vol. 1, Quellen zur Geschichte der Stadt Worms (Berlin: Weidmannsche Buchhandlung, 1886).

<sup>429</sup> Carl Pöhlmann, *Regesten der Grafen von Zweibrücken*, 1st ed. (Speyer: Verlag der Pfälzischen Gesellschaft zur Förderung der Wissenschaften, 1962).



concern activities in the 14<sup>th</sup> and 15<sup>th</sup> centuries which are beyond the chronological focus of this project and were subsequently unused in the historical descriptions found in Chapters Two and Three. Nevertheless, I have included them in the graph database, as it would be possible to add in the citations at a later time, once found. The online sources mainly consisted of digitized versions of the hard-copy *Regesta Imperii*, which are accessible via the *Regesta Imperii* website hosted by the Akademie der Wissenschaften und der Literatur, Mainz.<sup>430</sup> I still consulted the actual hard-copy books in order to confirm the information found online and to provide the source information for some of the transcriptions. Therefore, the online versions were more of a guide where to find the hard-copy sources, considering that the *Regesta Imperii* consists of multiple volumes with no method of searching particular names in absence of the digitized form.

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<sup>430</sup> Akademie der Wissenschaften und der Literatur Mainz, "RI OPAC," *Regesta Imperii* Online, accessed August 3, 2020, [http://opac.regesta-imperii.de/lang\\_de/](http://opac.regesta-imperii.de/lang_de/).

### 3.2 The Ministeriales Commissioned in Lautern

Much has been written of the ministeriales of Lautern within the historical literature of the German Palatinate, most notably by Martin Dolch,<sup>431</sup> Jürgen Keddigkeit,<sup>432</sup> Jan Ulrich Keupp,<sup>433</sup> and Karl-Heinz Spieß.<sup>434</sup> The texts mainly concern their efforts as members of the royal and imperial entourages as well as pertaining to the perception of their status at the turn of the 13<sup>th</sup> century. However, the missing link in the research surrounding the ministeriales of Lautern concerns the reason behind their relatively sudden rise under Eckbert I von Lautern's son, Heinrich I von Lautern in the mid-1180s. As most ministeriales origin stories are unknown due to the lack of written documentation prior to their activities within the proceedings recorded in historical charters, their initial rise and strategies remain largely speculative. Provided that speculation is antagonistic to fact, and that historians seek to uncover truth rooted in evidence, to provide a narrative of the rise of ministeriales absent any historical documentation would result in a suspicious fiction and the opposite of what this project has set out to achieve. Thus, in order to maintain the integrity of this research, all speculative notions are identified as such. However, written documents were not the only resource available in this project, rather, the primary sites themselves provide evidence otherwise unrecorded in text. These fragments of information drawn from the medieval edifices and building phases of the primary sites offer empirical evidence where written documentation is found wanting. Prior to exploring the physical sites and their development, it is first necessary to explore what is known of the ministeriales families von Lautern (including the two lines of von Lautern-Hoheneck and *von Lautern-Montfort*) and that of von Beilstein. As more is known of the von Lautern-Hoheneck family line, and given their primacy in the employ of the kings and emperors, it is well suited that the foremost members of their family should be discussed first, followed by the lesser known von Beilstein family. In order to set the stage for their discussion, this section continues from the general development of the ministeriales found in Section 2.3.3.2, via a closer inspection of the ministeriales commissioned at the royal Palace of Lautern, as was promised.

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<sup>431</sup> Martin Dolch, "Das Reichsministerialengeschlecht von Lautern/von Hohenecken Im 12./13. Jahrhundert," in *Mitteilungen Des Historischen Vereins Der Pfalz*, ed. Joachim Kermann, vol. 92 (Speyer, Germany: Verlag des historischen Vereins der Pfalz e.V., 1994), 41–55.

<sup>432</sup> Keddigkeit, "Beilstein"; Keddigkeit, *Burg Hohenecken*; Barz et al., "Kaiserslautern"; Keddigkeit and Losse, "Hohenecken"; Keddigkeit, *Kleine Geschichte der Stadt Kaiserslautern*; Jürgen Keddigkeit, *Kaiserslautern Kaiserpfalz und Casimirschloss*, Schriften des Fördervereins zur Erhaltung der Kaiserpfalz 1 (Kaiserslautern: Rohr Druck, 1995).

<sup>433</sup> Keupp, *Dienst und Verdienst: Die Ministerialen Friedrich Barbarossas und Heinrichs VI.*

<sup>434</sup> Karl-Heinz Spiess, "Vom reichsministerialen Inwärtseigen zur eigenständigen Herrschaft: Untersuchungen zur Besitzgeschichte der Herrschaft Hohenecken vom 13. bis zum 17. Jahrhundert," in *Jahrbuch zur Geschichte von Stadt und Landkreis Kaiserslautern*, vol. 12/13, 37 vols. (Otterbach: Franz Arbogast Verlag, 1975), 84–106.

### 3.2.1 The Ministeriales von Lautern-Hoheneck

The life of Heinrich I von Lautern, as gathered from the 149 charters in which he appeared, offers the greatest detail of any of the members of the aforementioned ministeriales families. However, his early history is entirely missing as is the reason pertaining to his elevation into the inner circle of the emperors. It is certainly possible that Heinrich I had won the favor of the emperors for his abilities in statecraft, as he would later be one of the top three advisors to Emperor Henry VI according to Ingeborg Seltmann,<sup>435</sup> though the question remains as to how he was in the position to even be considered in the first place. Very little research has been conducted regarding the reason for which certain individuals were chosen to be ministeriales, or which experiences oriented them for the task. Curiously, Heinrich I is often regarded as having preceded the first mention of his father, Eckbert I, which can lead to substantially different interpretations of the family dynamic during the 1180s. However, this is due to the fact that Eckbert I has been routinely incorrectly identified as having first appeared in 1188,<sup>436</sup> when he actually appeared 15 years earlier in 1173.<sup>437</sup> It is highly likely that Eckbert I and his family had been present in the Palace of Lautern during the first decades of Frederick I's reign in the 1160s and 1170s, during which they garnered his favor. As imperial ministeriales, they would have lived at the Rittersberg, near the western side of the palace.<sup>438</sup>

What can be said with certainty is that Eckbert I and a certain Gottfried were brought *in* from areas outside of Lautern, yet still within the familial estate of the Hohenstaufen dynasty, and commissioned as administrators within the royal estate. This perspective is also supported by Rödel 1996, who expanded upon the theme of personnel transferred from properties in and around Alzey to support the development of the Reichsland of Lautern due to the fact that Alzey had been entrusted to Frederick I's half-brother Conrad, the Count Palatine, by 1156.<sup>439</sup> According to Werle 1971, the opportunities provided by the vast territories surrounding Lautern resulted in a geographical shift from the area around Alzey to the area around Lautern, both then within the familial estate of the

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<sup>435</sup> Keupp, *Dienst und Verdienst: Die Ministerialen Friedrich Barbarossas und Heinrichs VI.* P. 224.

<sup>436</sup> Ibid. P. 222. Incorrectly identified as having been mentioned for the first time in 1188. Klaus-Peter Westrich, "Die Königspfalz Lautern im 12. und 13. Jahrhundert und ihre Bedeutung für die Ministerialität des Pfälzischen Raumes," in *Ministerialität im Pfälzer Raum: Referate und Aussprachen der Arbeitstagung vom 12. bis 14. Oktober 1972 in Kaiserslautern*, ed. Friedrich Ludwig Wagner, 1st ed., vol. 64, Veröffentlichung der Verlag der Pfälzischen Gesellschaft zur Förderung der Wissenschaften (Speyer: Verlag der Pfälzischen Gesellschaft zur Förderung der Wissenschaften, 1975), 75–94. P. 81. Eckbert I is incorrectly associated with the years 1188/89 in order to provide context as to his first mention.

<sup>437</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I.* Pp. 51-52. Also catalogued as Charter ID 10720 in the graph database.

<sup>438</sup> Zink, *Kaiserslautern in Vergangenheit und Gegenwart: eine Ortskunde auf geschichtlicher Grundlage.* P. 204.

<sup>439</sup> Rödel, "Der Lautrer Reichsgutkomplex: Eine Zwischenbilanz." P. 415.

Hohenstaufen dynasty. The result of this shift meant that some of the ministeriales that had been commissioned in Alzey then moved to Lautern in accordance to the theory.<sup>440</sup> It is also possible that these ministeriales had recommissioned themselves from other areas seeking a more prestigious commission during the approaching renovation of the palace in Lautern.

The recommissioning of ministeriales from duchies and bishoprics to the royal estates by the emperors is well documented, though it is also apparent that the ministeriales could leave the court of a lesser lord of their own volition for more fruitful opportunities at the court of a king or emperor. According to the 12<sup>th</sup> century chronicler Arnold von Lübeck, this was very much the case for some ministeriales. He noted that, *‘those who had been raised from childhood by the very same whose fathers had served without contradiction...and transferred them(selves) to the empire.’*<sup>441</sup> Whether or not Eckbert I and Gottfried I had been transferred to the royal estate on the orders of the king’s court or had simply transferred voluntarily within the royal estates is unclear. However, the statement by Arnold von Lübeck in reference to Saxon ministeriales at nearly the same time during the 1180s under the sovereignty of the same emperor, provides a glimpse into the agency that individual ministeriales had in deciding their employment. It also provides an important insight regarding the raising of the sons of ministeriales at the courts of the lords to whom the fathers were commissioned. In Eckbert I’s case, it is evident that he brought his family with him, as his sons all adopted the name von Lautern and were repeatedly mentioned from the mid-1180s until the first quarter of the 13<sup>th</sup> century. Heinrich I von Lautern’s first mention on 15 March 1184 as imperial marshal<sup>442</sup> indicates that he was at least old enough to hold the title, suggesting that he had been born approximately 20 years prior, perhaps even earlier. If this were indeed the case, then Heinrich I would have been in close contact with the imperial entourages via his father’s commission, through whom an extensive and high-status social network would have been facilitated. The palace provided precisely the environment for his development into an agent of the Hohenstaufen dynasty, and around the same age as the future emperor Henry VI, to whom Heinrich I was later a loyal advisor. Heinrich I’s admittance in the imperial entourage as a marshal also indicates his martial prowess, though he only held the title for three years before being named imperial vicar under Frederick I in

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<sup>440</sup> Werle, “Wald und Herrschaft: Studien zur Geschichte der Reichswaldgenossenschaft Kaiserslautern.” P. 55.

<sup>441</sup> Keupp, *Dienst und Verdienst: Die Ministerialen Friedrich Barbarossas und Heinrichs VI.* P. 285. This was translated from the German by Pattee. The German version as found in Keupp’s text as follows: *‘die von Kindesbeinen an von demselben aufgezogen waren und deren Väter ihm ohne jede Widerrede gedient hatten, (...) und übertrugen sich (selbst) dem Reich.’*

<sup>442</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I.* P. 55. Also catalogued as Charter ID 10726 in the graph database.

early to mid-1187,<sup>443</sup> and royal chamberlain on 25 October 1187.<sup>444</sup> This does not necessarily mean that his martial abilities were less than of his counter parts such as Heinrich Testa or Heinrich von Kalden who remained as marshals until Frederick I's death in 1190.<sup>445</sup> Rather, the position of chamberlain indicated a high level of trust on behalf of the emperor. It is perhaps for this reason that Heinrich I accompanied the young King Henry VI on his first Italian campaign in 1187,<sup>446</sup> without the accompaniment of the emperor. It is also around this time that the emperor and his son were generally traveling to different places with different entourages. While Frederick I led his crusaders to the Holy Land in 1190,<sup>447</sup> Henry VI was in Germany during the same year and in Italy at the beginning of 1191.<sup>448</sup> Frederick's death in June of 1190 led to Henry VI's coronation as emperor on 15 April 1191,<sup>449</sup> which also spelled good fortune for Heinrich I von Lautern given his role as a key advisor. While other ministeriales such as Werner von Bolanden, Heinrich von Kalden, and Cuno von Münzenberg were trusted ministeriales of the late Frederick I and later joined Henry VI, Heinrich I had already been in Henry VI's inner-circle due to his decades-long dedication. Keupp suggests that Heinrich I's service to Henry VI was a deciding factor in the rise of the von Lautern family continued by his brother, Reinhard I, and subsequent domination over the other regional ministeriales<sup>450</sup>—a statement heralded by the results of this investigation. The avenue for this progression was undeniably aided by the family's commission at the palace. This is a particularly relevant point when considering the effect of the political turmoil of the 13<sup>th</sup> century upon the ministerialis families, many of whom were dispersed, or whose family names were uncoupled from their descendants via marriage, or whose properties were enfeoffed to others, thereby ending any possible future inheritance. In stark contrast to the intra-familial strife of formerly great ministeriales

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<sup>443</sup> Ibid. P. 63. An exact date is unavailable for this charter. Also catalogued as Charter ID 10754 in the graph database.

<sup>444</sup> Ibid. P. 63. Also catalogued as Charter ID 10757 in the graph database.

<sup>445</sup> Heinrich Testa and Heinrich von Kalden have 17 appearances in the graph database ranging from June of 1191 until July of 1213. All of the appearances are after Barbarossa's death because that was the moment when they switched to the entourage of Henry VI.

<sup>446</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. Pp. 63-64. Also catalogued as Charter IDs 10754, 10755, 10757, 10758, and 10759. Böhmer, *Die Regesten des Kaiserreiches unter Heinrich VI 1165(1190)-1197*. P. 31 features the charter from November 9<sup>th</sup> in Lodi.

<sup>447</sup> Neuhold, *Die Staufer*. P. 63.

<sup>448</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. Pp. 68-69.

<sup>449</sup> Neuhold, *Die Staufer*. P. 91.

<sup>450</sup> Keupp, *Dienst und Verdienst: Die Ministerialen Friedrich Barbarossas und Heinrichs VI*. Pp. 224-226.

families such as the von Bolanden family,<sup>451</sup> the von Lautern-Hoheneck family remained unified and even received additional honors throughout the first 70 years of the 13<sup>th</sup> century.<sup>452</sup>

Despite the political tumult at the turn of the 13<sup>th</sup> century, the palace remained in the Reichsland as part of the royal estate, and was a prime example of elite architecture with a designed landscape. The success of the palace was made possible by the von Lautern-Hoheneck family as a key shift occurred in the political activities of the family heirs. After the mention of Reinhard I von Lautern as sheriff in May of 1216,<sup>453</sup> the family effectively consolidated themselves and focused upon the area around Lautern and its castles. In contrast, the von Lautern-Monfort line extending from Eberhard I von Lautern achieved international notoriety during the reign of Frederick II and slowly faded during the fall of the Hohenstaufen dynasty, only regaining importance in the 14<sup>th</sup> century. The stratagem of the von Lautern-Hoheneck family was centered upon their administrator positions at the palace in a variety of capacities, allowing them to extend the construction of their Castle Hohenecken, and remain somewhat detached from the turbulent political survival of ruling dynasties. The process whereby the von Lautern family eventually received the emperor's approval and inclusion into his personal entourage is therefore reflection of their duties at the palace as its administrators, and not a result of their ancestry. A vital piece of information regarding the family's early history is located in the history of the palace in addition to the registers of charters, as their task was to enforce the policy of the emperor and serve as administrators of Frederick I's newest palace. Thus, it is highly likely that they were continually rewarded for their services with imperial administrator positions as *camerarius* (chamberlain), *pincera* (cupbearer), or *agaso* (marshal), as outlined in the *Lex familiae Wormatiensis ecclesiae*. In essence, the von Lautern-Hoheneck family enjoyed a rise to regional power under the Hohenstaufen dynasty, who had enfeoffed them with lands, and elevated them to prestigious administrator positions. They effectively owed their political and economic existence to the trust of the Hohenstaufen rulers.

Although Heinrich I von Lautern was arguably the most famous of his family among those in the second generation, his brothers Siegfried I, Reinhard I, Johannes, Erbo, and Werner also occupied administrator positions within the royal estate and in other areas. Siegfried I von Lautern

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<sup>451</sup> Ibid. P. 308.

<sup>452</sup> Ibid. P. 310. Reinhard III von *Lautern-Hoheneck* was named provisioner of the imperial regalia at castle Trifels by King Richard of Cornwall.

<sup>453</sup> Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,1 n. 848, Friedrich II., 1216 März 16, Ap. Sanctum Naborem," Regesta Imperii Online, accessed July 22, 2020, [http://www.regesta-imperii.de/id/1216-03-16\\_1\\_0\\_5\\_1\\_1\\_1467\\_848](http://www.regesta-imperii.de/id/1216-03-16_1_0_5_1_1_1467_848). Also catalogued as Charter ID 10505 in the graph database.

served as commander of castle *Gavi* in the Piedmont region of Italy on 30 July 1190<sup>454</sup> and remained in Italy for at least the next three years indicated by another charter issued on 1 April 1193.<sup>455</sup> Reinhard I von Lautern appeared in 21 charters between 6 July 1193<sup>456</sup> and 10 March 1217.<sup>457</sup> During that time he was commissioned as the royal sheriff of the Reichsland of Lautern, oversaw business with the Abbey of Otterberg,<sup>458</sup> and was present as a witness in four charters issued by Emperor Henry VI,<sup>459</sup> three charters issued by King Philip of Schwaben,<sup>460</sup> two charters issued by King Otto IV,<sup>461</sup> and 11 charters issued by King Frederick II.<sup>462</sup> Reinhard I's activity is particularly interesting as he retained his administrator position as royal sheriff throughout the tumultuous period following the death of Emperor Henry VI until the election of King Frederick II. His inclusion in the witness lists of King Otto IV indicates that either had been impartial to the events or that his

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<sup>454</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. P. 69. Also catalogued as Charter ID 10770 in the graph database.

<sup>455</sup> Ibid. P. 79. Also catalogued as Charter ID 10823 in the graph database.

<sup>456</sup> Ibid. P. 82. Also catalogued as Charter ID 10828 in the graph database.

<sup>457</sup> Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,1 n. 898, Friedrich II., 1217 März 10, Bopardie," Regesta Imperii Online, accessed July 22, 2020, [http://www.regesta-imperii.de/id/1217-03-10\\_1\\_0\\_5\\_1\\_1\\_1522\\_898](http://www.regesta-imperii.de/id/1217-03-10_1_0_5_1_1_1522_898). Also catalogued as Charter ID 10450 in the graph database.

<sup>458</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. Pp. 90-91. Also catalogued as Charter ID 10859 in the graph database.

<sup>459</sup> Ibid. Pp. 82, 90-93. Also catalogued as Charter IDs 10828, 10859, 10860, and 10866 in the graph database.

<sup>460</sup> Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,1 n. 87, Philipp, 1204 Nov. 12, Confluentie," Regesta Imperii Online, accessed July 22, 2020, [http://www.regesta-imperii.de/id/1204-11-12\\_2\\_0\\_5\\_1\\_1\\_203\\_87](http://www.regesta-imperii.de/id/1204-11-12_2_0_5_1_1_203_87); Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,1 n. 113, Philipp, 1205 Juli 16, Ap. Hagenou," Regesta Imperii Online, accessed July 22, 2020, [http://www.regesta-imperii.de/id/1205-07-16\\_1\\_0\\_5\\_1\\_1\\_235\\_113](http://www.regesta-imperii.de/id/1205-07-16_1_0_5_1_1_235_113); Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,1 n. 140, Philipp, 1207 Ian. 31, Ap. Gelnhusen," Regesta Imperii Online, accessed July 22, 2020, [http://www.regesta-imperii.de/id/1207-01-31\\_1\\_0\\_5\\_1\\_1\\_285\\_140](http://www.regesta-imperii.de/id/1207-01-31_1_0_5_1_1_285_140). Also catalogued as Charter IDs 10430, 10431, and 10432 in the graph database.

<sup>461</sup> Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,1 n. 284, Otto IV., 1209 Iun. 16, apud Spiram," Regesta Imperii Online, accessed July 22, 2020, [http://www.regesta-imperii.de/id/1209-06-16\\_1\\_0\\_5\\_1\\_1\\_599\\_284](http://www.regesta-imperii.de/id/1209-06-16_1_0_5_1_1_599_284); Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,1 n. 285, Otto IV., 1209 Iuni 30, apud Spiram," Regesta Imperii Online, accessed July 22, 2020, [http://www.regesta-imperii.de/id/1209-06-30\\_1\\_0\\_5\\_1\\_1\\_601\\_285](http://www.regesta-imperii.de/id/1209-06-30_1_0_5_1_1_601_285). Also catalogued as Charter IDs 10434 and 10435 in the graph database.

<sup>462</sup> Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,1 n. 802, Friedrich II., 1215 Iuni 2, apud Lutram," Regesta Imperii Online, accessed July 22, 2020, [http://www.regesta-imperii.de/id/1215-06-02\\_1\\_0\\_5\\_1\\_1\\_1405\\_802](http://www.regesta-imperii.de/id/1215-06-02_1_0_5_1_1_1405_802); Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,1 n. 827, Friedrich II., 1215 Sept. 6," Regesta Imperii Online, accessed July 22, 2020, [http://www.regesta-imperii.de/id/1215-09-06\\_1\\_0\\_5\\_1\\_1\\_1441\\_827](http://www.regesta-imperii.de/id/1215-09-06_1_0_5_1_1_1441_827); Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,1 n. 851, Friedrich II., 1216, in Novo Castro," Regesta Imperii Online, accessed July 22, 2020, [http://www.regesta-imperii.de/id/1216-00-00\\_1\\_0\\_5\\_1\\_1\\_1470\\_851](http://www.regesta-imperii.de/id/1216-00-00_1_0_5_1_1_1470_851); Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,1 n. 846, Friedrich II., 1216 März 12, Ap. Sanctum Naborem," Regesta Imperii Online, accessed July 22, 2020, [http://www.regesta-imperii.de/id/1216-03-12\\_1\\_0\\_5\\_1\\_1\\_1465\\_846](http://www.regesta-imperii.de/id/1216-03-12_1_0_5_1_1_1465_846); Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,1 n. 854, Friedrich II., 1216 Apr. 17," Regesta Imperii Online, accessed July 22, 2020, [http://www.regesta-imperii.de/id/1216-04-17\\_2\\_0\\_5\\_1\\_1\\_1473\\_854](http://www.regesta-imperii.de/id/1216-04-17_2_0_5_1_1_1473_854); Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,1 n. 898"; Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,1 n. 848." Also catalogued as Charter IDs 10442, 10444, 10446, 10447, 10448, 10450, and 10505 in the graph database. Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. Pp. 122-124. Also catalogued as Charter IDs 10932, 10933, and 10934 in the graph database.

commission was impartial due to its connection to the Palace of Lautern and not necessarily a specific monarch or dynasty. The latter is the most plausible explanation as his administrator position provided him more professional stability than his brother Heinrich I—who remained a staunch loyalist of the Hohenstaufen dynasty and never appeared in any charters issued by the Welf King and Emperor Otto IV.

The conflict between the Hohenstaufen and Welf houses was amplified by the participation of the papacy in the succession for the throne and the expulsion of German ministeriales from the Italian peninsula following Henry VI's death in September of 1197.<sup>463</sup> This was not unwarranted as the Hohenstaufen rulers regularly opposed the supremacy of the popes—a trend begun by Frederick I who had been excommunicated by Pope Alexander III in 1160 for supporting the Anti-Pope Victor IV.<sup>464</sup> The expulsion of Henry VI's loyalists upon his death placed many notable individuals in the opposition of the pope, including Henry VI's trusted steward and commander, Markward von Annweiler, and Heinrich I von Lautern's brother, Johannes von Lautern-Hoheneck—who was ordered to leave Italy on 18 January 1198.<sup>465</sup> The case against Markward is particularly relevant for the politics of Frederick II in the first half of the 13<sup>th</sup> century, because Markward was a highly regarded ministerialis serving as Frederick II's official guardian during his early childhood, and had begun paving the way for Frederick's later coronation as Roman-German King.<sup>466</sup> Markward was described by his enemies as an 'unfaithful man' and 'adventurer' who misused the trust of his late emperor.<sup>467</sup> This underlines the fragility of the status of a ministerialis, in which his reputation could be quickly cast asunder. Despite the allegations of infidelity to the Hohenstaufen dynasty and family, Markward had taken it upon himself to secure the safety of the Empress Constance and her son Frederick II in Palermo, alongside many comrades and veterans of the campaigns of the 1190s. These included Henry VI's chancellor, Walter von Palearia (also Bishop of Troia), and Wilhelm Capparone—the self-proclaimed captain of Sicily.<sup>468</sup> Despite being in southern Italy and Sicily—a

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<sup>463</sup> Neuhold, *Die Staufer*. P. 101.

<sup>464</sup> *Ibid.* P. 50. Alexander III had been excommunicated by Victor IV in the same year upon the orders of the Barbarossa.

<sup>465</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. P. 98. Also catalogued as Charter ID 10890 in the graph database.

<sup>466</sup> Prinz, *Markward von Anweiler; Truchsess des Reiches, Markgraf von Ancona, Herzog der Romagna und von Ravenna, Graf von Abruzzo und Molise*. P. 136.

<sup>467</sup> Keupp, *Dienst und Verdienst: Die Ministerialen Friedrich Barbarossas und Heinrichs VI*. Pp. 250-251.

<sup>468</sup> Odilo Engels, *Die Staufer*, 8th ed., *Geschichte/Kulturgeschichte/Politik* 154 (Stuttgart: Kohlhammer GmbH, 2005). P. 150.



long way from the Kingdom of Germany—Markward maintained communications with the new Hohenstaufen King, Philip of Swabia.<sup>469</sup>

The political environment became ever more precarious for Markward and the other ministeriales in the period following Henry VI's death, as Empress Constance opposed Markward's involvement in any of her affairs in the Kingdom of Sicily and wanted rid of him along with the other German ministeriales who had served her late husband.<sup>470</sup> This most likely explains Heinrich I von Lautern's curious 13-year absence from the charters following the death of Emperor Henry VI, as he presumably sought refuge from potential campaigns against his person and reputation.<sup>471</sup> With the support of Pope Celestine III, Empress Constance even went so far as to support the dispossession of Markward's lands, including the duchies given to him by her late husband. She then forced him to swear that he would abandon his claims and never return. Markward apparently did speak the oath commanded of him, but later claimed that it had been ordered under duress, only to return to Sicily at a later date. Prior to his return, a series of small battles ensued, involving various sieges and occupations of Markward's properties by papal supporters.<sup>472</sup> The newly elected Pope Innocent III officially excommunicated Markward in early 1198 following this series of altercations and contentions,<sup>473</sup> which eventually reached a boiling point upon the death of the empress in November 1198.<sup>474</sup> Innocent III called a crusade in 1199 against Markward,<sup>475</sup> seeking to permanently rid him from Italy and Sicily and involved such fiery rhetoric as to declare Markward 'an infidel worse than the infidels' in the hopes of garnering support against the famous ministerial war commander. Despite the pope's call to arms, very few answered, though one in particular stands out: the young Saint Francis.<sup>476</sup> The failure of the crusade against Markward was in part due to his death in 1203,<sup>477</sup> but also potentially due to his renown as a military leader. Provided the extreme

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<sup>469</sup> Ibid. P. 142.

<sup>470</sup> Prinz, *Markward von Anweiler; Truchsess des Reiches, Markgraf von Ancona, Herzog der Romagna und von Ravenna, Graf von Abruzzo und Molise*. Pp. 63-64.

<sup>471</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. Pp. 98-99. Heinrich I von Lautern disappeared from the charters between his appearance in 1197 in Linaria and 13 years later in Hagenau, catalogues as Charter IDs 10889 and 10893, respectively.

<sup>472</sup> Prinz, *Markward von Anweiler; Truchsess des Reiches, Markgraf von Ancona, Herzog der Romagna und von Ravenna, Graf von Abruzzo und Molise*. Pp. 64-65.

<sup>473</sup> Ibid. P. 106.

<sup>474</sup> Neuhold, *Die Staufer*. P. 103.

<sup>475</sup> Riley-Smith, *The Crusades: A History*. Pp. 162-163,

<sup>476</sup> Ibid. P. 163.

<sup>477</sup> Ibid. P. 163.

downward spiral suffered by Markward, Heinrich I von Lautern's sudden absence apparently spared him of a similar fate. Pope Innocent III later issued a decree at the Fourth Lateran Council in November of 1215 justifying crusades against heretics,<sup>478</sup> which could have proved useful in his earlier struggle with Markward. The purpose of the decree was to provide the argumentative foundation in support of the ongoing Albigensian Crusade in southern France, which took place from 1209 to 1229,<sup>479</sup> occurring simultaneously with the declaration of the fifth crusade.<sup>480</sup>

The political unrest also resulted in a re-alignment of allegiances between the two lines of the von Lautern family and the two premier royal houses vying for the throne, not to mention the counts and dukes of the empire. As the interregional notoriety of the von Lautern family shifted from members of the von Lautern-Hoheneck line to the von Lautern-Montfort line during the reign of Emperor Otto IV, another shift in regional power is remarkably evident with the rise of Frederick II as the official opponent to Otto. The coronation of Otto IV by the Archbishop of Cologne was countered by the election of Frederick II by the other princes as Anti-king. The willingness of Eberhard I von Lautern-Montfort to serve the Welf emperor Otto IV was more a matter of opportunism or duty to the throne rather than loyalty to the Welf dynasty as he joined Frederick II's camp shortly after his coronation in Aachen on 25 July 1215.<sup>481</sup> Prior to Eberhard's association with Otto IV both he and Heinrich I had maneuvered on the interregional scale, presenting themselves and their family's name at elite circles and events throughout the empire. Meanwhile Reinhard I had solidified the perception of the family as a trusted administrator of the royal estates. Of the other three brothers, only Erbo and Johannes were mentioned in the charters, whereas Martin Dolch listed Werner as another brother his 1994 text regarding the ministeriales of von Lautern and von Hoheneck.<sup>482</sup> Erbo first appeared alongside his brother Heinrich I on 23 September 1196 in a charter issued by Emperor Henry VI,<sup>483</sup> and appeared only once more on 31 July 1213 as a royal

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<sup>478</sup> Ibid. P. 175. This is in reference to the term *Excommunicamus*.

<sup>479</sup> Ibid. Pp. 166-169.

<sup>480</sup> Neuhold, *Die Staufer*. P. 131.

<sup>481</sup> Ibid. P. 121. Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,1 n. 835, Friedrich II., 1215 Sept. 26, Hagenowe," *Regesta Imperii Online*, accessed September 10, 2020, [http://www.regesta-imperii.de/id/1215-09-26\\_1\\_0\\_5\\_1\\_1\\_1449\\_835](http://www.regesta-imperii.de/id/1215-09-26_1_0_5_1_1_1449_835). Also catalogued as Charter ID 10445 in the graph database. This was Eberhard's first appearance in Frederick II's camp.

<sup>482</sup> Dolch, "Das Reichsministerialengeschlecht von Lautern/von Hohenecken Im 12./13. Jahrhundert." P. 55.

<sup>483</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. P. 96. Also catalogued as Charter ID 10882 in the graph database.

chamberlain in the service of King Frederick II during the infancy of his regency.<sup>484</sup> His activity in the service of Henry VI and Frederick II, and absence during the reign of both Philip and Otto IV, indicate his loyalty to the direct lineage of the Hohenstaufen dynasty. His actions suggest that he was partisan to the Hohenstaufen cause in contrast to his brother Reinhard I, who remained loyal to the throne regardless of its inhabitant, and his other brother Johannes, who briefly served Otto IV. Johannes' activity was more pronounced than that of his brother Erbo, though he too accompanied his elder brother Heinrich I on two occasions in service of Emperor Henry IV.<sup>485</sup> Curiously, Johannes and Erbo were never listed as witnesses in the same charter nor were they together with their brother Heinrich at the same time. A possible interpretation of this curiosity could be that Heinrich groomed his brothers for commissions as administrators independently, and helped open the door to elite social circles to expand their networks. Meanwhile, Reinhard and Siegfried had presumably already been groomed or were simply older than Johannes and Erbo and had developed simultaneously alongside Heinrich. Regardless of the precise scenario, it is evident that the various brothers were assisting one another, and operating within different levels of the administration hierarchy.

The third generation of the von Lautern-Hoheneck line consisted only of the offspring of both Reinhard II and Siegfried II. Although it is certainly possible that Heinrich, Johannes, Werner, and Erbo had children of their own, none of them were recorded in the extant charters, suggesting that the main promulgators of the family were restricted to the six sons of Reinhard and the single son of Siegfried. Despite Heinrich's incredibly active role as an advisor to the Hohenstaufen monarchs, his activity dwindled after 3 August 1197<sup>486</sup> after which he only appeared five more times with the last occurring on 11 September 1223.<sup>487</sup> Interestingly, his commission as imperial cupbearer under Emperor Henry IV was resumed under Emperor Frederick II, though he was last mentioned accompanying the young King Henry (VII). The period of time between Heinrich I's last appearance alongside the emperor and his appearance with King Henry (VII) is noteworthy, as he

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<sup>484</sup> Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,1 n. 710, Friedrich II., 1213 Iuli 31, Ap. Nuringberc," Regesta Imperii Online, accessed July 22, 2020, [http://www.regesta-imperii.de/id/1213-07-31\\_1\\_0\\_5\\_1\\_1\\_1281\\_710](http://www.regesta-imperii.de/id/1213-07-31_1_0_5_1_1_1281_710). Also catalogued as Charter ID 10441 in the graph database.

<sup>485</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. Pp. 63 and 69. Also catalogued as Charter IDs 10758 and 10772 in the graph database.

<sup>486</sup> Ibid. Also catalogued as Charter ID 10889 in the graph database.

<sup>487</sup> Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,2 n. 3900, Heinrich (VII)., 1223 Sept. 11, Northusin," Regesta Imperii Online, accessed July 22, 2020, [http://www.regesta-imperii.de/id/1223-09-11\\_2\\_0\\_5\\_1\\_2\\_105\\_3900](http://www.regesta-imperii.de/id/1223-09-11_2_0_5_1_2_105_3900). Also catalogued as Charter IDs 10523 in the graph database.

must have returned to his household in Lautern where his father and the rest of his brothers were located. Heinrich never had any children that were mentioned and his nephews never attained the interregional notoriety that he had enjoyed, as they all seem to have remained in the area of the Reichsland of Lautern with the exception of Reinhard I's son, Landolf, who was elected Bishop of Worms in 1234.<sup>488</sup> Of the other five brothers and their cousin, Sigelo I the son of Siegfried I, only Reinhard II and Siegfried II were routinely active in the politics and administration of the royal estate during the Hohenstaufen-Welf struggle for the royal and imperial thrones. In Reinhard II's first documented appearance in 1217,<sup>489</sup> he was recorded as a knight, and 15 years later in May of 1232<sup>490</sup> he was the royal sheriff of the Reichsland of Lautern. Meanwhile, his brother Siegfried II appeared as an advocate and later as a royal sheriff in 1231 under King Heinrich (VII)<sup>491</sup>—one year before Reinhard II held the title. The immediate conclusion is either two individuals could hold the title as royal sheriff concurrently, or they alternated roles. It seems most likely that the two brothers served the kings and emperors in a number of capacities at the will of the monarchs—especially during the tenure of their brother Landolf as Bishop of Worms—and therefore alternated roles based upon necessity.

Landolf's first ecclesiastical position within the bishopric of Worms was that of the Cathedral Deacon in 1227. Due to his heritage as a ministerialis, Landolf was at a political disadvantage over other members of the bishopric that included *nobiles* with vast networks of contacts and resources. This was particularly evident in the network of prebendaries at his disposal, which were far fewer than those of both his predecessors and successors.<sup>492</sup> His election as Bishop of Worms took place on 5 October 1234, with the confirmation following soon thereafter by the Archbishop of Mainz, Siegfried III von Eppstein, and the investment of the regalia by King Henry (VII). It was theorized by Burkard Keilmann that Henry (VII) sought to establish a change within the bishopric by supporting a ministerialis in order to appeal to the citizens of Worms rather than to

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<sup>488</sup> Burkard Keilmann, "Landolf von Hoheneck," in *Die Bischöfe des Heiligen Römischen Reiches 1198 bis 1448: Ein biographisches Lexikon*, ed. Erwin Gatz (Berlin: Duncker und Humblot GmbH, 2001). P. 863.

<sup>489</sup> Dolch and Münch, *Die Urkunden des Zisterzienserklosters Otterberg 1143-1360*. P. 84. Also catalogued as Charter IDs 10410 in the graph database.

<sup>490</sup> Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,1 n. 1983, Friedrich II., 1232 Mai 00, apud Portum Naonis," *Regesta Imperii Online*, accessed July 22, 2020, [http://www.regesta-imperii.de/id/1232-05-00\\_1\\_0\\_5\\_1\\_1\\_2857\\_1983](http://www.regesta-imperii.de/id/1232-05-00_1_0_5_1_1_2857_1983). Also catalogued as Charter IDs 10464 in the graph database.

<sup>491</sup> Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,2 n. 4202, Heinrich (VII), 1231 Juni 2, Wormacie," *Regesta Imperii Online*, accessed July 22, 2020, [http://www.regesta-imperii.de/id/1231-06-02\\_1\\_0\\_5\\_1\\_2\\_469\\_4202](http://www.regesta-imperii.de/id/1231-06-02_1_0_5_1_2_469_4202). Also catalogued as Charter IDs 10524 in the graph database.

<sup>492</sup> Keilmann, "Landolf von Hoheneck." P. 863.

the *nōbiles* who were more likely to support his father, the emperor Frederick II.<sup>493</sup> Unfortunately for Landolf, his election corresponded to the same months in which Henry (VII)'s insurrection against his father, Frederick II, was at a fever pitch. However, the struggle for the support of Worms had been underway years prior to Landolf's election, meaning that he would have been fully aware of the political situation, indicating the significant risk that he took in order to signal the status of his family and of himself within ecclesiastical networks.

The struggle for Worms during the insurrection required people on the ground as operators for the king, emperor, and pope. These roles were often embodied by the *ministeriales* and in this case, brothers from the same family. In January of 1232, Emperor Frederick II sent Reinhard II, the brother of both Siegfried II and Bishop Landolf, to deliver documents on his behalf to the councilmen of Worms<sup>494</sup> to secure their support in the feud with his rebellious son. Landolf's allegiance to Henry (VII) beginning in 1233,<sup>495</sup> placed him on the opposite side of the emperor and his own brothers who were Frederick II's *ministeriales*. Soon after his election as bishop, Landolf's older brother Siegfried II<sup>496</sup> was enlisted as his solicitor,<sup>497</sup> presumably to assist in sorting out the political and legal situation Landolf had been mired in. Landolf soon switched sides to support the emperor after the investment of the regalia by King Henry (VII), and the young king promptly placed the city of Worms under siege in 1235 in response to Landolf's apparent treason.<sup>498</sup> It is likely that Siegfried II's council had brought Landolf back onto the side of Frederick II, after Reinhard II had presumably failed to do so.

His allegiance to the emperor was precarious as Frederick II was often opposing the policies of the papacy. In fact, Pope Gregory IX had excommunicated the emperor in 1227 when he failed to sail to the Holy Land for the Sixth Crusade, apparently stricken with a sudden illness—the authenticity of which was challenged by contemporary chroniclers.<sup>499</sup> Frederick II's excommunication is not entirely shocking, except for the fact that it occurred no less than four times

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<sup>493</sup> Ibid. P. 863.

<sup>494</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. P. 160. Also catalogued as Charter ID 11000 in the graph database.

<sup>495</sup> Keilmann, "Landolf von Hoheneck." P. 863.

<sup>496</sup> Although Siegfried II had been the official imperial sheriff since 1212, Reinhard II is labeled with the same position in 1237, suggesting Reinhard II was either given a temporary title, or Frederick II had two sheriffs of *Lautern* at the same time.

<sup>497</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. P. 163. Also catalogued as Charter ID 11004 in the graph database.

<sup>498</sup> Keilmann, "Landolf von Hoheneck." P. 863.

<sup>499</sup> See Roger of Wendover

over his life. He was excommunicated a second time by the same Pope for having embarked on the crusade at a later time—as an excommunicate had no right to take part in a crusade, though both excommunications were lifted in 1230 by Gregory IX. Landolf's new loyalty to the emperor did not immediately translate to receiving support from him; rather, Frederick II actively sought to replace him. Through a spectacular turn of events, Landolf was able to make amends with both the emperor and the pope in 1236.<sup>500</sup> From this point on, he forged an alliance with Frederick II, acting as a key agent along the upper Rhine alongside the Prince-Bishop of Strasburg, Berthold I von Teck.<sup>501</sup> Landolf even accompanied the emperor on the Italian campaign against the Lombard league in 1237, distinguishing himself as the only ecclesiastical prince to do so. During this period, he operated as Frederick II's key negotiator with the pope and was bountifully enfeoffed with privileges, though in the meantime, Landolf had lost the support of the citizens of Worms.<sup>502</sup> Frederick II was excommunicated a third time in 1239<sup>503</sup> for his sieges of the Lombard cities of Brescia, Milan, Bologna, and Piacenza. In response to his third excommunication, Frederick II expelled all Franciscans and Dominicans from the entirety of Lombardy—due to their unwavering support of the papacy and the crusades,<sup>504</sup> and apparent opposition to the Hohenstaufen party. The war in Lombardy was directly targeted at Pope Gregory IX, whose address in Rome was on the emperor's warpath. However, in response to Gregory IX's death in 1241, prior to Frederick II's arrival in Rome, the emperor ended the campaign.

Soon thereafter, the Archbishops of Mainz and Cologne abandoned the emperor and began appropriating properties loyal to the Hohenstaufen dynasty. This period also resulted in the tragedy of Landolf's first cousin, Sigelo I, who was killed by the men of the Mainz Archbishop Siegfried III in 1242. As a royal knight, Sigelo I had been ordered by Frederick II's son, King Conrad IV, to deliver the Archbishop of Trier, Theoderich II von Wied to the safety of the royal estate, when the company was intercepted by the forces of the Mainzer Archbishop on 28 March 1242.<sup>505</sup> The purpose for the mission was presumably to safely bring Theoderich II to Aachen so that he could

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<sup>500</sup> Keilmann, "Landolf von Hoheneck." P. 863.

<sup>501</sup> Wolfgang Stürner, *Friedrich II: 1194-1250* (Darmstadt: Wissenschaftliche Buchgesellschaft, 2009). P. 321.

<sup>502</sup> Keilmann, "Landolf von Hoheneck." P. 864.

<sup>503</sup> This was only five years after Frederick II's son, Henry (VII) had been excommunicated by Gregory IX as well

<sup>504</sup> J. H. H. Sassen, *Hugo von St. Cher: Seine Tätigkeiten als Kardinal 1244-1263* (Bonn: Verlag von Peter Hanstein, 1908). P. 4.

<sup>505</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. P. 178. Also catalogued as Charter ID 10097 in the graph database.

crown King Conrad IV as the new emperor.<sup>506</sup> Theoderich II had been the Archbishop of Trier since 1212, a staunch supporter of the Hohenstaufen dynasty for over 30 years, and had promoted Emperor Frederick II's Italian campaign in 1239 despite the emperor's excommunication. The Archbishop had been a supporter of various monastic and military orders, including the Teutonic Knights as well,<sup>507</sup> and had been present at the issuing of two charters in the Palace of Lautern on 1 April 1214<sup>508</sup> and 31 July 1215,<sup>509</sup> underlining his longtime alliance with Frederick II, and familiarity with the von Lautern-Hoheneck family.

Following the death of his cousin, Landolf refused to follow the Archbishops of Mainz and Cologne on their campaign to eradicate ecclesiastical support for the Hohenstaufen dynasty—particularly within the Electorate of Trier—and as a result, an interdict was placed upon him and the city of Worms. Landolf then refused to acknowledge the interdict by continuing to celebrate mass, and was excommunicated by the Archbishop of Mainz, Siegfried III von Eppstein in 1244—the same one who had confirmed Landolf's election in 1234.<sup>510</sup> It is apparent that during this period, Landolf managed to establish himself as the most loyal bishop in the service of the emperor, but had also lost the support of the clerics and citizens of Worms, who had authorized the distribution of new prebendaries loyal to the cause of the pope in Landolf's absence while in Frederick II's entourage. The anti-Hohenstaufen alliance under Pope Innocent IV sought to drive a wedge between Frederick II and all of his major supporters, which also included the Teutonic Knights, who's Grandmaster Hermann von Salza had accompanied the emperor, alongside Landolf. The establishment of a Teutonic Knight Commandry in castle Trifels in 1239 highlighted the cooperation between Hermann von Salza and Frederick II.<sup>511</sup> However, in 1244 Pope Innocent IV granted the

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<sup>506</sup> Wolfgang Seibrich, "Dietrich (Theoderich) von Wied," in *Die Bischöfe des Heiligen Römischen Reiches 1198 bis 1448: Ein biographisches Lexikon*, ed. Erwin Gatz, 1st ed., vol. 1, 3 vols. (Berlin: Duncker and Humblot GmbH, 2001), 792–94. P. 793.

<sup>507</sup> Martin Persch, "Theoderich II," in *Biographisch-Bibliographisches Kirchenlexikon*, ed. Traugott Bautz and Friedrich Wilhelm Bautz, 1st ed., vol. 11 Stoss, Veit-- Tieffenthaler, Joseph (Herzberg: Verlag Traugott Bautz, 1996), 847–48. P. 847.

<sup>508</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. Pp. 107-109. Also catalogued as Charter ID 10921 in the graph database.

<sup>509</sup> Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,1 n. 822, Friedrich II., 1215 Juli 31, (Aquisgrani)," *Regesta Imperii Online*, accessed September 10, 2020, [http://www.regesta-imperii.de/id/1215-07-31\\_1\\_0\\_5\\_1\\_1\\_1430\\_822](http://www.regesta-imperii.de/id/1215-07-31_1_0_5_1_1_1430_822). Also catalogued as Charter ID 10443 in the graph database.

<sup>510</sup> Keilmann, "Landolf von Hoheneck." P. 864.

<sup>511</sup> Martin Armgart and Matthias Untermann, "Trifels, Deutschherrenkommende," in *Pfälzisches Klosterlexikon: Handbuch der pfälzischen Klöster, Stifte und Kommenden*, ed. Jürgen Keddigkeit et al., 1st ed., vol. 5 T-Z, 5 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern in Verbindung mit dem Institut für Europäische Kunstgeschichte der Ruprecht-Karls-Universität Heidelberg, 26.5 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2019), 46–53. P. 47.

Teutonic Order the privilege of amending their order's statutes, a freedom rarely granted to any religious order.<sup>512</sup> By granting additional privileges to the Teutonic Order, Innocent IV was effectively cultivating a new relationship to bring the order more in line with the papacy than the empire.

The various struggles came to a head at the Council of Lyon in 1245, in which Frederick II was excommunicated for the fourth time by Pope Innocent IV who described him as a heretic, invoking the decree by his predecessor Innocent III, and demanded he be deposed.<sup>513</sup> This calls to mind the similar fate suffered by Frederick's former guardian, Markward von Annweiler. With the emperor excommunicated and relieved of his title, Bishop Landolf was then forced to submit to the pope. Despite the official reversal in loyalties and atonement with the pope, Landolf refused to acknowledge the papal Anti-King Heinrich Raspe against the Hohenstaufen King Conrad IV, and ordered his brother Heinrich II von Lautern to defend castle Stein against the Archbishop of Mainz in December of 1245,<sup>514</sup> for which he was excommunicated a second time in 1246.<sup>515</sup> Landolf's death the following year in 1247 led to the election of Konrad III von Dürkheim as the new Bishop of Worms, previously a member of the Cathedral Chapter of Mainz who had enjoyed the seemingly unyielding favor of Pope Innocent IV,<sup>516</sup> and was an adversary of the Hohenstaufen dynasty.<sup>517</sup> Landolf's legacy of shifting his loyalties between the camps of the Hohenstaufen dynasty and the papacy was for the most part due to the subservient status of the Bishop of Worms relative to the Archbishop of Mainz, the Roman-German King, the Holy Roman Emperor, and the pope. He was effectively drafted into a role destined for strife, strengthening the argument as to why the cathedral canons had elected a son of a ministerialis family and not a son of a more storied and wealthy nōbilis family during an insurrection. In turn, Landolf's position as bishop certainly raised his family's

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<sup>512</sup> Klaus Militzer, *Die Geschichte des Deutschen Ordens*, 2nd ed. (Stuttgart: W. Kohlhammer GmbH, 2012). P. 17.

<sup>513</sup> Norman Tanner, *Decrees of the Ecumenical Councils*, vol. Volume I: Nicaea I to Lateran V (London and Washington D.C.: Sheed & Ward, Georgetown University Press, 1990). P. 278.

<sup>514</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. P. 180. Also catalogued as Charter ID 11026 in the graph database.

<sup>515</sup> Keilmann, "Landolf von Hoheneck." P. 864.

<sup>516</sup> Burkard Keilmann, "Konrad von Dürkheim," in *Die Bischöfe des Heiligen Römischen Reiches 1198 bis 1448: Ein biographisches Lexikon*, ed. Erwin Gatz (Berlin: Duncker und Humblot GmbH, 2001). P. 864. Konrad III von Dürkheim's favorable position could also have been a result of his origin from the County of Leiningen, who's ruling von *Leiningen* family had been staunch enemies of the Hohenstaufen dynasty.

<sup>517</sup> Jürgen Keddigkeit, Britta Hedtke, and Matthias Untermann, "Worms, St. Peter (und Paul), Domstift," in *Pfälzisches Klosterlexikon: Handbuch der pfälzischen Klöster, Stifte und Kommenden*, ed. Jürgen Keddigkeit et al., 1st ed., vol. 5 T-Z, 5 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern in Verbindung mit dem Institut für Europäische Kunstgeschichte der Ruprecht-Karls-Universität Heidelberg, 26.5 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2019), 409–505. P. 417.



standing within the ecclesiastical realm, allowing him to assign prebendaries within the Bishopric of Worms. Landolf also led the way in reformations regarding the integration of the women's convents of Nonnenmünster and Kirschgarten into the Cistercian order, and actively supported the women of the Order of St. Mary Magdalene.<sup>518</sup> However, his active participation on both sides of the insurrection of Henry (VII), his failure to secure his standing in Worms, and his two excommunications have dampened his legacy.

Landolf's turbulent tenure as bishop ended the von Lautern-Hoheneck family's ecclesiastical involvement on the interregional scale for the duration of the Middle Ages. In fact, none of the family members of the fourth generation of the von Lautern-Hoheneck line—i.e. the sons of Sigelo I, Reinhard II, and Siegfried II—even became members of the clergy. Although the new generation lacked clergymen, they were very active in proceedings with the establishment of the Teutonic Knight Commandry at Einsiedel alongside Siegfried II, and conducted business with the Abbey of Otterberg. The first mention of the foundation of the commandry at Einsiedel dates to a charter from 11 August 1253<sup>519</sup> issued by the papal legate, Hugo de St. Cher, offering an indulgence of 100 days to anyone who answered the call to fund the construction of a church, main building, and outbuildings for the new Teutonic Knight Commandry at Einsiedel,<sup>520</sup> and parcel of land no more than two kilometers from Castle Hohenecken. This came nearly one month after a previous call by Hugo requesting funds for the commandry at Saarburg on 14 July 1253.<sup>521</sup> On 18 October 1253, the imperial sheriff Siegfried II von Lautern-Hoheneck, along with his wife Ludgard,<sup>522</sup> son Reinhard III, and other family members, agreed to answer the call from the papal

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<sup>518</sup> Keilmann, "Landolf von Hoheneck." P. 864. The Order of St. Mary Magdalene consisted of nuns who were former prostitutes who sought penitence for their past. Peter Schmidt and Stefanie Fuchs, "Worms, St. Andreas, später St. Maria Magdalena Kollegiatstift, geplantes Dominikanerkloster, dann Reuerinnenkloster, zeitweise Dominikanerinnenkloster," ed. Jürgen Keddigkeit et al., 1st ed., vol. 5 T-Z, 5 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern in Verbindung mit dem Institut für Europäische Kunstgeschichte der Ruprecht-Karls-Universität Heidelberg, 26.5 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2019), 505–31. According to this source, the Patrocinium was to St. Andreas but had become a Dominican monastery by 1231. The dedication to Mary Magdalene may not have occurred until the 18<sup>th</sup> century, 500 years after Landolf's death. Pp. 506-507.

<sup>519</sup> Akademie der Wissenschaften und der Literatur, Mainz, "RI V,2,3 n. 10434, Hugo von S. Sabina, 1253 Aug. 11, Metis," Regesta Imperii Online, accessed July 22, 2020, [http://www.regesta-imperii.de/id/1253-08-11\\_1\\_0\\_5\\_2\\_3\\_5330\\_10434](http://www.regesta-imperii.de/id/1253-08-11_1_0_5_2_3_5330_10434). Also catalogued as Charter ID 10532 in the graph database.

<sup>520</sup> Armgart and Diener, "Einsiedel, St. Maria Deutschherrenkommende, zeitweise Kommende des Lazarusordens." P. 339.

<sup>521</sup> Johann Heinrich Hennes, *Commenden des Deutschen Ordens in den Balleien Coblenz, Altenbiesen, Westphalen, Lothringen, Oesterreich und Hessen*, 1st ed. (Mainz: Verlag von Franz Kirchheim, 1878). P. 200.

<sup>522</sup> Various forms of her name exist in the charters including Lukardis.

legate.<sup>523</sup> A brief summary of the legate's life is warranted as he was heavily involved in the policies of the Reichsland of Lautern and the von Lautern-Hoheneck family.

Hugo de St. Cher had been elevated to the position of Cardinal on 28 May 1244, by Pope Innocent IV,<sup>524</sup> as one of seven new cardinals prior to the Council of Lyon.<sup>525</sup> Interestingly, Innocent IV did not exclusively choose anti-Hohenstaufen clerics, strengthening the claim that he hoped to unify, rather than to abandon compromise altogether.<sup>526</sup> Hugo's appointment also marked the first time that a Dominican had been called to the College of Cardinals. It was likely his membership and fidelity to the Dominican Order aided his opposition to the Hohenstaufen dynasty, as Frederick II actively pursued both the Franciscans and Dominicans due to their outspoken support of the crusades—an enterprise in which Frederick II was not keen in partaking. By 1241, the majority of the Dominicans had joined the anti-Hohenstaufen movement, a time at which Hugo was the Vicar of the entire order. Upon his elevation to cardinal, it was his obligation to represent the order's interests in Rome.<sup>527</sup> He was an intellectual who had previously operated as a professor at the University of Paris, known at the time for his work in theology and exegesis. His work regarding a revision of the bible at the Dominican Monastery of St. Jacques in Paris strengthened his reputation as a theologian and teacher. As his interregional activities increased, so too did his reputation as a diplomat, making him an ideal candidate for cardinal and later a papal legate.<sup>528</sup> Hugo de St. Cher<sup>529</sup> apparently supported the anti-Hohenstaufen movement following the Council of Lyon in 1245, as did Pope Innocent IV who had renewed a crusade against Emperor Frederick II in 1244,<sup>530</sup> and against his son, King Conrad IV in 1253<sup>531</sup>—the same year during which the charter for the funding of the commandry at Einsiedel was issued. Hugo's anti-Hohenstaufen sentiment<sup>532</sup> offers a glimpse into the political and social climate at the time of the commandry's foundation.

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<sup>523</sup> Armgart and Diener, "Einsiedel, St. Maria Deutschherrenkommende, zeitweise Kommende des Lazarusordens." P. 339. Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. Pp. 194-196.

<sup>524</sup> Sassen, *Hugo von St. Cher: Seine Tätigkeiten als Kardinal 1244-1263*. P. 1.

<sup>525</sup> *Ibid.* P. 2.

<sup>526</sup> *Ibid.* P. 1.

<sup>527</sup> *Ibid.* Pp. 4-5.

<sup>528</sup> *Ibid.* Pp. 5-6.

<sup>529</sup> He is also known as Hugo von S. Sabina in Charter ID 10532

<sup>530</sup> Riley-Smith, *The Crusades: A History*. P. 201.

<sup>531</sup> *Ibid.* P. 202.

<sup>532</sup> Armgart and Diener, "Einsiedel, St. Maria Deutschherrenkommende, zeitweise Kommende des Lazarusordens." P. 339.

Siegfried II's response to the call by Hugo leaves little doubt that he had played a major role behind the scenes in the prelude to these events as he was Bishop Landolf's legal advisor and imperial sheriff of the royal city of Lautern. This certainly contributed to the 11-week waiting period between the call from the papal legate in August of 1253, and Siegfried II's subsequent answer in October of the same year. It also seems as though Siegfried II had waited until the last minute to answer the call, as Hugo had left the Kingdom of Germany in October, though his tenure as papal legate continued until 29 November 1253.<sup>533</sup> By responding to the letter of indulgence, Siegfried II positioned himself and his family in the good graces of the church, after the politically chaotic tenure of his brother, Landolf, and the disastrous end of the Hohenstaufen dynasty. This also indicates an abrupt change in the loyalties of the von Lautern-Hoheneck family, by fundamentally shifting from the pro-Hohenstaufen side during the collapse of the dynasty to the side of the papacy. Considering his status as a ministerialis, despite his administrator position as imperial sheriff, pursuing a pro-Hohenstaufen agenda during the collapse of the dynasty could have led to the extinguishment of his career and could certainly have endangered his entire family. It is for this reason that Siegfried II included his nephew, Heinrich III, the son of Reinhard II and heir to Castle Hohenecken in the charter of acceptance. These 11 weeks may have been necessary to convince his family and to gather funds in order to support such a financial endeavor. However, his ministerialis status would not necessarily have exempted him from possessing the funds for the commandry, as ministeriales of Weissenburg had funded a Teutonic Knight Commandry three years prior in 1250, which became one of the five most important commandries of the region.<sup>534</sup> Siegfried II's decision to fund the commandry was therefore a highly strategic move in order to secure the longevity of his family especially at the beginning of the 67-year Great Interregnum, or *Interimperium*, that would last until 1312.<sup>535</sup>

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<sup>533</sup> Sassen, *Hugo von St. Cher: Seine Tätigkeiten als Kardinal 1244-1263*. P. 105.

<sup>534</sup> Martin Armgart and Andreas Diener, "Weissenburg, St. Elisabeth, Deutschordenskommande, zeitweilig Kommande des Lazarusordens," in *Pfälzisches Klosterlexikon: Handbuch der pfälzischen Klöster, Stifte und Kommenden*, ed. Jürgen Keddigkeit et al., 1st ed., vol. 5 T-Z, 5 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern in Verbindung mit dem Institut für Europäische Kunstgeschichte der Ruprecht-Karls-Universität Heidelberg, 26.5 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2019), 258–97. P. 259.

<sup>535</sup> Klaus Herbers, "Das mittelalterliche Heilige Römische Reich," in *Das Heilige Römische Reich: Ein Überblick*, 1st ed. (Köln: Böhlau Verlag GmbH&Cie, 2010), 23–193. P. 141 in section five entitled, 'Vom Interregnum bis zur Etablierung der Luxemburger: Zwischen Rheinland und Osten (1254-1346)'. Herber's notes that the title 'Interregnum' is imprecise considering that the period still consisted of German-Roman Kings, but an absence of German-Roman Emperors until the coronation of Henry VII von Luxemburg in the year 1312.

The dominant figures of the fourth generation of the von Lautern-Hoheneck family were unquestionably Reinhard III, son of Siegfried II, and his cousin Heinrich III, son of Reinhard II. Their relationship is particularly interesting when discussing a family politick as both were often working hand in hand in the proceedings with the monasteries. The two cousins operated in different capacities in the Reichsland of Lautern as Reinhard III was the royal sheriff by 1265<sup>536</sup> and Heinrich III never possessed an administrator position, though he was the main inheritor of Castle Hohenecken and the only of the male heirs in its first documented mention on 30 November 1277.<sup>537</sup> Unfortunately, the two also had the misfortune of living during the period in which the ministerialis family von Lautern-Hoheneck lost all of its administrator positions, amplified by the extreme amount of debt that Reinhard III had accumulated while royal sheriff.<sup>538</sup>

The cause of the debt is imprecisely known, other than it had been accrued through extensive spending rather than debts of lands or services. The debt itself is an incredibly important aspect pertaining to this project as it reinforces the theory that members of the ministeriales von Lautern-Hoheneck were involved in costly signaling, by spending more than they possessed. Although the items upon which Reinhard III had spent his money are largely speculative, his access to funds was facilitated by two factors: his marriage to the daughter of the Count of Homburg, Kunigund von Homburg, and his commission as both royal sheriff of Lautern and custodian of the imperial regalia in castle Trifels. The practice of families attempting to enter into a more elite group via marriage is well documented for the German Middle Ages. However, these findings are largely based upon marriage strategies between the years 1400 and 1699—late Middle Ages and Early Modern Period. Still, plenty of evidence points towards a German phenomenon of men of lower social groups marrying the daughters of men of slightly higher social groups in an attempt to enter that group.<sup>539</sup> Within the time frame from 1200 until 1550, the marriage rates among the daughters of counts and barons was much higher than of other cohorts belonging to the group of imperial princes—65% of daughters and only 55% of sons married at all.<sup>540</sup> Provided the regional context of elite imperial ministeriales such as those von Lautern-Hoheneck, among the presence of so many

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<sup>536</sup> Dolch and Münch, *Die Urkunden des Zisterzienserklosters Otterberg 1143-1360*. P. 162. Also catalogued as Charter ID 10416 in the graph database.

<sup>537</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. P. 279-280. Also catalogued as Charter ID 10311 in the graph database.

<sup>538</sup> Keddigkeit and Losse, "Hohenecken." P. 379.

<sup>539</sup> Judith Hurwich, "Marriage Strategy among the German Nobility, 1400-1699," *Journal of Interdisciplinary History* 29, no. 2 (1998): 169-95. P. 194.

<sup>540</sup> *Ibid.* P. 174.

counts, the opportunities of marrying above one's station were abundant. The aspiration of some ministerialis families to be respected and seen as worthy equivalents of the nobiles meant that in order to match the status of the counts and barons, one had to match the strategy of achieving that status in the first place. For the ministeriales, various avenues existed for entering the nobiles. These included: marrying the daughters of men of higher status, having one's sons enter the clergy in higher numbers considering the political stability of a bishop's court, transferring one's self to the court of a king or bishop (though this necessitated a worthy résumé to fulfill the requirements for such a prestigious position), or establishing a large web of marriages between many ministerialis families thereby creating a large support network.

Kunigund von Lautern-Hoheneck (née von Homburg) was a member of the nobiles family von Homburg whose estate was located in Homburg, Saarland, directly to the west of the Reichsland of Lautern. The family had previously been involved in the politics of the royal estates prior to Frederick I's assumption to the crown, after which he proceeded to expel nobiles originating along the Saar River from the Reichsland of Lautern.<sup>541</sup> However, Emperor Henry VI soon included counts of the Saar in his entourages in the 1190s as Friedrich I von Homburg appeared in two charters alongside the emperor in 1193.<sup>542</sup> Reinhard III's great-uncle, Johann I, was also in the emperor's entourage at the same time, indicating that the two families were already in contact in the 1190s. By marrying a member of the nobiles, Reinhard III married above his status as a ministerialis. His marriage also represents the first between a member of the von Lautern family to a member of the nobiles. Reinhard III's commission as royal rather than imperial sheriff was due to the 67-year Great Interregnum, or Interimperium, which began with Frederick II's dethronement as emperor and lasted until 1312.<sup>543</sup> During that period, a number of kings and anti-kings assumed the throne of Germany, hailing from various families previously unrepresented at the royal level as well as a member of the English Plantagenet family—Richard of Cornwall. Reinhard III's ability to maintain his position as sheriff throughout the tumult of the interregnum recalls to mind the success of his grandfather, Reinhard I, who accomplished a similar feat during the early 1200s. Combined with the success of his father who had also served as royal sheriff, Reinhard III was in a secure position to

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<sup>541</sup> Johanna Hess-Gotthold, *Hausmacht Und Politik Friedrich Barbarossas Im Raum Des Heutigen Pfälzer Waldes*, vol. 7, Schriften Zur Geschichte von Stadt Und Landkreis Kaiserslautern (Otterbach: Franz Arbogast Verlag, 1962). P. 56.

<sup>542</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*.

<sup>543</sup> Herbers, "Das mittelalterliche Heilige Römische Reich." P. 141 in section five entitled, 'Vom Interregnum bis zur Etablierung der Luxemburger: Zwischen Rheinland und Osten (1254-1346)'. Herber's notes that the title 'Interregnum' is imprecise considering that the period still consisted of German-Roman Kings, but an absence of German-Roman Emperors until the coronation of Henry VII von Luxemburg in the year 1312.

be considered a stable spouse for a lady of the nobiles. His commission as custodian of the imperial regalia in castle Trifels under Richard of Cornwall,<sup>544</sup> provides evidence of his capabilities as an administrator, which he again demonstrated during Richard's wedding to Beatrix von Falkenburg on 16 June 1269.<sup>545</sup> As sheriff, he was responsible for both the protection of the event and the organization of the transport throughout the Reichsland of Lautern, for which he certainly enlisted the assistance of his cousin Heinrich III, as the von Lautern-Hoheneck had long since been responsible as escorts within the royal estate.

In the years preceding wedding, both cousins and their respective wives had taken part in a number of proceedings with the Abbey of Otterberg including acts of charity regarding logging rights, and the confirmation of villages, agricultural fields, and meadows to the monastery.<sup>546</sup> A possible explanation for this phenomenon was that the cousins were continuing a strategy of making reparations with the church in order to erase the memory of their uncle. As these were mainly charitable donations, they do not explain the debt that Reinhard III had incurred, yet they speak to the signaling power of the cousins as they were gifting properties and purchasing items within the Reichsland of Lautern, for which the receivers of the payments and benefactors of the gifts seemed to trust their financial capabilities. The lack of an emperor and the absence of the king at the palace in Lautern from the last appearance of Henry (VII) in March of 1234—during which he ordered the reconstruction of Castle Beilstein<sup>547</sup>—until Richard of Cornwall's visit in 1265,<sup>548</sup> resulted in a 31 year timeframe in which the administrators of the Reichsland and Palace of Lautern were virtually unsupervised. This would account for the gifting of lands to Otterberg that had actually been enfeoffed by the emperors and a transaction of lands to the Premonstratensian monastery in Lautern.<sup>549</sup> It is highly possible that this period also accounted for certain construction phases of

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<sup>544</sup> Keupp, *Dienst und Verdienst: Die Ministerialen Friedrich Barbarossas und Heinrichs VI*. P. 310.

<sup>545</sup> Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,2 n. 5463a, Richard, 1269 Juni 16, apud Lutram," Regesta Imperii Online, accessed July 22, 2020, [http://www.regesta-imperii.de/id/1269-06-16\\_1\\_0\\_5\\_1\\_2\\_2463\\_5463a](http://www.regesta-imperii.de/id/1269-06-16_1_0_5_1_2_2463_5463a). Also catalogued as Charter ID 10534 in the graph database.

<sup>546</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. Pp. 218-219. Also catalogued as Charter IDs 10306 and 10307 in the graph database. Dolch and Münch, *Die Urkunden des Zisterzienserklosters Otterberg 1143-1360*. P. 162. Also catalogued as Charter ID 10416 in the graph database.

<sup>547</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. P. 407. Also catalogued as Charter ID 10171 in the graph database.

<sup>548</sup> Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,2 n. 5463a." Also catalogued as Charter ID 10534 in the graph database.

<sup>549</sup> Akademie der Wissenschaften und der Literatur, Mainz, "RI V,2,4 n. 11781, Reichssachen (Deutsche 1198-1272), 1257 März 21," Regesta Imperii Online, accessed July 22, 2020, [http://www.regesta-imperii.de/id/1257-03-21\\_1\\_0\\_5\\_2\\_4\\_1458\\_11781](http://www.regesta-imperii.de/id/1257-03-21_1_0_5_2_4_1458_11781). Also catalogued as Charter ID 10572 in the graph database.

Castle Hohenecken. The costs of continuing construction on the familial castle are potentially responsible for the mountain of debt that Reinhard III had acquired.

The death of Richard of Cornwall and election of Rudolf von Habsburg in 1273 spelled the end of the illustrious administrator careers of the von Lautern-Hoheneck family as the new king removed them from his employ in favor of loyalists from the *nobiles*.<sup>550</sup> The von Leiningen family, in particular, gained prominence during his reign as they received numerous administrator positions such as Friedrich IV von Leiningen's commission as the palace judge of Lautern. He also served as King Rudolf's replacement of Reinhard III, as indicated in a charter from 18 January 1275 regarding the protection of lands surrounding the Abbey of Otterberg.<sup>551</sup> The dire situation that the von Lautern-Hoheneck family found themselves in was further stressed by the death of Reinhard III, from whom they inherited his large debt. The charters demonstrate a remarkable difference in the proceedings of the family which switched from charitable actions and confirmations of lands for the monasteries, to direct transactions of villages, forests, and agricultural fields.<sup>552</sup> As with before, the benefactors were still the monasteries, particularly the Abbey of Otterberg with whom the family had cultivated a decades-long relationship. The death of Reinhard III's wife, Kunigund, in 1277 resulted in a large transfer of lands to the Teutonic Knight Commandry in Einsiedel for which the brothers dedicated one day of the year to her memory.<sup>553</sup> Her death also coincided with the transfer of Castle Hohenecken to the von Leiningen family with which Heinrich III von Lautern-Hoheneck was enfeoffed.<sup>554</sup> This was no doubt an insult to the former imperial and royal ministerial family who were henceforth tenants of the castle they had previously been enfeoffed with and developed. However, the political decline of the von Lautern-Hoheneck family was not necessarily to the detriment of the town of Lautern as it received the rights of a free imperial city on 18 August 1276

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<sup>550</sup> Spiess, "Vom reichsministerialen Inwärtseigen zur eigenständigen Herrschaft: Untersuchungen zur Besitzgeschichte der Herrschaft Hohenecken vom 13. bis zum 17. Jahrhundert." P. 92. Eckrich, "Neue Legenden um alte Kreuz: Johanneskreuz, Torstensonkreuz, Elendkreuz." P. 81.

<sup>551</sup> Akademie der Wissenschaften und der Literatur, Mainz, "RI VI,1 n. 320, Rudolf, 1275 Jan. 18, Nuremberg," Regesta Imperii Online, accessed July 22, 2020, [http://www.regesta-imperii.de/id/1275-01-18\\_1\\_0\\_6\\_1\\_0\\_355\\_320](http://www.regesta-imperii.de/id/1275-01-18_1_0_6_1_0_355_320). Also catalogued as Charter ID 10577 in the graph database.

<sup>552</sup> Dolch and Münch, *Die Urkunden des Zisterzienserklosters Otterberg 1143-1360*. Pp. 182-184. Also catalogued as Charter IDs 10417, 10418 and 10422 in the graph database. Akademie der Wissenschaften und der Literatur, Mainz, "RI VI,1 n. 1618, Rudolf, 1282 Jan. 29, apud Lutream," Regesta Imperii Online, accessed July 22, 2020, [http://www.regesta-imperii.de/id/1282-01-29\\_1\\_0\\_6\\_1\\_0\\_1787\\_1618](http://www.regesta-imperii.de/id/1282-01-29_1_0_6_1_0_1787_1618). Also catalogued as Charter ID 10535 in the graph database.

<sup>553</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. Pp. 277-279. Also catalogued as Charter ID 11134 in the graph database.

<sup>554</sup> *Ibid.* Pp. 279-280. Also catalogued as Charter ID 10311 in the graph database.

by King Rudolf.<sup>555</sup> The following decade consisted of a series of transactions by Heinrich III and his wife Margarethe to the Teutonic Knights and the Abbey of Otterberg,<sup>556</sup> and an oath of fealty to Friedrich IV von Leiningen,<sup>557</sup> the new overlord of Castle Hohenecken. After this point, the future generations of the von Lautern-Hoheneck family were known only as *von Hoheneck*. In addition to the property sales and endowments to the monasteries, a certain Gezele von Lautern-Hoheneck appeared as prioress of the monastery in Enkenbach on 15 October 1278,<sup>558</sup> though her relation to the rest of the family is uncertain, as she could have been the daughter of any one of the six cousins of the fourth generation.

The dismantling of the family's array of enfeoffments following the election of Rudolf von Habsburg provides very little information as to which part of the original enfeoffment the family actually still possessed. Although the rapid transactions indicated financial distress and desperation, the family was able to rally back together and establish themselves in the aftermath of the age of the ministeriales as members of what was known as the Niederadel, or lower nobility, discussed in Section 2.3.3.2. What had appeared to be a downward spiral was actually more strategic than chaotic as the family managed to hand over properties within their original enfeoffment only to the ecclesiastical orders, whereas their castle—which was actually a property of the king—was the only item specifically given to a *nobilis* family. The von Hoheneck family even managed to cleverly retake ownership of the castle via the marriage of Heinrich III's grandson Johann I von Hoheneck to Elisabeth von Leiningen.<sup>559</sup> Thus, the family appears to have switched strategies rather quickly under the leadership of Heinrich III, from seeking administrator positions to reforming their bonds to the ecclesiastical realm and marrying into the *nobiles*. The other major ministerialis family of the Reichsland of Lautern to be discussed was the von Beilstein family whose first members had also been commissioned at the royal palace in Lautern.

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<sup>555</sup> Ibid. Pp. 275-277. Also catalogued as Charter ID 11133 in the graph database.

<sup>556</sup> Ibid. Pp. 285-295 and 301-302. Also catalogued as Charter IDs 11142, 11144, 11145, 11146, 11151 and 11157 in the graph database.

<sup>557</sup> Ibid. P. 293. Also catalogued as Charter ID 11150 in the graph database.

<sup>558</sup> Ibid. P. 285. Also catalogued as Charter ID 11141 in the graph database.

<sup>559</sup> Johann Georg Lehmann, "Die Burg- und Herrschaft Hohenecken," in *Urkundliche Geschichte der Burgen und Bergschlösser in den ehemaligen Gauen, Grafschaften und Herrschaften der bayerischen Pfalz: Urkundliche Geschichte der Burgen und Bergschlösser im Westliche und im ehemaligen Bliesgau*, vol. 5, Pfälzische Bibliothek 7 (München: Scholler Verlag, 1913). P. 55.



### 3.2.2 The Ministeriales von Beilstein-Wartenberg

A member of the ministerialis family known as von Beilstein can be traced as far back as 49 years before the charter authorizing the reconstruction of Castle Beilstein on 23 March 1234.<sup>560</sup> The family's patriarch, Merbodo I von Beilstein, was a castellan at the royal Palace of Lautern<sup>561</sup> alongside those of the family von Lautern mentioned in the previous section. Despite his commission, Merbodo I was never mentioned as a member of the royal entourage, though some of the foremost members of the imperial entourage at the time, such as Heinrich I von Lautern, were also commissioned at the palace and would have been Merbodo's direct colleague, and possibly neighbor at the Rittersberg. The origins of the von Beilstein family are difficult to trace prior to 1185, due to their position as ministeriales and the inconvenient fact that ministeriales often changed their name based upon where they were stationed. Therefore, it is inaccurate to link a certain ministerialis family to a particular castle, or genealogically bind multiple people who happen to share the same name without explicit evidence sourced from a charter;<sup>562</sup> a particularly important point when discussing the von Beilstein family network. In the case of the von Lautern family which split into von Lautern-Hoheneck and von Lautern-Montfort, the evidence is abundant, though prior to 1184 the same issue is encountered as with the von Beilstein family. The only information that is certain, is that Merbodo I had been a castellan in Lautern at the royal castle and that he had many sons.

The von Beilstein family is linked to the von Wartenberg family via Merbodo I's sons, Werner Kolb I von Wartenberg and Heinrich I von Wartenberg, with whom he appeared in charter from 1185 alongside his other sons Ulrich von Beilstein, a local provost, Merbodo II von Beilstein, Herbod, and his nephew Heinrich. Additionally, Landold von Wilenstein and his sons, as well as Ulrich von Wartenberg and his sons, appeared in the witness list.<sup>563</sup> The connection to the von Wartenberg family occurred repeatedly throughout the charters of the 13<sup>th</sup> century. This connection is particularly evident in a charter from May 18<sup>th</sup>, 1227, in which the same Werner I Kolb von

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<sup>560</sup> Keddigkeit, "Beilstein." P. 229.

<sup>561</sup> Johann Georg Lehmann, "Die Waldveste Beilstein," in *Urkundliche Geschichte der Burgen und Bergschlösser in den ehemaligen Gauen, Grafschaften und Herrschaften der bayerischen Pfalz: Urkundliche Geschichte der Burgen und Bergschlösser im Westriche und im ehemaligen Bliesgaue*, 5 vols., Pfälzische Bibliothek 7 (München: Scholler Verlag, 1913). P. 36.

<sup>562</sup> Ibid. P. 36. Lehmann noted the difficulty in tracing genealogies because members of these families often changed their surnames based upon where they were stationed.

<sup>563</sup> Dolch and Münch, *Die Urkunden des Zisterzienserklosters Otterberg 1143-1360*. Pp. 68-70. Also catalogued as Charter ID 10060 in the graph database.

Wartenberg and his wife, Sofia, were destitute and forced to sell various items and properties to the Abbot and brothers of the Abbey of Otterberg. Werner I's brother Merbod von Beilstein, his son Merbodo II [von Wartenberg] and wife Mechthild, Werner I's daughter Adelheid, and Adelheid's husband Folmar von Sankt Alban all appeared as witnesses in the same charter.<sup>564</sup>

The respective ecclesiastical order to which the cleric Ulrich von Beilstein belonged—who appeared alongside his father in 1185 regarding a conflict between the monasteries of Otterberg and Lambrecht—is not distinctly mentioned in the charter from 1185. However a certain Ulrich is mentioned as Provost of the Hospital (Hospitalkloster) in Lautern in the year 1190.<sup>565</sup> It is highly probable that the indescript Provost Ulrich in Lautern is in fact Ulrich von Beilstein, son of Merbodo I. Additionally, Ulrich von Beilstein is explicitly mentioned as the major provost in Worms in a charter from 1219 where he appeared alongside his brothers in a lawsuit with the Abbey of Otterberg concerning property rights in the village of Santbach.<sup>566</sup> Ulrich's career trajectory from the local Hospital of St. Mary in Lautern to the cathedral of Worms draws to memory a similar path taken by Landolf von Lautern-Hoheneck who became Bishop of Worms in 1234.<sup>567</sup> Ulrich's family was apparently connected to the monastery at Lambrecht as well, based upon the charter from 1185, in which all of the known male members of the von Beilstein family appeared as witnesses. The activity of the family as imperial ministeriales in Lautern and as Provost of the Hospital in Lautern—and later Major Provost of Worms—confirms that the von Beilstein family had political influence in the region that could be traced back to the 12<sup>th</sup> century. Although their suddenly frequent appearances at the turn of the 13<sup>th</sup> century suggests that they had perhaps been brought in from other areas—as the von Lautern-Hoheneck and von Lautern-Montfort families had been—evidence exists that they had familial ties to the Reichsland long beforehand.

Loyalists to the Salian dynasty who then served its Hohenstaufen descendants could have been rewarded with properties and titles during the expansion of the imperial ministerialis under Frederick I. Johanna Hess-Gotthold addressed this topic in which she also drew upon the connection of Castle Beilstein to the Salian dynasty. Notably, she claimed that Castle Beilstein was the only

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<sup>564</sup> Ibid. Pp. 88-89. Also catalogued as Charter ID 10082 in the graph database.

<sup>565</sup> Keddigkeit, Wenz, and Untermann, "Kaiserslautern, St. Maria Hospital, später Premonstratenserstift bzw. -kloster, dann Kollegiatstift St. Marien und St. Martin." P. 378.

<sup>566</sup> Frey and Remling, *Urkundenbuch des Klosters Otterberg in der Rheinpfalz*. Pp.27-28. Also catalogued as Charter ID 10411 in the graph database.

<sup>567</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. P. 171. Charter ID 10093 in the graph database.

ministerialis castle located upon the former territory of the Salians.<sup>568</sup> In fact, the Salians actively sought to expand their ministeriales in the hilly areas of the Palatinate,<sup>569</sup> providing evidence of their campaign to merge the royal estates with their dynastic estates. This also corroborates a potentially early settlement of the von Beilstein family at the location of Castle Beilstein prior to the reconstruction in 1234. The expansion of their territory in the German Palatinate began under Otto von Worms,<sup>570</sup> the grandson of Emperor Otto I. Otto von Worms was a member of the Salian dynasty by way of his father, Conrad the Red, and himself father to Henry of Speyer and Pope Gregory V. In turn, Henry von Speyer's son was Conrad II, the first emperor of the Salian dynasty.<sup>571</sup> Some of the territory of the Reichsland of Lautern was included within the familial estate of the Salians, whose house had manifested itself among the most elite in Europe. The territorial expansion required administrators for the estate and its associated monasteries and courts (i.e. the *Sattelhof*), for which a clearer picture of the relation between the von Beilstein family and the territory emerges. The evidence that the administrators had been in the area prior to the Hohenstaufen dynasty becomes even more compelling when considering the policies of Emperor Henry IV who greatly expanded the ministeriales.<sup>572</sup> Henry had also removed the possessions of the *nobiles* from the Reichsland of Lautern thereby making it strictly a possession of the king,<sup>573</sup> whose estates were administrated by his ministeriales as discussed in Section 2.3.3. The removal of *nobiles* from the Reichsland of Lautern continued even through the reign of Frederick I, who focused upon those from the Saar.<sup>574</sup>

Hess-Gotthold noted that Frederick I's Reichsland policy of the second half of the 12<sup>th</sup> century required ministeriales to fill the necessary posts as state, regional, and local administrators. For this purpose, he gathered loyalists from Alzey and Worms to occupy these new positions.<sup>575</sup> The Hohenstaufen stronghold of Alzey had been a residence of Frederick I's father, Duke Frederick

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<sup>568</sup> Hess-Gotthold, *Hausmacht Und Politik Friedrich Barbarossas Im Raum Des Heutigen Pfälzer Waldes*. P. 31.

<sup>569</sup> Janssen, "Siedlungsgeschichtliche und siedlungsarchäologische Beobachtungen zum Haus- und Reichsgut der Salier." P. 13.

<sup>570</sup> Werle, "Wald und Herrschaft: Studien zur Geschichte der Reichswaldgenossenschaft Kaiserslautern." P. 48.

<sup>571</sup> Möller and Ammerich, *Die Salier*. Pp. 203-205.

<sup>572</sup> Bosl, *Die Reichsministerialität Der Salier Und Staufer: Ein Beitrag Zur Geschichte Des Hochmittelalterlichen Deutschen Volkes, Staates Und Reiches*. P. 76.

<sup>573</sup> Werle, "Wald und Herrschaft: Studien zur Geschichte der Reichswaldgenossenschaft Kaiserslautern." P. 52.

<sup>574</sup> *Ibid.* P. 56.

<sup>575</sup> Hess-Gotthold, *Hausmacht Und Politik Friedrich Barbarossas Im Raum Des Heutigen Pfälzer Waldes*. P. 30.

II of Swabia, who died in 1147.<sup>576</sup> Frederick I Barbarossa—who had been known at that time as Duke Frederick III<sup>577</sup>—inherited the title and lands of his late father, but also the ministeriales in the service of the duchy. After Frederick’s election as king he transferred the regional stronghold from Alzey, to the Reichsland of Lautern.<sup>578</sup> In the case of Eberhard I von Lautern-Monfort, it is known that he had originated from Alzey and perhaps even other members of the von Lautern-Hoheneck as well, considering that the familial split occurred after they had already arrived in Lautern. However, in the case of the von Beilstein family, the argument is stronger that it had already been in the Palatinate prior to Frederick’s policy, due to their apparent previous roles as ministeriales of the Salians—though this certainly does not exclude the possibility of them having been related to, or having originated from ministeriales of Worms and Alzey. Particularly in the case of the von Beilstein family, numerous other surnames are included in the genealogies, such as those von Wartenberg, as mentioned earlier, which indicate that the family had already made connections to other local families before the turn of the 13<sup>th</sup> century.

The von Wartenberg family, whose castle was located directly north of Castle Beilstein near the Donnersberg mountain and whose descendants are routinely mentioned alongside the sons von Beilstein, was first mentioned in the mid-12<sup>th</sup> century, as an *Odalricus de Warteneberc* (Odalricus von Wartenberg) appeared in a charter dated between 1155 and 1161 issued by Emperor Frederick I in Worms.<sup>579</sup> Odalricus was possibly the father of Merbodo I von Beilstein, hence the integration of the surname von Wartenberg into the names of Merbodo I’s children and grandchildren, or because his sons were given other positions and therefore other names. The most famous of Merbodo I’s children was Heinrich I von Wartenberg, who accompanied Emperor Henry VI on his Italian campaign in 1195, receiving an enfeoffment near Worms for his services.<sup>580</sup> Heinrich I von Lautern took part in the same campaign as a key advisor of the emperor, lending evidence that the two had been acquaintances. The fact that the von Wartenberg family most likely originated from Worms, would have also provided a network for Merbodo I’s son, Ulrich von Beilstein to become the Major Provost in Worms by around 1200. A potential male lineage from

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<sup>576</sup> Neuhold, *Die Staufer*. P. 24.

<sup>577</sup> *Ibid.* P. 39.

<sup>578</sup> Werle, “Wald und Herrschaft: Studien zur Geschichte der Reichswaldgenossenschaft Kaiserslautern.” P. 55.

<sup>579</sup> Martin Dolch and Uwe Welz, “Wartenberg I,” in *Pfälzisches Burgenlexikon IV.2: St-Z*, ed. Jürgen Keddigkeit, Ulrich Burkhardt, and Rolf Übel, 1st ed., vol. 4.2 St-Z, 4 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 12.4.2 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2007), 214–28. P. 215.

<sup>580</sup> *Ibid.* P. 215.

Worms suggests that the regional connection to the Palatinate was matrilineal for the von Beilstein family, and that Merbodo I's mother was from a Salian territory in the Palatinate. Merbodo I's sons Werner Kolb von Wartenberg and Heinrich I von Wartenberg were later reeves of the monastery of St. Lambrecht in 1209, acting as local administrators in Alsenbrück, near the Donnersberg. The web of the family also extended to castle Randeck, as Odalricus' grandson, nephew of Merbodo I, was Heinrich von Randeck.<sup>581</sup> This large conglomeration of family members active in the areas of Worms, Lambrecht, Lautern, and the Donnersberg, bound by notable ministeriales, made them strong regional contenders opposite the von Lautern family, complete with both the Hoheneck and Montfort lines. This also placed the family in a precarious situation with the powerful Counts of Leiningen, who controlled much of the area near the Donnersberg and were opponents to the Hohenstaufen dynasty. In fact, the Counts of Leiningen did push back against the pressure from the new ministerialis families in the second half of the 13<sup>th</sup> century, in which the von Wartenberg family sold much of its territory and the portion of their castle, without the tower, to the counts in 1265.<sup>582</sup> A similar series of submissions to the von Leiningen family was imposed upon the von Lautern-Hoheneck family during the 1270s, as discussed in the previous section.

Throughout the turbulence of the first half of the 13<sup>th</sup> century, the only member of the von Beilstein family that held any influential ecclesiastical post was the aforementioned Ulrich von Beilstein. During this period, the von Beilstein family members were involved in only a single proceeding in 1214—a confirmation from Ulrich regarding the transfer of his properties in Santbach to the Abbey of Otterberg.<sup>583</sup> The next proceeding from the von Beilstein family took place five years later in 1219 (the same charter mentioned before where Ulrich was mentioned as the major provost of Worms) regarding the same properties in Santbach, albeit after the abdication of Emperor Otto IV.<sup>584</sup> From this point on, the von Beilstein family partook in only nine more events in the Reichsland of Lautern dating from 12 December 1219<sup>585</sup> until 1 March 1363.<sup>586</sup>

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<sup>581</sup> Ibid. P. 215.

<sup>582</sup> Ibid. P. 216.

<sup>583</sup> Frey and Remling, *Urkundenbuch des Klosters Otterberg in der Rheinpfalz*. P. 9. Also catalogued as Charter ID 10303 in the graph database.

<sup>584</sup> Dolch and Münch, *Die Urkunden des Zisterzienserklosters Otterberg 1143-1360*. P. 90. Also catalogued as Charter ID 10411 in the graph database.

<sup>585</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. Pp. 138-139.

<sup>586</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern II*. P. 216. Also catalogued as Charter ID 10168 in the graph database

The charter from 1234 authorizing the reconstruction of Castle Beilstein by King Henry (VII) indicated a shift in loyalties from the emperor to the king, presumably resulting from a lack of interest from Emperor Frederick II given their absence of administrator positions during the period between the death of Emperor Henry VI and the early 1230s. The charter also makes it clear that the new building campaign of the castle was conducted on the property of the Premonstratensian Hospital of St. Mary in Lautern. Erecting a castle for royal purposes on monastic land would normally have indicated a direct infraction of the letter of personal protection granted to the Hospital and its lands by Henry (VII)'s father, Emperor Frederick II in April of 1225.<sup>587</sup> However, it is worth mentioning that leading up to the event of reconstructing Castle Beilstein, Frederick II had granted the re-construction of castles on ecclesiastical lands in May of 1232,<sup>588</sup> and that Henry (VII) had renewed the Hospital's privilege of not having to pay any taxes in 1228,<sup>589</sup> even granting them interest on their holdings in May of 1231.<sup>590</sup> These were potentially the reason as to why the monastery did not issue a formal complaint regarding the reconstruction of the castle on their land.<sup>591</sup> These events also offer a small window in the growing tension between Henry (VII) and his father who later pronounced his son an outlaw in July of 1234, four months after Henry (VII)'s order of the reconstruction of Castle Beilstein. The reconstruction of the castle was not the reason for the removal of his son from his status as king, but represented one of a slew of grievances in which Henry (VII) repeatedly undermined his father's rule.<sup>592</sup> Thus, the second letter of imperial protection for the monastery by Frederick II in June of 1237<sup>593</sup> was most likely due to Henry's insurrection and as a later punishment to the von Beilstein family for having supported him.

In the charter issuing the reconstruction of Castle Beilstein, Merbodo II von Beilstein was described as a loyalist of Henry (VII) and as the recipient of the new castle alongside fellow loyalists Gottfried von Randeck and Gottfried's brother, Emmerich von Randeck. Given that the von

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<sup>587</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. P. 151. Also catalogued as Charter ID 10603 in the graph database.

<sup>588</sup> Böhmer, *Die Regesten des Kaiserreichs unter Philipp, Otto IV, Friedrich II, Heinrich (VII), Conrad IV, Heinrich Raspe, Wilhelm und Richard 1198-1272*. P. 391.

<sup>589</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. P. 158. Also catalogued as Charter ID 10605 in the graph database.

<sup>590</sup> *Ibid.* P. 160. Also catalogued as Charter ID 10606 in the graph database.

<sup>591</sup> Keddigkeit, Wenz, and Untermann, "Kaiserslautern, St. Maria Hospital, später Premonstratenserstift bzw. -kloster, dann Kollegiatstift St. Marien und St. Martin." P. 372.

<sup>592</sup> Neuhold, *Die Staufer*. P. 145-146.

<sup>593</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. Pp. 169-170. Also catalogued as Charter ID 11013 in the graph database.

Beilstein and von Randeck families could both trace their lineage back to Odalricus von Wartenberg, the three individuals in the charter were most likely second cousins. Interestingly, these same brothers of Randeck are featured in the witness list of the aforementioned charter from 18 May 1227.<sup>594</sup> There, they appeared alongside a third brother, Wilhelm von Randeck, as well as Emmerich I von Lewenstein, Merbodo II von Beilstein, Konrad I von Wartenberg, and Albero I von Wilenstein. It cannot be stated from this alone that all of the parties involved were directly related, though it is certain that the von Beilstein, von Wartenberg, von Randeck families were at least distantly related. The relation between the von Beilstein and von Wilenstein families is even more cryptic as members of the direct line of the von Wilenstein family were never distinctly mentioned as having married a daughter of the von Beilstein family—and vice versa. This is also possibly due to the fact that only the males of the von Beilstein are ever mentioned in the charters. It is therefore possible that the von Wilenstein and von Beilstein families were directly related, though never explicitly stated, especially because Albero I von Wilenstein's grandson was named Merbod von Wilenstein.<sup>595</sup>

The members of the von Beilstein, von Wartenberg, von Randeck, von Lewenstein, and von Wilenstein families never again appeared alongside one another after the reconstruction of Castle Beilstein. Curiously, a condition was set in the charter from 1234 stating that if the inhabitants of the castle ever acted outside the wishes of the Hospital of St. Mary, the citizens had the right to strike the castle or otherwise seek reparations in a measurable manner. However, the 1234 charter did not distinctly indicate which citizens were meant. Instead, the ambiguous language referring to the 'citizens' mentioned in the charter could possibly mean those of Lautern, or the former village of Entersweilerhof which was situated very close to Castle Beilstein, or simply the citizens of both the town and village. The fact that the Hospital of St. Mary belonged to the Premonstratensian order in Lautern and the ownership of Entersweilerhof belonged to the Premonstratensian abbey of Münsterdreisen, an ecclesiastical relationship existed between the citizens of Lautern and Entersweilerhof. Provided that Ulrich von Beilstein had previously been the provost of the monastery in Lautern, it seems that the family had cultivated a long relationship with the Premonstratensian Order, thus supporting their ability to construct a castle on the monastery's property.

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<sup>594</sup> Dolch and Münch, *Die Urkunden des Zisterzienserklosters Otterberg 1143-1360*. Pp. 88-89. Also catalogued as Charter ID 10082 in the graph database.

<sup>595</sup> Though perhaps controversial, the very fact that a male of the von Wilenstein family was named Merbodo, is a strong indication of the relation, considering that virtually no one, except those belonging to the von Beilstein family, appeared with that name in the vicinity of *Lautern*.

Despite the family's cordial relationship with the Premonstratensian monastery in Lautern, it was at odds with the Cistercian Abbey of Otterberg based upon two lawsuits from 1219 resulting in Otterberg's control of the village of Santbach and various other lands which had been challenged by the von Beilstein family.<sup>596</sup> The case of the charter from 22 December 1219 is particularly interesting because it dealt with the inheritance of Heinrich I von Lautern, which was decided in Otterberg's favor. However, the von Beilstein family claimed that portions had in fact belonged to them instead—again supporting the notion that the Abbey of Otterberg and the von Lautern-Hoheneck family were regional allies. Many of the contested properties located in the area of the Waltmark had originally been part of the dynastic estate associated with the Sattelhof court of the Salians in Lambrecht.<sup>597</sup> Furthermore, the Premonstratensian abbey of Münsterdreisen and the Cistercian Abbey of Otterberg were at odds against one another in the years from 1180-1220,<sup>598</sup> resulting in a scenario in which the von Beilstein family and Premonstratensian monasteries were in direct competition with the von Lautern-Hoheneck family and the Cistercians. It is apparent that the von Beilstein family attempted to at least alleviate the bond with Otterberg with a transaction from 18 May 1227 in which every lead member of the various families connected to the von Beilstein cluster appeared during a series of sales to the monastery from the family's enfeoffment. The following three events in which the von Beilstein family conducted business within the Reichsland of Lautern all consisted of concessions to the Abbey of Otterberg in 1251,<sup>599</sup> 1275,<sup>600</sup> and on 17 May 1285.<sup>601</sup> Unfortunately, very little is known of the proceedings of the von Beilstein family during the Interregnum or the period between Henry (VII)'s authorization of the reconstruction of Castle Beilstein and the wedding of Richard of Cornwall in 1269 during which a king had not visited Lautern. As discussed previously in the section concerning the von Lautern-Hoheneck family, the

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<sup>596</sup> Dolch and Münch, *Die Urkunden des Zisterzienserklosters Otterberg 1143-1360*. P. 90. Also catalogued as Charter ID 10411 in the graph database. Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. Pp. 138-139. Also catalogued as Charter ID 10076 in the graph database.

<sup>597</sup> Werle, "Wald und Herrschaft: Studien zur Geschichte der Reichswaldgenossenschaft Kaiserslautern." P. 60.

<sup>598</sup> Jürgen Keddigkeit and Michael Werling, "Münsterdreisen, St. Saturninus, Frauengemeinschaft, später (Regular-) Kanonikerstift, dann Prämonstratenserabtei," in *Pfälzisches Klosterlexikon: Handbuch der pfälzischen Klöster, Stifte und Kommenden*, ed. Jürgen Keddigkeit et al., 1st ed., vol. 3 M-R, 5 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern in Verbindung mit dem Institut für Europäische Kunstgeschichte der Ruprecht-Karls-Universität Heidelberg, 26.3 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2015), 130–52. P. 135.

<sup>599</sup> Dolch and Münch, *Die Urkunden des Zisterzienserklosters Otterberg 1143-1360*. P. 131. Also catalogued as Charter ID 10412 in the graph database.

<sup>600</sup> *Ibid.* P. 189. Also catalogued as Charter ID 10420 in the graph database.

<sup>601</sup> *Ibid.* P. 218. Also catalogued as Charter ID 10424 in the graph database.



absence of the king left the Reichsland in the hands of the administrators who had been entrusted with its maintenance, but also facilitated the political aspirations of those fortunate enough to possess positions of power at that particular point in time. The von Beilstein family had largely lost its political agency upon the failure of Henry (VII)'s insurrection and were eliminated from the administrator positions at the palace. The construction of their castle may have only been funded by the sale of properties to the Abbey of Otterberg, though it is evident that their construction efforts were dwarfed by those of the von Lautern-Hoheneck construction as Castle Hohenecken is much larger and more visible. It is also possible that the von Beilstein family sought to withdraw from the political stage and instead focus upon the construction of the castle and the cultivation of their enfeoffed lands. The latter is certainly supported by the lack of feuds or direct lawsuits between the two families, which despite the more passive disagreements represented by who was present in the witness lists of the charters, the only contentions were between the von Beilstein family and the Abbey of Otterberg.

Previous research regarding the relationship between the von Beilstein family and the Castle Beilstein, claimed that it was constructed to oversee the eastern roads leading to and from Lautern, and that was built in a way in which Henry (VII) could luxuriously house the people responsible for the task.<sup>602</sup> Thus, more akin to a vicarage which is neither owned by the priest, nor is he allowed to lease it further. In essence, the castle was a luxurious manor house available to the von Beilstein family as long as they were under contract in service of the royal castle and abided by the rules stipulated by the Hospital of St. Mary upon whose land they resided. However, the convoluted legality of constructing the castle in the first place, paired with the failed rebellion of Henry (VII) placed the von Beilstein family on the opposition of the Hohenstaufen alliance, whose agents in the von Lautern-Hoheneck family were still commissioned with high level administrator positions. The role of the von Beilstein family within the regional politics largely subsided as they were no longer mentioned as ministerialis—imperial or otherwise—and they shared a relatively small castle with two to three other families.

Over time, the von Beilstein's claim to the castle as their ancestral home became reliant more upon the fact that they shared the same name, rather than any owned inheritance since they had largely moved to the Middle Rhineland by the late 14<sup>th</sup> century. By the second half of the 14<sup>th</sup> century, Castle Beilstein gradually became more independent. Evidence for this is found in events in which the von Randeck inhabitants were leasing their portions to various lords including the

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<sup>602</sup> Lehmann, "Die Waldveste Beilstein." P. 38.

knight Johann von Weißenstein in 1331, and Sifrid Lummelzum von Lewenstein opened his portion of the castle to the Prince Elector of the Palatinate 37 years later in 1368.<sup>603</sup> During this period, the von Beilstein family was not even mentioned at the castle, though they may still have owned a portion.

In contrast to the marriage strategies of the von Lautern-Hoheneck family who managed to enter into holy matrimony with members of the *nōbiles*, the von Beilstein family created a massive web of relationships bound by marriage to various other *ministeriales* families. In effect, their entrance into the *Niederadel*—which they apparently gained given the activities of their descendants described as *nōbiles*—was a result of them having been too interconnected to fail. Additionally, the services of Hans and Friedrich von Beilstein to the Bishop of Speyer, Adolf von Nassau-Wiesbaden-Idstein, during the late 14<sup>th</sup> century certainly improved the family’s reputation as the bishop had successfully been elected Archbishop of Mainz and retained the two Beilsteiners in his employ. The new Archbishop even enfeoffed Hans von Beilstein with the famous Kästenburg near Neustadt an der Weinstraße on 24 March 1381 for his loyalty.<sup>604</sup> The other families that were connected with the von Beilstein family also enjoyed that privilege, suggesting that the strategy was put into motion already in the early 13<sup>th</sup> century as a sort of emergency plan in case the pursuit of administrator positions were to fail. Thus, both case study families (von Lautern-Hoheneck and von Beilstein) represent two strategies of the progression from *ministeriales* to *nōbiles*. What remains to be seen is precisely how these strategies were demonstrated via the construction of their castles and which architectural elements indicated their attempts to signal status.

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<sup>603</sup> Keddigkeit, “Beilstein.” P. 228.

<sup>604</sup> Würzburg, Staatsarchiv Mainzer Ingrossaturbücher, “MIB 9 Fol. 245,” Die Regesten der Mainzer Erzbischöfe, accessed September 10, 2020, <http://www.ingrossaturbuecher.de/id/source/2836>.

### 3.3 The Primary Sites

Precise dates of construction are not available for all of the sites, though estimates exist for the [Royal Palace of Lautern](#) (mid-12<sup>th</sup> to early 13<sup>th</sup> centuries),<sup>605</sup> [Castle Hohenecken](#) (late 12<sup>th</sup> to late 13<sup>th</sup> centuries),<sup>606</sup> and [Castle Perlenberg](#) (second half of 12<sup>th</sup> to early 13<sup>th</sup> centuries).<sup>607</sup> In contrast to the aforementioned sites, a charter from 1234 exists for [Castle Beilstein](#) referencing its reconstruction.<sup>608</sup> According to these approximate dates, the majority of the constructions, reconstructions, and renovations of the sites occurred between the reigns of Frederick I (1152-1190)<sup>609</sup> and of Conrad IV (1237-1254).<sup>610</sup> The lack of precise documentation is not unique to the castles of the German Palatinate during the late 12<sup>th</sup> and early 13<sup>th</sup> centuries, as the same phenomenon is found across the border in the Alsace of France, which in the medieval period had belonged to the Holy Roman Empire. The northern Alsace had essentially been the cultural and architectural spouse of the Palatinate, only to be divorced in later years. Therefore, an analysis of the medieval Alsatian castles is nearly a mirror image of the Palatinate castles, as the current border between the two regions is only political, and artificial in every other capacity—as was mentioned in Section 2.2.5. Of the 45 Alsatian castles mentioned in the written record prior to 1200, only two are documented with construction dates, whereas the others are casually mentioned in other contexts. In the absence of hard evidence, it is prudent to be more circumspect than trusting of these casual first mentions as definite dates of origin.<sup>611</sup> Furthermore, merely citing a historical charter with a specific date is insufficient in the effort to provide a starting date of the actual, physical construction. In the case of Castle Beilstein, a *re*-construction is mentioned, but written documents referencing the first construction do not exist. The ambiguity of the dates, the unreliability of historical charters to convey the complete story, and the lack of extant written documents necessitated a field investigation—the topic of Chapter 4. The following four primary sites compose the core of the project and are therefore discussed in the highest detail—relative the other sites—including

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<sup>605</sup> Barz et al., “Kaiserslautern.” Pp. 114-118.

<sup>606</sup> Keddigkeit and Losse, “Hohenecken.” Pp. 384-385.

<sup>607</sup> Jürgen Keddigkeit and Dieter Barz, “Perleburg,” in *Pfälzisches Burgenlexikon*, ed. Jürgen Keddigkeit, Ulrich Burkhart, and Rolf Übel, 1st ed., vol. 4.1 O-Sp, 4 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 12.4.1 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2007), 112–17. P. 116.

<sup>608</sup> Keddigkeit, “Beilstein.” P. 229.

<sup>609</sup> Neuhold, *Die Staufer*. P. 186.

<sup>610</sup> *Ibid.* P. 187.

<sup>611</sup> Biller and Metz, *Die Anfänge des Burgenbaues im Elsaß (bis 1200)*. P. 52.

descriptions of past excavations and reviews of the historiographies of each site. The objective is to provide a complete overview of the history and archaeology of all four sites in order to lay the framework for the architectural analyses discussed in Chapter 4.

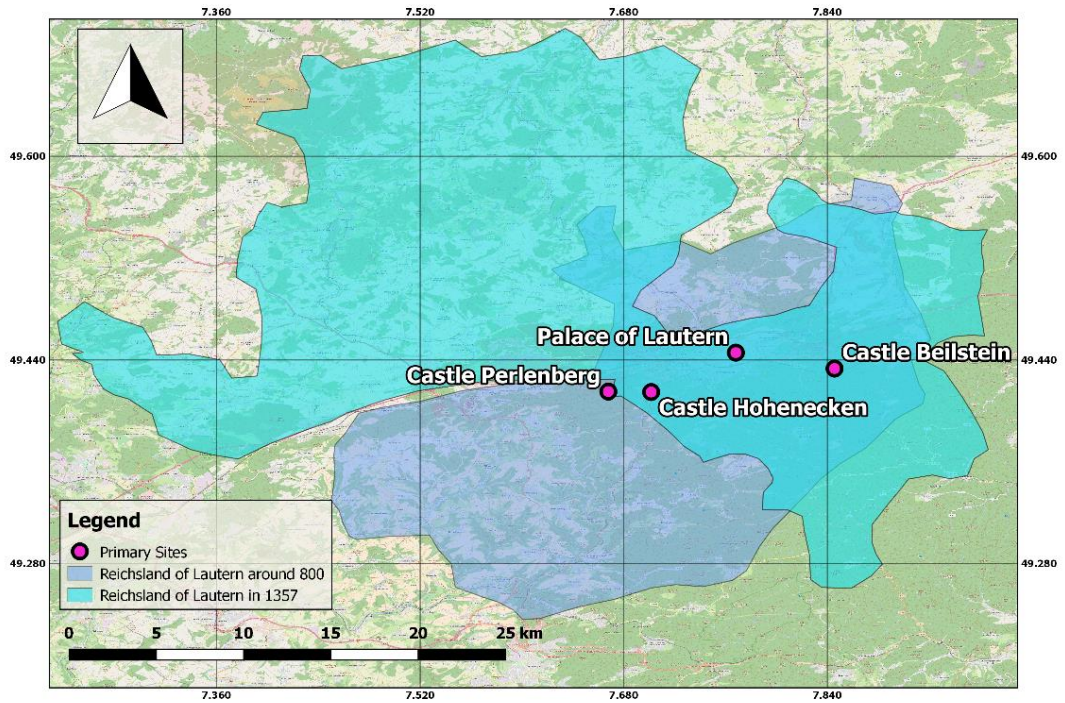


Figure 5: Location of the Primary Sites relative the two models of the Reichsland of Lautern.

### 3.3.1 The Palace of Lautern—Königspfalz Lautern

The historical significance of the Palace of Lautern extends far beyond that of the other sites within the history of the Palatinate and the medieval HRE. However, the success of the palace in broadcasting the authority of the Roman-German Kings and in garnering the respect of foreign monarchs, was dependent upon the ministeriales who maintained the site. These administrators were essential for the HRE during the 12<sup>th</sup> and 13<sup>th</sup> centuries, without whom, the palace would later wane in significance. The largest contingent of these ministeriales came from the von Lautern family, whose von Lautern-Hoheneck line composed the core of the company of regional administrators, as well as some of the most trusted advisors of the Hohenstaufen kings and emperors within the royal and imperial entourages at the turn of the 13<sup>th</sup> century. The palace in which they served and the estate they maintained was heralded by 12<sup>th</sup> century chroniclers, and served as the backdrop for a 13<sup>th</sup> century royal wedding.



Figure 6: The remains of the Royal Palace.

### 3.3.1.1 Location

The site is located in the heart of the Reichsland of Lautern (Figure 5), along the former medieval street leading from Metz to Worms with a divergence just north of Lautern leading to Mainz.<sup>612</sup> The palace was the most visited site of all of the locations mentioned in the charters, from which 122 of the 707 charters were issued. The position of the ruins within the middle of the city, built on all sides including a 21-story city hall immediately to the north, does not reveal many clues as to why it was developed on that spot. This is largely due to the city planning of the past two centuries that filled in the spaces between the four rock plateaus that once separated the town into different sections, transforming the former valley city once transected by a river and bounded by a large lake into a flat plot of land.<sup>613</sup>

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<sup>612</sup> Rödel, “Der Lautrer Reichsgutkomplex: Eine Zwischenbilanz.” P. 410.

<sup>613</sup> Werner Bremer, *Die Ausgrabungen an der Barbarossapfalz zu Kaiserslautern* (Kaiserslautern: E. Lincks-Crusius Verlag, 1937). P. 4.

### 3.3.1.2 Medieval Accounts of the Palace

Before discussing previous investigations of the material record of the palace, it would be prudent to first explore the written record from the second half of the 12<sup>th</sup> century by the chronicler Rahewin. Medieval contemporary accounts of castles or palaces are useful insofar as they confirm the site existed around the time of the documentation, and often provide details of particular structures at the sites. However, medieval chroniclers often embellished their accounts in order to please their patrons, and to signal the status of their lord by providing extravagant descriptions of elite architecture inextricably linked to the financial capacities at hand to construct such sites.<sup>614</sup> Therefore, the historical description of the palace in Lautern by Rahewin should be regarded as a highly stylized portrayal rather than an accurate account of the architecture. Despite possible inaccuracies of such descriptions, they are still relevant for analyzing the role of architecture within medieval society as they provide a glimpse as to the reception of palaces and castles as important symbols linked to themes of chivalry, status, and honor.<sup>615</sup> Additionally, the potential role of the Palace of Lautern within the medieval literature and of the poems of the *Minnesänger* should not be underestimated, as Emperor Henry VI was himself a poet who actively partook in the musings of the *Minnesänger* (German equivalent of the French Troubadours) and appeared in 18 charters issued at the Palace of Lautern between 31 July of 1184<sup>616</sup> and 28 November of 1195.<sup>617</sup> In fact, it is presumed that Henry wrote his most famous poem *Ich grüesse mit gesange* in 1184, following the Mainzer Hoffest in May of 1184. It was during the same year that he was engaged to Constance of Sicily, whom he later married in 1186.<sup>618</sup>

Rahewin's account of the palace in Lautern is taken from the end of book four in his chronicle of Emperor Frederick I, *Gesta Frederici*.<sup>619</sup> The subject matter of the fourth book primarily concerned Frederick I's diplomatic relations with the northern Italian cities, the papal struggle between Alexander III and Viktor IV, various assaults and sieges in Lombardy,

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<sup>614</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. P. 122. Liddiard refers generally to historical chroniclers who provide descriptions of sites.

<sup>615</sup> *Ibid.* P. 122.

<sup>616</sup> Böhmer, *Die Regesten des Kaiserreiches unter Friedrich I 1152(1122)-1190*. P. 86. Also catalogued as Charter ID 10601 in the graph database.

<sup>617</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. P. 92. Also catalogued as Charter ID 10860 in the graph database.

<sup>618</sup> Lothar Voetz, *Der Codex Manesse: Die berühmteste Liederhandschrift des Mittelalters*, 1st ed. (Darmstadt: Wissenschaftliche Buchgesellschaft, 2015). Pp. 12-15.

<sup>619</sup> Bischof Otto von Freising and Rahewin, *Die Taten Friedrichs oder richtiger Cronica*. Pp. 510-715.

ecclesiastical councils, and a detailed description of his person and notable building projects all prior to 1160. The latter two topics are only discussed on three pages, though they provide a substantial insight regarding his character, as perceived by Rahewin, and which building projects Frederick I valued most. Of particular interest for this project are the descriptions of his morning prayers, the appearance of the Palace of Lautern, the landscape surrounding the palace, the extent to which Lautern is described in relation to the other sites mentioned at the end of book four, Frederick's love for the hunt, and his association with other European monarchs. All of these aspects are relevant with regard to the broader canvas of the emperor's depiction and desire to signal his status. His partaking in elite social activities, including the personal accompaniment of priests and reliquaries when performing his morning worship, and his hunting with horses, hounds, falcons, and bows speak to his singular ability to afford such luxuries, highlighting the infrastructure required to pursue these activities and accentuate his unequalled status as emperor.<sup>620</sup> On the subject of his morning prayers and routine, Rahewin stated,

*'Regarding his daily activities outside of the house, the following can be said: he visits either alone or with a small entourage in the early hours the collective prayer in the basilicas or with his priests and so evinces this zealous reverence, offering a model and example to all Italians, how honor and veneration towards bishops and clerics is to be observed. The mass he bestows with such adoration, that every hour he prays before God, through appropriate silence honored, and during which no one dares to bother him with any sort of business. When he finishes his devotions and the mass with the blessing of the holy reliquaries, he dedicates the remainder of the morning to governmental business.'*<sup>621</sup>

Frederick's adherence to his faith is a matter of personal character and given the overtly positively-biased account from Rahewin, his faith cannot be accurately analyzed based upon this excerpt alone, nor is it the task of this project to do so. His devotion to morning worship services in basilicas indicates that he often visited ornate buildings in order to perform his prayers, including priests trusted enough to accompany the emperor. Provided the papal struggle propagated by Frederick I in

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<sup>620</sup> Ibid. P. 711.

<sup>621</sup> Ibid. P. 711. Translated from the German into English by Pattee.



the 1150s,<sup>622</sup> it is clear that he did not immediately trust members of the church based upon the office they held, but rather upon their loyalty to him. These could certainly have included clerics from ministerialis families, but not necessarily. Alternatively, this could be a reason for the relatively swift admission of members of the ministeriales of Lautern into the higher status positions of the ecclesiastical realm. Ulrich von Beilstein's position as Provost of the Premonstratensian Monastery in Lautern in 1190<sup>623</sup> and then as Provost of the Cathedral in Worms as of 1214<sup>624</sup> is indicative of the sudden rise of ministeriales within the church, which may have been spurred on by the necessity of clerics loyal to the ruling dynasties. A certain Ulrich Kolb von Wartenberg is recorded as having been the Provost of the Cathedral in Worms from 1196 until his death 1215,<sup>625</sup> though this is almost certainly the same man as Ulrich von Beilstein considering that his brother was named Werner I Kolb von Wartenberg in 1185.<sup>626</sup> Frederick I had many ecclesiastical princes in his retinues who supported his imperial policies as 67 percent of princes involved in his campaigns were ecclesiastical, and some even actively participated in battle.<sup>627</sup> As was previously discussed, his grandson Frederick II enjoyed the services of the Bishop of Worms, Landolf von Lautern-Hoheneck, during his Italian campaign of the late 1230s and early 1240s.<sup>628</sup>

The place of worship is of key importance in Rahewin's description in which he indicated that Frederick I often worshipped in basilicas or with his priests in Italy. A basilica in Lautern is notably absent, requiring a substitute of some nature. Provided that Frederick I was often on campaign outside of cities, his entourage would certainly have had the capacity to construct a temporary altar for his morning prayers. The addition of a chapel fit for the emperor at his renovated palace in Lautern by the 1150s is uncertain, although he did reside in Lautern in April and May of 1158,<sup>629</sup> and would therefore have required a chapel or place of worship near his sleeping quarters

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<sup>622</sup> Neuhold, *Die Staufer*. P. 73.

<sup>623</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. Pp. 65-68. Also catalogued as Charter ID 10765 in the graph database.

<sup>624</sup> Dolch and Münch, *Die Urkunden des Zisterzienserklosters Otterberg 1143-1360*. Pp. 78-79. Also catalogued as Charter ID 10303 in the graph database.

<sup>625</sup> Keddigkeit, Hedtke, and Untermann, "Worms, St. Peter (und Paul), Domstift." P. 416.

<sup>626</sup> Dolch and Münch, *Die Urkunden des Zisterzienserklosters Otterberg 1143-1360*. Pp. 68-70. Also catalogued as Charter ID 10060 in the graph database.

<sup>627</sup> John B. Freed, *Frederick Barbarossa: The Prince and the Myth*, 1st ed. (New Haven: Yale University Press, 2016). P. 129. The Archbishop of Cologne, Rainald von Dassel, and the Archbishop of Mainz, Christian von Buch, personally fought in the battles of Barbarossa's campaigns.

<sup>628</sup> Keilmann, "Landolf von Hoheneck." P. 864.

<sup>629</sup> Westrich, "Die Königspfalz Lautern im 12. und 13. Jahrhundert und ihre Bedeutung für die Ministerialität des Pfälzischen Raumes." P. 78.

as was his wont to worship in the early hours of the day. Possible alternatives could have been nearby churches or monasteries, though the nearest ecclesiastical buildings were either unbuilt or had just begun construction by this time.

Emperor Frederick I's relationship with his advisors and ministeriales was also touched upon by Rahewin, who noted, *'He does not threaten the members of his house when he speaks to them, nor does he scorn their advice, nor does he show himself at the detection of crimes to crave prosecution.'*<sup>630</sup> Each portion of this statement is significant as it is clear that he had a friendly association with the members of his house, which included those commissioned at his palaces, and cast an open ear to their advice. His willingness to actually heed their advice was not explicitly stated, though based upon this excerpt he at least made an effort to acknowledge other perspectives. It is necessary to briefly reflect upon the topic of assassination attempts on Frederick I's life, which spans two pages in the *Gesta Frederici*. These colorful events included a spy dressed as monk, and the crucifixion of a Saracen who had attempted to poison the emperor.<sup>631</sup> However, one assassination attempt garners particular attention. While Frederick I had been in his camp outside of Lodi, Italy, in June of 1159,<sup>632</sup> a Milanese assassin attacked the emperor at dawn when he had stepped out of his tent on the way to his morning prayers. The assassin and the emperor grappled with each other and stumbled over the tent's guy-ropes at which point Frederick's chamberlains arrived and killed the unsuccessful assassin.<sup>633</sup> The threat of assassination could be by no means be underestimated, especially when considering Frederick's harsh stance against the Lombard League and his support of anti-popes. However, the fact that his chamberlains came to his rescue and battled off the would-be assassin indicates that they were most likely nearest to the event—befitting for their title as chamberlains—and also possessed martial abilities to fight off an assassin at dawn. It is perhaps this reason that Heinrich I von Lautern was recommissioned from marshal to royal chamberlain in October of 1187, and sent to Italy to accompany the young King Henry VI in November outside of Lodi.<sup>634</sup> Frederick may have reflected upon that moment outside of Lodi 28 years earlier when choosing a former marshal to serve as the chamberlain of his son on a campaign into Lombardy.

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<sup>630</sup> Bischof Otto von Freising and Rahewin, *Die Taten Friedrichs oder richtiger Cronica*. P. 711. Translated from the German by Pattee.

<sup>631</sup> *Ibid.* P. 601.

<sup>632</sup> Freed, *Frederick Barbarossa: The Prince and the Myth*. P. 92.

<sup>633</sup> Bischof Otto von Freising and Rahewin, *Die Taten Friedrichs oder richtiger Cronica*. P. 599.

<sup>634</sup> Böhmer, *Die Regesten des Kaiserreiches unter Heinrich VI 1165(1190)-1197*. P. 31.

The renovation efforts at the Palace of Lautern had also begun in the 1150s and had been at least so far complete as to host the emperor in 1158 and for Rahewin to describe the estate prior to the completion of his *Gesta Frederici* in 1160. Of key importance is the term renovation, due to the existence of earlier palatial buildings at the site. During these early phases of the palace renovations, it is possible that Frederick I conducted his morning prayers in 1158 outside of the palace at the church which would later become the Premonstratensian monastery of Lautern. The church represents the most likely scenario considering that the palatial chapel was still under construction and that he very rarely visited monasteries.<sup>635</sup> He would later reside at the palace at least five more times based upon a charter issued from the palace in February of 1171,<sup>636</sup> two from July of 1184,<sup>637</sup> one from November of 1186,<sup>638</sup> and one from September of 1187.<sup>639</sup> His description of the palace and the surrounding estate is as follows,

*'...he has at various locations begun a range of buildings serving to beautify and to benefit the empire, several of which have also been completed and the greater portion dedicated to his welfare and pursuit of piety. The magnificent, once by Charlemagne constructed palaces and those royal courts decorated with splendid artisanship in Nymwegen and at the court of Ingelheim, especially pronounced, though by way of neglect and age already brittle structures, he most magnificently renovated thereby demonstrating his innate munificence; in Lautern he constructed a royal palace from red stones and furnished with no lack of generosity. For on one side, he had encompassed [the palace] with a powerful wall, the other side bathed by a sea-like fishpond that as a feast for both the eyes and the palate contains all delicacies of fish and fowl. Thereon initiates a park, which through an abundance of venison and deer supplies nourishment. The royal splendor of all these things, larger than which one can portray, awakens the amazement of the beholder. Also in Italy, he had in Monza, in Lodi and other locations and cities through the renovation*

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<sup>635</sup> Freed, *Frederick Barbarossa: The Prince and the Myth*. P. 126. This is in reference to Barbarossa's avoidance of monasteries.

<sup>636</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. P. 49. Also catalogued as Charter ID 10718 in the graph database.

<sup>637</sup> *Ibid.* Pp. 55-56. Also catalogued as Charter IDs 10727 and 10601 in the graph database.

<sup>638</sup> *Ibid.* P. 62. Also catalogued as Charter ID 10753 in the graph database.

<sup>639</sup> *Ibid.* P. 63. Also catalogued as Charter ID 10756 in the graph database.

*of palaces and holy buildings demonstrated so superbly his generosity, that the entire empire will not cease, to continually honor these gifts and the remembrance of this great emperor.*<sup>640</sup>

By describing the Palace of Lautern in the same sentence as the famous Carolingian palaces of Nijmegen and Ingelheim, Rahewin elevated its perceived status and then provided evidence as to why it should be regarded as even better than the ‘brittle’ palaces at Nijmegen and Ingelheim. At the same time, he confirmed the authority of Frederick I as an emperor in the succession of Charlemagne—a figure exalted by all Western European societies at the time. According to Thomas Zotz, Frederick I was demonstrating that politics could be conducted *with* palaces as well as *in* palaces.<sup>641</sup>

The neighboring park filled with venison and deer is significant due to the status of such animals as symbols of prestige,<sup>642</sup> and made a visual comparison to the palace of Aachen built by Charlemagne. Rahewin’s description of Frederick’s skill with a variety of hunting weapons including falcons indicated his love for the hunt, not only as an elite pastime, but as an endeavor to demonstrate his status amongst the other kings of Europe. A strong religious element was linked to hunting during the medieval period in which many thought that man had once possessed the senses of the animals but had lost them upon the Fall of Man.<sup>643</sup> Therefore, demonstrating expert skill in coordination (handling a bow and arrow), controlling animals (riding horses, directing hounds and falcons), and tracking wild beasts established Frederick as the archetype of the medieval hunter, in tune with senses absent in most men—thus closer to God’s first creation and greater than other men. The expanse of the Reichsland around Lautern allowed the emperor to exercise the hunt in a multiplicity of areas with different environs, ideal for entertaining elite guests. The hunt itself was not limited to the emperor and his men, rather, women often partook in the spectacle as participants

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<sup>640</sup> Bischof Otto von Freising and Rahewin, *Die Taten Friedrichs oder richtiger Cronica*. Pp. 711 and 713. Translated from the German into English by Pattee.

<sup>641</sup> Thomas Zotz, “Die mittelalterliche Königspfalz - Erscheinungsformen und Funktionen,” in *Staufische Pfalzen*, ed. Gesellschaft für staufische Geschichte e.V., Schriften zur staufische Geschichte und Kunst e.V. 14 (Göppingen: Gesellschaft für staufische Geschichte e.V., 1994), 9–24. P. 10.

<sup>642</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. P. 102. This is in reference to the symbolism of deer.

<sup>643</sup> *Ibid.* P. 105.

or spectators.<sup>644</sup> The focus upon the hunt had a direct effect upon the architecture of palaces, in which fenestration was specifically orientated towards the deer parks, allowing the inhabitants of a palace to view the hunt from the comfort of the chambers.<sup>645</sup> These events are even corroborated within the medieval literature by the 12<sup>th</sup> century minstrel, Hartmann von Aue,<sup>646</sup> who was also a knight who partook in Frederick I's crusade from 1189-1192.<sup>647</sup> Parks were an essential part of medieval displays of lordship as their topographies could condition the way in which an elite residence could be approached, creating a designed experience for the visitor or passer-by.<sup>648</sup>

The close proximity to the palace suggests that this was most likely a 'Little Park' in contrast to an English 'Great Park' which seigneurial castles often possessed in areas further away. Little Parks neighbored the castle, serving as a scenic backdrop and are often interpreted as pleasure parks, whereas Great Parks were more utilitarian.<sup>649</sup> In the case of the Palace of Lautern, the position of the Little Park is clear from Rahewin's description, though no mention is made of a Great Park. In fact, a Great Park may not even have been planned, though it is important to bear in mind the expanse territory that belonged to the palace. A single Great Park may not have been a particular area bounded by a pale, but rather various areas within the larger Reichsland of Lautern may have served the purpose of a Great Park over time. The sheer size of the estate provided a key advantage when displaying imperial authority as the palace was the centerpiece of what was soon to be an ensemble of both secular and ecclesiastical elite buildings.

The concept of a hunting park in the vicinity of the palace is drawn directly from the legacy of Charlemagne who frequently preformed the hunt in the forest near his palace in Aachen,<sup>650</sup> and the large fishpond in Lautern harkens back to Charlemagne's son, Louis the Pious who paired the

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<sup>644</sup> Werner Rösener, "Jagd, Rittertum und Fürstenhof im Hochmittelalter," in *Jagd und höfische Kultur im Mittelalter*, ed. Werner Rösener, 1st ed., Veröffentlichungen des Max-Planck-Instituts für Geschichte 135 (Göttingen: Vandenhoeck & Ruprecht, 1997), 123–48. P. 137. Rösener specifically mentions Rahewin's account of the Palace of Lautern as the best example of Frederick's emphasis upon the hunt.

<sup>645</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. P. 113.

<sup>646</sup> Rösener, "Jagd, Rittertum und Fürstenhof im Hochmittelalter." Pp. 137-138.

<sup>647</sup> Walter Hansen, ed., "Hartmann von Aue," in *Die Minnesänger. Die Liebespoesie des Mittelalters* (Rheinbach: Regionalia Verlag GmbH, 2015), 69–71. P. 69.

<sup>648</sup> Creighton, "Castle, Landscape and Townscape in Thirteenth-Century England: Wallingford, Oxfordshire and the 'Princely Building Strategies' of Richard, Earl of Cornwall." P. 334.

<sup>649</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. P. 113.

<sup>650</sup> Lutz Fenske, "Jagd und Jäger im früheren Mittelalter. Aspekte ihres Verhältnisses," in *Jagd und höfische Kultur im Mittelalter*, ed. Werner Rösener, 1st ed., Veröffentlichungen des Max-Planck-Instituts für Geschichte 135 (Göttingen: Vandenhoeck & Ruprecht, 1997), 29–94. Pp. 56-57.

hunt with fishing.<sup>651</sup> The very fact that both the park and the lake were mentioned by Rahewin after speaking of Lautern in the same sentence as the Carolingian palaces of Ingelheim and Nijmegen is a clear statement linking Frederick I to the great emperor Charles. Furthermore, the emperor need not even be present at the palace for the effect to manifest itself with those acquainted with Carolingian history and legend. The palace's existence with its constellation of monumental red walls, a 'sea-like' fishpond, and a park filled with prestige animals was an expression of imperial status. In turn, the ministeriales responsible for maintaining the palace, both in the presence of the emperor and in his absence, functioned as custodians of the imperial status, placing them solidly within the network of the elite figures of the mid to late 12<sup>th</sup> century.

The purpose of using red sandstone was twofold: 1. red sandstone from the *Buntsandstein* level of the Germanic Trias is plentiful in the region of German Palatinate,<sup>652</sup> and 2. the color of the stone does not fade. The use of finely crafted red stones indicates that the palace was meant to last, without fear of tarnishing.<sup>653</sup> In turn, this was a reflection of the lasting empire he had sought to establish and directly corresponds to Rahewin's statement that, '*... the entire empire will not cease, to continually honor these gifts and the remembrance of this great emperor.*'<sup>654</sup> The red wall against the fishpond also represents what was undoubtedly the 'show-front' of the site, a term commonly associated with the 16<sup>th</sup> century,<sup>655</sup> yet clearly has manifestations in the 12<sup>th</sup> century, evident from other sites contemporaneous to the palace such as castle *Münzenberg* that featured numerous arched fenestrations.<sup>656</sup> Additionally, by constructing the palace from red stone and modifying a lake with an abundance of fish and fowl, Frederick I was demonstrating his control over nature. His grandson, Frederick II, continued the tradition of maintaining opulent palatial gardens filled with horses, dogs, various birds, and leopards, for which he commissioned ministeriales to maintain them.<sup>657</sup> The German Palatinate was particularly difficult to control, considering the vast marshlands, large rock outcrops, and dense forest. Frederick was essentially creating an Eden from a harsh territory, and

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<sup>651</sup> Ibid. P. 46.

<sup>652</sup> Pattee, "Integrative 3D Recording Methods of Historic Architecture: Burg Hohenecken from Southwest Germany." Pp. 5-7.

<sup>653</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. P. 143. This is in reference to the use of durable materials at prestigious castles.

<sup>654</sup> Bischof Otto von Freising and Rahewin, *Die Taten Friedrichs oder richtiger Cronica*. P. 713.

<sup>655</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. P. 46.

<sup>656</sup> Krahe, *Burgen und Wohntürme des deutschen Mittelalters*. P. 34.

<sup>657</sup> Stürmer, *Friedrich II: 1194-1250*. P. 247.

representing his authority in the process. This aspect should not be readily dismissed as a fanciful interpretation, because medieval society was highly visual, where allegory and symbolism were abundant and permeated all social levels.<sup>658</sup> Frederick I and the architects of the palace's renovation were fully aware of how both the common folk and the *nobiles* would interpret the site.

The elaborate description of the fishpond is particularly interesting, especially when regarded within the context of the mid to late 12<sup>th</sup> century, as freshwater fish were expensive,<sup>659</sup> and the positioning of the lake against the backdrop of tremendous red sandstone walls would have indeed been a sight to behold. Rahewin's decision to describe the fishpond as 'sea-like' was a clever inclusion which undeniably called to mind the manner in which the lake near the palace of Favara in Sicily had been referred to at the time, namely a *Albehira*—an Arabic word meaning small sea.<sup>660</sup> The Sicilian palaces also included the lavish menagerie of the Palace of Palermo.<sup>661</sup> It is essential to mention that the Norman Kingdom of Sicily composed one of the greatest political oppositions to Frederick I, despite the fact that his son, Henry VI married the daughter of the Sicilian king.<sup>662</sup> The Kingdom of Sicily was eventually subdued by Henry VI,<sup>663</sup> alongside the ministeriales Heinrich I von Lautern and Heinrich I von Wartenberg. In drawing a linguistic comparison to the Sicilian fishpond at Favara and describing the opulent park of Lautern as essentially a large menagerie, Rahewin was establishing the newly renovated Palace of Lautern as an architectural counterbalance to both the Norman palaces of Palermo and Favara. To add insult to injury, Rahewin then continued that Lautern was not the only palace Frederick had built, but that he had also begun extravagant projects in the Italian Lombard cities of Monza and Lodi. This emphasized the vast coffers at Frederick's disposal to initiate such construction ventures throughout the empire, and that he was doing so in the newly conquered Lombard lands as well, as a method to establish his authority.<sup>664</sup>

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<sup>658</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. P. 109.

<sup>659</sup> *Ibid.* P. 107.

<sup>660</sup> Hauck, "Tiergärten im Pfalzbereich." P. 60.

<sup>661</sup> *Ibid.* P. 61.

<sup>662</sup> Neuhold, *Die Staufer*. P. 62.

<sup>663</sup> *Ibid.* P. 95.

<sup>664</sup> This sentiment regarding the demonstration of sovereignty is shared by Zotz, "Die mittelalterliche Königspfalz - Erscheinungsformen und Funktionen." P: 11.

This same phenomenon was discussed in Chapter 2 regarding CST and the Hittite strategy of constructing monuments near borders in order to signal political strength to the opposition.<sup>665</sup>

The emperor's diplomatic relations were also discussed in the *Gesta Frederici*, in which *Rahewin* noted that Frederick I had engaged the kings of Spain, England, France, Denmark, Bohemia, and Hungary so effectively that they obeyed his commands with envoys without fail. Even Manuel of Constantinople is said to have changed his title to Emperor of New-Rome, in honor of Frederick I.<sup>666</sup> This once again corresponded to his desire to emulate Charlemagne and to position himself as a model of knightly culture. The latter is strongly linked to his marriage with Beatrix of Burgundy, who had substantial influence upon the shaping of the court due to her French background.<sup>667</sup> His court was replicated throughout the empire by the princes, such as Duke Welf VI—Frederick I's maternal uncle—who designed his court on the model of the royal court including the positions of steward, cupbearer, marshal, chamberlain, and flagbearer. This indicates that ministeriales commissioned at the courts of lower status elites were familiar with the organization of the royal court, and therefore in an ideal position should they wish to transfer. However, such a luxurious court without the benefit of the royal purse often required the princes to sell their land, as Welf VI had done, much to the chagrin of his descendants.<sup>668</sup> The Palace of Lautern was thus among the greatest of the imperial palaces and worthy of international fame, which even extended well into the 13<sup>th</sup> century as evidenced by the English chronicler Thomas of Wykes, who accompanied Richard of Cornwall's entourage at his wedding in 1269. Wykes claimed that no other palaces in all of the kingdoms compared to the Palace of Lautern,<sup>669</sup> whose sheriff and chief administrator was Reinhard III von Lautern-Hoheneck.

Although castles and palaces often exhibited militaristic features such as walls and towers, the viability of the utility of such features in a military capacity were rendered useless by the existence of ornate features such as large windows and balconies. This was undeniably the case for the palace in Lautern which had at one point featured tremendously thick walls of sandstone, albeit permeated with massive arched windows. At the top of the walls were arcades of finely crafted columns rather than a crenellated battlement. Thus, the palace gave the impression of a fortified

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<sup>665</sup> Glatz and Plourde, "Landscape Monuments and Political Competition in Late Bronze Age Anatolia: An Investigation of Costly Signaling Theory." P. 303.

<sup>666</sup> Bischof Otto von Freising and Rahewin, *Die Taten Friedrichs oder richtiger Cronica*. P. 713.

<sup>667</sup> Rösener, "Jagd, Rittertum und Fürstenhof im Hochmittelalter." P. 136.

<sup>668</sup> *Ibid.* P. 134.

<sup>669</sup> Barz et al., "Kaiserslautern." P. 104. Kraft, "Das Reichsland von Kaiserslautern." P. 63.



castle nestled between a lake, river, and pasture, whose watery features could be interpreted as a large moat to ward off enemies and the pasture a rallying ground for armies. In actuality, the palace was an ostentatious residence with a lake full of expensive freshwater fish and a deer park. Maintaining security at the palace would have been accomplished through the sheer size of the imperial retinue numbering over 1000 men,<sup>670</sup> not to mention the local ministeriales at the palace.

The various elements described by Rahewin were not chosen at random, and should neither be read simply as extravagances recorded solely to indulge the emperor with praise, nor as purely utilitarian features necessary for the upkeep of a palace. Rather, the descriptions provide evidence as to which features were most important for an emperor of the 12<sup>th</sup> century in order to signal his opulence and strength both to allies and enemies. In turn, the presence of the ministeriales pursuing their own aspirations for prominence reinforces the concept of piggy-backing—mentioned in Section 2.4.2—in which they also benefitted from the emperor's ostentatious display of wealth.

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<sup>670</sup> Freed, *Frederick Barbarossa: The Prince and the Myth*. P. 93.

### 3.3.1.3 Previous Investigations of the Palace

Prior to its first documented mention in the year 830 as *Luthra* in the *Lorscher Codex* during the Carolingian period,<sup>671</sup> the area around Kaiserslautern had been inhabited for millennia, though only sparsely settled until the Early Middle Ages. According to the *Pfälzischer Geschichtsatlas* from 1935, the area within the immediate vicinity of Kaiserslautern—where all four primary sites are located—consisted only of one discovery from the Stone Age,<sup>672</sup> one from the Bronze Age, and two from the Hallstatt period (8<sup>th</sup> to 5<sup>th</sup> centuries B.C.).<sup>673</sup> Postholes discovered in the early 1990s indicate a prehistoric settlement in association to the numerous other such discoveries throughout the nearby region.<sup>674</sup> In 1900, a so-called *Gallenhäuschen* (little Gaulish house) was discovered on the banks of a lake near the *Hotel Blechhammer*—a Kaiserslautern landmark three kilometers northwest of the city center—dated to approximately 1000 B.C. The next oldest site near the city is a Celtic grave field from the Hallstatt period composed of eight tumuli that were excavated in the 1930s, located in the forest near in the *Kalkofen* approximately five kilometers northeast of the city-center of Kaiserslautern.<sup>675</sup> Similarly-dated tumuli were discovered near the village of *Morlautern*, approximately three kilometers directly north of the site of the Palace of Lautern. The Celtic presence around the area of Kaiserslautern continued into the *La Tène* Culture (5<sup>th</sup> to 1<sup>st</sup> centuries B.C.<sup>676</sup>), for which a Celtic *Fürstengrab*—the grave of an elite princely figure—was discovered in 1874 near the village of *Rodenbach*, ten kilometers northwest of Kaiserslautern.<sup>677</sup>

In contrast to most other German cities left of the Rhine River, Kaiserslautern has very few indicators of a concentrated Roman presence,<sup>678</sup> other than the *strata romana*, despite its position

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<sup>671</sup> Karl Josef Minst, “Lorscher Codex,” in *Kaiserslautern/P.*, vol. 5: Schenkungsurkunden Nr. 2911-3836 (Lorsch: Verlag Laurissa, 1971), 255, <https://doi.org/10.11588/diglit.20609#0261>.

<sup>672</sup> F. Sprater, “Karte der Funde aus der Steinzeit,” in *Pfälzischer Geschichtsatlas: Im Auftrag der Pfälzischen Gesellschaft zur Förderung der Wissenschaften und des Vereins zur Herausgabe eines historischen Atlases*, ed. Wilhelm Winkler (Neustadt an der Hardt: Verlag der Pfälzischen Gesellschaft zur Förderung der Wissenschaften, 1935), 2.

<sup>673</sup> F. Sprater, “Karte der Funde aus den Metallzeiten,” in *Pfälzischer Geschichtsatlas: Im Auftrag der Pfälzischen Gesellschaft zur Förderung der Wissenschaften und des Vereins zur Herausgabe eines historischen Atlases*, ed. Wilhelm Winkler (Neustadt an der Hardt: Verlag der Pfälzischen Gesellschaft zur Förderung der Wissenschaften, 1935), 3.

<sup>674</sup> Keddigkeit, *Kleine Geschichte der Stadt Kaiserslautern*. 15.

<sup>675</sup> Lothar Kilian, “Die schutzbedürftigen Grabhügel vom Kalkofen bei Kaiserslautern,” in *Jahrbuch zur Geschichte von Stadt und Landkreis Kaiserslautern*, vol. 8/9, 37 vols. (Otterbach: Franz Arbogast Verlag, 1971), 1–5. Pp. 1-3.

<sup>676</sup> Andreas Willmy, “Die Kelten,” in *Der Heidengraben-Ein keltisches Oppidum auf der Schwäbischen Alb*, by Dorothee Ade et al., 2nd ed., Führer zu archäologischen Denkmälern in Baden-Württemberg 27 (Stuttgart: Konrad Theiss Verlag, 2013), 12–15. Pp. 14-15.

<sup>677</sup> Keddigkeit, *Kleine Geschichte der Stadt Kaiserslautern*. 16.

<sup>678</sup> *Ibid.* 17.

near the center of the former Roman province of *Germania Superior*.<sup>679</sup> Scattered remains of Roman *Terra sigilata* have been found throughout the city, but foundations of Roman buildings within the city's boundaries have not been discovered to date. The one exception in the general area is the large late Roman settlement atop the *Großen Berg* in the forest near the *Einsiedlerhof* that was abandoned around the 4<sup>th</sup> century A.D. Curiously, it is located directly between two later sites that play a major role in this project, namely, Castle Perlenberg and the Teutonic Knight Commandry of Einsiedel. Additionally, a Roman depiction of the god Mercury was carved into the red sandstone on a natural rock outcrop between the village of Kindsbach and the town of Landstuhl where Castle Nanstein is located,<sup>680</sup> directly west of the aforementioned settlement. This indicates a ritualistic or spiritual site in the vicinity of Lautern, possibly due to the phenomenon of the large rock outcrops, forests, and lakes that once populated the area.

Very few archaeological remains have been discovered between the Celtic period of the La Tène Culture and the occupation by the Franks in the 6<sup>th</sup> and 7<sup>th</sup> centuries A.D.<sup>681</sup> A possible explanation for this phenomenon is the topology of the area in which Kaiserslautern is situated. The city is located in a geographic depression (the *Lauterer Senke*), bounded by low mountains on all sides. Besides the irregular positions of the four sandstone plateaus scattered throughout the valley, the land was mostly swamp and regularly floods even to this day. The absence of a Roman site can be explained by the presence of the settlement atop the *Großer Berg* as a strategic position well above the threat of flooding. It is also possible that later migrating Alemannic groups, who did indeed cross this area during the 3<sup>rd</sup> to 5<sup>th</sup> centuries,<sup>682</sup> built temporary structures on the unsolid portions of land which have since sunk or been washed away.

Despite the gaps in the material record, during the period prior to the Early Middle Ages, the area of Kaiserslautern quickly developed until the end of the 7<sup>th</sup> century. Four settlements along both sides of the Lauter River were constructed atop the aforementioned large rock plateaus, including a 1400 m<sup>2</sup> grave field with 188 identified individual graves located just north of the later royal palace, active from the 7<sup>th</sup> until the 12<sup>th</sup> centuries A.D. The city expanded throughout the 8<sup>th</sup> and 9<sup>th</sup> centuries across the four settlements, evidenced by numerous foundations of houses and a

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<sup>679</sup> Sprater, "Karte der Funde aus der Römer- und Merowingerzeit." Heather, *Empires and Barbarians: The Fall of Rome and the Birth of Europe*. Map of the Roman provinces during the Marcomannic War on page 625.

<sup>680</sup> Zink, *Kaiserslautern in Vergangenheit und Gegenwart: eine Ortskunde auf geschichtlicher Grundlage*. P. 40.

<sup>681</sup> Keddigkeit, *Kleine Geschichte der Stadt Kaiserslautern*. 18.

<sup>682</sup> *Ibid.* 18.

well between the site of the palace and the *Rittersberg*—one of the four settlements atop the rock plateaus. The three other settlement plateaus near the current positions of the *Altenhof*, the *Stiftskirche* (previously the Premonstratensian Hospital of St. Mary), and the church of St. Martin were developed contemporaneously. An additional Frankish grave field organized in rows (a *Reihengräberfeld*) was discovered in 1975 near the modern-day *Stiftskirche*, including a building phase of a previous church during the Carolingian period.<sup>683</sup>

Lautern's inclusion in the Lorsch Codex listed it as one of the royal courts located along the street from *Saarbrücken* to *Schifferstadt*, which featured a court approximately every 25 kilometers during the Merovingian period.<sup>684</sup> Although relatively little remains Merovingian period,<sup>685</sup> the existence of a royal court was again mentioned in the late 9<sup>th</sup> century in a charter from 2 December 882, in which Emperor Charles III confirmed various royal courts that he had received from his father, including one in Lautern.<sup>686</sup> In the early years of the German Kingdom, various forest properties belonged to the court of Lautern as indicated in a charter from 17 December 945, in which King Otto I gifted a loyalist by the name of Franco, various lands in the territory of the Conrad the Red, the Duke of Lorraine.<sup>687</sup> Later that century, the area of Lautern's control increased, developing into local center of commerce and trade. This is supported by a charter from 985 indicating the bestowal of the toll, market, and hunting reserves of Lautern from Emperor Otto III to his cousin, Otto I, Duke of Carinthia.<sup>688</sup> The duke's nephew, Conrad II, would later become the first Emperor of the Salian dynasty in 1027,<sup>689</sup> and played a major role in the development of the ministeriales throughout the German Kingdom and especially within the areas of the royal estates. The importance of the Palace of Lautern was documented in the royal contracts of the years 1064 to

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<sup>683</sup> Ibid. 20-21.

<sup>684</sup> Hans Werle, "Feudalisierung der Ministerialität im 12. Jahrhundert. Zur Situation des Pfälzer Reichsministerialien Werner II. von Bolanden," in *Jahrbuch zur Geschichte von Stadt und Landkreis Kaiserslautern*, vol. 8/9, 37 vols. (Otterbach: Franz Arbogast Verlag, 1971), 67–77. P. 72.

<sup>685</sup> Keddigkeit, *Kaiserslautern Kaiserpfalz und Casimirschloss*. P. 5.

<sup>686</sup> Akademie der Wissenschaften und der Literatur, Mainz, "RI I n. 1645, Karl III (Der Dicke), 882 Dez. 2, Franconfurt Curte Imp.," Regesta Imperii Online, accessed September 10, 2020, [http://www.regesta-imperii.de/id/0882-12-02\\_1\\_0\\_1\\_1\\_0\\_3762\\_1645](http://www.regesta-imperii.de/id/0882-12-02_1_0_1_1_0_3762_1645). Also catalogued as Charter ID 10489 in the graph database.

<sup>687</sup> Akademie der Wissenschaften und der Literatur, Mainz, "RI II, 1 n. 128, Otto I., 945 Dez. 17, Tarneburg," Regesta Imperii Online, accessed September 10, 2020, [http://www.regesta-imperii.de/id/0945-12-17\\_1\\_0\\_2\\_1\\_1\\_271\\_128](http://www.regesta-imperii.de/id/0945-12-17_1_0_2_1_1_271_128). Also catalogued as Charter ID 10490 in the graph database.

<sup>688</sup> Akademie der Wissenschaften und der Literatur, Mainz, "RI II, 3 n. 966, Otto III., 985 Februar 6, Mühlhausen," Regesta Imperii Online, accessed August 12, 2017, [http://www.regesta-imperii.de/id/0985-02-06\\_1\\_0\\_2\\_3\\_0\\_103\\_966](http://www.regesta-imperii.de/id/0985-02-06_1_0_2_3_0_103_966); Keddigkeit, *Kleine Geschichte der Stadt Kaiserslautern*. 21.

<sup>689</sup> Möller and Ammerich, *Die Salier*. P. 206.

1065, in which the Palace of Lautern—known as *Luthera* at the time—delivered eight *Servitien*, or services often in the form of taxes to the royal coffers. The only other site in Germany that delivered the same amount was *Aquisgrani*—the royal city of Aachen.<sup>690</sup> At that time, a single royal *Servitium* from the Saxon courts consisted of thirty large pigs, three cows, five suckling pigs, fifty hens, fifty eggs, ninety cheeses, ten geese, five barrels of beer, five pounds of pepper, ten pounds of wax, and wine from various cellars.<sup>691</sup> Provided this information, the Palace of Lautern was clearly already regarded among the elite palaces by the mid-Salian period.

As the ecclesiastical center of power switched from the cathedral of Worms during the imperial Ottonian dynasty to the cathedral of Speyer, during the imperial Salian dynasty, so too did the rights of the lands in and around Lautern. A charter from 11 January 1086<sup>692</sup> corroborates this switch, describing the gift of *Villa Lutera* and its bonds people from Emperor Henry IV to the bishop of Speyer.<sup>693</sup> Although the Salian dynasty ended in 1125, their concept of an organized empire under a powerful emperor lived on. Particularly poignant was the foundation they laid for the *Reichslandpolitik*<sup>694</sup> (imperial estate politics) in which certain regions throughout the empire were allocated as royal estates, fully independent of subservient feudal lands within the empire. The accumulation of lands from the *Wasgau* (South) to the *Lußhardt* (North)—and everything in between—had actually begun under Otto von Worms, though the high point of this strategy was achieved by Emperor Henry IV in the late 12<sup>th</sup> century.<sup>695</sup> The core of the Salian estate was situated in the area just described, with the northern boundary near Ingelheim am Rhein, and the southern near Haguenau<sup>696</sup>—both sites of royal palaces. During the reign of the Salian dynasty, the royal court in *Lambrecht* had included a portion of the *Waltmark*, a territory of forest and meadows near

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<sup>690</sup> Ludwig Weiland, ed., “440. Indiculus Curiarum ad Mensam Regiam Pertinentium (1064-1065),” in *Constitutiones et acta publica imperatorum et regum*, vol. 1: 911-1197, 13 vols., Monumenta Germaniae Historica: inde ab anno Christo quingentesimo usque ad annum millesimum et quingentesium, Legum Sectio IV. (Hannover: Impensis Bibliopolii Hahniani, 1893), 646–49. P. 648.

<sup>691</sup> Benjamin Arnold, *Medieval Germany, 500-1300: A Political Interpretation*, 1st ed. (Basingstoke: Macmillan, 1997). P. 166.

<sup>692</sup> Böhmer, Lubich, and Brauch, *Die Regesten des Kaiserreiches unter Heinrich IV. 1056 (1050) - 1106*. Pp. 4-5. Also catalogued as Charter ID 10598 in the graph database.

<sup>693</sup> Keddigkeit, *Kleine Geschichte der Stadt Kaiserslautern*. P. 22.

<sup>694</sup> Möller and Ammerich, *Die Salier*. P. 146.

<sup>695</sup> Werle, “Wald und Herrschaft: Studien zur Geschichte der Reichswaldgenossenschaft Kaiserslautern.” P. 48.

<sup>696</sup> Janssen, “Siedlungsgeschichtliche und siedlungsarchäologische Beobachtungen zum Haus- und Reichsgut der Salier.” P. 13.

the Abbey of Otterberg, originally belonging to the royal estate.<sup>697</sup> However, the Salian ownership of one fourth of the *Waltmark* can be dated back to the year 987,<sup>698</sup> meaning that the dynasty had acquired the area prior to their ascension to the royal and imperial thrones. These areas north of Lambrecht in the *Waltmark* included the former Castle Otterburg, which was later razed and the stones repurposed for the foundation of the Abbey of Otterberg in 1143.<sup>699</sup> Despite the strong connection of the Hohenstaufen dynasty to the territory of Lautern, the area had actually belonged to the patrimony of the Salian estate.<sup>700</sup> The acquisition of specific lands into the royal and imperial territories was continued under the Saxon Emperor Lothair II and by the Swabian Hohenstaufen dynasty.<sup>701</sup> During the reign of Frederick I Barbarossa in the second half of the 12<sup>th</sup> century, Lautern enjoyed its golden age with the renovations of the palace.<sup>702</sup> The city was referred to with a variety of titles over the course of the 13<sup>th</sup> century including *Burgum* in 1215, *Lutra imperialis* in 1237, *oppidum* in 1260, and *civitas regia* in 1262. However, it was only in 1276 that the citizens of Lautern received the same rights and privileges of other royal cities as commissioned by King Rudolf von Habsburg.<sup>703</sup>

Besides the various excavations conducted throughout the area of Kaiserslautern, the first recorded archaeological excavation of the palace was carried out from 1934 until 1936 by the engineer Werner Bremer. Prior to the excavation, a number of buildings were removed that had been built throughout the course of the 19<sup>th</sup> and early 20<sup>th</sup> centuries on the site. These mainly included the Bavarian state prison and the Wächter Brewery, but also a library, city offices, conference rooms, a recital hall of the local theater, and a kindergarten.<sup>704</sup> The use of the palatial grounds for this conglomeration of various structures and businesses was due to the auction conducted by the French occupiers during the Napoleonic Wars, in which the site was dismantled and the stones reused. The prison was built in 1825 along the northern part of the site, and the southern portions had been the former Wächter Brewery since 1842.<sup>705</sup> It should be mentioned that the investigation of the 1930s

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<sup>697</sup> Werle, "Wald und Herrschaft: Studien zur Geschichte der Reichswaldgenossenschaft Kaiserslautern." Pp. 56-57.

<sup>698</sup> Ibid. P. 60.

<sup>699</sup> Keddigkeit et al., "Otterberg, St. Maria Zisterzienserabtei Otterburg." P. 525.

<sup>700</sup> Hess-Gotthold, *Hausmacht Und Politik Friedrich Barbarossas Im Raum Des Heutigen Pfälzer Waldes*. P. 57.

<sup>701</sup> Ibid. P. 52.

<sup>702</sup> Bischof Otto von Freising and Rahewin, *Die Taten Friedrichs oder richtiger Cronica*. P. 713.

<sup>703</sup> Kraft, "Das Reichsland von Kaiserslautern." P. 64.

<sup>704</sup> Bremer, *Die Ausgrabungen an der Barbarossapfalz zu Kaiserslautern*. P. 13.

<sup>705</sup> Barz et al., "Kaiserslautern." P. 111.

was funded and driven in part by the National Socialist desire to identify ancient traces of their ideology. These traces were often invented if they could not be directly found, and even the supposed traces that were ‘found’, had in fact been twisted to fit the narrative of a peoples’ community willing to defend itself and the Reich. Whether or not Bremer had felt the necessity to write these components in order to publish, or if he truly felt that these were indeed rooted in fact is beyond the scope of this project. Despite the underlying NS tones in his work—as the case was for Karl Bosl’s work on the ministeriales in Chapters 2 and 3—there are some interesting facts from the excavation that provide clues as to how the palatial complex operated and had looked at the turn of the 13<sup>th</sup> century.

Bremer correctly noted that the history of Kaiserslautern is not so easily derived given the layout of the city, not only due to the various destruction phases, but also the environmental changes. The town is situated in a valley once populated with pockets of fresh water and transected by the Lauter River.<sup>706</sup> All of these components were dwindling by the 1930s and are completely absent since the post-world war period. A number of pages in his text were dedicated to the Germanic battle against the Romans in which Lautern had apparently been sacked by Attila the Hun, among other speculations in an attempt to make the town relevant in the eyes of the ideologically driven supporters of the excavation. However, the true value of his work appears mid-way through the report in which he described the archaeological discoveries, beginning with a brief discussion of the graves located at the site. He and his team discovered a litany of graves from mostly indeterminable periods, among which were pairs of skeletons and even families buried together. All of the graves were unmarked, though some were laid to rest in sarcophagi, indicating a more elite status than those simply laid in the ground. As some of the grave goods could be found in the burial of a pair of skeletons, Bremer was able to determine that they had been from the Merovingian period in which the palace was a simple court.<sup>707</sup>

The discovery of the burials was near the eastern-most buildings on the site that are consequently also the oldest, yet still from the 8<sup>th</sup> and 9<sup>th</sup> century Carolingian period—some hundred years after the burials. This was determined based upon clay bound walls indicative of that period, though the buildings had been expanded during the 11<sup>th</sup> and 12<sup>th</sup> century Salian period.<sup>708</sup> Curiously, no discoveries were made from the 10<sup>th</sup> century Ottonian period, which is corroborated by the rather

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<sup>706</sup> Bremer, *Die Ausgrabungen an der Barbarossapfalz zu Kaiserslautern*. P. 4.

<sup>707</sup> *Ibid.* P. 12.

<sup>708</sup> *Ibid.* P. 13.

scant written sources from that period, as only a transfer of properties near Lautern was mentioned in the year 945.<sup>709</sup> The discoveries from the Salian period speak to the imbalance that often exists between the material record and the written record, as a fair amount was excavated at the site from a time for which only two charters exist. However, both charters distinctly mention the Palace of Lautern as a gift: the first from Emperor Henry IV to his loyalist Bishop Rüdiger of Speyer on 11 January 1086,<sup>710</sup> and the second to the cathedral chapter of Speyer on 24 September 1103.<sup>711</sup> Both gifts also included the surrounding environs which would have encompassed the area where all of the primary sites are located. The building phases that could be determined during this time were rather restricted, consisting of a wall that presumably ran along the entire southern border of the palace. The course of the wall can be identified, though only small pieces still remain. There could very well have been other components built during the Salian period, but the excavators only documented these few remains. Nevertheless, Bremer highlighted the point that the Palatinate had once been part of the heartland of the Salian estate, which had effectively been merged with the royal estate during the 11<sup>th</sup> century.<sup>712</sup> This corroborates the theory put forth in Section 3.2.2 regarding the von Beilstein family, in that the palace required administrators to maintain it and oversee its construction. Considering that the Salians were forced to restrain their reach following the Investiture Crisis of the late 11<sup>th</sup> century, they were known to have selected ministeriales for essential tasks, as was mentioned in Section 2.3.3.2, and to have provided loyalists with grandiose gifts, such as giving the palace to the bishop of Speyer.

The natural rock atop which the palace rest was partially hollowed out underneath the eastern building component of the complex to serve as a storage area in the 11<sup>th</sup> century. Bremer concluded that the Salian construction project had been very modest compared to the later periods,<sup>713</sup> suggesting that the site had been more utilitarian than representative. In addition to the construction discoveries made by Bremer and his team, they also uncovered ‘countless rows’ of skeletons atop the Merovingian and Carolingian burials. To make sense of the burials, including

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<sup>709</sup> Akademie der Wissenschaften und der Literatur, Mainz, “RI II,1 n. 128.” Also catalogued as Charter ID 10490 in the graph database.

<sup>710</sup> Böhmer, Lubich, and Brauch, *Die Regesten des Kaiserreiches unter Heinrich IV. 1056 (1050) - 1106*. Pp. 4-5. Also catalogued as Charter ID 10598 in the graph database. Keddigkeit et al., “Speyer, St. Maria, Domstift.” P. 137. Describes the context of the gift in more detail.

<sup>711</sup> Böhmer, Lubich, and Brauch, *Die Regesten des Kaiserreiches unter Heinrich IV. 1056 (1050) - 1106*. P. 150. Also catalogued as Charter ID 10599 in the graph database.

<sup>712</sup> Bremer, *Die Ausgrabungen an der Barbarossapfalz zu Kaiserslautern*. Pp. 13-15.

<sup>713</sup> *Ibid.* P. 16.



entire families, he supposed that the palace had been besieged many times—a theory that supported the concept of a people attacked from the outside while trying to protect the Reich. However, there are neither material nor written records of attacks, sieges, or anything of the like during that period. Therefore, the simplest explanation would be that the palatial grounds served as the cemetery for the town and palace prior to the foundation of the Premonstratensian Hospital of St. Mary in 1152.<sup>714</sup> Considering that the area was known to fill with water, and that the palace had been built atop a natural rock plateau, the safest placed to bury the dead would be in an area well above the waterline.



Figure 7: Wagon Ruts on the eastern side of the palace.

Certainly the most extensive discoveries at the site concerned the mid to late 12<sup>th</sup> century building phases conducted by the Hohenstaufen dynasty. It was at this point, Bremer notes, that the palace took on a more representative nature in which it would become a favored abode of Emperor Frederick I. As mentioned earlier in Section 2.2.1, the NS regime and its enablers often sought to connect specific emperors from the HRE to Hitler and none was forced into that role more often than Emperor Frederick I. Thus, the excavation was clearly less interested in the pre-Hohenstaufen period, not just because more remains of the Hohenstaufen involvement at the site. During the excavation, they were able to uncover the polygonal outline of the double-chapel, located on top of a vault from the Salian period. Bremer determined that the eastern-facing chapel had two levels—

<sup>714</sup> Keddigkeit, Wenz, and Untermann, “Kaiserslautern, St. Maria Hospital, später Premonstratenserstift bzw. -kloster, dann Kollegiatstift St. Marien und St. Martin.” Pp. 371-372.

one for the servants and one for the monarch—connected directly to the great hall immediately to the west. The architectural sculpture discovered in the building indicated an advanced Romanesque design, including animal heads and ornate leaf-capitals dated to the 13<sup>th</sup> century.<sup>715</sup> This is indeed an important discovery, because it demonstrates that the palace had not been finished during Frederick I's reign, let alone during that of his son, Henry VI. This is supported by dendrochronology made in 2012 showing that the wood used in construction had been felled after 1190, following the death of Frederick I.<sup>716</sup> The great hall was only briefly described by Bremer as having been a monumental addition to the palace that included an ornate balcony with a view toward the south. He concluded his descriptions of the construction research with a brief discussion of the rock tunnel leading from the Salian storage chambers to the gatehouse of the former Rittersberg—the building where the ministeriales commissioned at the palace were to have lived.<sup>717</sup>

Bremer's report ended by summarizing that the palace of Lautern had been an idyllic site surrounded by lakes and meadows, as a sort of jewel of 'German construction' in a fateful landscape, once again underlining the threat from outside. Following the 1930s excavation, the eastern building of the palatial complex was rebuilt to serve as a museum for the history of the palace. The bombings of the Second World War devastated the city between August 1944 and March 1945, during which much of the city center was destroyed.<sup>718</sup> After World War II, Kaiserslautern spent the following decades rebuilding and redefining itself as a university city. The palatial grounds were reused for the construction of a new 22-storey city hall,<sup>719</sup> which included the intentional demolition of large sections of the historical site.<sup>720</sup> It was not until the 1990s, when the IPGV began the production of the *Pfälzisches Burgenlexika* that the palace was once again researched by a local organization, appearing in the 2005 Volume III of the series.

The lexicon offers a concise and complete overview of the site and its description, building upon past investigations in addition to new research undertaken by the institute and its contributors. The authors partitioned the construction history of the site into three phases followed by the renaissance phase: the first phase comprises everything until 1100 A.D., the second continues from

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<sup>715</sup> Bremer, *Die Ausgrabungen an der Barbarossapfalz zu Kaiserslautern*. Pp. 16-17.

<sup>716</sup> Marita Gies, "Lautern bleibt, was es war," *Die Rheinpfalz*, March 28, 2012, sec. Lokalteil.

<sup>717</sup> Bremer, *Die Ausgrabungen an der Barbarossapfalz zu Kaiserslautern*. P. 17.

<sup>718</sup> Heinz Friedel, *Kaiserslautern: Von der Kaiserzeit bis zur Universitätsgründung*, 1st ed. (Kaiserslautern: Geschwister Schmidt Verlag, 1998). Pp. 112-114.

<sup>719</sup> *Ibid.* Pp. 148-149.

<sup>720</sup> Barz et al., "Kaiserslautern." P. 112.

there until 1200, and the third phase consists of only the first half of the 13<sup>th</sup> century. They began the investigation with an acknowledgement that the only excavation by 2005 had been the 1930s dig previously discussed. However, the authors did not restrict themselves to only the findings from Bremer, but also included documentation from previous historians and conducted their own architectural inspection of the visible walls.<sup>721</sup>

The earliest components of the site seem to have the 7<sup>th</sup> century graveyard, mentioned briefly by Bremer, and three large buildings within the outer walls. Fortifications prior to the 10<sup>th</sup> century have been discovered in many European cities, though nothing has been found in Kaiserslautern to date. In fact, the first fortifications seem to have been built in the second half of the 11<sup>th</sup> century consisting of 1.4 meter thick walls that draw through the eastern and southern borders of the palace site,<sup>722</sup> as had been noted by Bremer. It was during the 11<sup>th</sup> century that the cemetery was also closed and built upon as indicated by the stylistically typical small ashlar of the Salian period. These building foundations feature neat courses of small ashlar and were located in the eastern-most building<sup>723</sup> that later became the museum of the late 1930s.

Phase two of the palace mainly included the monumental great hall, or aula, and the chapel commissioned by Emperor Frederick I. The hall had been built directly over the aforementioned outer wall from the Salian period in rectangular fashion with dimensions of 19 by 25.4 meters, and wall thicknesses ranging between 2 and 2.5 meters. Interestingly, the hall extended nearly 2 meters beyond the southern outer wall, resulting in the construction of an artificial support composed of wood underneath the southwestern corner of the hall, though the southeastern corner rests on the natural rock. This means that the front of the hall extended directly into the Schlosswoog—the lake along the southern side of the palace described by Rahewin. The majority of the aula extended beyond the northern side of the Salian outer wall and was built directly upon the natural rock. However, there seems to have been a previous phase indicated by smaller ashlar similar to those found in the Salian wall constructions. The building housing the aula consisted of three levels as indicated by a depiction of the palace from 1764 that included the Romanesque arched windows and arcades along the crest of the building. In fact, the only two depictions of the palace in which the upper levels of the medieval structure are portrayed date to the 1740s, made by F.J. Kiesling, so often referred to by Barz et al. The aula featured six sets of double-arched windows with the center

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<sup>721</sup> Ibid. P. 113.

<sup>722</sup> Ibid. P. 113.

<sup>723</sup> Ibid. Pp. 113-114.

column holding the tympanum for each window.<sup>724</sup> These strongly resemble the windows at Seligenstadt am Main, which also featured six double-arched windows with the center columns holding the tympana, as shown in Binding 1996.<sup>725</sup> Similarly double-arched windows are located at the Wartburg near Eisenach on the first floor. The existence of the same architectural elements at the Wartburg as at the palace in Lautern is potentially linked to the social network of Frederick I, whose half-sister Jutta was married to the Landgrave Ludwig II von Thüringen, who owned the Wartburg. The emperor also showed favor to one of his closest ministeriales, Cuno von Münzenberg, who resided in the Castle Münzenberg featuring multiple levels of opulent fenestrations.<sup>726</sup> The arches are also incredibly similar to those at the Palace of Bad Wimpfen. Above these windows were five rectangular windows on either side of the base of the ornate balcony that viewed the lake,<sup>727</sup> similar to those along the northern fenestration of Castle Hohenecken.

During the excavations of the 1930s, multiple courses of embossed ashlar (Buckelquader) had been discovered and displayed along the northern wall of the aula that faced the inner court of the Palace, though these were intentionally removed during the construction of the new city hall in the 1960s. Unfortunately, no depictions were made of the inner court side of the hall except for a map from 1735 that provided an aerial view of the palace's layout. The map showed three semi-circular buildings on the northern side of the hall that have been interpreted as having been stairwells, because according to a document from 1559, this was the entrance side to the great hall.<sup>728</sup> However, it is not clear when these additions were made or if they are even from the 12<sup>th</sup> century.

The aula itself is supposed to have been in the third story of the building, as evidenced by the depiction from 1764, which opened into the aforementioned balcony. It is entirely unclear whether or not the great hall was on this level, or below, or elsewhere, though if it had comprised the entire third-story, the hall would have spanned 280 square meters. Additionally, a minimum of four chimneys were determined to have been at the site, extending through the floors. Had the total height of the building been the estimated 20 meters, then the building would have included a space ranging between 800 and 1000 square meters. In contrast to the rather scant remains of the great hall, the chapel building still exhibits its eastern and southern walls. However, these massive walls

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<sup>724</sup> Binding, *Deutsch Königspfalzen: Von Karl dem Großen bis Friedrich II. (765-1240)*. Pp. 256-258.

<sup>725</sup> *Ibid.* Pp. 391-392.

<sup>726</sup> *Ibid.* Pp. 200-202.

<sup>727</sup> Barz et al., "Kaiserslautern." Pp. 115-116.

<sup>728</sup> *Ibid.* P. 116.

composed of large embossed ashlars are from a different building phase than the inner walls that served as the foundations for the chapel. In fact, a span of 1.5 meters separates the two structures, whose walls run parallel to one another. This inner chapel building has been attributed to the same building phase as the great hall, though the outer cladding was considered to have been from the early 13<sup>th</sup> century as part of an initiative to enhance the chapel.<sup>729</sup>

The third phase from the first half of the 13<sup>th</sup> century consists of the aforementioned chapel cladding, which the authors dated to have been approximately around the year 1215. This dating is based upon a charter issued from the Palace of Hagenau on 6 September 1215 by King Frederick II in which he placed the Premonstratensian Hospital in the castle of Lautern under his protection.<sup>730</sup> The shape of the chapel floor plan resembles that of the chapel of the palace in Bad Wimpfen, which was built around the same time as the palace in Lautern on the orders of Frederick I as previously discussed. Based upon the sketch from 1740, the chapel featured an upper level bounded on three sides with a gallery of profiled, ogival arches. It is likely that this upper level constituted the upper chapel mentioned in the charter from 1215.<sup>731</sup> The chapel was also dedicated to St. Nicholas, as the chapel in Nijmegen had been dedicated, which was modeled upon the chapel in Aachen, due to its octagonal structure.<sup>732</sup>

This concept of a top floor chapel located above the inner chapel does not necessarily conflict with Bremer's interpretation of two chapels reserved for the monarch and the servants, respectively. However, these determinations are based upon an 18<sup>th</sup> century depiction of architectural elements that no longer exist, thus requiring an investigation of those components that are still visible. Furthermore, the claim that the upper floor arcades were not from the same period as the bottom portions of the chapel cladding is entirely dependent upon interpreting the arcades as having been in situ since the 13<sup>th</sup> century. However, the site suffered critical damage in 1635 prior

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<sup>729</sup> Ibid. P. 117.

<sup>730</sup> Ibid. P. 118. Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,1 n. 827." Also catalogued as Charter ID 10444 in the graph database.

<sup>731</sup> Binding, *Deutsch Königspfalzen: Von Karl dem Großen bis Friedrich II. (765-1240)*. P. 260. Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,1 n. 827." Also catalogued as Charter ID 10444 in the graph database.

<sup>732</sup> Matthias Untermann, "Zentralbaukirchen als Mittel der Repräsentation. Visuelle Kommunikation durch Architekturzitate," in *Deutsche Königspfalzen: Beiträge zu ihrer historischen und archäologischen Erforschung*, ed. Caspar Ehlers, Jörg Jarnut, and Matthias Wemhoff, vol. 7 Zentren herrschaftlicher Repräsentation im Hochmittelalter Geschichte, Architektur und Zeremoniell, Veröffentlichungen des Max-Planck-Instituts für Geschichte 11/7 (Göttingen: Vandenhoeck & Ruprecht, 2007), 221–36. P. 228. Binding, *Deutsch Königspfalzen: Von Karl dem Großen bis Friedrich II. (765-1240)*. Pp. 248-249.

to the 1764 depiction,<sup>733</sup> suggesting that certain portions could have been rebuilt afterwards in a style assumed to be of the 13<sup>th</sup> century, or simply a style preferred by those responsible for the palace's reconstruction.

To provide clarity to the question of the palace's origins and construction history, an excavation was conducted from 2010 to 2011 by the state archaeologists of the *Rhineland-Palatinate General Directorate for Cultural Heritage (Generaldirektion Kulturelles Erbe Rheinland-Pfalz, or GDKE)*. Toward the end of the investigation, an exhaustive yet precise documentation of the masonry was produced by researchers from the IEK of Heidelberg. Dr. Aquilante de Filippo and Dr. Wilfried Keil examined the uncovered stones and catalogued them in ten categories. The first category consisted of five very large, flat ashlars usually exhibiting two lifting holes (*Hebelöcher*) along their apical side, indicating the use of a Wolf or Spreizwolf, known as a *Lewis*.<sup>734</sup> These stones were found to be aligned with the masonry courses, though were almost certainly reused from other places. Some of them are thought to have been components of a former spiral staircase or even tombstones. However, it is evident that some of them had been moved from their first positions and repurposed in other parts of the palace due to different construction campaigns over the centuries. All stones belonging to this category exhibited residues of plaster and paint. The positions of the lifting holes were also asymmetrical, revealing that these holes had been fashioned before the stone was repurposed to fit within their new masonry courses. Due to these peculiarities, all of the stones of this category were deemed to have been spolia.<sup>735</sup>

The second category of stones were all very large as well, but also very tall, and contoured with long diagonal carvings facing the outside. This was the largest grouping consisting of 19 stones.<sup>736</sup> As with the first category of stones, these were also neatly fit into the masonry courses with very tight mortar joints. The inside of the stones—i.e. the parts facing the inside of the building—had apparently once faced the filling of the wall (*Füllmauerwerk*) consisting of quarry stones and mortar as indicated by the extensive mortar residues on those sides. The tops of the stone feature symmetric lifting holes clearly suggesting that a Spreizwolf had been used in order to lift them into place, though these same upper sides are also quite weathered. Interestingly, the

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<sup>733</sup> Barz et al., "Kaiserslautern." P. 111.

<sup>734</sup> De Filippo, "Bezeichnung und Kategorisierung der Quadern."

<sup>735</sup> Aquilante De Filippo and Wilfried E. Keil, "Beschreibung der verschiedenen Steinkategorien," Spolienkatalog, Kaiserpfalz Kaiserslautern, Ausgrabung 2010-2011 (Universität Heidelberg: Institut für Europäische Kunstgeschichte, March 25, 2011).

<sup>736</sup> De Filippo, "Bezeichnung und Kategorisierung der Quadern."

contouring and dimensions of the ashlar is strikingly similar to the ashlar along the cornice of the southeast tower above the fourth story of the Cathedral of Worms built between 1160 and 1170. They also resemble the ashlar composing the northern tower of the St. Andrew's Church in Worms built around 1160.<sup>737</sup> Fascinatingly, Heinrich von Wilenstein was documented as having been the Dean of the cathedral from 1127 until 1165, a position later filled by Landolf von Lautern-Hoheneck from 1232 until his election as Bishop of Worms in 1234.<sup>738</sup> This is a clear indication from both the material and written record that the influence in the Reichsland of Lautern had shifted from the Bishopric of Speyer during the Salian period, to the Bishopric of Worms during the Hohenstaufen period.

Category three consisted of five stones that are all embossed ashlar.<sup>739</sup> Only one ashlar belongs to category three, singled out due to its isolated position above the other masonry courses, unbound by mortar and featuring an embossed outer surface. Unfortunately, the other sides of the stone were processed in a different manner for reuse at some point in time. Its rather alien form—relative to the ashlar of categories one and two—suggest that it had been brought in from another site.<sup>740</sup> Of key importance is the presence of lifting holes on the upper side of the stone rather than pincer holes on the lateral sides. This unequivocally indicates that it was an early embossed ashlar and not produced during the time of Emperor Frederick II. All other embossed ashlar at the site were mortared to one another, yet each were fashioned seemingly independently, strongly suggesting that they too had been brought in from other construction projects to be reused at the palace. Categories five through ten represent at most two stones each, and were selected due to their peculiar form relative the surrounding stones.<sup>741</sup> In total, 40 stones were described and analyzed in the highest detail, and almost every case indicated that they had been reused from other sites or other parts of the palace.<sup>742</sup>

These results are critical in understanding the construction history of the site and the relatively rapid construction of the palace recorded by Rahewin in the *Gesta Frederici*. It is clear that the builders made considerable use of spolia for the construction of the buildings housing the aula

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<sup>737</sup> De Filippo and Keil, "Beschreibung der verschiedenen Steinkategorien."

<sup>738</sup> Keddigkeit, Hedtke, and Untermann, "Worms, St. Peter (und Paul), Domstift." P. 433.

<sup>739</sup> De Filippo, "Bezeichnung und Kategorisierung der Quadern."

<sup>740</sup> De Filippo and Keil, "Beschreibung der verschiedenen Steinkategorien."

<sup>741</sup> Aquilante De Filippo, "Kriterien zur Auswahl der Steine," *Spolienkatalog, Kaiserpfalz Kaiserslautern, Ausgrabung 2010-2011* (Universität Heidelberg: Institut für Europäische Kunstgeschichte, July 2, 2012).

<sup>742</sup> De Filippo, "Bezeichnung und Kategorisierung der Quadern."

and the double chapel described by Barz et al. It is important to note that the Palace of Lautern was not the only palace under construction at the time. The constellation of the double chapel and the great hall bear a striking similarity to the palace at Bad Wimpfen, especially when compared to the reconstruction proposed by Fritz Arens located in the museum of the *Steinhaus*.<sup>743</sup> According to Haberhauer 2013, the palace of Bad Wimpfen was completed in the years 1200 to 1230, making it slightly younger than the Palace of Lautern,<sup>744</sup> though according to Hartmann 2013, the construction had begun around 1160 or 1170,<sup>745</sup> making it a contemporary of the Palace of Lautern. It is presumably for this reason that Rahewin excluded the palace at Bad Wimpfen from the end of book four, as the Palace of Bad Wimpfen would have just begun construction, in contrast to the partially completed palace at Lautern.

The area of the Palace of Lautern was much smaller than that of its counterparts in other cities. The aula and camera of the palace of Aachen encompassed an area 350 by 350 meters. The palaces in Duisburg, Frankfurt am Main, Nijmegen, Paderborn, Tilleda, and Werla were smaller than Aachen yet still covered a minimum area of 100 by 100 meters.<sup>746</sup> This suggests that the Palace of Lautern was meant for a different purpose than to host a large number of dignitaries within its aula. Alternatively the Palace of Lautern was designed to be taller rather than wider, as the chapel in Lautern is positioned higher than the aula, in stark contrast to the position of the chapel lower than the aula in Aachen. In both the palace of Aachen and Lautern, the chapels were attached via a corridor,<sup>747</sup> though the one in Lautern resembled more of a doorway. Additionally, the aula in Lautern followed a north-south design, emulating those built during the Ottonian-Salian period,<sup>748</sup> which corroborates the claim by Barz et al. that the aula had been built upon a previous Salian build. Unfortunately, very little of the architectural ornamentation exists at the Palace of Lautern. One fragment, presumably from a decorative panel featuring a weave and series of leaves found at the

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<sup>743</sup> Günther Haberhauer, "Frühere Ausgrabungen im Bereich der Königspfalz Wimpfen," in *Die Pfalz Wimpfen und der Burgenbau in Südwestdeutschland*, ed. Wartburg-Gesellschaft zur Erforschung von Burgen und Schlössern e.V., 1st ed., Forschungen zu Burgen und Schlössern 15 (Petersberg: Michael Imhof Verlag GmbH & Co. KG, 2013), 34–37. P. 36.

<sup>744</sup> Ibid. Pp. 36–37.

<sup>745</sup> Hartmann, "Neue archäologische Erkenntnisse zur Baugeschichte der Königspfalz Wimpfen." P. 43.

<sup>746</sup> Binding, *Deutsch Königspfalzen: Von Karl dem Großen bis Friedrich II. (765-1240)*. P. 64.

<sup>747</sup> Ibid. P. 64.

<sup>748</sup> Ibid. P. 64.



site suggests that it was contemporaneous with the palace of Gelnhausen,<sup>749</sup> although it is not certain that the piece actually belonged to the palace as it was not found *in situ*.

The directional position of the Palace of Lautern is a strong indicator of its Salian construction phase, which was apparently covered up during the expansion under Frederick I beginning in the 1150s. However, his decision to build the chapel atop the foundations laid by the Salians,<sup>750</sup> and not to change the direction of the aula was likely due to desire to draw connections to his Salian ancestors while at the same time emulating the palatial grounds in Aachen. The palatial grounds of Lautern stretched along the Lauter River and included the surrounding territories belonging the Reichsland drawing to mind the large expanse at the palace in Ingelheim am Main, which also included a large hunting reserve, drawing to mind the Carolingian Emperor Louis the Pious and his love for the hunt.<sup>751</sup>

The current site is only a shadow of its former self as it has been often destroyed and rebuilt since its expansion in the 13<sup>th</sup> century. An in-depth discussion of its frequent reconstructions after the 13<sup>th</sup> century is beyond the scope of this project, though a few modifications are worth mentioning. For example, the construction of a palatial mill on the Schlosswoog (called Kaiserwoog at that time) was authorized by King Henry VII on 9 August 1310,<sup>752</sup> and that Count Palatine Johann Casimir renovated the palace in a renaissance style from 1570 until 1580. A further discussion of his construction efforts—however interesting they may be—is a theme reserved for another project.

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<sup>749</sup> Ibid. P. 258.

<sup>750</sup> Ibid. P. 260.

<sup>751</sup> Ibid. P. 102.

<sup>752</sup> Kraft, "Das Reichsland von Kaiserslautern." P. 64.

### 3.3.2 Castle Hohenecken



Figure 8: Castle Hohenecken from above during the aerial photography in 2015.<sup>753</sup>

#### 3.3.2.1 Location

The castle is located directly to the southwest of the Palace of Lautern as shown in Figure. It was logistically connected to the royal palace via the *Hohenecker Weg*, as it was known by 1721,<sup>754</sup> leading directly to the front gate of the castle.

#### 3.3.2.2 Previous Investigations of Castle Hohenecken

Castle Hohenecken was the topic of my master's thesis in which I discussed its history at length with regard to the von Lautern-Hoheneck family. Therefore, this section will not repeat what was already written, as the master's thesis initiated the CITADEL project, which was discussed in Section 1.1.1. The new results regarding the castle are located in Chapters 4 and 5, in which the architectural and geo-spatial analyses are described.

<sup>753</sup> Credit for this photo belongs to Christian Seitz, who assisted me in the photogrammetric recording of the site.

<sup>754</sup> Zink, *Kaiserslautern in Vergangenheit und Gegenwart: eine Ortskunde auf geschichtlicher Grundlage*. Pp. 113-114.

### 3.3.3 Castle Beilstein



Figure 9: Castle Beilstein on the day of the second recording.

#### 3.3.3.1 Location

Castle Beilstein is located to the east/southeast of the city of Kaiserslautern (Figure 5) atop a 313 meter hill north of the modern day rail line,<sup>755</sup> near the former village of Entersweilerhof and the source of the Lauter River at Lauterspring.<sup>756</sup>

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<sup>755</sup> Keddigkeit, “Beilstein.” P. 226.

<sup>756</sup> Peter Gärtner, “11. Bilen-, Beil- oder Beutelstein bei Kaiserslautern,” in *Geschichte der bayrerisch-rheinpfälzischen Schlösser und der dieselben ehemals besitzenden Geschlechter nebst den sich knüpfenden romanischen Sagen*, vol. 2 (Speyer, Germany: G. L. Lang Verlag, 1855), 304–6. P. 304.

### 3.3.3.2 Previous Investigations of Castle Beilstein

The castle was active from the early 13<sup>th</sup> century until the mid-15<sup>th</sup> century, though the exact origins of the castle are unknown prior to the declaration for its reconstruction by the German King Henry (VII)<sup>757</sup> on 23 March 1234.<sup>758</sup> The site was built around a natural rock outcrop resembling a large wedge, hence the name *Beil*, meaning *axe*, and *Stein*, meaning *stone*.<sup>759</sup> The current state of the ruin is best described as having two main structures: a primary structure with a natural rock outcrop, connected via a bridge to a secondary structure exhibiting an earthen ramp. The top of the primary structure is surrounded by an outer oval-shaped wall, dissected by another wall perpendicular to the axe-headed edge of the stone outcrop located in the middle of the structure. A modern wooden bridge connects this main castle structure through the remains of a former gate at the northeastern portion of the outer wall, leading to the secondary ramp structure further to the northeast. This secondary structure consists of a winding ramp leading to the bridge—which during the Middle Ages may have been a drawbridge. Remnants of an outer wall to the north of the ramp, including the foundations of a circular tower were found in a 1957 excavation of the site, and have been proposed as the site of the first castle prior to its reconstruction.<sup>760</sup> It was also concluded that these wall fragments were not rebuilt in the 13<sup>th</sup> century. The famous Kaiserslautern historian, Theodor Zink, theorized that the original castle, prior to the reconstruction in 1234, was in fact a hunting lodge constructed by Emperor Frederick I or even an earlier emperor.<sup>761</sup> He supported the theory linguistically, drawing upon the antiquated word *bilen* which means ‘to wait on the game’. He further demonstrated how this pertained to a hunting lodge and not simply a general hunting area by defining the word *bil*, which refers to the moment and location when the game is seen by the hunter<sup>762</sup>—a reference to the natural observation point of the rock outcrop.

By the 1230s, the territory upon which Beilstein stood, belonged to the Premonstratensian Hospital of St. Mary in Lautern, which had received various pieces of the Reichswald as a loan from

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<sup>757</sup> Henry’s numerical suffix is in parentheses due to his forced abdication following his revolt against his father, the emperor Frederick II. The Henry VII without the parentheses was a later German King of the Luxemburg family in the 14<sup>th</sup> century.

<sup>758</sup> Keddigkeit, “Beilstein.” P. 228-229.

<sup>759</sup> Lorenz Eckrich, “Das Schicksal einer Burg: Grabungsergebnisse vom Beilstein bei Kaiserslautern,” in *Westrich-Kalender 1960: Heimatkalender für die Stadt und den Landkreis Kaiserslautern*, ed. Stadt und Landkreis Kaiserslautern (Neuwied am Rhein: Verlag Gerhard Doktor, 1960), 184. P. 135.

<sup>760</sup> Keddigkeit, “Beilstein.” P. 230-231.

<sup>761</sup> Zink, *Kaiserslautern in Vergangenheit und Gegenwart: eine Ortskunde auf geschichtlicher Grundlage*. P.167.

<sup>762</sup> *Ibid.* P. 168.

Emperor Frederick I and his son Henry VI soon after its foundation in 1176.<sup>763</sup> The transfer of an eastern portion of the imperial estate to the Hospital of St. Mary very well could have occurred between 1152 and 1230, because the territory is recorded as having belonged to the Premonstratensians by 1234 and no mention of the territory in any capacity is made prior to this charter. Furthermore, Ulrich von Beilstein—the son of Merbodo I von Beilstein—was the provost of the monastery in Lautern during that period, as was discussed in Section 3.2.2. Therefore, it is entirely possible that the earlier Castle Beilstein had indeed been a royal hunting lodge in a former Great Park belonging to the palace in Lautern, then abandoned once the territory was endowed to the Premonstratensians.

Another theory made by Lorenz Eckrich, who excavated the castle site in 1957, and Helmut Hemmer, who published the findings, suggests that the castle had served a defensive purpose during the 12<sup>th</sup> century conflict between Duke Frederick II of Swabia (Barbarossa's father) and the Counts of Leiningen from 1116 until 1120. He claimed that its position along the former road leading from castle Trifels—located in the south of the Palatinate—to the ore mines of the Donnersberg in the north would have made it an advantageous military post.<sup>764</sup> Thus, Eckrich and Hemmer proposed that Castle Beilstein was built as a defensive site at the intersection of the aforementioned road, and another road leading east to west toward the city of Lautern. They supported the argument with a description of the excavated stonework, bound by clay, dating to the first half of the 12<sup>th</sup> century.<sup>765</sup> The clay-bound walls were over one meter thick, but only found in certain places and not around the entire perimeter of the site. The walls were mostly built upon solid rock, but at times were found to have been built upon a 50-centimeter-thick layer of debris, limiting the potential total height of the wall to no more than two levels; according to their calculations. Additionally, a 4.80 meter in diameter tower was found between the natural rock of the secondary ramp structure and the outer clay-bound wall.<sup>766</sup> Beyond the wall and further down the slope of the hill, they discovered sparse remains of yet another wall, where the original gate is presumed to have been.<sup>767</sup> It is worth noting that Eckrich did not provide any photos of the discoveries as to garner a second opinion on the dating

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<sup>763</sup> Ibid. P. 161.

<sup>764</sup> Helmut Hemmer, "Burgruine Beilstein: Rekonstruktion einer pfälzischen Burg," *Die Barbarossastadt*, 1961. P. 6.

<sup>765</sup> Eckrich, "Das Schicksal einer Burg: Grabungsergebnisse vom Beilstein bei Kaiserslautern." P. 135.

<sup>766</sup> Hemmer, "Burgruine Beilstein: Rekonstruktion einer pfälzischen Burg." P. 6.

<sup>767</sup> Ibid. P. 7.

of the stonework in either his first report in March of 1958,<sup>768</sup> or his second in December of 1958.<sup>769</sup> Nor did Eckrich provide an explanation regarding the indications for how the stones were dated to the first half of the 12<sup>th</sup> century. Hemmer's description of the excavation extends to the primary structure as well in which they made discoveries of older stones beneath those of the 13<sup>th</sup> century castle, including a circular tower located in the northeastern portion of the primary structure, near the bridge. Additionally, he proposed that a third, albeit smaller, tower was built atop the large rock outcrop and that buildings were constructed around it. As the walls could not have supported more than two stories made of stone, based upon their findings, Hemmer suggest that a third level would have been made of half-timber (*Fachwerk*).

Two key misinterpretations arise in these findings. The first and most evident refers to the necessity of three towers in a relatively small location—so close in fact, that one could gently toss a pebble from one to the other. As towers were certainly prevalent in castles of the 12<sup>th</sup> and 13<sup>th</sup> centuries, three foundations for towers built incredibly close to one another could be interpreted either as having been symbolic much in the same way as can be seen at castle *Hoh-Andlau* in the Alsace,<sup>770</sup> or in which each tower was built at a different time with at most two overlapping chronologically. It is almost certain that all three would not have stood at one time, let alone two. In turn, this could open the door for a building phase preceding the one Eckrich intended on excavating. Three towers from three different castle phases could also incorporate Zink's theory of a hunting lodge as one of the previous builds. The second misinterpretation regards the proposed half-timber third story. Half-timber structures can only be determined if a description exists of the site indicating such a structure,<sup>771</sup> or if the stones of the level beneath offer any indications of support beams. In the case of Castle Beilstein, neither of these indicators are present for the predecessor castle, making the idea purely speculative.

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<sup>768</sup> Lorenz Eckrich, "Vorläufiger Bericht über die Ausgrabungen auf dem Beilstein bei Kaiserslautern," *Nordpfälzischer Geschichtsverein*, Beiträge zur Heimatsgeschichte, 38. Jahrgang, no. 1 (1958): 203–8.

<sup>769</sup> Lorenz Eckrich, "Zweiter Bericht über die Ausgrabungen bei dem Beilstein bei Kaiserslautern," *Nordpfälzischer Geschichtsverein*, Beiträge zur Heimatsgeschichte, no. 4 (1958): 265–74.

<sup>770</sup> P. Grussenmeyer et al., "Comparison Methods of Terrestrial Laser Scanning, Photogrammetry and Tacheometry Data for Recording of Cultural Heritage Buildings," *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences* 37, no. B5 (2008): 213–18. This castle is significant not only due to its symbolic relevance, but also because it was one of the first medieval castles to be recorded using tacheometry, photogrammetry, and terrestrial laserscanning. Castle Hoh-Andlau was also built around the same time as the primary castles of the CITADEL project. With the exception of applying tacheometry, this paper contributed to the conceptual approach taken in the in the 2016 Master's thesis *Integrative 3D Recording Methods of Historic Architecture: Burg Hohenecken from Southwest Germany*.

<sup>771</sup> Hotz, *Pfalzen und Burgen der Stauferzeit: Geschichte und Gestalt*. P. 20.

A substantial amount of rounded arched windows were excavated by Eckrich and his team including a variety of Romanesque mason's marks placing their origin in the early 13<sup>th</sup> century.<sup>772</sup> These were often in the form of a double-arch each with a radius of 20-21 centimeters, comparable to the double arched windows at Castle Hohenecken with radii of 20 centimeters.<sup>773</sup> Other arched windows featuring an early-gothic point at the apex were also discovered, comparable to those found at castle *Frankenstein*<sup>774</sup>—equidistant from Beilstein to the east as Castle Hohenecken is from the west. A number of *Buckelquader* (embossed ashlars) were also found,<sup>775</sup> indicating an early 13<sup>th</sup> century construction phase. A large pointed arched portal is still visible near the cistern, though this is a product of the reconstruction efforts undertaken by Eckrich and his team in the late 1950s. The arched portal, built and designed by the sculptor Richard Menges,<sup>776</sup> was not the only component to be reconstructed. The walls belonging to the primary structure were elevated and their crowns sealed using stones found on-site.<sup>777</sup> Curiously, the lower walls described in the excavation around the secondary structure were not rebuilt. Instead all efforts were focused upon the primary structure, indicating a substantial decrease in the overall built area of the castle. Only a small wall encapsulated the primary structure, with various inner buildings constructed around the large rock outcrop.<sup>778</sup> A five-sided central tower was apparently constructed on and around the large axe-shaped rock outcrop composed of *Buckelquader*, determined by Eckrich to have originated around 1250. The height of the tower atop the rock outcrop was estimated to be 15 meters, making a 23 meter height in total when including the rock itself.<sup>779</sup>

The buildings surrounding the central rock outcrop and tower would have made the natural rock invisible from the outside due to the radiating structures.<sup>780</sup> Postholes and putlog holes are still visible in the rock, indicating that the natural rock was used as the central support for the buildings. The outer wall of the primary structure, enclosing the inner-buildings is roughly 1.80 meters thick. Large chunks of half-timber were also found exhibiting a blue-grey plaster impressed with a zig-zag

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<sup>772</sup> Hemmer, "Burgruine Beilstein: Rekonstruktion einer pfälzischen Burg." P. 9.

<sup>773</sup> Ibid. P. 13.

<sup>774</sup> Ibid. P. 14.

<sup>775</sup> Ibid. P. 7.

<sup>776</sup> "Wer rettet die Mauern der Ruine Beilstein?," *Pfälzische Volkszeitung*, February 18, 1960, 119/60 edition.

<sup>777</sup> Hemmer, "Burgruine Beilstein: Rekonstruktion einer pfälzischen Burg." P. 4.

<sup>778</sup> Ibid. P. 9.

<sup>779</sup> Ibid. P. 11.

<sup>780</sup> Ibid. P. 12.

pattern. However, Eckrich did not provide a date for these elements, though they could support Hemmer's claim of a third level composed of half-timber. Portions of tiled ovens were discovered throughout the excavation from various periods.<sup>781</sup> A large cistern is perhaps the most prevalent structure still visible at the site today, including a number of water conduits carved into the rock leading to the cistern (Figure 71 in Section 4.5.5.4). At the southwestern curve of the encapsulating wall of the primary structure, directly perpendicular to the central tower, Eckrich and his team discovered the remnants of a bay window (*Erker*) with a one meter diameter. Prevalent throughout the entire excavation were sherds of roof tiles that must have populated the roofs of the inner buildings connected to the rock outcrop.<sup>782</sup>

The primary structure also included a small courtyard at the northeastern portion leading towards the main gate, featuring two elongated buildings that presumably housed the stalls, smiths, and storage areas for the castle, in which many large pieces of half-timber were found. The two structures wrapped around towards the front gate, where they connected above the gate to provide a possible battlement.<sup>783</sup> The gate itself was approximately 3.5 meters in height and two meters wide, connected to the secondary ramp structure via a five meter drawbridge.<sup>784</sup> The findings from the excavation by Eckrich, and described in detail by Hemmer, represent only the 13<sup>th</sup> century construction of the castle, which consequently was noted as also being the last building phase. However, the reports provide no insight as to the owners of the castle and as why certain features were left out; an outer wall, for example. It is notable that the site did not possess many defensive structures and was in fact very compact. The existence of so many ornate windows encircling the primary structure also indicates that it was not meant to be a fortress—a clear distinction from the findings of the 12<sup>th</sup> century findings of the secondary structure. Instead, these windows likely represented the show front of the castle.

Nevertheless, the excavation still resulted in many new findings of the 12<sup>th</sup> century castle at the site and is the only excavation at Castle Beilstein to date. To accept Eckrich's dating of the stonework does not necessitate one to accept his explanation regarding Castle Beilstein's role in the regional conflict between the Hohenstaufen and Leiningen families. In fact, his argument is largely unsubstantiated, as the Hohenstaufen dynasty did not control the area of the Reichsland of Lautern

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<sup>781</sup> Ibid. P. 13.

<sup>782</sup> Ibid. P. 14.

<sup>783</sup> Ibid. P. 15.

<sup>784</sup> Ibid. P. 17.



until Duke Frederick II's brother, Conrad III was elected King of the Romans in March of 1138<sup>785</sup>—18 years after the end of the alleged conflict. Additionally, the Salian dynasty controlled the Reichsland and Palace of Lautern until 1125<sup>786</sup> as their ancestors had founded the nearby monastery of St. Lambrecht in the year 695,<sup>787</sup> and both the palace and the monastery are connected by an east to west roadway that winds its way through the mountains. Castle Beilstein is located directly on this road between the two sites, albeit closer to Lautern than to Lambrecht, which had also been the site of a royal court called the Sattelhof.<sup>788</sup> In essence, this territory was firmly situated within the Salian Hausgut, well-guarded by their loyalists. A sudden incursion by the Counts of Leiningen could have resulted in the sporadic construction of a new castle, especially given the sheer power imbalance between the Counts of Leiningen and the reigning imperial Salian dynasty. However, Castle Beilstein is never mentioned as having been constructed by the Salian dynasty, nor by the Hohenstaufen during the 12<sup>th</sup> century, though many of the surrounding castles of Palatinate are.<sup>789</sup> This would mean that the first construction of Beilstein had been that of a military post, more akin to the construction of a temporary fortress such as *Auf den Scharen* located along the Moselle River, than to than a hunting lodge or residence.<sup>790</sup> In turn, this supports the idea that the later ministeriales von Beilstein were descendants of the Salian loyalists in the area as discussed in Section 3.2.2.

The theories from Eckrich, Hemmer, and Zink offer faint insights to the site prior to its reconstruction in 1234, and are not mutually exclusive. Rather, the existence of a late 11<sup>th</sup> and early 12<sup>th</sup> century Salian hunting lodge located in a highly secure area could have had an outer stone wall quickly constructed at specific points as an emergency in the event of a northern Leiningen incursion. The castle's natural observation point certainly would have been beneficial during a regional conflict. After the end of the conflict, the wall would have no longer served a purpose and then left to decay or removed, with the site returning to its purpose as a hunting lodge. Eckrich never

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<sup>785</sup> Neuhold, *Die Staufer*. P. 25.

<sup>786</sup> Barz et al., "Kaiserslautern." P. 104.

<sup>787</sup> Keddigkeit, Wenz, and Untermann, "Kaiserslautern, St. Maria Hospital, später Premonstratenserstift bzw. -kloster, dann Kollegiatstift St. Marien und St. Martin." P. 526.

<sup>788</sup> Werle, "Wald und Herrschaft: Studien zur Geschichte der Reichswaldgenossenschaft Kaiserslautern." P. 56.

<sup>789</sup> Die Stadt Karlsruhe, ed., *Die Staufer am Oberrhein: Geschichte, Handschriften, Urkunden, Kunst*, vol. 4 (Karlsruhe, Germany: Karlsruher Stadtarchiv, 1977). P. 15.

<sup>790</sup> Olaf Wagener and Bernhard Höfle, "Burgen in der Landschaft – Inszenierung und Entzifferung anhand neuer Methoden," in *Symbole der Macht? Aspekte mittelalterlicher und frühneuzeitlicher Architektur*, ed. Olaf Wagener, Beihefte zur Mediaevistik—Monographien, Editionen, Sammelbände 17 (Frankfurt am Main: Peter Lang GmbH, Internationaler Verlag der Wissenschaften, 2012), 123–52. P. 138. *Auf den Scharen* was built during the early 13<sup>th</sup> century to in order to establish a physical reminder to the inhabitants of Burg Thurant.

mentioned any traces of destruction in this phase of the excavation, or the extent of the 12<sup>th</sup> century wall. Despite the potentiality of this synergetic explanation, it is still a speculative attempt to bind the traces of evidence unearthed by previous researchers in order to understand the castle's early history, and not a substantive or factual account either in favor or in contrast to their research. The possibility of the site having been a hunting lodge during the Salian period also conflicts with the theory that the hunting areas (*Wildbann*<sup>791</sup>) applied only to the areas north and west of the Palace of Lautern and not to the south and east.<sup>792</sup> Unfortunately, the current state of the site offers few clues as to its medieval form and was even described as 'completely meaningless' in the context of the protection of the Reichsland by Johann Georg Lehmann in his 1858 description of the castle and its inhabitants.<sup>793</sup>

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<sup>791</sup> Clemens Dasler, "Wildbann und Forsthoheit," Online Encyclopedia, Historisches Lexikon Bayerns, November 23, 2009, [https://www.historisches-lexikon-bayerns.de/Lexikon/Wildbann\\_und\\_Forsthoheit](https://www.historisches-lexikon-bayerns.de/Lexikon/Wildbann_und_Forsthoheit).

<sup>792</sup> Werle, "Wald und Herrschaft: Studien zur Geschichte der Reichswaldgenossenschaft Kaiserslautern." P. 65.

<sup>793</sup> Lehmann, "Die Waldveste Beilstein." P. 35.

### 3.3.4 Castle Perlenberg



Figure 10: Castle Perlenberg on the day of the documentation.

#### 3.3.4.1 Location

Castle Perlenberg, also called *Perleburg* or *Perlenburg*, is located atop the 371 meter solitary *Kleiner Berg* directly west of Hohenecken (Figure 5) and south of the *Einsiedlerhof*.<sup>794</sup> The site is partially overgrown with vegetation and hidden within the Palatinate forest. Of particular note, is the topographical position of the *Kleiner Berg*, what can best be described as centered within a large basin surrounded on all sides by slightly larger mountains. The area of the topographical basin is transected by multiple trails following various trajectories between the gaps of the surrounding mountains, including the *Bännjer Sträßel* which led from the *Bännjerrück* at the western end of Lautern, to the north of Hohenecken, and through the forest towards the village of *Bann*.<sup>795</sup> This path, directly at the foot of the *Kleiner Berg*, separates it from its northern neighbor, the *Großer Berg*—atop which the late Roman settlement described in Section 3.3.1.3 is located.

<sup>794</sup> Keddigkeit and Barz, “Perleburg.” P. 116.

<sup>795</sup> Zink, *Kaiserslautern in Vergangenheit und Gegenwart: eine Ortskunde auf geschichtlicher Grundlage*. P. 114.

### 3.3.4.2 Previous Investigations of Castle Perlenberg

The site of the castle itself offers few clues as to its original purpose, absent its historical and geospatial context. The structure is composed of a quadratic nine meter by nine meter foundation, presumably of a tower, with wall thicknesses ranging from 1.39 to 1.45 meters. The walls currently reach a humble height of less than a meter above the ground, yet still expose excellently crafted embossed ashlar, featuring very tight mortar joints.<sup>796</sup> The oldest charter in which it is mentioned, it had been labelled *Berleberg* and was regarded more or less as a border marking within the forest belonging to the Lords of Sickingen based in the nearby town of Landstuhl in 1542.<sup>797</sup> The first examination of the site, that has since become the reference point for every article concerning Castle Perlenberg, was documented by the historian Dr. Christian Mehlis in 1903.

Mehlis' inspection of the castle took place on the 26 June 1902, with the assistance of Günther, the *Stumm'schen* forester from the nearby *Steigerhof*. His approach toward investigating the area followed much the same line of thought as Theoder Zink's explanation for the origin of Castle Beilstein based upon *Volkskunde* (Folklore Studies), because Mehlis relied upon local tales to provide context as to why Perlenberg was built. In the local folklore, the pathway was characterized as having been an older Roman road, possibly even Gaulish, leading towards Zweibrücken, over the villages of *Bann*, *Wallhalben*, and *Auerbach*.<sup>798</sup> Implicit in the tale regarding the old Roman road, is the tale of two rival lords living atop the Kleiner Berg and Großer Berg, provided curtesy of Günther, in which they contested one another over logging and transportation rights.<sup>799</sup> The impact of these tales seems to have had a significant impact upon Mehlis' understanding of the site as he immediately assumed that the castle had been defensive in nature, without providing any historical or archaeological explanation. This was also a reflection of the prevailing contemporary concept of castles as having belonged to the class of Military Architecture as described in Section 2.2.1. However, Mehlis still conducted an objective analysis in which he compared the embossed ashlar masonry at the foundations of the castle to the masonry of castles Trifels (Figure 10) and Landeck (Figure 11). Taking this lead, he noted that the pedestal of the tower most strongly resembled that of castle Trifels. He also noted that the mortar in the joints was light

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<sup>796</sup> Keddigkeit and Barz, "Perleburg." P. 115.

<sup>797</sup> Ibid. P. 112.

<sup>798</sup> Christian Mehlis, "Archäologische Studien: Die Perlenburg," in *Pfälzische Museum: Monatsschrift für heimatliche Literatur und Kunst, Geschichte und Volkskunde*, ed. Literarischer Verein der Pfalz and Organ des historischen Vereins der Pfalz, vol. 20. Jahrgang (Kaiserslautern: Hofbuchdruckerei von Hermann Kayser, 1903), 22–25. P. 22.

<sup>799</sup> Ibid. P. 22.

in color, hard, chalky, and contained very little sand. Anecdotally, he also described a crest depicting an animal's head with peaked ears engraved on the front of one of these Trifels-esque stones, which he dismissed as the musings of a stonemason.<sup>800</sup> To his advantage, more of the site could still be seen in 1902, evident from his cross-section and aerial-perspective depictions of the site. These included a small, circular, outer wall that sparsely populated the vicinity a few meters from the castle's quadratic foundation. He noted that the overview of the site bears a striking similarity to that of castle *Walahstede*,<sup>801</sup> also known as *Schlößl*, which features a 13.3 by 13.3 meter living tower dated from the late 11<sup>th</sup> and early 12<sup>th</sup> century Salian period.<sup>802</sup> Curiously, Mehlis also compared Perlenberg to Castle Beilstein, which he claimed both were built to defend the royal palace at Lautern and to provide protection for people traveling along the east to west road to Lautern. According to this line of thought, Perlenberg had belonged to the same castle group as Lautern, Hohenecken, Wilenstein, Beilstein, and Nanstein.<sup>803</sup> Although all six castles are located in the same general area, to assume that each served the same purpose as purely defensive sites fails to take into account the impact of the landscape and the historical/political context of the construction of each castle. A key component of Mehlis' investigation was the northeast to southeast serpentine pathway leading up the Kleinen Berg to the castle. This would mean that the path leading to the castle was connected to the former Roman road previously mentioned. The significance of this finding is mainly due to the fact that that same path leads to Castle Hohenecken immediately to the east, establishing a direct logistical bond between the two sites. Mehlis concluded his documentation with the future prospect of excavating the site with the assistance of the forester-master *Herr Schneider* of Landstuhl in the summer of 1904.<sup>804</sup> Unfortunately, a record of this excavation does not exist, and perhaps it never even occurred.

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<sup>800</sup> Ibid. P. 22.

<sup>801</sup> Ibid. P. 24.

<sup>802</sup> Dieter Barz et al., "Schlößl (Schloössel)," in *Pfälzisches Burgenlexikon*, ed. Jürgen Keddigkeit, Ulrich Burkhart, and Rolf Übel, 1st ed., vol. 4.1 O-Sp, 4 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 12.4.1 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2007), 448–61. P. 453.

<sup>803</sup> Mehlis, "Archäologische Studien: Die Perlenburg." P.24.

<sup>804</sup> Ibid. P. 25.



Figure 11: Embossed ashlars at the base of Castle Trifels.



Figure 12: Embossed ashlars at the base of the tower of Castle Landeck.

To date, the only recorded excavation that has been undertaken at the site was led by a teacher named *Herr Schneider*<sup>805</sup> along with his students under the supervision of the *Landesdienst für Vor- und Frühgeschichte* of Speyer during the summer of 1959. Lorenz Eckrich—who also excavated the Castle Beilstein—later produced a brief description of the findings in a local magazine, *Pfälzer Heimat* in 1960.<sup>806</sup> Before describing the discoveries made by Herr Schneider, Eckrich spent a few paragraphs explaining the linguistic meaning of the castle, in an attempt to dispel local tales regarding the existence of Castle Perlenberg, notably, that it had not been built by the Lords of

<sup>805</sup> Likely not the same Herr Schneider, the forester-master from Landstuhl.

<sup>806</sup> Lorenz Eckrich, “Die sogenannte ‘Perleburg’ auf dem Perleberg südlich des Einsiedlerhofs,” *Pfälzer Heimat*, 1960. P. 23.

Sickingen, nor had it been a toll station. Linguistically, he deferred to a Professor Christmann,<sup>807</sup> who explained that the old German word *biral* meant cup, jug, or urn, and therefore referring to the shape of the Kleiner Berg.<sup>808</sup> This directly contradicted an attempt made by Theodor Zink in 1908 to linguistically define the castle in which he defined the word *bër* or *bërle* as meaning a male boar,<sup>809</sup> thereby referencing to the charter from 1542 in which the castle was recorded as Berleberg. However, Zink offered a completely different definition five years later in 1913 relating the word *bërle* to the name *bero*, meaning bear, which he interpreted as the base of the names *Berhard*, *Berlach*, *Berman*, or *Bernot*. According to his second definition, the name of the castle was derived from the name of the first occupant or owner of Castle Perlenberg.<sup>810</sup> However, no mention was ever made of a person with a name derived from the word *bero* at any time in the known historical record of Castle Perlenberg or any of the sites in its vicinity. Therefore, the explanation by Christmann seems most likely due to the shape of the solitary Kleiner Berg. Nevertheless, Zink's linguistic connection to a boar is also interesting as Perlenberg was located in a hunting area in 1542,<sup>811</sup> and was previously within the region of the Reichsland of Lautern, outlined by Häberle in 1907.<sup>812</sup> However, given the three completely different explanations for the origin of Castle Perlenberg's curious name, no consensus has been drawn, leaving it open to interpretation. Both the shape of the mountain and the reference to a boar may have played a part in the naming of the castle as well as a play on words and may reference the animal carving sighted by Mehlis. In closing his introduction to the castle and his conversations with Prof. Christmann, Eckrich also established that the road passing between the Kleiner Berg and Grosser Berg gains ever more importance the further

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<sup>807</sup> Professor Christmann was a local historian from the mid-20<sup>th</sup> century who specialized in dialectal words. He also regularly published alongside Lorenz Eckrich. For more information on his works, see: Ernst Christmann, "Zur Geschichte des Dorfes Kindsbach," in *Jahrbuch zur Geschichte von Stadt und Landkreis Kaiserslautern*, vol. 8/9, 37 vols. (Otterbach: Franz Arbogast Verlag, 1971), 112–18; Ernst Christmann, "Volkskundliches in Flurnamen des Landkreises Kaiserslautern," in *Jahrbuch zur Geschichte von Stadt und Landkreis Kaiserslautern*, vol. 8/9, 37 vols. (Otterbach: Franz Arbogast Verlag, 1971), 234–40; Ernst Christmann, "Das Pfälzische Flurnamenarchiv," in *Jahrbuch zur Geschichte von Stadt und Landkreis Kaiserslautern*, vol. 8/9, 37 vols. (Otterbach: Franz Arbogast Verlag, 1971), 320–21.

<sup>808</sup> Eckrich, "Die sogenannte 'Perleburg' auf dem Perleberg südlich des Einsiedlerhofs." P. 23.

<sup>809</sup> Theodor Zink, "Westlicher Flurnamen," *Pfälzische Geschichtsblätter*, Monatliche Beilage zur "Pfälzischen Presse," no. 4. Erscheinungsjahr (1908): 82–85. P. 84.

<sup>810</sup> Theodor Zink, "Um Franz von Sickingens Besitzungen," *Pfälzische Geschichtsblätter*, Monatliche Beilage zur "Pfälzischen Presse," no. 9. Erscheinungsjahr (1913): 82–88. P. 83.

<sup>811</sup> *Ibid.* P. 86.

<sup>812</sup> Häberle, *Das Reichsland Bei Kaiserslautern: Quellen Zur Förderung Der Heimat- Und Familienkunde Im Gebiet Des Bannforstes Lutra*.

back one looks into history, though during the medieval period it was almost certainly not the main road to Zweibrücken,<sup>813</sup> as Mehliis had suggested in 1903.

The excavators of the site considered the castle to have been the remnants of a main tower (*Bergfried*), rather than a tower house (*Wohnturm*), relating it to what can still be seen at castles Landeck, *Miltenberg* and *Wildenberg*, all of which were built around the turn of the 13<sup>th</sup> century.<sup>814</sup> They determined that Perlenberg was built around the same time period based upon the size of the embossed ashlars, the *Lewis Holes* (*Wolfslöcher*) in the tops of the stones, and the relatively large dimensions of the stones suggesting that they could only have been lifted by a *Lewis* (*Wolf*).<sup>815</sup> Eckrich also noted that the slightly buckled pedestal of Perlenberg resembles the towers at Castles Hohenecken, Trifels, Landeck, *Scharfenberg*, and *Gräfenstein*.<sup>816</sup> Of these castles, Eckrich claimed that the tower at Landeck most closely resembles Perlenberg as both towers have approximately the same dimensions.<sup>817</sup> However, castle Landeck is a much larger overall site with dimensions of 90 meters by 60 meters,<sup>818</sup> closer to the 100 x 64 meters of Castle Hohenecken,<sup>819</sup> than to the 60 meter diameter of the entire hill-top upon which Perlenberg was built.<sup>820</sup> Additionally, the tower at Landeck had slightly smaller dimensions of 9 meters by 8.5 meters,<sup>821</sup> compared to Perlenberg's 9 meters by 9 meters.<sup>822</sup> Although these differences are not so great as to dismiss their description as similar.

Interestingly, the excavation also produced Romanesque window arches strongly resembling those found in the *Erker* (bay window) of castle Trifels.<sup>823</sup> This is indeed a significant discovery, because castle Trifels was under construction from 1190 until 1235 during the

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<sup>813</sup> Eckrich, "Die sogenannte 'Perleburg' auf dem Perleberg südlich des Einsiedlerhofs." P. 23.

<sup>814</sup> Ibid. P. 23.

<sup>815</sup> Ibid. P. 24.

<sup>816</sup> Ibid. P. 24.

<sup>817</sup> Ibid. P. 25.

<sup>818</sup> Alexander Thon et al., "Landeck," in *Pfälzisches Burgenlexikon III: I-N*, ed. Jürgen Keddigkeit, Ulrich Burkhart, and Rolf Übel, 1st ed., vol. 3 I-N, 4 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 12.3 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2005), 278–96. P. 288.

<sup>819</sup> Pattee, "Integrative 3D Recording Methods of Historic Architecture: Burg Hohenecken from Southwest Germany." P. 123.

<sup>820</sup> Keddigkeit and Barz, "Perleburg." P. 114.

<sup>821</sup> Thon et al., "Landeck." P. 292.

<sup>822</sup> Keddigkeit and Barz, "Perleburg." P. 115.

<sup>823</sup> Eckrich, "Die sogenannte 'Perleburg' auf dem Perleberg südlich des Einsiedlerhofs." P. 24.



Hohenstaufen reign.<sup>824</sup> The strongest indicator for dating Castle Perlenberg was discovered in the form of a, currently missing, mason's mark exhibiting a large 10.5 cm letter 'S'. Eckrich stated that the same mark had been found at the Abbey of Otterberg, indicating the construction of Perlenberg to have occurred between 1190 and 1210.<sup>825</sup> In fact, a variety of similar mason's marks were found and catalogued by Michael Werling in 1986 at the Abbey of Otterberg. By comparison of the photo of the mark in Eckrich's report with those of Otterberg's mason's marks catalogued by Werling in the *Pfälzisches Klosterlexikon*, the marks 28, 202, 262, 292, and 387—and possibly even 405 and 533—could be matches for the one found at Perlenberg.<sup>826</sup> However, the most likely candidates are 262, 292, and 387 considering that they face the same direction as the one at Perlenberg and also feature a slight notch at their ends. Of these three finalists, only mark 262 has the same type of notching, suggesting that this was the mark of the workshop that was potentially active at Castle Perlenberg. Even more compelling is that the same mason's mark catalogued as number 262 in Otterberg, is also present at the Cathedral of Speyer. During the excavations and renovations of the cathedral from 1957 until 1971, four large ashlar were discovered on the western wall of the southern nave aisle, of which two exhibited precisely the same 'S' as found at Castle Perlenberg and the Abbey of Otterberg.<sup>827</sup> In fact, the same mark is exhibited 14 more times on the stones forming the ribbed-vaulting of the northwestern crossing of the transept in the cathedral, though not found in any other area of the transept.<sup>828</sup> According to the report of the excavations in *Der Dom zu Speyer* and the entry *Speyer, St. Maria Domstift* in the *Pfälzisches Klosterlexikon*, the transept of the cathedral was built during its second construction phase between 1080 and 1130 A.D.,<sup>829</sup> indicating that the mason's mark was in use for decades before the construction of the Abbey of Otterberg and Castle Perlenberg. This suggests that the workshop involved at the Cathedral also began work at the

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<sup>824</sup> Alexander Thon and Bernhard Meyer, "Trifels," in *Pfälzisches Burgenlexikon IV.2: St-Z*, ed. Jürgen Keddigkeit, Ulrich Burkhart, and Rolf Übel, 1st ed., vol. 4.2 St-Z, 4 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 12.4.2 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2007), 105–32. P. 116.

<sup>825</sup> Eckrich, "Die sogenannte 'Perleburg' auf dem Perleberg südlich des Einsiedlerhofs." P. 24.

<sup>826</sup> Keddigkeit et al., "Otterberg, St. Maria Zisterzienserabtei Otterberg." P. 565.

<sup>827</sup> Hans Erich Kubach and Walter Haas, eds., *Der Dom zu Speyer*, vol. I, II vols., Die Kunstdenkmäler von Rheinland-Pfalz: Im Auftrag des Ministeriums für Unterricht und Kultus, V: Der Dom zu Speyer (München: Deutscher Kunstverlag, 1972). P. 222. Hans Erich Kubach and Walter Haas, eds., *Der Dom zu Speyer: Bildband*, vol. II, II vols., Die Kunstdenkmäler von Rheinland-Pfalz: Im Auftrag des Ministeriums für Unterricht und Kultus, V: Der Dom zu Speyer (München: Deutscher Kunstverlag, 1972). Image Nr. 260. *Südl. Seitenschiff, Quader mit Steinmetzzeichen*.

<sup>828</sup> Kubach and Haas, *Der Dom zu Speyer*. Pp. 371-372. Kubach and Haas, *Der Dom zu Speyer: Bildband*. Image Nr. 971. and 972. *Mitte, Untersicht mit Steinmetzzeichen*, 973. and 974. *Unten, Untersicht mit Steinmetzzeichen*.

<sup>829</sup> Kubach and Haas, *Der Dom zu Speyer*. P. 663. Keddigkeit et al., "Speyer, St. Maria, Domstift." P. 187.

Abbey roughly 20 years after the cathedral's completion, and possibly even worked at Castle Perlenberg. Although it is almost certain that the workshop operated at both the cathedral and the abbey, the discovery of the mason's mark at Castle Perlenberg is most likely a spolia taken from another construction site, such as the abbey.

The dating of the second half of the 12<sup>th</sup> century until the early portion of the 13<sup>th</sup> century, is augmented by the dendrochronology of the sheet pile wall found during the excavation of the foundation of the Abbey of Otterberg, which resulted in dates ranging from 1173 to 1176,<sup>830</sup> and the wood used for the foundation of the northern free-standing pillar dated to the year 1220.<sup>831</sup> The chronological range of 1173 to 1220 encompasses the 20 years for the construction of Perlenberg proposed by Eckrich, strengthening his claim. The Abbey of Otterberg also had various properties including the *curiam Lutree*, which was the old *Ziegelhof*, or brickyard,<sup>832</sup> located approximately one kilometer southwest of the city of Lautern, in the direction of both Castles Hohenecken and Perlenberg.<sup>833</sup> The high caliber workmanship exhibited in the narrow mortar joints and the excellently chiseled embossed ashlar at Castle Perlenberg indicates that a highly-skilled workshop had been active at the site, using both newly carved ashlar and spolia. This sort of construction entails an expense most likely not available to the average count or ministerialis, but rather that of a king or bishop.<sup>834</sup> The presence of workshops at Castle Perlenberg who were also contracted for the construction of ecclesiastical sites at the same time, indicates a higher status of castle, similar to that of castle Trifels and the royal Palace of Lautern.

As evidence regarding the potential funding of such an elaborate building, Eckrich pointed to the ransom of Richard the Lionheart, received by Henry VI<sup>835</sup> following his release on 4 February

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<sup>830</sup> Keddigkeit et al., "Otterberg, St. Maria Zisterzienserabtei Otterburg." P. 566.

<sup>831</sup> Ibid. P. 566.

<sup>832</sup> Zink, *Kaiserslautern in Vergangenheit und Gegenwart: eine Ortskunde auf geschichtlicher Grundlage*. P. 205. Ropp, *Regesten der Erzbischöfe von Mainz von 1289 - 1396*. The same brickyard is later mentioned in a charter from 19 July 1369 regarding its transaction from Reinher von Hoheneck to the Archbishop of Mainz, Gerlach von Nassau, catalogued as Charter ID 10353 in the graph database.

<sup>833</sup> P. Ertl, "Gewinnung und Verarbeitung von Bodenrohstoffen in der Pfalz vor dem Übergang an Bayern," in *Pfälzischer Geschichtsatlas: Im Auftrag der Pfälzischen Gesellschaft zur Förderung der Wissenschaften und des Vereins zur Herausgabe eines historischen Atlases*, ed. Wilhelm Winkler (Neustadt an der Hardt: Verlag der Pfälzischen Gesellschaft zur Förderung der Wissenschaften, 1935), 19.

<sup>834</sup> Eckrich, "Die sogenannte 'Perleburg' auf dem Perleberg südlich des Einsiedlerhofs." P. 24.

<sup>835</sup> Ibid. P. 25.

1194.<sup>836</sup> The sheer magnitude of the monumental payment for Richard's release is something almost unimaginable. The 100,000 Silver Marks as ransom constituted the equivalent of three year's income for the entire Kingdom of England at the time. The ransom was to be split between Emperor Henry VI and Duke Leopold V of Austria—the one responsible for Richard's capture.<sup>837</sup> However, the money did not arrive all at once, but rather over the span of at least two years, with the last known payment arriving in 1196. As Emperor Henry VI began receiving his payment around the time of his travels through the Palatinate in spring of 1194 prior to his Sicilian campaign, some of the silver was sent to the regional centers for minting new coins. These centers are typically organized into four groups: 1. Mainz and Oppenheim, 2. Worms and Lautern, 3. Speyer and Annweiler, and 4. Hagenau. The majority of his silver apparently remained close to him on his campaign, evidenced by his extravagant celebration of Pentecost in Milan in 1194, and his equipment of an entire naval fleet in Genoa of the same year.<sup>838</sup> However, the most relevant piece of information regarding Castle Perlenberg is the prospect of coin minting in Lautern.

The influx of thousands of silver marks into Lautern would have had a significant impact on the local economy, resulting in the availability of loans, and would have laid the financial foundation for the construction of castles—specifically castles located in the Reichsland, such as Perlenberg, and those belonging to members of Henry's imperial entourage, such as Castle Hohenecken. Eckrich followed this same line of thought and refined his dating of the construction of Castle Perlenberg at the end of his report to the years between 1194 and 1197. Eckrich provided 1197 as his chronological limit due to Henry's death in the same year.<sup>839</sup> However, it is certainly possible that the construction continued after his death, considering that his brother, Philip of Swabia, succeeded him as the Roman German King in Mainz on 8 September 1198. On the other hand, it may have been difficult for Philip to have been able to continue the construction of new castles considering that Otto IV had also been elected Roman German King on 12 July 1198.<sup>840</sup> Although, the fact that Philip's dynastic lands included the Palatinate and that his election was in Mainz, the Reichsland of Lautern would almost certainly have remained within the control of the

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<sup>836</sup> Caspar Ehlers, "Der Speyerer Hoftag und seine Folgen: Die verzögerte Auslieferung von Richard Löwenherz," in *Richard Löwenherz: König-Ritter-Gefangener*, ed. Alexander Schubert, 1st ed. (Regensburg, Germany: Verlag Schnell und Steiner, 2018), 265–71. P. 270.

<sup>837</sup> Stefan Kötz, "Das Lösegeld für Richard I. Löwenherz im Licht der Numismatik," in *Richard Löwenherz: König-Ritter-Gefangener*, ed. Alexander Schubert, 1st ed. (Regensburg, Germany: Verlag Schnell und Steiner, 2018), 284–85. P. 284.

<sup>838</sup> *Ibid.* P. 285.

<sup>839</sup> Eckrich, "Die sogenannte 'Perleburg' auf dem Perleberg südlich des Einsiedlerhofs." P. 25.

<sup>840</sup> Neuhold, *Die Staufer*. P. 107.

Hohenstaufen and not of the House of Welf. The prospect of a monarch distributing vast sums of money to his loyal followers who in turn constructed, or continued constructing, castles on his behalf also bears a striking similarity to the building program of the English King Edward I in the late 13<sup>th</sup> century. According to Richard Morris, *'the impression is firmly given of an elite group of men-at-war, longstanding comrades in arms of the king, indulging in an orgy of military architectural expression on an almost unlimited budget.'*<sup>841</sup> In fact, this may be the most accurate description of the series of construction projects initiated by Henry VI and the ministeriales of his entourage.

Despite the near certainty that Castle Perlenberg was erected in the mid-1190s in the Reichsland, not once was it mentioned as a royal or imperial castle. In fact, it was never mentioned at all prior to the charter from 1542 referencing it as a border marking. Additionally, no trace of roof tiles were found during the excavation of 1959,<sup>842</sup> nor did they discover a single potsherd or any trace of the wall that Mehlis had apparently found in 1902.<sup>843</sup> These findings led Eckrich to interpret the site as having never been finished, instead replaced by the Teutonic Knight Commandry at Einsiedel as the primary protector of the road to Lautern.<sup>844</sup> His assumption would be viable if the site had been designed as a defensive site, though based upon the findings of this project, it is most likely that Perlenberg served a more celebratory purpose, to be elaborated upon in the Section 4.6.

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<sup>841</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. P. 55.

<sup>842</sup> Eckrich, "Die sogenannte 'Perleburg' auf dem Perleberg südlich des Einsiedlerhofs." P. 24.

<sup>843</sup> *Ibid.* P. 25.

<sup>844</sup> *Ibid.* P. 26.

### 3.4 The Secondary Sites

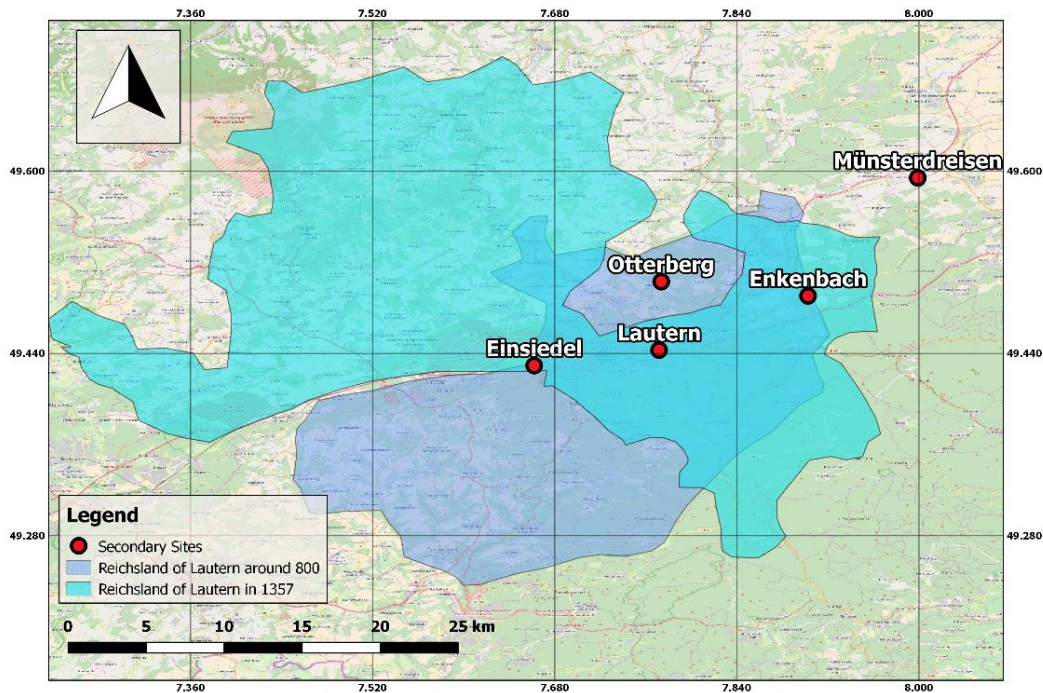


Figure 13: Location of the Secondary Sites relative the two models of the Reichsland of Lautern.

The secondary sites are composed entirely of monasteries that played important roles in the proceedings of the ministeriales and were involved in the ecclesiastical development of the Reichsland of Lautern. Although the monasteries of Hornbach, Eusserthal, Wadgassen, and Werschweiler were also involved in the development of the estate, they were not located in the estate and are therefore excluded. The inclusion of Münsterdreisen, although it was outside of the estate as well, is due to its involvement in the proceedings of the von Beilstein family and connection to both the monasteries of Lautern and Enkenbach.

### 3.4.1 The Teutonic Knight Commandry at Einsiedel



Figure 14: A view of the western wall of the commandry.

#### 3.4.1.1 Location

The former commandry of the Teutonic Knights is located to the west of Kaiserslautern (Figure 14) in the suburb of Einsiedlerhof. The site is bounded on its southern side by the Kaiserstrasse—the former *via regia*<sup>845</sup>—at the foot of the 392 meter Grosser Berg,<sup>846</sup> and on its northern side by the modern-day rail station of the Einsiedlerhof. The commandry was built upon a slight incline, sloping upwards towards the Grosser Berg and away from the marshlands of the *Moorwald*, located to the north of the modern rail line. Although the site was completely changed throughout the chaos of the French Revolution and ensuing Napoleonic Wars of late 18<sup>th</sup> to early 19<sup>th</sup> centuries, the overall dimensions of 123 meters by 86 meters can still be outlined based upon a few existing walls.<sup>847</sup> The position of the site along the Kaiserstrasse, is particularly important because the road once led from Metz to Kaiserslautern and on towards Mainz, whose junction to the village of *Weilerbach* was positioned at the southeast corner of commandry. The street to Weilerbach can be approached from

<sup>845</sup> Armgart and Diener, “Einsiedel, St. Maria Deutschherrenkommende, zeitweise Kommende des Lazarusordens.” P. 356.

<sup>846</sup> Keddigkeit, “Beilstein.” P. 467.

<sup>847</sup> Armgart and Diener, “Einsiedel, St. Maria Deutschherrenkommende, zeitweise Kommende des Lazarusordens.” P. 356.

the eastern side of the commandry, requiring one to walk along its outer east wall. The area around the commandry was a swamp as late as 1907, whose waters reached the Sickingen borders (i.e. the jurisdiction of Landstuhl) at midday on the west, and the trench outside of the commandry at the east. The northern expanse of the wetland stretched towards Weilerbach in the north and to the *Einsiedlerwoog*—the large lake to the northeast of the commandry.<sup>848</sup>

Although the first documented charters regarding the commandry appeared in late summer and fall of 1253, Rudolf Fendler has theorized that the commandry had already been established decades prior during the 1220s. A charter from 23 February 1220 regarding ecclesiastical holdings in Weilerbach, Spesbach, and Ramstein made no mention of the commandry, although they were later central components of the commandry's estate in the 13<sup>th</sup> century. Fendler suggested that the foundation of the commandry must have occurred after the first part of the year 1220 at the earliest.<sup>849</sup> This calls to mind the Teutonic Knight Commandry at Ober-Flörsheim near Alzey, which had established a monastery in 1253 as well, though the property had belonged to the order since 1237.<sup>850</sup> Interestingly, Siegfried II von Lautern-Hoheneck mentioned in the charter of acceptance in October of 1253 that the hospital at the commandry had been founded by his forefathers.<sup>851</sup> Due to the fact that Siegfried II was imperial sheriff by the year 1231 at the earliest,<sup>852</sup> any actions by his forefathers would indicate events prior to his rise to the position of imperial sheriff. Fendler therefore suggested that the actual foundation of the lands of the commandry had occurred sometime between 1220 and 1230<sup>853</sup>—during the reign of Emperor Frederick II—though the funding of the main buildings was still outstanding.

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<sup>848</sup> Häberle, *Das Reichsland Bei Kaiserslautern: Quellen Zur Förderung Der Heimat- Und Familienkunde Im Gebiet Des Bannforstes Lutra*. P. 37.

<sup>849</sup> Rudolf Fendler, *Geschichte der Deutschordenskommande Einsiedel bei Lautern*, Quellen und Abhandlungen zur Mittelrheinischen Kirchengeschichte 55 (Mainz: Selbstverlag der Gesellschaft für Mittelrheinische Kirchengeschichte, 1986). Pp. 23-24.

<sup>850</sup> Martin Armgart and Matthias Untermann, "Ober-Flörsheim, Deutschherrenkommande (Ober)-Flörsheim," in *Pfälzisches Klosterlexikon: Handbuch der pfälzischen Klöster, Stifte und Kommenden*, ed. Jürgen Keddigkeit et al., 1st ed., vol. 3 M-R, 5 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern in Verbindung mit dem Institut für Europäische Kunstgeschichte der Ruprecht-Karls-Universität Heidelberg, 26.3 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2015), 331–57. P.331.

<sup>851</sup> Armgart and Diener, "Einsiedel, St. Maria Deutschherrenkommande, zeitweise Kommande des Lazarusordens." P. 340.

<sup>852</sup> Charter ID 10524 in the graph database. The charter, issued by King Henry (VII), concerns the enfeoffments and properties of condemned heretics. This immediately precedes the commencement of the Inquisition by Pope Gregory IX in 1233 who would later excommunicate King Henry (VII). Also present at the issuing of the charter was Gottfried von Randeck, who is positioned ahead of Siegfried II in the witness list, suggesting that he was more important. This is most likely due to the fact that the von Randeck family was loyal to King Henry (VII).

<sup>853</sup> Fendler, *Geschichte der Deutschordenskommande Einsiedel bei Lautern*. P. 24.

### 3.4.1.2 The Order of the Teutonic Knights

The Teutonic Knights, or *The Order of Brothers of the German House of St. Mary in Jerusalem* (*Ordo domus Sanctæ Mariæ Theutonicorum Hierosolymitanorum*), is a religious military order whose first members were predominantly Germans involved in the crusades in the Holy Land of the 12<sup>th</sup> century. Although the first group to label themselves with the aforementioned title existed in 1118,<sup>854</sup> it was not until the events of the Third Crusade in the early 1190s that a formal recognition was granted to the group. The support of the crusading leaders was necessary for beginning the process of official recognition. The first step occurred at a meeting in October of 1190 with Duke Frederick of Swabia, a son of the late Emperor Frederick I, in which he granted the organization his protection and presumably that of his brother's, the newly crowned Emperor Henry VI. However, Duke Frederick died in the siege of Acre on 20 January 1191, putting a temporary halt to their formal foundation.<sup>855</sup> One month later, the process of inducting them as a new religious order began with a preliminary acceptance granted by Pope Clement III on 6 February 1191<sup>856</sup> for their efforts in constructing field hospitals for the crusaders stricken with disease outside of the besieged city of Acre.<sup>857</sup> Five years later, on 21 December 1196, Pope Celestine III granted the group the freedom from having to pay a tithe when breaking land for the first time, in addition to funerary rights at the behest of the master of the order. Despite these confirmations and privileges, the organization still did not have a firm footing as a military order akin to the Hospitallers or Templars.<sup>858</sup> The failed crusade of 1197 due to the death of Emperor Henry VI in September of the same year, yielded interesting results. The dying emperor had gifted the organization the Church of the Holy Trinity in Palermo and the Hospital of St. Thomas in Barletta to the knights, effectively leading to their recognition as an official military order in March of 1198. The formal recognition of the order by Pope Innocent III on 19 February 1199, elevated them to the same religious level as the other orders, applying the legal and religious principles associated with the military orders.<sup>859</sup>

The extent of their dominion began to truly take shape soon after the turn of the 13<sup>th</sup> century when King Philip of Swabia gifted the knights various properties and loans in 1207, which were

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<sup>854</sup> Ibid. P. 10.

<sup>855</sup> Militzer, *Die Geschichte des Deutschen Ordens*. P. 15.

<sup>856</sup> Fendler, *Geschichte der Deutschordenskommande Einsiedel bei Lautern*. P. 12.

<sup>857</sup> Ibid. P. 11.

<sup>858</sup> Militzer, *Die Geschichte des Deutschen Ordens*. P. 15.

<sup>859</sup> Ibid. P. 16.



confirmed by both Emperor Otto IV in 1212, and King Frederick II in 1214.<sup>860</sup> However, Frederick II contributed most to the early success of the Teutonic Order by gifting them the chapel of the imperial palace in Nuremberg on 30 January 1216.<sup>861</sup> The order expanded itself in Nuremberg by constructing the Hospital of St. Elizabeth, which by 1230 was the largest in southern Germany and quickly became the main hospital of the order.<sup>862</sup> The rapid expansion of the order throughout the Holy Roman Empire was in part due to their intimacy with the emperor. Their first documented high master, Hermann von Salza, was a trusted advisor of Frederick II, first mentioned as master of the order in on 17 February 1217 in which the young king granted the order all the privileges that they had enjoyed under his father the late emperor. A number of key ministeriales and loyalists of the king were included as witnesses to the event, including Eberhard I von Lautern who by that time had recently joined the Hohenstaufen cause.<sup>863</sup> Hermann von Salza appeared a second time alongside Frederick II in 1224,<sup>864</sup> after his imperial coronation in 1220, and was beside him in his Italian campaign discussed in Section 3.2.1. It was during this time that the order established a commandry at Castle Trifels, in which the imperial regalia were stored and under the protection of the von Lautern-Hoheneck sheriffs.

Around this time that the order had expanded its area of operations towards establishing a presence in central and Western Europe, rather than remaining limited to the Holy Land.<sup>865</sup> The Teutonic Knights had been involved in the area for a number of years, considering that a commandry in Saarburg had already been established in 1208 by a count from Metz,<sup>866</sup> and a charter from 13 December 1245 detailed a trade agreement between the lord Bertran von Volmeringen and the commandry in Metz.<sup>867</sup> The commandry at Einsiedel belonged to the Bailiwick of Lorraine, among the older commandries in Saarburg and Metz.<sup>868</sup> The members of the order quickly increased over

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<sup>860</sup> Burger, "Die Frühgeschichte des Deutschen Ordens und die Anfänge seiner Wehrbauten." P. 32.

<sup>861</sup> Böhmer, *Die Regesten des Kaiserreichs unter Philipp, Otto IV, Friedrich II, Heinrich (VII), Conrad IV, Heinrich Raspe, Wilhelm und Richard 1198-1272*. P. 207.

<sup>862</sup> Burger, "Die Frühgeschichte des Deutschen Ordens und die Anfänge seiner Wehrbauten." Pp. 32-33.

<sup>863</sup> Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,1 n. 897, Friedrich II., 1217 Feb. 17," Regesta Imperii Online, accessed July 22, 2020, [http://www.regesta-imperii.de/id/1217-02-17\\_1\\_0\\_5\\_1\\_1\\_1520\\_897](http://www.regesta-imperii.de/id/1217-02-17_1_0_5_1_1_1520_897). Also catalogued as Charter ID 10449 in the graph database.

<sup>864</sup> Militzer, *Die Geschichte des Deutschen Ordens*. P. 66

<sup>865</sup> Fendler, *Geschichte der Deutschordenskommende Einsiedel bei Lautern*. P. 12.

<sup>866</sup> Hennes, *Commenden des Deutschen Ordens in den Balleien Coblenz, Altenbiesen, Westphalen, Lothringen, Oesterreich und Hessen*. P. 197.

<sup>867</sup> *Ibid.* P. 191.

<sup>868</sup> *Ibid.* P. 190.

the course of the 13<sup>th</sup> century, and by 1300 had established 300 branches throughout Europe and the Mediterranean,<sup>869</sup> including 150 commandries,<sup>870</sup> which formed the basis of the administration of the order's dominions.<sup>871</sup> They were the first line of interaction between the order and its outsiders, necessary for the economic development of the order's infrastructure.<sup>872</sup> A typical commandry consisted of 12 knights and a *Komtur* (commander), who was responsible for leading the estate and communicating with his superior, the *Landkomtur* (regional commander).

Within the Kingdom of Germany, the number of knights at a particular commandry was likely to fall well below the 12-person limit, whereas the limit at times extended in commandries in Poland due to the crusades against the Slavic Pagans. These regional differences in the local organization of a commandry included the absence of marshals in the German Kingdom, as it was forbidden to make battle against fellow Christians in those areas. The members of a commandry took administration positions within the estate including a tax master, a *Trappier* responsible for the clothing, a cellarer responsible for the provisions, a kitchen master responsible for both cooking and baking, a building master responsible for maintaining the various buildings on the estate, a fish master responsible for fishing and maintaining ponds on the estate, and a shipmaster.<sup>873</sup> The last two positions were obviously reliant upon the vicinity to lakes and rivers. Two particularly important positions for a commandry were that of the *pietas* master, responsible for marking the remembrance of benefactors, and the hospital master, responsible for the infirmaries. The remembrance of benefactors was of key importance with regard to the involvement of the von Lautern-Hoheneck family in the foundation of the commandry and the charitable gifts by Kunigund in 1277. Additionally, at least one priestly brother was responsible for worship services and for the spiritual health of his fellow brothers. If the commandry owned local church, it was also the duty of the priestly brother to serve as its pastor.<sup>874</sup> A number of members from the von Lautern-Hoheneck family would enter the order over the following centuries as indicated by a certain Johannes Philipp von Hohenecken at the end of the 17<sup>th</sup> century.<sup>875</sup>

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<sup>869</sup> Fendler, *Geschichte der Deutschordenskommende Einsiedel bei Lautern*. P. 12.

<sup>870</sup> Armgart and Diener, "Einsiedel, St. Maria Deutschherrenkommende, zeitweise Kommende des Lazarusordens." P. 339.

<sup>871</sup> Militzer, *Die Geschichte des Deutschen Ordens*. Pp. 41-42.

<sup>872</sup> *Ibid.* P. 44.

<sup>873</sup> *Ibid.* Pp. 42-43.

<sup>874</sup> *Ibid.* P. 43.

<sup>875</sup> Eckrich, "Neue Legenden um alte Kreuz: Johanneskreuz, Torstensonkreuz, Elendkreuz." P. 83.

### 3.4.1.3 Archaeological Investigations of the Commandry

Very little is known of the medieval design of the site or any modifications except for the various 18<sup>th</sup> century depictions of the estate and two excavations: one by Werner Bremer in the mid-1930s and one led by Ludwig Schmidt in 1963.<sup>876</sup> A possible example for how the commandry may have appeared is the Templar Commandry at *Iben*, near *Bad Kreuznach*—a secluded commandry located along a road, which remains isolated to this day.<sup>877</sup> Bremer’s work provided the best insight regarding the physical layout of the site, as can be determined archaeologically. Many of the features he described were depicted in a 1776 plan of the site by Herr Minder, a builder from Landstuhl responsible for demolishing the old site and overseeing the construction of the late-18<sup>th</sup> century commandry.<sup>878</sup> According to Bremer’s 1930s excavation, the site once contained a large gatehouse, church, hospital, and living quarters.<sup>879</sup> The southern walls of the commandry along the former *via regia* were removed during Napoleon’s grand infrastructure project which featured a new road placed atop the medieval one,<sup>880</sup> in addition to new territorial boundaries.<sup>881</sup> The former gatehouse was located roughly 15 meters to the north of the medieval street, flanked by two rounded towers. Evidence of vaulting was found at the site of the gatehouse suggesting that it was composed of more than one level.<sup>882</sup> The gatehouse was connected to the commandry’s church to the east by a large spiral staircase indicating that both the gatehouse and the church had multiple accessible levels. The church itself was rather large with dimensions of 8.40 meters by 24.50 meters. Bremer determined that the church had consisted of a large nave, separated into three parts, each with ribbed cross-vaults.<sup>883</sup> The spiral staircase between the gatehouse and the church may have also doubled as the

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<sup>876</sup> Armgart and Diener, “Einsiedel, St. Maria Deutschherrenkommende, zeitweise Kommende des Lazarusordens.” P. 358.

<sup>877</sup> Jürgen Keddigkeit and Matthias Untermann, “Iben, Templerkommende,” in *Pfälzisches Klosterlexikon: Handbuch der pfälzischen Klöster, Stifte und Kommenden*, ed. Jürgen Keddigkeit et al., 1st ed., vol. 2 H-L, 5 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern in Verbindung mit dem Institut für Europäische Kunstgeschichte der Ruprecht-Karls-Universität Heidelberg, 26.2 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2014), 347–56. P. 349.

<sup>878</sup> Werner Bremer, *Das Deutschherrenhaus zu Einsiedel bei Kaiserslautern* (Kaiserslautern: Bibliothek des Stadtarchivs Kaiserslautern, 1938). P. 2.

<sup>879</sup> *Ibid.* Pp. 3-4.

<sup>880</sup> *Ibid.* P. 2.

<sup>881</sup> Wilhelm Winkler, “Verwaltungseinleitung der Pfalz unter der französischen Herrschaft nach 1801,” in *Pfälzischer Geschichtsatlas: Im Auftrag der Pfälzischen Gesellschaft zur Förderung der Wissenschaften und des Vereins zur Herausgabe eines historischen Atlases*, ed. Wilhelm Winkler (Neustadt an der Hardt: Verlag der Pfälzischen Gesellschaft zur Förderung der Wissenschaften, 1935), 9.

<sup>882</sup> Bremer, *Das Deutschherrenhaus zu Einsiedel bei Kaiserslautern*. P. 2.

<sup>883</sup> *Ibid.* P. 3.

bell tower, as the only other multi-level spiral staircase located within a tower was at the eastern side at the northwestern corner of the hospital.<sup>884</sup> The hospital of the commandry had fallen victim to burning during the 30 Years War, an event after which the brothers of the commandry had moved their headquarters to the city of Kaiserslautern.<sup>885</sup> During the reconstruction of the site in the late 1770s, much of the building material from the destroyed buildings was used in order to elevate the street prior to its replacement by Napoleon.<sup>886</sup> The entire site was secularized in 1800 during the Napoleonic Wars,<sup>887</sup> after which the buildings of the site were sold and repurposed as private housing, leading to the eventual disintegration of the church by 1862.<sup>888</sup> The Teutonic Knight Commandry in Ober-Flörsheim suffered a similar fate, in which it was founded in 1237, then sold and repurposed in 1806.<sup>889</sup> The buildings on the site bear a similarity to those found at the site of the Einsiedel, though Ober-Flörsheim is more intact, including the façade of the baroque commandry house<sup>890</sup> and a 15<sup>th</sup> century gate tower.<sup>891</sup> Anecdotally, Ober-Flörsheim is located near Alzey where a number of the ministeriales were from and the *von Flörsheim* family owned half of castle Wilenstein beginning in 1340.<sup>892</sup>

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<sup>884</sup> Ibid. P. 4. This is only in reference to the location of the second tower and the hospital.

<sup>885</sup> Ibid. P. 6.

<sup>886</sup> Ibid. P. 6.

<sup>887</sup> Ibid. P. 6.

<sup>888</sup> Armgart and Diener, “Einsiedel, St. Maria Deutschherrenkommende, zeitweise Kommende des Lazarusordens.” P. 362.

<sup>889</sup> Armgart and Untermann, “Ober-Flörsheim, Deutschherrenkommende (Ober)-Flörsheim.” Pp. 331 and 338 for the information regarding the 13<sup>th</sup> century founding and 19<sup>th</sup> century auction (respectively).

<sup>890</sup> Ibid. P. 350.

<sup>891</sup> Martin Armgart, Stefan Grathoff, and Rolf-Konrad Beck, “Oberflörsheim (Deutschordenskommende),” in *Pfälzisches Burgenlexikon*, ed. Jürgen Keddigkeit, Ulrich Burkhart, and Rolf Übel, 1st ed., vol. 4.1 O-Sp, 4 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 12.4.1 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2007), 47–52. P. 51.

<sup>892</sup> Martin Dolch, Stefan Ulrich, and Jürgen Keddigkeit, “Wilenstein,” in *Pfälzisches Burgenlexikon*, ed. Jürgen Keddigkeit, Ulrich Burkhart, and Rolf Übel, 1st ed., vol. 4.2 St-Z, 4 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 12.4.2 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2007), 323–34. P. 327.

### 3.4.2 The Cistercian Abbey of Otterberg

The monastic Cistercian order was a prominent order within the Kingdom of Germany during the 12<sup>th</sup> and 13<sup>th</sup> centuries, founded in 1098 in Burgundy by Robert of Molesmes.<sup>893</sup> Located within the area of the former Reichsland of Lautern (Figure 13), the Cistercian Abbey of Otterberg was the dominant monastic presence and the only one belonging to the order in the area. Its foundation is credited to Count Siegfried IV von Northeim-Boyneburg in 1144 having replaced the former castle, named Otterburg, though its construction was relocated to the immediate valley and begun in 1165.<sup>894</sup> The first record of the Cistercian presence at Otterberg dates back to 1143 in a charter regarding properties and the founding of the monastery, ‘...in antique Castro Otterburc...’ indicating that the first years of the monastery were at the site of the former castle.<sup>895</sup> The small population in the area north of Lautern presumably played a role in King Conrad III’s authorization to build the monastery within the royal estate, as the Cistercian order was already well known for its colonization abilities.<sup>896</sup> Otterberg became one of the six daughters of the Cistercian Abbey at Eberbach, which itself had only been founded in 1131—only 13 years prior to Otterberg’s foundation. The monastery was under construction from approximately 1165 until 1200, though the process was at times arduous due to the border disputes between the monastery and the ministeriales von Beilstein, von Falkenstein, von Wartenberg, and von Wilenstein.<sup>897</sup> The monastic representation on behalf of these families was led by the Benedictine monastery St. Lambertus in the nearby village of Lambrecht, where the von Beilstein family had been involved for decades by that point; as described earlier in the discussion of the von Beilstein family. The magnitude of the monastery at Lambrecht is worthy of note considering that it was one of the oldest monasteries in the entire region, founded in the late 10<sup>th</sup> century as one of the three familial monasteries of the Salian dynasty, located in the Salian estate that neighbored the royal estate.<sup>898</sup>

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<sup>893</sup> Hans Ammerich, *850 Jahre Zisterzienserkloster Eusserthal*, ed. Ortsgemeinde Eußerthal (Eußerthal, 1998). P. 1.

<sup>894</sup> Keddigkeit et al., “Otterberg, St. Maria Zisterzienserabtei Otterburg.” P. 525.

<sup>895</sup> Helmut Bernhard and Dieter Barz, “Frühe Burgen der Pfalz. Ausgewählte Beispiele salischer Wehranlagen,” in *Burgen der Salierzeit: In den südlichen Landschaften des Reiches*, 1st ed., vol. 2, Römisch-Germanisches Zentralmuseum Forschungsinstitut für Vor- und Frühgeschichte. Monographien 26 (Sigmaringen: Jan Thorbecke Verlag GmbH & Co., 1991), 125–76. Pp. 137-138.

<sup>896</sup> Kraft, “Das Reichsland von Kaiserslautern.” P. 69.

<sup>897</sup> Keddigkeit et al., “Otterberg, St. Maria Zisterzienserabtei Otterburg.” P. 526.

<sup>898</sup> Hans Fell, Jürgen Keddigkeit, and Matthias Untermann, “Lambrecht, St. Lambertus, Benediktinerkloster, später Benediktiner-Doppelkloster, dann Dominkanerinnenkloster St. Lambrecht,” in *Pfälzisches Klosterlexikon: Handbuch der pfälzischen Klöster, Stifte und Kommenden*, ed. Jürgen Keddigkeit et al., 1st ed., vol. 2 H-L, 5 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern in Verbindung mit dem

Due to the favor of the Hohenstaufen dynasty, the Abbey of Otterberg progressed at the turn of the 13<sup>th</sup> century, having received multiple endowments from both Emperors Frederick I and Henry VI. The bond between the monastery and the dynasty was very amiable as the emperors supported the monastery even over the interests of their own ministeriales.<sup>899</sup> Curiously, the members of the von Lautern family, from whom the von Lautern-Hoheneck and von Lautern-Montfort families were derived, had not been involved in these disputes in the early phases of the monastery's construction. During that precise time, they had received numerous administrator positions at the palace and continued the construction of Castle Hohenecken as discussed earlier. In stark contrast to the development of the von Lautern-Hoheneck family, the von Beilstein family was a layover of the former Salian dynasty and no longer the chosen advisors and administrators of the emperors. This represents yet another manifestation of the change in regional power, which was also a westward shift as both Lambrecht and the von Beilstein family were no longer at the forefront.

The actual construction of the monastery in the valley began by 1173 based upon the dendrochronology of sheet pile wall, though evidence for wooden conduits during the preparation phases for the construction can be dated five years earlier to 1168—eight years after the completion of the *Gesta Frederici*—the chronicle of Emperor Frederick I that included many of his construction projects.<sup>900</sup> The Abbey of Otterberg was under constant construction, despite the regime changes of the first half of the 13<sup>th</sup> century evidenced by the dendrochronology of wooden sleepers under the choir stalls from 1200, boards and posts from 1220, and remnants of wooden rafters on the roof dated to 1246.<sup>901</sup> However, the Abbey of Otterberg was not the only regional monastery under construction in the vicinity of Kaiserslautern during the late 12<sup>th</sup> to early 13<sup>th</sup> centuries. The upper floors of the rounded towers of the monastery of *Hornbach* can be dated to around 1200,<sup>902</sup> and the eastern portions of the monastery of *Enkenbach* were built between 1180 and 1190, and eventually finished in 1225.<sup>903</sup> Furthermore, an endowment from the Archbishop of Trier indicates the

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Institut für Europäische Kunstgeschichte der Ruprecht-Karls-Universität Heidelberg, 26.2 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2014), 524–59. P. 525.

<sup>899</sup> Keddigkeit et al., “Otterberg, St. Maria Zisterzienserabtei Otterburg.” P. 526.

<sup>900</sup> Bischof Otto von Freising and Rahewin, *Die Taten Friedrichs oder richtiger Cronica*.

<sup>901</sup> Keddigkeit et al., “Otterberg, St. Maria Zisterzienserabtei Otterburg.” P. 547.

<sup>902</sup> Pia Heberer, *Das Kloster Hornbach in der Pfalz: Baugeschichte und Sakraltopographie*, Forschungen zur pfälzischen Archäologie 3 (Speyer, Germany: Generaldirektion Kulturelles Erbe Direktion Landesarchäologie Aussenstelle Speyer, 2010). P. 177.

<sup>903</sup> Jürgen Keddigkeit and Matthias Untermann, “Enkenbach, St. Maria Prämonstratenserstift, später Prämonstratenserpropstei,” in *Pfälzisches Klosterlexikon: Handbuch der pfälzischen Klöster, Stifte und Kommenden*, ed. Jürgen Keddigkeit et al., 1st ed., vol. 1 A-G, 5 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für

construction of various portions at the monastery of *Eusserthal* in 1199,<sup>904</sup> and the long choir of the Hospital of St. Mary in Lautern was built around 1220.<sup>905</sup> The construction of so many ecclesiastical sites in the Reichsland of Lautern at the same time as the construction of the Palace of Lautern and castles Beilstein, Hohenecken, and Perlenberg provides the foundation for the argument that the same stone masons had worked at multiple sites—as has been discussed in Section 3.3.4.2 regarding Castle Perlenberg. The builders of Otterberg also reused materials from the former castle, evidenced by the numerous bossed ashlar composing the foundations of the main piers of the nave.<sup>906</sup> This suggests not only had the builders carried the stones from the razed castle Otterburg down the valley to the Abbey of Otterberg, but that the practice may have been employed elsewhere in the Reichsland as the same stone masons were at work. Furthermore, the construction of the foundations of the piers was begun after 1180, though some of the piers were constructed beginning in 1199.<sup>907</sup> Thus, the reuse of the iconic embossed ashlar from the castle occurred during the same years as the presumed construction of Castle Perlenberg. The prospect that the stones composing Castle Perlenberg had been brought from another construction site is therefore a possibility to be considered.

Otterberg's involvement within the regional politics mainly took the form of economic expansion as the monastery controlled a variety of farms and the mill at Sambach. Their strategy of controlling the northern area of the Reichsland, known as the Waltmark, is clearly displayed by their proceedings throughout the late 12<sup>th</sup> century and the entirety of the 13<sup>th</sup> century.<sup>908</sup> The monastery appeared in 134 charters of the 707 belonging to the project corpus in which it conducted business with the ministeriales, the nobiles, and nearby monasteries mainly for property rights the transaction of forests, meadows, and agricultural fields. It was essentially the major ecclesiastical institution in the Reichsland of Lautern, serving as a balance to the powerful secular institution of the royal palace.

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pfälzische Geschichte und Volkskunde Kaiserslautern in Verbindung mit dem Institut für Europäische Kunstgeschichte der Ruprecht-Karls-Universität Heidelberg, 26.1 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2014), 378–404. P. 391.

<sup>904</sup> Martin Armgart and Heribert Feldhaus, "Eußerthal, St. Maria Zisterzienserabtei, zeilweise Zisterzienserpriorat," in *Pfälzisches Klosterlexikon: Handbuch der pfälzischen Klöster, Stifte und Kommenden*, ed. Jürgen Keddigkeit et al., 1st ed., vol. 1 A-G, 5 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern in Verbindung mit dem Institut für Europäische Kunstgeschichte der Ruprecht-Karls-Universität Heidelberg, 26.1 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2014), 405–61. P. 434.

<sup>905</sup> Keddigkeit, Wenz, and Untermann, "Kaiserslautern, St. Maria Hospital, später Premonstratenserstift bzw. -kloster, dann Kollegiatstift St. Marien und St. Martin." P. 386.

<sup>906</sup> Keddigkeit et al., "Otterberg, St. Maria Zisterzienserabtei Otterburg." P. 564.

<sup>907</sup> Ibid. P. 551.

<sup>908</sup> Ibid. P. 528.

### 3.4.3 The Premonstratensian Monastery in Lautern

Although the Abbey of Otterberg was the most influential in the region, the nearest monastery to the palace in Lautern (Figure 13) was the Premonstratensian monastery no more than 300 meters away. The monastery was also founded by Emperor Frederick I in 1152—the same year as his royal coronation. A correspondence between the provost of the monastery and St. Hildegard von Bingen is also available from the same year.<sup>909</sup> Interestingly, in the first mention of the monastery in Lautern, Frederick I is said to have transferred the *ecclesia* of Lautern to the monastery of *Rot an der Rot* in Upper Swabia,<sup>910</sup> suggesting that a church had already been present in Lautern at the time of the endowment in 1152. Shortly thereafter, the monastery of Lautern was under construction, based upon the dating of architectural forms in its nave from the 1160/70s,<sup>911</sup> around the same time as construction of the Abbey of Otterberg. The construction of both monasteries at the same time as the renovations of the palace indicate that masonry workshops specializing in ecclesiastical and elite secular architectural forms were on site for decades. In turn, this provides evidence that masons lived nearby and may have been hired for additional sites in the vicinity of Lautern.

The Hospital of St. Mary received various pieces of the Reichswald as a loan from Emperor Frederick I and his son Henry VI soon after its foundation in 1176.<sup>912</sup> The Hospital also received forests from the monastery of Münsterdreisen, located to the northwest of Lautern.<sup>913</sup> However, very few records regarding the Hospital of St. Mary or its properties can be traced during the second half of the 12<sup>th</sup> century, with the exception of a charter from 1190 indicating the first documented provost of the Hospital—a cleric named Ulrich, who is one in the same as Ulrich von Beilstein.<sup>914</sup> By the early 13<sup>th</sup> century, various territories had been gifted to the Hospital as confirmed in a charter by King Frederick II in which he gave his royal protection to the Hospital, located within the castle

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<sup>909</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. Pp. 42-43. Keddigkeit, Wenz, and Untermann, “Kaiserslautern, St. Maria Hospital, später Premonstratenserstift bzw. -kloster, dann Kollegiatstift St. Marien und St. Martin.” Pp. 371-372.

<sup>910</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. Pp. 42-43. Dolch and Münch included the following Latin excerpt regarding the endowment: *‘Hic ad petitionem et instantiam multorum nobelium quinque ecclesias notri ordinis instituisse dinoscitur, Steingademensem, Willetinensem, Lutrensem, ... Marhtelensem ...’*

<sup>911</sup> Keddigkeit, Wenz, and Untermann, “Kaiserslautern, St. Maria Hospital, später Premonstratenserstift bzw. -kloster, dann Kollegiatstift St. Marien und St. Martin.” P. 386.

<sup>912</sup> Zink, *Kaiserslautern in Vergangenheit und Gegenwart: eine Ortskunde auf geschichtlicher Grundlage*. P. 161.

<sup>913</sup> Frenzel, “Die historischen Wälder der Pfalz.” P. 273.

<sup>914</sup> Keddigkeit, Wenz, and Untermann, “Kaiserslautern, St. Maria Hospital, später Premonstratenserstift bzw. -kloster, dann Kollegiatstift St. Marien und St. Martin.” P. 372.



of Lautern, and all of its holdings on September 6<sup>th</sup>, 1215.<sup>915</sup> Interestingly, the Hospital received a renewal of its privilege of serving the double chapel of the Palace of Lautern as well.<sup>916</sup> The monastery was involved in a series of confirmations and royal decrees of protection throughout the first decades of the 13<sup>th</sup> century, including the struggle for the reconstruction of Castle Beilstein in 1234 discussed in Section 3.2.2. In 1238, the Premonstratensian order in Lautern ceased to be referred to as *hospitale*, but as an *ecclesia* instead, an event preceding the removal of the order's *canonici* by 1266.<sup>917</sup> The monastery certainly did not have nearly the impact as the abbey of Otterberg, yet still remained relevant during the 1152 to 1273 chronological span covered by this project as members of the ministerialis families often belonged to the monastery before moving on to more illustrious positions in Worms.

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<sup>915</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. Pp. 114-117. Also catalogued as Charter ID 10444 in the graph database.

<sup>916</sup> Keddigkeit, Wenz, and Untermann, "Kaiserslautern, St. Maria Hospital, später Premonstratenserstift bzw. -kloster, dann Kollegiatstift St. Marien und St. Martin." P. 372.

<sup>917</sup> *Ibid.* P. 372.

### 3.4.4 The Premonstratensian Monastery in Münsterdreisen

Münsterdreisen is located to the northeast of Lautern along the road toward Mainz (Figure 13). It is one of the oldest monasteries in the area dating back to 856, becoming Premonstratensian chapter in 1144 under Emperor Frederick I's father, Duke Frederick II of Swabia.<sup>918</sup> Unfortunately, very little of the monastery still exists as much of it was destroyed during the Peasants' Revolt of 1525.<sup>919</sup> The history of the monastery at the turn of the 13<sup>th</sup> century is marked by constant disputes with the Cistercian Abbey of Otterberg,<sup>920</sup> both of whom sought to claim lands and patronages in the Reichsland of Lautern. The struggle between the monasteries defined the economic policies of Münsterdreisen, who was granted the mothership of the monastery of Enkenbach in 1190 as well as a series of lands by the Bishop of Worms, Konrad II.<sup>921</sup> Ulrich von Beilstein—the provost of the monastery of Lautern at the time—was also a witness of the charter, alongside a certain Folmar von Lautern. As a chapter of the Premonstratensian order, Münsterdreisen was affiliated with the monastery in Lautern and was the contested mother convent of the monastery in Enkenbach. Münsterdreisen's connections to the von Beilstein family are particularly relevant for this project as it had owned the village property of Entersweilerhof,<sup>922</sup> located near the site of Castle Beilstein. At the same time that the von Lautern-Hoheneck family funded the commandry in Einsiedel in 1253, Münsterdreisen approved a variety of legal transactions of the monastery in Enkenbach indicating a stronger grip upon its contested daughter,<sup>923</sup> suggesting that the period of the Interregnum had numerous effects upon both secular and ecclesiastical spheres of influence in the region. The consolidation of the Premonstratensian monasteries of the area coincided with the reshuffling of political allegiances among the ministeriales of the Reichsland of Lautern following the Council of Lyon, and introduced new regional contenders, such as the commandry in Einsiedel. Thus, together with the von Beilstein family and the monasteries in Enkenbach and Lautern, Münsterdreisen

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<sup>918</sup> Keddigkeit and Werling, "Münsterdreisen, St. Saturninus, Frauengemeinschaft, später (Regular-) Kanonikerstift, dann Prämonstratenserabtei." P. 131.

<sup>919</sup> Ibid. P. 139.

<sup>920</sup> Ibid. P. 135.

<sup>921</sup> Ibid. P. 135. The *Klosterlexikon* incorrectly attributed the bishop as Konrad II of Mainz, rather than Konrad II of Worms (Konrad von Sternberg). Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. Pp. 65-68. Also catalogued as Charter ID 10765 in the graph database.

<sup>922</sup> Keddigkeit and Werling, "Münsterdreisen, St. Saturninus, Frauengemeinschaft, später (Regular-) Kanonikerstift, dann Prämonstratenserabtei." P. 144.

<sup>923</sup> Ibid. P. 135.

represented the monastic counterweight to Otterberg and its allies in the von Lautern-Hoheneck family and the commandry in Einsiedel.

Economic complications eventually stunted the growth of the monastery beginning in the late 13<sup>th</sup> century, continuing into the 14<sup>th</sup> century. The decline was coupled with a takeover of its leadership by the von Bolanden-Hohenfels family, who controlled the majority of the prefectures belonging to Münsterdreisen's estate.<sup>924</sup> Furthermore, the elevation of Gezele von Hoheneck—a sister of the convent in Enkenbach—to magistra and eventually prioress of Enkenbach occurred at the same time as its independency from Münsterdreisen.<sup>925</sup> The involvement of the both the von Hoheneck and von Bolanden-Hohenfels at the turn of the 14<sup>th</sup> century during which Münsterdreisen lost much of its control over estates in the Reichsland is particularly interesting. The ancestors of both families—the imperial ministeriales von Bolanden and von Lautern-Hoheneck—occupied elite administrator positions within the governments of Emperors Frederick I and Henry VI roughly 100 years prior, indicating a history of collaboration and association. Whether this can be interpreted as an act of political sabotage between regional adversaries is open to discussion, though it should be mentioned that the Abbey of Otterberg also experienced economic stagnation and decline in the 14<sup>th</sup> century.<sup>926</sup> Although even in economic decline, Otterberg was receiving lands from the dwindling estate of Münsterdreisen as documented in a charter from 16 May 1314 in which Agnes von Lautern-Hoheneck—the sister of Heinrich III von Lautern-Hoheneck—was also a witness.<sup>927</sup>

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<sup>924</sup> Ibid. P. 136.

<sup>925</sup> Keddigkeit and Untermann, "Enkenbach, St. Maria Prämonstratenserstift, später Prämonstratenserpropstei."

<sup>926</sup> Keddigkeit et al., "Otterberg, St. Maria Zisterzienserabtei Otterburg." P. 529.

<sup>927</sup> Dolch and Münch, *Die Urkunden des Zisterzienserklosters Otterberg 1143-1360*. P. 288. Also catalogued as Charter ID 10426 in the graph database.

### 3.4.5 The Premonstratensian Monastery in Enkenbach

The monastery at Enkenbach was founded in 1144—the same year as the Abbey of Otterberg—by Count Ludwig von Arnstein and his wife Guda,<sup>928</sup> who played an important role in the eastern portion of the Reichsland of Lautern alongside his ministerialis Hunfried von Alsenborn.<sup>929</sup> The monastery appeared three times in the project corpus of charters, as a daughter of the monastery at Münsterdreisen until the year 1278.<sup>930</sup> During the second half of the 12<sup>th</sup> century, Enkenbach became embroiled in land disputes with the abbey of Otterberg due largely to the indecisiveness of the ministerialis Degenhard—whose nephew was Eberhard I von Lautern-Montfort—and the attempt by Otterberg to attain paternity of Enkenbach against the wishes of Münsterdreisen. The result was a decision by Bishop of Worms Konrad II in favor of Münsterdreisen, granting them the official paternity over Enkenbach in addition to rights over various properties.<sup>931</sup> Ulrich von Beilstein, the son of Merbodo I von Beilstein, appeared as a witness in the charter on the side of the monastery of Münsterdreisen, due to his role as Provost of the monastery in Lautern and his family's connections to Münsterdreisen. His appearance on the side of the Bishop of Worms also provided an avenue into a more powerful position in the diocese, which he later attained as Provost of the Cathedral of Worms in 1219. As provost in Worms he was involved in another dispute with the abbey of Otterberg regarding property rights, alongside his brothers Herbod von Beilstein and Werner I Kolb von Wartenberg, as well as other regional ministeriales.<sup>932</sup> Although the charter from 1219 dealt with Otterberg and not with Enkenbach, it clearly displays an evolution of the secular alliances formed in the 1180s and 1190s which included differences in monastic allegiances. The families von Beilstein, von Randeck, and von Wartenberg were core allies of Münsterdreisen and her daughter monasteries, occasionally supported by the von Wilenstein family.

Enkenbach suffered financial difficulties in the twilight years of the Hohenstaufen dynasty and came into direct conflict with the abbey of Otterberg yet again in 1250 for claiming rights over agricultural fields in the Waltmark. The case was settled in favor of Otterberg requiring the

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<sup>928</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. First appearance in the corpus in 1190, pages 65-68; second appearance on 15 October 1278 on page 285; third appearance on 18 September 1310 on pages 407-408; Also catalogued as Charter IDs 10765, 11141, and 10146 (respectively) in the graph database. Pp. 381 and 385 for information regarding Enkenbach's independency from Münsterdreisen and Gezele von Hoheneck's leadership positions (respectively).

<sup>929</sup> Keddigkeit and Untermann, "Enkenbach, St. Maria Prämonstratenserstift, später Prämonstratenserpropstei." P. 379.

<sup>930</sup> Ibid. P. 379.

<sup>931</sup> Ibid. P. 380.

<sup>932</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. P. 90. Also catalogued as Charter ID 10411 in the graph database.

financially strained monastery at Enkenbach to pay reparations, for which they were assisted by Wirich I von Daun, who had previously given them patronage of a local church on 18 January 1245.<sup>933</sup> During the following decades, Enkenbach was able to expand construction with the approval of the Bishop of Worms, the Raugrave Eberhard I. Enkenbach eventually gained independence from Münsterdreisen in 1278 under prioress Gezele von Lautern-Hoheneck, operating henceforth directly under the jurisdiction of the head of the Premonstratensian order, the Abbot of Prémontré<sup>934</sup>—another reshuffling of the regional hierarchy of the Reichsland of Lautern and neighboring territories following the end of the Interregnum under King Rudolf von Habsburg in the 1270s and 1280s. Enkenbach received various rights and privileges over the course of the 14<sup>th</sup> century beginning in 1310 in which they were enfeoffed a portion of the forest in the Reichsland of Lautern by King Henry VII,<sup>935</sup> indicating that the monastery was still politically active in the region.

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<sup>933</sup> Ibid. P. 178. Also catalogued as Charter ID 10095 in the graph database.

<sup>934</sup> Keddigkeit and Untermann, “Enkenbach, St. Maria Prämonstratenserstift, später Prämonstratenserpropstei.” P. 381.

<sup>935</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. Pp. 407-408. Also catalogued as Charter ID 10146 in the graph database.

### 3.5 The Tertiary Sites

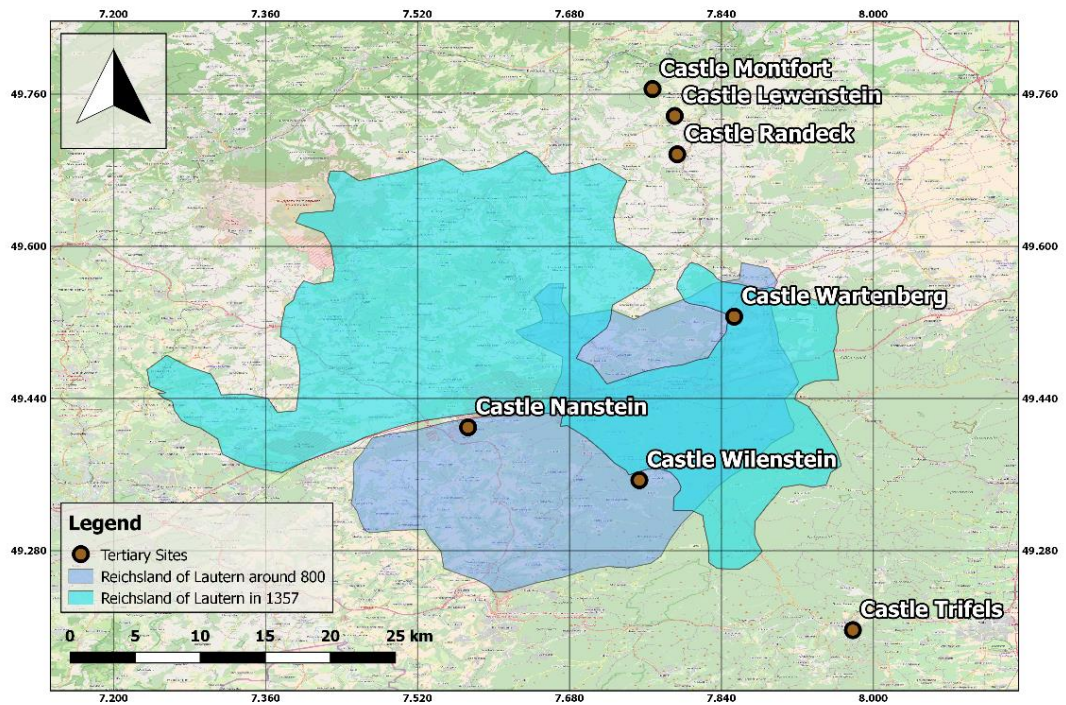


Figure 15: Location of the Tertiary Sites relative the two models of the Reichsland of Lautern.

The tertiary sites of the project are all neighboring castles, including three within the Reichsland of Lautern—castles Nanstein in Landstuhl, Wartenberg in Wartenberg-Rohrbach, and Wilenstein near Trippstadt. As with the secondary sites, these castles and their inhabitants were involved in the proceedings of the charters concerning the primary sites.

### 3.5.1 Castle Wilenstein

Castle Wilenstein had originally been one of the six sites that I had chosen at the inception of the CITADEL project, though I relegated it alongside the Commandry at Einsiedel at a later point due to a refocusing of the project towards the families of the imperial ministeriales von Lautern-Hoheneck and von Beilstein. The reason for castle Wilenstein's exclusion from what would later become the primary sites is due to: 1. the lack of influential ministeriales of the von Wilenstein family within both the regional and interregional politics at the turn of the 13<sup>th</sup> century; and 2. the more insignificant role that the castle played within the politics and economy of the Reichsland of Lautern. That is not to say that the von Wilenstein family had not played an influential role at certain points, nor does it dismiss their regional influence in the southwestern German Palatinate. However, with regard to the development of the palace and Reichsland of Lautern, castle Wilenstein and its inhabitants played a lesser role than that of the von Beilstein and von Lautern-Hoheneck families. Although the castle itself was purported to have been built by Emperor Frederick I and administered by his ministeriales from Lautern,<sup>936</sup> recent investigations have depicted a completely different image of the castle's development and the origin of the servitude of the ministeriales who inhabited and administered the site.<sup>937</sup>

The ministeriales von Wilenstein can be traced back to a certain Landolf von Wilenstein from around the year 1150, who served as a liege-man of the Counts of Saarwerden.<sup>938</sup> The name Landolf appeared again in 1159, though it was a few decades later in which a Landolf von Wilenstein appeared in various charters beginning in 1174<sup>939</sup>—the same year as the first mention of Eckbert I von Lautern. It is not immediately clear whether these Landolfs were one in the same, or perhaps a father and son. Provided that the two occurrences from the 1150s and those after 1174 are separated by 15 years, it is very much possible that these were in fact two individuals. At the beginning of this project, I modeled them as a father-son relationship considering that an ambiguous Landolf von Wilenstein continued to appear in charters until 1198. If this had been the same person that would mean that he had been active with an administrator position for nearly 50 years. In an effort to model the uncertainties regarding the political longevity of certain ministeriales—particularly in the case

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<sup>936</sup> Emil Heuser, *Pfälzerland in der Vergangenheit* (Neustadt an der Hardt: Marnet, 1922). P. 304.

<sup>937</sup> Dolch, Ulrich, and Keddigkeit, "Wilenstein." P. 324.

<sup>938</sup> *Ibid.* P. 324.

<sup>939</sup> Herrmann, *Geschichte der Grafschaft Saarwerden bis zum Jahre 1527*. P. 77. Also catalogued as Charter ID 10010 in the graph database.

of the von Beilstein ministeriales—I opted to select a maximum of 40 years activity for a single ministerialis who appeared only periodically. This decision was based upon the longevity of Heinrich I von Lautern’s activity in 149 historical proceedings lasting from 15 March 1184<sup>940</sup> until 11 September 1223<sup>941</sup>—roughly 39 years. As Heinrich I represents the greatest activity of any of ministerialis in this project, the longevities of other ministeriales are compared in relation to his. In the case of individuals who routinely appeared over a longer period, I chose not to limit them to a 40-year span, as there was enough evidence to confirm an identity. However, in the case of individuals who were more elusive and only periodically appeared with gaps of 10 to 15 years or more—as was the case for the mid-12<sup>th</sup> century Landolf von Wilenstein—I chose to separate the name into two distinct instances. In contrast to my own findings based upon a selection of charters, the definitive article regarding the von Wilenstein ministeriales written by Martin Dolch in 2004 outlined these periodic occurrences of Landolf as having been the same person, based largely upon two reasons: 1. Dolch gathered more charters regarding the von Wilenstein ministeriales considering that they were the focus of his manuscript; and 2. Dolch conducted a closer reading of the original charters, rather than transcriptions, reaching a more reliable interpretation. This underlines the implications of selection bias, thereby highlighting an often encountered problem in historical studies. Based upon Dolch’s findings, this mysterious Landolf was known as Landolf I von Wilenstein and eventually passed away around the year 1207.<sup>942</sup>

According to a charter from 1185 issued at the Abbey of Otterberg, Landolf I was the father of Landolf II, Albero, and Heinrich.<sup>943</sup> He possibly had a fourth son named Eberhard von Wilenstein who first appeared in a charter issued at the monastery of Hornbach in 1237,<sup>944</sup> though it is most likely that Eberhard was the son of another, albeit possibly unrelated, ministerialis of castle Wilenstein name Gerwin.<sup>945</sup> This again stresses the point made in Section 2.3.3.2 regarding the development of the ministeriales that the commonality of a surname does not necessarily indicate familial relation. Rather, many different individuals could be commissioned with similar positions

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<sup>940</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. P. 55. Also catalogued as Charter ID 10726 in the graph database.

<sup>941</sup> Akademie der Wissenschaften und der Literatur, Mainz, “RI V,1,2 n. 3900.” Also catalogued as Charter ID 10523 in the graph database.

<sup>942</sup> Dolch, “Wilenstein - Die Burg Und Das Sich Nach Ihr Nennende Rittergeschlecht (1174-1372).” P. 20.

<sup>943</sup> Dolch and Münch, *Die Urkunden des Zisterzienserklosters Otterberg 1143-1360*. Pp. 68-70. Also catalogued as Charter ID 10060 in the graph database.

<sup>944</sup> Pöhlmann, *Regesten der Grafen von Zweibrücken*. Pp. 29-31. Also catalogued as Charter ID 10087 in the graph database.

<sup>945</sup> Dolch, “Wilenstein - Die Burg Und Das Sich Nach Ihr Nennende Rittergeschlecht (1174-1372).” P. 45.



and therefore given similar surnames, as the case was for Gottfried I von Lautern and Eckbert I von Lautern. Still, Dolch considered the possibility that Gerwin von Wilenstein had not only been the father of Eberhard, but was also a much younger cousin of Landolf I.<sup>946</sup> This argument is strengthened by the fact that the same Gerwin adopted Landolf I's commission as *causidicus* of the monastery of Hornbach upon his death.<sup>947</sup> In fact, they had both been ministeriales at the monastery of Hornbach since 1182 when Landolf became sheriff of Hornbach and Gerwin became cupbearer on the monastic estate.<sup>948</sup>

It is highly likely that the two had been cousins, specifically with regard to Dolch's explanation that certain given names were commonly transferred through the same families.<sup>949</sup> This was certainly the case for the Heinrichs and Siegfrieds of the von Lautern-Hoheneck family, as well as the Merbodos of the von Beilstein family. Interestingly, a certain Gerwin von Kagelstat appeared in a charter from the year 1212 in which Albero von Wilenstein—the son of Landolf I—abandoned claims to lands belonging to the Abbey of Otterberg.<sup>950</sup> Kagelstat is an antiquated name for the town of Kallstadt located north of Bad Dürkheim, over 35 kilometers to the east of Otterberg where the charter was issued. More importantly, this specific Gerwin von Kagelstat also had a son named Eberhard, as did Landolf I's presumed cousin Gerwin von Wilenstein. In essence, another set of a father-son relationship with the same first names (Gerwin and Eberhard) were witnesses to a charter involving Landolf I's son, Albero von Wilenstein, indicating that they were perhaps called upon as witnesses due to a relation to Albero. The local sheriff, Siegfried II von Lautern-Hoheneck also appeared in the same charter alongside Merbodo II von Beilstein. The explanation for Siegfried II's appearance is relatively straight forward as he was local sheriff of the imperial territory at the time, but Merbodo II's appearance was likely due to a distant relation to the von Wilenstein family via the von Wartenberg family. This also does not exclude the possibility of Siegfried II having possibly been related in some degree to the von Wilenstein family.

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<sup>946</sup> Ibid. P. 20.

<sup>947</sup> Ibid. P. 21.

<sup>948</sup> Hans Fell, Jürgen Keddigkeit, and Pia Heberer, "Hornbach, St. Peter, später auch St. Maria und St. Pirmin, Benediktinerkloster," in *Pfälzisches Klosterlexikon: Handbuch der pfälzischen Klöster, Stifte und Kommenden*, ed. Jürgen Keddigkeit et al., 1st ed., vol. 2 H-L, 5 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern in Verbindung mit dem Institut für Europäische Kunstgeschichte der Ruprecht-Karls-Universität Heidelberg, 26.2 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2014), 283–346. P. 297.

<sup>949</sup> Dolch, "Wilenstein - Die Burg Und Das Sich Nach Ihr Nennende Rittergeschlecht (1174-1372)." P. 19.

<sup>950</sup> Dolch and Münch, *Die Urkunden des Zisterzienserklosters Otterberg 1143-1360*. P. 78. Also catalogued as Charter ID 10302 in the graph database.

Prior to Dolch's closer examination of the family tree, it was assumed that the von Beilstein, von Wartenberg, and von Wilenstein families all had a common origin, though it was more likely that the von Beilstein and von Wartenberg had married into one another, only later incorporating the von Wilenstein family.<sup>951</sup> Despite Siegfried II von Lautern-Hoheneck's position as sheriff, a tantalizing argument exists supporting the interrelation of the ministeriales of Wilenstein and Hohenecken regarding Albero's brother, Heinrich von Wilenstein, who was elected a cathedral canon in Worms in 1226.<sup>952</sup> This is the same time that Landolf von Lautern-Hoheneck, Siegfried II's brother, had also been a member of the cathedral chapter in Worms, later elected Cathedral Dean in 1232 and bishop in 1234.<sup>953</sup> Heinrich's given name was also common within the von Lautern-Hoheneck line. However, in stark contrast to the ministeriales von Lautern who were imperial ministeriales, the von Wilenstein ministeriales served local counts and monasteries of the Westrich (Westerreich, or western empire) such as the Counts of Saarwerden and the monastery of Hornbach.<sup>954</sup> Provided the arguments for their relation to the nearby families, it seems that the von Wilenstein family actively sought to marry into the families of the imperial ministeriales, possibly as a method of changing their station from mere ministeriales of counts and monasteries to ministeriales of kings and emperors. Arnold von Lübeck described the method in which certain ministeriales transferred themselves from bishops to kings, which makes it entirely possible that ministeriales could transfer—or attempt to transfer—themselves from serving monasteries to serving kings as monasteries and bishoprics were roughly equivalent as discussed in Section 2.3.2.1 regarding ecclesiastical princes. This would represent a more long-term marriage strategy in which men of lower ministerialis status sought to marry the daughters of more elite ministeriales. This clearly indicates a stratification within the group of ministeriales, emulating the marriage strategies of the *nobiles* that was also conducted by elite ministeriales of the late 13<sup>th</sup> century, as was discussed in Section 3.2.1. However, the members of the von Wilenstein family were no longer ministeriales of the monastery of Hornbach by the year 1237—three years after King Henry (VII)'s insurrection—having lost nearly all of the lands that had been entrusted to them.<sup>955</sup>

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<sup>951</sup> Dolch, "Wilenstein - Die Burg Und Das Sich Nach Ihr Nennende Rittergeschlecht (1174-1372)." Pp. 16-18.

<sup>952</sup> *Ibid.* P. 20.

<sup>953</sup> Keddigkeit, Hedtke, and Untermann, "Worms, St. Peter (und Paul), Domstift." P. 433.

<sup>954</sup> Dolch, "Wilenstein - Die Burg Und Das Sich Nach Ihr Nennende Rittergeschlecht (1174-1372)." P. 15.

<sup>955</sup> *Ibid.* P. 23.

This essentially left them the options of either marrying their daughters to men of higher status, having their sons enter the clergy, or establishing a large network of marriages among other ministeriales. As Heinrich von Wilenstein was already a cathedral canon in Worms, it is clear that they had already embarked upon the second option, though not only their sons became ecclesiastical as Johann von Wilenstein's daughter, Guda von Wilenstein was a Dominican nun at the monastery of St. Lambertus in Lambrecht—the monastery that the von Beilstein family had served in the 12<sup>th</sup> century. Guda's entrance into the monastery of St. Lambertus as a choir sister in the 1270s occurred around the same time that Alheidis von Beilstein, Agnes and Hildegund von Hoheneck had also become choir sisters in St. Lambertus.<sup>956</sup> This was the same Agnes who partook in the charter concerning Münsterdreisen's sale of lands to Otterberg in 1314 described in Section 3.4.4. Guda's presence at the monastery placed her in close connection with numerous other women from prominent families, including the four biological sisters Agnes, Elisabeth, Katharina, and Lisa of the von Bolanden family, Sara von Leiningen, and Agnes von Flersheim<sup>957</sup>—whose family would later inherit half of the castle Wilenstein after the dissolution of the von Wilenstein family in the mid-14<sup>th</sup> century.<sup>958</sup> The only documented marriage of a member of the von Wilenstein family marrying anyone of higher status is that of Wirich von Wilenstein's marriage to Hildegard in 1307, who was possibly the daughter of Count Emich I von Daun, lord of castle Nanstein.<sup>959</sup> Their family stratagem upward social progression was most likely a combination of their more humble ecclesiastical successes and intermarriage with the other ministeriales of the German palatinate, including the von Beilstein family and possibly the von Lautern-Hoheneck family.

The pathway towards their lack of political success is also marked by their lack of appearances in charters as members of the family appeared in only five charters between 1185 and 1237.<sup>960</sup> This is not to say that it was necessary to simply appear in as many charters as possible,

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<sup>956</sup> Fell, Keddigkeit, and Untermann, "Lambrecht, St. Lambertus, Benediktinerkloster, später Benediktiner-Doppelkloster, dann Dominkanerinnenkloster St. Lambrecht." P. 538. Dolch, "Das Reichsministerialengeschlecht von Lautern/von Hohenecken Im 12./13. Jahrhundert." P. 55.

<sup>957</sup> Fell, Keddigkeit, and Untermann, "Lambrecht, St. Lambertus, Benediktinerkloster, später Benediktiner-Doppelkloster, dann Dominkanerinnenkloster St. Lambrecht." Pp. 537-538. These names are drawn from the monastery's necrology between the years 1260 and 1330.

<sup>958</sup> Dolch, Ulrich, and Keddigkeit, "Wilenstein." P. 327.

<sup>959</sup> Dolch, "Wilenstein - Die Burg Und Das Sich Nach Ihr Nennende Rittergeschlecht (1174-1372)." P. 45.

<sup>960</sup> Dolch and Münch, *Die Urkunden des Zisterzienserklosters Otterberg 1143-1360*. Charter issued in 1212 on page 78, and catalogued as Charter ID 10302 in the graph database. Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. Charter issued in 1212 on page 105, and catalogued as Charter ID 10074 in the graph database. Dolch and Münch, *Die Urkunden des Zisterzienserklosters Otterberg 1143-1360*. Charter issued in 1219 on page 90, and catalogued as Charter ID 10411 in the graph database. Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. Charter issued on 22 December 1219 on pages

rather, that it was important to have documented evidence of being named alongside other men of higher status in order to expand one's network. Their limited social network effectively stunted their growth and expansion into the status of more elite ministeriales, not to mention the status of the nobiles. Despite their subtle social regression after 1200, the fortunes of the von Wilenstein family changed for a number of years upon the commission of Merbodo von Wilenstein as an imperial castellan at the Palace of Lautern by King Rudolf von Habsburg on 19 December 1287.<sup>961</sup> The name Merbodo immediately draws to mind the similarly named members of the von Beilstein family suggesting that the two families had intertwined by the second half of the 13<sup>th</sup> century. Merbodo von Wilenstein's son, Wirich, is also interesting as the lord of castle Nanstein at the time was Wirich II von Daun, a relative of the von Wilenstein who had endowed the monastery of Eusserthal with a portion of the Laubeerwald on 18 May 1293, indicating a familial connection.<sup>962</sup> The Laubeerwald had been the only remaining enfeoffment in the hands of the von Wilenstein family, and its continuous partitioning chipped portion after portion from their last properties. Wirich von Wilenstein eventually had the misfortune of witnessing the destruction of castle Wilenstein at the command of the Archbishop of Baldwin of Trier in 1333,<sup>963</sup> as a result of the ongoing feud regarding the succession of the seat of the Bishop of Worms which had encroached into the Reichsland of Lautern. As Archbishop Baldwin had been enfeoffed with the Reichsland by the emperor on 24 August 1332, it was his duty to quell feuds in the territory. Castle Wilenstein had been overrun by malefactors and therefore besieged and broken with great effort by the Archbishop's men.<sup>964</sup> From this point on, castle Wilenstein was rebuilt, yet existed as a double castle with separate buildings for the von Daun-Falkenstein and von Flersheim families.<sup>965</sup> The von Wilenstein family abandoned any claim to the site, though continued to exist on until the late 14<sup>th</sup> century<sup>966</sup> in the service of the von Leiningen and von Veldenz families.<sup>967</sup>

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138-139, and catalogued as Charter ID 10076 in the graph database. Dolch and Münch, *Die Urkunden des Zisterzienserklosters Otterberg 1143-1360*. Charter issued on 18 May 1227 on pages 88-89, and catalogued as Charter ID 10082 in the graph database.

<sup>961</sup> Dolch, "Wilenstein - Die Burg Und Das Sich Nach Ihr Nennende Rittergeschlecht (1174-1372)." P. 27. Also catalogued as Charter ID 10130 in the graph database.

<sup>962</sup> Ibid. P. 31. Also catalogued as Charter ID 10133 in the graph database.

<sup>963</sup> Ibid. P. 26.

<sup>964</sup> Ibid. P. 34.

<sup>965</sup> Dolch, Ulrich, and Keddigkeit, "Wilenstein." P. 327.

<sup>966</sup> Dolch, "Wilenstein - Die Burg Und Das Sich Nach Ihr Nennende Rittergeschlecht (1174-1372)." P. 37.

<sup>967</sup> Ibid. P. 43.

### 3.5.1.1 Location and Early Construction Phases

The position of castle Wilenstein warrants a brief discussion as it is located in a peculiar spot compared to castles Hohenecken and Beilstein, in that it is far away from any major roads leading to or even near the Palace of Lautern.<sup>968</sup> It was built upon a steep rock outcrop at the spur of a mountain overlooking the Moosalb stream near the town of Trippstadt.<sup>969</sup> Numerous attempts have been made to decipher the origin of its name as outlined in Christmann, 1938, though a consensus has not been reached.<sup>970</sup> Although it had originally been a single castle, upon its destruction in 1333 it was divided and co-owned by the von Daun-Falkenstein and von Flersheim families. The oldest portion of the site are located in the western portion, also known as the *Flörsheimer* or *Flersheimer Teil*—both names referring to the same family.

The Flersheimer section is particularly interesting for this dissertation as it consisted of a pentagonal main tower, also seen at castles Beilstein and Hohenecken. However, this pentagonal tower was composed of various types of stone ashlar with projecting joints, forming an irregular patchwork of masonry absent any pincer holes. It surrounds an older, rounder tower built between the middle and late 12<sup>th</sup> century which was positioned atop the highest point of the rock outcrop with a wall width fluctuating between 1.70 and 1.80 meters—roughly similar to the walls described at the site of Castle Beilstein during the excavations of the 1950s. The ashlar composing the rounded tower at Castle Wilenstein are relatively large with outer lengths of 90 to 100 centimeters. The remains of this tower after the 14<sup>th</sup> century destruction were presumably dismantled in the 14<sup>th</sup> century during the reconstruction efforts. A jagged outer wall separating the Flersheimer section from that of the von Daun-Falkenstein buildings is composed of ashlar at the bottom layer and the characteristic embossed ashlar in the layer above.<sup>971</sup> The base of the residence structure is composed of entirely different stones featuring slight burn marks indicating that the castle that had existed during the 12<sup>th</sup> and 13<sup>th</sup> century was reduced to its base during the reconstruction efforts following its 14<sup>th</sup> century destruction.<sup>972</sup>

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<sup>968</sup> Ibid. P. 29.

<sup>969</sup> Dolch, Ulrich, and Keddigkeit, “Wilenstein.” P. 323.

<sup>970</sup> Ernst Christmann, “Der Name der Burg Wilenstein,” in *Oberdeutsche Zeitschrift*, ed. Eugen Fehrle, vol. 12 (Bühl-Baden: Verlag Konkordia A.-G., 1938), 49–52. P. 52.

<sup>971</sup> Walter Herrmann, “Wilenstein,” in *Auf rotem Fels: Ein Führer zu den schönsten Burgen der Pfalz und des elsässischen Wasgau*, ed. Marianne Herrmann, 1st ed. (Karlsruhe: G. Braun Buchverlag, 2004), 201–5. P. 203.

<sup>972</sup> Dolch, Ulrich, and Keddigkeit, “Wilenstein.” P. 333.

The von Daun-Falkenstein section of the castle is located at the eastern side of the site and features a large shield wall with the main gate of the castle at the lower left-hand side when facing the wall from the east.<sup>973</sup> The portions located to the west of the large shield wall were extensively rebuilt following its destruction in 1333, leaving few traces of the architectural elements from the 12<sup>th</sup> or 13<sup>th</sup> century.<sup>974</sup> The northern chambers of this section of the castle were completely rebuilt as a protestant youth hostel from 1959 until 1962—a reconstruction conducted by students and teachers of the *Pädagogische Hochschule* in Kaiserslautern with financial support from various local institutions.<sup>975</sup> The large gate was connected to the nearby rock platform which separated the site from the rest of the mountain with a long bridge. The bridge was briefly rebuilt during the reconstruction efforts,<sup>976</sup> drawing to mind the similar structure found at Castle Beilstein. Curiously, Helmut Hemmer was the one who documented both bridges in the 1950s. Since the reconstruction efforts of the early 1960s, no further archaeological investigations have been conducted.

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<sup>973</sup> Herrmann, “Wilenstein.” P. 202.

<sup>974</sup> Dolch, Ulrich, and Keddigkeit, “Wilenstein.” P. 330.

<sup>975</sup> Walter Cappel, “Das Jugendheim auf Burg Wilenstein,” in *Jugendheim Burg Wilenstein: Eine Schrift zum Wiederaufbau der Burgruine Wilenstein, über dem Karlstal, bei Trippstadt, im Landkreis Kaiserslautern gelegen*, 1st ed. (Kaiserslautern: Rohr Druck GmbH, 1962), 6–12. Pp. 8–11.

<sup>976</sup> Helmut Hemmer, “Rekonstruktion der Burg Wilenstein,” in *Jugendheim Burg Wilenstein: Eine Schrift zum Wiederaufbau der Burgruine Wilenstein, über dem Karlstal, bei Trippstadt, im Landkreis Kaiserslautern gelegen*, 1st ed. (Kaiserslautern: Rohr Druck GmbH, 1962), 33–41. P. 36

### 3.5.2 Castle Montfort (Palatinate)

Castle Montfort is the northern-most of the sites covered in this project, located to the northwest of castle Lewenstein as shown in Figure 15. The castle was first mentioned in a charter from 1 September 1226 issued by the Counts Gerlach IV von Veldenz and Gerhard III von Diez, and the Raugraves Ruprecht I and Gerhard.<sup>977</sup> Both Gerlach IV von Veldenz and Gerhard III von Diez were of regional and interregional importance for the German Palatinate, recognized as having been loyalists of King Henry (VII) prior to his insurrection. Both counts appeared in a charter issued at the Palace of Lautern on 18 March 1234 regarding a feud between the Cathedral Dean of Aachen and the Bishop of Liege,<sup>978</sup> only five days before the documented permission for the reconstruction of Castle Beilstein.<sup>979</sup> The high status event at the palace also included the Archbishops of Mainz and Trier, Friedrich II von Leiningen, and numerous other German and Wallonian counts. As Gerlach IV von Veldenz and Gerhard III von Diez both had living quarters at castle Montfort, it is possibly that they traveled together to the palace and either left following the charter on 18 March or were simply absent thereafter as neither were mentioned as witnesses in the charter indicating the reconstruction of Castle Beilstein. This information provides a glimpse into the regional loyalties and demonstrations of respect between the counts and the imperial ministeriales.

The first ministeriales to have named himself after castle Montfort was Arnold I, the son of Eberhard I von Lautern a man of immense regional importance who appeared in 66 charters from 1186 until 1222. He is often referred to as Eberhard von Alzey indicating where he had originated before becoming a ministerialis associated with the palace in Lautern. His first appearance in this project's corpus was in 1186 in which he appeared as Count of Siena and loyalist of King Henry VI.<sup>980</sup> He would later become governor of Etruria under King Frederick II on 9 March 1219,<sup>981</sup> making him one of the most powerful ministeriales of the 13<sup>th</sup> century. Despite his time in Italy, he was possibly one of the founders of castle Monfort alongside the previously mentioned counts and

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<sup>977</sup> Ulrich Burkhardt and Stefan Ulrich, "Montfort," in *Pfälzisches Burgenlexikon*, ed. Jürgen Keddigkeit, Ulrich Burkhardt, and Rolf Übel, 3rd ed., vol. 3 I-N, 4 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 12.3 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, n.d.), 590–607. P. 592.

<sup>978</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. P. 68. Also catalogued as Charter ID 10767 in the graph database.

<sup>979</sup> Keddigkeit, "Beilstein." P. 229.

<sup>980</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. P. 62. Also catalogued as Charter ID 10752 in the graph database.

<sup>981</sup> Akademie der Wissenschaften und der Literatur, Mainz, "RI V,4,6 n. 157." Also catalogued as Charter ID 10510 in the graph database.

raugraves.<sup>982</sup> Interestingly, his son and widow gifted the Premonstratensian monastery in Lautern various properties and funded nine Masses to be said for the forgiveness of their family's sins and for Eberhard's salvation in 1247.<sup>983</sup> The nine Masses, combined with the charity of properties to the monastery in Lautern, bear a striking similarity to the endowment of the Teutonic Knight Commandry in Einsiedel by the von Lautern-Hoheneck family. Both endowments—though six years apart from one another—followed the Council of Lyon wherein Emperor Frederick II was deposed, initiating a frantic re-alignment of allegiances throughout the empire. In the case of the von Lautern-Hoheneck family, the closest member to the deposed emperor had been Bishop Landolf of Worms, though other members were also of significance as mentioned in Section 3.2.1 regarding the von Lautern-Hoheneck family. As for the von Lautern-Montfort family, Eberhard himself had been a trusted loyalist of Frederick II, thus placing his family along a quicker collision course with the rising powers than was the case for the von Lautern-Hoheneck family. In order to align themselves with the church and remain loyal to the throne, the von Lautern-Montfort presumably endowed the Premonstratensians and funded the masses to demonstrate both contrition and penitence—just as the von Lautern-Hoheneck family had done in 1253. The action apparently worked as the family remained in castle Montfort under commission of the Counts of Veldenz and were eventually given the right to pass portions of the castle as an inheritance by the year 1294.<sup>984</sup>

The castle remained a property of the Counts of Veldenz, though inhabited by various branches of the von Lautern-Montfort and von Sponheim families throughout most of the 14<sup>th</sup> century. During the feud of succession for the seat of the Bishop of Worms as mentioned earlier in Section 3.5.1 regarding castle Wilenstein, the inhabitants of castle Montfort allied themselves to Archbishop Baldwin of Trier in 1333<sup>985</sup>—the same year that castle Wilenstein was destroyed by the archbishop's men.<sup>986</sup> In 1335, the knightly brothers von Montfort initiated an armed conflict with the Collegiate Chapter St. Stephan of the Archdiocese of Mainz which lasted until 1391. During that period, the knights of Montfort were also engaged in the feud between the Bishop of Speyer, Adolf I von Nassau-Wiesbaden-Idstein, and the Prince Elector of the Rhine, Ruprecht I, in which they

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<sup>982</sup> Burkhart and Ulrich, "Montfort." P. 592.

<sup>983</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. Pp. 181-182. Also catalogued as Charter ID 11028 in the graph database. Burkhart and Ulrich, "Montfort." P. 592.

<sup>984</sup> Burkhart and Ulrich, "Montfort." P. 592. This refers only to the right of inheritance from 1294.

<sup>985</sup> *Ibid.* P. 593.

<sup>986</sup> Dolch, "Wilenstein - Die Burg Und Das Sich Nach Ihr Nennende Rittergeschlecht (1174-1372)." P. 26.



overran the Castles Randeck and Wartenberg in 1375.<sup>987</sup> The Bishop of Speyer, who later became the Archbishop of Mainz, counted two members of the von Beilstein family as some of his most trusted loyalists, again indicating a rivalry between the families in the Reichsland of Lautern. The Castles Randeck and Wartenberg were most likely sacked due to their association with Sifrid Lummelzun von Lewenstein, who had opened his portions of Castle Beilstein, among other castles, on a lifelong basis to Ruprecht I in 1368.<sup>988</sup> Curiously, the knight Friedrich von Beilstein had been a loyalist of the Bishop of Speyer by 1378<sup>989</sup> alongside the knights of castle Montfort, placing him on the opposing side of the joint owners of the castle bearing his name—presumably as to why Castle Beilstein was spared the same fate of castles Randeck and Wartenberg.

The militarism of the knights of Montfort even reached such lengths as to cause an alliance of three Prince Electors—the Archbishops of Mainz and Trier and the Count Palatine of the Rhine—to rise against them. However, no indication of any actual destruction of castle Montfort by the triple alliance was recorded. Over the course of the 15<sup>th</sup> century, the von Waldeck family acquired portions of the castle and joined the actions of the von Montforts, in which they plundered the region of the southwestern Archdiocese of Mainz. They were accused of being *Raubritter* (Robber-knights) and a new alliance between the Archbishop of Mainz and the Count Palatine of the Rhine was initiated in 1456, resulting in a five day siege and assault of castle Montfort in which it was broken and its inhabitants dispersed.<sup>990</sup> The von Waldeck family returned and rebuilt portions of the castle in the following decades, remaining at the site and in the village beneath the castle until its sale in 1806.<sup>991</sup>

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<sup>987</sup> Burkhart and Ulrich, “Montfort.” P. 594.

<sup>988</sup> Keddigkeit, “Beilstein.” P. 228.

<sup>989</sup> Würzburg, Staatsarchiv Mainzer Ingrossaturbücher, “MIB 9 Fol. 033 [05],” Die Regesten der Mainzer Erzbischöfe, accessed July 22, 2020, <http://www.ingrossaturbuecher.de/id/source/685>. Also catalogued as Charter ID 10471 in the graph database.

<sup>990</sup> Burkhart and Ulrich, “Montfort.” P. 596.

<sup>991</sup> *Ibid.* P. 597-598.

### 3.5.2.1 Location and Early Construction Phases

The castle's documentation precedes the similarly named crusader castle of the Teutonic Knights in Acre, which was mentioned in 1227.<sup>992</sup> Despite having first been mentioned in the early 13<sup>th</sup> century, archaeological investigations have revealed construction phases dating to around 1200, and that the castle was greatly expanded during the latter 13<sup>th</sup> century. The area of the castle resembles an irregular oval 70 meters long, orientated in an east-west fashion. It bares more similarities to the castles of the Rhineland than of those of the German Palatinate, though it is located between the two regions in the Nahegau. The foundations of a large shield wall bounded by a large ditch separated the castle from the higher elevations of the 286 meter high mountain<sup>993</sup>—resembling Castle Hohenecken's relationship to the mountain upon which it rests. The masonry of the shield wall is quite interesting as it consists of large embossed quined ashlars set at an angle of roughly 130 degrees, in the form of the characteristic embossed ashlars of the 12<sup>th</sup> and early 13<sup>th</sup> centuries. However, the components of the shield wall between these wide-angled quoins are mainly rubble masonry with a few interspersed smooth ashlars. The view of the shield wall reveals two distinct phases, indicating that the wall was elevated at a later point.<sup>994</sup> Besides this wall, the only sections that were built during the first phases of construction in the early 13<sup>th</sup> century are located on the western side, incorporating the living quarters and great hall.<sup>995</sup> By 1352, the castle was home to 15 private owners who continued to build and renovate various sections spanning 10 to 12 different dwellings<sup>996</sup>—responsible for the confusing state of its construction history. Still, a few of the buildings feature interesting identifiers, such as Romanesque windows, and a large central well seems to have been a common property of all the inhabitants of the castle.<sup>997</sup>

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<sup>992</sup> Ibid. P. 591.

<sup>993</sup> Ibid. P. 599.

<sup>994</sup> Ibid. Information taken from the photo on page 603.

<sup>995</sup> Ibid. P. 606.

<sup>996</sup> Alexander Thon, ed., *“Wie Schwalben Nester an den Felsen geklebt...”: Burgen in der Nordpfalz*, 1st ed. (Regensburg: Verlag Schnell und Steiner, 2005). P. 100-102

<sup>997</sup> Ibid. P. 104.

### 3.5.3 Castle Nanstein

The castle is located in the town of Landstuhl which was documented in the Lorscher *Reichsurbar* of 830 as a property of the royal court of Lautern, located along the *via regia*—also known as the *strata regia* (Figure 15).<sup>998</sup> The town and surrounding area had previously been a core component of the Reichsland of Lautern as indicated in a *Reichsspruch* (binding decision) from 1357. Due to its incorporation within the Reichsland from the 9<sup>th</sup> century until 1357, Rudolf Kraft supposed that it may have even been a component of the early Frankish royal estate under the administrators of Clovis I.<sup>999</sup> The name Nanstein is derived from the same source as the name Landstuhl referring to the seat of a certain *Nanno*. It is likely that the name is a short form of *Nanthari*—the name of numerous individuals involved in the early Reichsland of Lautern. Interestingly, a loyalist of the early Salian dynasty by the name of Duke Nanthari was credited for endowing the village of Entersweilerhof to the Premonstratensian monastery of Münsterdreisen—which at the time had been a women’s convent<sup>1000</sup>—with the authorization of Louis the German in the year 865.<sup>1001</sup> This is a significant piece of information as it pertains to the western (Landstuhl) and eastern (Entersweilerhof) portions of the royal estate which would later be known as the Reichsland of Lautern. However, the Nanthari responsible for Landstuhl is certainly an earlier one considering that Landstuhl had already been referred to as Nannenstuhl by the year 796. It is likely that this earlier Nanthari was the same who had unlawfully taken lands from the monastery of Hornbach during the reign of Charlemagne—a damage which was reversed by Emperor Louis the Pious in the year 823.<sup>1002</sup> Although the origins of Landstuhl and its castle Nanstein remain murky, the castle was referred to as *Nannenstein* by Emperor Henry VI during his stay at the site on 21 May 1189.<sup>1003</sup> The castle was also the place of issue for a charter involving Heinrich I von Lautern on 21 March 1190,<sup>1004</sup> in which an Albertus de Nannenstein was also mentioned—a vassal of Heinrich’s fellow

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<sup>998</sup> Martin Dolch, Jürgen Keddigkeit, and Stefan Ulrich, “Nanstein,” in *Pfälzisches Burgenlexikon*, ed. Jürgen Keddigkeit, Ulrich Burkhart, and Rolf Übel, 3rd ed., vol. 3 I-N, 4 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 12.3 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, n.d.), 646–61. P. 647.

<sup>999</sup> Kraft, “Das Reichsland von Kaiserslautern.” P. 79.

<sup>1000</sup> Keddigkeit and Werling, “Münsterdreisen, St. Saturninus, Frauengemeinschaft, später (Regular-) Kanonikerstift, dann Prämonstratenserabtei.” P. 131.

<sup>1001</sup> Kraft, “Das Reichsland von Kaiserslautern.” P. 79.

<sup>1002</sup> Ibid. P. 80.

<sup>1003</sup> Ibid. P. 80.

<sup>1004</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. P. 68. Also catalogued as Charter ID 10767 in the graph database.

imperial ministerialis, Werner II von Bolanden. Over the following 63 years, the castle was administered by vassals of the powerful von Bolanden family until Wirich I von Daun assumed the mantle as of Lord of Nanstein in 1253. He was presumably enfeoffed with castle Nanstein by the German King William of Holland for having served as a marshal during his reign.<sup>1005</sup> Regarding castle Nanstein's role in the CITADEL project, the fact that Emperor Henry VI stayed at castle Nanstein in 1189 is particularly noteworthy as it can be determined that it was a way station on the *via regia* leading to and from the Palace of Lautern. Additionally, it can be assumed that the site was large enough to host an emperor and at least a portion of his entourage. This does not necessarily mean that the emperor and his entourage had stayed overnight at the castle, as it is only 17 kilometers from the palace in Lautern and 11 kilometers from Castle Hohenecken—well within the 30 kilometer riding distance normally achieved in one day.

The castle changed hands throughout the 13<sup>th</sup> and 15<sup>th</sup> centuries, in which different portions were mortgaged to the von Daun, von Leiningen, von Lewenstein, von Simmern, von Sponheim, and von Veldenz families before falling into the hands of Franz von Sickingen by way of his father, Schweikard, the grand court master of the Electorate of the Rhine. The site was transformed into a formidable fortress by Franz beginning in 1518,<sup>1006</sup> though was destroyed by an imperial coalition in 1523 led by the Archbishop of Trier, the Landgrave Philipp von Hessen, and the Prince Elector of the Rhine Ludwig V, as an answer to Franz's failed military campaign against Trier.<sup>1007</sup> The siege and destruction the Castle Nanstein resulted in the loss of the medieval elements with the exception of a few rock chambers and a portion of the shield wall.<sup>1008</sup> For this reason, the function of the castle at the turn of the 13<sup>th</sup> century is more reliably determined based upon the existing written documentation, than its meager medieval remains. The site was certainly different than that of Castle Hohenecken, considering that the overseer of Castle Nanstein in the 12<sup>th</sup> century was a vassal of an imperial ministerialis, whereas the overseer of Castle Hohenecken was an imperial ministerialis himself. Therefore, the medieval signal would have reflected the ambitions of the von Bolanden family, from whom their ministeriales piggy-backed the success of their ministerialis superiors—as described in Section 2.4.2 regarding CST. These lower ministeriales serving the imperial ministeriales von Bolanden, are similar to the von Wilenstein family and their service to the

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<sup>1005</sup> Dolch, Keddigkeit, and Ulrich, "Nanstein." P. 647.

<sup>1006</sup> *Ibid.* Pp. 653-654.

<sup>1007</sup> *Ibid.* P. 647-651.

<sup>1008</sup> *Ibid.* P. 653.

monastery of Hornbach and the Counts of Saarwerden. Their roughly equal status as lower-level ministeriales is substantiated by later marriages between the von Wilenstein family and those serving in Castle Nanstein at another's behest. However, its position along the *via regia* and on the border of the Reichsland according to the 1357 description indicates that it could originally have been used as an outpost or served a more militaristic purpose considering that it was closer to the border of the Reichsland and near the counties of the Saar. The Counts of Saarbrücken had been regional adversaries of Emperor Frederick I's Reichsland policies during the mid-12<sup>th</sup> century when Frederick destroyed the castle of Saarbrücken and other castles within the Saarland.<sup>1009</sup> However, the counts were later incorporated into the designs of the Hohenstaufen strategies in which they took a leading role in the administration of the southwest and western portions of the Reichsland of Lautern by the turn of the 13<sup>th</sup> century.<sup>1010</sup>

Following Castle Nanstein's destruction in 1523, the sons of Franz von Sickingen rebuilt the castle in a Renaissance style during the years 1542 to 1570<sup>1011</sup>—the same time that Castle Hohenecken and the palace in Lautern were renovated in similar styles. Castle Nanstein's story intertwines with Castle Perlenberg's at this point as 1542 was the same year as the first documented mention of Castle Perlenberg.<sup>1012</sup> The territory of Nanstein bordered those of the Teutonic Knight Commandry at Einsiedel and the city of Kaiserslautern for which a large border stone with the von Sickingen crest was placed by the sons of Franz von Sickingen around the same time as the reconstruction of the castle (Figure 16). Although Castle Nanstein was not destroyed in the 30 Year's War, its territory was plundered and economically ruined. The outer defenses that had been rebuilt during the 16<sup>th</sup> century construction efforts were later demolished by the Prince Elector of the Rhine Karl Ludwig in 1668 during his war with Duke Charles III of Lorraine<sup>1013</sup>—the same war in which the Prince Elector also demolished the outer walls of Castle Hohenecken.<sup>1014</sup> The lordship of the von Sickingen family over castle Nanstein and its associated lands continued until they were forced to sell the site as an item of French National Heritage in 1804 during the Napoleonic Wars.<sup>1015</sup>

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<sup>1009</sup> Hess-Gotthold, *Hausmacht Und Politik Friedrich Barbarossas Im Raum Des Heutigen Pfälzer Waldes*. P. 39.

<sup>1010</sup> Ibid. Pp. 56-57.

<sup>1011</sup> Dolch, Keddigkeit, and Ulrich, "Nanstein." P. 651.

<sup>1012</sup> Keddigkeit and Barz, "Perleburg." P. 112.

<sup>1013</sup> Dolch, Keddigkeit, and Ulrich, "Nanstein." P. 651.

<sup>1014</sup> Keddigkeit and Losse, "Hohenecken." P. 383.

<sup>1015</sup> Dolch, Keddigkeit, and Ulrich, "Nanstein." P. 652.



Figure 16: Border stone marking the extent of the Territory of the Lords of Nanstein.

### 3.5.4 Castle Wartenberg

Castle Wartenberg is located within the former Reichsland, 12 kilometers to the north of Kaiserslautern (Figure 15) near the town of Winnweiler at the base of the Donnersberg. Construction presumably began in the mid-12<sup>th</sup> century under Odalricus von Wartenberg—the father of Merbodo I von Beilstein. Merbodo I's son, Heinrich I von Wartenberg accompanied Emperor Henry VI in his Italian campaign of 1195 and received properties in Osthofen located between Alzey and Worms for his services.<sup>1016</sup> He was therefore a colleague of Heinrich I von Lautern during the campaign, indicating a similar career trajectory between the von Beilstein-Wartenberg and von Lautern-Hoheneck families at an early stage. At the turn of the 13<sup>th</sup> century, the von Wartenberg family received numerous enfeoffments of villages and forest rights within the Waltmark, which were later transferred to the Abbey of Otterberg towards the mid-13<sup>th</sup> century, as described in the Section 3.2.2 about the ministeriales von Beilstein. The many sons of Merbodo I von Beilstein were involved in the regional politics of the Reichsland and the diocese of Worms, bearing a striking similarity to the von Lautern-Hoheneck family on precisely these levels—including the presence of a family castle in the Reichsland. It is likely that the family resided in castle Wartenberg and the Rittersberg near the Palace of Lautern until the reconstruction of Castle Beilstein.

In the early 14<sup>th</sup> century, castle Wartenberg was expanded due to the large numbers of families with partial ownership of the site as a result of its proximity to the roadways transecting the Reichsland.<sup>1017</sup> During the conflict between the Bishop of Speyer and the Prince elector of the Palatinate in the 1370s, the loyalists of the bishop from Castles Dirmstein and Montfort used Castle Wartenberg as a base of operations after wringing it from the hands of the Prince Elector. The belligerents routinely sacked properties in the cities of Oppenheim, Gau-Odernheim, Ingelheim, and Kaiserslautern from this position during the feud.<sup>1018</sup> The success of Adolf I von Nassau-Wiesbaden-Idstein in his election as the new Archbishop of Mainz, having previously occupied the seat as Bishop of Speyer, was due to the support of his loyalists, including Friedrich von Beilstein.<sup>1019</sup> Friedrich was likely the grandson of Merbodo IV, and was the father of Siegfried von

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<sup>1016</sup> Dolch and Welz, "Wartenberg I." P. 215.

<sup>1017</sup> Ibid. P. 216.

<sup>1018</sup> Ibid. P. 217.

<sup>1019</sup> Friedrich appeared alongside the bishop six times between 26 September 1376 and 4 June 1382. Würzburg, Staatsarchiv Mainzer Ingrossaturbücher, "MIB 9 Fol. 033 [05]"; Würzburg, Staatsarchiv Mainzer Ingrossaturbücher, "MIB 9 Fol. 194v [02]," Die Regesten der Mainzer Erzbischöfe, accessed September 10, 2020, <http://www.ingrossaturbuecher.de/id/source/2585>; Würzburg, Staatsarchiv Mainzer Ingrossaturbücher, "MIB 9 Fol. 219v [03]," Die Regesten der Mainzer Erzbischöfe, accessed September 10, 2020,

Lautern<sup>1020</sup>—the provost of the monastery in Lautern during the late 14<sup>th</sup> century. Siegfried had served as provost under the name Siegfried II from the years 1360 until 1366, after which he was succeeded by Peter von Montfort.<sup>1021</sup>

Castle Wartenberg continued as home to many of the more prominent families of the Palatinate including members of the von Breidenborn and von Leiningen families. The von Wartenberg family allied themselves tightly to the will of the von Leiningen family who remained the strongest counter-balance to the Prince Elector in Heidelberg throughout the end of the 14<sup>th</sup> and most of the 15<sup>th</sup> centuries.<sup>1022</sup> The inhabitants of castle Wartenberg returned to attacking citizens of the empire from 1496-1498 during the feud between Hans von Oberstein and the imperial city of Weissenburg. However, not all of the inhabitants of the castle approved of the involvement of the von Wartenberg family in the various feuds between von Leiningen loyalists and the various princes along the Rhine River, without compensation for potential defensive building measures. The influence of Castle Wartenberg and its subsequent opening to various local lords came to a bitter end when Franz von Sickingen was favorably received at the castle in 1522, drawing the ire of the alliance of the Archbishop of Trier, the Prince Elector of the Rhine, and the Landgrave of Hessen. The three princes conquered castle Wartenberg in December of 1522 and destroyed it on their way to deliver judgement upon Castle Nanstein located in Landstuhl, which had served as a key base of Franz von Sickingen's rebellious operations. Over the course of the following decades, the owners of Castle Wartenberg sold their properties at the site before ultimately abandoning it, after which it was never rebuilt.<sup>1023</sup>

The destruction of the castle was rather substantial and the ruins were largely removed over the last centuries resulting in a site with almost no evidence to any of its former architectural elements. The only information regarding structures within the castle are found in 14<sup>th</sup> and 15<sup>th</sup> century documents that mention the presence of a chapel, cistern, and fortifications. The castle

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<http://www.ingrossaturbuecher.de/id/source/3005>; Würzburg, Staatsarchiv Mainzer Ingrossaturbücher, "MIB 10 Fol. 003v [01]," Die Regesten der Mainzer Erzbischöfe, accessed September 10, 2020, <http://www.ingrossaturbuecher.de/id/source/2049>; Würzburg, Staatsarchiv Mainzer Ingrossaturbücher, "MIB 10 Fol. 031 [03]," Die Regesten der Mainzer Erzbischöfe, 031, accessed September 10, 2020, <http://www.ingrossaturbuecher.de/id/source/2096>; *ibid.* Also catalogued as Charter IDs 10471, 10473, 10474, 10478, 10480, and 10479 in the graph database (respectively).

<sup>1020</sup> Würzburg, Staatsarchiv Mainzer Ingrossaturbücher, "MIB 10 Fol. 003v [01]." Also catalogued as Charter ID 10478 in the graph database.

<sup>1021</sup> Keddigkeit, Wenz, and Untermann, "Kaiserslautern, St. Maria Hospital, später Premonstratenserstift bzw. -kloster, dann Kollegiatstift St. Marien und St. Martin." P. 378.

<sup>1022</sup> Dolch and Welz, "Wartenberg I." Pp. 220-221.

<sup>1023</sup> *Ibid.* Pp. 222-223.



featured a ditch to its east over which a bridge of some sort had been presumably built—much in the same fashion as castles Beilstein, Hohenecken, and Wilenstein. In general, the only information that can be gleaned from the site is that it had been divided into an upper ward and a lower ward at the spur end of a 324 meter high mountain, with approximate dimensions of 40 x 25 meters.<sup>1024</sup>

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<sup>1024</sup> Ibid. Pp. 214, 226-228.

### 3.5.5 Castle Randeck (Palatinate)

Castle Randeck is located near the commune of Mannweiler-Cölln northwest of the Donnersberg (Figure 15), and south of Bad Kreuznach. The first to name themselves after the site was Heinrich von Randeck—the nephew of Merbodo I von Beilstein and potentially grandson of Odalricus von Wartenberg. His father was never mentioned in any of the charters that were gathered for this project, instead appearing only as the nephew of Merbodo I, in which he was mentioned alongside Merbodo’s sons. This suggests that Merbodo treated him equally amongst his sons indicating that he had been entrusted into his care as an orphan or as simply a nephew appearing alongside his uncle. In any event, he belonged to an elite group of ministeriales at the palace in Lautern through which he eventually received a position in the entourage of King Philip of Swabia by 1207. The first documented mention of Castle Randeck occurred in an enfeoffment from the year 1401 by King Ruprecht I, in which Konrad III von Randeck was given the Castles Randeck and Beilstein. However, castle Randeck is presumed to have been built during the last decade of the 12<sup>th</sup> century according to Martin Dolch and Stefan Ulrich.<sup>1025</sup> The family von Randeck constituted one of the more successful regional ministeriales families indicated by their numerous appearances alongside influential counts and princes including: the counts of Hohenfels, Leiningen, Saarbrücken, Sponheim, Veldenz, Zweibrücken, the Raugraves, and the Rhinegraves; the prince electors from Cologne, Heidelberg, Mainz, and Trier; the bishoprics of Speyer and Worms; the abbey of Fulda and the monastery of Hornbach.<sup>1026</sup> These alliances began in the mid-13<sup>th</sup> century and continued until the end of the 15<sup>th</sup> century. However, the early 14<sup>th</sup> century marked the golden age of the family in which they were able to expand the site and incorporate more inhabitants. The southern slopes of the hill upon which the castle was built even included vineyards,<sup>1027</sup> which had also been laid near Castle Beilstein; for which a Hesso von Randeck was enfeoffed in 1380.<sup>1028</sup>

Castle Randeck continued unharmed—with the exception of the brief takeover by the von Montfort belligerents—until the War of Palatinate Succession having survived both the Peasants’ Revolt and the 30 Years War. During the war of succession, the French captured the castle because

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<sup>1025</sup> Martin Dolch and Stefan Ulrich, “Randeck,” in *Pfälzisches Burgenlexikon*, ed. Jürgen Keddigkeit, Ulrich Burkhardt, and Rolf Übel, 1st ed., vol. 4.1 O-Sp, 4 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 12.4.1 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2007), 198–206. P. 199.

<sup>1026</sup> Ibid. P. 200.

<sup>1027</sup> Ibid. P. 201.

<sup>1028</sup> Mötsch, *Regesten des Archivs der Grafen von Sponheim 1065-1437*, 1988. P. 175.

it had been used as an outpost for the defenders of the Palatinate, facilitated by the large round tower that still commanded the surrounding landscape. In February 1690, the French soldiers stormed the castle and the structures were detonated from within. The remains of the castle passed through various owners, including the Teutonic Knights, until it was sold to private owners in 1844 who subsequently sold the materials still at the site for profit.<sup>1029</sup> Only the foundations of the castle still remain, featuring two general structures: an outer ward and inner ward. The entire area resembles an oval of 90 meters in length with the base of the round tower at the heart of the inner ward.<sup>1030</sup>

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<sup>1029</sup> Dolch and Ulrich, "Randeck." P. 203.

<sup>1030</sup> Ibid. Pp. 203-204.

### 3.5.6 Castle Lewenstein

Castle Lewenstein (also known as Löwenstein) is located near the village of Niedermoschel, equidistant from castle Montfort to the north and castle Randeck to the south (Figure 15). The castle is presumed to have been built to protect the nearby ore mines, though the claim is unsubstantiated. The first to bear the name Lewenstein was a ministerialis called Emmerich I von Lewenstein who appeared in charter regarding Werner Kolb von Wartenberg's desperate sale of lands to the Abbey of Otterberg on 18 May 1227, described in depth in Section 3.2.2. His sons, Emmerich II and Wolfram later served the Archbishop of Mainz, Siegfried III von Eppstein in 1238 during his war with the Count Palatine Otto II von Wittelsbach, though it is unknown in which capacity they had served his Eminence.<sup>1031</sup> Their service in the commission of the Archbishop is particularly relevant for the explanation of the regional struggle between the von Lautern-Hoheneck and von Beilstein families because they served an enemy of Landolf von Lautern-Hoheneck, bishop of Worms. The open conflict that ensued between the loyalists of the Hohenstaufen dynasty and of the ecclesiastical princes acting in accordance to the pope, included knights from both the von Lautern-Hoheneck and von Beilstein families. The death of Landolf's cousin, Sigelo I, in 1242 by the men of Archbishop Siegfried III highlights what may have been a direct conflict between the two ministeriales families discussed in Sections 3.2.1 and 3.2.2. Sigelo's death occurred at the hands of a loyalist of the Archbishop of Mainz sent to detain the Archbishop of Trier. Given the regional rivalry between the von Lautern-Hoheneck family and the von Beilstein / von Lewenstein / von Randeck / von Wartenberg alliance, it is certainly possible that the latter sought to seek retribution by killing a relative of the von Lautern-Hoheneck line. However, the precise nature of the event is unspecified by the charters, reflecting only a speculative interpretation of the death of Sigelo I.

By the late 13<sup>th</sup> and early 14<sup>th</sup> centuries, the von Lewenstein family had entered the services of the Counts of Veldenz, during which time some of their relatives from the von Randeck family had moved into castle Lewenstein. They continued as loyalists of the counts until their castle was burned and destroyed during the Peasants' Revolt in 1525. Despite the various sales of portions of the ruined Castle Lewenstein throughout the remainder of the 16<sup>th</sup> century, it was never rebuilt following its destruction.<sup>1032</sup> The ruins are still visible upon the small hill plateau where it once

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<sup>1031</sup> Christian Köhler, Ulrich Burkhardt, and Stefan Ulrich, "Lewenstein," in *Pfälzisches Burgenlexikon*, ed. Jürgen Keddigkeit, Ulrich Burkhardt, and Rolf Übel, 3rd ed., vol. 3 I-N, 4 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 12.3 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, n.d.), 381–93. Pp. 382-383.

<sup>1032</sup> *Ibid.* Pp. 385-388.

stood, though only two sides of a former tower house still exist. The entire site encompasses an area of roughly 40 meters in diameter though the tower house is located at the bottom of a hill.<sup>1033</sup> The scant remains of the site indicate that was mainly residential and not readily defensible.

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<sup>1033</sup> Ibid. Pp. 391-392.

### 3.5.7 Castle Trifels

Volumes have been written regarding castle Trifels, though for this project, it will be summarized in brief, emphasizing its role during the capture of Richard the Lionheart. The castle is located to the southwest of the four primary sites, well outside of the Reichsland of Lautern, and had been an imperial castle since the early 12<sup>th</sup> century. Between the years 1113 and 1116, three imperial ministeriales by the names of Konrad, Werner, and Heinrich are recorded as having the surname *von Trifels*. The castle was used as a residence by the emperors and kings over the course of the 12<sup>th</sup> century, though the site was administrated by ministeriales—precisely as the palace in Lautern had been. The castle gained even more notoriety under the Hohenstaufen dynasty beginning with Frederick I who stayed at the castle twice between the years 1155 and 1174, while the palace in Lautern was under construction.<sup>1034</sup> As Frederick’s policy of consolidating the Reichsland of Lautern and neighboring lands within the familial estate of the Hohenstaufen dynasty continued under Henry VI, so too did the tendency of developing the area into a geographic region signaling imperial status. The multiplicity of castles and monasteries constructed during the second half of the 12<sup>th</sup> century described as a string of pearls by Werner Bremer,<sup>1035</sup> transformed the region of the German Palatinate into a built representation of the Hohenstaufen dynasty punctuated with robust castles reaching into the heavens atop cliffs of red rock.

The most notable event that took place at the castle during the Hohenstaufen dynasty was certainly the imprisonment of the English King Richard the Lionheart. His imprisonment began in December of 1192 by the Austrian Duke Leopold V, after which he was handed over to Emperor Henry VI.<sup>1036</sup> He remained under security of the emperor for just more than a year, during which he was regularly transported. His first station of imprisonment was castle Dürnstein in Lower Austria, which had been built during the 11<sup>th</sup> century and included *Kapellenerker* (chapel bay) with a rounded apsis, as is found in castle Trifels, and *pietra rasa* on its outer walls, as is found at Castle Hohenecken. Its construction was of an elite nature and signified the first of a series of stops along Richards’s path.<sup>1037</sup> The following stations included Regensburg, Ochsenfurt am Main, and Speyer

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<sup>1034</sup> Thon and Meyer, “Trifels.” P. 108.

<sup>1035</sup> Bremer, *Die Ausgrabungen an der Barbarossapfalz zu Kaiserslautern*. P. 5.

<sup>1036</sup> Knut Görlich, “Gefangnahme und Gefangenschaft Richards I. Löwenherz,” in *Richard Löwenherz: König-Ritter-Gefangener*, ed. Alexander Schubert, 1st ed. (Regensburg, Germany: Verlag Schnell und Steiner, 2018), 245–51. P. 249.

<sup>1037</sup> Joachim Zeune, “Castro Tyernstein iuxta Danubium: Die Burg Dürnstein in Niederösterreich,” in *Richard Löwenherz: König-Ritter-Gefangener*, ed. Alexander Schubert, 1st ed. (Regensburg, Germany: Verlag Schnell und Steiner, 2018), 252–54. Pp. 252-253.

before his stay at castle Trifels beginning on 1 April 1193.<sup>1038</sup> Although he only remained at Trifels until sometime mid- April, the significance of his imprisonment is noteworthy, as the castle was in the heart of the familial estate of the Hohenstaufen dynasty. The relatively strange path that King Richard was submitted to after his stay in Trifels, continued with a southward journey to the imperial palace of Hagenau, which had recently been completed and enjoyed the sojourn of the late Emperor Frederick I seven times between the years 1158 and 1189.<sup>1039</sup> The next stop was a northward journey leading back through the familial estate to the city of Worms, though the precise path is known. Provided that the Lionheart had been in Hagenau by 5 April 1193 and then in Worms by 28 May 1193—over 120 kilometers—indicates that the caravan must have stopped at various locations along the way. Although the most immediate location would have been Weissenburg, the path could have continued northward in the relatively obscured area of the southern Palatinate. Considering that the palace Lautern was positioned along the *via regia* towards Worms, it is certainly possible that this route could have been taken, even though would have added an additional 40 kilometers the journey. Nevertheless, the likelihood of this alternate path should not be dismissed, as it would fit within the agenda of Henry VI to transport Richard throughout the imperial estate at various intervals. The effect of this would make the estate seem much larger, highlighted by the castles, monasteries, and palaces along the way. This is strengthened by the fact that Richard was led southward from Worms back to Speyer by December of 1193, then back to Worms in January of 1194 until his eventual departure from Mainz in February of 1194.<sup>1040</sup>

Following Richard's release and subsequent ransom of 100,000 silver marks, Emperor Henry VI stayed at castle Trifels from the 9<sup>th</sup> until the 10<sup>th</sup> of May in 1194, shortly before his Italian campaign to conquer Sicily, alongside various bishops, dukes, counts, and members of his imperial entourage.<sup>1041</sup> Two elements of Henry VI's time in Trifels stand out: he traveled to Trifels from the Palace of Lautern and Heinrich I von Lautern was not present at Castle Trifels in May of 1194. The first is particularly interesting because Henry set out from Trifels on his campaign towards Sicily,

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<sup>1038</sup> Görich, "Gefangnahme und Gefangenschaft Richards I. Löwenherz." P. 249.

<sup>1039</sup> Thomas Biller, "Die Pfalz Hagenau," in *Richard Löwenherz: König-Ritter-Gefangener*, ed. Alexander Schubert, 1st ed. (Regensburg, Germany: Verlag Schnell und Steiner, 2018), 255–60. P. 255.

<sup>1040</sup> Görich, "Gefangnahme und Gefangenschaft Richards I. Löwenherz." P. 249. This refers only to the locations and date of Richard's journey.

<sup>1041</sup> Böhmer, *Die Regesten des Kaiserreiches unter Heinrich VI 1165(1190)-1197*. Pp. 141-143. Also catalogued as Charter IDs 10054, 10055, and 10056 in the graph database.

though he first spent time in Lautern on 6 May 1194.<sup>1042</sup> Upon defeating the Normans in Sicily, he returned to Lautern for nearly two months from 31 July 1195 until 25 September 1195.<sup>1043</sup> The fact that he spent two months during the summer of 1195 is fascinating, considering that only four charters were issued during that time. This suggests that his time was spent partaking in other activities as a form of relaxation following the victory in Sicily. That Lautern was chosen for this period stresses the fact that the emperor and his entourage revered the forestae belonging to the palace, as the pastime of the elite consisted of outdoor activities as described in Section 3.3.1.3 regarding Frederick I. The exclusion of Heinrich I von Lautern at castle Trifels in May of 1194 is rather peculiar considering that his was the imperial cupbearer and one of the closest advisors—if not *the* closest advisor—of the emperor. His absence occurred between the months of April and September, in which he appeared alongside the emperor in Worms<sup>1044</sup> and the war camp outside of Salerno<sup>1045</sup> (respectively). Each time he appeared as cupbearer, though he was also referred to as the imperial envoy and legate during the same year.<sup>1046</sup> Therefore, it is entirely possible that Heinrich I von Lautern had been entrusted with the deportation of King Richard and delivery of the ransom money. After the ransom had increased to 150,000 silver marks following the cancellation of the English fleet in July of 1193,<sup>1047</sup> only a trusted loyalist could have overseen the transfer of a sum of that magnitude. This is substantiated by the fact that Emperor Henry VI had sent his legates alongside those of King Richard to London to receive the funds. The delivery of the silver was accomplished under guidance of an unnamed imperial legate, accompanied by none other than Richard’s own mother, Eleanor of Aquitaine.<sup>1048</sup>

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<sup>1042</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. Pp. 85-86. Also catalogued as Charter ID 10842 in the graph database.

<sup>1043</sup> Ibid. Pp. 88-89. Also catalogued as Charter IDs 10852, 10853, 10854, and 10855 in the graph database.

<sup>1044</sup> Ibid. P. 85. Also catalogued as Charter ID 10841 in the graph database.

<sup>1045</sup> Ibid. P. 86. Also catalogued as Charter ID 10843 in the graph database.

<sup>1046</sup> Ibid. P. 85. Also catalogued as Charter ID 10839 in the graph database. Akademie der Wissenschaften und der Literatur, Mainz, “RI IV,3 n. D713, Heinrich VI., (1194—1197),” *Regesta Imperii Online*, accessed September 10, 2020, [http://www.regesta-imperii.de/id/1194-00-00\\_21\\_0\\_4\\_3\\_1\\_810\\_D713](http://www.regesta-imperii.de/id/1194-00-00_21_0_4_3_1_810_D713). Also catalogued as Charter ID 10496 in the graph database.

<sup>1047</sup> Richard Engl, “Mit dem Lösegeld finanziert: Kaiser Heinrich VI. erobert das Königreich Sizilien,” in *Richard Löwenherz: König-Ritter-Gefangener*, ed. Alexander Schubert, 1st ed. (Regensburg, Germany: Verlag Schnell und Steiner, 2018), 280–81. P. 280.

<sup>1048</sup> Janis Witowski, “Die teuer erkaufte Freiheit: Das Lösegeld für Richard I. Löwenherz,” in *Richard Löwenherz: König-Ritter-Gefangener*, ed. Alexander Schubert, 1st ed. (Regensburg, Germany: Verlag Schnell und Steiner, 2018), 282–83. Pp. 282-283.



The imprisonment of King Richard in Castle Trifels and his subsequent journey throughout the familial estate of the Hohenstaufen dynasty brought the ministeriales of Lautern in close contact to one of the major events of the mid-1190s. The involvement of Heinrich I von Lautern in the delivery of the ransom money is substantiated by his lack of an appearance at Trifels during the initiation of the campaign against Sicily, his position as imperial legate, and the fact that an imperial legate led the delivery into the empire. The dependability of the von Lautern-Hoheneck family even extended to Heinrich I's great-nephew, Reinhard III von Lautern-Hoheneck, as he was entrusted with the protection of the imperial regalia in castle Trifels from 1269 until 1273.<sup>1049</sup> This indicates a clear example of an employer (the German monarchs) rewarding the observable trait that the family was very trustworthy. However, the reward was not limited to political commissions alone, as will be discussed in Chapter 4.

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<sup>1049</sup> Thon and Meyer, "Trifels." Pp. 110-111. This refers only to Reinhard III and the years of his commission of the imperial regalia.

### 3.6 Summary

The historical investigation presented in this chapter serves to lay the contextual foundation regarding the political and economic proceedings of the ministeriales that affected the construction of their castles and demonstration of status. The chapter was initiated with a discussion of the criteria for the selection of the four primary sites as well as the 12 additional sites partitioned into two groups based upon their association with the ecclesiastical and secular realms. The chapter continued with detailed descriptions of the ministeriales families von Lautern-Hoheneck and von Beilstein, effectively continuing from the end of Section 2.3.3.2 regarding the general development of the ministeriales until the reign of Emperor Frederick I. This served to provide an acute focus into the actual proceedings and involvement of specific ministeriales in the administration of the royal estate and activity in the royal and imperial entourages. The following sections discussed the history of the four primary sites, emphasizing previous archaeological investigations and the main first-hand historical accounts of the buildings. The sections regarding the secondary and tertiary sites were much briefer in scope and lack the specificities found in the descriptions of the primary sites, as their purpose was to provide regional context pertaining to auxiliary activities of the two ministeriales families outside of the Reichsland of Lautern, yet still significant to mention. This established a comprehensive exploration of their social network and involvement in other castles of the Reichsland, underlining their achievements in expanding their influence in both the ecclesiastical and secular realms. The chapter is essential in understanding the larger stratagem of the ministerialis families to solidify their status by tethering themselves to the reigning monarchs and the development of the royal estate.

## 4 Architectural Investigation

The construction of castles built from red sandstone in the iconic embossed ashlar style, symbolic of the Hohenstaufen reign, established a lasting architectural presence in the area. However, the precise function over time of these castles during the development of the region around the Palace of Lautern remains largely speculative,<sup>1050</sup> requiring a new analysis into their historical context, the architecture of the physical ruins, and the surrounding landscape. The necessity of this process was excellently explained by Oliver Auge in Rank, Volume One:

*'Another thing that complicates matters for cultural historians attempting to make the fullest possible use of the archives is the fact that a meaningful interpretation of the archival holdings will normally also require the investigation of sources that go beyond the (administrative) records kept in the archives, e.g. historiography, objects and monuments.'*<sup>1051</sup>

This chapter concerns the architectural investigation of the four primary castles via the application of a 3D modeling methodology comprised of two digital recording techniques: *Structure from Motion* (SfM) photogrammetry and *Terrestrial Laser Scanning* (TLS). Both were used in order to record the current state of the architecture of all four primary sites, generating precisely measured 3D models with a high color fidelity in order to analyze, interpret, and digitally conserve these four cultural heritage sites.<sup>1052</sup> Various publications over the past 16 years have employed digital methodologies and the associated techniques presented in this project for the study of medieval castles.<sup>1053</sup> The key information regarding the architectural and construction history of the sites—

<sup>1050</sup> Rödel, "Der Lautrer Reichsgutkomplex: Eine Zwischenbilanz." P. 416.

<sup>1051</sup> Oliver Auge, "Research on the Ecclesiastical Princes in the Later Middle Ages: State-of-the-Art and Perspectives," in *Princely Rank in Late Medieval Europe: Trodden Paths and Promising Avenues*, ed. Thorsten Huthwelker and Jörg Peltzer, vol. 1, 5 vols., RANK. Politisch-Soziale Ordnungen Im Mittelalterlichen Europa (Ostfildern: Thorbecke Verlag, 2011), 71–96. P. 82.

<sup>1052</sup> Philip Sapirstein, "A High-Precision Photogrammetric Recording System for Small Artifacts," *Journal of Cultural Heritage* 31 (May 2018): 33–45, <https://doi.org/10.1016/j.culher.2017.10.011>. P. 1. Deepali G Chaudhary, Ramdas D Gore, and Bharti W Gawali, "Inspection of 3D Modeling Techniques for Digitization," *International Journal of Computer Science and Information Security (IJCSIS)* 16, no. 2 (2018): 8–20. P. 8.

<sup>1053</sup> Th Kersten, C Acevedo Pardo, and M Lindstaedt, "3D Acquisition, Modelling and Visualization of North German Castles by Digital Architectural Photogrammetry," *20th Congress of The International Archives of Photogrammetry, Remote Sensing and Spatial Information Sciences, in Istanbul* 35, no. Commission 5, Part B2 (2004): 126–32; Lorenzo Gonzo et al., "Photo-Realistic 3D Reconstruction of Castles with Multiple-Sources Image-Based Techniques," in *Proceedings of ISPRS XXth Congress*. (ISPRS XXth Congress., Istanbul, 2004), 8; Sabry El-Hakim et al., "A Hierarchical 3D Reconstruction Approach for Documenting Complex Heritage Sites," *CIPA 2005 XX International Symposium*, 2005, 6; Pierre Drap et al.,

including their building phases—are deduced from the sites themselves with the assistance of the 3D models. Although a digital methodology was employed at these sites, the ethos regarding the objective of an architectural investigation (*Bauuntersuchung*) remains the same. The following statement by Johannes Cramer captures the essentials of a *Bauuntersuchung*, focusing upon comprehensiveness, retrospection, and the identification of the individual components within the architecture of a building:

*‘The goal of a comprehensive architectural investigation of a building is the total clarification of all of its building phases, so that a retrospective explanation of the individual components can result in a complete description of the entire fate of the building.’*<sup>1054</sup>

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“Photogrammetry and Archaeological Knowledge: Toward a 3D Information System Dedicated to Medieval Archaeology: A Case Study of Shawbak Castle in Jordan,” in *3D ARCH 2007*, 2007, 1–8; Grussenmeyer et al., “Comparison Methods of Terrestrial Laser Scanning, Photogrammetry and Tacheometry Data for Recording of Cultural Heritage Buildings”; Hannes Püschel, Martin Sauerbier, and Henri Eisenbeiss, “A 3D Model of Castle Landenberg (CH) from Combined Photogrammetric Processing of Terrestrial and UAV-Based Images,” *The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, Beijing 37, no. Part B6b (2008): 93–98, [https://www.isprs.org/proceedings/XXXVII/congress/6b\\_pdf/16.pdf](https://www.isprs.org/proceedings/XXXVII/congress/6b_pdf/16.pdf); Pierre Drap et al., “An Information System for Medieval Archaeology Based on Photogrammetry and Archaeological Database: The Shawbak Castle Project,” in *Progress in Cultural Heritage Preservation*, ed. Marinos Ioannides et al., vol. 7616 (Berlin, Heidelberg: Springer Berlin Heidelberg, 2012), 119–28, [https://doi.org/10.1007/978-3-642-34234-9\\_12](https://doi.org/10.1007/978-3-642-34234-9_12); G. Vacca et al., “Laser Scanner Survey to Cultural Heritage Conservation and Restoration,” *ISPRS - International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences* XXXIX-B5 (July 30, 2012): 589–94, <https://doi.org/10.5194/isprsarchives-XXXIX-B5-589-2012>; Markus Forbriger et al., “Der „Gesprengte Turm“ am Heidelberger Schloss Untersuchung Eines Kulturdenkmals Mithilfe Hoch Auflösender Errestrischer Laserscans,” *Denkmalpflege in Baden-Württemberg-Nachrichtenblatt Der Landesdenkmalpflege* 3 (2013): 165–68; Susie Green, Andrew Bevan, and Michael Shapland, “A Comparative Assessment of Structure from Motion Methods for Archaeological Research,” *Journal of Archaeological Science* 46 (June 2014): 173–81, <https://doi.org/10.1016/j.jas.2014.02.030>; B. Bayram et al., “Comparison Of Laser Scanning And Photogrammetry And Their Use For Digital Recording Of Cultural Monument Case Study: Byzantine Land Walls-Istanbul,” *ISPRS Annals of Photogrammetry, Remote Sensing and Spatial Information Sciences* II-5/W3 (August 11, 2015): 17–24, <https://doi.org/10.5194/isprsannals-II-5-W3-17-2015>; Pattee, “Integrative 3D Recording Methods of Historic Architecture: Burg Hohenecken from Southwest Germany”; V. A. Girelli et al., “Integration of Geomatics Techniques for Digitizing Highly Relevant Geological and Cultural Heritage Sites: The Case of San Leo (Italy),” *ISPRS - International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences* XLII-2/W5 (August 18, 2017): 281–86, <https://doi.org/10.5194/isprs-archives-XLII-2-W5-281-2017>; M. Koehl, Y. Courtois, and S. Guillemin, “3D Recording and Modelling Of Middle-Age Fortress in Dense Vegetation Environment,” *ISPRS - International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences* XLII-2/W5 (August 18, 2017): 415–20, <https://doi.org/10.5194/isprs-archives-XLII-2-W5-415-2017>; A. Luczfalvy Jancsó et al., “Multiple Uses of a 3D Point Cloud: The Castle Of Franchimont (Province Of Liège, Belgium),” *ISPRS - International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences* XLII-2/W5 (August 21, 2017): 475–81, <https://doi.org/10.5194/isprs-archives-XLII-2-W5-475-2017>; Pavel Tobiáš, Jiří Cajthaml, and Jiří Krejčí, “Rapid Reconstruction of Historical Urban Landscape: The Surroundings of Czech Chateaux and Castles,” *Journal of Cultural Heritage* 30 (March 2018): 1–9, <https://doi.org/10.1016/j.culher.2017.09.020>; Enrique Valero, Frédéric Bosché, and Alan Forster, “Automatic Segmentation of 3D Point Clouds of Rubble Masonry Walls, and Its Application to Building Surveying, Repair and Maintenance,” *Automation in Construction* 96 (2018): 29–39, <https://doi.org/10.1016/j.autcon.2018.08.018>.

<sup>1054</sup> Johannes Cramer, *Handbuch der Bauaufnahme: Aufmaß und Befund*, 2nd ed. (Stuttgart: Deutsche Verlags-Anstalt GmbH, 1984). P. 116. Translated from the German by Pattee. The original text is as follows: *„Das Ziel einer umfassenden Bauuntersuchung ist die vollständige Klärung aller Umbauphasen eines Gebäudes, so daß durch die rückwärts gewandte Beschreibung der einzelnen Maßnahmen zum Schluß das komplette Bauschicksal eines Hauses beschrieben werden kann.“*

The path toward achieving comprehensiveness is dependent upon the integrity of the site, the documented source material, and the type of methodologies and associated techniques used in recording and investigating the site. All three factors are subject to change over time, and a strictly formulated universal approach towards investigating buildings does not exist.<sup>1055</sup> However, any investigation must begin with a visit to the site for a preliminary inspection of its various architectural features, its position within the landscape, and its use of space. Emerging methodologies, even the 3D methodology presented in this chapter, cannot replace the inspection of a site in person.<sup>1056</sup> This point cannot be stressed enough as the role of the archaeologist or architectural investigator is to interpret and draw new conclusions of a site based upon evidence from an on-site investigation. The implementation of 3D models, scans, photos, drawings, and other recordings can certainly assist in this process, but cannot replace the investigator, as studying and interpreting an object is directly correlated with the time spent with it. Simply analyzing scans or photos and not analyzing the object in person—particularly in the case of architecture—will result in a superficial interpretation based upon a disoriented approach. This aspect is essential in evaluating the various aspects of integrity as described in Section 1.1.2, especially the integrity of feeling at a site. Inspecting every aspect of a site in person helps structure the site in one’s mind, allowing one to follow an organized sequence based upon experiences made in person.<sup>1057</sup> This mentality should not be viewed as a hindrance towards adopting emerging methodologies or using 3D models to confirm findings at a later time when not on-site. Rather, pairing the on-site inspections with the adaptation of emerging digital methodologies adds an element of flexibility and increases both the accuracy and precision of the recording and the ensuing documentations. The advantages of this integrative approach are numerous, though its efficacy is dependent upon the implementation and quality of the particular techniques employed. The 3D models simply augment the investigation by replacing the lengthy process of archaeological illustration, which can lead to dimensional errors and a substantial disadvantage when analyzing certain features in relation to the overall structure.

The tradition and practice of archaeological illustration for construction research was a necessary process prior to the advent of more modern techniques such as SfM and TLS, in order provide archaeologists and art historians with scaled depictions of the stones and mortar composing the walls of a site. The prevalence of this practice even in the midst of emerging digital

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<sup>1055</sup> Ibid. P. 131. This is in reference to the second half of the sentence.

<sup>1056</sup> Grossmann, *Einführung in die historische und kunsthistorische Bauforschung*. P. 59.

<sup>1057</sup> Ibid. P. 59.

methodologies speaks to its beneficial effect upon the interpretations made by the researchers. On the one hand, the intimate nature of spending days with a single wall increases the probability of noticing elements that could be easily missed if one did not take the time to investigate each stone. Uncertain elements within the walls of the castles including masonry seams, mason marks covered with mortar, and the differentiation between nail-holes and knot-holes in woodwork cannot readily be determined by a 3D model alone.<sup>1058</sup> On the other hand, drawing the stones on millimeter paper and scaling the drawing adds an implicit layer of interpretation due to the effect of selecting certain elements which the investigator wishes to highlight or reject in the drawing. In contrast, a properly calibrated SfM or TLS model can result in a densely populated point cloud of precisely measured data that is not subject to a stone-by-stone human interpretation during the recording stage. Additionally, an entire castle can be recorded in this manner in a matter of hours,<sup>1059</sup> rather than spending weeks illustrating each individual wall with a physically-placed raster system. It should also be noted that physical raster systems needed for drawing walls by hand often involve hammering nails into the masonry or mortar seams in order to connect the cords composing the raster. This is an inherently invasive process that can result in damaging fragile components such as loose mortar, plaster remnants, or eroding sandstone—all of which exist at the four primary sites.

This chapter presents the benefit of employing the emerging method of first capturing hundreds of photos, generating a high-resolution 3D model based upon the photos, and then analyzing each element of the walls using scaled prints from the computer-generated models. Both the advantages and disadvantages of the digital techniques associated with 3D methodologies are explored with regard to the experience of recording and documenting the four primary sites. However, this project does not presume to have initiated the use of 3D models in architectural investigations. It is worth readdressing the reasoning behind the application of emerging technologies in this project: to identify new conclusions at the intersection of various digital methodologies, rather than presenting each methodology as entirely novel.

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<sup>1058</sup> Ibid. P. 75. Grossmann makes an excellent point here as both the texture and mesh of a 3D model cannot present indisputable evidence for the examples he provided.

<sup>1059</sup> Pattee, "Integrative 3D Recording Methods of Historic Architecture: Burg Hohenecken from Southwest Germany." P. 132. During this investigation, 22 scan positions were recorded in roughly nine hours.

## 4.1 The 3D Modeling Techniques

The implementation of digital 3D modeling techniques in archaeological investigations has increasingly gained popularity.<sup>1060</sup> TLS and photogrammetry have been established as two of the most dominant methodologies, though the latter has experienced an upsurge with the development of SfM.<sup>1061</sup> Recent investigations of archaeological sites around the world have garnered promising results with the application of SfM in revolutionizing the process whereby researchers can efficiently and precisely record objects varying from Greek temples, to Mayan cities, to medieval castles, and even small museum artifacts.<sup>1062</sup> My master's thesis provides a more detailed comparison of the two techniques and their application.<sup>1063</sup> The potential that these become staples in the repertoire of techniques employed in the fields of archaeology and architectural art history is already underway as the development of multi-dimensional recordings and reproductions of excavated structures has the potential to bridge the gap between *in* and *ex situ* preservation efforts. The prevailing practice of producing 2D representations of objects from a site—without a 3D recording—results in an absence of environmental context because the excavation sites and the surrounding areas are often not recorded, rendering the representations less suitable for later analyses and interpretations. This is particularly troublesome because excavations—and in this case, construction research—require highly detailed recordings (photos, 3D models, etc.) in order to provide holistic background knowledge for future investigations. The application of SfM provides a potential solution to the rising issue of accumulating data in absence of context.<sup>1064</sup> Recent excavations have employed SfM

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<sup>1060</sup> Sapirstein, “Accurate Measurement with Photogrammetry at Large Sites.” P. 139.

<sup>1061</sup> Herzog and Lieberwirth, “Einleitung.” P. 12. Sapirstein, “Accurate Measurement with Photogrammetry at Large Sites.” P. 137.

<sup>1062</sup> Sapirstein, “A High-Precision Photogrammetric Recording System for Small Artifacts”; Sapirstein, “Accurate Measurement with Photogrammetry at Large Sites”; G. Tucci et al., “The Florence Baptistery: 3-D Survey as a Knowledge Tool for Historical and Structural Investigations,” *ISPRS - International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences* XLI-B5 (June 16, 2016): 977–84, <https://doi.org/10.5194/isprsarchives-XLI-B5-977-2016>; Pattee, “Integrative 3D Recording Methods of Historic Architecture: Burg Hohenecken from Southwest Germany”; F. Remondino et al., “UAV Photogrammetry for Mapping and 3D Modeling – Current Status and Future Perspectives,” *ISPRS - International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences* XXXVIII-1/C22 (September 6, 2012): 25–31, <https://doi.org/10.5194/isprsarchives-XXXVIII-1-C22-25-2011>.

<sup>1063</sup> Pattee, “Integrative 3D Recording Methods of Historic Architecture: Burg Hohenecken from Southwest Germany.” Pp. 106-128.

<sup>1064</sup> Jeroen De Reu et al., “Towards a Three-Dimensional Cost-Effective Registration of the Archaeological Heritage,” *Journal of Archaeological Science* 40, no. 2 (February 2013): 1108–21, <https://doi.org/10.1016/j.jas.2012.08.040>. Pp. 1108-1109.

for recording the contextual information at an excavation site to great effect, allowing researchers to analyze the excavations as well as the objects of study at a later time.<sup>1065</sup>

It is important to recall the brief description of Objective Two from Chapter 1 of this dissertation regarding the process of recording, documenting, and interpreting cultural heritage. The semantics and order of these words are essential as they refer to fundamentally different processes within construction research. The *recording* of an object is simply its representation absent any annotations or analyses. The *documentation* of an object is the on-site investigation and annotation of the recordings, and the introduction of mid-range questions regarding the utilitarian and representative functions of individual architectural components. The *interpretation* of a site is the comprehensive analysis of the site's function based upon the aggregation of the results from the documentation paired with the historical and geo-spatial context.

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<sup>1065</sup> Jochen Reinhard, "Structure from Motion Photogrammetrie mit Agisoft PhotoScan. Erste Erfahrungen aus der Grabungspraxis," in *3D-Anwendungen in der Archäologie: Computeranwendungen und Quantitative Methoden in der Archäologie--Workshop der AG CAA und des Exzellenzclusters Topoi 2013*, ed. Undine Lieberwirth and Irmela Herzog, 1st ed., Berlin Studies of the Ancient World 34 (Berlin: Edition Topoi / Exzellenzcluster Topoi der Freien Universität Berlin und der Humboldt-Universität zu Berlin, 2016), 17–44. P. 25.



#### 4.1.1 Structure from Motion (SfM) Photogrammetry

The application of archaeological illustration can effectively lead to merging the recording and documentation processes due to the process of drawing certain elements and simultaneously inquiring into mid-range questions regarding function. In the case of 3D models, whether by SfM or TLS, the recording and documentation phases are more easily separated as the recording process for an entire castle can be achieved in a matter of hours, and only minutes are spent in front of each wall thereby limiting the amount of mid-range questions and preventing annotation from occurring. This is not to say that the generation of a SfM model is void of pre-analyses or that the recording process could be achieved robotically without the involvement of an archaeologist or architectural historian. Conducting a proper recording is dependent upon the experience one has with the technique, the specific modeling software, and where to place the calibrated markers for the alignment stage of the 3D model generation. A properly conducted photogrammetric recording using calibrated markers requires a fair amount of time deciding where to place the markers considering that once placed, as anything beneath the marker will be permanently hidden in the SfM model. Deciding where to place the markers is one of the main objectives during the pre-recording on-site inspection, and must be accomplished by someone familiar with the site—again stressing the importance of the historical investigation and human involvement. When the automatically detected tie points are combined with the manually placed calibrated markers in the alignment stage, the result is a 70% increase in the accuracy compared to models without the markers.<sup>1066</sup>

Examining how to adjust the camera to the specific conditions at the site should also be considered during the first inspection, even if the camera was not taken with. This consists of taking notes regarding the approximate height of the walls, the planned placement of the markers, and the overall area that needs to be covered. A vital component of the inspection stage is the consideration of particular portions of the architecture that could prove difficult to record, commonly consisting of the joints between walls and the gaps or breaks between rooms in the buildings—especially prevalent in castle ruins. While on-site for the actual recording, the camera should be adjusted according to the notes taken from the first inspection and the light conditions. These adjustments should take into account the amount of usable space between the tripod of the camera and the various walls. Additionally, the camera lens should remain fixed for the duration of the recording, as fixed-lens cameras out-perform variable zoom lenses in precision.<sup>1067</sup> It is therefore necessary to identify

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<sup>1066</sup> Sapirstein, “Accurate Measurement with Photogrammetry at Large Sites.” P. 140.

<sup>1067</sup> Ibid. P. 141.

a focal length that can be used at all areas of the site during a single recording campaign. In the case of the four primary sites recoded for this project, I stood a distance of at least 1.5 meters from the walls, with the exception of narrow portions of the Palace of Lantorn—such as the corridor between the outer cladding of the chapel and the inner chapel foundations. The camera lens was fixed for each site, depending upon the factors previously discussed for each recording campaign. The only discrepancies were the aerial and terrestrial photosets from Castle Hohenecken which will be discussed in detail in Section 4.4.3. Each site was also recorded with the calibrated markers thereby increasing the accuracy of the per-image calibration,<sup>1068</sup> and scale bars were placed in multiple locations for scaling the models upon completion. The multiplicity of the scale bars was necessary in order to select a scale bar present in the most image projections of the model. However, I did not use geographic coordinate points for the calibrated markers at any of the sites, though it would be advantageous to do so for future recordings. The details of the SfM models can be found in the processing reports located in online repository in HeiDATA located [here](#).<sup>1069</sup>

Generating the SfM models in the computer required many hours reviewing each photo and removing blurred photos in an effort to minimize the local errors.<sup>1070</sup> 3D SfM models are inherently affected with errors arising from processing algorithms and optical deformations of the camera lens.<sup>1071</sup> Each subsequent step in the generation of the 3D model reveals certain aspects, such as areas where the software had difficulty in combining the photos. During the photo inspections it is common to notice certain construction trends, such as the location of finely crafted stones, the different types of arches composing the various portals and windows, and the prevalence of vegetation in suboptimal places which at times block the view of a marker. Following the generation of the sparse point cloud created by the alignment phase, it is immediately recognizable which portions lacked the proper amount of camera positions made evident by distortions in the spatial relationship between architectural elements, or areas where the fewest points were available. The dense cloud reveals which sections were emphasized the most during the recording revealed by certain areas featuring a high concentration of points. The meshes reveal mainly which surfaces

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<sup>1068</sup> Ibid. P. 141. The absence of calibrated markers leads to a 45% increase in error for the per-image calibrations.

<sup>1069</sup> Aaron Pattee, "CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Research Data)" (HeiDATA, 2023), <https://doi.org/10.11588/data/ZDOC70>.

<sup>1070</sup> Sapirstein, "Accurate Measurement with Photogrammetry at Large Sites." P. 142. Sapirstein includes a list of local errors to take into account including poor lens calibrations, blurred photos, lack of high-contrast patterns, surfaces oblique to the camera, and movements in the scene during the recoding.

<sup>1071</sup> V Barrile et al., "Structural Modeling of a Historic Castle Using Close Range Photogrammetry," *International Journal of Mathematics and Computers in Simulation* 10 (2016): 12. P.373.

where recorded most effectively and where the recording failed to capture sufficient data made clear by billowing portions giving the appearance of balloons or bubbles. The textures reveal the overall success of the model for the purpose of an architectural investigation in the resolution of the image quality wrapped over the meshed model.

The opportunity to view an entire site as a 3D model that is rotatable and adjustable in size is an advantage unattained when analyzing only archaeological illustrations or 2D photos. Furthermore, one does not have to conceptualize how the different illustrations fit with one another when analyzing a 3D model, because they are already unified. At each of the four stages in the generation of the model, it is necessary to bear in mind the first inspection of the site and whether or not the model reflects how the site actually appears. A lack of photos in a particular area, typically the joints between walls, can have disastrous results in which the model disintegrates into several components, turned on one another in a spiral manner shown in Figure 17. Typically, the issues can be solved by increasing the sampling amounts of the generation stages—i.e. the key point limit and tie point limit of the alignment stage—though if it does not alleviate the problems, then it may be necessary to embark on a new recording campaign as the case was for Castle Beilstein. These various stages in modeling and recurring analyses of the progression of the model, the entire four-step generation of the SfM models still constitute only the recording.

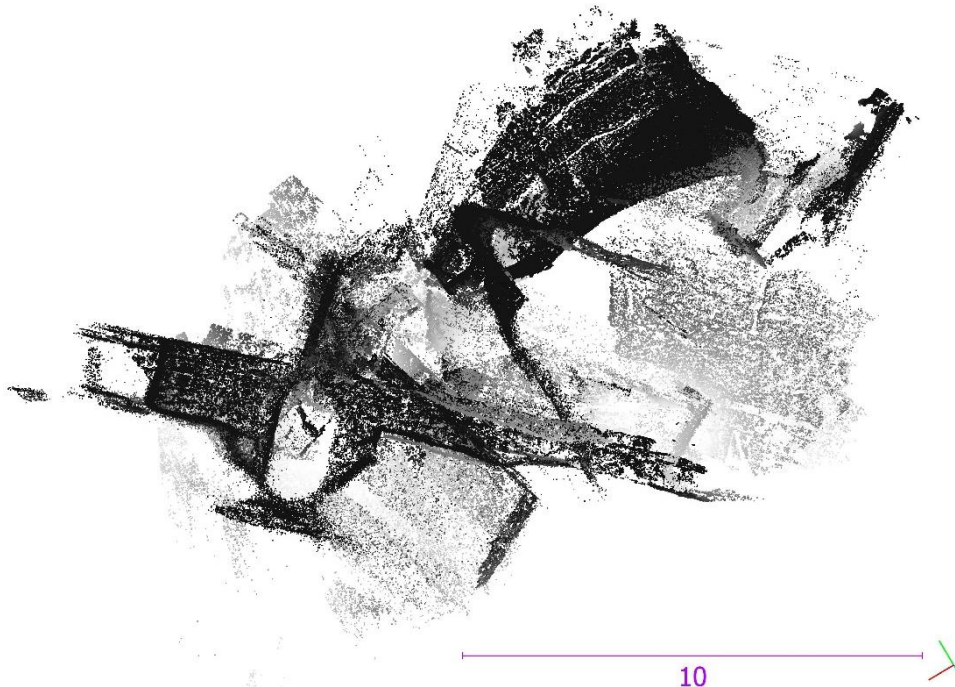


Figure 17: Distorted Photogrammetric 3D Model of Castle Beilstein.

Documenting and arriving at mid-range questions regarding the relationship of walls to one another, their cross-sections, and spatial distribution of the architectural elements can only be achieved on-site. However, certain impetuses leading to these mid-range questions may well have been catalyzed by the four-staged progression of the models. For this project, I applied a relatively simple procedure for the documentation, in which I exported orthogonal rendered files of each wall from the meshed and textured models of the four sites. Each model of the primary sites was scaled using the scale bars that were placed on-site along with the calibrated markers during the recording phase. This consisted of identifying which scale bar was visible by the most camera positions, and scaling by one centimeter. Thus, each exported rendered file of the various walls included scale bars, from which an overall scale could be automatically calculated and applied. The 2D files rendered from the 3D models were first imported into *Inkscape*, in which I manually outlined each stone visible in the models, except for the majority of the Palace of Lautern and the entirety of Castle Perlenberg. The reason for these exceptions will be discussed later in the sections regarding both castles. After completing the outline of the stones on each wall, the files were then printed on A3 sized paper and compiled into groups based upon their association with certain architectural elements and building types located at the sites, which are outlined in the roombooks for each site. I then used these as plans upon which I annotated the results of the on-site, stone-by-stone investigation, using the traditional Faber Castel pencils used by countless archaeologists and architectural researchers—a subtle inclusion drawn from the archaeological illustrative process. Completing the annotations comprised only the beginning of the documentation process which continued with the contemplation of mid-range questions regarding the utilitarian and representative functions of the individual architectural components. This was predicated upon the search for building phases which were primarily recognizable based upon the connectivity between the walls, and the comparison of portal and window frames.

Upon accomplishing the documentation of the individual walls, their relation to one another, and the rooms that they constituted, I then analyzed the relationship of the rooms to one another. This is essentially a workflow in which I started with the recordings, and then worked stone by stone towards the overall picture. Once I arrived at the interpretation process of the architectural investigations, I had already been acutely acquainted with the overall appearance of the sites, courtesy of the time spent on-site and with the 3D models. By consistently working with the 3D models, I did not have to imagine how different portions of the sites operated in relation to one another while off-site. In the case of castles Beilstein and Perlenberg, this was not of utmost significance considering the meager remains of the former and the quaint overall dimensions of the

latter. However, in the cases of Castle Hohenecken and the Palace of Lautern, having the 3D perspective in mind throughout the entire process was highly beneficial given the larger size of the sites and the multitude of architectural features they exhibit. The interpretations of each individual site are outlined in the respective sub-sections of each castle investigation. These were based upon how the sites fit within their historical context and the environmental framework of the Reichsland of Lautern.

#### 4.1.2 Terrestrial Laser Scanning (TLS)

The high-resolution textures achieved by the SfM models were useful for the construction research on-site, though the models yielding the most accurate measurements for this project were recorded using TLS. The three-step process of recording, documenting, and interpreting architecture using a 3D model was applied to the TLS technique as well, albeit in a slightly different manner. Prior to each recording, the sites were inspected for the optimal positions where the laser scanner could capture multiple wall surfaces, in order to optimize the connections between the scan positions. The scanner used for all four sites was the Riegl VZ-400 (Figure 18), which has a near 360 degree scan angle range, with a rotating multi-facet mirror that can reach speeds of 120 lines/sec. The scanner has an accuracy of five millimeters and precision of three millimeters within a 100 meter distance between the scanner and the object. The accuracy of the scanner refers to the degree of conformity of a measured quantity to its actual value, and precision refers to the degree to which further measurement yielded the same result.<sup>1072</sup> The scanner was placed atop a large, adjustable, and easily transportable tripod at each position. It also allowed for the range to be limited to only the area of interest rather than scanning 360 degrees each time, and was modified by the Institute for Geoinformatics at Heidelberg University with an adjustable tilt. The recordings required approximately six hours for castles Beilstein and Perlenberg—in part due to their remote locations—and seven hours for the Palace of Lautern. The scans of Castle Hohenecken required nearly 10 hours, which had been recorded during my master's thesis in 2015 and were still applicable for the analyses conducted in this project.

Generating the 3D models from the laser scan data required a considerable length of processing time in which each scan position was analyzed and specific tie points were manually placed on unique features in the architecture in the proprietary software, *RiSCAN Pro*. Each scan averaged around 50 manually placed tie points placed on positions mutual to multiple scan positions in order to link them to one another. Reflectors positioned at the sites could have shortened the processing time, but we did not have the transportation capacities at the time of the recordings to bring them with. Once the scans were connected to one another via the tie points, the model was exported into *CloudCompare* for post-processing, which included trimming the surrounding areas from the core model and virtually removing the vegetation from the walls. The TLS technique was also overwhelmingly better at capturing the edges and upper-corners of buildings that were

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<sup>1072</sup> Riegl Laser Management Systems GmbH, "Data Sheet, Riegl VZ-400," 2014, [www.riegl.com](http://www.riegl.com).

otherwise obscured by the meshes of the SfM models resembling large bubbles rather than distinct lines. In the effort to preserve as much context as possible, I saved extra copies of the full models including the surroundings and vegetation.

The documentation stage was where the TLS technique differed drastically from the SfM technique, as on-site annotations were not made using the TLS models. This is due to the fact that the TLS models did not offer the color fidelity that the SfM models did, and because the TLS models are best used in conjunction with the documentations from the SfM models for the purpose measuring building elements. The TLS models also offered a more complete scan of the area of the four sites than the SfM models, which included only the architecture of the sites and an occasional tree trunk. Whereas the SfM models provided the core of the information, the interpretations of the sites were enhanced by the application of the TLS technique, due to the precisely measured architectural plans. If given the choice of either SfM or TLS for the purpose of construction research, SfM is the slightly better option as it is much more manageable while on-site, the data requires substantially less space, and the textures from models allow one to produce high resolution orthogonal images of the walls. A future step would be to import the TLS scan into Agisoft Metashape in order to provide the scaling for the SfM model of each site, though at the time of the project, this feature was not yet available. Nevertheless, all of the TLS scans (both the raw and processed data) are available in HeiDATA [here](#).



Figure 18: The Riegl VZ-400 Scanner at Castle Hohenecken on the day of the TLS recording.

## 4.2 Investigating the Sites

The explanations of the primary site investigations are described in the following detailed approach: 1. descriptions of the on-site inspections as perceived for the first time; 2. the TLS recording of each site; 3. The SfM recording of each site and process of generating of the models; 4. the organization of the building types and order of the walls forming the roombook (Section 9.1 of the Appendix), or *Raumbuch*; 5. the on-site analyses using the information from the models as the foundation for the documentation; and 6. results pertaining to the mid-range questions that arose during the documentation phase. The final interpretations of the sites will be discussed in Chapter 7, as they are predicated upon the combination of these analyses with the historical and geo-spatial results.

The order of the primary sites follows the same order as in Chapter 3 so as to maintain the consistency of the narrative and the logical continuation of what has been added to the historiography of the sites by this project. The information pertaining to the primary sites in Chapter 3 will be periodically referenced in this chapter in order to draw connections from previous investigations seen at the current state of the castle ruins. The roombooks of the sites consist of a numerical progression beginning with Castle Hohenecken, followed by the royal Palace of Lautern, Castle Perlenberg, and Castle Beilstein. The order reflects the chronological order of the final SfM recordings of the four sites, beginning with Castle Hohenecken, though the first site to be discussed is the Palace of Lautern. The building phases are organized in accordance to the *CITADEL Color Schematic for the Architectural Investigations* available in HeiDATA [here](#).

Among the secondary and tertiary sites, only the Commandry at Einsiedel was recorded using SfM and TLS. During the recording process, access could only be gained to the late medieval wall that once formed the western boundary of the site. The entire complex was auctioned multiple times during the early 19<sup>th</sup> century, as discussed in Section 3.4.1, and as such, multiple families live on the premises. Many of these families share the wall as a border between their properties and one house is even built on the wall itself. The other components of the commandry have long been incorporated into the modern houses or demolished. The quality of the models was greatly diminished due to the presence of overgrown vegetation along the majority of the wall preventing any conclusive interpretations, except for the identification of a closed portal used during the construction of the wall (Figure 14). Furthermore, the dating of the wall to the late medieval period is outside the chronological scope of the project by nearly 100 years. For these reasons, the Einsiedel was omitted from the architectural investigations.



## 4.3 The Royal Palace of Lautern

### 4.3.1 First Inspection and Key Insights at the Palace

My first encounter with the palace occurred in the early 1990s when I was a young boy while learning about the Middle Ages, knights, and castles. During the summers spent with my grandparents, it was an objective of mine to visit the Palace of Lautern and Castle Hohenecken as many times as I could. Both sites fascinated me as a child and have continued to fascinate me to this day. Therefore, I cannot truly speak of a first inspection having occurred during the time of my master's degree or during my Ph.D., rather, my first inspection of the site is a conglomeration of curiosity-driven encounters over the course of 20 years. For the purposes of a proper architectural inspection, these previous encounters obviously do not suffice. However, they do provide me with a deep familiarity of the site and its development over the course of two decades which is undeniably useful in understanding its regional significance—an important aspect when considering site significance.

The ruins of the former royal Palace of Lautern are easily accessible given their position within the city center of Kaiserslautern at the foot of the 22-storey city hall. The site is bounded on the southern side by the central city bus station, typically bustling with school children and shoppers. When looking at the southern walls of the ruins, it is not immediately evident that they extend far below the current street level, which provides a false impression of their actual size. As mentioned in Section 3.3.1.3, the visible southern wall is the portion of the building containing the aula that had been built into the Schlosswoog. At first glance, a multiplicity of building phases and stones composing the walls are apparent. In fact, the walls more closely resemble the patchwork of a quilt, sewn from extraneous scraps of textiles bound together without regard to their variance in texture or aesthetic appeal, than to a coordinated structure. When viewed from afar, the walls appear as massive dark-red blocks emerging from the grey stones of the sidewalk and greenery of the surrounding berms. The craggy remains of the apical portions of the walls stretch like freshly cut weeds, lending insight as to their tumultuous past, to which the walls routinely fell victim to the destruction of war.

Of the ruinous walls, chambers, and window tracery, a single building still remains with its roof, resembling a large rectangular block with a small tower on top covered by a conical roof as stout as the tower upon which it rests. This element atop the rectangular structure is only visible from across the street or from the area of higher elevation to the north of the ruins near the city hall. This is the museum built in the 1930s upon the walls of the renaissance addition called the

*Casimirschloß*, which in turn cover the eastern portions of the palace dating back before the Salian period. When walking around the site, different features emerge only visible from particular angles, and just when it seems that there is no more to be seen, a sneaking portion of wall presents itself. The beguiling nature of the palace necessitates more than one general inspection given its sprawling shape, resembling more of an amoeba than a rigid structure. The grey cement of the public square located between the palatial ruins and the city hall have the effect of encroaching upon the site—which had in fact been the case prior to a brief excavation of the outer walls in 2016 in order to construct the beginnings of what is to become a museum.<sup>1073</sup> The remains of the palace are a far cry from the grand description by Rahewin. The absence of the original surroundings and significant loss of the medieval buildings have tested the integrity of the site. Of the six aspects of integrity described in Section 1.1.2, the only one that still applies is the integrity of materials. However, the role that the palace played in history and an analysis of its geographical surroundings reveal how unique the site truly was. These additional analyses assist in determining the other aspects of integrity, even though the physical site itself can no longer relay the information by itself.

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<sup>1073</sup> ITA, “Ein Stück aus Kaisers Zeiten freigelegt,” *Die Rheinpfalz*, September 1, 2016, 204 edition, sec. Pfälzische Volkszeitung.

#### 4.3.2 Laser Scan Procedure for the Palace

The TLS recording of the palace took place on 12 June 2018 with the assistance of Katharina Anders, a fellow doctoral candidate in the *HGSMathComp*. Without her support, I could not have accomplished the recording campaign as she possesses an expertise in laser scanning and was instrumental in the success of the recording.<sup>1074</sup> One day prior to the scanning, we calibrated the scanner and reviewed the equipment, which consisted of the *Riegl VZ-400* laser scanner, a robust tripod, and an extra scanner battery. When we arrived on-site, Mrs. Petra Rödler of the *Förderkreis Kaiserpfalz e.V.* and her son Liam arrived to assist us with the logistics of gaining access to the rooftops of certain buildings for the scanner and for guiding commuters out of the path of the scans. With their assistance, we accessed the top of the city hall, the roof of the nearby *Pfalztheater*, and the parking deck of the neighboring mall. These three scan positions facilitated the capture of the entire area surrounding the palace. We began with the first scan around 9:30 and finished the scanning at 15:00 on the same day for a total of approximately 5.5 hours. We collected data from 11 scan positions, capturing the entire site including the non-medieval portions and the entire remains of the Casimirschloß. Although both sections are not under direct investigation for this project, as the focus is upon the high medieval portions, they are useful for analyzing the overall expanse of the site.

The generation of the model from the 11 scan positions in *RiSCAN Pro* required manual placements of tie points in order to connect the scans to one another. This process was also described in my master's thesis, which I applied to each of the TLS procedures presented in this chapter. Although the bulk of the documentations were conducted using the SfM recordings, the scans of the sites provide an overview of the surrounding landscape, and were useful in measuring certain features at the sites. However, the SfM recordings were more suited for purposes of construction research. The TLS recordings could become more useful with the acquisition of a high resolution Digital Terrain Model (DTM) of the Reichsland of Lautern, though this will be discussed in more detail in Chapter 5. This scan provided the underlying basis for comparing the previous investigations of the site by Bremer in 1937 and the GDKE in 2011, as shown in Figure 19.

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<sup>1074</sup> She accompanied me on three of the four laser scan campaigns and provided technical support with the files and using *RiSCAN Pro*.

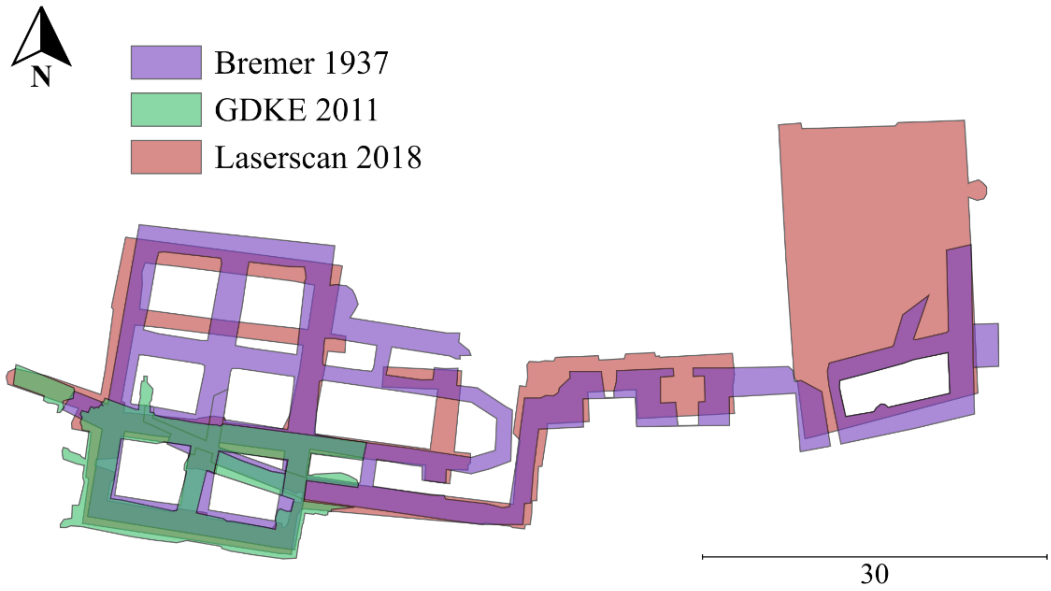


Figure 19: Comparison of previous investigations with the TLS scan. Note: the outlines are adapted from Bremer 1937 and GDKE 2011 publications cited in Chapter 3.

### 4.3.3 Photogrammetric Procedure for the Palace

The recording of the SfM model of the palace took place on 28 May 2018 around 8:30 in the morning in order to optimize the morning light for the duration of the photography. With the assistance of Mrs. Petra Rödler, chairwoman of the Förderkreis Kaiserpfalz e.V., we placed the calibrated targets at various sections of the palace, mainly on recently placed stones of the reconstruction efforts following the excavation from 2011, atop portions already covered with graffiti, and on older stones that were absent of any unique features such as mason's marks. Her support in this task was based upon her keen knowledge of the site and its history, as both aspects are required of those assisting in the placement of the targets. In total, we placed 122 calibrated, 16 Bit, matte-laminated targets. The specifications of the camera and the photos are located in Table 2. The photoset consisted of 590 jpg. files, each saved with an associated nef. raw file. The duration of the initial recording was quite efficient and I finished around 10:20—a total of two hours.

Table 2: Camera specifications for the SfM recording of the Royal Palace.

ROYAL PALACE				
<b>CAMERA</b>	<b>Model</b>	<b>Focal Length</b>	<b>Exposure Time</b>	<b>ISO</b>
	Nikon D750	35 mm	1/250 sec.	250
<b>IMAGE</b>	<b>Width</b>	<b>Height</b>	<b>Resolution</b>	<b>Bit Depth</b>
	6016 pixels	4016 pixels	300 dpi	24

I processed the SfM model of the palace over the course of three months, though the actual generation of the four stages occurred on three weekends. The intermittent processing of the model was due to my working on other portions of the CITADEL project in parallel as well as other obligations at the time. The process began with having the software identify the calibrated markers on the photos prior to the alignment. Of the 590 photos recorded at the site, 581 were successfully aligned with parameters set at the highest accuracy: a 100,000 key point limit, and a 50,000 tie point limit. The alignment resulted in a sparse cloud of approximately four million points with a *Root Mean Square* (RMS) reprojection error of 0.143 and Max reprojection error of 0.459 in 32 minutes. The dense cloud was generated at high quality on moderate filtering resulting in a cloud of approximately 360 million points in 22 hours. The mesh of the model was processed at high quality based upon the results of the dense cloud, with a custom selection of 30 million faces, requiring slightly more than six hours. This limited selection of faces was predicated upon the usability of the

model once processed, as face counts higher than 30 million are often difficult to maneuver in the Agisoft Metashape and CloudCompare interfaces. Upon completion of the mesh, I scaled the model using a scale bar which I had placed on the site during the distribution of the calibrated markers. Each of the scale bars that I fixed at the site were situated directly beneath a marker and were also matte-laminated in order to avoid reflection or water damage. Of the numerous scale bars that were dispersed throughout the site, I selected the scale bar beneath the marker that had been identified by the most photos in the first stage of the processing. The texture of the mesh model was generated in three hours with 20 additional jpg. texture files each with a texture size of 8192 x 8192 to ensure high resolution and color fidelity for the on-site annotations. Additional specifications can be found in the processing report in HeiDATA [here](#). A more detailed processing procedure can be found in my 2016 document entitled, ‘*Photogrammetric Procedure for Modeling Castles and Ceramics.*’<sup>1075</sup> For the remaining sections of this chapter referring to the generation of the SfM models, I will provide a brief overview of the specific alterations in the processing that deviate from the general procedure in order to avoid extensive repetition.

Once the final model was complete in Agisoft Metashape, I exported it in both ply. and obj. formats for post-processing in CloudCompare. The high resolution model is available in the online repository in HeiDATA [here](#)<sup>1076</sup> as KoenigspfalzLautern\_OBJ.zip, and a low-resolution, yet interactive model is available in HeidICON [here](#)<sup>1077</sup>. During this stage, I loaded the obj. file with its associated texture files and proceeded to trim extraneous features in the model such as tree limbs, outside pavement, streetlamps, and vegetation on the crowns of the walls. Removing vegetation proved to be the most difficult because certain portions of the site were enveloped by ivy and grass growing on the tops of the walls were time consuming to delete. Once the trimming was complete, I saved the entire model after orientating it in accordance to the XYZ coordinates. Next, I saved individual obj. files of each section of the model according to the roombook design. This was necessary in order to reduce the strain on the computer when cutting individual walls and rendering high resolution orthogonal image files for the documentation phase. Had I loaded the entire file at once, the program would have crashed multiple times—as had in fact happened at the very beginning

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<sup>1075</sup> Aaron Pattee, “Photogrammetric Procedure for Modeling Castles and Ceramics,” *Propylaeum-DOK*, no. 1 (2016): 20, <https://doi.org/10.11588/propylaeumdok.00003217>.

<sup>1076</sup> Pattee, “CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Research Data).”

<sup>1077</sup> Aaron Pattee, “KönigspfalzLautern\_SfM,” SfM Model, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.ub.uni-heidelberg.de/#/detail/1733126>.

requiring me to introduce the method of saving individual sections. I exported each wall as a texture and a mesh with a scale bar at the bottom. Each exported file had horizontal and vertical resolutions of 96 dpi with dimensions ranging between 5901 x 6208 for the smallest image and 28776 x 5578 for the largest. After exporting the files from CloudCompare, I imported them into *Inkscape*, provided them with a simple label and printed the images onto A3 sized paper. After printing each of the walls as both textures and meshes, I organized them according to the roombook and prepared them for the documentation phase.<sup>1078</sup>

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<sup>1078</sup> The entire post-processing phase consisted of free software that were easy to handle and provided precisely what I need in order to conduct the next portion of the investigation.

#### 4.3.4 Creating a Roombook for the Palace

The roombook and overview of the palace (located in Section 9.1 of the appendix) is composed of five sections: 9. Inner Chamber D, which corresponds to the renaissance additions next to the Casimirschloss; 10. The Chapel Foundations; 11. The Main Hall, which corresponds only to the visible portions of the building that once contained the aula; 12. The Outer Ward Walls, which consist of both the Salian and Hohenstaufen outer walls; and 13. The Curtain Wall, which corresponds to the outer cladding of the chapel atop which the chapel platform once stood. The names of the sections were intentionally void of any implicit meaning—with the exception of the chapel—in order to provide a general overview. The entire roombook with the affiliated Wall Numbers is found in online HeidICON repository. The order regarding the numbering and letters associated with the various sections began with the investigation of Castle Hohenecken, followed by the Palace of Lautern, Castle Perlenberg, and Castle Beilstein. This reflects the chronological order of the investigations and does not denote importance or significance on the basis of the affiliated number or letter designating the section. Each section is composed of sub-sections and were determined based largely upon the masonry the sections exhibits, but also upon the dimensions of the buildings. This is not always an easy process as some buildings have long walls which I had to partition among the sections. However, the order of the roombook follows the physical path taken when visiting the site which serves to view subsections of various sections in unison with one another despite their partition. The first part of the ruin that is most accessible is the area between the eastern-most wall of Inner Chamber D and the remains of the Casimirschloß. The general approach is a counter-clockwise investigation around the site as shown in the roombook.



#### 4.3.5 Documenting the Palace

The documentation phase consisted of two parts: annotating the printed rendered files on-site, and outlining the stones in Inkscape with close attention paid to the annotations. The materials required for the on-site annotations were essentially the same toolkit for a standard archaeological illustration, including a pad of millimeter paper in case a detailed illustration were to be necessary. However, I did not resort to illustrating anything and instead made all annotations on the printed images of the walls. The annotations consisted chiefly of analyzing the stones for features that were not readily seen in the photogrammetric models and making notes regarding the context of the stones. Despite the practicality of the rendered images from the photogrammetric model, viewing the site in person is fundamental, providing the sense of context necessary for analyzing why stones were placed in their particular positions and where certain stones were recycled. The Palace of Lautern essentially has a medieval portion, an early modern portion, and a recent reconstruction from the 21<sup>st</sup> century. Thus, the use of spolia, as indicated by Aquilante De Filippo following the excavation from 2010 to 2011<sup>1079</sup> is quite evident while on site.

Upon completing the annotations, I created templates for the walls for the stone by stone outlining, consisting of textures and meshes for which I manually traced the outlines of all of the stones. It was also the longest portion of the documentation phase as it consisted of 1,190 manually outlined stones shown in the orthogonal images of the walls. This process proved fruitful in identifying the various building phases and resulted in three different images per wall—the texture, the mesh, and the stone outlines. All three images provide different information that are incredibly valuable for determining the building phases of the sites as the textured images provide the colors of the stones, the meshes the 3D surfaces and depth, and the outlines the overall distribution of the masonry. When analyzed next to one another, the building phases are fairly simple to identify. However, the history of the phases necessitates a closer analysis, namely an approach in which the history of the site is taken into account along with the landscape analyses—precisely the manner in which these sites are interpreted in this project. Although the documentation phase is relatively straight forward to describe, the process was time consuming as all of the stones were outlined manually in order to avoid identification errors had I employed a more automated approach.

The advantage of this procedure is the on-site interaction, and detailed stone outlining while off-site. The novelty of the procedure is not found in the generation of the 3D models, nor necessarily

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<sup>1079</sup> De Filippo, “Bezeichnung und Kategorisierung der Quadern”; De Filippo, “Kriterien zur Auswahl der Steine.”

the documentation process. Rather, the key difference when compared with previous procedures is the application of the graph database in which the individual buildings types, roombook names, wall names, construction elements, substances, and component types were all recorded into a large table—each with a unique ID allowing for connections to be made between all of these aspects across all four primary sites. This documentation process enhances the quality of the data by utilizing computer generated 3D models instead of hand-drawn walls, outlining the stones based upon the model, and entering the characteristics of the masonry and their respective walls into a database in which building phases can be analyzed with regard to the social network of the inhabitants and owners of the sites. Additionally, the framework for this procedure permits other sites to be added without limit. Therefore, analogous structures, building types, and construction elements can be easily compared across a multitude of sites relatively quickly through the use of queries as described in Section 6.4. It is important that one follows the documented outlines of the walls of the roombooks located in Section 9.1 of the Appendix alongside the descriptions of the architectural groups.

#### 4.3.5.1 Group 9. Inner Chamber D

The first building at the palace in the roombook is Inner Chamber D which is composed of four subgroups labelled: 9.1 Western Section, 9.2 Middle Section, 9.3 Eastern Section, and 9.4 Northern Side. All four sections feature numerous building phases, indicated by the patchwork masonry composed of a host of stone sizes and shapes, and the walling of three portals and two windows. With the exception of the foundations of the building in Subgroup 9.1, the building was the product of the reconstruction efforts by Count Palatine Johann Casimir von Pfalz-Simmern during the 1570s and 1580s, including subgroup 9.4 in its entirety—which was not included in the architectural plans for this reason. The architect of the structure was the famous Rochus zu Lynar,<sup>1080</sup> who had also served as Johann Casimir’s field marshal during the Wars of Religion in 1568.<sup>1081</sup> The jumbled nature of the masonry is largely due to the repeated destruction of the site, particularly during the 30 Years War and the French Revolution.<sup>1082</sup> Due to the project focus between the years 1152 and 1273, I did not analyze the building phases of Inner Chamber D as precisely as the other buildings on site.

The southern side of Section 9.1 (a full format of the architectural plan is available in the online repository [here](#))<sup>1083</sup> consists entirely of red sandstone with a walled portal in the very middle featuring a slight arch resembling a segmental arch. It is possible, given its relatively crude design, that it had been intended as a temporary portal during construction. Evidence for this lies in the absence of any piers alongside sides as structural support for a more permanent doorway. The masonry on either side of the walled portal exhibit two different sizes of stones and a low window with piers, windowsill, and lintel are still visible, although the feature was also walled up. The southeast corner of Subgroup 9.1 features large quoins and ashlar along its edge and surface, whereas the southwestern portion that connects to Subgroup 13.2 is composed of small or medium sized ashlar. The southwestern corner is consistent with the masonry between the foundations and the threshold of the walled portal, indicating that it was built before the southeast corner. The connection between the southwest corner and the curtain wall of Subgroup 13.2 is interesting as the

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<sup>1080</sup> Barz et al., “Kaiserslautern.” P. 120.

<sup>1081</sup> Deutsche Biographie, “Lynar, Rochus Graf von - Deutsche Biographie” (Bayerische Staatsbibliothek), accessed June 2, 2020, <https://www.deutsche-biographie.de/sfz55336.html>.

<sup>1082</sup> Barz et al., “Kaiserslautern.” P. 111.

<sup>1083</sup> Aaron Pattee, “Königspfalz Lautern, 9.1.1, InnerChamberD, WesternSection, SouthernWall, Texture and Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/#/detail/1728707>. Also catalogued as Architectural Plan 31.

only stones which interlock with the curtain wall are located at the bottom, whereas all of the other stones were placed against the wall, indicating the older nature of the curtain wall. However, the bottom stones interlocking with the curtain wall are noticeably different in color and feature smooth surfaces rather than any sort of embossing. It seems likely that they were added at a later time in order to mend that portion of the wall, possible during the renovations in the 1820s. Above the walled portal is a threshold to a portal which no longer exists in full, flanked on either side by ashlars, albeit relatively ruined. The foundations of the eastern side of subgroup 9.1 (a full format of the architectural plan is available in the online repository [here](#))<sup>1084</sup> continue from those of the southern side, including the quoined sandstone ashlars along the corner. The middle of the wall features a peculiar form of masonry in which impostes for a large stone lintel are still visible near the top, though another portal was built within this former portal featuring piers, a threshold, and lintel. The size of the second portal is roughly two thirds the size of the one in which it was built with dimensions of 1.34 meters by 2.22 meters, and rubble masonry was placed in the areas between both portals. The second portal was eventually walled up as well and may have served as a side entrance.

Subgroup 9.2 (a full format of the architectural plan is available in the online repository [here](#))<sup>1085</sup> features only a southern wall, whose foundations correspond to those of 9.1, though the section is located approximately 2.5 meters to the north of both subgroups 9.1 and 9.3. The design of a slightly retracted middle section bears a striking resemblance to the western wall of the *Marstall* in Heidelberg (Figure 20), which was built 50 years prior. The southern wall of 9.2 features a walled portal with a segmental arch composed of narrow, vertically positioned stones. The central height of the former portal reached just over two meters with a width of 0.94 meters. Three large putlog holes extend along the same level as either impostes of the arched portal indicating the existence of an outside level built at the same time as the former portal as they complement one another and the putlog holes components of the masonry, i.e. they were neither removed from the stones at a later point, nor were they carved from the stones surrounding them. A variety of stones placed through the wall exhibit pincer holes and slight embossing, suggesting that these were recycled from the medieval wall and used during the later reconstructions. The tapering stones directly beneath the

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<sup>1084</sup> Aaron Pattee, “Königspfalz Lautern, 9.1.2, InnerChamberD, WesternSection, EasternWall, Texture and Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.ub.uni-heidelberg.de/detail/1728708>. Also catalogued as Architectural Plan 32.

<sup>1085</sup> Aaron Pattee, “Königspfalz Lautern, 9.2.1, InnerChamberD, MiddleSection, SouthernWall, Texture and Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.ub.uni-heidelberg.de/detail/1728709>. Also catalogued as Architectural Plan 33.

walled portal were carved along a horizontal plane in order to fit a board larger enough to compose an entrance for the portal, including portions for the placement of beams at the bottom right-hand side. These provide evidence for a former wooden staircase leading to the southern wall of 9.2.



Figure 20: Western Side of the Marstall in Heidelberg.

The western wall of subgroup 9.3 (a full format of the architectural plan is available in the online repository [here](#))<sup>1086</sup> does not feature any elements other than a mix of large and medium ashlar and two large putlog holes, presumably once forming the roof and railing of the wooden balcony corresponding to the walled portal of the southern wall of 9.2. Some of these ashlars are very large, including one toward the top of the ground floor used as a quoin. The masonry of the southern wall features stone courses that are equal in height between the large quoined ashlars on the southeast and southwest corners. A walled window is located directly in the middle of the wall with two support arches located above the lintel. A section of new stones—similar to those found in the northeast corner of 13.2 and southwest corner of 9.1—are located in the bottom middle section of the wall. A number of inconsistencies in the stone courses are prevalent in the bottom half of the wall, in which the stones extending from the west do not match the same level as those from the east. This inconsistency was remedied by placing smaller stones in the gaps, though a consistent

<sup>1086</sup> Aaron Pattee, “Königspfalz Lautern, 9.3.1, InnerChamberD, EasternSection, WesternWall, Texture and Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.ub.uni-heidelberg.de/detail/1728710>. Also catalogued as Architectural Plan 34.

source along the same level is seen only at the level of the lintel of the walled window. This indicates that either subgroup 9.3 had been begun from the west and then finished from the east, or that the two sides were under construction simultaneously. However, the leveling error supports the former in which the eastern portion of the wall was begun only after much of the western portion had been finished. Once both sides had reached the level of the top of the window, a single building phase then continued.

#### 4.3.5.2 Group 10. Chapel

The palace chapel was one of the core components of the renovations by Frederick I and represented an emerging constellation of the design of Hohenstaufen palaces. As was described in Section 3.3.1.3, the Palace of Lautern preceded the palace of Bad Wimpfen indicating that either both palaces were designed simultaneously, or Bad Wimpfen was designed based upon the near-completion of Lautern. The design followed an east-west axis of the chapel in which the apsis faced east and the west emptied out into the aula. This allowed for quick access between the two buildings and symbolically unified the connection of the ecclesiastical realm with the secular realm—essential for Frederick’s political aspirations that included the expansion of the monastic lands. In fact, the construction of the chapel was concurrent with the expansion of various monasteries as was discussed in Section 3.4 regarding the secondary sites. It is certainly possible that there had been two connections between the buildings: one directly into the inner chapel from the first level of the great hall building, and one leading into the upper arcaded level supported by the curtain wall. This second entrance would likely have led into a larger chapel designated for more public use in the event of state visitors and thus linked to the actual aula of the building. The first entrance leading to the inner chapel was likely a more intimate setting and possibly connected to the chambers of the monarch. In the case of Frederick I, direct access to a chapel for his morning prayers was of utmost importance to him, according to his chronicler Rahewin, as discussed in Section 3.3.1.2.

Unfortunately, the form of the chapel can only be derived from 18<sup>th</sup> century depictions, as the site was auctioned by the French in 1804 resulting in a steady deconstruction until the Bavarian government completely removed the majority of the buildings in 1820.<sup>1087</sup> The removal of the Bavarian state prison and other buildings from the area of the palace resulted in an uncovering of the chapel foundations during the excavation by Werner Bremer in the mid-1930s.<sup>1088</sup> The southern foundations of the chapel (a full format of the architectural plan is available in the online repository [here](#))<sup>1089</sup> reveal masonry from the early 12<sup>th</sup> century featuring parquet-style processing formed by a claw chisel on the southern wall extended from the great hall building. The style matches the masonry in the subterranean levels of the palace and on the inside of the curtain wall—suggesting that either a lower wall surrounded the chapel, or the curtain wall had been started at an earlier phase.

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<sup>1087</sup> Barz et al., “Kaiserslautern.” P. 111.

<sup>1088</sup> Ibid. P. 112.

<sup>1089</sup> Aaron Pattee, “Königspfalz Lautern, 10, Chapel, AllFoundations, SouthEast, Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.ub.uni-heidelberg.de/detail/1728692>. Also catalogued as Architectural Plan 38.

Only a small, eastwardly protrusion exists of the foundation of the former apsis. Provided that the masonry of this protrusion exhibits the same parquet-style markings, the apsis was built prior to the renovation by Frederick I, therefore placing it within Romanesque I. These findings from the chapel foundations indicate that the chapel had been begun before Frederick I and the plan was simply continued by his architects. This is rather important, because it suggests that the novelty of the position of the chapel relative the main hall cannot be attributed to Frederick I and his building efforts, but rather to an organic development beginning in the late Salian period.

A narrow corridor separates the southern chapel foundations from the northern side of the curtain wall, into which access was gained via Portal 23 (Figure 21), whose door opened from the eastern side of the chapel foundations (a full format of the architectural plan is available in the online repository [here](#))<sup>1090</sup> into the corridor. The precise use of this corridor remains speculative, though it could have simply served as a storage area considering the eight servitia listed as having belonged to the palace. The eastern foundations of the chapel were added to the southern foundations and were built during the renovations under Frederick I. Indications for their later addition are the lack of parquet-style markings on the stone and a lack of interlocking stones on the southeastern corner (Figure 22). Dotted indentures on the stones of the eastern foundations take the place of the parquet-style markings of the stones on the southern foundations, bearing a similarity to some of the stones located on the walls of the outer court at Castle Hohenecken. In turn, this helps identify the beginning of the castle as early than previously thought.

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<sup>1090</sup> Aaron Pattee, “Königspfalz Lautern, 10, Chapel, AllFoundations, East, Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.ub.uni-heidelberg.de/detail/1728691>. Also catalogued as Architectural Plan 37.





Figure 21: Portal 23 into corridor between the chapel and the curtain wall.



Figure 22: Non-interlocking stones between the eastern and southern foundations.

#### 4.3.5.3 Group 11. Main Hall

The main hall was excavated in 2010 and 2011, revealing the outline of the walls,<sup>1091</sup> including the connection to the chapel and a well located near the southeastern corner. The subsequent reconstruction and preservation efforts, essentially covered the crowns of the medieval masonry in an effort to preserve the walls from erosion. The majority of what is seen at the site of the main hall consists primarily of these reconstructions, though several courses of masonry from Romanesque I and II are visible along the ground levels on the inside of the Main Hall. The positions of these stones are available in the online repository in full format under subgroups [11.1](#), [11.2](#), and [11.3](#).<sup>1092</sup> The stones of the outside of the southern wall were intricately documented by De Filippo in his reports from 2011 to 2012 and belong to the second category featuring polygonal forms, centered Lewis holes, and subtly chiseled processing on the outside. De Filippo also determined that a single stone mason's mark was discovered on these stones indicating a unified construction effort of the same phase. The inside of the walls were less uniform in sometimes angled forms, featuring multiple Lewis holes, and different profiles. These belong to category one and are mostly spolia.<sup>1093</sup>

Due to the coverage of the medieval masonry by the reconstructed portions, I did not conduct as highly detailed an examination of the building as I had done with the other buildings at the site. The walls of the basement levels correspond to the same height and building phase as the foundations of the chapel indicating that the chapel and main hall constellation preceded the expansion under Frederick I. This is consistent with the development of the royal palaces until the mid-12<sup>th</sup> century, as the constellation had become the standard by the 12<sup>th</sup> century.<sup>1094</sup> The additions under Frederick I consisted mainly of the southern wall that faces the modern-day street, but had bordered the Schlosswoog in the High Middle Ages. The northern-most wall of the basement levels

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<sup>1091</sup> "Förderkreis Kaiserpfalz Kaiserslautern e.V. - Die Kaiserpfalz," accessed August 31, 2020, <https://www.kaiserpfalz-kaiserslautern.de/index.php/der-burgberg/die-kaiserpfalz.html>.

<sup>1092</sup> Aaron Pattee, "Königspfalz Lautern, 11.1, MainHall, NorthernBasement, SouthernWalls, Texture and Mesh," Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728693>; Aaron Pattee, "Königspfalz Lautern, 11.2, MainHall, WesternBasement, WesternWall, Texture and Mesh," Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728695>; Aaron Pattee, "Königspfalz Lautern, 11.2, 11.3, MainHall, WesternAndEasternBasements, NorthernWalls, Texture and Mesh," Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728694>. Also catalogued as Architectural Plans 39, 41, and 40 (respectively).

<sup>1093</sup> De Filippo, "Kriterien zur Auswahl der Steine." Pp. 1-3.

<sup>1094</sup> Gauert, "Zur Struktur und Topographie der Königspfalzen." Pp. 42-43.

of the Main Hall was built into the natural rock, as is also seen at the northern corner of the eastern Curtain Wall that was built on a north to south axis. The rock features dozens of thin rock layers, preventing the quarrying of ashlars (Figure 23).



Figure 23: Natural rock outcrop (highlighted area) between the main hall and the chapel.

This means that either the stones composing the structure were quarried from another part of the site, or that they were quarried from the nearby hills and then brought to the site. The most likely scenario is that the stones were brought from elsewhere, namely the hills up river from the palace. By quarrying the stones further away, the scenery of the palatial estate would not be disturbed. Its position against the large lake to the south, fed by the Lauter River, would have facilitated a swift mode of transporting the material directly to the site. The use of an upper-river quarry would also explain as to how the nearby hospital of St. Mary (later the Premonstratensian Monastery of Lautern) received its building materials. Furthermore, the likely use of the same quarry indicates that workshops were involved in both building projects. Two features are worthy of note in the western and eastern basements belonging to the southern portion of the Main Hall shown in the architectural plans 11.2.4 and 11.4.1: Portal 11 and the Well 2 (respectively). Portal 11 is peculiar as its opening is blocked by the outer wall from the 17<sup>th</sup> bastion built by the Electorate of the Palatinate. The purpose of the portal is unclear when considering that it presented an opening from the palace to the area beyond the wall (a full format of the architectural plan is available in the online repository

[here](#))<sup>1095</sup>. Therefore, it could have been used for disposing items from the castle or as a convenient method of transporting foodstuffs from the river into the palace. Nothing remains of the original portal, save a weathered block giving the appearance of a threshold. The current construction of the portal is entirely speculative as it was built recently during Reconstruction III. The masonry directly to the south of the portal continue from the course composing the piers of the reconstructed portal. However, they are slightly angled, despite being from the same building phase. The probable reason for these unlevelled courses of stones is due to the fact that this corner of the building was built upon a wooden structure as it extended into the lake, whereas the other corner at the southeastern end was built upon natural rock. In turn, this could provide evidence that the portal had in fact been a support arch for the building.

The well located in the middle of the eastern basement was a newer development as its masonry indicates its origin from the Renaissance. This was determined by the finishing of the stone surfaces on the inside of the well, which strongly resembles the finishing of the quoins of Inner Chamber D (Figure 24), which was built during the Renaissance. Nevertheless, it is probable that it had been a renovation of a previous medieval well or cistern.



Figure 24: Comparison of the stone profiling within Well 2 (left) and the surface of Inner Chamber D (right).

The outer wall of the Main Hall features the grand red sandstone sloped walls described by Rahewin—as was discussed in Section 3.3.1.2—though only three stone courses are still visible (Figure 25), and the upper two courses are products of Reconstruction III, serving to protect the

<sup>1095</sup> Aaron Pattee, “Königspfalz Lautern, 11.4, MainHall, WesternOuterWall, WesternWall, Texture and Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.ub.uni-heidelberg.de/#/detail/1728696>. Also catalogued as Architectural Plan 42.

crowns of the original stones and provide a foundation for the metal structure built atop the ruins of the Main Hall as part of a recent rehabilitation campaign to also expand the site's physical presence at the center of the city of Kaiserslautern.



Figure 25: Outer wall of the Main Hall exhibiting the stones celebrated by Rahewin.

#### 4.3.5.4 Group 12. Outer Ward Wall

The outer ward wall (the full formats of the architectural plans of the [southern side](#)<sup>1096</sup> and the [northern side](#)<sup>1097</sup> in the online repository) is all that remains of the Salian wall still visible from the outside that once continued through the entire site. The wall also features stones with the parquet-style finishing adorning the stones of the chapel foundations on the southern side and the bottom courses of the wall of the Main Hall. This indicates that the wall drawn by the Salians to serve as the outer wall of the palace had later served as the foundation of the both the great hall and the chapel buildings. It is entirely possible that the eastern extension of this wall had been merged with the chapel, whose construction was completed by Frederick I. Although his additions did alter the appearance of the palace, certain portions—such as the outer ward wall—were maintained in their previous form. The effect of preserving the outer ward wall built by the dynastic predecessors of the Hohenstaufen created a visual continuation of the construction ambitions of the two families. Unfortunately, much of the outer ward wall was still covered with a tarp and bounded on its sides with overgrown weeds during the recording of the site. The point of connection between the Main Hall and the Outer Ward Wall is particularly interesting as it connects at an angle into a junction between the western wall of the Main Hall and a very short wall (Figure 26) leading directly to the west, extending directly from the northern basement wall of the great hall. This wall is largely a product of Reconstruction III making it rather difficult to determine what its original purpose had been.

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<sup>1096</sup> Aaron Pattee, “Königspfalz Lautern, 12.1.1, OuterWardWall, SalianWall, SouthernSide, Texture and Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.ub.uni-heidelberg.de/detail/1728697>. Also catalogued as Architectural Plan 43.

<sup>1097</sup> Aaron Pattee, “Königspfalz Lautern, 12.1.2, OuterWardWall, SalianWall, NorthernSide, Texture and Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.ub.uni-heidelberg.de/detail/1728698>. Also catalogued as Architectural Plan 44.



Figure 26: Fragment of westward wall (highlighted) leading towards the west.

#### 4.3.5.5 Group 13. Curtain Wall

The Curtain Wall is the largest and most iconic component of the medieval structure that is still visible today, featuring large embossed ashlar arranged in a slight slope. Although centuries of erosion have somewhat reduced the embossing of the stones, they still have quite an imposing effect. The purpose of the wall was to envelop the chapel in a sort of cladding, and at one point included large arched openings allowing for light to enter the area between the chapel and the wall. These large arches were crowned with an arcade that truly gave the impression of a crown—highlighting the representative nature of the building. The wall is positioned in the shape of an ‘L’ composed of two parts: a southern wall running east to west, and an eastern wall running north to south. The southern wall has a southern side and northern side that are presented as Wall Number 13.1.1 (view the full format [textured](#)<sup>1098</sup> and [meshed](#)<sup>1099</sup> architectural plans in the online repository) and Wall Number 13.1.2 (view the full format [textured](#)<sup>1100</sup> and [meshed](#)<sup>1101</sup> architectural plans in the online repository). The southern side faces the modern-day street, although the medieval scenery featured the Lauter River and a lake. The wall is built upon the natural bedrock, though exactly where the bedrock ends is currently unknown. It is possible that the position of the wall was dependent upon the extent of the rock considering its sheer size. This is not self-explanatory as the great hall extended beyond the natural bedrock on its southwestern corner, necessitating a wooden support structure.

In any event, the wall was built after the completion of the inner chapel—as it was built around the chapel—and therefore towards the end of the 12<sup>th</sup> century. It was determined to be from the early 13<sup>th</sup> century, according to Barz et al.,<sup>1102</sup> though the form of the embossed ashlar and their similarity to those found at castles Hohenecken and Perlenberg suggests that they are of a slightly

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<sup>1098</sup> Aaron Pattee, “Königspfalz Lautern, 13.1.1, CurtainWall, SouthernWall, SouthernSide, Texture,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728700>. Also catalogued as Architectural Plan 46.

<sup>1099</sup> Aaron Pattee, “Königspfalz Lautern, 13.1.1, CurtainWall, SouthernWall, SouthernSide, Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728699>. Also catalogued as Architectural Plan 45.

<sup>1100</sup> Aaron Pattee, “Königspfalz Lautern, 13.1.2, CurtainWall, SouthernWall, NorthernSide, Texture,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728702>. Also catalogued as Architectural Plan 48.

<sup>1101</sup> Aaron Pattee, “Königspfalz Lautern, 13.1.2, CurtainWall, SouthernWall, NorthernSide, Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728701>. Also catalogued as Architectural Plan 47.

<sup>1102</sup> Barz et al., “Kaiserslautern.” P. 118.



earlier time. Considering that wooden posts were discovered at the site, providing evidence that the construction continued into the 1190s,<sup>1103</sup> the curtain wall was most certainly a component of this later construction. Interestingly, the northern side of the wall indicates three building periods including Romanesque II, III, and IV. Towards the end of the chapel's construction, the curtain wall was begun, enveloping the eastwardly ward wall composing the southern wall of the inner chapel foundations. After the construction of the inner chapel, a small wall was built from the southeastern corner to connect to the Curtain Wall. This small wall was built during Romanesque III and includes Portal 23. The evidence for this addition lies in the very abrupt masonry seam shown in plan number 13.1.2. The masonry surrounding Portal 23 follows along different course than those to the left of the Portal built during Romanesque IV. Thus, the masonry from Romanesque II was first augmented by the installation of Portal 23, then its connection to the main hall on its western end was reconstructed during Romanesque IV. This western end of the Curtain Wall was begun in the 1190s during the transition between Romanesque III and IV indicated by two distinct building phases that converged near the center of the wall (Figure 27), and the position of a large embossed ashlar evening out the stone courses. This indicates that a sort of curtain wall had been started around the time of the completion of the inner chapel, presumably constructed as a smaller building on the outside, through which access could be gained by Portal 23. The architectural plan took a rather sudden change in which this outer building was augmented to serve as the foundation for the more elaborate curtain wall to include large arched windows and an upper level of arcades. In order that this outer building be suited for the task, its western end was adapted to the eastern side of the main hall, and the southern side of Portal 23 was integrated into the new construction.

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<sup>1103</sup> Gies, "Lautern bleibt, was es war."



Figure 27: Connection of the Curtain Wall to the Main Hall (left) and continuation of stone courses from Salian Ward Wall to the Main Hall (right).

The southern side of the curtain wall facing the modern-day street features very large embossed ashlars. Some of a similar style are interspersed on the inside of the wall as well, but are intermixed with various other types of stones of different sizes and profiles. These other types are almost certainly spolia. In stark contrast to the inside patchwork, the outside stones are very uniform and clearly indicate a single building phase conducted in two parts, separated by a large vertical masonry seam that stretches 4.15 meters. The seam aligns precisely with the outside of Portal 23 on the other side of the curtain wall, which means that the outside of the wall was begun while the inside was merged into the outer building into which Portal 23 provided access. This masonry seam also indicates that the outside of the curtain cladded the inside until the entrance of Portal 23, after which the curtain wall was continued in an eastward direction using spolia on the inside to maintain the same thickness. Some of the outside stones are quite large, measuring 1.25 meters diagonally on the profiled surface—precisely the same size and profiling as some of the stones on the main tower of Castle Hohenecken that measure 1.24 meters diagonally. It is for this reason that the curtain wall and main tower of Castle Hohenecken belong to Romanesque IV and thus built at the turn of the 13<sup>th</sup> century. The 1215 date of construction of the curtain wall provided by the Burgenlexikon can be confirmed by these findings, though it was likely the date of completion.

A variety of curiously placed putlog holes on the southern side of the curtain wall and portions of the bossed ashlars have been chiseled flat. Provided that the stones are the same from the 12<sup>th</sup> century, these holes and stone cuttings were done at a late time. They were added during the establishment of the *Schloßmühle* (the mill belonging to the Palace) as depicted in plan from 1821, featuring the outer walls of the palace, and the mill with three large water wheels along the course

of the Lauter River. The walls of the mill correspond precisely with the portion of the flattened ashlar both the southern and eastern sides. This is corroborated by Daniel Zink, who identified the same scenario.<sup>1104</sup> The mill was built prior to 1314 based upon a charter from the same year describing a pledge regarding an interest rate of corn from received by the knight Wilhelm von Ackers from the *Burgmühle*<sup>1105</sup>—which is the same as the *Schloßmühle*, provided the tendency of later centuries to label an old Burg as a Schloss. The charter was issued only four years after the construction of a mill on the *Kaiserwoog* (also called *Schlosswoog*), authorized by King Henry VII on 9 August 1310.<sup>1106</sup> However, it is uncertain if this is the same mill, or perhaps the *Stadtmühle*, which was formerly known as the *Klostermühle* in the 14<sup>th</sup> century.<sup>1107</sup> The year 1310 was particularly relevant for the mills in and around Lautern as King Henry VII granted logging rights from the forests of Lautern to the monastery of Enkenbach as well.<sup>1108</sup>

The southeastern corner of the curtain wall is also the connection point between its southern and eastern components, catalogued under Wall Number 13.2.1 (view the full format of the [textured](#)<sup>1109</sup> and [meshed](#)<sup>1110</sup> architectural plans in the online repository) and Wall Number 13.2.2 (view full format of the [textured](#)<sup>1111</sup> and [meshed](#)<sup>1112</sup> architectural plans in the online repository). The same phenomenon of uniform embossed ashlar on the outside and spolia on the inside is also exhibited on the eastern component of the curtain wall. The eastern side (i.e. outside) of the wall

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<sup>1104</sup> Zink, *Kaiserslautern in Vergangenheit und Gegenwart: eine Ortskunde auf geschichtlicher Grundlage*. P. 306.

<sup>1105</sup> Friedrich Weber, *Die Mühlen der Stadt Kaiserslautern und der Näheren Umgebung*, ed. Nordpfälzer Geschichtsverein Rockenhausen and Landkreis und Stadtverwaltung Kaiserslautern (Kaiserslautern: Rudolf Roch oHG, 1967). Pp. 10-12.

<sup>1106</sup> Kraft, “Das Reichsland von Kaiserslautern.” P. 64.

<sup>1107</sup> Weber, *Die Mühlen der Stadt Kaiserslautern und der Näheren Umgebung*. Pp. 24-25.

<sup>1108</sup> Zink, *Kaiserslautern in Vergangenheit und Gegenwart: eine Ortskunde auf geschichtlicher Grundlage*. P. 156.

<sup>1109</sup> Aaron Pattee, “Königspfalz Lautern, 13.2.1, CurtainWall, EasternWall, EasternSide, Texture,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728704>. Also catalogued as Architectural Plan 50.

<sup>1110</sup> Aaron Pattee, “Königspfalz Lautern, 13.2.1, CurtainWall, EasternWall, EasternSide, Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728703>. Also catalogued as Architectural Plan 49.

<sup>1111</sup> Aaron Pattee, “Königspfalz Lautern, 13.2.2, CurtainWall, EasternWall, WesternSide, Texture,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728706>. Also catalogued as Architectural Plan 52.

<sup>1112</sup> Aaron Pattee, “Königspfalz Lautern, 13.2.2, CurtainWall, EasternWall, WesternSide, Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728705>. Also catalogued as Architectural Plan 51.

features three construction phases including a continuation of Romanesque IV. The other two phases are Gothic I, during which the Schossmühle was added, and Renaissance I during the renovations of Johann Casimir in the 16<sup>th</sup> century. These additions kept the masonry from Romanesque IV, and only performed modifications on the embossing of the stones. The aspects of the eastern wall that are particularly relevant regarding the medieval design of the site are the positions of Portals 13 and 14 and Window 18. These were once the large openings that allowed light into the area of the chapel just beyond the border of their protection. As Window 18 and Portal 13 were both installed during the Renaissance, when combined they reveal what had previously existed. These large openings were arched—according to 18<sup>th</sup> century depictions—and were architectural siblings of those arched openings on the southern side—though nothing remains of them. The wall of Inner Chamber D was built directly against the eastern side of the eastern Curtain Wall (Figure 28), though the curtain wall continued more to the north and wrapped around to the west as indicated in the 18<sup>th</sup> century depictions. The fate of this northern component is unknown as nothing more exists. The renovation efforts of the renaissance managed to match the level of the stone courses of the eastern curtain wall at the bottom, giving the impression of a continuous structure. These findings, along with the constellation of window 18 and portal 13 demonstrate how the renaissance renovations were finely crafted into the medieval structure as a continuation of the architecture rather than a sudden departure.



Figure 28: Connection of the western section of Inner Chamber D to the eastern Curtain Wall with close up (right).

Unfortunately, the western side of the eastern component of the curtain wall was mostly covered with vegetation at the time of the recording. Despite the overgrowth, two construction phases are identifiable, namely those of Romanesque IV and Renaissance I. Additionally, a small portion of the segmented natural rock is also visible at the northeastern corner of the wall (Figure 29), bounded on the west by a support wall from the Renaissance. It is possible that the eastern curtain wall originally made its western turn at this point, but was partially dismantled during the construction of Renaissance I. The majority of what is to be found on this side of the Curtain Wall mainly pertains to the Renaissance, which is beyond the scope of this project's chronological focus. However, the position of the wall relative the chapel foundations is interesting as it leaves enough room between the two for an apsis—after all, its purpose was to envelop the inner chapel.



Figure 29: Natural Rock at the northwestern corner of the eastern Curtain Wall.

#### 4.3.6 Interpretation of the Architectural Investigations at the Palace

Based upon the investigations presented in this documentation of the palace, the majority of the medieval construction occurred before 1200 during construction phases Romanesque I – III, though some stretched into the 13<sup>th</sup> century and therefore part of Romanesque IV. The renovations under Frederick I were continued under the authority of his son and successor, Henry VI upon his death in 1190. Although the construction may have continued to follow the plans designed during Frederick’s reign, the curtain wall is markedly different than the other components belonging to the palace prior to the 1190s. As was previously discussed in Sections 3.3.4 and 3.5.7 regarding castles Perlenberg and Trifels, the ransom of Richard the Lionheart in 1194 resulted in an influx of funds for building projects and campaigns. Considering that Henry VI had already been crowned as king prior to his father’s death, he had acquired trusted ministeriales within his entourage, which included members of the von Lautern-Hoheneck family, namely Heinrich I von Lautern—a person routinely mentioned in this work. His administrator position as imperial chamberlain—a position he first held in 1187—meant that he was responsible for the emperor’s housing arrangements. In this case, it meant developing the palace to both demonstrate the new emperor’s status and to accommodate his entourage. However, he was not the only one of the family who had belonged to the royal and later imperial entourages under Henry VI. Heinrich’s father, Eckbert I was a royal marshal between 1188 and 1190,<sup>1113</sup> his brother Siegfried I had served as a commander of a royal castle in July 1190,<sup>1114</sup> and his brother Johannes served as master of ceremonies for the new Emperor Henry VI in April 1191.<sup>1115</sup> His other brothers would all later serve the emperor in some capacity—usually as sheriffs and palace administrators—throughout the 1190s thereby cementing their position as key members of the entourages specifically around Henry VI.

Thus, the involvement of a member of the von Lautern-Hoheneck family in the construction and design of the palace was certainly not limited to Heinrich I von Lautern alone. Instead, his brothers and possibly his father were involved in the development of the palace as Heinrich was often away with the emperor—implying that he was involved with other palace construction projects. In fact, he was well acquainted with palatial estates considering that he had routinely visited palaces throughout the German Kingdom determined by his appearances in charters issued from the

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<sup>1113</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. Pp 64-65. Also catalogued as Charter IDs 10761, 10763, and 10764 in the graph database.

<sup>1114</sup> *Ibid.* P. 69. Also catalogued as Charter ID 10770 in the graph database.

<sup>1115</sup> *Ibid.* P. 73. Also catalogued as Charter ID 10792 in the graph database.

palace. These included four appearances in Frankfurt am Main,<sup>1116</sup> seven in Gelnhausen,<sup>1117</sup> and seven in Haguenau<sup>1118</sup>—not to mention his five appearances in Lautern.<sup>1119</sup> He also appeared at the palaces of Aachen<sup>1120</sup> and Kaiserswerth<sup>1121</sup> as well as a host of Italian cities, most notably the palace of Palermo in which he appeared in four charters<sup>1122</sup> following the Sicilian conquest. The development of the Palace of Lautern as one of the premier palaces of the empire began under Frederick I, with great applause from Rahewin, though the palace was still celebrated in the mid-13<sup>th</sup> century during Richard of Cornwall's marriage. This indicates that the palace was of elite standing—more so than other palaces—which could only be facilitated through a meticulous attention to its construction and maintenance.

More plainly, the family was responsible for the construction of the curtain wall around the chapel that communicated Henry VI's equivalence to his late father. The curtain wall was upgraded from the original plan connecting to the main hall, while still presenting a continuation of Frederick's political aspirations to control the ecclesiastical domains within the empire. The large curtain wall completely enveloped the chapel, demonstrating that the chapel was under the protection of Henry and that access to the inner chapel belonged to him alone. The use of large embossed ashlar was also demonstrative of the new wealth that the empire had gained through the ransom of the English King.<sup>1123</sup> The series of sheriffs who were responsible for the administration of the Reichsland of Lautern beginning with Heinrich I's brother, Reinhard I von Lautern, provides evidence that the familial control of the administration of the palace correlated to a sense of duty to preserve that may have bordered upon a sense of ownership, as the family emulated the majesty of the curtain wall composed of embossed ashlar at their own castle, discussed in the next section.

<sup>1116</sup> Ibid. Pp. 68, 72, 84, and 92. Also catalogued as Charter IDs 10768, 10809, 10838, and 10862 in the graph database.

<sup>1117</sup> Ibid. Pp. 76, 84, 89-90, and 92. Also catalogued as Charter IDs 10810, 10836, 10837, 10856, 10857, 10858, and 10863 in the graph database.

<sup>1118</sup> Ibid. Pp. 55, 76, 80, 92, and 99. Also catalogued as Charter IDs 10726, 10805, 10806, 10807, 10824, 10861, and 10893 in the graph database.

<sup>1119</sup> Böhmer, *Die Regesten des Kaiserreiches unter Friedrich I 1152(1122)-1190*, IV:1190. P. 86. Also catalogued as Charter ID 10601 in the graph database. Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. Pp. 90-92 and 138-139 Also catalogued as Charter IDs 10076, 10859, and 10860 in the graph database. Dolch and Münch, *Die Urkunden des Zisterzienserklosters Otterberg 1143-1360*. P. 90. Also catalogued as Charter ID 10411 in the graph database.

<sup>1120</sup> Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,1 n. 822."

<sup>1121</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. P. 84. Also catalogued as Charter ID 10835 in the graph database.

<sup>1122</sup> Ibid. P. 87. Also catalogued as Charter IDs 10846, 10847, 10848, and 10849 in the graph database.

<sup>1123</sup> Engl, "Mit dem Lösegold finanziert: Kaiser Heinrich VI. erobert das Königreich Sizilien."



## 4.4 Castle Hohenecken

### 4.4.1 First Inspection and Key Insights at Castle Hohenecken

My first inspection of Castle Hohenecken followed a story similar to that which was described in Section 4.3.1 regarding the royal palace. I have known Castle Hohenecken nearly my entire life and visited the site very often (Figure 30). However, my first architectural inspection of the site took place in 2015 during my work on my master's thesis in which I recorded a SfM and TLS model of the site.<sup>1124</sup> Due to the lack of calibrated markers in the first recording, I revisited the site in 2018 and conducted a new SfM recording. For this 'first' inspection in 2018 prior to the recording, I tried to examine the site with a more critical lens based upon my previous experiences, paying close attention to the building phases.



Figure 30: Visiting Castle Hohenecken with my family in the summer of 1996.

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<sup>1124</sup> The aerial SfM recording was conducted by Christian Seitz and the TLS recording was mainly conducted by Prof. Dr. Bernhard Höfle and Zsófia Koma of the Institute for Geography at Heidelberg University.

Castle Hohenecken is located atop a 376 meter high natural rock formation protruding from the spur of a low mountain directly southwest of the city of Kaiserslautern.<sup>1125</sup> The castle overlooks the suburb of Kaiserslautern-Hohenecken, which had been the village of Hohenecken prior to 1969.<sup>1126</sup> The name of the castle means ‘high corner,’ presumably referring to its position on the cliff, overlooking the surrounding valley on three sides. Immediately noticeable when visiting the site is the fact that it is not built at the highest point of the mountain that continues to rise well above the castle to the northeast. When standing upon the highest point of the mountain, one can look over the first rock wall of the castle and into its outer court. The inner castle is invisible from the outside due to a second large shield wall on the eastern side with a tower in the middle of it, stretching above the terminus of the wall. The southern, western, and northern sides of the castle resemble a horseshoe, whose opening faces the northeast with the main structure of the castle within the curve. A number of windows can be seen on the northern side which are directed towards the valley allowing one to view directly north over the *Nordpfalz* (northern Palatinate). Fewer windows face the south/southwest into the valley that twists its way through the densely forested mountains of the German Palatinate.

The entire site can be divided into two sections: the areas outside of the inner castle, and the area within the inner castle. The outside, which will be called the outer court, consists of an entranceway, a bedrock wall, the foundations of a building at the southeastern corner, and the scant remains of an outer wall that enclosed the outer court. The front gate forming the entrance to the site is located at the southeastern corner, connected on its northern side by the bed rock wall, and on its southern side by the foundations of a slender building. The keystone of the front gate features the crest of the Hohenecken family above which the year ‘1560’ is engraved, which is curiously off-center in relation to the overall arch composing the entrance of the front gate, as though it had replaced a previous keystone and its neighboring *vousoir* to the right. Additionally, two short walls protrude from either side of the front gate, each featuring a rounded hole at the level of a firearm. However, the stout nature of the two protruding walls and their meager width when compared to the other walls of the castle, give the impression that these gun ports were more representative than utilitarian—not to mention the fact that they are located outside of the front gate.

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<sup>1125</sup> Keddigkeit and Losse, “Hohenecken.” P. 377.

<sup>1126</sup> Statistisches Landesamt Rheinland-Pfalz, ed., *Amtliches Gemeindeverzeichnis*, vol. 407, Statistische Bände (Bad Ems: Statistisches Landesamt Rheinland-Pfalz, 2016), [www.statistik.rlp.de/baende/band407\\_amtliches\\_gemeindeverzeichnis.pdf](http://www.statistik.rlp.de/baende/band407_amtliches_gemeindeverzeichnis.pdf). P. 151.

Once inside the castle, one is immediately acquainted with the tremendous shield wall directly within the line of sight. Despite various destruction phases, the wall has maintained its majesty, standing as a proud purveyor of the past. The courtyard between the outer rock wall and the shield wall is currently a grassy field, ideal for annual festivals and outdoor activities. The foundations of a long, yet narrow building extend along the southern side of the site when approaching through the front gate, of which only the western wall still stands. Its proposed purpose is extrapolated upon in Section 4.4.5.2, however it should be noted here that the length of the building makes the courtyard appear larger, thus enhancing the effect of the indomitable shield wall crowned with its main tower of embossed ashlar, similar to those featured in the Curtain Wall of the royal palace discussed in Section 4.3.5.5. The tower is accentuated by the distribution of the buildings which neither connect to the wall nor hinder its view from top to bottom. Other castles, such as Castle Landsberg in Alsace, France, also have large main towers constructed of the iconic embossed ashlar, yet the towers are more integrated with the sprawling nature of the castle and not left as a stone guardian commanding the attention of the visitor (Figure 31). However, this is likely a result of destruction and neglect rather than an intention of the architects.



Figure 31: Comparison of the Towers from Castles Landsberg (left) and Hohenecken (right).

The entrance to the inner portions of the castle is currently along the same trajectory taken when one walks through the front gate, passing the elongated building to the left. It is likely that the original entrance had indeed been on this side, due to the optics of leading the visitor to the inner part of the castle, behind the stone tower. In fact, the outer court, shield wall, and main tower have a martial appearance and feel—indicating a preservation of the integrity of feeling at the site—whereas the inner court provides a more residential impression. The combination of these factors adds to the intricate nature of the site as having fulfilled both roles in its past. The current staircase leading into the castle was reconstructed of the ruinous building material during the early 20<sup>th</sup> century, which has unfortunately permanently altered a large portion of the southern wall of the inner castle, or keep. The inside of the keep is transected by the desolate remains of the numerous walls once composing the residential portions of the site.



Figure 32: Renaissance plinths of the spiral staircase between Inner Chamber A and the Inner Court.

The building on the southern side of the inner castle located to the left when entering the site, reveals two walls that stretch multiple levels. The foundations of additional walls belonging to the building are still visible and indicate that the building had been closed. At the northeastern corner of this same building are remnants of a spiral staircase and the plinths of two columns from the renaissance (Figure 32). Directly in front of these plinths is an opening with large stone pavers that once populated the inner court (Figure 33). Though mostly shattered, they still exhibit deep scores in the

stone for drainage purposes. Beyond the staircase is a large wall with two double-arched windows and three portals, connecting to another wall that it shares with the first building. At the junction of the foundations of the first building and the fenestrated wall just described, is a portal leading into the western area of the inner castle composing a third building that features numerous windows, doorways, and chimneys arranged in a semi-circle. Through this western building, one also gains access to the northern building which proudly displays six windows in a row with another arched opening on the level above. The southern wall of this northern building includes the two double-arched windows previously mentioned. Three levels are visible for this building which seems to have at one point connected to the great shield wall located to its east, based upon the craggy remains of a wall on the western side of the shield wall. With the exception of the well in the southeastern corner, the foundations of a staircase in the middle, and curiously placed stone block, little remains of the castle's inner court.



Figure 33: View of the Inner Court of Castle Hohenecken from the position of the well.

The entirety of the inner castle is built directly upon the natural rock outcrop from which the stones comprising the various building types were presumably quarried. The use of on-site materials would not only have allowed for a quick access to the building blocks of the site, but also carved the foundation into the desired design. Portions of the natural rock outcrop where gaps had formed through erosion were filled with ashlars and mortar as support for the structure.

#### 4.4.2 Laser Scan Procedure for Castle Hohenecken

The TLS recording of Castle Hohenecken took place on 8 April 2015 (from 11:20 until 17:53) with Professor Bernhard Höfle of the Institute for Geography and Zsófia Koma, a guest graduate student from Budapest University. The process is described in detail in Section 5.1 of my 2016 master's thesis.<sup>1127</sup> As the focus of this project shifted towards exploring results of the new SfM models as a basis for documenting the construction history of the primary sites, I did not conduct a new TLS recording of Castle Hohenecken.

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<sup>1127</sup> Pattee, "Integrative 3D Recording Methods of Historic Architecture: Burg Hohenecken from Southwest Germany." P. 129.

#### 4.4.3 Photogrammetric Procedure for Castle Hohenecken

The SfM recording of Castle Hohenecken consisted of three campaigns over the course of three years, conducted within a timeframe from April 2015 until September 2018. The only aerial SfM recording was conducted in May of 2015, and the first terrestrial SfM recording in June of 2015. These results are documented and discussed in the 2016 master's thesis.<sup>1128</sup> Unfortunately, these recordings did not take into account all of the various aspects necessary for a well-calibrated and precise model as outlined in Sapirstein, 2016.<sup>1129</sup> Due to the lack of a fixed focal length on the camera lens and absence of a tripod in the terrestrial photos, in addition to not having placed calibrated markers for both photo-sets, the SfM model exhibited distortions in its dimensions and was no longer suitable, independent of a precise adjustment. The camera specifications of both the first terrestrial recording and the aerial recording are found in Tables 3 and 4. The first SFM model was merged with the highly precise TLS model conducted in April of 2015, which resulted in the benefit of both adjusting the SfM model and adding higher resolution textures to the TLS model as presented in my master's thesis. Despite the promising result of the merged model, certain portions of the castle were still missing. The northern and southern upper-hand sides of the monumental shield wall were not captured by the drone in the aerial photo-set, nor were they captured in the terrestrial photo-set. The southern lower wall located directly south of the main gate, and the remnants of the northern outer-wall were also not recorded due to the thick vegetation that surrounded the site in 2015. Additionally, the process of combining the SfM and TLS models first required both models to be either point clouds or meshes. The TLS model was already a point cloud and the SfM model could be exported as a dense point cloud, though that would eliminate the key benefit of the SfM model, namely the high resolution textures. Therefore, I had opted to convert the TLS model into a mesh, which necessitated a decimation of the point cloud in order to generate a mesh and merged it with the SfM model. The result of the decimated TLS model was the loss of entire portions of the walls. However, merging the precise measurement of the TLS model still adapted its precision to the SfM model resulting an accurate model despite the lack of calibrated points during the SfM recording. It must be noted that the lack of calibration points certainly had a negative effect upon the textures even though the model was precisely scaled. The model from the 2016 thesis includes a multitude of distorted areas caused by stretching the SfM model to the TLS model, thus reinforcing the necessity of applying calibration points from the beginning.

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<sup>1128</sup> Ibid. The photogrammetric process begins on page 139.

<sup>1129</sup> Sapirstein, "Accurate Measurement with Photogrammetry at Large Sites."

Table 3: Camera specifications for the first terrestrial SfM recording of Castle Hohenecken.

HOHENECKEN: 2015 TERRESTRIAL				
CAMERA	Model	Focal Length	Exposure Time	ISO
	Nikon D3300	Variable	1/40 sec.	100
IMAGE	Width	Height	Resolution	Bit Depth
	6000 pixels	4000 pixels	300 dpi	24

Table 4: Camera specifications for the aerial SfM recording of Castle Hohenecken.

HOHENECKEN: 2015 AERIAL				
CAMERA	Model	Focal Length	Exposure Time	ISO
	Sony NEX-7	19 mm	1/640 sec.	100
IMAGE	Width	Height	Resolution	Bit Depth
	6000 pixels	4000 pixels	75 dpi	24

Since the recordings of 2015, the local Förderverein has trimmed nearly all of the vegetation around the site and invested in goats to maintain the area by eating the briars and bushes. Scaffolding was also present in the inner-chambers of the northern quarters of the inner-castle during the TLS recording, against the western side of the great tower during the aerial recording, and atop the crowns of the walls on the southern chambers during the terrestrial SfM recording. The castle had been under renovation for nearly four years, resulting in a regular change of scaffolding. The movement of the scaffolding was indeed problematic, though only one of the three sections was worked upon at one time. Therefore, what one recording could not capture due to the blockage of the scaffolding, another recording could.

Based upon the findings from the master's thesis, it became clear that the site needed to be terrestrially recorded using SfM a second time. The aerial photos of the Castle Hohenecken were not re-recorded as they still provided an accurate overview of the state of the ruin, with the exception of the crown of the walls of the southern chambers, which was renovated in June of 2015 after the aerial recording in May, and the western wall of the great tower, where scaffolding had stood during the recording. The new terrestrial photos were recorded in October of 2018 using a Nikon D750 camera, a tripod, and fixed focal length of 28 mm. In total, 1,485 new photos were taken of the site with 250 calibrated markers distributed evenly throughout the entire site, including the southern and northern outer-walls previously not recorded. The upper-hand portions on the northern and southern



sides of the shield wall were also recorded as best as possible given their 20 meter height above the outer courtyard of the castle. A rebuilt foundation within the inner courtyard of the castle which followed a recent, though unpublished, excavation between the renaissance spiral staircase and the well was also recorded.

I began the second terrestrial photoset around 9:00 on October 27, 2018 (specifications in Table 5). The weather was overcast and around five degrees centigrade. Much of the greenery on the existing vegetation was still present. It was important to choose a time in which only limited scaffolding was present and where the textures of the aerial photoset and the new terrestrial photoset would be more similar than different—i.e. not to have a photoset from high summer and one from the dead of winter. Therefore, October of 2018 was well suited to the task. Around 10:30, the sun began to faintly shine through the blanket of clouds, which dispersed and blended the light perfectly for the new photoset. Although the site is a well-loved local destination for picnics and other events, the cold morning air and the absence of direct sunlight in October had its effect to the benefit of the recording, as nearly no one showed up that morning, save the president of the Förderverein, a photographer, and the regular cohort of local runners. I ended the recording at around 13:00, totaling slightly less than four hours with no pauses. The recording was also featured in a regional magazine entitled *Vielfalz*, which seeks to discover the hidden treasures of the Palatinate and make them known to the general public in efforts to promote its rich history and culture.<sup>1130</sup>

Table 5: Camera specifications for the second terrestrial SfM recording of Castle Hohenecken.

<b>HOHENECKEN: 2018</b>				
<b>CAMERA</b>	<b>Model</b>	<b>Focal Length</b>	<b>Exposure Time</b>	<b>ISO</b>
	Nikon D750	28 mm	1/160 sec.	400
<b>IMAGE</b>	<b>Width</b>	<b>Height</b>	<b>Resolution</b>	<b>Bit Depth</b>
	6016 pixels	4016 pixels	300 dpi	24

<sup>1130</sup> Dostal, “Neue Wege zu alten Schätzen.”

#### 4.4.3.1 Generating the SfM Model of Hohenecken

The time required for generating a model is always a key factor to take into account as it is dependent upon the size of the photoset, the resolution of the photos, the computational capacity at hand, and the processing time for the alignment, dense cloud, mesh, and texture stages of a model. Provided that the aerial and terrestrial photosets were conducted separately with two different cameras and two different focal lengths (shown in Tables 4 and 5), the photosets were aligned independently in order to eliminate the negative effect of processing all of the photos together—as various focal lengths lead to distortions. Processing the new photos from 2018 and the aerial photos from 2015 in Agisoft Photoscan Pro required a close examination of which sections had been renovated and, consequently, where masks would need to be applied in order to merge the two models. The two photosets consisting of the 2015 aerial recording and the 2018 terrestrial recording were processed individually with high-resolution alignments and medium resolution dense clouds, meshes, and textures in order to produce initial models for masking. As the alignment stage would not be repeated after merging the models, it was necessary to have this on the highest settings. The other stages were at lower settings in order to quickly merge the two models and then repeat the dense cloud, mesh, and texture at higher settings for the merged model. The 2015 terrestrial photoset was not used due to the varying focal length of the photos, and lack of calibration points.

Once the alignment for the new terrestrial photoset was generated, I inspected each photo individually to make sure the calibrated markers had been identified, and in the cases where the markers were not identified, I then placed the correct marker taking two conditions into regard. First, manually applying markers can lead to distortions or even ruin the model, therefore, I only manually placed the markers in which I had at least 20 other photos in which the marker appeared because markers that were identified more often by the software were more reliable. Second, I only manually placed markers on their respective marker if the marker was crisply shown in the photo. Blurry markers are mostly due to the difference in distance from the camera and the fixed focal length, and adding a marker on a blurry part of the photo will interfere with the *Multi-View Stereo* (MVS) component of the model generation, upsetting the distance calculations. Upon checking all 250 markers, the dense cloud, mesh, and texture were generated at a medium resolution producing a model with 4 million polygons. Generating medium to low resolution models of both photosets provided a more flexible workspace for the masking to take place. Higher resolution models are more difficult to manoeuvre in the software due to the higher polygon count. This is dependent upon

the computer's amount of RAM, in which case the more the better for the sake of processing models in Agisoft.

The masks were generated directly in both models by simply deleting the unwanted features on the meshed textures and processing a mask from the altered model, rather than applying masks to the individual photos.<sup>1131</sup> During this stage, the western wall of the main tower and the crown of the wall of the southern chambers were masked from the aerial model due to the scaffolding in the photoset and alteration from later reconstructions (respectively). The 2018 terrestrial photoset included scaffolding within the northern chambers, which were recorded in the aerial photoset, and therefore masked from the 2018 terrestrial model—unfortunately resulting in less than desirable textures for the inside of the northern wall. Upon masking out the various portions of the two SfM models, they were then aligned to one another and merged. Aligning the models at this stage prevented the two focal lengths from interfering with one another during the SIFT calculations—the process through which feature points are detected.<sup>1132</sup> Prior to this stage, neither model was scaled to any particular measurement in order to reduce the potential distortion of aligning an unscaled model to a scaled one. An unscaled SfM model of Castle Hohenecken was aligned with a scaled TLS model of the same castle in the master's thesis, producing a noticeable stretching of the textures in some portions of the merged model. As the meshes and textures are of utmost importance for the architectural analyses, it was necessary to keep the scales of both models arbitrary up until that point. I also selected for the markers from the 2018 terrestrial recording to be merged with the aerial model, resulting in a merged model featuring all 250 markers, all sections of the walls, and no scaffolding. After successfully merging the models, subtle differences in the textures from the aerial and the terrestrial photos were recognizable. This was due to the different radiance of the sun at the different times of the year that the photos were recorded, i.e. the difference in vegetation colors between the spring and fall seasons, and the prevalence of clouds in the 2018 recording. Therefore, the model had to be re-generated from the dense cloud onward, in order to blend the colors and prevent visual breaks in the model. Blending the colors from the textures at this stage requires re-generating the dense cloud rather than simply a new texture because the dense cloud selects individual points where as the texture selects polygons from the mesh. Mixing the colors in the form of points from both models blended them seamlessly together resembling a model from a single photoset. However,

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<sup>1131</sup> My 2016 publication detailing the procedure for generating 3D photogrammetric models of castle and ceramics provides a more in-depth explanation on page eight of how this is done. Pattee, "Photogrammetric Procedure for Modeling Castles and Ceramics."

<sup>1132</sup> Sapirstein, "A High-Precision Photogrammetric Recording System for Small Artifacts." P. 2.

generating a new dense cloud for all 1800 photos was a demanding process requiring multiple days for such a large photoset. The high resolution model and processing report are available in the online repository in HeiDATA [here](#)<sup>1133</sup> as Burg\_Hohenecken\_Oct2019\_OBJ.zip, and a low-resolution, yet interactive model is available in HeidICON [here](#)<sup>1134</sup>.

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<sup>1133</sup> Pattee, “CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Research Data).”

<sup>1134</sup> Aaron Pattee, “BurgPerlenberg\_SfM,” SfM Model, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.ub.uni-heidelberg.de/#/detail/1733015>.

#### 4.4.4 Creating a Roombook for Hohenecken

The roombook and overview of Castle Hohenecken (located in Section 9.1 of the Appendix) is composed of eight groups beginning with the number one because it was the first castle in the project for which I had begun the architectural investigation. It is also the largest of the four sites and therefore has the largest of the roombooks, composed of 24 subgroups including 21 windows, 11 portals, three garderobes (privies), and a service lift. The schematic of the roombook is based upon entering the site via the front gate and the numbering of the walls is based upon what one sees directly in front of oneself when entering the site, and then scanning clockwise. The site is divided into two general parts, labelled inner areas and outer areas for simplicity's sake, shown in the roombook. The general approach is to enter the castle from the east via the front gate, then continue in a clockwise fashion around the inner castle, or keep. Once a full loop has been completed, enter the castle keep and move clockwise within the inside. Begin with Inner Chamber A, followed by the Inner Court, and then Inner Chambers B and C. Each wall of each group is numbered clockwise beginning with the first wall seen upon entering a new group.

#### 4.4.5 Results of the Documentation of Castle Hohenecken

I conducted the documentation of Castle Hohenecken using printed orthographic images from the merged SfM model. These were generated in CloudCompare and annotated in Inkscape—both of which are free software programs—providing the basis for the on-site documentations. After conducting the investigation on-site, I then digitally annotated the images by applying them to the Roombook template, outlining the stones, and highlighting the stones based upon building phase. A total of 12,378 stones were visible and manually outlined in the architectural plans located in the HeidICON online repository noted throughout the investigations. The building phases were primarily determined by the window and portal frames, as well as close examinations of the connections between walls. The following sub-sections describe each building of the roombook with reference to the plans in the online repository as they are too large to include in the text.

#### 4.4.5.1 Group 1. Front Gate

The front gate of the castle (view the full format [textured](#)<sup>1135</sup> and [meshed](#)<sup>1136</sup> architectural plans in the online repository) is located at the southeastern corner of the site and features a large rounded arch gate with an off-center keystone with the crest of the von Hoheneck family and the year 1560. The date gives reference to the reconstruction efforts during Renaissance I of the mid-16<sup>th</sup> century by the sons of Philip and Jost II von Hoheneck to repair the castle damaged in the Peasants' Revolt of 1525. A number of repairs were introduced during that phase, though the most notable component yet standing is the front gate. Interestingly, the hinges which held the actual gate are on the outside of the castle, meaning that the gate opened outwards rather than inwards. The elevated position of the front gate relative the wall to its south, as well as the results from Julius Naecher's 1887 investigation,<sup>1137</sup> provide evidence for the previous existence of a bridge at the site. The presence of a drawbridge is uncertain as nothing remains of a gate tower or of holes near the gate through which chains could draw the bridge. The eastwardly gun port walls do not exhibit any residues from walls on any of their sides with the exception of their apical portions, indicating that they stood as support walls for a short gate tower above them. The width of the space between the short walls measures approximately five meters, meaning that any drawbridge that would enclose the area between the walls and the gate would have been at least that wide. The natural rock to the north of the gate forms the eastern-most wall of the castle and is well integrated into the design of the front gate. The inside of the front gate features a large segmented arch behind the rounded arch exhibiting the family crest. The masonry courses on the eastern wall of the storehouse connect into the southern inside of the front gate fairly well, though the piers of the gate were clearly changed at a later point while still maintaining the approximate level of the courses. The stone composing the piers of the segmented arch align quite well with those of the rounded arch indicating that the entire front gate was modified in one phase, while maintaining the same position of the castle gate. Unfortunately, the SfM model of the inside of the front gate was quite blurry, preventing any stone-by-stone architectural plan from being made.

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<sup>1135</sup> Aaron Pattee, "Burg Hohenecken, 1.1.1, FrontGate, Texture," Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.ub.uni-heidelberg.de/detail/1728523>. Also catalogued as Architectural Plan 2.

<sup>1136</sup> Aaron Pattee, "Burg Hohenecken, 1.1.1, FrontGate, Mesh," Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.ub.uni-heidelberg.de/detail/1728522>. Also catalogued as Architectural Plan 1.

<sup>1137</sup> Julius Naecher, *Die Burgen der rheinischen Pfalz: Ein Beitrag zur Landeskunde und mittelalterlichen Kriegsbaukunst*, ed. Willi Fallot-Burghardt, Vollständige Nachdruck der Ausgabe mit 14 doppelblattgroßen lithographierten Tafeln aus dem Jahr 1887 (Kaiserslautern, Germany: Willi Fallot-Burghardt, 2001). Pp. 30-31 and Folio 10.



Figure 34: Inside of Front Gate. Note the segmented arch behind the rounded arch on the façade.

#### 4.4.5.2 Group 2. Storehouse

The eastern, southern, and western walls of the storehouse still remain, featuring Windows 1 and 2 and a variety of putlog holes (view the full format of the architectural plans for Wall Numbers 2.1.3 and 2.2.3 in the online repository [here](#))<sup>1138</sup>. A large, centrally placed putlog hole is positioned just above Window 1 indicating that a large central beam once supported the second level (i.e. above the ground level) of the building. The entire ground level had been walled with stone as is indicated by the broken walls emanating from the inside of the western wall towards the eastern wall, located to the south of the front gate. However, the second level of the storehouse was most likely built of half-timber due to the lack of wall residues, but also to the protruding nature of the second level extending beyond the width of the first. This is a classic example of half-timber construction that is seen all throughout Germany. The width of the walls on the first level are also substantially narrower than the walls of the castle keep, measuring just 69 centimeters wide on the southern side and 65 centimeters on the northern side—just a few centimeters thinner than the wall separating Inner Chambers E and F at Castle Beilstein. These thin walls also provide evidence that the second level was half-timber, as a second level made of stone, protruding beyond the width of the narrow first level walls is unlikely. Thus, the second level was mainly wood and plaster, though the gabled western and eastern walls were certainly stone. Unfortunately, only the foundations of the southern and northern walls of the first level of the storehouse still exist, though the southern wall extends far below the first level forming the southern-most wall at the site.

The eastern wall of the storehouse is located to the south of the front gate which was built during the middle to late 14<sup>th</sup> century during the Gothic II building phase. The consistency of the masonry with the rest of the outer walls of the storehouse provides evidence that the entire structure was built during one phase. Additionally, its connection to the front gate suggests that a gate preceding the Renaissance gate had been built at that position—which later necessitated a reconstruction during the mid-16<sup>th</sup> century following the storming of the castle during the Peasants' Revolt of 1525. An extension of the castle during the Gothic II phase is substantiated by the historical record in which the castle became a *Ganerbenburg* (a joint-owned castle) by 1333,<sup>1139</sup> during the

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<sup>1138</sup> Aaron Pattee, "Burg Hohenecken, 2.1.3, 2.2.3, Storehouse, WesternWall, Inside, Texture and Mesh," Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728524>. Also catalogued as Architectural Plan 3.

<sup>1139</sup> Keddigkeit and Losse, "Hohenecken." P. 380.



time of Johann von Hoheneck.<sup>1140</sup> At that point, a new gate was constructed at the east end of the site and an enlarged farmstead. The farmstead corresponds to the large outer courtyard between the natural rock wall and shield wall, as previously discussed.

The southern wall of the storehouse represents one large building phase connected to the eastern wall, though it is not consistent with the western wall. Of particular note is the difference between the quoins on the western wall when compared to those on the eastern wall, which reveals that they were of two separate building phases as shown in Figure 35. The western wall is more ornate than the eastern wall, including red quoined ashlar that are uncovered by plaster while the rest of the wall is rubble masonry covered with plaster (view the full format architectural plans of Wall Numbers [3.1.4](#)<sup>1141</sup> and [3.2.4](#)<sup>1142</sup> in the online repository). The windows themselves resemble the outsides of Windows 13 and 15 on the northern wall of the keep. Thus, construction of this wall of the storehouse was during the early 15<sup>th</sup> century within the Gothic III phase. The historical record also substantiates a construction during that time, due to two important charters from the early 15<sup>th</sup> century regarding a peace treaty between Jost I von Hoheneck, the Archbishop of Mainz Konrad III von Daun, and the Count Palatine Ludwig III on 6 November 1430,<sup>1143</sup> in which the three split Castle Hohenecken amongst them; and the enfeoffment of the entire castle to Jost I von Hoheneck by King Frederick III on 8 July 1442.<sup>1144</sup> The reason for the archbishop's interest the Castle Hohenecken was due to the regional influence of his family who had inhabited castle Nanstein at the turn of the 14<sup>th</sup> century and was distantly related to the von Wilenstein family—as was discussed in Sections 3.5.1 and 3.5.3 regarding castles Wilenstein and Nanstein, respectively.

According to the Burgenlexikon, the storehouse was built during the 1560 renovations of the castle. However, upon closer analysis, the finely chiseled stonework along the edges of the

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<sup>1140</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern II*. P. 102. Also catalogued as Charter ID 10339 in the graph database.

<sup>1141</sup> Aaron Pattee, “Burg Hohenecken, 3.1.4, OuterCourtA, StorehouseNorthernWall, Texture and Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728529>. Also catalogued as Architectural Plan 9.

<sup>1142</sup> Aaron Pattee, “Burg Hohenecken, 3.2.4, OuterCourtB, WesternWallStorehouse, Texture and Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728530>. Also catalogued as Architectural Plan 10.

<sup>1143</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern II*. Also catalogued as Charter ID 10402 in the graph database.

<sup>1144</sup> Akademie der Wissenschaften und der Literatur, Mainz, “RI XIII H. 17 n. 21, Friedrich III., 1442 Juli 8, Frankfurt,” Regesta Imperii Online, accessed August 25, 2020, [http://www.regesta-imperii.de/id/1442-07-08\\_2\\_0\\_13\\_17\\_0\\_21\\_21](http://www.regesta-imperii.de/id/1442-07-08_2_0_13_17_0_21_21). Also catalogued as Charter ID 10567 in the graph database.

building and the framing of the window provide evidence that the building is in fact much older. The outer ashlar do not feature any plaster whereas the quarry stone masonry between the ashlar and the window frames were completely covered. Although this phenomenon can be traced back to the 11<sup>th</sup> and 12<sup>th</sup> centuries, it was common for later centuries that the more finely dressed ashlar and window stones remained visible.<sup>1145</sup> This feature alone does not place the storehouse before the Renaissance, rather, its position and the masonry of its southern wall provide the strongest evidence. The outside of the western wall of the storehouse—documented as Wall Number 3.2.4—reveals a more elaborate construction than the rest of the storehouse. In fact, it belongs to an entirely different construction phase, as is indicated by a distinct difference in the masonry at the southwestern end of the southern wall of the storehouse (Figure 35). Additionally, there is a clear separation in the masonry courses connecting the eastern wall of the storehouse to the front gate as shown in Wall Number 1.1.1. Provided that the northern wall foundations are also nearly identical to the separating wall in Castle Beilstein, both were built at around the same time. The outsides of Windows 1 and 2 reveal a construction of the early 15<sup>th</sup> century in the Gothic III phase, during which other modifications were undertaken around the castle. Therefore, the storehouse is a building likely begun prior to the 15<sup>th</sup> century, but mainly modified during the middle to late 15<sup>th</sup> century.

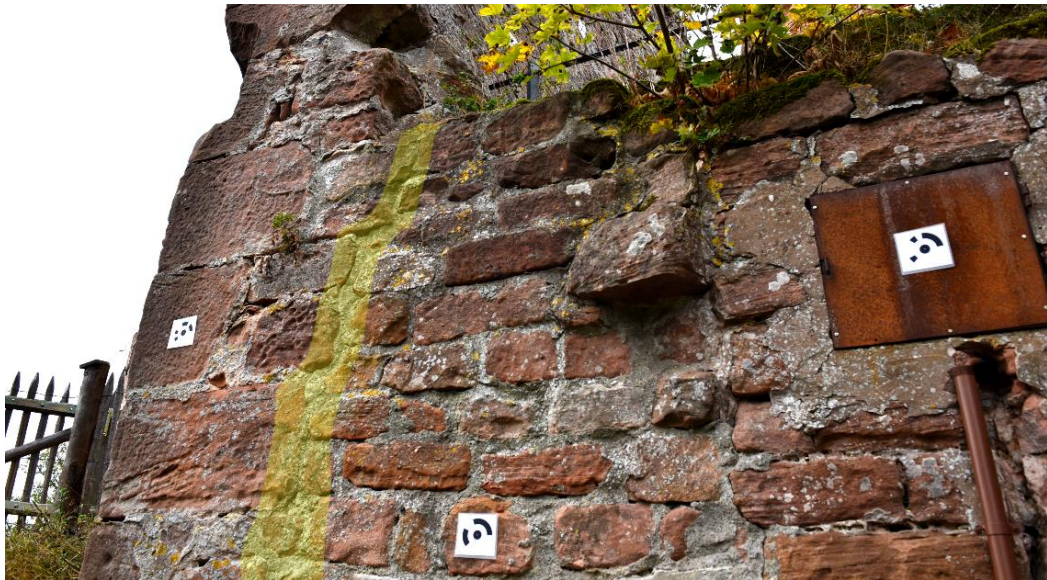


Figure 35: Building phase highlighted in yellow at the southwestern corner of storehouse.

<sup>1145</sup> Matthias Untermann, “III. Die Haut Des Bauwerks,” in *Handbuch Der Mittelalterlichen Architektur* (Darmstadt: Wissenschaftliche Buchgesellschaft, 2009). P. 346.

#### 4.4.5.3 Group 3. Outer Court

The components of the Outer Court are the most recognizable portions of the castle as they compose the outer walls of the keep. They also feature some of the oldest building phases of the site which began during Romanesque III, between the years 1160 and 1194. The monumental shield wall (view the full format [textured](#)<sup>1146</sup> and [meshed](#)<sup>1147</sup> architectural plans of Wall Numbers 3.1.1 and 3.1.5 in the online repository) is the foremost example of the oldest architectural components featuring four distinct groups: the bedrock forming the foundation, a middle section of smooth ashlars, a top section of all embossed ashlars, and rehabilitation efforts at the turn of the 20<sup>th</sup> century. The separation of the ashlar types between the 11<sup>th</sup> and 12<sup>th</sup> courses of stones from the top of the wall indicate both a break in the building phase, but also an increase in ornamentation, as the embossed stones were previously used only as quoins for the middle section. The upper section of the shield wall (see above) continues into the main tower (view full format of the architectural plan of Wall Number 3.1.2 in the online repository [here](#))<sup>1148</sup>, composed entirely of embossed ashlars as well; save for the reconstructions during the late 20<sup>th</sup> century on the southern side of the tower. The embossed ashlars bear a striking similarity to the embossed ashlars found at Perlenberg and the palace suggesting a similar date of construction. Provided that an increase in ornamentation—not to mention size—necessitated an increase in funds, the event most likely responsible for an influx of resources was the ransom of Richard the Lionheart in 1194, for which Heinrich I von Lautern appeared as the imperial envoy.<sup>1149</sup> A large reconstruction stretching along the central portion of the shield wall from the very bottom to sixth stone course from the top was undertaken in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries during a series of reconstruction efforts to rehabilitate the site. The date 1903 was carved into the stones indicating that the reconstruction of the central part of the wall was likely finished around then (Figure 36). The masons responsible for the reconstruction did remarkably well to align the reconstructed stone courses with those of the original stone courses, and also maintained

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<sup>1146</sup> Aaron Pattee, “Burg Hohenecken, 3.1.1, 3.1.5, OuterCourtA, ShieldWallEast, Texture,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.ub.uni-heidelberg.de#/detail/1728526>. Also catalogued as Architectural Plan 5.

<sup>1147</sup> Aaron Pattee, “Burg Hohenecken, 3.1.1, 3.1.5, OuterCourtA, ShieldWallEast, Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.ub.uni-heidelberg.de#/detail/1728525>. Also catalogued as Architectural Plan 4.

<sup>1148</sup> Aaron Pattee, “Burg Hohenecken, 3.1.2, OuterCourtA, MainTower, Texture and Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.ub.uni-heidelberg.de#/detail/1728581>. Also catalogued as Architectural Plan 6.

<sup>1149</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. P. 85. Also catalogued as Charter ID 10839 in the graph database.

very fine mortar seams between the stones. A number of holes caused by various kinds of firearms are also visible on the southern half of the shield wall.



Figure 36: Comparison of embossed ashlars at Castle Hohenecken and the Palace of Lautern. Note that the discrepancies in sizes are within a margin of five millimeters.

Arguably the most iconic feature of the castle is the imposing main tower that extends above the shield wall (view a full format of the architectural plan of Wall Number 3.1.2 in the online repository [here](#))<sup>1150</sup>. As mentioned in Section 4.3.5.5 regarding the curtain wall that clad the double chapel of the palace, the stones composing the main tower at Castle Hohenecken have precisely the same dimensions and profiling as those in the curtain wall. The larger stones from the northeastern and southeastern sides of the main tower of Castle Hohenecken have the same dimensions of 1.24 meters as some of the stones in the curtain wall of the palace. The main tower essentially a continuation of the upper third of the shield wall, thus placing it firmly within Romanesque IV. The southern edge of the tower was rehabilitated during Reconstruction I in order to stabilize the tower. A curious

<sup>1150</sup> Pattee, “Burg Hohenecken, 3.1.2, OuterCourtA, MainTower, Texture and Mesh.” Also catalogued as Architectural Plan 6.

clump of combined stones is located on the southeastern side of the tower which has not been explained before. At first glance it appears to have been a grouping of stones that fell off of the top of the tower, though upon closer inspection, the side of the stone clump angles outward, meaning that it could not have come from the top of the tower as the walls would have all had walls enclosing a pentagonal shape. Had this group of stones come from the top of the tower, then the shape would have been entirely different. Instead, it is likely that the clump of stones was from a slight extension of the tower along the top of the shield wall that was inverted on itself during the destruction of the site.



Figure 37: Engraved date on the shield wall of Castle Hohenecken.

Opposite the shield wall is a large rock wall (view the full format of the [textured](#)<sup>1151</sup> and [meshed](#)<sup>1152</sup> architectural plans of Wall Number 3.1.3 in the online repository), carved from the mountain at whose southern end the front gate is attached. Nothing remains at the northern end, which had presumably connected to the outer wall on the northwestern side of the site, though a number of putlog holes and carved features are still visible on the western side of the rock wall. The most prominent feature of the western side is the large casemate located directly to the north of the front gate. The reason for its construction cannot be precisely determined, though it was likely a

<sup>1151</sup> Aaron Pattee, “Burg Hohenecken, 3.1.3, OuterCourtA, RockWallWest, Texture,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728528>. Also catalogued as Architectural Plan 8.

<sup>1152</sup> Aaron Pattee, “Burg Hohenecken, 3.1.3, OuterCourtA, RockWallWest, Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728527>. Also catalogued as Architectural Plan 7.

component of an enlarged farmstead in the outer court built during the late 14<sup>th</sup> century, which also included either a well or cistern shown in Figure 38. The farmstead was distinctly mentioned in a charter outlining terms of mutual support between the inhabitants of Castle Hohenecken and the citizens of Lautern.<sup>1153</sup>

The putlog holes indicate that a series of small structures were built into the rock, possibly serving as the positions for the castle forge. Past archaeological investigations discovered a rampart on top of the rock wall, though not much can be seen, given the immense overgrowth of vegetation (Figure 38). Curiously, the rock wall is not parallel to the shield wall of the castle keep. Instead it is angled in which the eastern side faces more to the northeast rather than directly eastward. The reason for this development could be to the natural shape of the rock on the eastern side or in order to direct a visitor's attention to the front gate located at the furthest corner of the rock wall, relative the shield wall. The eastern side also bordered a former neck ditch, evidence for which was still visible in the early 20<sup>th</sup> century consisting of two large stone columns that operated as supports for a bridge connecting the front gate to the path leading to the castle. The rock wall is certainly the most mysterious component of the site, as it reveals almost nothing except for the aforementioned features and that it was the easternmost component of the site.

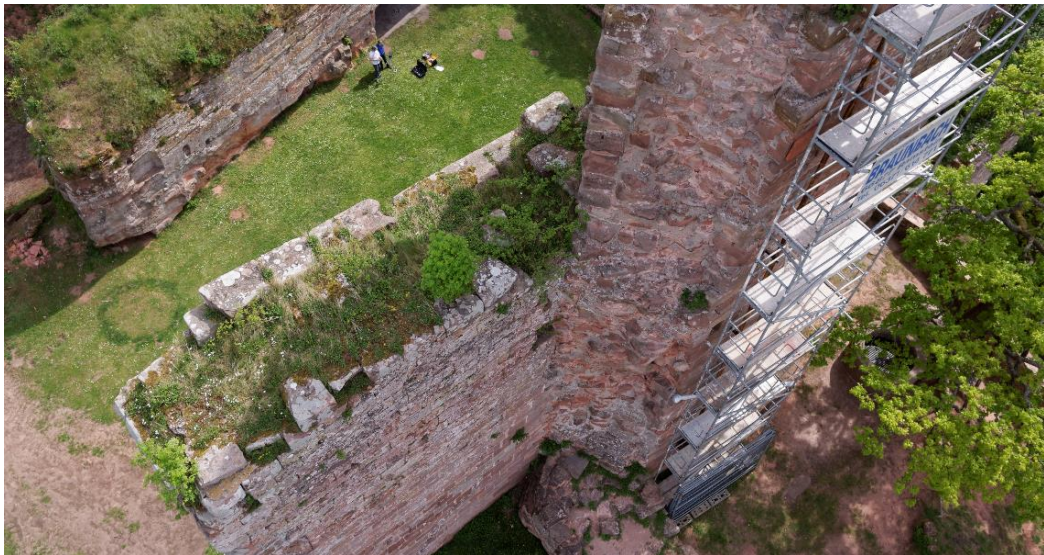


Figure 38: Top of Rock Wall with nearby location of a former well or cistern on the bottom left.<sup>1154</sup>

<sup>1153</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern II*. P. 349-350. Also catalogued as Charter ID 10373 in the graph database.

<sup>1154</sup> This aerial photo was taken by Christian Seitz during the 2015 photogrammetric recording campaign.

The southern wall of the castle keep (Wall Number 3.2.1) that connects to the shield wall was entirely reconstructed during the same period as the central portion of the shield wall. Provided that only the reconstructed portions and natural rock still exist on this side, it was not included in the architectural plans which focus upon the medieval and early modern portions. The western side of this reconstructed wall also included a new staircase leading into the castle. Despite the efforts to reconstruct and also prevent the site from deteriorating further, the reconstructions permanently removed much of what still remained of the former entrance in the castle keep. Although the modern staircase was most likely set in the same position as the entrance prior to the destruction of the castle, the reconstructed walls have made it difficult to determine how the entrance may have appeared before the destruction. A number of architectural features indicate how the entrance may have appeared and where it was most likely positioned, which will be described in more detail in Section 4.4.5.6 regarding the Inner Court. Of particular note regarding the southern side of the keep is a U-shaped feature resembling a narrow rampart between the shield wall and the storehouse shown in Figure 39. This could have been an addition following the expansion of the outer court as a form of separation between the area open to the citizens of Lautern and the portion of the castle reserved for its inhabitants.<sup>1155</sup>



Figure 39: Connection point of the walkway between the shield wall and storehouse, in yellow.

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<sup>1155</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern II*. Pp. 349-350. Also catalogued as Charter ID 10373 in the graph database. This charter describes the cooperation between castle Hohenecken and the town of Lautern in times of distress.

The southern wall of the castle keep to the west of the reconstructed portion of the wall includes one of the most important indicators for the progression of the castle's construction which is documented on Wall Number 3.3.1 (view the full format of the [textured](#)<sup>1156</sup> and [meshed](#)<sup>1157</sup> architectural plans in the online repository). A large break in the masonry exists directly to the right of a walled opening and extends to a level just a few stone courses above the rock foundations. However, the stones to the left of the break continue in nearly identical fashion regarding the height of the stone courses, with the exception of a number of stones to the bottom right of the walled opening. As is indicated in the texture file of Wall Number 3.3.1, the walled opening was a former garderobe due to the existence of a yellow fungus smeared on the outside of the wall beneath the bottom of the opening. Provided that the masonry garderobe correlates precisely with the surrounding masonry of the wall, it was certainly a feature designed during the construction phase to the left of the masonry break. Due to the necessity of building an entrance to a castle located atop a rock outcrop—which is located to the right on Wall Number 3.3.1 and indicated by the reconstructed yellow-colored stones—the section to the right of the masonry break on the southern wall of the keep was built during the first building phase of the castle. However, given the incredibly similar masonry and extension of the same courses to the left of the break, this portion of the wall represents a transition between Romanesque II and III. Further evidence that the components to the left of the break began in Romanesque III is the extent of the fenestration along the wall wrapping around to the west. The masonry that continues throughout the wall of the castle keep is nearly identical to other castles which have been dated to the late 12<sup>th</sup> and early 13<sup>th</sup> centuries.<sup>1158</sup>

Windows 3, 4, 9, 19, and 21 are identifiable on the southern wall. Windows 3 and 9 are the most recognizable, though both were modified in later periods, namely in Gothic III during the early 15<sup>th</sup> century. Portions of Window 3 and the entire window frame of Window 9 were replaced in Reconstruction II, though both are representative of the early 15<sup>th</sup> century and similar windows can be seen at Heidelberg castle (Figure 40). Only the windowsills of Windows 4 and 21 still exist, though similar vertical break in the masonry to the right of Window 4 suggests that there may have

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<sup>1156</sup> Aaron Pattee, “Burg Hohenecken, 3.3.1, OuterCourtC, SouthernKeepOutside, Texture,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728532>. Also catalogued as Architectural Plan 12.

<sup>1157</sup> Aaron Pattee, “Burg Hohenecken, 3.3.1, OuterCourtC, SouthernKeepOutside, Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728531>. Also catalogued as Architectural Plan 11.

<sup>1158</sup> Thomas Kühtreiber, “Handwerksgeschichtliche und ideologische Aspekte mittelalterlichen Mauerwerks am Beispiel Ostösterreichs,” in *Mittelalterarchäologie und Bauhandwerk*, by Walter Melzer, Soester Beiträge zur Archäologie 6 (Soest: Westfälische Verl.-Buchhandlung Mocker & Jahn, 2005), 1–21. P. 9. Castle Gars in Austria features the same masonry style.



been a third window at that level of the castle—possibly even double window scenario as is the case with Windows 4 and 21.



Figure 40: 15<sup>th</sup> century windows (top left) at Heidelberg castle next to embossed quoins.

In contrast to the previously mentioned windows, Window 19 is less clear as to its position and existence. Given that the opposite side of Window 19, which is located in Inner Chamber B, resembles a portal, and that a building phase is distinctly visible beneath the outside of Window 19, it was not originally built as a window at all. Instead, it was most likely a construction portal, allowing workers to enter a part of the building directly without having to walk all the way around through the main entrance. In fact, a similar portal is located on the northern wall of the castle keep as will be discussed later on. These were never meant to be proper portals in sense that they were to be permanent doorways, but were instead walled up as soon as the building phase was complete. Another example is displayed in Figure 14 of Section 3.4.1 regarding the Teutonic Knight

Commandry of Einsiedel. In the case of Window 19, a window was constructed in its place during Gothic II during the late 14<sup>th</sup> century given its stark similarity to the windows on the northern side of the keep. The southwestern wall (view a full format architectural plan of Wall Number 3.4.1 in the online repository [here](#))<sup>1159</sup> of the keep features a continuation of the stone courses from the southern wall, of which the bottom four belong to the end of Romanesque III. The top of the wall features the position of the remains of Window 10, identifiable only by the vertical masonry.

The western wall of the castle keep (view a full format of the architectural plan of Wall Number 3.4.2 in the online repository [here](#))<sup>1160</sup> features Garderobe 3 located at the very top level of the wall, ornately crafted with two rounded stone corbels which once held the wooden compartment forming the garderobe. As the case is with Garderobe 2, a six meter long smearing of yellow fungus still exist directly beneath Garderobe 3. A break in the masonry located to the right of the garderobe indicates that it was installed at a later point than the wall to the right, which places it towards the beginning of Romanesque IV, due to the similarity of the stone courses to the left of the garderobe, though they are not level with those to the right. It is possible that a window had been installed prior to the garderobe, which would explain the flush stones to the right from Romanesque IV. Unfortunately, nearly everything to the left of the garderobe from a three stone distance no longer exists, as the northwestern wall most likely collapsed entirely following the destruction of the castle in the late 17<sup>th</sup> century. A new portion of the wall was built in order to stabilize the top where Garderobe 3 is located during Reconstruction I, which also managed to preserve half of a structural arch located at the bottom of the wall as well as maintain the levels of the stone courses.

The arch connected two portions of the natural rock foundation in order that the stone wall could be erected in continuation of the semi-ovular shape of the western portion of the castle. However, this arch is likely responsible for the collapse of the northwestern wall because once an arch's integrity is compromised, so too is everything relying upon its stability. Whether the bedrock was quarried in the peculiar fashion requiring the later construction of an arch, or if the rock naturally formed in that manner is open to debate. However, the inside of the arch reveals that the builders used incredibly large stones to construct it (Figure 41), and it would have been unwise to quarry a

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<sup>1159</sup> Aaron Pattee, "Burg Hohenecken, 3.4.1, OuterCourtD, SouthwesternKeep, Texture and Mesh," Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728533>. Also catalogued as Architectural Plan 13.

<sup>1160</sup> Aaron Pattee, "Burg Hohenecken, 3.4.2, OuterCourtD, WesternKeep, Texture and Mesh," Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728534>. Also catalogued as Architectural Plan 14.

section of the rock that would later require an arch. In any event, the destruction of the castle caused the arch to fail, resulting in the loss of the west-northwestern wall to the left of the garderobe.



Figure 41: The support arch on the western wall of the keep.

The northern wall of the keep (view the full format [textured](#)<sup>1161</sup> and [meshed](#)<sup>1162</sup> architectural plans of Wall Number 3.5.1 in the online repository) is the most notable wall for those familiar with Castle Hohenecken because it faces the largest part of the village and is visible from the road. In its current state, it consists of Windows 11, 12, 13, 14, 15, and 16, Portal 21, and Garderobe 4. The wall is free standing, though it had been connected to the shield wall, confirmed by northern side of the shield wall which still exhibits the remnants of where the northern keep was once attached (Figure 42). The majority of the wall was built some time at the transition period between Romanesque III and IV—similar to the southern wall of the keep—during which time two balconies were constructed. These balconies were later modified as Windows 12 and 16 during Gothic II (Figure 42). The shape

<sup>1161</sup> Aaron Pattee, “Burg Hohenecken, 3.5.1, OuterCourtE, NorthernKeep, Texture,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.ub.uni-heidelberg.de/detail/1728536>. Also catalogued as Architectural Plan 16.

<sup>1162</sup> Aaron Pattee, “Burg Hohenecken, 3.5.1, OuterCourtE, NorthernKeep, Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.ub.uni-heidelberg.de/detail/1728535>. Also catalogued as Architectural Plan 15.

of the modified windows is identical to Windows 11 and 14, and nearly the same as Window 19 (Subgroup 3.3.1 in the roombook).



Figure 42: Hypothetical attachment between northern wall of the keep and the shield wall.<sup>1163</sup>

Evidence for modifications are found in the masonry breaks surrounding all of the windows, clearly demonstrating where previous elements once existed. A small aperture allowing light into the lower levels beneath Window 12 is identical to an aperture beneath Window 19 on the southern side, installed around the same time as the modifications of the associated windows. The wall is full of fascinating alterations including two former balconies from Romanesque IV that were later converted into Windows 12 and 16 during Gothic II. Reasons for the conversion of the balconies to simple rectangular windows are twofold: the changing climate during the MCA would have made large balconies on the northern side of a castle facing a valley essentially into cold air ducts, and because a regional war had embroiled the German Palatinate during the 1360s and 1370s—as was described in Section 3.5.2 concerning Castle Montfort. The effects of the MCA were discussed in Section 1.3 of my master’s thesis.<sup>1164</sup> In addition to the change in climate, these modifications hint

<sup>1163</sup> This aerial photo was taken by Christian Seitz during the 2015 photogrammetric recording campaign.

<sup>1164</sup> The MCA is referred to as the Medieval Warming Period (MWP) in my master’s thesis on page 9: Pattee, “Integrative 3D Recording Methods of Historic Architecture: Burg Hohenecken from Southwest Germany.” Also see: Goosse et al., “The Origin of the European ‘Medieval Warm Period’”; Paolo Malanima, “Energy and Population In Europe The Medieval Growth

towards a more utilitarian function in which defense was stressed. It also corroborates the events regarding Reinher von Hoheneck during the late 14<sup>th</sup> century, who was involved in various feuds. He and his brother Beimond had inherited one half of the castle from their father and proceeded to treat the entire site as their own, even to the extent of locking out one of the castle's co-owner—the Archbishop of Mainz—who owned a fourth of the castle.<sup>1165</sup> The remaining fourth belonged to the Elector of the Rhine who together with the Archbishops of Mainz and Trier had been in drawn-out feud with the robber knights of Castle Montfort. This regional conflict of the late 14<sup>th</sup> century had direct implications for Castle Hohenecken as all the owners were either related to the robber knights or actively combatting them. This is perhaps one reason as to why the conflict lasted so long and it was not until 1430—when all of the owners from the late 14<sup>th</sup> century had passed—that a treaty was made between the owners of the castle.<sup>1166</sup> The feud ebbed and flowed until 1456 when the Prince Electors eventually crushed Castle Montfort and dispersed the knights, possibly with the assistance of the knights of Hohenecken. In turn, this indicates that the Prince Electors from Mainz and Heidelberg owned perhaps the northern part of Castle Hohenecken, which would explain the conversions of windows to more plain designs.

The enfeoffment of the castle by King Ruprecht I on 3 August 1401,<sup>1167</sup> introduced the next building phase, which also followed the end of the hostilities. This latter building phase is designated as Gothic III, which includes the ornate modifications of Windows 13 and 15 on the northern side, as well as Windows 3 and 9 on the southern side of the keep. As discussed previously, the northern wall also features Portal 21 that was used during construction and later walled following the completion of the building phase. The reconstruction of the northern wall leading into the northwestern curve of the keep occurred during Reconstruction I—presumably as a safety measure for visitors. Additional modifications were the recent replacement of a window pier and lintel on Window 11, and a small patchwork of stones a few meters beneath Window 12.

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(10th-14th Centuries),” n.d., 18; Mann et al., “Global Signatures and Dynamical Origins of the Little Ice Age and Medieval Climate Anomaly”; Xoplaki et al., “The Medieval Climate Anomaly and Byzantium.”

<sup>1165</sup> Würzburg, Staatsarchiv Mainzer Ingrossaturbücher, “RggEbMz Nr. 2553,” Die Regesten der Mainzer Erzbischöfe, accessed September 8, 2022, <http://www.ingrossaturbuecher.de/id/source/9908>. Also catalogued as Charter ID 10353 in the graph database.

<sup>1166</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern II*. Also catalogued as Charter ID 10402 in the graph database.

<sup>1167</sup> Ibid. P. 368. Also catalogued as Charter ID 10293 in the graph database.



Figure 43: Comparison of Windows 11, 12, 14, and 16 (respectively).<sup>1168</sup>

The northern wall undeniably represents what was the fenestrated show front of the castle during the 13<sup>th</sup> century as it featured two balconies, three windows, and a magnificent garderobe with a rounded arch and two stone corbels. Such elaborate fenestrated constellations can be found throughout Germany, though a very clear example is exhibited at the Strahlenburg in Schriesheim, near Heidelberg. The construction of Garderobe 4 forced a subtle migration of Window 13 to the right as it had previously been directly below the opening of the privy of the garderobe. Unfortunately, a large section of the wall is missing between Window 16 and the shield wall, which may have included more windows and potentially another balcony. The main construction occurred during Romanesque IV, though the construction progression of the northern wall was east to west, as it was on the southern wall because the shield wall was the first completed component at the castle.

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<sup>1168</sup> This image is a compilation of various aerial photos taken by Christian Seitz during the 2015 photogrammetric recording campaign.

#### 4.4.5.4 Group 4: Neck Ditch

The neck ditch to the east of the rock wall has already been briefly discussed, though there are a few elements worth focusing upon. The location of the ditch is currently a pathway leading from the northeast corner of the site to the southwestern main gate. It was filled in with earth over the past century and very little evidence still remains revealing its former shape. In fact, the only evidence that points to a neck ditch, based upon the modern condition of the site, is the eastern wall of the storehouse which plunges well beneath the surface of the path leading to the front gate. The left and right of the gate are flanked with short walls exhibiting gun ports that also date from Renaissance I. The gun port walls were attached to either side of the arch of the front gate and allow one to look to the south and north. However, these gun ports do not seem to have been particularly function in the utilitarian sense, because the front gate opened outwards, thus preventing anyone from actually using the gun ports when the gate was open, and conversely, preventing any access to safety once the gate was closed. Additionally, the view through the gun ports is very restricted (Figure 44) and would certainly prevent one from looking into the neck ditch thereby rendering impractical if ever someone had been lurking in the ditch. It is therefore probable that the gun ports were not practical gun ports at all, rather they were simply representative and at most served as a port to look and perhaps fire an untargeted volley.



Figure 44: The restricted view of the southern gun port facing the eastern wall of the storehouse.

#### 4.4.5.5 Group 5: Inner Chamber A

The first of the inner chambers of the castle keep is located at the left-hand terminus of the reconstructed staircase when entering the castle. The southern wall of the keep forms the southern wall of the chamber (view a full format of the architectural plan of Wall Numbers 5.2.1, 5.2.2, and 5.2.3 in the online repository [here](#))<sup>1169</sup>, and the western wall separates it from Inner Chamber B (view a full format of the [textured](#)<sup>1170</sup> and [meshed](#)<sup>1171</sup> architectural plans of Wall Numbers 5.1.1, 5.1.2, and 5.1.3 in the online repository). Both existing walls have the same thickness of 1.13 meters. Only the foundations of the eastern and northern walls still exist, though the majority of the eastern wall was rebuilt during the reconstruction of the staircase entrance into the castle. The southern wall features the insides of Windows 3, 4, and 21 as well as Garderobe 2. The interior of Window 3 bears a striking similarity to the interiors of Windows 12 and 13 of the northern wall of the keep due to the presence of two window seats built into the wall. It is likely that Window 3 once had the appearance of Windows 12 and 13, though it was considerably modified during Gothic III (Figure 45). The interior walls of the window were broadened as is visible on the right hand side, above which segmental arch was installed. An interesting component located next to the window is a small niche 45 cm wide and 64 cm tall. Above and below the niche are two additional niches 37 cm wide by 27 cm tall. To the right of the window on the western wall is another niche 61 cm wide and 43 cm tall. The combination of these niches and the elaborate window point towards a potential location of the castle chapel as the niches could have been used for a tabernacle and for a miniature statue of the saint to whom the chapel at the castle was dedicated. Although the precise saint remains elusive, by 1269 the castle did have a chapel in which a priest from Lautern would celebrate mass each Sunday and holiday.<sup>1172</sup> The modifications of the window, and conversion of Garderobe 2 into a wall, by the early-15<sup>th</sup> century may have been accompanied by a change in the location of the chapel to another part of the castle, though this is entirely speculative.

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<sup>1169</sup> Aaron Pattee, “Burg Hohenecken, 5.2, InnerChamberA, SouthernWall, Texture and Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728539>. Also catalogued as Architectural Plan 19.

<sup>1170</sup> Aaron Pattee, “Burg Hohenecken, 5.1, InnerChamberA, WesternWall, Texture,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728538>. Also catalogued as Architectural Plan 18.

<sup>1171</sup> Aaron Pattee, “Burg Hohenecken, 5.1, InnerChamberA, WesternWall, Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728537>. Also catalogued as Architectural Plan 17.

<sup>1172</sup> Lehmann, “Die Burg- und Herrschaft Hohenecken.” P. 53.





Figure 45: Window 3 and niche on the left-hand side of the figure.

The floor of the third level of the southern wall is clearly indicated by five aligned large putlog holes, and an additional three putlog holes are also exhibited near the five larger ones. However, the only evidence for the position of the second level is provided by the entrance into the window seats of Window 3 and the threshold of the Garderobe 2, as putlog holes along this level are found wanting. The likely answer is that the floor was placed upon beams connecting the western wall to the now lost eastern wall of the chamber. The third level of the southern wall of the chamber is considerably narrower, measuring only 65 cm wide, compared to the 1.45 meter width of the first and second levels.

The western wall of Inner Chamber A (view a full format of the [textured](#)<sup>1173</sup> and [meshed](#)<sup>1174</sup> architectural plans of Wall Numbers 5.1.1, 5.1.2, and 5.1.3 in the online repository) is one of the most fascinating walls within the castle keep as it features three portals and a service lift. Unfortunately, the position of the second level of the chamber is also left unanswered by a lack of putlog holes, whereas the third level is clearly indicated by another five, large putlog holes along

<sup>1173</sup> Pattee, “Burg Hohenecken, 5.1, InnerChamberA, WesternWall, Texture.” Also catalogued as Architectural Plan 18.

<sup>1174</sup> Pattee, “Burg Hohenecken, 5.1, InnerChamberA, WesternWall, Mesh.” Also catalogued as Architectural Plan 17.

the same height as those on the southern wall. However, where precisely these connected on the eastern and northern walls is unanswerable as they no longer exist. What is certain, is that Portal 2 allowed for the passage from the Inner Court into Inner Chamber B. Portals 3 and 4 presumably served as access points between all three inner chambers via short balconies that connected the chambers to one another within the area of the inner court (Figure 46).



Figure 46: Hypothetical placement of mezzanine balcony connecting Portals 3 and 6.<sup>1175</sup>

The service lift is located to the south of Portal 2 and 3 in Figure 47, and extends vertically from mid-way through the first level to mid-way in the second level. Evidence for its purpose as a service lift is provided by the narrow channel that continues from the terminus of the opening upwards within the wall (Figure 47). The channel allowed a pulley system to draw items from the lower levels to the higher levels, and vice versa. The opening was likely covered with wood, which explains the large aperture. Castle Hohenecken is not the only site to have included a service lift in its design, as castle Falkenstein, near the Donnersberg, also featured one. Castle Falkenstein had passed to the family von Bolanden under Philipp IV von Bolanden in the mid-13<sup>th</sup> century, who later changed his name to Philipp I von Falkenstein. Having established himself as a trusted imperial ministerialis during the mid-13<sup>th</sup> century, he belonged to the most elite of the regional ministeriales of the German

<sup>1175</sup> This aerial photo was taken by Christian Seitz during the 2015 photogrammetric recording campaign.

Palatinate.<sup>1176</sup> Although his castle was located outside of the Reichsland of Lautern, Philipp I von Falkenstein appeared as a lord in a charter from 1262 in which Reinhard III von Lautern appeared as the imperial provisioner, indicating that the two were the most elite figures at the issuing of the charter in the royal Palace of Lautern.<sup>1177</sup> The two elite ministeriales not only shared the favor of the German kings, but apparently also distinct architectural elements in their familial castles.



Figure 47: The opening of the service lift within the wall, from above (left) and below (right).<sup>1178</sup>

Along the level of the threshold above Portal 3 are seven large putlog holes, indicating that large support beams extended from the western wall at one point. However, four more putlog holes are exhibited above these that articulate with the six large putlog holes on the southern wall. This demonstrates that ceiling of level two—and thus the floor of level three—had either been changed or that it had been a lattice of large beams. The latter would indicate the possible presence of ceiling paintings from the renaissance period. These types of lattices are still exhibited in other renaissance buildings, such as Castle Colditz shown in Figure 48.

<sup>1176</sup> Thon, “*Wie Schwalben Nester an den Felsen geklebt...*”: *Burgen in der Nordpfalz*. P. 52.

<sup>1177</sup> Dolch and Münch, *Die Urkunden des Zisterzienserklosters Otterberg 1143-1360*. P. 158. Also catalogued as Charter ID 10415 in the graph database.

<sup>1178</sup> The photo on the left was taken by Christian Seitz during the 2015 photogrammetric recording campaign.



Figure 48: Ceiling lattice at Castle Colditz. Note the different levels of boards.

Curiously, only one putlog hole exists along the separation between the first and second levels, albeit on the southern wall. The western wall shows no more trace of any putlog holes, as it was rehabilitated in recent years through the application of more mortar in the seams of the masonry. However, older photos indicate locations of putlog holes that were filled with stones, possibly during Reconstruction I. They are located directly above the corbel stones for the large fireplace on the opposite side of the western wall that Inner Chamber A shares with Inner Chamber B. This would have been an optimal position for a putlog hole because it would guarantee a fixed position of the wooden beams, provided the counter weight of the corbel stones. On the other hand, if the beams are missing—as well as the mortar and *Zwickelsteine* holding them in place—then the wall loses much of its integrity at that point, thus necessitating either a reconstruction of the floor or simply by filling in the hole with a stone. It is for this reason that the stones were set in Reconstruction I and not at an earlier period, because previous building phases would presumably have maintained the separation between the first and second levels.



Figure 49: Half-timber construction for interior wall at Castle Colditz.

Just above these former putlog holes is a slim break between two courses of masonry between the first and second levels, featuring small stones within a fairly large mortar seam. This is a clear indication of a floor supported by a half-timber construction, as can also be seen at Castle Colditz (Figure 49), which were anchored into the wall with large beams. These smaller stones in the large mortar seams are known as *Zwickelsteine* and were used for a multiplicity of purposes ranging from

sheer aesthetics to maintaining building statics by filling gaps in the masonry.<sup>1179</sup> In any event, they indicate the position of the second floor, which does not correlate to the level of the threshold of Portal 3. This means that the northern wall of Inner Chamber A either blocked a direct access to Portal 3, or simply that a small set of stairs made up for the difference in the levels. Access to the first level of Inner Chamber A was gained via Portal 24 (Figure 50), whose door opened into the chamber from the inner court, directly across from Portal 5 of Inner Chamber C. Unfortunately, very little exists of Portal 24 as does the majority of what had been the northern wall of the chamber.



Figure 50: Portal 24 located in the northern wall of Inner Chamber A.

Staircases would have achieved access between the levels of the inner chambers, though the remnants of spiral staircase still exist at the northeastern corner of Inner Chamber A only include Renaissance plinths and the pier of a doorframe (Figure 32). Other staircase locations that extend over multiple levels have not yet been identified, though a position between the shield wall and Inner Chamber C could have served such a purpose.

<sup>1179</sup> Arbeitskreis zur archäologischen Erforschung des mittelalterlichen Handwerks and Walter Melzer, eds., *Mittelalterarchäologie und Bauhandwerk: Beiträge des 8. Kolloquiums des Arbeitskreises zur archäologischen Erforschung des mittelalterlichen Handwerks*, Soester Beiträge zur Archäologie, Bd. 6 (Soest: Westfälische Verlagsbuchhandlung Mocker & Jahn, 2005). Pp. 202-205. Georg Böttcher, “Sanierung von Natursteinkonstruktionen” (Ingenieurbüro Dipl.-Bau-Ing. Georg Böttcher, 2020), <https://www.fachwerk.de/pdf/beispiele-aus-der-sanierung-von-natursteinmauerwerk.pdf>. P. 43. Josef Maier, “Geschichte des Mauerwerks.” in *Handbuch Historisches Mauerwerk*, by Josef Maier (Berlin, Heidelberg: Springer Berlin Heidelberg, 2012), 9–66, [https://doi.org/10.1007/978-3-642-25468-0\\_2](https://doi.org/10.1007/978-3-642-25468-0_2). Pp. 10-12.

#### 4.4.5.6 Group 6: Inner Court

The inner court composes the area between the shield wall and the inner chambers. It includes the outside of the spiral staircase and the water well in the southeast corner of the Keep. Unfortunately, the existence of a large tree and scaffolding during the aerial recording inside the court prevented the generation of a usable photogrammetric mesh. For this reason, the TLS offers a better solution to examining the inside of the shield wall as it was not inhibited by the branches and leaves of the tree—as was described in my master’s thesis. The inner court was also ground zero of the castle in which the main tower was detonated towards the inner chambers in a west by southwest direction—as is indicated by direction of the arrows in Figure 51.

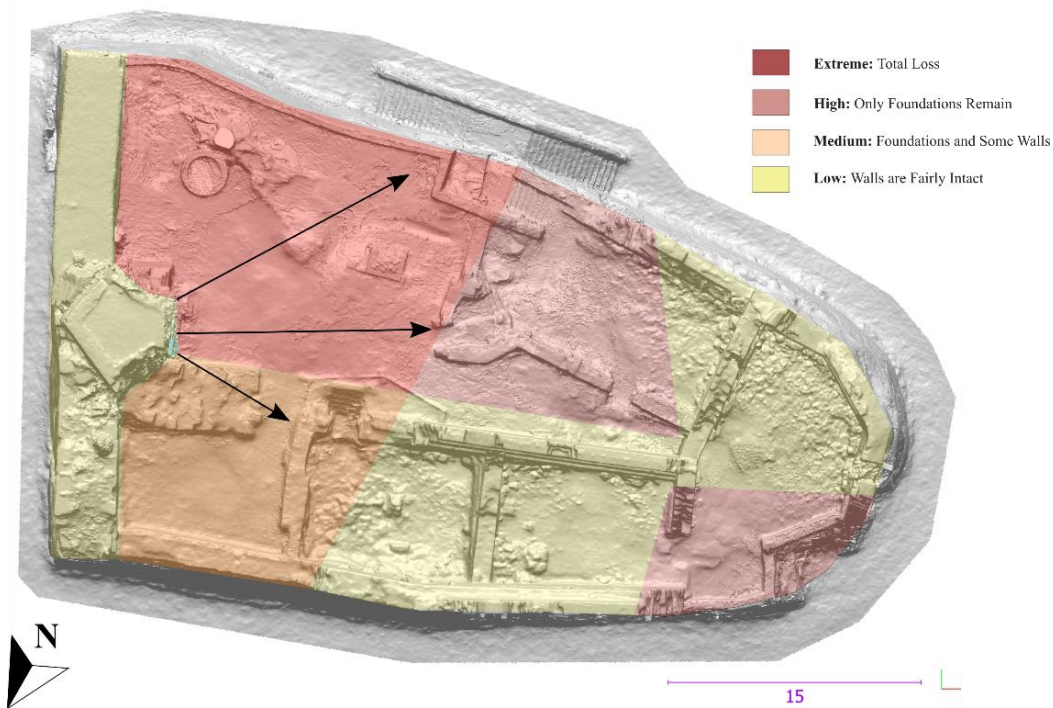


Figure 51: General levels of relative destruction throughout the site and directions of the blast.

The inside of the shield wall exhibits the same building phases as the side facing the outer court. The base of the main tower and its connection to the shield wall is still visible in the northern section of the inner area (Figure 49). This clearly indicates that the majority of the main tower was built during Romanesque IV in a pentagonal form, though the core of the tower was built concurrently with the shield wall portions of Romanesque III.



Figure 52: Connection of the main tower (right) to the shield wall (left). Note the difference in masonry styles clearly indicating different building phases and, likely, different masons.

The main tower was an immense structure of pentagonal form, though the extent of its outline is largely obscured by the extreme loss of material that once formed its southern, western, and northern sides. However, if the extent of the northern side of the foundations of the tower are applied to the southern side, a more complete image of the base of the tower emerges, as shown in Figure 53. The small mound of stones located in the top right-hand corner of the green area, hypothesizing the extent of the main tower was almost certainly the point of connection between the tower and a potential southern building that no longer exists. Drawing from this evidence, a series of interpretations follow, namely that the main tower operated as the nexus through which Inner Chamber C, the lost southern building, the shield wall, and the well were linked. This essentially makes the main tower not only the most readily seen element from outside, but also the most important visual element from within. Considering that the northern wall of the tower continues in a direct trajectory from the southern wall of Inner Chamber C, it is almost certain that the chamber merged into the tower, through which one could gain access to other parts of the keep.



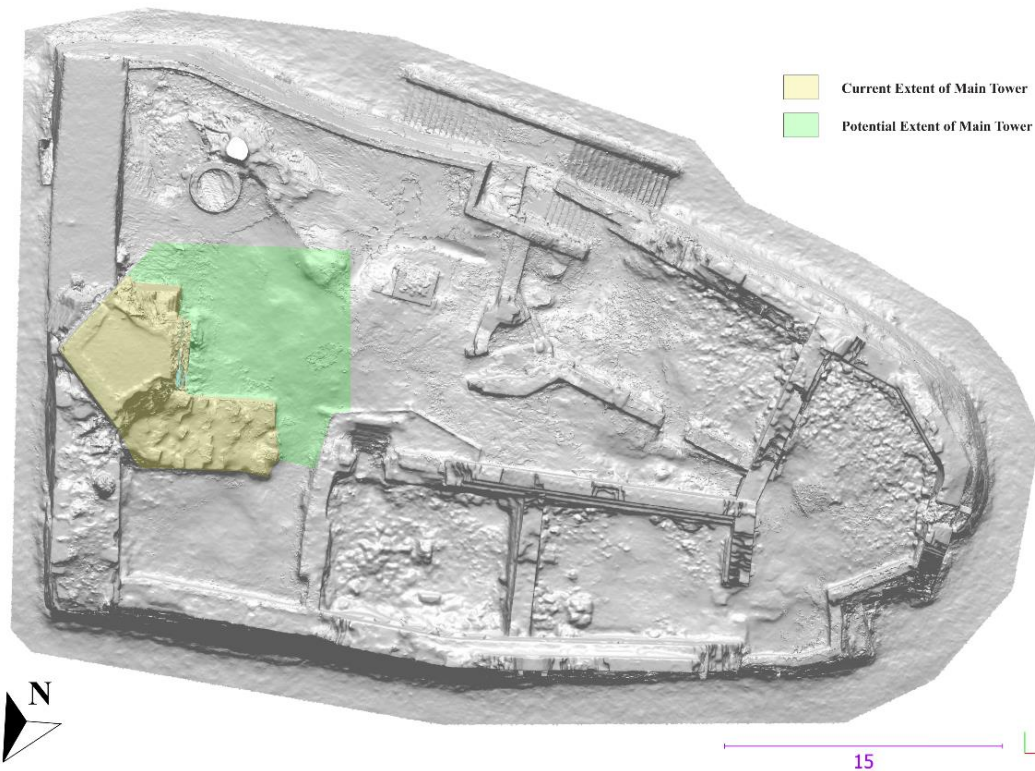


Figure 53: Current and potential extents of Main Tower.

Among the other sections of the inner court, very little remains, offering few clues as to which building once occupied the space between the inner chambers and the shield wall. The spiral staircase is the most prominent remnant of the court featuring portions of two columns that once stood at the entrance of the spiral for which the plinth, die, cornice, and base of each are still visible, though the shafts and capitals are gone (Figure 32). The columns are distinctly of the Renaissance I phase and represent one of the more ornate features at the site, directly across from the two double-arched Romanesque windows of Inner Chamber C. A water well is also situated in the southeastern corner of the inner court, though it was entirely rebuilt during Reconstruction II. A single stone from its previous form still exists, nestled within the rhizomatic clutches of a large oak tree as shown in Figure 54.



Figure 54: Stone well in the Inner Court. Note the purple highlighted stone from the medieval wall.

The inner court also features a variety of clues regarding the position of the original entrance into the castle keep. The most important of these elements is a rut that leads directly to the east of the spiral staircase indicating a conduit for water run-off. The rut was carved into the sandstone pavers that composed the floor of the inner court. Another feature is a large rectangular base of a former building, though its purpose cannot be divined. However, it almost certainly was a component of the entrance to the keep, forming the eastern wall of a portal into the inner court as shown in Figure 55, as well as a support for the lost southern building.



Figure 55: Water conduit to the east of the spiral staircase and hypothetical entrance wall marked in yellow.

The southern wall of Inner Chamber C (view the full format [textured](#)<sup>1180</sup> and [meshed](#)<sup>1181</sup> architectural plans of Wall Numbers 6.1.1, 6.1.2, 6.1.3, and 6.1.4 in the online repository) faces the inner court, leading the way towards Inner Chamber B. The wall features Portals 5, 6, 7, 9, and 10 as well as Windows 5, 6, 7, and 8. The first level was built during Romanesque III as is indicated by the rounded-arch of Portal 5 and the break in the masonry just above the portal where the mezzanine balcony with Portal 3 that once connected all three inner chambers. The pier and springing are still visible for Portal 9 and reveal it to have been nearly identical to Portal 5. The progression of construction emanating from the shield wall, leading east to west is further confirmed by this finding, though it indicates that the inner portion of the castle progressed more quickly than the outer walls. However, the transition to Romanesque IV was rather seamless considering that hardly any difference can be seen between the first and second levels of the wall with the exception of the shouldered arch of Portal 6. The second level is distinctly different, as is indicated by the form of Portal 6—which matches Portal 3 of the western wall of Inner Chamber A—as well as the two double-arched windows. The similarities between Portals 3 and 6 indicate that they were constructed at the transition from Romanesque IV to Romanesque V, though Portal 6 is included in the former phase as it lies closer to the shield wall, which was the origin of the castle’s building progression. The layer of *pietra rasa* covering nearly the entire surface of the wall also disguises the transition between the phases (Figure 56). The third level was built during Romanesque IV as well as is indicated by the consistency of the masonry with that of the second level. Only the piers of Portal 10 remain, which led to the basement level of Inner Chamber C, with a door opening into the basement from the staircase.

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<sup>1180</sup> Aaron Pattee, “Burg Hohenecken, 6.1, InnerCourt, SouthernWall, InnerChamberC, Outside, Texture,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728541>. Also catalogued as Architectural Plan 21.

<sup>1181</sup> Aaron Pattee, “Burg Hohenecken, 6.1, InnerCourt, SouthernWall, InnerChamberC, Outside, Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728540>. Also catalogued as Architectural Plan 20.



Figure 56: Traces of *pietra rasa* plaster on the southern wall of Inner Chamber C between levels two and three.

Portal 7 and Window 8 reveal almost nothing of their form, save for the fact that they were a portal and window, respectively. However, Portal 7 exhibits two small putlog holes that likely served as support beams for a balcony, which in turn was connected to a former wall directly to the east of Window 6. This wall was almost certainly a half-timbered structure considering that was supported by a large putlog hole about five meters to the east of Portal 6. This indicates that the mezzanine had been anchored into the stone wall, yet extended to the position of the aforementioned large putlog hole. Furthermore, the half-timbered construction would have featured a portal leading to a balcony in front of Portal 7, therefore explaining why a portal is on the third floor. Considering that the explosion of the main tower was concentrated on this part of the castle, any wooden structures would either have been demolished or consumed by the ensuing fires leaving but faint traces in the masonry. However, the half-timbered wall was likely built sometime between Gothic II and Gothic III as part of the various measures taken to modify the castle. Besides the colder climate at the time, the castle was owned by multiple parties, requiring new entrances into portions of the castle that had previously been accessible only by areas owned by a different owner. Window 5 was also modified during Gothic II, bearing nearly an identical form as Windows 11, 12, 14, and 16. In contrast to those other windows, Window 5 was fit well into the masonry, giving the appearance that it had been original. However, the difference in mortar and the existence of a crescent-shaped stone indicating a smaller previous window provide evidence that Window 5 was a replacement at a later time.

#### 4.4.5.7 Group 7: Inner Chamber B

Inner Chamber B is located at the western-most end of the castle, accessible through Portals 2 leading from the Inner Court, and Portals 3 and 4 leading from short mezzanine levels. The eastern wall within the chamber (view the full format [textured](#)<sup>1182</sup> and the [meshed](#)<sup>1183</sup> architectural plans of Wall Numbers 7.1.1, 7.1.2, and 7.1.3 in the online repository) is the same as the western wall of Inner Chamber A, only from the other side. Thus, it shares Portals 2, 3, and 4 as well as the service lift, though it provides more evidence as to when the wall was constructed. The eastern wall also connects to the western wall of Inner Chamber C. The foundations at the southern end of the eastern wall of Inner Chamber B were constructed after the completion of the southern wall of the keep, and the first level of the southern and western walls of Inner Chamber C. Evidence for this is provided by a lack of interlocking stones into the southern wall of the castle keep and the southwestern corner of Inner Chamber C (Figure 57). Interestingly, the eastern wall of Inner Chamber B is 1.35 meters wide at the base, which corresponds to the 1.37-meter thickness of the southern wall of the Keep. However, construction of the wall from the foundation upwards occurred later, as the stone courses do not interlock with the southern wall of the keep.



Figure 57: Connection of the stones of the eastern wall of Inner Chamber B with the southeastern corner of Inner Chamber C (left) and the southern wall of the keep (right).

<sup>1182</sup> Aaron Pattee, “Burg Hohenecken, 7.1, InnerChamberB, EasternWall, Texture,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.ub.uni-heidelberg.de/detail/1728543>. Also catalogued as Architectural Plan 23.

<sup>1183</sup> Aaron Pattee, “Burg Hohenecken, 7.1, InnerChamberB, EasternWall, Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.ub.uni-heidelberg.de/detail/1728542>. Also catalogued as Architectural Plan 22.

The only interlocking stones of the eastern wall with either of its adjacent walls are found in the lintels of Portals 2 and 3, as shown in Figure 58. Based upon the similarity of the stone summers indicating the positions of the floors of levels two and three, the eastern wall of Inner Chamber Band and the walls converging at the southwestern edge of Inner Chamber C were built with the same plan—again evidence for their construction around 1230. Nevertheless, a clear demarcation between the eastern wall and the southeastern corner is visible, indicating that the eastern wall was added shortly after the completion of the southern wall of Inner Chamber C.



Figure 58: Interlocking lintels of Portals 2 and 3 with the southwestern edge of Inner Chamber C.

The eastern wall also indicates that the castle kitchen was located on the first level. Evidence for this is found in the slightly elevated area at the southern end of the chamber where gaps of the piers of a large oven remain. The oven's close proximity—only 1.13 meters away—to the service lift indicates that food could be brought to the second level rather quickly while it was still warm. Directly above the oven was a fireplace on the second level, indicated by the two stone corbels that extend from the eastern wall upon which a mantel once existed. This represented one of the most elite rooms of the castle, due to the presence of a large fireplace and the service lift which features a lintel on its western side (i.e. on the eastern wall of Inner Chamber B). A small niche is located between the two aforementioned elements that could have served as a storage space. The walls of the fireplace converge into a chimney that permeates the wall of the third level of the eastern wall and possible served as a heat source for the third level—though not nearly as ornate as the second level. Thus, the second level of Inner Chamber B served as the dining hall of the castle.

The southern wall of Inner Chamber B (view the full format of the architectural plans of Wall Numbers 7.2.1, 7.2.2, and 7.2.3 in the online repository [here](#))<sup>1184</sup> features the inside of Windows 9, 19, and 22. As previously discussed, Window 19 had originally begun as a portal for construction purposes, then modified as a window, and later walled-up entirely. As to why it was permanently closed is currently unclear, though there are a few possibilities. Provided that this lower first level of Inner Chamber B served as the kitchen, a door leading directly from the outside could have been useful for transporting foodstuffs and materials. Its conversion into a window during Gothic II could be due to the effect of the colder climate as a result of the MCA. Its further conversion into a wall during Gothic III could harken back to the more defensive design undertaken by the castle's owners during the regional conflict of the late 14<sup>th</sup> and early 15<sup>th</sup> centuries. The third level features the remnants of Window 22, though only the eastern side still exists and is not visible from the other side of the wall. The southwestern wall of the chamber (view the full format of the architectural plans of Wall Numbers 7.3.1, 7.3.2, and 7.3.3 in the online repository [here](#))<sup>1185</sup> continues with the same stone courses from the southern side, featuring three large double-stone summers indicating the floor of the second level built towards during Romanesque IV. The stone summers found throughout the chamber are strongly reminiscent of those found in the kitchen of Castle Frankenstein which had belonged to the Counts of Leiningen from the 12<sup>th</sup> until the mid-14<sup>th</sup> centuries. By 1251 certain parts of Castle Frankenstein were enfeoffed to individuals bearing the same name at the castle, and one person was in the charters selected for this project. A certain Frederick von Frankenstein appeared in Burg Hambach in Neustadt an der Weinstrasse in 1262 alongside members of the von Leiningen family and various ministeriales including Gozo von Wilenstein, the son of Albero von Wilenstein mentioned in Section 3.5.1.<sup>1186</sup> However, no tangible social connection between those associated with Castle Hohenecken and Castle Frankenstein can be determined from the selected charters. On the other hand, this information provides evidence corroborating the conflict between the ministeriales von Lautern and the Counts of Leiningen

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<sup>1184</sup> Aaron Pattee, "Burg Hohenecken, 7.2, InnerChamberB, SouthernWall, Texture and Mesh," Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728548>. Also catalogued as Architectural Plan 24.

<sup>1185</sup> Aaron Pattee, "Burg Hohenecken, 7.3, InnerChamberB, SouthwesternWall, Texture and Mesh," Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728549>. Also catalogued as Architectural Plan 25.

<sup>1186</sup> Remling, *Urkundenbuch zur Geschichte der Bischöfe zu Speyer*. Pp. 290-291. Also catalogued as Charter ID 10102 in the graph database.

considering that Castle Frankenstein was outside of the royal estate whereas Castle Hohenecken was in the middle of it.

The second level of Inner Chamber B also features one open stone niche and one closed niche. Although the open niche is just as mysterious as the niche next to the service lift, the closed one may indicate the position of a support for a construction pulley that was simply filled in following the completion of the building. The third level features the inner wall of the northwestern side of Window 10, and an indented wall indicating where the floorboards of the third level once existed. Only a narrow portion of the western wall of the chamber (view the full format of the architectural plans of Wall Numbers 7.4.1, 7.4.2, and 7.4.3 in the online repository [here](#))<sup>1187</sup> still exists as its supporting arch on the outside collapsed during, or shortly after, the destruction by the French. The top level features Garderobe 3 with two piers and a single springer, the designs of which emulate the Gothic III windows. However, the outside of the same garderobe features two large stone corbels as the garderobe on the northern side of the keep. A disruption of the stone course indicates a later modification to the wall beneath the inside of the garderobe and two angled putlog holes indicate that a staircase led to the garderobe directly from the second level. This would have allowed those dining in level two to quickly access the toilet in level three.

The remnants of what appear to have been a window pier can be seen on the second level bordering the reconstruction at the turn of the 20<sup>th</sup> century. However, a wider opening on the first level, directly beneath the pier on the second level, and a narrow opening to the right of Garderobe 3 indicate a possible fireplace-oven-chimney (Figure 59) constellation as seen on the eastern side of the chamber. Figure 59 depicts how the constellation would have hypothetically fit in the wall and is drawn directly from the outline of the eastern wall where this constellation is still exhibited. The copy of the outline fits precisely into the void on the western wall, currently supported by the rehabilitation efforts of Reconstruction I. This would mean that the chamber had two heating sources opposite one another. Further evidence for a fireplace-oven-chimney constellation is indicated by the collapse of the wall, as these constellations necessitate a substantially thinner wall than the rest of the walls of the castle keep, which also explains why an arch was built beneath it rather than a stone foundation. Thus, the fireplace-oven-chimney constellation atop the supporting arch represented a structural weakness, leading to the collapse of the northwestern portion of Inner

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<sup>1187</sup> Aaron Pattee, "Burg Hohenecken, 7.4, InnerChamberB, WesternWall, Texture and Mesh," Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728550>. Also catalogued as Architectural Plan 26.



Chamber B. The large hole in the wall next to the only stone summer on the western wall could very likely have been the location of a stone corbel for a large oven on the ground level of the chamber.

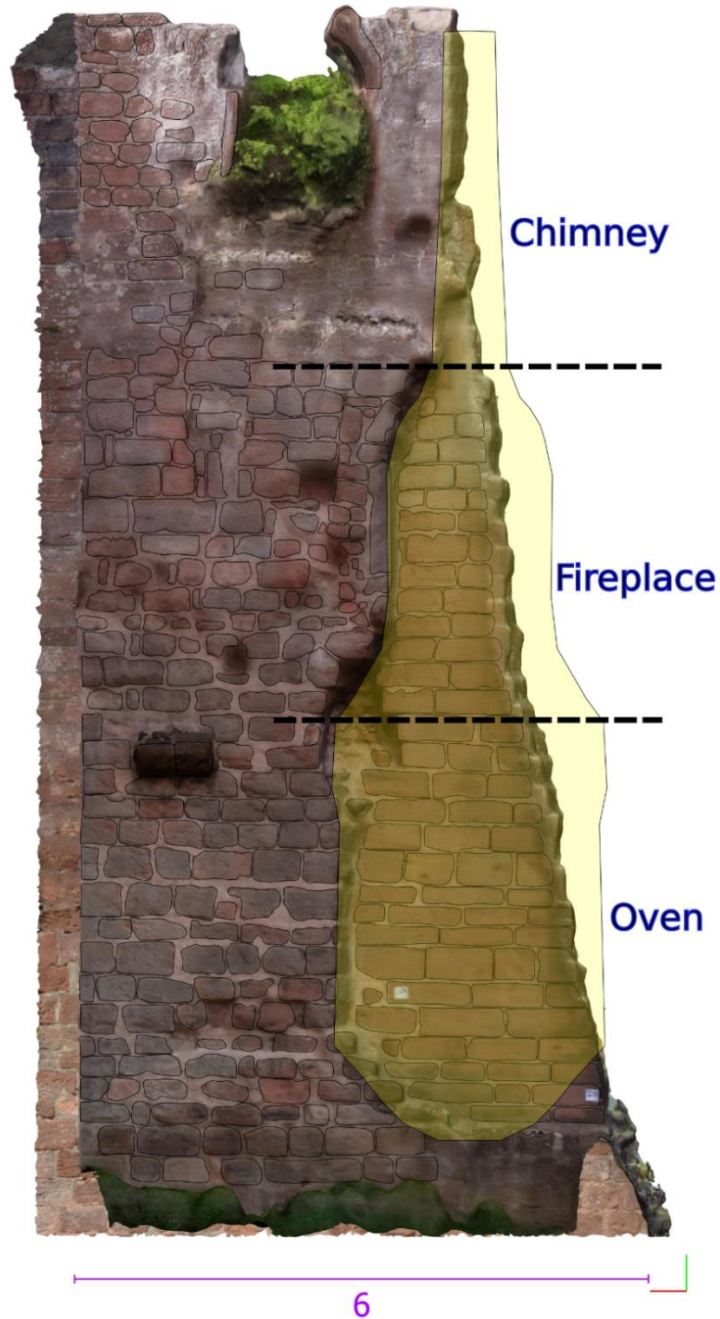


Figure 59: Hypothetical fireplace-oven-chimney constellation in the western wall of Inner Chamber B, by applying the outline of the oven, fireplace, and chimney constellation from the opposite wall.

#### 4.4.5.8 Group 8: Inner Chamber C

The last building of Castle Hohenecken contains the most windows and portals of all the building types. It is commonly called the *Palas*, or palace, referring to the idea that it had served as the main residential part of the site. These documentations do not disprove the idea that it was predominantly residential; instead, they cast light upon the extent of the chamber and its individual elements. The outer walls were already discussed in Sections 4.4.5.3 and 4.4.5.6 regarding the northern keep and the southern wall facing the Inner Court. Besides the two inner walls laden with windows and portals, another wall exists connecting the two. This middle wall is worth discussing first because it only extended from the basement level until the floor of first level. However, the wall continued up the side of the inner southern wall of the chamber until just below the floor of the third level. As the stones do not extend up the side of the inner northern wall of the chamber, it is likely that the middle wall only extended halfway through the first and second levels. This means that the first and second levels were not large, open rooms bounded with windows. Instead, this means that the first and second levels were interrupted by a wall protruding halfway into the center of the chamber and was potentially continued by a half-timber construction. As nothing remains of the inside of the chamber, it is difficult to say how many rooms existed and what the precise purpose of the middle wall was. What is certain is that the middle wall was part of the design of the basement and first level on one side of the chamber during Romanesque III, though during Romanesque IV the wall was not continued along the northern side. The interlocking stones connecting the middle wall to the southern wall, as shown in Figure 60, provide evidence for this. However, the connection to the northern wall of the chamber does not feature interlocking stones indicating again that the inside of the inner castle was built slightly before the outer walls.



Figure 60: Middle basement wall of Inner Chamber C connected to the southern (left) and northern (right) walls.

The inside of the southern wall of the chamber (view the full format of the [textured](#)<sup>1188</sup> and [meshed](#)<sup>1189</sup> architectural plans of Wall Numbers 8.1.1, .8.1.2, and 8.1.3 in the online repository) features Portals 5, 6, 7, 9, and 10 as well as Windows 5, 6, 7, and 8—representing the highest concentration of windows and portals at the castle. The basement and first levels were built during Romanesque III, though the first level was built shortly before Romanesque IV. Evidence for the identification of these phases is provided by the frames of Portals 5 and 6, which both feature flat arches on the inside, though Portal 5 has a rounded arch on the side facing the inner court and Portal 6 has a shouldered arch. The inside of the southern wall also lacks stone summers, for which slightly indented walls provided ledges for floor boards to be installed. The insides of Windows 6 and 7 are identical in form, though Window 5 was later modified during Gothic III, provided that its piers are the same as those found on Windows 1 and 2 of the storehouse. The lintel of Window 5 was likely

<sup>1188</sup> Aaron Pattee, “Burg Hohenecken, 8.1, InnerChamberC, SouthernWall, Inside, Texture,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.ub.uni-heidelberg.de/detail/1728545>. Also catalogued as Architectural Plan 28.

<sup>1189</sup> Aaron Pattee, “Burg Hohenecken, 8.1, InnerChamberC, SouthernWall, Inside, Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.ub.uni-heidelberg.de/detail/1728544>. Also catalogued as Architectural Plan 27.

changed earlier due to its different style, which places it in Gothic II. Unfortunately, the inside of Inner Chamber C was being rehabilitated during the 2018 recording campaign, resulting in blurry textures at the bottom of the meshes. Portal 9 most likely looked the same as Portal 5 as the wall connected to the northwestern corner of the main tower, though it too would have been from Romanesque III as its outer pier is identical to the piers on Portal 5. The southern wall connects to the eastern wall of Inner Chamber B at its southwestern corner, which in turn connected to the northern wall thus forming the western wall of Inner Chamber C. This wall was also not properly recorded due to rehabilitation efforts, though it does not reveal any windows or portals. A thick layer of plaster still covers large portions of the wall which bear a striking similarity to the plaster to the right of Window 3 in Inner Chamber A, as shown in Figure 61. The plaster extends to Window 5 of the southern wall, covering a small portion of the second level, indicating that the insides of the chambers were plastered after the modifications of Window 3 in Inner Chamber A. Thus, the plaster is likely from the end of Gothic III or perhaps from the middle to late 15<sup>th</sup> century for which no buildings phases were identified. Alternatively, it could be that the plaster stems from the renovations during Renaissance I. Nevertheless, plaster of this sort is also seen at the storehouse around Window 1 and the large quoins, which in turn corroborates the identification of this construction phase—as do the window piers—and therefore the most likely application of the plaster was during Gothic III.



Figure 61: Plaster to around Window 3 (left) in Chamber A and Window 5 (right) in Chamber C.

The inside of the northern wall features Windows 11, 12, 13, 14, 15, and 16, as well as Garderobe 4 and Portal 21 (view the full format of the [textured](#)<sup>1190</sup> and [meshed](#)<sup>1191</sup> architectural plans of Wall Numbers 8.2.1, 8.2.2, and 8.2.3 in the online repository). Unfortunately, the scaffolding in the chamber during the recording prevented a more detailed mesh and texture. Nevertheless, the key features of the wall are still clearly depicted, though the masonry is more difficult to determine. Due to the blurriness of the scaled model, I generated an additional model of Inner Chamber C using all photos that included its architectural elements. This photoset consisted of 679 photos with 18 different focal lengths from five different cameras. For these reasons, the model was neither scaled nor used for the architectural analyses in the plans. The benefit of the model was its higher resolution textures as the photoset ranges from the years 2007 until 2018, omitting the period of time when scaffolding stood at the site. Therefore, the model was only used in order to have a better image of the overall stone constellation of the masonry, taking into account that it is not an accurate model.

What is immediately noticeable on the wall is the similarity between Windows 12 and 13 that both feature double window seats beneath a rounded arch. The opening between the top of the arch and the entrance to the window seats measures 3.2 meters for both windows. However, the aperture of Window 12 is wider than Window 13, as its eastern pier was set at an angle. This made the springer of the arch protrude more than the other without substantial support beneath it. The peculiar nature of the angled wall and springer was augmented during Romanesque IV, as the stone beneath the springer and the stone above the window seat match the masonry courses between Windows 11 and 12. A possible solution elucidating the rather obscure nature of Window 12 can be found in the Church of the Holy Sepulcher in Jerusalem, shown in Figure 62.

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<sup>1190</sup> Aaron Pattee, “Burg Hohenecken, 8.2, InnerChamberC, NorthernWall, Inside, Texture,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728547>. Also catalogued as Architectural Plan 30.

<sup>1191</sup> Aaron Pattee, “Burg Hohenecken, 8.2, InnerChamberC, NorthernWall, Inside, Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728546>. Also catalogued as Architectural Plan 29.



Figure 62: Comparison of arch from Window 12 and an arch from the Anastasis Rotunda in Jerusalem.

The Anastasis Rotunda of the Sepulcher features three levels of arcades above the main level within which the Tomb of Christ is located. Construction began in 326 and extended for a long time thereafter, though the current form of the rotunda was altered in the 11<sup>th</sup> century by Byzantine Emperor Constantine IX Monomachos in 1048 following the church's destruction a few decades prior. The reconstruction featured a larger entrance in the rotunda leading to the Ompahlos within the courtyard of the church.<sup>1192</sup> Considering that both Eckbert I von Lautern and many of his sons had served as imperial marshals and cupbearers—among other positions—to Emperors Frederick I and Henry VI, they would have been brought with on military campaigns which included crusades. Unfortunately, the extant records do not mention any of the von Lautern-Hoheneck members in the Holy Land at any time. However, Heinrich I von Lautern and his brothers Johann I, Siegfried I, Reinhard I, and Erbo all served within the entourage of Emperor Henry VI from 1191 until the emperor's death on 28 September 1197.<sup>1193</sup> Henry VI died six after his main army arrived in Acre

<sup>1192</sup> Robert Ousterhout, "Architecture as Relic and the Construction of Sanctity: The Stones of the Holy Sepulchre," *The Journal of the Society of Architectural Historians* 62, no. 1 (2003): 4–23. Pp. 5-8.

<sup>1193</sup> Dolch, "Das Reichsministerialengeschlecht von Lautern/von Hohenecken Im 12./13. Jahrhundert." Pp. 44-45.

to partake in a new crusade.<sup>1194</sup> Considering that Heinrich I von Lautern was the emperor's cupbearer, he was likely at Henry VI's side upon his death in Sicily. His brothers on the other hand, were involved in various military capacities—mainly in Italy—but Reinhard I apparently traveled with Heinrich I and the other main ministeriales including the steward and fleet commander Markward von Annweiler and the marshal Heinrich von Kalden.<sup>1195</sup> The fact that Reinhard I was in the company of these latter men, it is highly likely that he arrived in the Holy Land with the main army. The expulsions of the ministeriales from Italy and Sicily under Empress Constance following her husband's death would have affected all those in Italy at the time as well as those with territorial holdings who had to repair to the peninsula to defend their properties—as described in Section 3.2.1. Nevertheless, the crusade continued until the entire coast had been re-conquered from Muslim forces,<sup>1196</sup> a task in which Reinhard I von Lautern was likely involved. Although the crusaders decided not to attack Jerusalem, some may very well have visited the city as pilgrims. In summary, Reinhard I could have seen the Anastasis Rotunda in Jerusalem and brought the idea back home.

Upon closer analysis, Windows 11, 15 and 16 are different than Windows 12 and 13, as they were modified during Gothic II. It is possible that a rounded arch had existed above Window 11 and a segmental arch was placed in its stead, albeit much lower than what it would have been with a rounded arch. The window seats are still visible and at the same level as those belonging to Windows 12 and 13. The seats belonging to Window 16 are immediately noticeable based upon the stone outlines, but its arch may also have been replaced. Its current arch is identical to the top portion of Window 15 as both feature lintels and relieving arches. In contrast to Windows 11, 12, 13, and 16, Window 15 does not have any recognizable window seats, though it certainly could have had a rounded arch. It is worth noting that Windows 12 and 16 had formerly been balconies but were later closed.

Window 14 is very different from all the others and is positioned much higher than either of its neighbors. This is most likely due to the presence of a former set of stairs leading from the floor beneath Windows 15 and 16—as is indicated by the four stone summers (in the textured architectural plan of Subgroup 8.2 in the online repository [here](#))<sup>1197</sup>. The bottom of the window

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<sup>1194</sup> Riley-Smith, *The Crusades: A History*. P. 147.

<sup>1195</sup> Dolch, “Das Reichsministerialengeschlecht von Lautern/von Hohenecken Im 12./13. Jahrhundert.” P. 45.

<sup>1196</sup> Riley-Smith, *The Crusades: A History*. P. 147.

<sup>1197</sup> Pattee, “Burg Hohenecken, 8.2, InnerChamberC, NorthernWall, Inside, Texture.” Also catalogued as Architectural Plan 30.

seats of Windows 11, 12, and 13 form stone ledges, representing a potential installation point for wooden boards as stone summers were not placed on that section of the wall. It is therefore possible that Inner Chamber C was split in half down the middle—between Windows 13 and 14—in which the second level along the northern wall was slightly higher than that of the southern wall. Evidence for this is found not only in the small ledge, but in the extent of the middle wall that is limited mostly to one side of the chamber. The stone summers beneath Windows 15 and 16 clearly indicate where the floor was—at precisely the same level as the indenture on the southern wall—and also indicate a series of stones leading to the ledge of the window seats. However, had the chamber been split down the middle, with a slightly elevated position of the floor connected to the northern wall, this would not explain as to why Windows 11, 12, and 13 are all at the same level as Windows 15 and 16. Therefore, the only certainty is that some sort of staircase was located between Windows 13 and 14, explaining as to why Window 14 is so much higher. Its purpose was to bring light to a wooden staircase, which presumably lead to Garderobe 4 directly above it.

The presence of a structure leading to a garderobe on the third level from the second level is also exhibited in Inner Chamber B. These connections between the levels allowed for quick access to the garderobes from the second levels which served as the dining and residential areas of the castle. Garderobe 4 is not of the same building phase as Garderobe 2 on the western wall of Inner Chamber B, because it features a rounded arch from the Romanesque IV. However, the stone corbels that extend from both garderobes are of the same design as shown in Figure 63. The height of Garderobe 4 indicates that Inner Chamber C extended above the height of Inner Chamber B, for which the angled stones along the crown of the walls indicate the position and angle of the roof. With regard to the inner-room structure of Inner Chamber C, the basement was completely split into two rooms, whereas the first level was split in two yet likely had access between the two halves. The second level was almost certainly partitioned into three sections provided the difference in the windows, with walls between Windows 11 and 12, and between Windows 13 and 14. These partitions correlate with the portals and windows of the southern wall of Inner Chamber C as Portal 6 and Window 6 are directly across from Windows 12 and 13 (respectively). Considering that Window 12 had previously been a balcony, it would have been the first thing seen upon entering through Portal 6 from the mezzanine level between the three inner chambers.





Figure 63: Comparison of the stone corbels of Garderober 4 (left) and 2 (right).<sup>1198</sup>

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<sup>1198</sup> Both aerial photos were taken by Christian Seitz during the 2015 photogrammetric recording campaign.

#### 4.4.6 Interpretation of the Architectural Investigations at Hohenecken

Castle Hohenecken is the most substantial of the four primary sites and provides the most evidence regarding its construction history when compared to the other three sites. The previous sections discussed the main features that provide evidence for the development of the castle, with an emphasis upon building phases that occurred within the project chronology of 1152 to 1273. Based upon these findings, the shield wall was the first to be built, followed by the walls composing the inner court, and then the outer walls of the castle keep progressing east to west. The continuation of the outer walls was augmented by a massive undertaking in the 1190s in which the top layer of the shield and main tower were built using embossed ashlar of the same dimensions found on the curtain wall of the Palace of Lautern. It was during Romanesque IV (1194 - 1230) that the vast majority of the castle keep was built, though it was not completed until Romanesque V (1230 - 1270). The construction slowed down considerably during Gothic I (late 13<sup>th</sup> and early 14<sup>th</sup> centuries) for which I was unable to clearly identify any building phases. Construction resumed in Gothic II (middle to late 14<sup>th</sup> century) when the walls surrounding the entire castle were erected, at which time the first front gate was built in addition to another gate located between the southeastern corner of the shield wall and the northwestern corner of the storehouse. This phase resulted in a considerable expansion of the area of the site, as well as the reduction in size of many of the windows, and the renovation of two lavish balconies to quaint rectangular windows. During Gothic III (early 15<sup>th</sup> century), the construction was limited mainly to modifications of the masonry—such as the western wall of the storehouse—and window tracery. This was essentially a refinement of the structure to bring it to the architectural standard enjoyed at the time by the great princes—such as the Elector of the Rhine who co-owned Castle Hohenecken at the beginning of the 15<sup>th</sup> century—but also to adjust the castle to be more defensively formidable provided the regional feud in the German Palatinate at the time. Following the Peasant's Revolt of 1525, the castle was refurbished to include a spiral staircase at the northeastern corner of Inner Chamber B, and the front gate was replaced. Further construction phases are not exhibited at the site, though they likely included interior changes in the ornamentation of the rooms. The destruction of the outer walls in 1664 by the Elector of the Rhine foreshadowed the destruction of the castle keep in the summer of 1688 by the French,<sup>1199</sup> resulting a complete loss of the interior constellation of rooms. The combination of these conflicts and the centuries of decay have led to its current state.

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<sup>1199</sup> Keddigkeit and Losse, "Hohenecken." Pp. 382-383.

Some very important features with regard to Castle Hohenecken's status at the turn of the 13<sup>th</sup> century clearly indicate its elite nature. The mortar seams between the embossed ashlar of the main tower are remarkably tight and appear to be rich in chalk. Although very few documentations of the price of chalk for the High Middle Ages exist—and certainly not in the case of Castle Hohenecken—the price of chalk and of iron were two of the most expensive components in the bills of medieval castles. This is due to the difficulty in transporting such materials and then mixing chalk and fashioning iron on site.<sup>1200</sup> The vestiges of iron hinges for windows and doors are readily found all over the site, again providing evidence of the castle's high expense. In all other areas besides the upper third of the shield wall and the portion of the main tower visible from outside the castle, the mortar seams are wider. The visible remains of chalk are also located in the *pietra-rasa* of the southern side of Inner Chamber C (Subgroup Number 6.1), and in the patches of plaster found near the window of Inner Chamber A and the inside of the western wall of Inner Chamber C. The *pietra-rasa* remnants are indicative of the early and high medieval periods,<sup>1201</sup> which coincide with the high medieval arched windows found on the southern wall of Inner Chamber C.

A thin layer of plaster is still visible covering portions of the bedrock on the outside of the core of the castle. This is particularly interesting because there are a few portions where masonry is found above and beneath the bedrock in order to both support the structure and maintain continuity of the façade. In precisely these areas it is entirely possible that the thin layers of plaster are remnants of *pietra-rasa*, providing the illusion that the entire wall had been composed of masonry, although the bedrock certainly provided a part of the wall. Covering masonry with *pietra-rasa* in which the stones were not finely fashioned, but rather rough from initial quarrying can be seen at castles contemporaneous with Castle Hohenecken. Castle Dunkelstein in Lower Austria features a portion of quarry stone masonry covered in *pietra-rasa* dating from the late 12<sup>th</sup> century.<sup>1202</sup> It is therefore likely that the outer walls of the castle keep were fashioned in this manner.

The combination of thin mortar seams with embossed ashlar and *pietra-rasa* covering the southern wall of Inner Chamber C facing the inner court, indicates a wealth of resources to pay for the services of artisan masons and for chalk to be applied over the majority of the walls at the site. The von Lautern-Hoheneck family therefore had access to masonry workshops and copious amounts

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<sup>1200</sup> Untermann, "I. Holzbau." P. 269.

<sup>1201</sup> Untermann, "III. Die Haut Des Bauwerks." P. 345.

<sup>1202</sup> Kührtreiber, "Handwerksgeschichtliche und ideologische Aspekte mittelalterlichen Mauerwerks am Beispiel Ostösterreichs." P. 175.

of resources, both of which were facilitated by their elite administrator positions in service of the kings and emperors. As was discussed in the summary of the investigations of the Palace of Lautern, the embossed ashlar that compose the main tower of Castle Hohenecken represent an architectural link to the palace. The position of the tower atop the large shield wall—itsself partially composed of embossed ashlar—gives the appearance of a head atop a broad set of armored shoulders. When viewed from afar, the embossing appear as studded bumps that reflect light and cast shadows on different parts of the stones depending upon the time of the day. A similar phenomenon is exhibited on a suit of chain mail, whose interlocking links reflect light and cast shadows in like fashion. The Main Tower and shield wall therefore give the illusion of the armor of a knight—the preferred status of an administrator in the emperor’s service. The geographical direction of the castle towards the palace is also significant as is the pentagonal shape of the tower. Although the shield wall doubled as a protective wall against the higher elevation of the hill, upon whose spur the castle was built, it also presents itself as a guardian with a fixed gaze towards its master. Furthermore, the pointed angle of the main tower facing the east resembles the face guard of an enclosed helmet—also a pentagonal shape. Thus, the design of Castle Hohenecken was intended as a homage to the both the emperor and the desired status of knighthood.

## 4.5 Castle Beilstein

Compared to the other primary sites discussed in this project, almost nothing remains of Castle Beilstein. Its condition was categorized as very poor in a 2005 dissertation regarding the hilltop castles of the German Palatinate.<sup>1203</sup> Although it was excavated in the 1950s, its main architectural features—with the exception of the cistern—were reconstructed.

### 4.5.1 First Inspection and Key Insights at Castle Beilstein

The castle is much more remote than the other three sites as it requires a 20-minute drive from the city in order to reach a parking lot where one can then walk to the site. The forest path to the castle is relatively short though a number of geographical attributes are immediately noticeable during the brief hike. Two different paths lead towards the castle from the northeastern and southwestern corners. The site was built upon a slight hill surrounded on all sides by smaller hills whose slopes are relatively free of trees, though a thin canopy persists throughout the area. The forest between the parking lot and the castle is very well maintained as it serves as a burial ground for cremated remains known as the *Ruheforst*. The conditions are very peaceful and the area is very pleasant. The landscape resembles the rolling hills of golf course with various depressions that could have been small lakes or ponds. The slight slopes of the hills are reminiscent of vineyards in other parts of the German Palatinate—with the exception of the trees, of course. This is indeed befitting as vineyards were supposed to have been present at the site during the 14<sup>th</sup> century.<sup>1204</sup> The path from the southwest leads to the wall requiring one to walk around the western or eastern sides in order to gain access to the front gate which is approachable only over a short bridge underneath which one would walk up a small ramp. The northeastern path leads directly to the bridge and offers a tremendous view of the whole site with the forested mountains of the Palatinate in the distance. These paths leading to the castle served two different functions: the southwestern path showcased the former façade of the wall with the main tower peering over its crown, whereas the northeastern path showcased the castle via the front gate which may have had a more imposing feel.

The site itself provides few clues as it has been a ruin for nearly 600 years and only the foundations of the walls are visible, save the excavated portions on the western side which feature a

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<sup>1203</sup> Desiree Dall'Agnol, “Die mittelalterlichen Höhenburgen im Biosphärenreservat Naturpark Pfälzerwald: Ansätze zu Entwicklungskonzepten für Kulturdenkmäler in der Erlebnisgesellschaft” (Dissertation zur Erlangung des Doktorgrades der Naturwissenschaften, Hamburg, Geowissenschaften der Universität Hamburg, 2005). P. 123.

<sup>1204</sup> Mötsch, *Regesten des Archivs der Grafen von Sponheim 1065-1437*, 1988. P. 175. Also catalogued as Charter ID 10190 in the graph database.

gothic doorway and enclosed room. Once inside the premises of the site, it becomes clear how small and cramped it would have been—especially if three families, their servants, livestock, and materials had inhabited the site in the High Middle Ages. For this to have been the case, Castle Beilstein would have been slender and tall. If the buildings within the site still stood, the pathway from the front gate to the rock outcrop would have been quite narrow. Castle Beilstein pales in comparison to the vast size of Castle Hohenecken and the quality of its masonry, offering evidence for the dichotomy of financial capability and royal favor.

#### 4.5.2 Laser Scan Procedure for Castle Beilstein

The TLS recording of Castle Beilstein took place on 3 December 2016 with the assistance of Katharina Anders and Zsófia Koma of the Institute of Geoinformatics. The recording was begun at 9:40 and finished around 15:30, conducted simultaneously with the first SfM recording. The cold weather conditions were a hindrance as the scanner encountered acquisition issues and ceased working around 13:00—about halfway through the recording. Despite the unexpected interruption, Katharina Anders and Zsófia Koma were able to solve the issue and we finished recording the site. The scan of the site consisted of 11 scans of the inside of the ruin and omitted the outer walls and underpass, which were nearly enveloped with briars and would have required at least an additional 10 scans. Due to the disruption in the scanner, we chose to leave the outer walls for another campaign. The dense vegetation consisting primarily of thorns, roots, and bushes surrounding the site made it nearly impossible to even walk around the outer wall, much less place a scanner and computer in its midst. An aerial recording would be much more suitable for sites exhibiting similar conditions. The generation of the model continued in the same manner in which the other sites were merged via manually placed tie points. I placed over 100 of these tie points on objects in the recordings visible by at least two scans, of which approximately 80 became the final points for the PRCS.

#### 4.5.3 Photogrammetric Procedure for the Castle Beilstein

Castle Beilstein was recorded on two occasions. The timing of the first campaign was suboptimal given the very cold weather and limited daylight of the winter months. The SfM recording was conducted from 9:30 until 13:00 with the use of calibrated markers placed throughout the site—the camera specifications can be found in Table 6. These markers proved beneficial for the concurrent TLS recording as I manually merged the scans during the processing phase using the markers as tie points. Unfortunately, this was the worst of the SfM campaigns undertaken in this project as nearly all of the photos exhibited a slight blur, the markers were hardly visible at times, and the light conditions were terrible given the heavy overcast of clouds and subtle mist. The markers themselves were poorly constructed from 220 gram paper and unlaminated. Due to the lack of a protective surface on the markers, the slight mist during the recording permeated the paper, warping a number of the markers, necessitating the production of a new set of matte-laminated markers that were used for all recordings from 2017 onward. The second set of markers was then used for the only recording of the palace, and the second recordings of castles Beilstein, Hohenecken, and Perlenberg. Although the first SfM model of Castle Beilstein failed to merge correctly after months of trial and error, conducting both recordings at the same time is highly advisable as it maintains the same conditions for both models and provides hundreds of calibration points common throughout both data sets. The failure of the SfM photos to align correctly was due to a lack of photos in joint positions resulting in multiple portions that were connected arbitrarily to one another, though certain portions had indeed aligned well. This necessitated a second SfM campaign on 14 March 2020 from 12:23 until 14:54 with the assistance of two friends, Wilhelm Töws and Alexander Haard, who are both from Kaiserslautern and familiar with the site.

Table 6: Camera specifications for the first SfM recording of Castle Beilstein.

<b>BEILSTEIN: 2016</b>				
<b>CAMERA</b>	<b>Model</b>	<b>Focal Length</b>	<b>Exposure Time</b>	<b>ISO</b>
	Nikon D3300	18 mm	1/60 sec.	640
<b>IMAGE</b>	<b>Width</b>	<b>Height</b>	<b>Resolution</b>	<b>Bit Depth</b>
	6000 pixels	4000 pixels	300 dpi	24

The second campaign made use of the superior Nikon D750 camera and matte-laminated markers; the camera specifications are located in Table 7. The weather conditions were favorable with a slight overcast, though it had briefly rained for about 30 minutes about midway through the recording. Thankfully the 143 calibrated markers that we had placed were the same laminated markers that I had used at the other three sites and were not affected by the rain. The recording was much faster than I had expected due to the lack of visitors and because I was familiar with the site—particularly the places which had caused the problems in the first SfM model. The main difficulty with recording Castle Beilstein was linking the disparate sections of the ruin to one another in absence of a drone or camera boom to take photos from above. Additionally, substantial portions of the ruins are covered with vegetation including grass, ivy, bushes, and saplings whose leaves are constantly moving. However, we were able to connect the different parts of the site by fixing markers to the ground in a line from the main portion of the site to the foundations of the front gate. This proved fruitful as the camera was able to correctly identify the markers on the ground despite the acute angle between the markers and the camera atop the tripod. In order to guarantee a connection of the various portions of the site, I also made sets of overview photos from various points by taking photos on a pivot while maintaining the same focal length. These also proved beneficial as the provided fixed positions allowed the software to make sense of the distance between portions of the ruin.

Table 7: Camera specifications for the second SfM recording of Castle Beilstein.

<b>BEILSTEIN: 2020</b>				
<b>CAMERA</b>	<b>Model</b>	<b>Focal Length</b>	<b>Exposure Time</b>	<b>ISO</b>
	Nikon D750	28 mm	1/250 sec.	400
<b>IMAGE</b>	<b>Width</b>	<b>Height</b>	<b>Resolution</b>	<b>Bit Depth</b>
	6016 pixels	4016 pixels	300 dpi	24



#### 4.5.3.1 Generating the SfM Model of Castle Beilstein

The second SfM model was generated in Agisoft Metashape with the highest alignment settings and both the dense cloud and mesh set to medium. The resulting model was a point cloud of 143,949,212 points and a mesh of 28,789,841 faces. Only eight of the cameras were unable to align and all markers were identified except one that had fallen off the walls at the very beginning of the recording. This represents the most successful alignment of photos and identification of markers of all the SfM models that I conducted over the course of the project. The procedure for the generation of the model was precisely the same as for the previous models, with changes only made on the quality of the dense cloud and mesh production. The high resolution model and processing report are available in the online repository in HeiDATA [here](#)<sup>1205</sup> as Burg\_Beilstein\_March2020\_OBJ.zip, and a low-resolution, yet interactive model is available in HeidICON [here](#)<sup>1206</sup>.

The high accuracy of the alignment is the key feature whereupon the remaining steps are predicated. The final mesh would have reflected the geometry of the site more accurately had I increased the number of polygons to be generated from the dense cloud. This was especially evident on the textures—which are essentially ‘wrapped’ onto the mesh—as they were very pixelated in areas where a sharper resolution was needed. This is also due to the medium level of the dense cloud, as a higher density would have secured more points for the meshing stage. However, the true malefactor behind the poor textures in areas required for the architectural investigation was the extensive vegetation at the site. Entire walls covered with moss, grass, ivy, and small bushes are stalwart opponents to SfM. For this reason, and due to the discordant layout of the site, Castle Beilstein was the most difficult to record and generate a model using SfM. In the future, sites that emulate Castle Beilstein should be recorded using a drone for an aerial SfM recording prior to a terrestrial recording as had been done at Castle Hohenecken.

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<sup>1205</sup> Pattee, “CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Research Data).”

<sup>1206</sup> Aaron Pattee, “BurgBeilstein\_SfM,” SfM Model, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1731800>.

#### 4.5.4 Creating a Roombook for Castle Beilstein

The approach of the roombook and overview for Castle Beilstein (located in Section 9.1 of the Appendix) follows a counter-clockwise movement by entering the site at the eastern side and walking along the northeastern wall of the courtyard to the entrance of Inner Chamber E, continuing to Inner Chamber F, along the crown of the northern wall to Inner Chamber G, and then finishing in the Inner Area. For each of the groups, the walls were recorded counter-clockwise fashion beginning with the first one seen when entering a new group. Provided that the castle is a total ruin and almost nothing actually remains, the process was rather quick.

#### 4.5.5 Results of the Documentation of Castle Beilstein

The process whereby I conducted the documentation of Castle Beilstein followed precisely the same procedure as for the royal palace and Castle Hohenecken. Unfortunately, very little remains of Castle Beilstein and aerial photography was not available in order to record the top of the rock outcrop or the surrounding walls. Nevertheless, the following sections explore the main features that can still be seen at the site, highlighting the inner chambers.

#### 4.5.5.1 Group 15. Courtyard



Figure 64: View of the separating wall from the south.

The largest component of the courtyard is the separating wall (wall subgroup 15.1) that divides the ovular shaped castle into two parts (Figure 64). The wall features two portals, identifiable by their piers and thresholds, placed on either side of the large axe-shaped rock outcrop, thus joining Subgroups 16.2, 17.4, and 19.2 together (view the full format of the architectural plans of the separating wall in the online repository [here](#))<sup>1207</sup>. The piers of Portal 17 are strikingly similar to those of Portals 3 and 6 at Castle Hohenecken which were constructed between Romanesque IV and Romanesque V, and therefore around the year 1230. The rock outcrop is the centerpiece of the castle around which all of the buildings are oriented. The stone courses are similar to those composing the wall southwestern and western wall of the keep at Castle Hohenecken, which were also built around 1230. Considering that the castle was issued to be rebuilt in 1234, the construction can be dated to sometime within the period thereafter during Romanesque V. However, the failed insurrection of

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<sup>1207</sup> Aaron Pattee, "Burg Beilstein, 16.2, 17.4, 19.2.1, Northeastern Walls, Separating Wall, Texture and Mesh," Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.ub.uni-heidelberg.de/detail/1728602>. Also catalogued as Architectural Plan 63.

Henry (VII) and the association of the von Beilstein family as his loyalists may have made it difficult for the construction to take place within the same year. Further evidence suggesting a later construction is found in a charter from 16 June 1317,<sup>1208</sup> representing the first charter issued from Castle Beilstein. It is likely that construction at the castle was stalled until mid-way through the 13<sup>th</sup> century following the dethronement of the Hohenstaufen dynasty. Construction either began or resumed in the second half of the 13<sup>th</sup> century during which time much of the castle was built, including the separating wall—within Romanesque V—though the other components are more towards the transition with Gothic I. Provided the results of Eckrich’s excavation described in Section 3.3.3.2, at least some of the buildings had been built at the turn of the 13<sup>th</sup> century. This means that the (re)construction indicated an expansion and/or renovation, yet was placed on hold following the failed insurrection of Henry (VII) to whom the von Beilstein family was loyal. The northern end of the separating wall connects to the outer wall of the castle, which are linked by interlocking stones indicating a concurrent building phase (Figure 65).



Figure 65: Connection of the northern end of the separating wall and the outer wall.

<sup>1208</sup> Georg Friedrich Böhn, “Das Breidenborner Kopialbuch im Fürstlich v.d. Leyen’schen Archiv zu Waal,” in *Jahrbuch zur Geschichte von Stadt und Landkreis Kaiserslautern*, vol. 4, 37 vols. (Otterbach: Franz Arbogast Verlag, 1966), 151–236. P. 156. Also catalogued as Charter ID 10173 in the graph database.

#### 4.5.5.2 Group 16. Inner Chamber E

This is the first chamber of the western half of the castle accessible via Portal 18 (view the full format of the architectural plans of Wall Numbers 16.1.1 and 16.1.2 in the online repository [here](#))<sup>1209</sup>. Not much remains except for a multitude of putlog holes in the rock outcrop and a steep, downward sloped path leading into Inner Chamber F. In comparison to the Inner Chambers of the royal palace and of Castle Hohenecken, those of Castle Beilstein are considerably smaller and mainly exhibit the first four masonry courses above the current ground level. The most interesting features of the chamber are the large cistern carved directly into the rock and Portal 20, which features a gothic pointed arch. The chamber features at least two levels, though it was most likely an antechamber leading to the cistern, Inner Chamber F, and a staircase (Figure 66).



Figure 66: View of Inner Chamber E from Portal 18.

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<sup>1209</sup> Aaron Pattee, “Burg Beilstein, 16.1, InnerChamberE, NorthwesternWall, Texture and Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.ub.uni-heidelberg.de/detail/1728601>. Also catalogued as Architectural Plan 62.

The exact form of the staircase is unclear, though it was certainly built of wood and lead up the rock to the left-hand side of the chamber when entering the chamber from the courtyard. Stone stairs most likely formed the path to Portal 20, though none of these can be seen. Likewise, a small staircase led to the cistern, though only one segment of stone still exists. The level of the cistern is intriguing as it was only a small room, identifiable by the position of the northwestern wall of Inner Chamber E and the large putlog holes overhead the cistern. The cistern itself is a large structure that stretches far beneath the level just described. It is currently covered by a wooden bridge, though one can still look into its depths (Figure 67). A number of putlog holes populate the surface of the rock wall (view the full format of the [textured](#)<sup>1210</sup> and [meshed](#)<sup>1211</sup> architectural plans of Wall Number 16.3.1 in the online repository), as well as platforms that presumably held various wooden-built floors that spiraled around the rock outcrop.



Figure 67: The depth of the cistern of Inner Chamber E.

<sup>1210</sup> Aaron Pattee, “Burg Beilstein, 16.3, InnerChamberE, Southeastern, RockWall, Texture,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728604>. Also catalogued as Architectural Plan 65.

<sup>1211</sup> Aaron Pattee, “Burg Beilstein, 16.3, InnerChamberE, Southeastern, RockWall, Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728603>. Also catalogued as Architectural Plan 64.

The northwestern wall contains Portal 20, featuring a pointed arch representative of the early gothic period. Based upon the interlocking stones between the wall and the separating wall, the northwestern wall was concurrent with the separating wall. This reinforces the point that the castle was mainly built during one construction phase that was sometime during Romanesque V, featuring augmentations during Gothic I. Further evidence for this is provided by the fact that at least one of the members of the von Beilstein family—Merbodo IV—had gained the favor of the kings and was a castellan at the royal Palace of Lautern by June of 1305.<sup>1212</sup> Furthermore, Merbodo von Wilenstein was also a castellan at the palace, albeit slightly earlier in 1287,<sup>1213</sup> and Merbodo von Breidenborn was also a castellan at the palace by 1291.<sup>1214</sup> All three Merbodos were related in the larger familial network of the von Beilstein family. Their administrator positions brought favor and income and therefore a reliable bit of evidence that most of the castle was built late 13<sup>th</sup> century. The appearances of the three Merbodos does reinforce the stark change in favor of the regional ministerialis families from the von Lautern-Hoheneck family to the von Beilstein family after the election of Rudolf von Habsburg in 1273. Portal 20 was itself reconstructed following the excavation led by Lorenz Eckrich discussed in Section 3.3.3.2, yet they reused parts of an arch they had found on site. It remains unclear as to the original location of the portal's arch stones.

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<sup>1212</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. Pp. 264-265. Also catalogued as Charter ID 10425 in the graph database.

<sup>1213</sup> Akademie der Wissenschaften und der Literatur, Mainz, "RI VI,1 n. 2125A, Rudolf, 1287 Dezember 19, Speyer," *Regesta Imperii Online*, accessed September 1, 2020, [http://www.regesta-imperii.de/id/1287-12-19\\_1\\_1\\_6\\_1\\_0\\_2392A\\_2135A](http://www.regesta-imperii.de/id/1287-12-19_1_1_6_1_0_2392A_2135A).

<sup>1214</sup> Akademie der Wissenschaften und der Literatur, Mainz, "RI VI,1 n. 2436A, Rudolf, 1291 April 5, Germersheim," *Regesta Imperii Online*, accessed September 1, 2020, [http://www.regesta-imperii.de/id/1291-04-05\\_1\\_1\\_6\\_1\\_0\\_2762A\\_2436A](http://www.regesta-imperii.de/id/1291-04-05_1_1_6_1_0_2762A_2436A).

#### 4.5.5.3 Group 17. Inner Chamber F



Figure 68: View of Inner Chamber F from the northwest corner atop the separating wall.

This is the most complete of all the buildings at Castle Beilstein, featuring the other side of Portal 20 and a wall slightly more than two meters in height (Figure 68). However, very little can be said regarding the purpose of this room. A few indicators point towards a modification during Gothic I. These modifications are found on southwestern and the southeastern walls (view the full format of the architectural plans of Wall Subgroups [17.2](#)<sup>1215</sup> and [17.3](#)<sup>1216</sup> in the online repository). The extension to the right of Portal 20 on the southeastern wall was to support a second level by creating a short ledge extending from the wall. This corresponds precisely with a ledge to the left of Portal 20 that was not added later as its stone courses continue and interlock with the southeastern and northeastern walls of the chamber. This is an indication that the chamber was under construction by

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<sup>1215</sup> Aaron Pattee, “Burg Beilstein, 17.2, InnerChamberF, SouthwesternWall, Texture and Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728605>. Also catalogued as Architectural Plan 66.

<sup>1216</sup> Aaron Pattee, “Burg Beilstein, 17.3, InnerChamberF, SoutheasternWall, Texture and Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728606>. Also catalogued as Architectural Plan 67.



the late 13<sup>th</sup> century because a large gap in the southwest wall was also filled around the same time—possible a construction portal. The southwestern addition replaced a portal leading to Inner Chamber G from Inner Chamber F. The replacement of a door on the ground level suggests that it may have been done because of a new connection on the second level—whose existence is given by the wall extension on the southeastern wall. Therefore, the chamber had likely been partially finished at the end of Romanesque V while still allowing one to traverse from Portal 18, through Portal 20, and further through the portal on the southwestern wall in order to gain access to Inner Chamber G. The wall extensions did away with this by re-routing traffic through the second level. Thus, construction was underway at Castle Beilstein during the tenure of its family members (the three Merbodos) who were castellans at the royal palace—which was also under construction on the southeastern corner of the Curtain Wall with the addition of the Schloßmühle.

#### 4.5.5.4 Group 18. Inner Chamber G



Figure 69: View of Inner Chamber G from the eastern corner.

Inner Chamber G leaves much to be desired of its medieval form as only two walls (view the full format of the architectural plans of Wall Number 18.1.1 in the online repository [here](#))<sup>1217</sup> and a portion of the rock outcrop (view the full format of the [textured](#)<sup>1218</sup> and [meshed](#)<sup>1219</sup> architectural plans of Wall Number 18.2.1 in the online repository) still provide an outline of its original form as shown in Figure 69. The northeastern wall is the opposite side of the southwestern wall from Inner Chamber F which once had a portal but was walled during Gothic I, as was previously discussed. The northwestern wall features a large cavity in the wall that was most likely a former oven, though not nearly of the same dimensions as those found at Castle Hohenecken. It is therefore probable that this chamber was the castle kitchen, whose position would have been practical due to its vicinity to the cistern. However, this is entirely speculative as the form of the cavity is more similar to a

<sup>1217</sup> Aaron Pattee, “Burg Beilstein, 18.1.1, InnerChamberG, NortheasternWall, Texture and Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728607>. Also catalogued as Architectural Plan 68.

<sup>1218</sup> Aaron Pattee, “Burg Beilstein, 18.2.1, InnerChamberG, RockWall, Texture,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728594>. Also catalogued as Architectural Plan 70.

<sup>1219</sup> Aaron Pattee, “Burg Beilstein, 18.2.1, InnerChamberG, RockWall, Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728608>. Also catalogued as Architectural Plan 69.

fireplace than a kitchen oven, though it is certainly possible given the quaint size of the castle. Almost nothing remains of its southeastern wall as only trances of the foundations are still visible (Figure 70). The rock outcrop also exhibits some interesting features, which mainly consist of putlog holes supporting the second level, but also long depressions in the rock leading to the cistern. These were carved in order to place water conduits to guide rain water to the central cistern (Figure 71) indicating that the castle possessed fine materials for the construction of conduits. According to the Burgenlexikon, a well has not been located at the site,<sup>1220</sup> so a cistern in the heart of the castle made water readily accessible to the inner chambers.



Figure 70: The foundations of the southeastern wall of Inner Chamber G.



Figure 71: Water conduit leading to the cistern.

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<sup>1220</sup> Keddigkeit, "Beilstein." P. 232.

#### 4.5.5.5 Group 19. Inner Area

The last portion of the castle to be discussed in this chapter is the Inner Area, of which nothing remains except for a multitude of putlog holes carved into the rock outcrop, an earthen ramp leading to Portal 17, and the southern end of the separating wall (Figure 72).



Figure 72: View of the Inner Area from the southern curve of the outer wall.

The rock outcrop is partitioned into thirds for this section of the castle. The partitions are catalogued under Wall Numbers 19.1.1 ([texture](#)<sup>1221</sup> and [mesh](#)<sup>1222</sup>), 19.1.2 ([texture](#)<sup>1223</sup> and [mesh](#)<sup>1224</sup>), and

<sup>1221</sup> Aaron Pattee, “Burg Beilstein, 19.1.1, InnerArea, SouthernSideOfRockWall, Texture,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728596>. Also catalogued as Architectural Plan 72.

<sup>1222</sup> Aaron Pattee, “Burg Beilstein, 19.1.1, InnerArea, SouthernSideOfRockWall, Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728595>. Also catalogued as Architectural Plan 71.

<sup>1223</sup> Aaron Pattee, “Burg Beilstein, 19.1.2, InnerArea, SoutheasternSideOfRockWall, Texture,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728598>. Also catalogued as Architectural Plan 74.

<sup>1224</sup> Aaron Pattee, “Burg Beilstein, 19.1.2, InnerArea, SoutheasternSideOfRockWall, Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728597>. Also catalogued as Architectural Plan 73.

19.1.3 ([texture](#)<sup>1225</sup> and [mesh](#)<sup>1226</sup>) in the online repository correlating with the southern, southeastern, and eastern side of the rock outcrop (respectively). A particularly enigmatic feature exhibited on the rock outcrop is a series of semi-circular carvings along the base of the rock. They lead from Inner Chamber G throughout the Inner Area until they are covered by the ramp that leads to Portal 17. Their precise purpose is unclear, though they may have been large putlog holes for beams placed at an oblique angle to support the second level. They would therefore have assisted the more evident putlog holes directly above them that were placed in a horizontal fashion, presumably connected to the outer stone wall of the castle—which is also missing. Despite the poor condition of the ruins, the putlog holes on the rock outcrop indicate at least three levels of construction, with a high concentration located near Portal 17.

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<sup>1225</sup> Aaron Pattee, “Burg Beilstein, 19.1.3, InnerArea, EasternSideOfRockWall, Texture,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728600>. Also catalogued as Architectural Plan 76.

<sup>1226</sup> Aaron Pattee, “Burg Beilstein, 19.1.3, InnerArea, EasternSideOfRockWall, Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728599>. Also catalogued as Architectural Plan 75.

#### 4.5.6 Interpretation of the Architectural Investigation

Castle Beilstein leaves few clues as to its former shape, to which speculation can easily triumph over fact in the absence of evidence. However, the visible masonry indicates a later construction than what is normally pronounced on the castle's behalf. The charter of reconstruction in 1234 did announce the desire to rebuild the site, though the action did not necessarily follow immediately thereafter. A later construction is supported by the historical documentation in which the three Merbodos were employed concurrently with one another at the palace in the service of kings in opposition to the Hohenstaufen claim. Interestingly, their social elevation followed Rudolf von Habsburg's dismissal of the members of the von Lautern-Hoheneck family from his service. The elevation of the von Beilstein family network—including member of the von Wilenstein and *von Breidenborn* families—reinforces the theory that the administration of the Reichsland of Lautern had embarked on an anti-Hohenecken trajectory following Rudolf's election. Thus, the construction of their castle in the latter half of the 13<sup>th</sup> century and beginning of the 14<sup>th</sup> century corresponds to their elevation as royal administrators.

The castle's nature as a fortified residence for the conglomerate family of von Beilstein and its location a few kilometers from the royal palace indicates that it was well outside the city limits, yet still easily reached. The fact that the path leading to the castle directed the visitor to the western façade of the site, from which one would have to walk around the northern wall and up the eastern ramp supports the prospect of a show front, typically associated with the 16<sup>th</sup> century, yet evident at the site as early as the mid-13<sup>th</sup> century. Other sites throughout Europe featured a show front during the 13<sup>th</sup> century, including Stokesay castle in Shropshire, England which required visitors to walk around a parish church and a portion of the castle's wall before being granted entry.<sup>1227</sup> A castellated manor house, so to speak, fits Merbodo II von Beilstein's status as a both descendent of a former imperial ministerialis and as someone active in regional affairs.<sup>1228</sup> Towards the end of the 13<sup>th</sup> century, Castle Beilstein was home to members from many of the related local families including those of von Lewenstein and von Schöenburg in addition those von Beilstein and von Randeck.<sup>1229</sup> The presence of so many families inhabiting portions of the same castle does not exclude the possibility that the von Beilsteiners inhabited the largest portion, but it certainly means that the castle

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<sup>1227</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. P. 46. This also references the show front mentioned in the preceding sentence.

<sup>1228</sup> Merbodo II von Beilstein appears in six different charters regarding the Reichsland of *Lautern*

<sup>1229</sup> Keddigkeit, "Beilstein." P. 228.

was shared, and thus a Ganerbenburg,<sup>1230</sup> as Castle Hohenecken had later become. Multiple families enfeoffed with different portions of the castle, does not necessarily mean that the entire families lived at the site. The occupations of the leading members of the von Beilstein and von Wartenberg families placed them in other cities and castles over time, meaning that although a family had been enfeoffed with a portion of Castle Beilstein, they were not necessarily always present, though still carried the responsibility of the enfeoffment. The fact that the von Beilstein family had been enfeoffed with a portion of the royal castle in Lautern until the late 14<sup>th</sup> century further supports the claim that they were not permanently at Castle Beilstein as the enfeoffed persons could not be in two places at once.

The significance of the discussion of a permanent inhabitation at Castle Beilstein is fundamental to understanding the castle's architectural form and its meaning to outsiders. The location of the castle upon the lands of the Premonstratensian monastery in Lautern and within the borders of the Reichsland, meant that in addition to the von Randeck brothers, there were originally five parties involved in its maintenance and representative form: the monks of the monastery, the royal sheriff, Merbodo II von Beilstein, and the two von Randeck brothers. The later addition of the von Lewenstein and von Schönenberg members further complicates the idea of Castle Beilstein belonging solely to the von Beilstein family, or that this same family had complete agency in the appearance of the castle's reconstruction. The failure of Henry (VII)'s rebellion and the renewal of imperial protection for the Premonstratensian Order in Lautern would have diminished the perceived status of those enfeoffed with Castle Beilstein and placed the castle within the control of the Order—which by way of the imperial protection, placed it within the control of the regional administrators. In this case, the Provost Hartmut von Lautern and the Sheriff Siegfried II von Lautern-Hoheneck would have had administrative rights over the lands atop which the castle had been (re)built. It is indeed possible that the two individuals were related, which would strengthen the claim that the von Lautern-Hoheneck family occupied many of the leadership positions within the royal estate and sought to marginalize other ministerial families. Indeed, Siegfried II von Lautern-Hoheneck's loyalty and service to the emperor is evident in a charter from January of 1232 in which he delivered imperial mandates on the emperor's behalf to the citizens of Worms.<sup>1231</sup> Thereafter, the position of royal sheriff passed from Siegfried II to his brother Reinhard II von Lautern-Hoheneck by the year

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<sup>1230</sup> Ibid. P. 228.

<sup>1231</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. P. 160. Also catalogued as Charter ID 11000 in the graph database.

1237,<sup>1232</sup> shortly after the reconstruction of Castle Beilstein, who was succeeded by Siegfried II's son, Reinhard III von Lautern-Hoheneck as imperial sheriff from 1262,<sup>1233</sup> until his death after 1275.<sup>1234</sup> Thus, for the greater part of the 13<sup>th</sup> century, the regional administrators were members of the same family.

This underlines the apparent struggle between the families von Beilstein and von Lautern-Hoheneck, though to two never entered into open, armed, conflict with one another. Rather, the conflict presumably began in the time of Henry (VII)'s reign, as the von Beilstein members were loyal to him and the von Lautern-Hoheneck members were loyal to the emperor, Frederick II. Henry (VII)'s failed revolt, which resulted in his imprisonment and later suicide,<sup>1235</sup> undoubtedly cast a shadow upon his supporters, most of all, his loyalists. The sheer difference in size of Castles Beilstein and Hohenecken also represents an architectural manifestation of the victory of the emperor's men over those of the shamed king within the regional context of the Reichsland of Lautern. The size of the respective castles and the agency of their inhabitants, or lack thereof, was not the only indicator of tension between the families. The property struggles between the von Beilstein family and the monasteries of Lautern and Otterberg resulted in nearly the entire relinquishment of lands enfeoffed or owned by the von Beilstein family within the royal estate during the mid-13<sup>th</sup> century. The same fate was shared by the von Wartenberg family in 1270.<sup>1236</sup> In nearly all of these charters in which the members of the von Beilstein or von Wartenberg families sold or gifted lands to the two monasteries, the von Lautern-Hoheneck sheriffs were always in the witness lists. It is nonetheless possible that the two families had initially enjoyed a working relationship, given the fact that both had ancestors who served in the Italian campaign of 1195 and had occupied positions as castellans at the royal castle in Lautern around 1200, but later devolved into regional antagonism.

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<sup>1232</sup> Ibid. P. 170. Also catalogued as Charter ID 10466 in the graph database.

<sup>1233</sup> Frey and Remling, *Urkundenbuch des Klosters Otterberg in der Rheinpfalz*. P. 107. Also Charter ID 10415 in the graph database.

<sup>1234</sup> Ibid. P. 141. Also catalogued as Charter ID 10422 in the graph database.

<sup>1235</sup> Neuhold, *Die Staufer*. P. 143.

<sup>1236</sup> Dolch and Welz, "Wartenberg I." P. 216.



## 4.6 Castle Perlenberg

This is the smallest of all the sites covered in this work, though certainly not the least significant, particularly regarding the scholarship of medieval castles in the German Palatinate. Although the site has often been marginalized as having been a failed construction or destroyed look-out tower, it is evident based upon the documentations presented in this section that Castle Perlenberg had been one of the most elite buildings at the turn of the 13<sup>th</sup> century in the Holy Roman Empire, and possibly all of Europe.

### 4.6.1 First Inspection and Key Insights at Perlenberg

The remote ruins of Castle Perlenberg are located in the Palatinate forest between the Kaiserslautern boroughs of Einsiedlerhof and Hohenecken. A southward path leading from Einsiedlerhof into the forest splits immediately after passing the Grosser Berg, with the main artery continuing towards the Gelterswoog (a large lake) and the tributary path leading towards Castle Hohenecken around the base of the Kohlkopf (a large hill). In fact, both routes lead to Hohenecken, albeit from different sides of the geographical basin in which Castle Perlenberg is situated. The boisterous sounds of the city streets and nearby air force base are muffled and even dissipate completely at certain points in the forest. The general feeling is a blend of solitude, reflection, and serenity, supported by the idyllic mixture of deciduous and coniferous trees. The tall pines along the surrounding mountain ridges act as a wall, accentuating the concavity of the basin in which the Kleiner Berg atop which Castle Perlenberg rests is the physical focal point. If not for the large rock projections seen when approaching the western side of the Kleiner Berg (Figure 73), it would seem almost certainly artificial, given its perfectly round shape. The paths that circulate the northern portion of the Palatinate Forest are the same described previously in Section 3.3.4.2. Due to erosion and disuse, many of the paths that had once been are now lost. Any attempt to divine the course of the medieval paths amidst the modern shrubbery would be an exercise in futility, without the application of more intrusive methods such as an excavation or the use of *Ground Penetrating Radar* (GPR) and *Aerial Laser Scanning* (ALS).<sup>1237</sup>

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<sup>1237</sup> Harald von der Osten-Woldenburg, “Geophysikalische Prospektion keltischer Fundplätze,” in *Mit Hightech auf den Spuren der Kelten: Begleitheft zur gleichnamigen Sonderausstellung*, ed. Jörg Bofinger and Matthias Merkl, Archäologische Informationen aus Baden-Württemberg 61 (Esslingen: Landesamt für Denkmalpflege im Regierungspräsidium Stuttgart, 2010), 44–69. P. 67. The combination of geomagnetic and ALS analyses allowed researchers to discover the foundations and roads of a celtic town atop the plateau of *Ipf* by *Bopfingen*.



Figure 73: Natural rock of the Kleiner Berg on the western side.

The current path to Castle Perlenberg diverts rather suddenly from the path leading towards the Gelterswoog, snaking its way from the west, around the northern side of the Kleiner Berg, and up the western side. The ruins are situated atop a small plateau, populated by only a handful of trees in stark contrast to the slopes of the hill and the neighboring environment. The southern side of the Grosser Berg—where the late Roman settlement is located—can be seen from the Kleiner Berg during late fall and winter, though nothing can be seen on the other side of the mountain ridges in the other three cardinal directions. In essence, the castle occupies a lonely residence within the forest, completely out of sight. The ruins themselves are, at first glance, unimpressive if one approaches with the expectation of a large castle. Only the base of a tower can still be seen, though the southwestern wall is completely covered with earth and vegetation. It is upon closer examination of the stones that the secrets of Castle Perlenberg begin to unveil themselves. The masonry of the walls exhibit such a high quality that is rarely seen, with incredibly fine mortar seams and exquisitely fashioned embossed ashlars, whose embossments resemble cushions on the outsides of the stones—similar to those featured at Castle Hohenecken and the Palace of Lautern yet of an even higher caliber. The northwestern wall includes a finely crafted garderobe with embossing on all outside surfaces of the stones. The inside of the castle ruin is hollow, though its current earthen floor increases in height with each year that passes. Due to its position beneath the open sky and

surrounded by trees, it has often been used as a site for campfires. However, these are not rare occurrences as I have encountered the smolders of a campfire surrounded with stones plucked from the ruin each time that I arrived at the site. Given my irregular, and at times spontaneous, visits to the site during different seasons it cannot be coincidence, but rather a common event taking place throughout the year. Typically the site is relatively clean, though occasionally a can or bottle of alcohol is left behind. These scenes demonstrate in perfect fashion the attitude of people seeking a pleasant spot for an evening campfire. The ruins amidst the graceful trees form a romantic backdrop, and the location of the site is far enough from civilization to remain unseen, yet close enough to conveniently walk to either the Einsiedlerhof or the village of Hohenecken in 30-45 minutes, providing a sense of security in the wilderness.

#### 4.6.2 Laser Scan Procedure for Castle Perlenberg

The TLS recording of the site took place on 2 December 2016 from 9:45 until 13:45 with the assistance of Katharina Anders and Zsófia Koma from the *GIScience* research group at the Institute of Geography at Heidelberg University. Due to the small size of the site, we needed only seven positions in order to capture the remains of the building. Although we limited the scope of each scan to focus only upon the building itself, the scanner still had a range of 400 meters, thus recording virtually everything in the surrounding area. Had we not limited the scope of the scans, we would have recorded a denser point cloud of the surrounding area. Instead we obtained a sparser cloud of the castle's surroundings that was well suited to displaying the general shape of the plateau upon which the castle was built.

### 4.6.3 Photogrammetric Recording of Castle Perlenberg

Castle Perlenberg was recorded on two separate occasions over the course of the CITADEL project. The first recording was a SfM recording on 26 November 2016 from 8:00 until 9:00, prior to the TLS recording in December 2016. Although the focal length of the camera remained fixed and I used a tripod, the light conditions were poor due to the overcast and overall dreary winter weather. The specifications of the camera's settings are located in Table 8. The calibrated markers gleamed as though they had siphoned what little light was available to the extent in which many of the targets were unreadable by the software during the processing stage. This was also due to their construction as these markers represented my first attempt at printing and using markers and had not been laminated with a matte coating. Additionally, many of the photos were blurry due to moving too quickly between photos and not taking into account the slower speed of the camera's exposure time.

Table 8: Camera specifications for the first SfM recording of Castle Perlenberg.

<b>PERLENBERG: 2016</b>				
<b>CAMERA</b>	<b>Model</b>	<b>Focal Length</b>	<b>Exposure Time</b>	<b>ISO</b>
	Nikon D3300	27 mm	1/8 sec.	100
<b>IMAGE</b>	<b>Width</b>	<b>Height</b>	<b>Resolution</b>	<b>Bit Depth</b>
	6000 pixels	4000 pixels	300 dpi	24

The second SfM recording took place on 9 September 2018, from 15:40 until 16:20, after over one year of attempting to make the other photoset generate a proper model. For the second recording, I had a new set of equipment including the same camera and markers used at the palace, the second recording of Castle Hohenecken, and the second recording of Castle Beilstein. The specifications are found in Table 9. Having learned from my previous mistakes, I moved more slowly when taking the photos, and optimized the total amount. The first recording consisted of 340 photos, whereas the second recording consisted of only 198. The second recording was also 20 minutes quicker overall, though I spent more time examining the area by removing grass growing through the stones, raking away leaves from the bases of the walls, and placing the markers more carefully.

Table 9: Camera specifications for the second SfM recording of Castle Perlenberg.

<b>PERLENBERG: 2018</b>				
<b>CAMERA</b>	<b>Model</b>	<b>Focal Length</b>	<b>Exposure Time</b>	<b>ISO</b>
	Nikon D750	34 mm	1/100 sec.	400
<b>IMAGE</b>	<b>Width</b>	<b>Height</b>	<b>Resolution</b>	<b>Bit Depth</b>
	6016 pixels	4016 pixels	300 dpi	24

#### 4.6.3.1 Generating the SfM Model of Perlenberg

The differences in quality of the two models is stark. Of the 340 photos from the first recording, only 167 successfully aligned, whereas 181 of the 198 photos from the second recording were aligned. The model from the second recording resulted in a high resolution model in which all four settings were set to their highest capability. This was unique for Perlenberg when compared to the other three sites because there were fewer overall photos, resulting in a faster generation time for the computer. The high resolution model and processing report are available in the online repository in HeiDATA [here](#)<sup>1238</sup> as Burg\_Perlenberg\_OBJ.zip, and a low-resolution, yet interactive model is available in HeidICON [here](#)<sup>1239</sup>.

<sup>1238</sup> Pattee, "CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Research Data)."

<sup>1239</sup> Pattee, "KönigspfalzLautern\_SfM."

#### 4.6.4 Creating a Roombook for Perlenberg

The roombook and overview for Castle Perlenberg (located in Section 9.1 of the Appendix) is considerably smaller than the other three sites as it consists of only the base of a tower with four walls, though only three are fully visible from within. The roombook also follows the order in which the final models were generated, and therefore Castle Perlenberg is third on the list. The sole building type at the site has the label of ‘Tower Base’ and was allocated as roombook group number 14. The subgroups are partitioned according to the process of accessing the site via the eastern corner which is at the terminus of the path spiraling around the hill to the top of the plateau. Subgroup 14.1 consists of the outer walls on all four sides which all feature the same type masonry, distinctly different from the inside of the structure. Subgroup 14.2 consists of the inner walls, of which only three are visible and feature a number of clues indicating wooden structures once located within the structure. Subgroup 14.3 consists of the wall crowns, which offer an interesting perspective as they are essentially cross-sections of the walls. The Wall Numbers of each subgroup are ordered according to how I walked about the site, which I found to be the most logical procession—essentially a clockwise movement around the outside, the inside, and on top of the walls. The only major construction element located in the walls is the garderobe, or privy, which is ostentatiously presented on the outside of the northwest wall and visible on the inside as well. The categorization of the building type as a tower and not a main tower (Bergfried), is due to the lack of any surrounding construction elements indicating other building types. The main tower was a core component of other castle sites, though never on their own without any accompanying structures. Some examples of castles in the Palatinate where primarily the main towers are visible would include Castle Scharfenberg near Annweiler and Castle Schlößl near Klingenstein. However, both are notably different from Perlenberg as other structures were discovered in their respective excavations, whereas only a small, narrow wall was found at the site of Castle Perlenberg—a far cry from an outer ward wall.

#### 4.6.5 Results of the Documentation of Castle Perlenberg

The documentation of Castle Perlenberg began on 17 June 2019, in relatively sunny and dry conditions. Given the small size of the site, a total of four hours were needed in order to investigate the castle for interesting features and evidence regarding building phases. Orthographic rendered files of the second SfM model provided the basis for the documentation making use of both the meshes and textures of each side of each wall. In contrast to the other three primary sites, I did not outline the stones on the rendered files of the wall at Castle Perlenberg. This was due to the high resolution textures and distinctly recognizable outlines of the stones on both the shaded and textured meshes. The high level generation parameters set for the model of Perlenberg were more applicable than for the other sites because of the lower camera count as a result of the overall size. The castle is the smallest of the sites by a considerable margin, yet this worked to its benefit as it yielded the highest resolution model. This was of course dependent upon the computation power that I used. The model therefore represents the only example in this project of a site entirely without manually illustrated outlines of the stones.

Essentially nothing on the site had changed since the recording of the site in September of 2018, with the exception of piles of dried leaves from the fall and winter months and the typical array of loose stones for the occasional campfire. However, the arrangement of the campfire and the surrounding stones had not changed since September, indicating that no one had altered the site for this purpose in between the time of the recording and the time of the documentation. Furthermore, the overall condition of the site was the same with the exception of high grass, which I removed from the walls. The SfM rendered files were therefore optimal for the investigation which yielded a variety of interesting information, namely the strong likelihood of a single building phase, the various types and styles of stones present at the site, and evidence of quarrying in more recent centuries.

#### 4.6.5.1 Subgroup 14.1: The Outer Walls

I began the investigation on the outside of the southern wall at the southwestern corner, as the southeast wall is the first in the roombook catalogued as Wall Number 14.1.1 Outer Wall Southeast (view a full format of the architectural plan is available in the online repository [here](#))<sup>1240</sup>. A total of 22 stones are visible in the model in three courses, all of which are embossed ashlar. Curiously, none of the quoined ashlars are still visible on this side of the site, though the gap in the wall would accommodate a 0.57 by 0.915 meter stone. In fact, only the northwestern quoin nearest the foundation is still in its intended place. A quoin belonging to the southeast corner is located a few meters away as though someone attempted to carry it away (Figure 74), though its sheer size made it difficult to do so.



Figure 74: Outside quoin a few meters from the southern corner of Castle Perlenberg.

The majority of the stones are rectangular embossed ashlars with a few square embossed ashlar placed between the larger stones, though none of the stones share the same horizontal dimensions and are smaller than those found at Castle Hohenecken and the Palace of Lautern. Additionally, the embossing of the ashlars all seemed to be of different qualities, as some are more damaged than others, suggesting they were not intended to be used in concert with one another. This could be due

<sup>1240</sup> Aaron Pattee, “Burg Perlenberg, 14.1.1, OutsideWalls, OuterWallSoutheast, Texture and Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.ub.uni-heidelberg.de/detail/1728682>. Also catalogued as Architectural Plan 53.



to the years of erosion since its construction, or due to the effect of being damaged repeatedly during its service as a stone quarry for centuries. However, many of the embossed sides do not seem to have been damaged in recent years, with the exception of the inevitable erosion of all stones left in the open. Rather, they seem to have been damaged at the time of construction or slightly before. This conclusion is due to the existence of careful notching on the damaged surfaces. It seems as though the intent was to apply the same profiling found on a complete embossed ashlar, to the embossed side of a damaged ashlar in order to salvage some uniformity on an otherwise unprofitable stone. It is therefore highly likely that a number of the stones are spolia. The distance from the outline of the stone to the embossing of an embossed ashlar also varied from stone to stone, resembling more of a patchwork of various prototypes, rather than a conforming set based upon one example. The mortar seams between the stones are generally less than 1.5 centimeters, giving the appearance of lacking mortar altogether as the stones correspond to one another perfectly. A number of large gashes in the surfaces of the stones can be seen as well as to obvious engravings: ‘H.i.’<sup>1241</sup> and a swastika. Both of these engravings presumably date from the 1930s and 40s, underlining the dark past of some of the castles and their connection to Nation Socialism.

The lower, tapered stones are truly remarkable and quite large, as they are in nearly perfect condition. They emulate the 12<sup>th</sup> century tapered stones seen at the Kästenburg<sup>1242</sup> in Hambach shown in Figure 75. The stones feature embossing: one on the 50 degree angled surface forming the outward tapering of the tower, and one on the flat surface below the tapering. In contrast to the tapering stones at the Kästenburg, the embossing on those located at Castle Perlenberg are in the reverse, in which the thicker embossing is on the angled portion and the lower portion features a very thin embossing. Both embossing resemble a *Kissenquader* (pillowed ashlar) more than a traditional embossed ashlar seen at other castles, namely Hohenecken, Landsberg, and Trifels.

A possible solution for the inconsistency of the quality of the stones, is the idea that perhaps many of the stones were spolia, delivered from other sites using embossed ashlar formed stones. The forming of a single embossed ashlar required the precision of an experienced mason as well as a larger investment of time than what would be necessary for the fashioning of a rectangular stone with no particular stylistic embossing featured on its sides. Provided the concurrent construction of

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<sup>1241</sup> H.i. could simply be the initials of someone who had visited the site at one point, or relay a more sinister meaning, namely the initials of the Hitler Youth abbreviated at H.J. in German.

<sup>1242</sup> Alexander Thon, Stefan Ulrich, and Dieter Barz, “Kästenburg,” in *Pfälzisches Burgenlexikon*, ed. Jürgen Keddigkeit, Ulrich Burkhart, and Rolf Übel, 3rd ed., vol. 3 I-N, 4 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 12.3 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, n.d.), 83–100. P. 100.

Castle Hohenecken and its large main tower composed entirely of embossed ashlar of the same size and quality, the production of these high quality stones was well underway in the area. With the exception of the tapered stones at the conjoining of the site with the present day earth level, nearly all of the stones on the southern side were damaged embossed ashlar. This is quite peculiar considering that entire sections of the main tower of Hohenecken are still in perfect condition—and it was violently blown up, in contrast to Castle Perlenberg for which no indication of warfare is visible. This is an incredibly important point to consider and is based upon the complete lack of any fire damage on the stones. Although it is a ruin, it was likely a ruin caused by negligence rather than hostility. The use of the same masons for Otterberg, which was identified by Eckrich and discussed in Section 3.3.4.2 regarding the mason marks, indicates an early cooperation between the von Lautern-Hoheneck family and the Abbey of Otterberg.

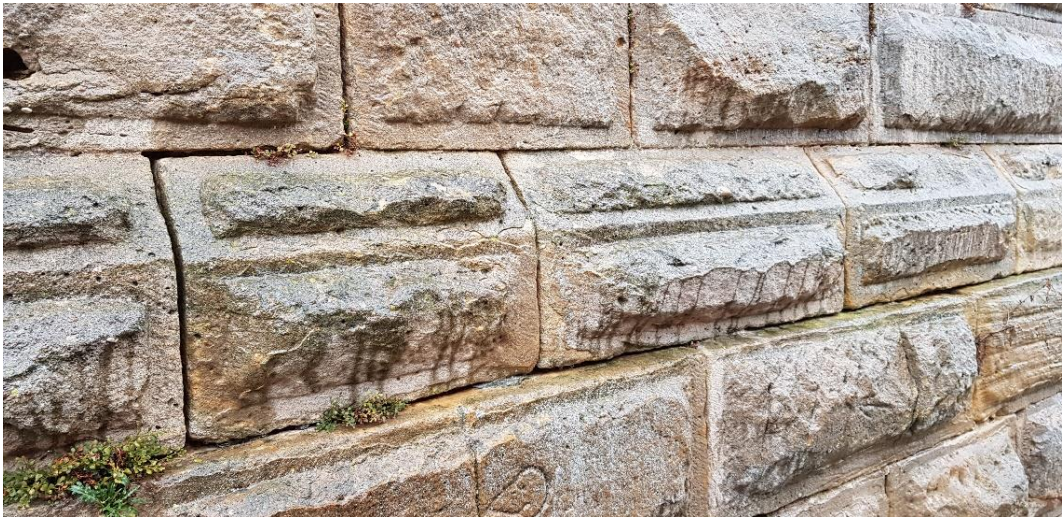


Figure 75: Tapering embossed ashlar at the Kästenburg.

The southwestern wall of the site, catalogued as Wall Number 14.1.2 (view a full format of the architectural plan is available in the online repository [here](#))<sup>1243</sup>, is almost entirely covered by debris and earth of which only five stones are visible, though two are mostly covered. Still, these few stones display excellently fashioned embossing and present the only quoined embossed ashlar at the site.

<sup>1243</sup> Aaron Pattee, “Burg Perlenberg, 14.1.2, OutsideWalls, OuterWallSouthwest, Texture and Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.ub.uni-heidelberg.de/detail/1728683>. Also catalogued as Architectural Plan 54.

The connection between the courses of tapered quoined ashlar and the non-tapered ashlar above them flow seamlessly into one another, for which no mortar is longer identifiable. The overall lack, or general absence of mortar between the stones at Castle Perlenberg, particularly in the outer walls, provides evidence that chalk was not used at the site. This is in contrast to other castles which feature vast amounts of mortar and remnants of plaster coatings, both of which require chalk. The excellently articulated stones with embossed surfaces apparently diminished the need for a substantial amount of chalk, and in this case, almost none at all. To fashion such exquisite stones, a higher caliber of stone mason would have been required. The stones on the southwestern side are mostly intact, with the exception of a large crack down the center of the non-taped quoined ashlar.

Wall Number 14.1.3 Outer Wall Northwest (view a full format of the architectural plan is available in the online repository [here](#))<sup>1244</sup>, is similar in size to 14.1.1 with a total of 23 stones, and was perhaps the show front of Castle Perlenberg based upon the walls that are still visible as it exhibits an extravagant garderobe, or privy, that I have often referenced. It is located slightly off center in the wall and with the form of two vertical piers composed of individually embossed ashlar, of which the upper two are quoined and articulate with the top course of the stones seen in Figure 76. Between the two piers is a gap within which a ramp was fashioned in order to lead the excrement from the inside of the castle to the outside. This is a novel design as most garderobes were located in wooden or stone structures connected to the outside of the wall with a crude hole allowing a vertical drop—as seen at Castle Hohenecken. In contrast, the garderobe at Castle Perlenberg allowed its users to remain within the walls of the site to conduct their business. As discussed earlier, the presence of a stone garderobe integrated in the construction of the castle at what appears to have been the show front is a clear display of exclusivity as only the wealthiest could afford such a luxury in the first place. Additionally, the garderobe is not situated well above the ground as the case is at Castle Hohenecken, rather, it is near the modern ground level, perhaps even the historical first level. This offers the clearest evidence that the site was not defensive in nature, as a low garderobe would allow projectiles to be very easily cast into the building. Furthermore, the site is not in a particularly defensible position atop a small, solitary hill. The embossed ashlar surrounding the garderobe on both sides are in better condition than those of the opposite, southeast side, of which only three are noticeably damaged, and the widest mortar seam measures only five millimeters.

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<sup>1244</sup> Aaron Pattee, “Burg Perlenberg, 14.1.3, OutsideWalls, OuterWallNorthwest, Texture and Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728675>. Also catalogued as Architectural Plan 55.

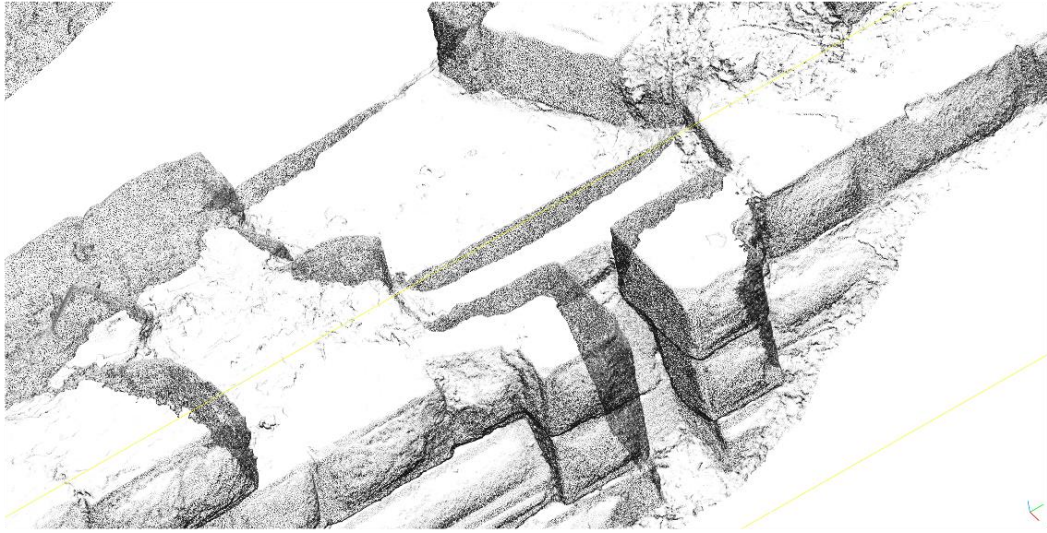


Figure 76: Point Cloud of the Garderobe at Castle Perlenberg.

The fourth outer wall, catalogued as 14.1.4 Outer Wall Northeast, is nearly as concealed by debris and earth as the opposite wall to the southwest. A total of six stones are visible, of which only one has remained entirely uncovered, and five exhibit the same quality of embossing as on the northwestern side. This is presumably due to process of arriving at the site in which one would first have seen the northwestern side with its ostentatious garderobe, followed by the northeastern side. The eastern corner of the site is mostly lost, though the only tapered stone still visible on the northeastern side lacks an embossing on the 50 degree angle, indicating that it had either been removed or had never been planned to have been fashioned in like manner as the others. This is an interesting piece of information as it likely demonstrates where a beam had once been placed at an angle—an embossing would prevent the beam from laying flush upon the stone—possibly for a wooden staircase to enter the site. Further evidence is provided by the solitary stone, previously mentioned, exhibiting a cut 20 centimeters from the side, and 12 centimeters deep. This correlates well with an intricately crafted stone on the northeastern outer wall that features an embossing on the outside and a 20 centimeter cut from its eastern side into the middle of the stone. Thus, this stone and the quoin laying a few meters away likely were placed opposite on another as the foundations for the piers of a portal. It is therefore highly likely that the entrance to the site was near the eastern corner on the northeast side. The fact that the southeastern side features so many blemished stones (presumably spolia), they would remain unseen as one entered from the northeast.

#### 4.6.5.2 Subgroup 14.2: The Inner Walls

The inside of the site features three walls composed of ashlars with profiling appearing as deep lines or notches. This sort of fashioning was done using a pointed iron chisel known as a *Spitzeisen* with a hammer,<sup>1245</sup> or using a *Spitzfläche* which did not necessitate a hammer. Both tools were in use throughout the middle ages and were documented in a 12<sup>th</sup> century *fresco-secco* in the castle chapel of Schwarzhof near Bonn, Germany.<sup>1246</sup> Wall Number 14.2.1 (view a full format of the architectural plan is available in the online repository [here](#))<sup>1247</sup> exhibits the inside of the garderobe and represents the first wall one would have seen when entering from the eastern corner, yet another clue as to why the entrance would have been located at that position. The wall includes 34 stones across four courses that are still visible, though the lowest course is almost entirely hidden with only three stones peering from beneath the soil. The second course from the bottom protrudes towards the inside by only two centimeters, yet the protrusion correlates with courses of the other three inner walls, indicating that they had composed a ledge for a floor of a level. The possible presence of a workshop typically under contract at ecclesiastical sites, as indicated by the mason's mark identified in Eckrich 1960, does explain the incredible precision of the placement of the stones, their fine mortar seams, and detailed shapes and profiling. Unfortunately, I was unable to identify any mason's marks at the site, or any traces of Romanesque window pieces found by Eckrich. It is possible that these components were carried off in the decades following Eckrich's investigation by locals familiar with the available stones at the site.

The northeastern inner wall (view the full format of the architectural plan for Wall Number 14.2.2 in the online repository [here](#))<sup>1248</sup> is very modest compared to its two visible counterparts, as it exhibits only the notched profiles and the slight indentation indicating a floor level. Unfortunately,

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<sup>1245</sup> Peter Roman Heid, *Steinmetzhandwerk in der Pfalz: Arbeiten aus dem 19. und 20. Jahrhundert*, Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, Band 8 (Kaiserslautern: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 1994). P. 42.

<sup>1246</sup> Norbert Nussbaum and Michael Wagener, "IV. Steinbearbeitung und Maurerarbeiten," in *Der mittelalterliche Baubetrieb nördlich der Alpen in zeitgenössischen Darstellungen*, ed. Günther Binding and Norbert Nussbaum (Darmstadt: Wissenschaftliche Buchgesellschaft, 1978), 46–49. P. 49.

<sup>1247</sup> Aaron Pattee, "Burg Perlenberg, 14.2.1, InsideWalls, InsideWallNorthwest, Texture and Mesh," Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728676>. Also catalogued as Architectural Plan 56.

<sup>1248</sup> Aaron Pattee, "Burg Perlenberg, 14.2.2, InsideWalls, InsideWallNortheast, Texture and Mesh," Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728677>. Also catalogued as Architectural Plan 57.

the stones that once composed the eastern corner were the portal presumably stood have been carried off. The southeastern wall (view the full format of the architectural plan of Wall Number 14.2.3 in the online repository in the online repository [here](#))<sup>1249</sup>, on the other hand, exhibits the same profiling and ledge, but also features a fascinating evidence for an internal staircase. A large gap exists in the wall directly across from the garderobe, in which the stones were deliberately hewn to accommodate some sort of structure. The masonry courses directly to the east of the gap exhibit another ledge 1.27 meters wide and eight centimeter deep, indicating a position upon which a wooden structure could be anchored. This constellation provides evidence for a wooden staircase leading to the outside of the building. Given that the embossed ashlar on the outside do not exhibit any putlog holes or positions where a staircase could have been set from the outside, this feature on the inner southeastern wall likely lead to a balcony that no longer exists. Castle Perlenberg would have therefore had an ornate privy on the northwestern wall and a balcony on the southeastern wall indicating that there was apparently something to look at from the southeast. This could be evidence for a platform atop the ruins that allowed for a panoramic view which would explain the short stature of the site.

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<sup>1249</sup> Aaron Pattee, “Burg Perlenberg, 14.2.3, InsideWalls, InsideWallSoutheast, Texture and Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728678>. Also catalogued as Architectural Plan 58.

#### 4.6.5.3 Subgroup 14.3: The Wall Crowns

The crowns of the walls (view the full format of the textured and meshed architectural plans of [14.3.1](#),<sup>1250</sup> [14.3.2](#),<sup>1251</sup> and [14.3.3](#)<sup>1252</sup> in the online repository) do not offer many clues regarding additional levels or positions of windows. However, they do demonstrate how walls featuring large embossed ashlar on one side and smaller notched ashlar on the other side were constructed. Each of the visible embossed ashlar were carved the form of a trapezoid, whose angled sides extended at most 45 centimeters within the wall. The notched ashlar were rectangular and also extended approximately 45 centimeters within the wall. The widths of the walls are roughly 1.6 meters, indicating that 70 centimeters of space existed between the outer and inner sides of the walls. This space was filled with rubble masonry and mortar, providing evidence for a construction style that held stones in place from the back rather than feature visible mortar within the mortar seams.

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<sup>1250</sup> Aaron Pattee, “Burg Perlenberg, 14.3.1, WallCrowns, WallCrownSoutheast, Texture and Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728679>. Also catalogued as Architectural Plan 59.

<sup>1251</sup> Aaron Pattee, “Burg Perlenberg, 14.3.2, WallCrowns, WallCrownNortheast, Texture and Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728680>. Also catalogued as Architectural Plan 60.

<sup>1252</sup> Aaron Pattee, “Burg Perlenberg, 14.3.3, WallCrowns, WallCrownNorthwest, Texture and Mesh,” Architectural Plan, CITADEL: Computational Investigation of the Topographical and Architectural Designs in an Evolving Landscape (Heidelberg: HeidICON, 2023), <https://heidicon.uni-heidelberg.de/detail/1728681>. Also catalogued as Architectural Plan 61.

#### 4.6.6 Interpretation of the Architectural Investigations at Perlenberg

Considering the remote position of the castle, its complete absence from the medieval historical record, and the theory that it was used as a hunting lodge, it is very likely that the masons took certain liberties on the job. These liberties refer to the possibility that the masons, upon orders of the construction manager, used spolia from nearby sites and experimented in new construction techniques. Construction sites were abundant in the vicinity of Kaiserslautern, though the most notable sites were Castle Hohenecken, the Palace of Lautern, and the various monasteries under construction at the time including Otterberg. This is particularly relevant because the builder of the Abbey of Otterberg used stones from the former castle, Otterburg, for its foundation.<sup>1253</sup> If the same workshop(s) were present at both the Abbey of Otterberg, Castle Hohenecken, and the Palace of Lautern, it is possible that they brought damaged stones from these sites to Castle Perlenberg rather than spend more time and money to craft new ones. The stones that could have been carried to the site would have been those located above the tapered stones, as they are much smaller. Recycling stones is certainly more economical and leads to a faster construction. As the majority of Richard the Lionheart's ransom money was carried to Italy in Henry VI's train, the funds available for more frivolous purposes, such as a remote hunting lodge, would likely have been limited, yet not depleted, allowing for a stout tower.

The use of spolia is particularly evident when comparing the southeastern and northwestern outside walls of Perlenberg. As neither the northeastern, nor the southwestern sides still have visible outside walls—both are mostly covered in debris and soil—only the visible sides can be accurately compared. The difference is stark, especially when viewing the incredibly poignant and detailed exterior of the garderobe on the northwestern side. Based upon the small overall dimensions of the castle, and the relatively large size of the garderobe, it is clear that this element was a key feature of the site. The higher quality embossed ashlar composing and surrounding the garderobe further support this claim. The visible difference in quality is relevant for determining which side was meant to be seen first. Based upon the investigation by Mehlis in 1903, the original path to the castle snaked its way up the northern side of the Kleiner Berg, indicating that the first visible sign of the castle would have been its northern corner, the northeastern wall, and the northwestern wall with its finely crafted privy. However, no trace of the zig-zagged path on the northern side of the hill remains, despite having been marked with stones as late as 1903. Nevertheless, an intersection of two paths

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<sup>1253</sup> Keddigkeit et al., "Otterberg, St. Maria Zisterzienserbtei Otterburg." P. 564.



is located at the base of the hill, which would theoretically lead directly to the northern corner of the castle.

Considering that the Palace of Lautern was under construction at the same time as the main tower and shield wall of Castle Hohenecken within Romanesque IV, and the abundance of concurrent construction projects in the royal estate, Castle Perlenberg was certainly a product of the same period. Given the proximity of these three sites to one another and the amount of construction in the area, it is indeed possible that either a single or a combination of workshops were fashioning stones for all of the sites, by both quarrying new stones for visible portions of the sites, and using spolia for less visible portions. Particularly striking is the fact that the imperial cupbearer and envoy for Richard's ransom money was Heinrich I von Lautern, whose brother, Reinhard I von Lautern was the imperial sheriff of the royal estate at the time of the construction of Castle Hohenecken. Additionally, Heinrich I's other brother, Siegfried I had accumulated experience of running a castle given his service as the commander of castle Gavi in 1190.<sup>1254</sup> Considering that Heinrich I and his brothers were operating as administrators of the Hohenstaufen dynasty during the 1190s, it is necessary to see who was most regularly in the Reichsland of Lautern in order to determine who was most likely responsible for the construction of the castles. Furthermore, their father, Eckbert I and former imperial marshal of Emperor Frederick I, was presumably still alive during the 1190s considering that the last charter he appears in dates to 1189. Given this prestigious pedigree of individuals whose namesake castle is located less than 3 kilometers from Castle Perlenberg, it is highly likely that Eckbert I and at least some of his sons oversaw the construction of Castle Perlenberg beginning in 1194, following the reception of the ransom money in the same year. Henry VI returned to the Palace of Lautern in the summer of 1195 and stayed for nearly two months, as was described in Section 3.5.7 regarding Castle Trifels. It is therefore probable that Castle Perlenberg was immediately built following the arrival of the ransom money and overseen by the father and brothers of Heinrich I von Lautern while he and the emperor were conquering Sicily. The garderobe at the site allowed for visitors to watch the hunt unfold from the protection of a short tower composed of embossed ashlars. Its purpose was therefore as an elite, yet small, lodge within the hunting reserve of the royal estate that was quickly constructed for the following summer—in time for the two-month sojourn of the emperor in the Reichsland of Lautern.

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<sup>1254</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. P. 69. Also catalogued as Charter ID 10770 in the graph database.

## 4.7 Summary

This chapter presented the architectural investigation that was undertaken composing the backbone of the mid-range questions regarding the function of the four sites over time. When combined with the social and conceptual context from Chapter 2 and the historical context from Chapter 3, a relatively clear image emerges of the relationship between the von Lautern-Hoheneck and von Beilstein families with the reigning monarchs of the High Middle Ages. The construction of the castles clearly mirrored the success or decline of the highest status members of the respective families. The higher an individual rose within the government, the more privileges and access to funds were granted, resulting in an increase of construction capabilities of one's castle. The use of the SfM and TLS models for the construction research of this chapter also highlighted the advantage of a digital methodology, as four castles could be architecturally analyzed alongside in-depth historical analyses and the geographical analyses presented in the following pages.

## 5 Geo-spatial Investigation

The geo-spatial analyses were begun towards the beginning of the project and composed the core of the findings of the early stages as described in Section 1.1.1 regarding the project timeline. They provide a detailed overview of the geographical area of the Reichsland of Lautern, essential for the interpretation of the relationship between the castles and their environment, and to one another. These investigations follow in line with the tradition of linking a landscape analyses to architectural investigations which began in the early 20<sup>th</sup> century as described in Section 2.2.1, and are essential contextual components to any castle study.<sup>1255</sup> This chapter provides a brief review of the application of *Geographical Information Systems* (GIS) in the humanities focusing upon research regarding castles, followed by in-depth descriptions of the three main techniques employed in GIS for this project: geo-referencing historical maps, conducting *Least Cost Paths* (LCPs), and generating Viewshed analyses. The geographic data and spatial analyses were evaluated using QGIS with two base maps: the *Open Street Map* (OSM) and a 25-meter resolution ASTER<sup>1256</sup> *Global Digital Elevation Model* (GDEM). In addition to these raster base maps, 27 geo-referenced historical maps of the German Palatinate ranging from 1540 until 1799 provided additional information regarding the historical extents of lakes and territories.<sup>1257</sup>

The investigation of cultural heritage sites all over the world has often been paired with landscape analyses conducted in GIS consisting of geo-referenced maps, LCPs, and Viewsheds.<sup>1258</sup> The application of GIS is a fundamental component for most archaeological investigations and has

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<sup>1255</sup> Creighton, "Castle, Landscape and Townscape in Thirteenth-Century England: Wallingford, Oxfordshire and the 'Princely Building Strategies' of Richard, Earl of Cornwall." P. 310.

<sup>1256</sup> Tan, "ASTER." ASTER is an acronym for *Advanced Spaceborne Thermal Emission and Reflection Radiometer*.

<sup>1257</sup> Pattee et al., "Analysing the Medieval Landscape of the German Palatinate." P.40.

<sup>1258</sup> JWHP Verhagen, "On the Road to Nowhere? Least Cost Paths, Accessibility and the Predictive Modelling Perspective," 2013; A. Agapiou et al., "Cultural Heritage Management and Monitoring Using Remote Sensing Data and GIS: The Case Study of Paphos Area, Cyprus," *Computers, Environment and Urban Systems* 54 (November 2015): 230–39, <https://doi.org/10.1016/j.compenvurbsys.2015.09.003>; Rowin J. van Lanen et al., "Best Travel Options: Modelling Roman and Early-Medieval Routes in the Netherlands Using a Multi-Proxy Approach," *Journal of Archaeological Science: Reports* 3 (September 2015): 144–59, <https://doi.org/10.1016/j.jasrep.2015.05.024>; Jennifer von Schwerin et al., "Airborne LiDAR Acquisition, Post-Processing and Accuracy-Checking for a 3D WebGIS of Copan, Honduras," *Journal of Archaeological Science: Reports* 5 (February 2016): 85–104, <https://doi.org/10.1016/j.jasrep.2015.11.005>; N. Bruno et al., "A Virtual Hub Brokering Approach for Integration of Historical and Modern Maps," *ISPRS - International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences XLI-B4* (June 13, 2016): 163–70, <https://doi.org/10.5194/isprsarchives-XLI-B4-163-2016>; Armin Volkmann, "Perspectives for Network Analysis: Roman Roads, Barbarian Paths and Settlement Patterns in the Borderlands at the Limes Germanicus in the Main River Region," *Open Archaeology* 3, no. 1 (January 26, 2017), <https://doi.org/10.1515/opar-2017-0007>; Richards-Rissetto, "An Iterative 3D GIS Analysis of the Role of Visibility in Ancient Maya Landscapes."

been routinely adapted to castle studies as well.<sup>1259</sup> GIS applications have also gained recognition within historical studies for the purpose of visualizing connections and communication routes. The development and accessibility of the software has made it possible for non-specialists to take advantage of its vast capabilities. However, GIS platforms such as ArcGIS or QGIS contain a wealth of techniques, which are easily applied, but offer little information as to their suitability for a specific analysis.<sup>1260</sup> Therefore, the techniques presented in this chapter are paired with an explanation as to why they are necessary for understanding the geo-spatial aspect of the castles and their environments. Each of the selected techniques are based upon a concept of space, spatial distributions, and spatial languages in order to discuss the processes responsible for the distribution of data, known as geometries. The two most relevant geometries to archaeological and historical GIS applications are: 1. Topologies, which resemble a relative non-metric model of space, by distinguishing objects considered different because of the way in which they relate to their neighbors; and 2. Euclidean Geometries, referring to a metric model of space regarding the distance between points. Topologies in a GIS typically consist of rivers, roads, and lakes, whereas Euclidean Geometries allow one to measure areas in between the features on the map.<sup>1261</sup>

The main data structure used in this project was a base map raster *Digital Elevation Model* (DEM) of the region of the German Palatinate, that provided a discrete approximation of a continuous field, recording the height above sea level for set of cells arranged in a regular grid. In addition to the raster DEM, a vector map was also used, consisting of entities with locations characterized by both spatial and non-spatial attributes.<sup>1262</sup> Beside the DEM, examples of rasters used in this chapter include the historical maps, calculated slope layers, and Viewsheds. The vector data included polygons outlining the historical territories and lakes, as well as points referring to the

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<sup>1259</sup> Andrew G Lowerre, "A GIS Analysis of the Location of Late-Eleventh-Century Castles in the Southeastern Midlands of England," in *Proceedings of the 34th Conference (CAA2006: Computer Applications and Quantitative Methods in Archaeology, Budapest: Archaeolingua, 2007)*, 14, [https://proceedings.caaconference.org/files/2006/CD25\\_Lowerre\\_CAA2006.pdf](https://proceedings.caaconference.org/files/2006/CD25_Lowerre_CAA2006.pdf); Wagener and Höfle, "Burgen in der Landschaft – Inszenierung und Entzifferung anhand neuer Methoden"; Edward Triplett, "Visualizing Medieval Iberia's Contested Space Through Multiple Scales of Visibility Analysis," in *Digital Methods and Remote Sensing in Archaeology*, ed. Maurizio Forte and Stefano Campana, Quantitative Methods in the Humanities and Social Sciences (Cham: Springer International Publishing, 2016), 199–227; Will Kennedy, "Ein Versuch einer Higuruchi-Viewshed-Analyse am Beispiel eines Wachturms auf der Umm al-Biyara in Petra, Jordanien," in *3D-Anwendungen in der Archäologie: Computeranwendungen und Quantitative Methoden in der Archäologie--Workshop der AG CAA und des Exzellenzclusters Topoi 2013*, ed. Undine Lieberwirth and Irmela Herzog, 1st ed., Berlin Studies of the Ancient World 34 (Berlin: Edition Topoi / Exzellenzcluster Topoi der Freien Universität Berlin und der Humboldt-Universität zu Berlin, 2016), 157–79.

<sup>1260</sup> Mark Conolly and Mark Lake, *Geographical Information Systems in Archaeology*, Cambridge Manuals in Archaeology (Cambridge: Cambridge University Press, 2006). P. 1.

<sup>1261</sup> *Ibid.* P. 4.

<sup>1262</sup> *Ibid.* P. 5.

cities, castles, and monasteries depicted in the maps. When combined, these data can lead to the illusion of a ‘totalizing knowledge’ of the landscape, yet do not necessarily lead to an understanding of the social landscape. Thus, meaningful interpretations of the interaction between humans and the landscape cannot be determined by only assembling the data,<sup>1263</sup> requiring one to analyze the GIS with respect to other, non-geographical data such as social interactions drawn from historical charters or building phases based upon 3D models. When paired with a robust database, a GIS can serve as a tool to visualize patterns that may otherwise be difficult to identify with textual queries alone. Additionally, the flexibility of adapting the digital map as new data are entered into the database highlights a clear advantage over the use of non-digitized maps.<sup>1264</sup>

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<sup>1263</sup> Ibid. Pp. 42-43.

<sup>1264</sup> Bol, “How the Digital Is Changing Research and Teaching on Asia.” P. 20.

## 5.1 Geo-referencing Historical Maps of the Palatinate

The historical maps of the palatinate used in this project were downloaded from the *David Rumsey Historical Map Collection*, an online map repository consisting of thousands of digitized maps hosted by the Stanford University Library.<sup>1265</sup> The clear benefit to the process of downloading the maps from the David Rumsey Historical Map Collection and subsequent geo-referencing in QGIS, was that everything was free of charge. In fact, the map collection website indicated that their copyright follows the *Creative Commons License* allowing users to copy and redistribute the material in any format, as well as remix, transform and build upon the material.<sup>1266</sup>

I selected 70 maps from the repository based upon their inclusion of the city of Kaiserslautern and either Hohenecken or the Einsiedel, which were the only other sites that regularly appeared alongside Kaiserslautern in the maps. All three sites were often captioned with an alternative spelling, most commonly *Cayserslautern* for Kaiserslautern, *Honneck* for Hohenecken, and *Minsidel* for Einsiedel. Despite the variances in spelling, the certainty that they are the same locations is very high considering that they always appeared in the same general vicinity to one another prior to geo-referencing the maps to the OSM layer. Of the 70 total maps chosen for a closer inspection, I narrowed the selection to 27 maps to be geo-referenced due to their more focused field of interest around the German Palatinate and the course of the Rhine River.

Historical maps provided the basis for the identifying former bodies of water, trajectories of rivers, and directions of historical roads. It is necessary to acknowledge the six key deficiencies of historical maps: 1. they are static, preventing cartographers from depicting dynamic changes in the environment; 2. they are two-dimensional, inhibiting accurate depictions of elevation; 3. they are flat, impeding an accurate measurement between objects due to the curvature of the earth, absent a projection which can introduce distortions; 4. Often too precise, in the sense that they do not allow one to maps ‘fuzzy’ boundaries, which refer to boundaries between vegetation or cultural zones; 5. they are difficult to update, requiring new maps to be constantly re-made; and 6. non-spatial data relating to entities on the maps can only be identified with an associated gazetteer.<sup>1267</sup> In order to adapt such maps to the GIS, they have to be geo-referenced, a process in which the spatial content

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<sup>1265</sup> David Rumsey, “About,” David Rumsey Map Collection, 2020, <https://www.davidrumsey.com/about>.

<sup>1266</sup> Ibid.; “Attribution-NonCommercial-ShareAlike 3.0 Unported (CC BY-NC-SA 3.0),” Creative Commons, 2020, <https://creativecommons.org/licenses/by-nc-sa/3.0/>.

<sup>1267</sup> Conolly and Lake, *Geographical Information Systems in Archaeology*. Pp. 16-17.

of the maps are implicitly or explicitly referred to positions on the Earth's surface.<sup>1268</sup> The process whereby I geo-referenced the maps followed a tutorial provided by Dr. Armin Volkmann using the *Georeferencer* plugin from the *Geospatial Data Abstraction Library* (GDAL<sup>1269</sup>) in QGIS.<sup>1270</sup> The plugin uses a type of interpolation (mathematical techniques for estimating attribute values at unsampled locations from those at sampled locations<sup>1271</sup>) called a *Thin Plate Spline* interpolation. These are the principal techniques from the class of spline interpolations applicable to data consisting of a one-dimensional codomain and a two-dimensional domain. In essence, these interpolations are composed of a global affine transformation for relocating data without bending it, and a local non-affine component for local displacements. Another technique, called *Multiquadratic* interpolation, is also used for analyzing distortions in old maps, but the technique does not include a smoothing process, whereas the Thin Plate Spline interpolation does. In contrast to Multiquadratic interpolations, smoothness—which refers to a continuous and differentiable surface—is guaranteed by a Thin Plate Spline interpolation.<sup>1272</sup> It accomplishes this task by replacing the exact surface with a weighted average in order to generate a surface with minimum curvature.<sup>1273</sup>

A problem that I had encountered early on in the geo-referencing process was the prevalence of blurry distortions when I had not selected enough control points. The identification of *Ground Control Points* (GCPs) on the digitized historical map corresponding to the GIS map are essential for transforming the coordinates of the paper map to real-world coordinates.<sup>1274</sup> However, the GCPs were not evenly spread, resulting in highly detailed referencing in specific parts of the map and large distortions in other areas of the same map, to the extent in which major cities no longer corresponded with one another between the historical map and the OSM layer. This problem was easily solved by referencing major cities in the four corners of each map and then creating a grid of reference points throughout each map. These additional points were often not within the

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<sup>1268</sup> Ibid. P. 17. This is in reference only to the definition of geo-referencing.

<sup>1269</sup> Frank Warmerdam and Even Rouault, "FAQ — GDAL Documentation," accessed July 29, 2020, <https://gdal.org/faq.html#what-does-gdal-stand-for>.

<sup>1270</sup> Armin Volkmann, "Georeferenzierung von historischen Karten mit QGIS – Ein Bilderbuch," 2017, [https://www.academia.edu/8595755/Geo\\_referencing\\_of\\_historical\\_maps\\_with\\_QGIS\\_-\\_Georeferenzierung\\_von\\_historischen\\_Karten\\_mit\\_QGIS](https://www.academia.edu/8595755/Geo_referencing_of_historical_maps_with_QGIS_-_Georeferenzierung_von_historischen_Karten_mit_QGIS).

<sup>1271</sup> Conolly and Lake, *Geographical Information Systems in Archaeology*. P. 294.

<sup>1272</sup> Manuel Claeys BouÛaert et al., "Computation and Visualisation of the Accuracy of Old Maps Using Differential Distortion Analysis," *International Journal of Geographical Information Science* 30, no. 7 (July 2, 2016): 1255–80, <https://doi.org/10.1080/13658816.2015.1127377>. Pp. 1262-1263.

<sup>1273</sup> Conolly and Lake, *Geographical Information Systems in Archaeology*. P. 97.

<sup>1274</sup> Ibid. P. 80.

direct area of study, but they prevented the global distortions that I had encountered earlier. Once the grid of GCPs had been selected, I then focused the control points on the area of the German Palatinate, often yielding 150 GCPs for some of the larger and more detailed maps. The key advantage to point digitizing, i.e. manually placing GCPs, is that it adds a layer of quality control resulting in a more accurate placement of vertices, though the process was very time consuming.<sup>1275</sup> In total, I identified 452 control points that regularly appeared throughout the 30 maps, though not all of these appeared on every map. By creating an excel table with the x and y coordinates of each of the 452 control points, the process of copying the coordinates to the GDAL plugin was much faster and far more efficient than searching for each site anew on the OSM layer for each map (Figure 77). This also guaranteed that the same coordinate points were used for every position that was georeferenced.

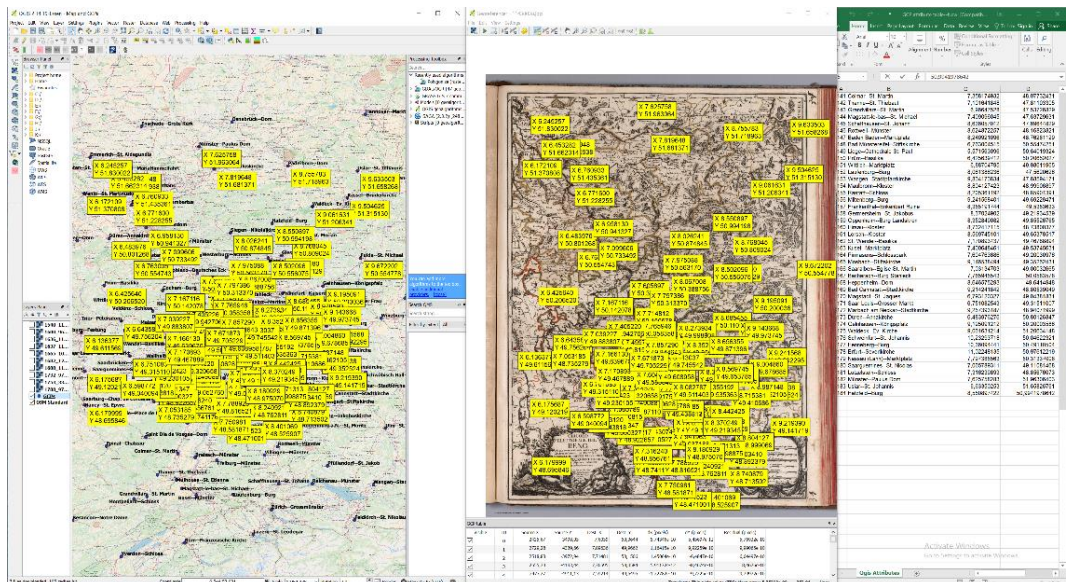


Figure 77: Georeferencing the 1686 map entitled *Circolo elettorale del Reno*.

<sup>1275</sup> Ibid. P. 83.



### 5.1.1 Historical Territories

Due to the absence of a clearly marked territory of the Reichsland of Lautern in the geo-referenced maps, I resorted to outlining the territory in QGIS based upon the descriptions provided by Rudolf Kraft and have already been presented as Figures 1 and 2 in Section 2.2.4. These are approximations similar to fuzzy borders as they are based upon presumed enfeoffments and properties described in the medieval charters, and as such, the borders should not be viewed as absolutes. This is important to keep in mind as the sharp edges of a polygon in GIS do not necessarily mirror the reality, which is more fluid and detailed, subject to periodic change as a result of topographical or political changes.<sup>1276</sup>

The application of fuzzy systems allows for robust modeling of real-world dependencies and a detailed quality check of the results,<sup>1277</sup> as the degree of uncertainty for each object is part of the ‘fuzzy’ classification.<sup>1278</sup> However, the focus of this project is upon the function of the castles and the signals they broadcasted, rather than an analysis of the fluctuations of the borders of the Reichsland of Lautern. Still, the borders of the Reichsland are important, specifically when considering its partitioning in the mid-14<sup>th</sup> century as described in Section 2.2.4. Provided the chronological span of this project between the year 1152 and 1273, the later partitioning is out of scope for more in-depth analyses. Furthermore, the borders of the Reichsland in the GIS model serve primarily to provide context regarding the extent of the territory with regard to the spatial analyses from the four primary sites. A more detailed modeling of the Reichsland could be undertaken in the future, making use of the numerous studies conducted over the last century by local researchers of the German Palatinate who meticulously theorized the extents of the territory,<sup>1279</sup> and mapped the medieval and early modern border stones in the former Reichsland.<sup>1280</sup>

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<sup>1276</sup> Fangju Wang and G. Brent Hall, “Fuzzy Representation of Geographical Boundaries in GIS,” *International Journal of Geographical Information Systems* 10, no. 5 (July 1, 1996): 573–90, <https://doi.org/10.1080/02693799608902098>. Abstract.

<sup>1277</sup> Ursula C. Benz et al., “Multi-Resolution, Object-Oriented Fuzzy Analysis of Remote Sensing Data for GIS-Ready Information,” *ISPRS Journal of Photogrammetry and Remote Sensing* 58, no. 3–4 (January 2004): 239–58, <https://doi.org/10.1016/j.isprsjprs.2003.10.002>. P. 240.

<sup>1278</sup> *Ibid.* P. 234.

<sup>1279</sup> Häberle, *Das Reichsland Bei Kaiserslautern: Quellen Zur Förderung Der Heimat- Und Familienkunde Im Gebiet Des Bannforstes Lutra*; Hess-Gothold, *Hausmacht Und Politik Friedrich Barbarossas Im Raum Des Heutigen Pfälzer Waldes*; L.A. Doll, “Das Reichsland Lautern im Mittelalter,” in *Jahrbuch zur Geschichte von Stadt und Landkreis Kaiserslautern*, ed. Historischer Verein der Pfalz, vol. 3 (Otterbach: Arbogast, 1965), 20–35; Frenzel, “Die historischen Wälder der Pfalz”; Werle, “Wald und Herrschaft: Studien zur Geschichte der Reichswaldgenossenschaft Kaiserslautern”; Hubert Zintl, *Johanniskreuz--Im Herzen des Pfälzerwaldes: Eine Forst- und Waldgeschichte* (Kaiserslautern, Germany: Ministerium für Umwelt, Forsten und Verbraucherschutz Rheinland Pfalz, 2006).

<sup>1280</sup> Ernst Bilfinger, *Johanneskreuz, Eine Pfälzerwaldgeschichte* (Kaiserslautern: Thiemesche Druckverein GmbH, 1904); Kraft, “Das Reichsland von Kaiserslautern”; Eckrich, “Neue Legenden um alte Kreuz: Johanneskreuz, Torstensonkreuz,

Once the actual maps were geo-referenced, I then selected those featuring outlines of the various territories, including the Electorate of the Palatinate, the Duchy of Zweibrücken, the Archbishoprics of Mainz and Trier, the Bishoprics of Speyer and Worms, and various other secular territories. I then created vector data in the form of polygons by tracing the outlines of the territories in QGIS, which allows their areas of coverage to be viewed on the OSM base layer when the respective map is deactivated. It is important to note that these territorial realms did not necessarily portray the same areas of control during the Middle Ages as they were retrieved from 16 of the 27 geo-referenced maps ranging between the years 1665 and 1788. The purpose of creating these topologies in QGIS was in order to compare the areas of coverage to one another and over time. As a variety of other elements, such as towns, castles, and lakes are included within the outlined territorial depictions, there was the possibility of identifying functional uses of the castles in later periods as border markings. This was precisely the reason for the only known record of Castle Perlenberg, which was referenced as a border marking in a 1542 charter described in Section 3.3.4.2. Therefore, it was of interest to see where the castles and monasteries—from all three levels of details—fell within later territories following the dissolution of the Reichsland of Lautern.

Of the 16 maps that I selected for this purpose, 10 were uniquely suited for the task as they also included the positions of roadways, the flow of waterways, topographic information, and illustrations of vegetation in addition to locations of various lived sites.<sup>1281</sup> The distribution of the

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Elendkreuz”; Otto Gödel, “Der ‘Hochfels’ auf dem Gersweiler-Kopf,” *Pfälzerwald: Zeitschrift des Pfälzerwald-Vereins e.V.*, 1988.

<sup>1281</sup> Giovanni Giacomo de Rossi, Giacomo Cantelli da Vignola, and Domenico de Rossi, *Circolo Elettorale Del Reno in Cui Principalmente Sono Espressi Gl’arcivescouati Ed Elettorati Di Magonza, Di Treviri, Di Colonia e Del Palatino Elettorale Con Le Altre Signorie Adiacenti Giusta Le Notitie Piu Moderne.*, Atlas Map, 1: 690,000, David Rumsey Historical Map Collection (Rome: Domenico de Rossi, 1686), [http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~290524~90062097:Circolo-elettorale-del-Reno?sort=Pub\\_List\\_No\\_InitialSort%2CPub\\_Date%2CPub\\_List\\_No%2CSeries\\_No;Giovanni+Giacomo+de+Rossi,+Giacomo+Cantelli+da+Vignola,+and+Domenico+de+Rossi,+Elettorato+e+Palatinato+Del+Reno+Con+Li+Domini+Della+Casa+Palatina+Annessi+al+Medesimo+et+Altre+Signorie+in+Esso+Contenute+Rappresentato+Conforme+Lo+Stato+Presente,+Da+Giacomo+Cantelli+Da+Vignola+Sudditi+e+Geografo+Del+Sermo.](http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~290524~90062097:Circolo-elettorale-del-Reno?sort=Pub_List_No_InitialSort%2CPub_Date%2CPub_List_No%2CSeries_No;Giovanni+Giacomo+de+Rossi,+Giacomo+Cantelli+da+Vignola,+and+Domenico+de+Rossi,+Elettorato+e+Palatinato+Del+Reno+Con+Li+Domini+Della+Casa+Palatina+Annessi+al+Medesimo+et+Altre+Signorie+in+Esso+Contenute+Rappresentato+Conforme+Lo+Stato+Presente,+Da+Giacomo+Cantelli+Da+Vignola+Sudditi+e+Geografo+Del+Sermo.), Atlas Map, 1: 440,000, David Rumsey Historical Map Collection (Rome: Domenico de Rossi, 1688), [http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~290525~90062096:Elettorato-e-Palatino-del-Reno?sort=Pub\\_List\\_No\\_InitialSort%2CPub\\_Date%2CPub\\_List\\_No%2CSeries\\_No;Frederick+de+Wit+and+Nikolaus+Visscher,+Exactissima+Palatinatus+Rheni+Ac+Ducatus+Bipontini+Tabula.](http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~290525~90062096:Elettorato-e-Palatino-del-Reno?sort=Pub_List_No_InitialSort%2CPub_Date%2CPub_List_No%2CSeries_No;Frederick+de+Wit+and+Nikolaus+Visscher,+Exactissima+Palatinatus+Rheni+Ac+Ducatus+Bipontini+Tabula.), Atlas Map, 1: 350,000, David Rumsey Historical Map Collection (Amsterdam: Frederick de Wit, 1682), [http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~290042~90067373:Exactissima-Palatinatus-Rheni-ac-Du?sort=Pub\\_List\\_No\\_InitialSort%2CPub\\_Date%2CPub\\_List\\_No%2CSeries\\_No;Guillaume+de+L’Isle,+Le+Cours+Du+Rhin+Depuis+Strasbourg,+Jusqu’a+Worms+et+Le+Pays+Adjacens.](http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~290042~90067373:Exactissima-Palatinatus-Rheni-ac-Du?sort=Pub_List_No_InitialSort%2CPub_Date%2CPub_List_No%2CSeries_No;Guillaume+de+L’Isle,+Le+Cours+Du+Rhin+Depuis+Strasbourg,+Jusqu’a+Worms+et+Le+Pays+Adjacens.), Atlas Map, 1: 256,000, David Rumsey Historical Map Collection (Paris: Guillaume de L’Isle, Quai de l’Horloge, 1704), [http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~2875~300007:Le-Cours-du-Rhin-depuis-Strasbourg.?sort=Pub\\_List\\_No\\_InitialSort%2CPub\\_Date%2CPub\\_List\\_No%2CSeries\\_No;Herman+Moll,+The+Seat+of+War+in+the+Rhine+Being+a+New+Map+of+the+Course+of+That+Rive\(r\)+from+Basil+to+Bonn.](http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~2875~300007:Le-Cours-du-Rhin-depuis-Strasbourg.?sort=Pub_List_No_InitialSort%2CPub_Date%2CPub_List_No%2CSeries_No;Herman+Moll,+The+Seat+of+War+in+the+Rhine+Being+a+New+Map+of+the+Course+of+That+Rive(r)+from+Basil+to+Bonn.), Atlas Map, 1: 221,000, David Rumsey Historical Map Collection (Cornhill: John and Tho. Bowles, 1732), [http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~277433~90050434:Rhine-River-Valley-?sort=Pub\\_List\\_No\\_InitialSort%2CPub\\_Date%2CPub\\_List\\_No%2CSeries\\_No&qvq=w4s:/when%2F1732;q:rhine%2Brive](http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~277433~90050434:Rhine-River-Valley-?sort=Pub_List_No_InitialSort%2CPub_Date%2CPub_List_No%2CSeries_No&qvq=w4s:/when%2F1732;q:rhine%2Brive)

production of the maps was also intriguing as two of the maps were published in Rome, two in Amsterdam, two in Nuremberg, two in Paris, one in Cornhill, and one in Venice. Despite the different publication sites and cartographers, the same distortion occurred around the area of Castle Beilstein in every map that I had geo-referenced. The degree of the distortion became smaller after 1777—a map of the Rhine published in Venice—though it still remained. This indicated that the area located between Kaiserslautern and Neustadt an der Weinstraße had been imprecisely mapped by cartographers for centuries. Although the distortions may seem to diminish the quality of information presented by old maps, the location, spatial variation, and magnitude of the distortions reveal insights into each map’s production.<sup>1282</sup> The significance of these findings relates to the use of roadways and the importance of particular sites in the production of maps well after the Middle Ages. These results highlight the ability of a particular site to remain relevant in the eyes of the cartographers who encountered only ruins of many of the sites.

In stark contrast to the distortions surrounding Castle Beilstein, the immediate area around Hohenecken in the maps of the 17<sup>th</sup> and 18<sup>th</sup> centuries is remarkably similar to the modern OSM layer due to the higher density of locations including Teutonic Knight Commandry of Einsiedel, Castle Nanstein, and the villages of Waldfischbach, Weilerbach, and Kindsbach. The geographical area between Lautern and Landstuhl included a host of competing lordships—which later necessitated the 16<sup>th</sup> century border agreement in which Castle Perlenberg was first mentioned. In

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r/%2Bvalley;sort:Pub\_List\_No\_InitialSort%2CPub\_Date%2CPub\_List\_No%2CSeries\_No;lc:RUMSEY~8~1&mi=0&trs=1 ; Pierre Mortier, Covens, and Guillaume de L’Isle, *Le Cours Du Rhin Depuis Strasbourg, Jusqu’a Worms et Le Pays Adjacens.*, Atlas Map, 1: 256,000, David Rumsey Historical Map Collection (Amsterdam: Covens & Mortier, 1742), [http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~31208~1150237:Le-Cours-du-Rhin-depuis-Strasbourg?sort=Pub\\_List\\_No\\_InitialSort%2CPub\\_Date%2CPub\\_List\\_No%2CSeries\\_No#](http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~31208~1150237:Le-Cours-du-Rhin-depuis-Strasbourg?sort=Pub_List_No_InitialSort%2CPub_Date%2CPub_List_No%2CSeries_No#); Didier Robert de Vaugondy and Gilles Robert de Vaugondy, *Carte Des Cercles Du Haut et Du Bas Rhin Ou Se Trouvent Dans Le Premier, Le Duche de Deux-Ponts, Les Echeves de Worms, et de Spire, Les Etats de Nassau et de Hesse, Les Comtes de Hanaw, de Solms, d’Isenburg, Les Abbees de Fulde et d’Hirschfeld &c., et Dans Le Second, Les Electorats de Mayence, de Treves, de Cologne, et Le Palatinat Du Rhin, Avec Leurs Enclaves.*, Atlas Map, 1: 640,000, David Rumsey Historical Map Collection (Paris: Boudet, 1753), [http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~3954~490030:Haut,-Bas-Rhin?sort=Pub\\_List\\_No\\_InitialSort%2CPub\\_Date%2CPub\\_List\\_No%2CSeries\\_No#](http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~3954~490030:Haut,-Bas-Rhin?sort=Pub_List_No_InitialSort%2CPub_Date%2CPub_List_No%2CSeries_No#); Didier Robert de Vaugondy and Gilles Robert de Vaugondy, *30. Carte Des Cercles Du Haut et Du Bas Rhin.*, Atlas Map, 1: 840,000, David Rumsey Historical Map Collection (Venice: Remondini, 1777), [http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~285776~90058293:30--Carte-des-Cercles-du-Haut-et-du?sort=Pub\\_List\\_No\\_InitialSort%2CPub\\_Date%2CPub\\_List\\_No%2CSeries\\_No&qvq=w4s:/when%2F1777;q:germany;sort:Pub\\_List\\_No\\_InitialSort%2CPub\\_Date%2CPub\\_List\\_No%2CSeries\\_No;lc:RUMSEY~8~1&mi=0&trs=2#](http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~285776~90058293:30--Carte-des-Cercles-du-Haut-et-du?sort=Pub_List_No_InitialSort%2CPub_Date%2CPub_List_No%2CSeries_No&qvq=w4s:/when%2F1777;q:germany;sort:Pub_List_No_InitialSort%2CPub_Date%2CPub_List_No%2CSeries_No;lc:RUMSEY~8~1&mi=0&trs=2#); Johann Baptist Homann, *Circulus Rhenanus Inferior Sive Electorum Rheni.*, Atlas Map, 1: 637,000, David Rumsey Historical Map Collection (Nürnberg: Homannianis Hereditibus, 1788), [http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~281717~90054552:Circulus-Rhenanus-Inferior-sive-Ele?sort=Pub\\_List\\_No\\_InitialSort%2CPub\\_Date%2CPub\\_List\\_No%2CSeries\\_No#](http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~281717~90054552:Circulus-Rhenanus-Inferior-sive-Ele?sort=Pub_List_No_InitialSort%2CPub_Date%2CPub_List_No%2CSeries_No#); Franz Ludwig Güssefeld, *Der Rhein, Mass Und Mosel.*, Atlas Map, 1: 900,000, David Rumsey Historical Map Collection (Nürnberg: Homannianis Hereditibus, 1783), [http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~281759~90054594:Der-Rhein,-Mass-und-Mosel?sort=Pub\\_List\\_No\\_InitialSort%2CPub\\_Date%2CPub\\_List\\_No%2CSeries\\_No#](http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~281759~90054594:Der-Rhein,-Mass-und-Mosel?sort=Pub_List_No_InitialSort%2CPub_Date%2CPub_List_No%2CSeries_No#).

<sup>1282</sup> Claeys Bouuaert et al., “Computation and Visualisation of the Accuracy of Old Maps Using Differential Distortion Analysis.” P. 1256.

the 13<sup>th</sup> century, much of the land belonged to the administration of the Reichsland and Palace of Lautern, though smaller territories belonged to Castles Hohenecken and Nanstein (in Landstuhl), as well as the ecclesiastical realm of the Teutonic Knight Commandry in Einsiedel.<sup>1283</sup> The intersection of these numerous dominions was to the west of Castle Hohenecken, to the south of the Einsiedel Commandry, and to the east of Castle Nanstein—precisely the location of Castle Perlenberg. During the 14<sup>th</sup> century, the territory of Castle Hohenecken no longer belonged to a single party, but instead to the von Hoheneck family as well as the Elector of the Rhine and the Elector of Mainz. Although much of the territory belonging to the Reichsland and Palace of Lautern was mortgaged to the Electorate of the Rhine in 1357,<sup>1284</sup> both the dominions of Castle Hohenecken and town of Lautern were effectively linked, highlighted in a treaty from 19 October 1394 in which the inhabitants of the Castle were to offer safety for the townspeople in the event of an attack.<sup>1285</sup>

By the time of the first map in 1665, only Castle Hohenecken had not been destroyed among the four primary sites, and only a handful had been spared among the secondary and tertiary sites of this project following the 30 Years War. The destruction wrought by the war also brought down the walls of the 16<sup>th</sup> century renaissance additions of the palace built by *Johann Casimir von Pfalz-Simmern*—the son of the Elector Palatine Frederick III, and husband of Elisabeth of Saxony, daughter of the Saxon Elector August I. Castle Hohenecken's ability to elude destruction came to an end in 1668, when the Elector Palatine Charles Louis besieged it during a feud with Duke Charles III of Lorraine, to whom the heirs of the castle had sold the site. A portion of the castle had belonged to the Elector Palatine and was forbidden from entering his portion following the sale to the Duke of Lorraine. Charles Louis subsequently marched on Castle Hohenecken the same year and ordered all outer elements of the site to be bombarded, save the upper castle that had originally been an imperial enfeoffment<sup>1286</sup>—i.e. the 12<sup>th</sup> and 13<sup>th</sup> century building phases. The bombardment led to the evacuation of the site by all parties, resigning Castle Hohenecken to a mere shadow of its former self, patiently awaiting its postponed denouement in 1688 at the hands of the French.

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<sup>1283</sup> Kraft, "Das Reichsland von Kaiserslautern." Pp. 63-66.

<sup>1284</sup> Frenzel, "Die historischen Wälder der Pfalz." P. 271.

<sup>1285</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern II*. Pp 349-350. Also catalogued as Charter ID 10373 in the graph database.

<sup>1286</sup> Keddigkeit and Losse, "Hohenecken." P. 383.

The maps reflect this historical circumstance as the two from 1665<sup>1287</sup> and 1682<sup>1288</sup> both include Hohenecken—albeit as *Holmeck*—but the following map from 1688<sup>1289</sup> omitted the site. It was not until 1704<sup>1290</sup> that Castle Hoheneck—now called *Honneck*—is again included, continuing with the emblem marking the presence of a wall or fortress until 1742.<sup>1291</sup> However, the following map from 1753<sup>1292</sup> lacked the cartographic symbol indicating a fortress, though both Landstuhl and Kaiserslautern were depicted with the symbol. This information is corroborated by historical written sources in which both Castle Hohenecken and the Palace of Lautern were traded between various lords and dominions and used for various purposes, such as storage houses, throughout the mid to late 18<sup>th</sup> century. As Hohenecken continued to be depicted without the symbol of a fortress, Kaiserslautern was once again shown with the fortress emblem in 1788,<sup>1293</sup> which follows the 1784 record describing the rehabilitation of its bastions.<sup>1294</sup>

Throughout this entire period, the territorial border between the Electorate of the Palatinate and Duchy of Zweibrücken featured a large southward protruding bulge emanating from the electorate into its neighboring duchy. The bulge is directly south of Kaiserslautern extending just beyond the town of Trippstadt, where the regionally famous border stone called the Johanneskreuz is located. The western border of the bulge is just beyond Castle Hohenecken and the eastern side approximately transects the location of Castle Beilstein, though the castle is not explicitly depicted in the maps. Directly opposite Castle Hohenecken on the side of the duchy is the location of Castle Perlenberg, indicating that the results of the 16<sup>th</sup> century border conflict between the Counts of Sickingen based in Landstuhl and the jurisdiction of Lautern had extended into the 17<sup>th</sup> and 18<sup>th</sup> centuries, though this time between the electorate and the duchy. The drawing of the border at that position could have been due to the large main tower of Hohenecken, which recalled the grandeur of the 12<sup>th</sup> and 13<sup>th</sup> century imperial dynasties. The Electorate of the Palatinate had been established by Emperor Frederick I upon the appointment of his half-brother Conrad in the late 12<sup>th</sup> century. By

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<sup>1287</sup> Joan Blaeu, *Palatinatvs Ad Rhenvm*, Atlas Map, David Rumsey Historical Map Collection (Amsterdam: Joan Blaeu, 1665), [http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~279994~90052933:Palatinatvs-Ad-Rhenvm?sort=Pub\\_List\\_No\\_InitialSort%2CPub\\_Date%2CPub\\_List\\_No%2CSeries\\_No](http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~279994~90052933:Palatinatvs-Ad-Rhenvm?sort=Pub_List_No_InitialSort%2CPub_Date%2CPub_List_No%2CSeries_No).

<sup>1288</sup> de Wit and Visscher, “Exactissima Palatinatus Rheni Ac Ducatus Bipontini Tabula.”

<sup>1289</sup> de Rossi, Cantelli da Vignola, and de Rossi, “Elettorato e Palatinato Del Reno.”

<sup>1290</sup> de L’Isle, “Le Cours Du Rhin Depuis Strasbourg, Jusqu’a Worms et Le Pays Adjacens.”

<sup>1291</sup> Mortier, Covens, and de L’Isle, “Le Cours Du Rhin Depuis Strasbourg, Jusqu’a Worms et Le Pays Adjacens.”

<sup>1292</sup> Robert de Vaugondy and Robert de Vaugondy, “Haut, Bas Rhin.”

<sup>1293</sup> Homann, “Circulus Rhenanus Inferior Sive Electorum Rheni.”

<sup>1294</sup> Keddigkeit and Losse, “Hohenecken.” P. 383. Barz et al., “Kaiserslautern.” P. 111.

including Hohenecken in the territory of the Electorate along the border, a subtle homage was paid to the origin of the territory besides simply the prevalence of the Hohenstaufen lion upon the Prince-Elector's crest. Thus, the large red tower at Castle Hohenecken clearly marked the passage from one territory to another, further indicating the strategic prowess of its builders to place its robust red tower in sight of a main road.

The significance of the southern portion of the territorial bulge is quite relevant for interpreting the medieval distribution of lands, as the 18<sup>th</sup> century demarcation is around the Johanneskreuz—a stone cross with various crests near the town of Trippstadt (Figure 78). The stone cross was first mentioned in 1533 in reference to a border inspection by a certain Johanns Creutz and was repeatedly mentioned over the following century with regard to route descriptions. Most importantly, the stone was included in a border description issued by the Electorate of the Palatinate in 1670<sup>1295</sup>—only two years after the bombardment of Castle Hohenecken by the electoral forces. The area for which the stone cross had served as a border marking was the former forest known as the Laubeerwald for which the ministeriales of Castle Wilenstein had been in charge at the turn of the 13<sup>th</sup> century, as discussed in Section 3.5.1.1. In the 17<sup>th</sup> century, the stone marked the southern border between the Electorate of the Palatinate and the Duchy of Zweibrücken, though a consensus has not been reached as to its medieval purpose. A number of theories abound including that it had been a territorial marker indicating the escort privileges of the lords of Hohenecken, or that it had been a stone of atonement following the murder of a certain Johann. Whatever the circumstance may have been, the crests carved into the stone cross are clearly of a 13<sup>th</sup> century style, suggesting that the stone had been there for centuries prior to the issuing of the early-modern maps geo-referenced for this project.<sup>1296</sup>

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<sup>1295</sup> Zintl, *Johanniskreuz--Im Herzen des Pfälzerwaldes: Eine Forst- und Waldgeschichte*. Pp. 34-35.

<sup>1296</sup> Eckrich, "Neue Legenden um alte Kreuz: Johanneskreuz, Torstensonkreuz, Elendkreuz." P. 84. Zintl, *Johanniskreuz--Im Herzen des Pfälzerwaldes: Eine Forst- und Waldgeschichte*. P. 36.



Figure 78: The 13<sup>th</sup> century border stone at Johanneskreuz featuring numerous crests.

Another peculiar, yet revealing feature was the distortion to the east/southeast of Kaiserslautern mentioned earlier where Castle Beilstein is located. The distortion covers a northward territorial bulge to the east of the southward bulge just discussed. However, this belonged to the Duchy of Zweibrücken. The fact that the area to the south of Castle Beilstein not only lacked important roadways and landmarks, but was routinely mapped in the middle of a major cartographic distortion indicates that the general area was considered insignificant for the cartographers. Furthermore, it may indicate that the castle fell from memory after its destruction in the 15<sup>th</sup> century and was no longer along a noteworthy path or road. It is rather interesting that the duchy received a portion of land that was nearly severed from the rest of its territory, covering an area void of any major logistical significance. However, the parcel of land did include Castle Frankenstein, an ornate medieval castle that had rarely been modified since the 14<sup>th</sup> century. The castle itself did not belong to the duchy, but instead to a number of owners, including members of the families von Nassau-Saarbrücken, von Leiningen-Dagsburg-Hardenburg, von Wallbrunn, and most importantly, the Electorate of the Palatinate. The fenestration of the castle and its overall features mirror the northern and western sides of keep of Castle Hohenecken. In contrast to Castle Hohenecken, Castle Frankenstein was mostly spared in the War of Palatinate Succession whereas almost everything else

in the region was scorched.<sup>1297</sup> This is presumably due to its location in a cartographic distortion that made its position difficult to discover (Figure 79).

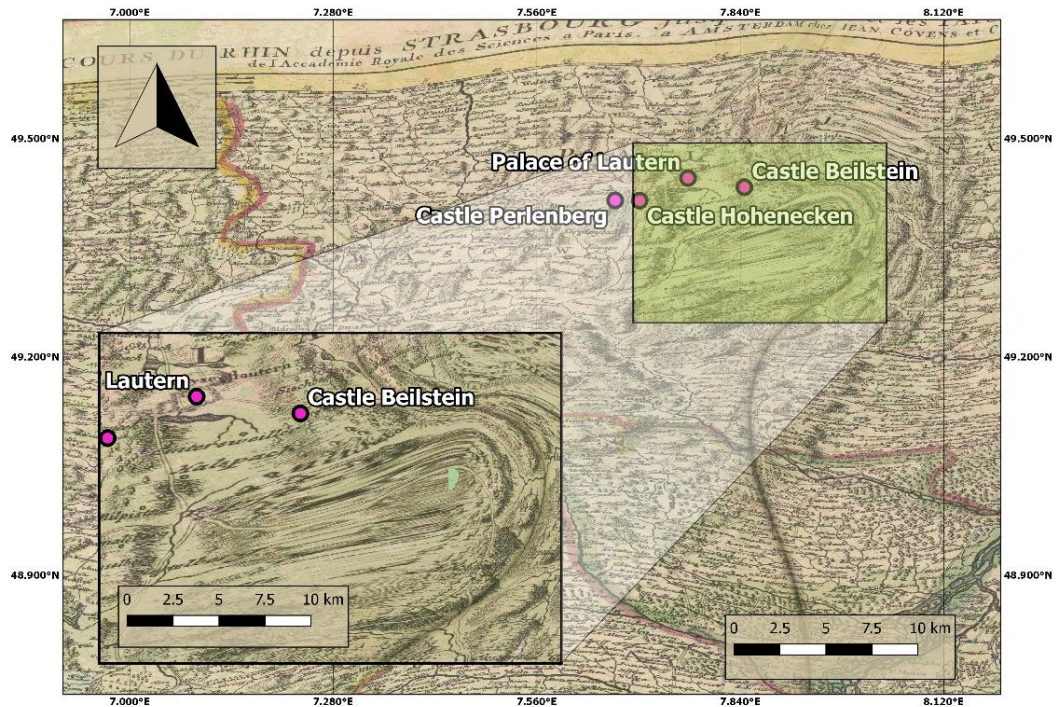


Figure 79: Distortion south of Castle Beilstein in the 1742 map entitled *Le Cours du Rhin depuis Strasbourg, jusqu'a Worms et le pays adjacens*.<sup>1298</sup>

The geo-referenced maps offer a glimpse into the territorial adjustments and positions of roadways but also the waterways and lakes that once populated the German Palatinate around the primary sites (Figure 80). Of particular note are the former lakes along the northern side of the *via regia*, once known as the *Scheidenberger Woog*, *Einsiedler Woog*, and *Schloßwoog*. The areas of these lakes are now the Ramstein Air Base, the district of Einsiedlerhof, and the 19<sup>th</sup> century extension of the city of Kaiserslautern (respectively).

<sup>1297</sup> Jürgen Keddigkeit and Dieter Barz, “Frankenstein,” in *Pfälzisches Burgenlexikon*, ed. Jürgen Keddigkeit et al., 1st ed., vol. 2 F-H, 4 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 12.1 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2002), 115–29. Pp. 120–121.

<sup>1298</sup> Mortier, Covens, and de L’Isle, “Le Cours Du Rhin Depuis Strasbourg, Jusqu’a Worms et Le Pays Adjacens.”



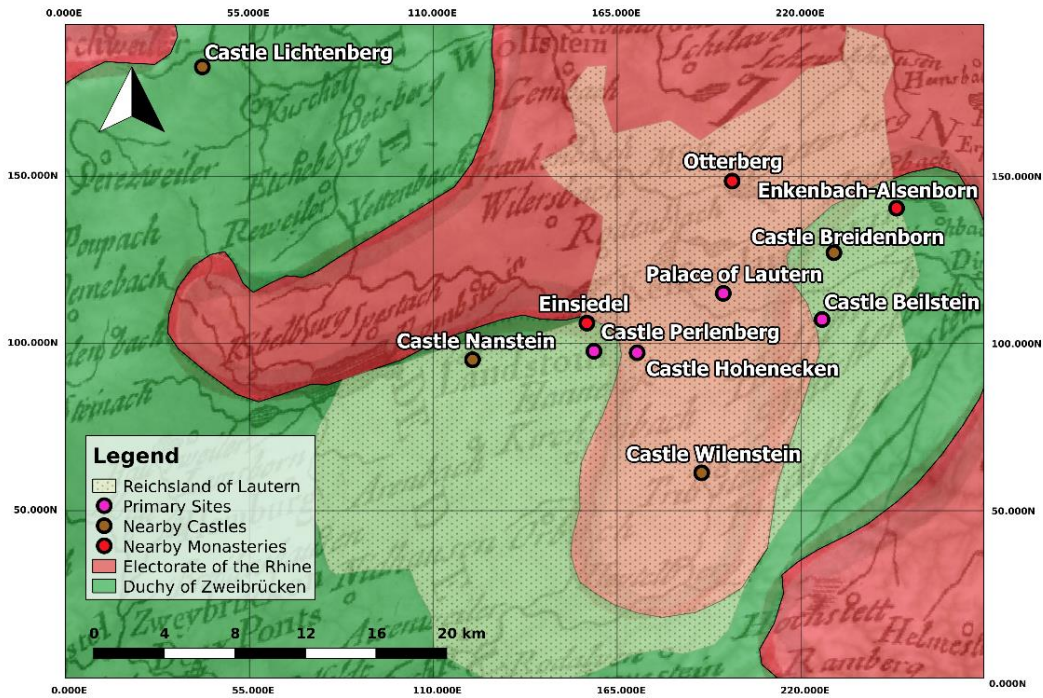


Figure 80: 18<sup>th</sup> century Territories in the Reichsland of Lautern.<sup>1299</sup>

<sup>1299</sup> Robert de Vaugondy and Robert de Vaugondy, “30. Carte Des Cercles Du Haut et Du Bas Rhin.”

### 5.1.2 Historical Lakes and Waterways

The lakes and ponds that populate the area of the Palatinate forest are referred to in the local dialect as *Woogen* (or *Woog*, sing.).<sup>1300</sup> They come in various shapes and sizes, though 46 percent are less than 0.1 hectare,<sup>1301</sup> and only 12 percent are deeper than two meters.<sup>1302</sup> The geology of the forest where all of the case study sites are located is predominantly composed of the middle Buntsandstein rock layer, resulting in a mostly sandy soil with some pockets of more clay-like soils. Rain water is easily filtered into the ground due to the sandy soil, and a multitude of natural water wells exist as a result of the interspersed rock outcrops. The forest is therefore very wet, containing more than one third of all of the lakes in the entire region of the German Palatinate.<sup>1303</sup> The natural filtration system essentially prevents large lakes from forming, without human involvement, which is why prior to the Middle Ages, only small ponds or larger marshes existed in the forested region of study. Due to the expanse of human settlements, and particularly the development of the monasteries, man-made lakes were formed for fish-farming and the construction of mills. During the 12<sup>th</sup> century, the lakes around Otterberg and the Palace of Lautern were enlarged.<sup>1304</sup> The Schlosswoog near the palace was even described in the *Gesta Frederici* as having contained a variety of fish and fowl—discussed in Section 3.3.1.3. The archaeological investigations of the 1930s also discovered that the town of Lautern had been reliant upon fish-farming until the 13<sup>th</sup> century,<sup>1305</sup> stressing the importance of lakes and freshwater access.

However, the majority of the lakes that originated in the Middle Ages were no longer maintained by the late 18<sup>th</sup> century. For example, only one fishpond of the eight that had been expanded in the medieval period located to the south of Castle Hohenecken is still active. The reason that the lakes were abandoned or were drained was largely due to the many wars which ravaged the region of the German Palatinate during the 17<sup>th</sup> century.<sup>1306</sup> The *Gelterswoog*, located to the southwest of Castle Hohenecken and south of Castle Perlenberg, still exists though its use has shifted

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<sup>1300</sup> Gero Koehler, ed., *Konzept zur ökologischen Bewertung und Entwicklung der Wooge im Biosphärenreservat Pfälzerwald*, Berichte des Fachgebietes Wasserbau und Wasserwirtschaft der Technischen Universität Kaiserslautern 20 (Aachen: Shaker, 2011). Vorwort.

<sup>1301</sup> *Ibid.* P. 41.

<sup>1302</sup> *Ibid.* P. 43.

<sup>1303</sup> *Ibid.* P. 11.

<sup>1304</sup> *Ibid.* P. 13.

<sup>1305</sup> Bremer, *Die Ausgrabungen an der Barbarossapfalz zu Kaiserslautern*. P. 78.

<sup>1306</sup> Koehler, *Konzept zur ökologischen Bewertung und Entwicklung der Wooge im Biosphärenreservat Pfälzerwald*. Pp. 13-14.

from fish-farming to recreation. Curiously, some marshy areas within the valleys still swell with water during the spring, including the *Kolbenwoog*, located between Castle Perlenberg and the Gelterswoog, as well as a slew of smaller lakes near the village of Bann, though they normally remain relatively dry.<sup>1307</sup>

The historical lakes were also depicted on a variety of the maps that I geo-referenced, providing an opportunity to view the variation in their sizes over approximately 100 years. However, due to local distortions in some of the maps, many of the lakes appeared much smaller after geo-referencing than beforehand, stressing the importance of not comparing maps that have not yet been referenced to modern cartography or to a common base layer. For the purpose of this project, I focused upon only a handful of lakes located along the northern side of the *via regia* and between Kaiserslautern and Hohenecken, including the Scheidenberger Woog, Einsiedler Woog, and Schlosswoog. These are particularly interesting for the sake of the project because they were all located close to the four primary sites, and in the area between Otterberg and Kaiserslautern, which featured medieval mills that were often traded in the proceedings of the charters.<sup>1308</sup> Although the Scheidenberger Woog and Schlosswoog were regularly depicted in the 30 maps that I had selected to be geo-referenced, only three maps<sup>1309</sup> from the mid to late 18<sup>th</sup> century depicted all three lakes. This was due to the higher detail of the later maps, and closer attention paid to the natural obstacles and vegetation than in older maps, which had focused more upon general roadways, locations of cities, and landmarks. Mapping lakes has proved to be a valuable tool in literary studies as well in order to understand the literature of place and space.<sup>1310</sup> This project seeks a similar aim, namely the relationship of place and space.

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<sup>1307</sup> These are personal observations that I have made over the years.

<sup>1308</sup> Akademie der Wissenschaften und der Literatur, Mainz, “RI VII H. 2 n. 32, Ludwig, 1317 Juli 23, Worms,” Regesta Imperii Online, accessed July 28, 2020, [http://www.regesta-imperii.de/id/1317-07-23\\_1\\_0\\_7\\_2\\_0\\_32\\_32](http://www.regesta-imperii.de/id/1317-07-23_1_0_7_2_0_32_32). Also catalogued as Charter ID 10542 in the graph database. Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. Also catalogued as Charter ID 10306 in the graph database. This charter concerned the enfeoffment of the mill of *Lautern* to *Jakob von Wachenheim* by King Louis IV on 23 Juli 1317. P. 218. This charter concerned the rights to the mill called *Lampertsmühle* given to the Abbey of Otterberg by *Heinrich III von Lautern-Hoheneck* in 1265.

<sup>1309</sup> Johann Baptist Homann, *Palatinatus Ad Rhenum.*, Atlas Map, 1: 354,000, David Rumsey Historical Map Collection (Nürnberg: Homannianus Heredibus, 1788), [http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~281721~90054556:Palatinatus-ad-Rhenum-?sort=Pub\\_List\\_No\\_InitialSort%2CPub\\_Date%2CPub\\_List\\_No%2CSeries\\_No#](http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~281721~90054556:Palatinatus-ad-Rhenum-?sort=Pub_List_No_InitialSort%2CPub_Date%2CPub_List_No%2CSeries_No#); Robert de Vaugondy and Robert de Vaugondy, “30. Carte Des Cercles Du Haut et Du Bas Rhin.”; Mortier, Covens, and de L’Isle, “Le Cours Du Rhin Depuis Strasbourg, Jusqu’a Worms et Le Pays Adjacens.”

<sup>1310</sup> David Cooper et al., “Introduction,” Mapping the Lakes: A Literary GIS, n.d., <https://www.lancaster.ac.uk/mappingthelakes/>; Patricia Murrieta-Flores, Christopher Donaldson, and Ian Gregory, “GIS and Literary History: Advancing Digital Humanities Research through the Spatial Analysis of Historical Travel Writing and Topographical Literature,” *Digital Humanities Quarterly*, 2017, 19, <http://hdl.handle.net/10034/620256>.

After selecting the three maps that included the three lakes that I had previously geo-referenced, I then marked polygons around the lakes in the same manner as I had done with the historical territories. This process established a basis for which I could find the area of overlap between the three versions of each of the three lakes, after which I clipped the differences resulting in only the area of overlap. It is worth mentioning that the three maps were published in three different cities—namely Venice, Amsterdam, and Nuremberg—by six different cartographers indicating that the three maps were possibly made independently of one another. Despite the fact that the overlapped areas represent the known size of the three lakes over the course of the 18<sup>th</sup> century, they still provide reliable positions for the center points of lakes that would have changed less over time than the perimeters of their banks. Additionally, the same lakes radically reduced in size beginning in the 17<sup>th</sup> century as previously stated, indicating that they would have presumably been much larger during the Middle Ages, due to fish-farming and monastic milling. The results yielded fairly small areas where the lakes were most reliably to have been located prior to 1788—the year of the most recent map that I geo-referenced—though the location of the positions was not entirely consistent. The Schlosswoog was depicted in the geo-referenced maps much further to the south than I had expected, considering that had at one point bordered the outer wall of the palace. The southern position of the lake is due to the expansion of the city which pressed it further to the south over time, particularly in the 18<sup>th</sup> and 19<sup>th</sup> centuries. The Einsiedler Woog is presumably more accurate with where it would have been because the area of the Einsiedel did not expand until after the Napoleonic Wars as mentioned in Section 3.4.1.3.

The position of the Scheidenberger Woog north of Castle Nanstein fluctuated the most of all the lakes that I geo-referenced. The clipped overlap revealed only a small portion when compared to the size of the lake in the individual maps. Despite the discrepancy, it still presents an accurate depiction of the lake, considering that it regularly swelled and retreated throughout the seasons of the year as described in Section 3.4.1.3 regarding the Einsiedel. The topography of the area in which the palace and the Einsiedel are both located is a physical depression visible in Figures 81 and 82 by the darker hue of green. The entire area was subject to flooding, as it was a natural wetland, making it a perfect candidate for developing lakes and constructing mills due to the abundance of water.

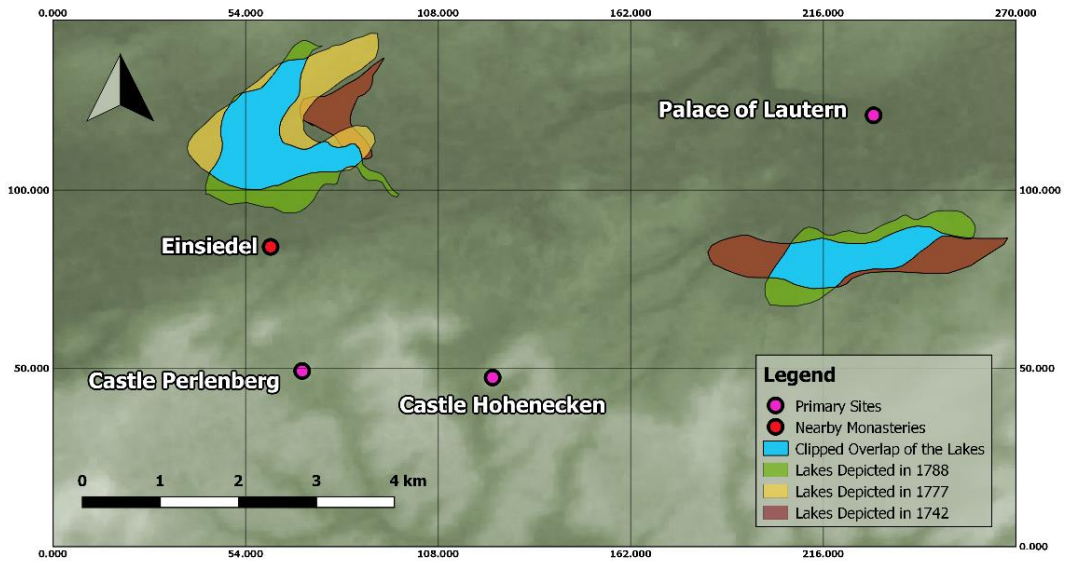


Figure 81: Overlap of the Einsiedler Woog (left) and Schlosswoog (right) near the Primary Sites.

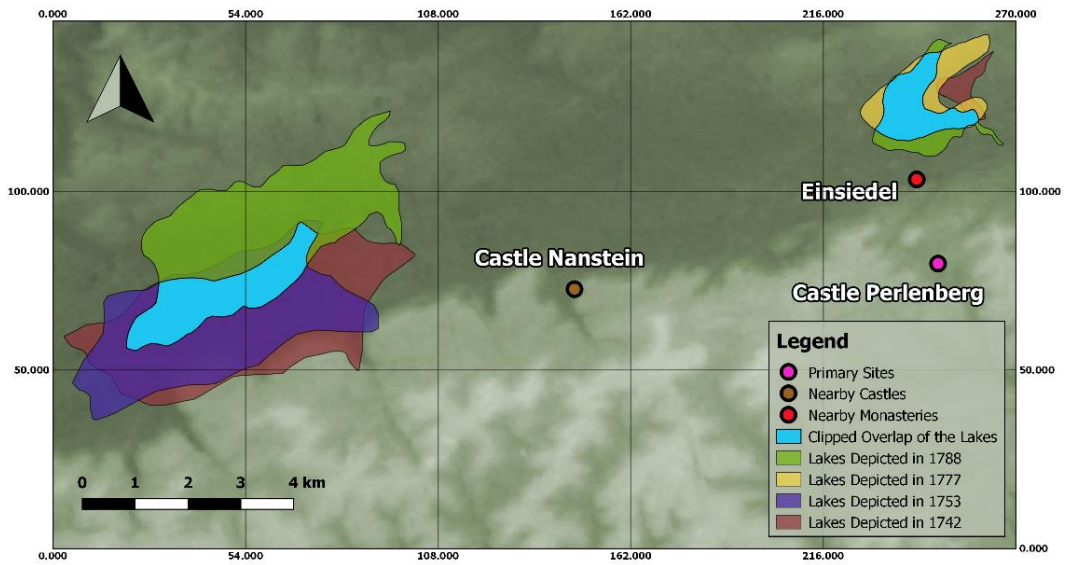


Figure 82: Overlap of the Scheidenberger Woog (left) and Einsiedler Woog (right) near the Primary Sites.

The significance of these findings reveals how the surrounding environment impacted the construction of the castles. Access to water sources also served both aspects of function as some lakes could be mainly representative whereas others were mainly utilitarian. The position of a lake could reveal architectural decisions with regard to fenestrations to look upon the glistening surface of the water. In fact, this was a major theme in the 12<sup>th</sup> and 13<sup>th</sup> centuries, particularly noted in the Kingdom of England.<sup>1311</sup> It is important to bear in mind that the castles—with the exception of Castle Perlenberg—had continuous building phases throughout the following centuries until the 17<sup>th</sup> century. As the castles were developed, the changing of their owners, or collective owners, modified or added certain architectural features as well as environmental features. Unfortunately, much of the environment has been severely altered since the collapse of the German Palatinate in the 17<sup>th</sup> century, though the lakes still provide important information.

Rarely anything was built at a castle to serve only one purpose, though most features were economically focused.<sup>1312</sup> The position of Castle Hohenecken between the Einsiedel Woog and the Schlosswoog—and the Gelterswoog to the south—was a rather ideal situation as the castle readily had access to large bodies of water and scenic environments to be discussed in the following section. Though before moving on, it is necessary to discuss that these three lakes were not the only ones at that time. At least two other lakes have been scientifically dated to the 13<sup>th</sup> century including the Laubeerwoog and Wilensteiner Mühlen-woog,<sup>1313</sup> both near Castle Wilenstein, and thus near the Johanneskreuz border stone mentioned in the previous section. Such lakes near forested areas were also necessary for transport as mentioned in Section 2.4.1.1, as wood could be stored in water and floated to designated retrieval areas. These lakes were therefore necessary for construction purposes as well as fishing and recreation. The mills responsible for processing the wood were elite institutions of their own, as sawmills were introduced to the HRE at the turn of the 14<sup>th</sup> century. In England, for example, a single mill was equivalent to the construction of 200 pales at Stafford Castle.<sup>1314</sup> Medieval builders and lords were keenly aware of the environmental impact upon the reception of their building efforts and included these high status elements into the design of the surrounding landscapes.

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<sup>1311</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. Chapter 5: Lordly Landscapes.

<sup>1312</sup> *Ibid.* P.102.

<sup>1313</sup> Koehler, *Konzept zur ökologischen Bewertung und Entwicklung der Wooge im Biosphärenreservat Pfälzerwald*. P. 16.

<sup>1314</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. P. 104.

### 5.1.3 Historical Roadways

Provided the emphasis upon the Roman *via regia* mentioned so often throughout this work, historical roads are essential to understand the placement of the castles and their respective designs. Nevertheless, the focus of this project was upon the castles and their immediate surroundings, using geo-spatial analyses as a buttress towards interpreting the full picture of their development. Therefore, the *via regia* and its full course will not be discussed in this work, nor will the regional transportation network of the German Palatinate be explored. Instead, this section explores the networks depicted in the historical maps within the area between the primary sites, as well as calculated routes within the same vicinities. The purpose of restricting these analyses is to maintain a focused scope throughout the work and limit the number of tangential discussions that may be interesting, but not necessary towards understanding how the architecture of the castles worked within their direct environmental context.

Identifying the locations of historical roadways was the simplest of the analyses undertaken for the geo-referenced maps, because they normally consisted of straight lines and rarely overlapped with the modern roadways. The only exception was the *via regia*, which corresponded exactly with the modern road, though this is presumably due to the fact that many of the control points for geo-referencing the maps were located along the *via regia*. This means that the depiction in the maps was essentially forced to fit on the modern map, whereas the other roads were not. It is also necessary to discuss the purpose of the publication of the historical maps that I geo-referenced as nearly all of them were intended for war campaigns. They indicate the locations of fortified sites surrounding the major cities, portray mountainous/hilly regions as groups of bumps, and roads as relatively straight lines. The waterways, such as the course of the Rhine River were mapped in extreme detail which is evident by the fact that the maps trace the course of the Rhine incredibly well, despite the relatively few control points along the river. This is logical considering that the Rhine served as the oft sought after border between the French Kingdom and the German territories by the French rulers, as many of the cartographers were either French or hired by the French. Thus, roadways leading from France towards the Rhine were for the purpose of indicating the quickest travel along the most favorable path—possibly for a large army—rather than an in-depth tracing of the medieval paths that snake through the hilly forest of the German Palatinate.

For this reason, I only marked the pathway of the roads on a map from 1742<sup>1315</sup> which provided the most detailed depiction of the roads around the four case study sites. However, the map also features the large distortion between Kaiserslautern and Neustadt an der Weinstraße, for which the roads heading towards the east essentially end in oblivion. For the purpose of this project, I was mainly concerned with the immediate roads between the sites because they provide insight as to how easily one could approach one site from the other and what one would have seen when travelling along these paths. I was not concerned with mapping the historical road network of the German Palatinate, as it is out of scope for this project—though it would be an exciting future endeavor. The roads from the 1742 map (Figure 83) only connect the Einsiedel and Kaiserslautern, whereas all of the other sites, and most importantly castles Beilstein, Hohenecken, and Perlenberg, are unconnected. The reason is twofold: 1. the Einsiedel and Kaiserslautern are both on the *via regia*, as previously described, and therefore important way stations on the road towards Mainz; and 2. both sites were still active during the mid-18<sup>th</sup> century whereas Castle Beilstein had been destroyed in the mid-15<sup>th</sup> century, Castle Hohenecken in the late 17<sup>th</sup> century, and Castle Perlenberg's fate was never explicitly recorded.

Although interesting, simply marking the historical roadways from the maps proved less fruitful than I had hoped for, especially considering that only one map depicted roads in which three of the four primary sites were also shown. These analyses begin to provide more information when compared to computational geo-spatial analyses described in the next section. These following analyses use the results of the geo-referenced maps as a foundation for mid-range conclusions regarding the relationship of the castles to one another and within their environment.

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<sup>1315</sup> Mortier, Covens, and de L'Isle, "Le Cours Du Rhin Depuis Strasbourg, Jusqu'a Worms et Le Pays Adjacens."



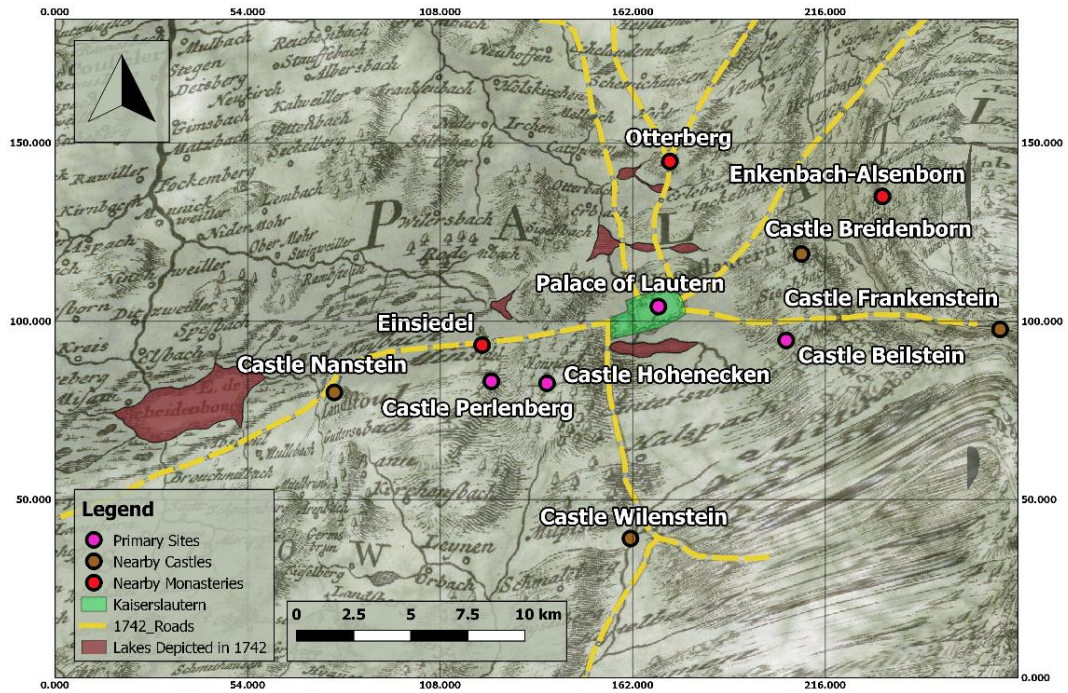


Figure 83: Highlighted roads from 1742 map entitled *Le Cours du Rhin depuis Strasbourg, jusqu'a Worms et le pays adjacens*. Note the distortion in the bottom right-hand corner.

## 5.2 Computational Geo-Spatial Analyses

The previous geo-spatial analyses presented in this work were mainly driven by manually placed GCPs or outlines of territories and lakes. The Thine Plate Spline interpolation involved in the geo-referencing of the maps was indeed computational, but the post-processing of the resulting maps were strongly affected by a bias of which features I chose to select. In contrast to these processes, this section presents the techniques employed that do not feature any post-processing, save for changing of the colors associated with the results. The two computational analyses that I employed for this project in QGIS were the generation of *Least Cost Paths* (LCPs) and Viewsheds. LCPs are routes that minimize the total cost of moving between two locations on an accumulated cost-surface,<sup>1316</sup> and are useful in predicting ‘lost’ routes.<sup>1317</sup> A Viewshed consists of a set of locations that are inter-visible with a given viewpoint,<sup>1318</sup> and is useful in understanding the placement of monuments in the landscape.<sup>1319</sup> Both analyses provide vital information regarding the placement of sites, what can be seen from a site, and from which points a site could itself be seen, thus having a tremendous impact on the overall interpretation of the positions of the primary sites in the former Reichsland of Lautern. The preliminary analyses were concluded in 2018 and published in the proceedings of the GI\_Forum held in Salzburg,<sup>1320</sup> yet they had not been discussed with regard to the historical context presented in this work. Therefore, these analyses will be discussed through the lens of the entire project rather than as an independent component.

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<sup>1316</sup> Conolly and Lake, *Geographical Information Systems in Archaeology*. P. 294.

<sup>1317</sup> Ibid. P. 252.

<sup>1318</sup> Ibid. P. 300.

<sup>1319</sup> Ibid. P. 225.

<sup>1320</sup> Pattee et al., “Analysing the Medieval Landscape of the German Palatinate.”

### 5.2.1 The Least Cost Paths (LCPs) between the sites

The generation of LCPs for the evaluation of the connectivity between archaeological sites and environmental phenomena has become a relatively standard procedure in recent years.<sup>1321</sup> They have also been conducted in conjunction with predictive modeling to create cumulative cost paths, which can be used to generate maps of potential movement.<sup>1322</sup> LCPs have also gained ground as useful procedures in literary studies as was the case for mapping lakes.<sup>1323</sup> They are useful as they provide an estimation of movement paths between locations, essential for determining the likelihood of interaction between certain groups of people.<sup>1324</sup> Regarding the four primary sites, I was predominantly looking for interactions to and from the royal palace, in addition to paths that transect the forest. It is important to note that the forest was not always prevalent in the same places during the Middle Ages as it is now. This is not necessarily related to the assumption that the inhabitants of each castle had laid bare the hill atop which the castle was set. Rather, that logging was a prized industry at the turn of the 13<sup>th</sup> century, particularly when paired with access to a wood-mill, evident by the many charters concerning forest and logging rights. Due to the dynamism of the environment of the German Palatinate, pathways coursing through modern-day forests may have been simply paths along sheep meadows or agricultural fields during the medieval period. In turn, this provides a stimulating point of departure for evaluating where certain enigmatic environmental features from the proceedings may have been located at one point. However, a discussion of the income and extent of each castle's fiefdom is beyond the scope of this project, as the focus is upon how the castles represented the interest of their builders, and how their physical location augmented that goal.

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<sup>1321</sup> Irmela Herzog, "Reconstructing Pre-Industrial Long Distance Roads in a Hilly Region in Germany, Based on Historical and Archaeological Data," *Studies in Digital Heritage* 1, no. 2 (December 14, 2017): 642, <https://doi.org/10.14434/sdh.v1i2.23283>. P. 9.

<sup>1322</sup> JWHP Verhagen, "On the Road to Nowhere? Least Cost Paths, Accessibility and the Predictive Modelling Perspective," in *Fusion of Cultures. Proceedings of the 38th Annual Conference on Computer Applications and Quantitative Methods in Archaeology, Granada, Spain, April 2010 (BAR International Series 2494)*, ed. F Contreras, M Farjas, and F J Melero (Oxford: Archaeopress, 2013), 383–89.

<sup>1323</sup> Murrieta-Flores, Donaldson, and Gregory, "GIS and Literary History: Advancing Digital Humanities Research through the Spatial Analysis of Historical Travel Writing and Topographical Literature."

<sup>1324</sup> Richards-Rissetto and Landau, "Movement as a Means of Social (Re)Production." P. 365.

Table 10: Slope Cost Values for the Least Cost Paths.

Slope	Weight
0 — 2	0
3 — 5	1
6 — 9	3
10 — 13	4
14 — 18	7
19 — 25	9
26 — 31.281	10

The underlying data for generating the LCPs was the 25-meter resolution ASTER GDEM layer as opposed to the OSM layer used for geo-referencing the historical maps. The GDEM layer was downloaded free of charge from the *United States Geologic Survey* (USGS) website and served as the main layer for both the LCPs and the Viewsheds. After loading the layer, I attempted to re-project its *Coordinate Reference System* (CRS) to EPSG: 4326 in order to match the CRS of the geo-referenced maps. However, my attempts to re-project the layer routinely failed, requiring me to make a new QGIS project for which I made its unique CRS of EPSG: 25832—the default for the computational geo-spatial analyses in this section. Upon switching coordinate systems, it was necessary to re-project the maps from the previous CRS, as all layers must share a common projection.<sup>1325</sup> The next step was to process the slope from the GDEM base layer from the QGIS processing toolbox and then to reclassify the new slope layer and partition the elevation into 10 groups for which each was assigned a cost value as shown in Table 10. Herzog 2017 was very helpful for this part of the analysis as it also concerned LCPs atop historical maps of Germany.<sup>1326</sup> I then used the *r.walk* processing tool to generate the cost surface, first using the position of Castle Hohenecken as a reference. I repeated that step for the palace in Lautern as well as for Castles Perlenberg and Beilstein. After each cost value was computed, I conducted the actual LCPs using the *GrassGIS r.drain* processing tool available in QGIS. The results of these analyses are found in Figure 84. The LCPs essentially follow either the modern roads or commonly traversed forest paths to and from the four primary sites. This indicates that the modern roads and paths are considered the most cost efficient according to the computation, though they also indicate that the four sites are

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<sup>1325</sup> Conolly and Lake, *Geographical Information Systems in Archaeology*. P. 22.

<sup>1326</sup> Herzog, “Reconstructing Pre-Industrial Long Distance Roads in a Hilly Region in Germany, Based on Historical and Archaeological Data.”

well connected to one another. The existence of the historical lakes could have complicated the reliability of the LCPs to model potential historical paths between the four sites. However, the results of the lake analyses from the geo-referenced maps indicate that they were not in the trajectory of the paths. Instead, the paths follow along the bank of the Schlosswoog between Hohenecken and Lautern.

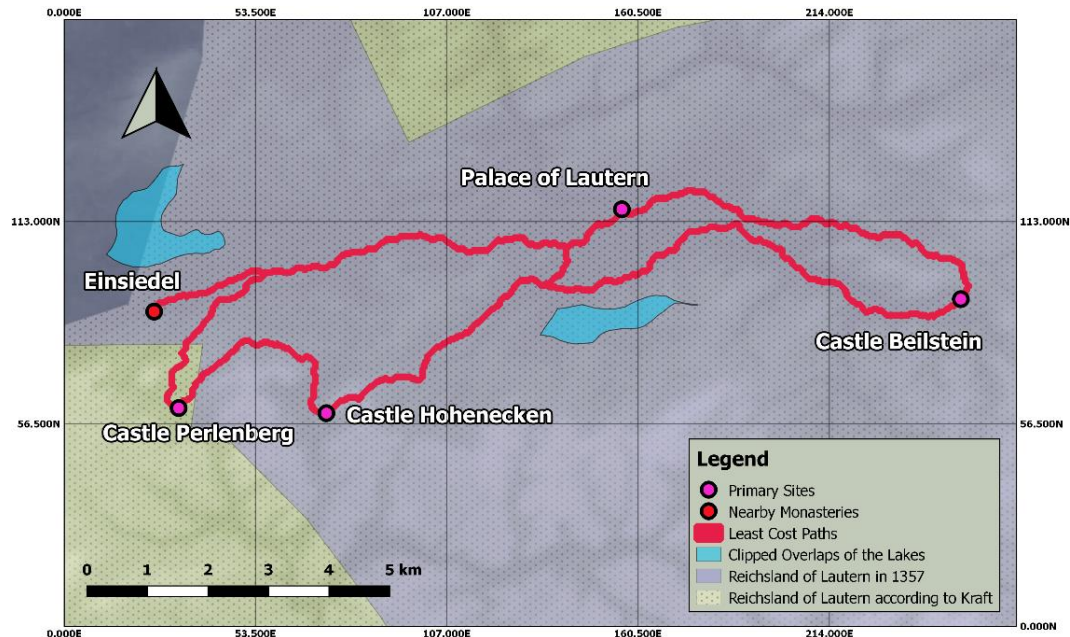


Figure 84: Computed Least Cost Paths between the four primary sites atop the two models of the Reichsland of Lautern and the clipped overlap of lakes from the historical maps.

The LCPs that were calculated partially overlap with modern roadways, specifically the road connecting the Einsiedel to the royal palace. The LCP from Hohenecken to the royal palace follows along the modern road at about the half-way point, in the direction of Kaiserslautern, whereas the first half is a forest path leading directly to the front gate of Castle Hohenecken (Figure 85). The LCP from Hohenecken to Perlenberg follows precisely along a footpath that partially corresponds with a modern street for roughly 200 meters. The path wraps around the base of the *Kohlkopf*—a large hill north of Hohenecken—that forms the beginning of a ridgeline separating the village of Hohenecken from the basin in which Castle Perlenberg is located. The path then wraps around the *Kohlkopf*, leading to an intersection located in between the Grosse Berg and Kleiner Berg atop which Castle Perlenberg is located. Curiously, this is not the path described by Christian Mehlis in Section 3.3.4.2. This simply indicates that the LCP follows the most energetically efficient path but

not necessarily the one that had been taken. This is an extremely important aspect because Castle Perlenberg was an exclusive site located in a reserve of the king. Thus, the easiest path would likely not have been the presumed path.

The LCP from the royal palace towards Castle Beilstein follows along a modern road as well, though not directly on top of it, before veering off into the forest. This LCP is likely the original one as it leads toward the monastery in Lambrecht that once served as a key institution for the Salian dynasty in the 11<sup>th</sup> and 12<sup>th</sup> centuries. A path leading between the Lambrecht—which also featured a court—directly to the palace in Lautern fits the intention of the Salians to incorporate the royal estate into their own familial estate. The fact that Castle Beilstein is situated along this path within the region of the Reichsland is evidence of the Salian attempt to slowly annex portions of the royal estate. Furthermore, it is a strong indication that von Beilstein family had served in the royal estate considering that the castle is within the estate and closer to Lautern than to Lambrecht. The change from the Salian to Hohenstaufen dynasty meant a change in politics, specifically a shift in loyalists and how these were consequently rewarded. As discussed at length before, the Hohenstaufen dynasty found its key loyalists in the von Lautern-Hoheneck family, whose castle is located along the *via regia* to the southwest of the palace, whereas Castle Beilstein is to the southeast. Provided that the development of the lakes and founding of the Teutonic Knight Commandry occurred around Castle Hohenecken and not Castle Beilstein, is evidence that the key roads under the Hohenstaufen monarchs would be to the west of the palace and therefore not in the vicinity of Lambrecht. Furthermore, it is a clear indication that the logistical shift that occurred during the second half of the 12<sup>th</sup> century had an extended impact well into the 18<sup>th</sup> century.

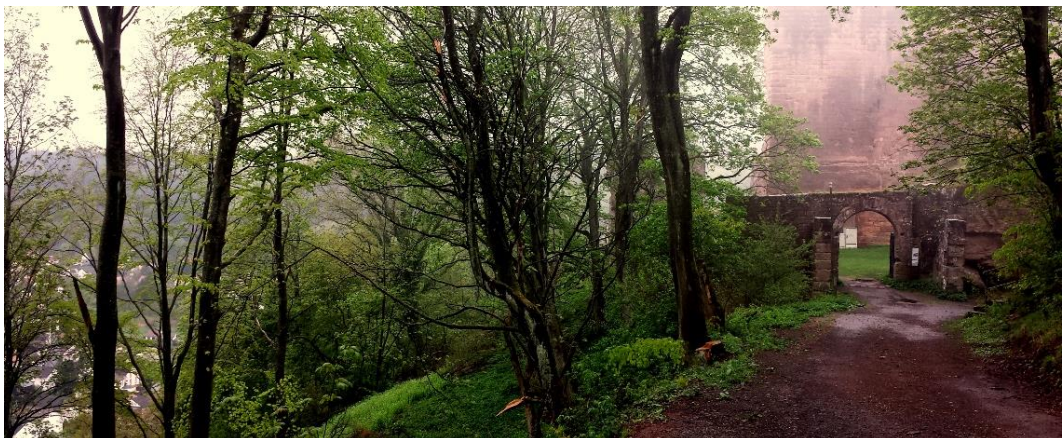


Figure 85: The path leading to the front gate of Castle Hohenecken from Kaiserslautern. Note the difference in elevation between the castle and the village below.

### 5.2.2 The Viewshed Analyses of the Primary Sites

The Viewsheds provide another aspect of analysis to assist in determining the function of the sites within their environmental context. As described in Chapter 2 with the analogy of a house, the two components of function are strongly reliant upon visual perception. Although the most obvious conclusion drawn from a Viewshed of a castle corresponds to what the inhabitants of a castle could see from the safety of their walls, the more relevant conclusions regarding the signaling of status corresponds to who could see the castles, and from where. In fact, both are essential in order to conclude function, as a castle could be built in order to see and to be seen, albeit from varying locations. Of key importance in these determinations are the historical features including lakes and territorial positions.

The Viewsheds generated for this project provided the greatest amount of information pertaining to the application of *Costly Signaling Theory* (CST) described in Section 2.4.2, as they clearly depict the ability of the sites to be seen or hidden within the landscape. They were conducted using the *Advanced Viewshed Analysis* plugin in QGIS with a search radius of 12 kilometers, an observer height of 32 meters for Castle Hohenecken and 10 for the other three primary sites, and an output of *Cumulative Viewsheds* for each site. These numbers correspond to the estimated height of the main tower at Castle Hohenecken and hypothetical heights of the towers located at the other sites. A Cumulative Viewshed is the map sum of two or more binary single Viewshed maps, in which the values consist of integers ranging from zero to a theoretical maximum of the number of viewpoints. Therefore, each cell of the raster GDEM recorded the number of viewpoints from which it is visible.<sup>1327</sup> The results were very revealing because the sites were hidden from one another based upon the calculated Viewsheds indicating that the purpose of the tower—especially at Castle Hohenecken—had not been intended to view into the areas around the other primary sites, as I had originally suspected. In fact, the same applied to Castles Nanstein, Wilenstein, and the Einsiedel for which I also generated Viewsheds. When compared with the LCPs a more interesting picture is unveiled, indicating which sites could view the theoretical historical paths and from which paths the sites could be seen by travelers.

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<sup>1327</sup> Conolly and Lake, *Geographical Information Systems in Archaeology*. Pp. 227-228.

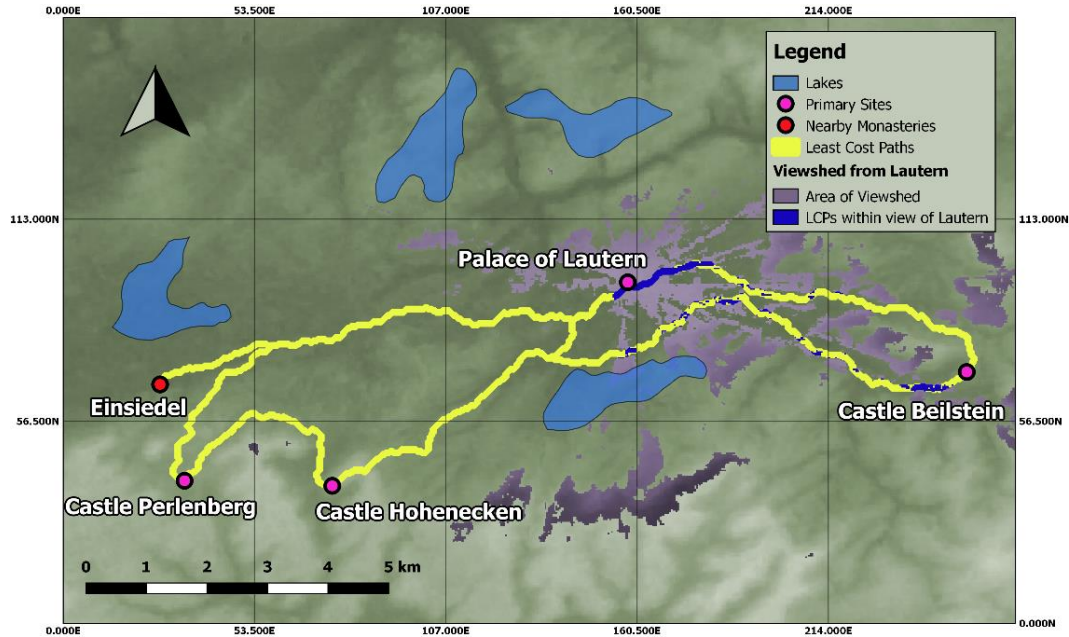


Figure 86: The results of the Viewshed from the Palace of Lautern.

The results from the Viewshed of the palace revealed that it was only visible from nearby hill ridges and from within the valley in which it is situated (Figure 86). Furthermore, only the eastern-bound roads are visible within the Viewshed indicating that the site was essentially invisible from the west. This conflicts with the idea that the palace had been built as a monument to remain visible to neighbors as the Hittite monuments had been constructed, as discussed in Section 2.4.2.1 regarding CST. The eastern regions—which were friendlier to the Hohenstaufen dynasty—consisted of the bishopric of Worms and areas belonging to the Elector Palatine. The regions further to the west were more adversarial, consisting of the County of Saarbrücken, and further along the way, the border of the Kingdom of France. Although the Counts of Saarbrücken had become incorporated into the designs of the Hohenstaufen dynasty, they began as enemies in the 12<sup>th</sup> century. However, they are not the main concern as the palace was constructed well before the conflict between the houses of Hohenstaufen and Saarbrücken as the palace had been begun many centuries prior. The hidden nature of the palace therefore indicates that the emperors and kings from the 9<sup>th</sup> century forth, who developed the Palace of Lautern, designed it as a remote location far from the major centers of politics, and unseen from the west. The continuation of this concept is also supported by Rahewin’s account of the palace in which it was portrayed as the most spectacular of all the empire to which even the palaces of Ingelheim and Nijmegen were to yield. The interpretation of the geo-spatial



analyses reveals that the palace, in addition to being an elite work of architecture, was also very exclusive due to its remote and hidden location. Thus, its exclusivity manifested itself in both its design and location. The fact that the palace could be seen from the east along a longer stretch of land, than from the west also supports the determination that the foundations of the largest sections were begun under the Salian dynasty, whose familial estate bordered the royal estate in the east. The fact that it apparently did not change under the Hohenstaufen rule can be interpreted in a number of ways. On the one hand, it could mean that the east continued to be considered friendly. On the other hand, the regional opponents of the von Leiningen family were also in the east. This means that those in the palace could potentially have seen the von Leiningen loyalists arriving from further away, reinforcing the military aspect. However, the imposing curtain wall faces the southwest, not the northeast where the von Leiningen cluster was located.

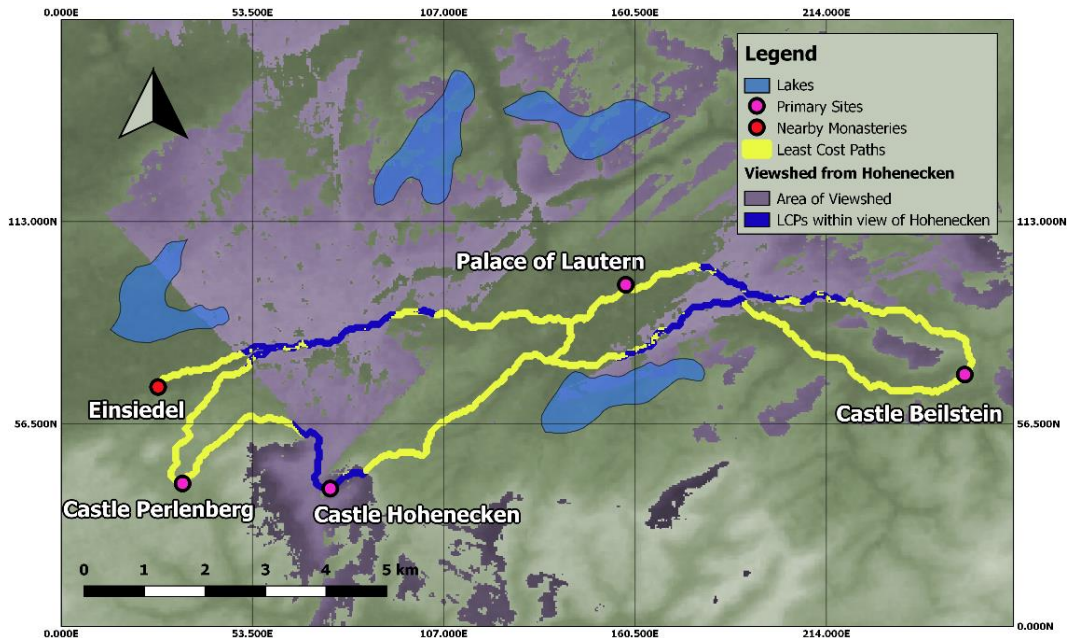


Figure 87: The results of the Viewshed from Castle Hohenecken.

The Viewshed from Castle Hohenecken reveals the largest area of visibility of the four sites. This is due to the 30 meter main tower at the site, but also to its position on the spur end of a large hill (Figure 87). The calculated 32 meters for the Viewshed is based upon the estimated height prior to the destruction in the late 17<sup>th</sup> century. When compared with the LCPs, the tower of Castle Hohenecken was visible from the via regia and the path from the Kohlkopf hill to the north.

Interestingly, the tower was also visible from both LCPs leading to Castle Beilstein, indicating that Castle Hohenecken could both view into the enfeoffment of Castle Beilstein—though not the castle itself—and that travelers along the two roads could see Castle Hohenecken for a length of approximately two kilometers. The visibility corresponds to the middle third of the LCP between the Palace of Lautern and Castle Beilstein. It is evident from these analyses that Castle Hohenecken was uniquely placed in order to see and be seen from areas surrounding the Palace of Lautern. Provided that it possessed the highest tower in the general vicinity of the palace, it most likely represented the first monument within the intimacy of the palace to be seen when traveling from the west—a sort of beacon to the grandeur that lay ahead. The fact that the main tower faces the grand curtain wall of the palace, and that both were constructed with embossed ashlar of precisely the same dimensions, is particularly peculiar. A possible interpretation would be that the gaze of Castle Hohenecken was fixed upon the palace as a knight orientated himself toward his lord. This is supported by the position of the front gate that also faces the direction of the palace.

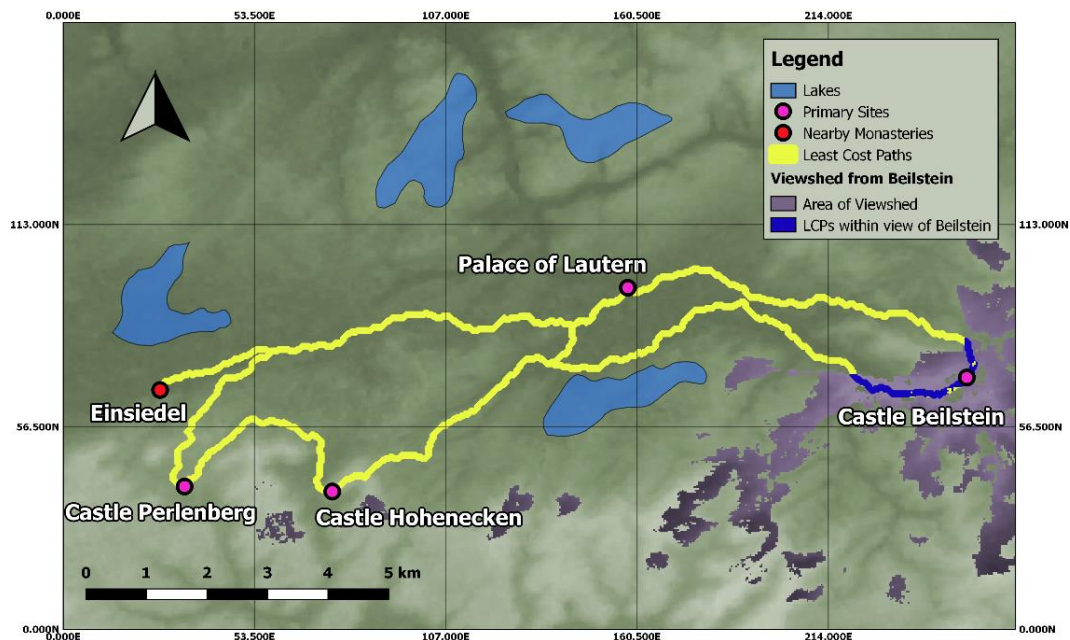


Figure 88: The results of the Viewshed from Castle Beilstein.

The Viewshed from Castle Beilstein is far less expansive than that of Castle Hohenecken, in which only the immediate vicinity is visible to and from the castle (Figure 88). The only exceptions appear to be small pockets near Castle Hohenecken, including the top of the hill to the south of Castle

Hohenecken. As the size of the observation point from which the Viewshed was conducted was set at 10 meters, a larger tower would indicate a larger field of view. However, I chose not to set the tower any higher than 10 meters due to the uncertainty of the historical height of the tower at Castle Beilstein. When combined with the roads depicted in the 1742 geo-referenced map of Figure 83, the road leading from the palace to the village of *Hochspeyer* could indeed be seen from Castle Beilstein—thus supporting the interpretation of the castle as an attempt by the Salians to slowly incorporate the royal estate into their own estate. It appears that travelers from the east would have seen Castle Beilstein on their way to the palace, though perhaps the effect would not have been as imposing as the tower of Hohenecken seen from the west. Furthermore, the placement of Castle Beilstein was in a much more secure area than that of Castle Hohenecken, which in turn indicates a lower risk factor regarding negative interactions with adversaries. The demonstration of the main tower at Castle Hohenecken as opposed to the one at Castle Beilstein corresponds to the ambitions of the respective ministeriales families, as it increased the ability for adversaries and the general public to see the castle and indicated a greater control and access to resources. In essence, the risk was greater for the builders of Castle Hohenecken than for those of Castle Beilstein, which could result in a bigger payoff in the form of notoriety.

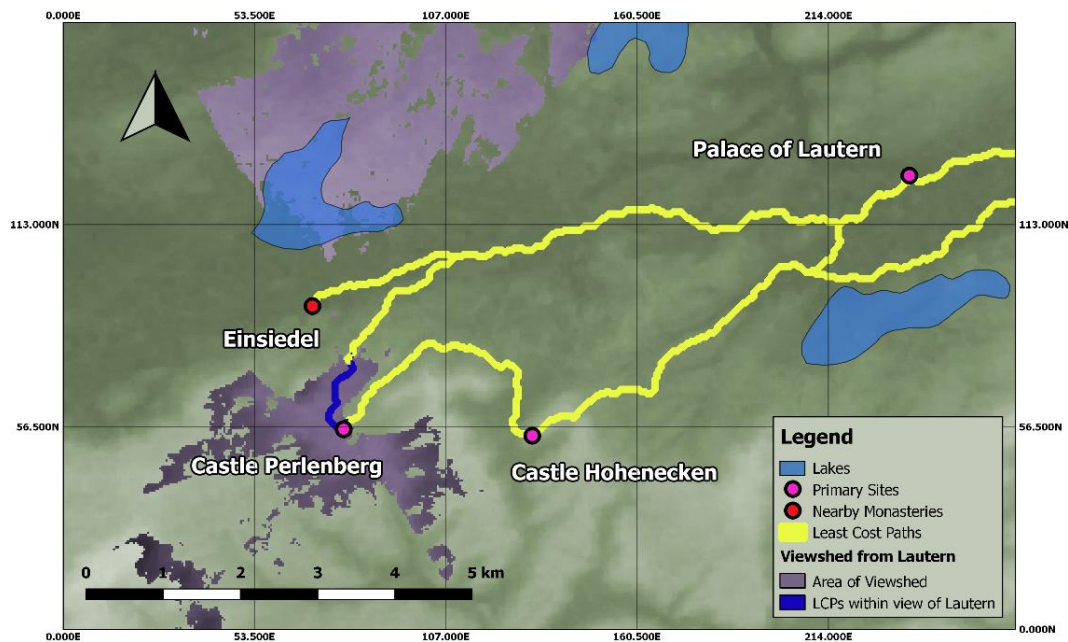


Figure 89: The results of the Viewshed from Castle Perlenberg.

The Viewshed from Castle Perlenberg provided the greatest amount of information regarding the interpretation of what the site had been originally intended for. Its position within a geographical basin, surrounded on all sides by large hills, and whose main path was apparently not the most energetically efficient was indeed an interesting choice by the builders. The results indicate that one could not look outside the geographical basin with the exception of an area to the north-northeast, which according to the overlapped lakes from the previous analysis, was the location the Einsiedler Woog (Figure 89). When all other surrounding Viewsheds including those of Castle Nanstein and the Commandry at Einsiedel are activated, none of the sites could view within the basin where Castle Perlenberg is located, as shown in Figure 90. Furthermore, the visibility of the lake from Castle Perlenberg did not cover any of the LCPs tracing the route of the *via regia*, indicating that travelers upon the road could not see the castle, as the angle of view from Castle Perlenberg was much more acute. This effectively lays to rest the hypothesis that the castle had served as a watch tower, which would have been terribly ineffective as it could neither see the major road, nor could travelers along that road see the castle. It is also necessary to mention that the current height of the castle is not even one meter above the ground, yet the Viewshed point was set to 10 meters above ground even though it likely did not extend beyond five meters. This solidifies the claim that Castle Perlenberg was a highly exclusive position.

The only LCPs visible from Castle Perlenberg are the immediate portion of the path leading to the *via regia* around the east of the Grossen Berg described in Section 3.3.4.2—precisely the location of the border stone set by the Lords von Sickingen—and the immediate path leading to the southern end of the geographic basin. This indicates that individuals at Castle Perlenberg could potentially see travelers entering into the basin from the north and south, for which it perhaps later served as a small watch tower in the 16<sup>th</sup> century as indicated in a charter from 1542. When compared to the discussion of a larger area of operation of the royal estate, particularly the hunting reserves, it appears that the basin was uniquely suited to serve as a natural arena for which Castle Perlenberg was a central auditorium atop its solitary hill—entirely hidden from the outside world.

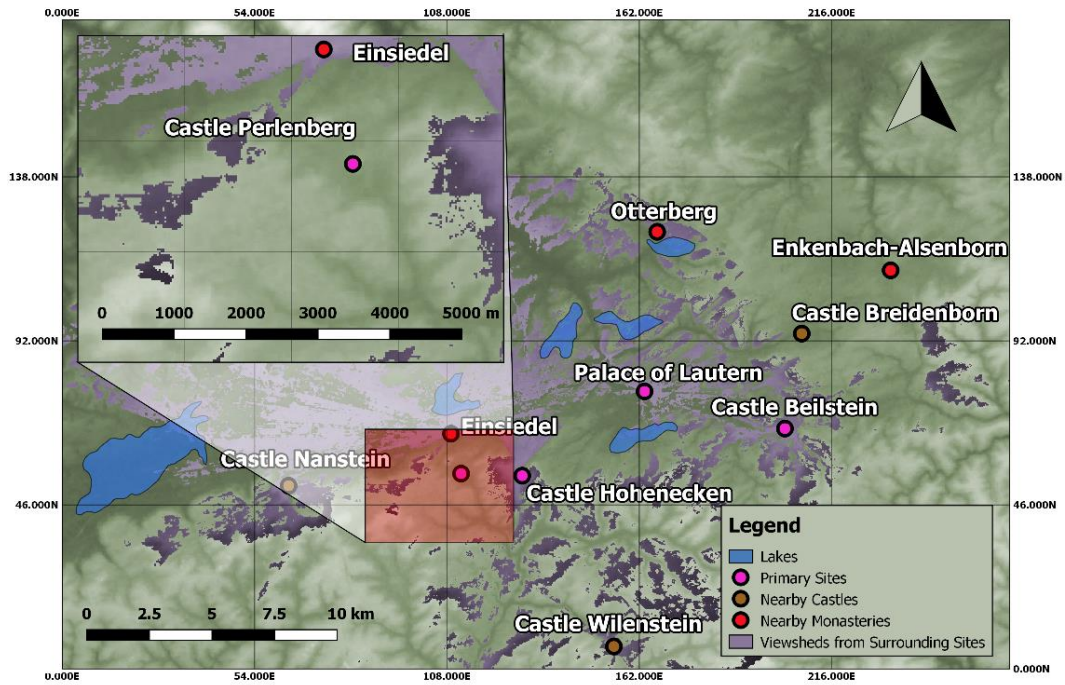


Figure 90: The results of the Viewsheds from all sites surrounding Castle Perlenberg.

### 5.3 Summary

The geo-spatial analyses described in this chapter outline the various analyses conducted in order to determine the relationship of the primary sites to the environment in which they were built, as well as to one another. The most revealing results were that none of the sites could see one another and that the main tower of Castle Hohenecken was almost certainly built in order to be seen from the areas within the royal estate, specifically by travelers along the *via regia* to and from the west, as well as by those commuting to and from Castle Beilstein. Additionally, the Viewsheds regarding the location of Castle Perlenberg clearly indicate that the site was the center point of natural reserve, giving more credit to the concept of a Great Park belonging to the Palace of Lautern. Its position atop the solitary hill was therefore to serve as a platform for onlookers of the hunt and to admire the splendor of the Einsiedler Woog to the north, just as visitors at the palace could admire the Schlosswoog along its impressive curtain wall. These analyses demonstrate how the landscape was designed for the pleasure of the emperors and kings, corroborating the case as to why Richard of Cornwall might have chosen to celebrate his wedding in Lautern in 1269. The palace, the abundance of lakes, the grand main tower of Castle Hohenecken, and the position of Castle Perlenberg in what was certainly a Great Park made the royal estate a luxurious area within the HRE. Based upon the findings of this chapter, the imperial monarchs and their loyalists belonging to the von Lautern-Hoheneck family were successful in altering the landscape to such a degree that their topographical designs can still be revealed with the implementation of digital methodologies.

## 6 Integrating the Graph Database

The story of the ministeriales, their commissions, the imposing buildings they administered, the society they lived in, and the manipulation of the landscape in which their stories unfolded were the topics of the previous four chapters. Chapter 2 introduced the main concepts necessary for a proper analysis and interpretation of the link between ministeriales and castles, including the concept of CST and a brief discussion of rank. Chapter 3 continued from the discussion of the ministeriales with a heightened focus upon the specific families at the center of this project and the four primary sites which provided the physical foundation of this project. The chapter included highly detailed descriptions of the von Lautern-Hoheneck and von Beilstein families during the years spanning 1152 until 1273, followed by in-depth literature reviews of all previous research at the four primary sites. The various ecclesiastical and secular sites that the families were affiliated with, identified as secondary and tertiary sites, were also examined. Chapter 4 then expanded upon the narrative by providing new architectural interpretations of the four primary sites through the use of 3D modeling techniques and stone-by-stone construction research of each site. Thus, Chapters 2 through 4 began with broad concepts in order to set the scene, introduce the characters, and explore their lives through the buildings they inhabited, ending with the finest level of detail in the stone-by-stone investigations. In Chapter 5, a new act was introduced in which the landscape was analyzed with regard to the knowledge of the characters, the functions of the primary sites drawn from the architectural investigations, and the interaction between the different components within the Reichsland of Lautern. The methodologies and techniques that were presented in the aforementioned chapters in order to describe the nuances of the focus families and the primary sites represented the intermediate results of the project, building upon the mid-ranged questions that arose from each analysis. However, the true novelty of the CITADEL project was attained by the integration of the intermediate results into the graph database, through which the narrative of the ministeriales and the castles can be explored from a more unified perspective. Chapter 6 tethers the previous results and interpretations into a network of nodes and relationships, providing explicit connections between the characters, their qualities, their actions, and most importantly, the four primary sites without which their stories would not have transpired. It is best described as a concretization of a mental map in which all aspects of the scenery, the characters, and their interpretations can be explored in order to draw connections between objects, people, and events.

## 6.1 Introduction to Graph Databases (GDBs)

*Graph database management systems* (known as graph databases or GDBs) are database management systems that make use of a graphical model. Graphs present a more accurate representation of the real world because they emphasize relations, and are practically unhindered by irregularities that commonly plague more uniform and rule-bound database management systems.<sup>1328</sup> The main components of a graph database are its nodes (entities) and its edges (relationships), in which the nodes are for things, whereas relationships are for its structure,<sup>1329</sup> in much the same way that a family defines itself through the specific relationships its members. The concept behind the graph database is essentially the same as a complex sociogram, which depicts relationships between actors using nodes and edges.<sup>1330</sup> The graphical model establishes a malleable organizational framework for various datasets retrieved from medieval charters, construction research, and landscape analyses acting as an avenue along which new interpretations can be drawn between individuals and phenomena.

To highlight the benefit of employing a graph database we must briefly explore the key advantages it offers over the often used *Relational Database Management Systems* (RDBMS). It must also be underlined that the application of a graph database does not replace traditional historical research and data collection. Nor is this an attempt to dismiss tremendous historical research that has made an excellent use of a RDBMS, such as the *China Biographical Database* (CBDB), which features a well-maintained relational database and incorporates *Geographical Information Systems* (GIS), text-mining, and a social network analysis.<sup>1331</sup> In fact, the aforementioned CBDB project provided a number of impulses for the direction of the CITADEL graph database, particularly regarding the idea of mapping the movements of certain administrators over time and then analyzing the clusters of individuals they regularly encountered. RDBMSs have long been used as a reliable foundation for digital projects, allowing mass quantities of information to be stored and retrieved. However, traditional RDBMSs are reliant upon JOIN tables—additional tables to combine two or more datasheets—in order to build connections. Increasing the quantity of these tables can lead to

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<sup>1328</sup> Robinson, Webber, and Eifrem, *Graph Databases: New Opportunities for Connected Data*. P. 2.

<sup>1329</sup> *Ibid.* Pp. 67.

<sup>1330</sup> Robert Gramsch, *Das Reich als Netzwerk der Fürsten: Politische Strukturen unter dem Doppelkönigtum Friedrichs II. und Heinrichs (VII.) 1225-1235*, *Mittelalter-Forschungen* 40 (Ostfildern: Jan Thorbecke Verlag der Schwabenverlag, 2013). P. 25. This is in reference only to the concept of a sociogram.

<sup>1331</sup> Bol, "How the Digital Is Changing Research and Teaching on Asia." P. 10.



inefficiencies in performance<sup>1332</sup> and reduce the malleability of the database. As outlier data increases, the relational model becomes increasingly burdened with large JOIN tables, sparsely populated rows, and more instances of null-checking logic.<sup>1333</sup> Repairing data that was incorrectly logged thus affects more than one table of information. In contrast, graph databases can readily import, combine, and disseminate volumes of information from datasheets or even from an existing RDBMS into a network of nodes and relationships without relying upon the use of JOIN tables. Nevertheless, JOIN tables can still be implemented in a graph database to great effect, especially when working with historical data.

The specific type of GDB employed in this project was a *Labelled Property Graph database* (LPG). The relationships between the imported data in a LPG are made by matching node types via a SQL-based script called *Cypher*.<sup>1334</sup> This fundamental difference in the organization of the database provides researchers the opportunity to shift relationships between nodes and even adjust data using the scripting language, therefore reducing the complications that arise when developing a database. The key strength of a graph database, in this regard, is its emphasis upon the flexibility of creating relationships between nodes and its ability to pose multivariate queries displayed in graphical as well as in tabular form in a matter of milliseconds using a script.<sup>1335</sup> Organizing information in a LPG also allows the relationships between entities to have their own associated properties, which is not possible in a RDBMS.<sup>1336</sup> This aspect is particularly important because it also the complexities of relationships between entities to be more accurately portrayed. Furthermore, the software architecture of graph databases provides an effective workflow for switching between different types of data modeling,<sup>1337</sup> and establishes a flexible working environment for historians and specialists from the digital humanities.<sup>1338</sup>

Other types of GDBs also exist, including the *Resource Description Framework* (RDF) data model that uses the scripting language called SPARQL. However, this scripting language is not

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<sup>1332</sup> Jonas Bruschke and Markus Wacker, "APPLICATION OF A GRAPH DATABASE AND GRAPHICAL USER INTERFACE FOR THE CIDOC CRM," n.d., 3.

<sup>1333</sup> Robinson, Webber, and Eifrem, *Graph Databases: New Opportunities for Connected Data*. P. 11.

<sup>1334</sup> *Ibid.* P. 30.

<sup>1335</sup> Aline Deicke and Anna Neovesky, "Contextualizing Controversies of the Post- Lutheran Reformation: A Workflow for Network Analytics Involving Relational and Graph Databases," n.d., 5.

<sup>1336</sup> Robinson, Webber, and Eifrem, *Graph Databases: New Opportunities for Connected Data*. P. 4.

<sup>1337</sup> Deicke and Neovesky, "Contextualizing Controversies of the Post- Lutheran Reformation: A Workflow for Network Analytics Involving Relational and Graph Databases."

<sup>1338</sup> Kuczera, "Graphentechnologien in den Digitalen Geisteswissenschaften." P. 192.

dedicated to the traversal of graphs and is thus limited in its ability to implement graph analysis algorithms.<sup>1339</sup> The key differences between RDFs and LPGs are not just the querying languages, but also the fact that LPGs can incorporate attributes on its nodes and edges whereas a RDF cannot. RDFs require additional nodes to even add key attributes of a person such as a person's name. In contrast, this information is neatly bundled within the node type dedicated to all persons in a LPG. The benefit to employing RDFs is therefore not its ability to model connections between people, places, and things in a graphical model. Instead, RDFs are extremely useful in communicating between data models and databases, as well as for establishing standards on how to publish, classify, or report information.<sup>1340</sup>

Although originally based upon the RDF structure, the CIDOC *Conceptual Reference Model* (CRM) has since evolved to include properties of property nodes. This blurry area between RDFs and LPGs is due to the CRM's existence as an ontology rather than a data model.<sup>1341</sup> Considering that neither the RDF data model nor the CIDOC CRM ontology provide the flexibility and freedom to bundle information with unique terms specific to this project, the application of a LPG was the logical conclusion. Furthermore, the Neo4j LPG software has a built-in *Natural Language Processing* (NLP) graph visualisation tool called *Neo4j Bloom* that was specifically designed to assist users in communicating with their non-technical peers.<sup>1342</sup> It has been used for a variety of projects ranging from the genealogy of the Carolingians,<sup>1343</sup> to research regarding the Devonshire Manuscript,<sup>1344</sup> and innovative research on the Holocaust.<sup>1345</sup> LPGs are not merely tools that can be used in order augment interdisciplinary research involving data extracted from

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<sup>1339</sup> Shota Matsumoto, Ryota Yamanaka, and Hirokazu Chiba, "Mapping RDF Graphs to Property Graphs," *ArXiv:1812.01801 [Cs]*, December 4, 2018, <http://arxiv.org/abs/1812.01801>. P. 1.

<sup>1340</sup> George Anadiotis, "Graph Databases and RDF: It's a Family Affair," ZDNet, accessed January 18, 2021, <https://www.zdnet.com/article/graph-databases-and-rdf-its-a-family-affair/>.

<sup>1341</sup> Martin Doerr, Richard Light, and Gerald Hiebel, "Implementing the CIDOC Conceptual Reference Model in RDF," n.d., 53. Pp. 1-3.

<sup>1342</sup> Jeff Morris, "Introducing Neo4j Bloom: Graph Data Visualization for Everyone," Company website blog, Neo4j, May 2, 2018.

<sup>1343</sup> Kuczera, "Graphentechnologien in den Digitalen Geisteswissenschaften."

<sup>1344</sup> Cole Mash et al., "Unknown but Not Unknowable: The Network of Identified and Unidentified Hands in the Social Edition of the Devonshire Manuscript," *Scholarly and Research Communication* 7, no. 2/3 (November 9, 2016), <https://doi.org/10.22230/src.2016v7n2/3a260>. P. 3.

<sup>1345</sup> Tobias Blanke et al., "The European Holocaust Research Infrastructure Portal," *Journal on Computing and Cultural Heritage* 10, no. 1 (January 2, 2017): 1–18, <https://doi.org/10.1145/3004457>. P. 9. The EHRI chose Neo4j for a variety of reasons including its ability to model relationship better than a RDBMS and that it allows interconnections between materials of different types.

historical sources, nor are they answer machines.<sup>1346</sup> Rather, they bring transparency to the connections between people and events from a variety of data sources in a flexible, efficient, and visual manner.

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<sup>1346</sup> Andreas Kuczera, “Digitale Farbenspiele Oder Nützliches Werkzeug--Visualisierung von Netzwerken Aus Den Registern von Editions- Und Regestenwerken,” *Mittelalter. Interdisziplinäre Forschung Und Rezeptionsgeschichte*, January 8, 2015, 25. P. 25.

## 6.2 The Data Sources of the Graph Database

Implicit in the extraction of historical information is the differentiation of which data are necessary for the project goal, which data is not *as* necessary, and which data are not necessary at all. The impetus behind choosing the LGP data model began with the objective of exploring the social network of the ministeriales families who inhabited the four primary sites, in addition to the political and economic strategies they employed in the Reichsland of Lautern. As such, all information regarding social status, economic or political proceedings, and social circles was absolutely necessary in order to generate a detailed model of their interaction in medieval society.

Provided the ruinous nature of the case study castles, it was necessary to accumulate as many relevant data sources as possible in order to fit the scattered pieces of their puzzling history together. Relevance is a highly relative term, and when used in absence of a proper definition, it can be more misleading than useful. Regarding the collection of data sources—besides those data retrieved from the 3D models and geo-spatial analyses—the historical charters considered relevant were those including members of the main ministeriales families, the case study sites, or any proceeding in the immediate regional area of the Reichsland of Lautern. When combined, the chronological span of the historical charters and maps collected for this project range from the years 882 until 1799. Over 900 years of data in the form of 707 transcriptions of historical charters and 27 geo-referenced historical maps provided much of the contextual data regarding the case study sites and their inhabitants over time. The purpose of accumulating such large amounts of data across a period of time outranging the 1152 to 1273 scope of the project, was due to the fact that the role of the ministeriales in the construction of castles and the development of the Reichsland of Lautern is never explicitly stated in the charters. This required as much context as possible from documented sources describing their activities.

Although many researchers have already described the actions of the ministeriales, the development of the Reichsland of Lautern, and the various castle sites, the three components are rarely discussed in unison. When they are discussed, they are treated as distinct topics that follow more along the path of *correlating* with one another rather than being *inextricably* bound to one

another. Historians such as Bosl,<sup>1347</sup> Dolch,<sup>1348</sup> Hechberger,<sup>1349</sup> Keddigkeit,<sup>1350</sup> Keupp,<sup>1351</sup> Spiess,<sup>1352</sup> and Werle<sup>1353</sup>—among many others—have made tremendous strides to explain the role of the ministeriales in the policies of the kings and emperors of the HRE and the development of the royal estates. However, with the exception of the *Pfälzische Burgenlexika*, these studies often lack construction research and landscape analyses that reveal essential information regarding the motivations and aspirations of the ministeriales within their cultural context. Furthermore, none of the studies include a database cataloguing the individuals, charters, locations, and social networks. Thus, all results are dependent upon the interpretation of the respective historian, requiring new researchers to rely upon their explanations and an examination of the transcriptions of the medieval charters.

Although all researchers should be expected to dive into the collections of charters such as the various *Urkundenbücher*<sup>1354</sup> and the *Regesta Imperii*,<sup>1355</sup> making connections between individuals who are not mentioned alongside one another and understanding the role of castles in the policies of the kings can become obstructed by prevailing theories of the functions of castles, subject to the fluctuation between military utility and representative symbolism as discussed in Chapter 2. Therefore, a database in which these connections can be empirically analyzed with regard to one another, such as the movements of individuals, the building phases of castles, and control of

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<sup>1347</sup> Bosl, *Die Reichsministerialität Der Salier Und Staufer: Ein Beitrag Zur Geschichte Des Hochmittelalterlichen Deutschen Volkes, Staates Und Reiches*; Bosl, “Pfalzen und Forsten”; Bosl, “Die Adelige Unfreiheit.”

<sup>1348</sup> Dolch, “Das Reichsministerialengeschlecht von Lautern/von Hohenecken Im 12./13. Jahrhundert”; Dolch, “Wilenstein - Die Burg Und Das Sich Nach Ihr Nennende Rittergeschlecht (1174-1372).”

<sup>1349</sup> Hechberger, *Adel im fränkisch-deutschen Mittelalter: Zur Anatomie eines Forschungsproblems*; Hechberger, *Adel, Ministerialität und Rittertum im Mittelalter*.

<sup>1350</sup> Keddigkeit et al., *Pfälzisches Burgenlexikon I: A-E*; Keddigkeit, Thon, and Übel, *Pfälzisches Burgenlexikon II: F-H*; Keddigkeit, Burkhart, and Übel, *Pfälzisches Burgenlexikon III: I-N*; Keddigkeit, Burkhart, and Übel, *Pfälzisches Burgenlexikon IV.1: O-Sp*; Keddigkeit, Burkhart, and Übel, *Pfälzisches Burgenlexikon IV.2: St-Z*.

<sup>1351</sup> Keupp, *Dienst Und Verdienst: Die Ministerialen Friedrich Barbarossas und Heinrichs VI*.

<sup>1352</sup> Spiess, “Vom reichsministerialen Inwärtseigen zur eigenständigen Herrschaft: Untersuchungen zur Besitzgeschichte der Herrschaft Hohenecken vom 13. bis zum 17. Jahrhundert.”

<sup>1353</sup> Werle, “Feudalisierung der Ministerialität im 12. Jahrhundert. Zur Situation des Pfälzer Reichsministerialien Werner II. von Bolanden”; Werle, “Wald und Herrschaft: Studien zur Geschichte der Reichswaldgenossenschaft Kaiserslautern.”

<sup>1354</sup> Dolch and Münch, *Die Urkunden des Zisterzienserklosters Otterberg 1143-1360*; Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*; Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern II*; Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern III*.

<sup>1355</sup> Böhmer, Mühlbacher, and Lechner, *Die Regesten des Kaiserreiches unter den Karolingern 751-918*; Böhmer, von Otenthal, and Kaminsky, *Die Regesten des Kaiserreiches unter Heinrich I. und Otto I. 919-973*; Böhmer, Lubich, and Brauch, *Die Regesten des Kaiserreiches unter Heinrich IV. 1056 (1050) - 1106*; Böhmer, *Die Regesten des Kaiserreiches unter Friedrich I 1152(1122)-1190*; Böhmer, *Die Regesten des Kaiserreiches unter Heinrich VI 1165(1190)-1197*; Böhmer, *Die Regesten des Kaiserreichs unter Philipp, Otto IV, Friedrich II, Heinrich (VII), Conrad IV, Heinrich Raspe, Wilhelm und Richard 1198-1272*; Redlich, *Die Regesten des Kaiserreichs unter Rudolf, Adolf, Albrecht, Heinrich VII 1273-1313*; Böhmer, *Die Urkunden Kaiser Ludwigs des Baiern, König Friedrich des Schönen und König Johann von Böhmen*.

resources, can only be of benefit to the study of the Middle Ages. Furthermore, a database—such as the one presented in this project—allows for more information to be added over time, thus increasing the connectivity between individuals across the entire spectrum of the social hierarchy.

The core data sources have already been discussed in Chapters 3 and 4, and the graph database has been repeatedly referenced in the footnotes throughout this dissertation. The networks modeled from the charters and the inclusion of the architectural analyses necessitate an exploration of how they were combined. The following section describes the details of their connections, including the use of the Cypher script and numerous JOIN tables in a highly flexible manner. This methodology also presents an option in which historians who already have large tables of information can easily adapt them to a LPG. The addition of building phases and their respective architectural components in the graphical model links the social, political, and economic proceedings of the focus group to the physical manifestations of their society. The connection between the primary sites as the primary sources of information regarding their construction, paired with the information drawn from the transcribed charters, fundamentally links the immateriality of past social events with the materiality of the arenas in which they transpired.

### 6.3 Descriptions of the Nodes and Relationships

Approximately 300 of the 707 transcribed charters in this project had been accumulated prior to initiating the database. In order to begin as structured as possible, I labelled each charter beginning with the number 10,000 for two reasons: I was unlikely to breach 10,000 charters for the project, and because any ID in the database that was five digits long and began with the number 1 could be quickly identified as a charter in absence of any associated data. The order of the collected charter transcriptions was not chronological, but based upon the order that I had discovered them over time and filed into a large binder. I then began extracting the information into a large *Microsoft Excel* table that included only the people who appeared in the charters, with their date of first mention, name, location, short description, their affiliated charters, and their status and administrator positions, if applicable. It was at this point, it became abundantly clear that the individuals from the Reichsland of Lautern or associated with its buildings were outnumbered by those outside of the Reichsland by a ratio of five to one. This meant that the database was rapidly growing to include a host of information regarding people who were mentioned in charters with people from the Reichsland, yet had no other connection to the immediate geographic area of study. Therefore, I made the decision to include the property of Focus Group in the spreadsheet regarding people in order to separate those of within the Reichsland and those without. The consequence of this separation is that those individuals belonging to the focus group are modeled at a much higher level of detail than those not belonging to the focus group. Nevertheless, the non-focus group individuals were still vital for modeling rank as many were mentioned with their respective titles and some were even recurring characters in the charters. By including those from outside the Reichsland, social analyses could then draw upon interregional data preventing the results from having too much of a bias based upon data only from the Reichsland of Lautern. It also provides a wealth of context regarding the major events of the chronological span of the project rather than restricting everything to the bubble of the Reichsland.

Over the course of the following months, the information was extracted into 20 different tables in order to partition the information from the first spreadsheet thereby making it more manageable. Seven of the tables are actually JOIN tables,<sup>1356</sup> regarding the genealogies of the focus group members, the charter affiliation of both the focus group and the non-focus group members,

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<sup>1356</sup> The seven active JOIN tables are labeled as the following sheets: *Architectural Investigation*, *Charter Activity*, *Events*, *Items*, *Person Charters*, *Related To*, and *Titles*. Although the sheets labeled *AdminLinks*, *StatusLinks*, and *Topic Sites* are included in the the file entitled *CITADEL All Spreadsheets Combined*, they were not used as active datasheets in the graph database. They were used only to organize data and were later incorporated into other datasheets.

and the hierarchical groupings for modeling rank over time via the combination of status and administrator positions that will be discussed in more detail later. For example, a relationship table entitled 'Related\_To' was devoted to all familial relations between members of the focus group including the associated charter IDs from which the data were retrieved, properties such as 'Brother\_Of', and the certainty level of the relationship as either high or low. However, as mentioned before, the more tables that are added, the higher the probability of potential errors, in which a simple error would have to be changed in each table, stressing the importance of intuitively labelling tables, clearly indicating where information was retrieved, and limiting the total amount of JOIN tables based upon necessity. It is advisable to limit JOIN tables and instead link genealogies via script, allowing relationships to be easily adjusted or modified rather than having to change the data in the JOIN table.

The other eight tables consist of the information for modeling the person, charters, locations, and their appearances in the charters, events, and items nodes. In order to remain consistent and minimize errors, I refrained from duplicating the text data by allocating identification numbers to each entity within the node-types. The number of digits, and the first number of the IDs correlate to specific node types: four digits beginning with the number '5000' refer strictly to the 'Person' node, charters are always five digits beginning at 10000, the 'Event' and 'Item' nodes are six digits beginning with the numbers 700000 and 800000 (respectively) and so on. Providing particular lengths of digits referring to types of nodes, and beginning identification numbers of a particular node-type with a specific number (e.g. the number 700000 referring to events), allowed me to quickly identify types of data absent their text descriptors, as mentioned before. It also is much more efficient to copy-paste or re-write a number than a name, which can easily be misspelled and potentially prevent a connection within the database.

In total, the graph database consists of 7,524 nodes assigned to 12 different node types, and 14,082 relationships assigned to 22 relationship types. Each node type also has at least one associated property pertaining to descriptors of the entity. For example, an *Element* node has the properties of a name and a unique identification number. The *Location* node type has an average of nine properties per node and a minimum of four—as not every location has data for all of the property field—representing the highest amount of properties per node in the graph database. However, the highest number of nodes belongs to the *Appearance* node type, with a sum of 3,500 nodes. The node type with the highest average amount of associated relationships are the *Realm* nodes, which consisted of two nodes averaging 329.5 relationships each. The node type with the second highest average amount are the *Building Phase* nodes. They average 58.33 relationships per



node, because they are only 12 total nodes corresponding to the 12 identified building phases identified in the construction research of Chapter 4. Each of these phases are documented in the *CITADEL Color Schematic for the Architectural Investigations* in HeiDATA [here](#). The following sections discuss the various node and relationship types composing the graph database in which the node types, along with their associated relationships, correlate with the colors shown in the *CITADEL Color Scheme* in HeiDATA [here](#), depicting the graph schematic.

The nodes and relationships are color-coded in order to visually combine the radiating relationships from a particular node. This is indeed a directed graph in which the relationships have distinct directions as can be seen in *CITADEL Project Schematic* in HeiDATA [here](#). The benefit of a directed graph is that it establishes distinct pathways along which queries can be led. The schematic is of particular importance regarding the organization of the graph database, which acts not only as an organizational tool, but as a ‘graph-map’ in which every connection is clearly depicted and labelled. The schematic for the project changed no fewer than 18 times over the course of the evolution of the graph database because its development should be dynamic and adjusted to the main question as well as any mid-ranged questions that may manifest themselves throughout the analysis and evaluation of the data. The combination of the historical and architectural investigations allows for a direct connection between the two, underlining the importance of viewing them together. The geo-spatial objective is not completely modeled in the graph database, though the locations in the GIS are the same as those in the database and include coordinate properties. This allows for a quick export of spatial data from the database that can be imported in GIS and modeled as a map. Furthermore, the schematic combines the factors of Perceived Rank, architecture, and social involvement, through which the known movements and activities of the members of the focus group are organized. This latter aspect will be discussed in more detail in Section 6.4.

### 6.3.1 Person Node (light green)

A total of 1,588 individuals were mentioned in the corpus of charter transcriptions and recorded in the graph database. The properties associated with nodes of this group include:

- The pID assigned to each person from the spreadsheet
- The person's name
- The person's first mention in the charters
- Their inclusion to the project focus group as 'Yes' or 'No'
- Their heritage (i.e. whether there are nobiles, ministeriales, or unknown)
- A home location
- Their gender as male or female
- Their WikiID (WikiData ID)
- Their GND (*Gemeinsame Normdatei*, or *Integrated Authority File*)

As not all individuals were presented with each property, such as a home location, some of the properties remained empty, accounting for the 5.85 average properties per node. It is also noteworthy that only 216 individuals had a WikiID that could be identified using the software *OpenRefine*, whereas 561 individuals could be identified by their GND. Furthermore, only 98 of the 1,588 individuals could be identified with both a WikiID and GND. The lack of associated normative data is due to the appearance of many individuals from the charters who have never been discussed beyond the pages of the respective registers in which they were chronicled. This means nearly 94% of the individuals in this database are unaccounted for online and therefore virtually invisible.

As was discussed in Section 3.1.1 regarding the selection criteria of charters, the emphasis was upon the primary sites and the associated ministeriales families in which I entered all such charter transcriptions into the various tables. The individuals who belong to those ministeriales families and the individuals located in the witness lists of the charters issued at locations within the Reichsland of Lautern compose the focus group of the project, ranging from bondservants to imperial marshals. In effect, the database captures the more stationary individuals associated with the imperial estate, as well as the more dynamic individuals such as the kings, emperors, and bishops with their associated entourages. The focus group accounted for 322 of the individuals catalogued in the graph database, of whom 51 belong to von Lautern-Hoheneck, 10 belong to von Lautern-Montfort, 32 belong the von Beilstein-Wartenberg family network, and 23 to the von Wilenstein family. Each of these families were ministeriales, previously discussed, though the family with the fourth most members present in the database belonged to von Leiningen—a nōbilis family. As castle

Wilenstein had originally been one the primary sites, the associated family was of key interest. During the progression of the project, they fell from the layer of highest importance, but are still interesting regarding their various connections to the main families, as was described in Section 3.5.1 regarding Castle Wilenstein. The differentiation of the focus group from the rest of the individuals in the corpus also assists in determining who was most affected in a proceeding in the Reichsland of Lautern, as the more stationary ones were the more affected—positively or negatively—one was by a transaction.

Table 11: Relationships connecting to the Person Node.

NODE TYPE	RELATIONSHIP TYPE	NODE TYPE
PERSON	HAS_ADMINPOSITION→	Administrator Position
PERSON	HAS_APPEARANCE→	Appearance
PERSON	HAS_LOCATION→	Location
PERSON	RELATED_TO→	Person
PERSON	HAS_STATUS→	Status

Four out-going relationships exist for the Person node type connecting it to the Appearance, Status, Administrator Position, and Location node types, in addition to one loop relationship (Table 11). The status and administrator positions of the individuals are only connected in two ways. Those individuals who are *not* part of the project focus group are connected directly via the outgoing HAS\_STATUS and HAS\_ADMINPOSITION relationships, respectively. In contrast, the status and administrator positions of the individuals who *do* belong to the focus group are connected via the outgoing APPEARS\_AS\_STATUS and APPEARS\_AS\_ADMINPOSITION relationships, stemming from the Appearance node. The purpose of applying these different relationships is to build in a differentiation between the members of the focus group and everyone else, making it possible to trace the social movement of the members of the focus group and their activities in proceedings over time and with a higher level of detail than the members of the non-focus group. It would be ideal to trace the social movement of everyone, but emphasis was upon the members of the focus group, their activity in regional proceedings, and their connection to the case study sites. Of the 324 members of the focus group, 306 individuals were recorded with genealogical information, identified by the relationship edge labelled RELATED\_TO. This is also the only loop relationship in the graph database in which the same node type connected to itself rather.

### 6.3.2 Appearances (light blue)

The Appearance meta-node type serves as an intermediary between the Person node type and the rest of the graph with regard to the activities of an individual within the charters. The properties associated with nodes of this group include:

- The pID assigned to each person from the spreadsheet
- The person's name
- The date
- The associated EventID of the specific action
- The role of the individual within the proceeding
- The vital status as either alive or dead, as some individuals are mentioned posthumously
- The associated cID of the respective charter

An appearance is not an entity based upon a defined list in the spreadsheets compiling the data for the database, rather it combines data from various sheets into a new node modeling a person in a specific place at a specific time with a specific action. It is the essential node type with regard to the social analyses as it is responsible for tracing the detailed activities of the members of the focus group. Although all individuals are connected to the Appearance node type, those involved in proceedings in the Reichsland of Lautern are connected first to the precise items that they were involved in, rather than directly to the charters. The five relationships connected to the Appearance node are shown in Table 12. Appearances of the focus group also catalogue the status and administration positions over time which include properties pertaining the title of their status or administration position. This allows for a more precise analysis of the progression, stagnation, or regression of an individual's position in society and clearly organizes the carriers of specific titles over time—such as the sheriff of the Reichsland of Lautern. In this way, the Perceived Rank of an individual can be more accurately determined, as was discussed in Section 2.4.4.2.

Table 12: Relationships leading from the Appearance Node.

<b>NODE TYPE</b>	<b>RELATIONSHIP TYPE</b>	<b>NODE TYPE</b>
<b>APPEARANCE</b>	APPEARS_AS_ADMINPOSITION→	Administrator Position
<b>APPEARANCE</b>	NONSPECIFIC_APPEARANCE_IN→	Charter
<b>APPEARANCE</b>	APPEARS_IN_ITEM→	Item
<b>APPEARANCE</b>	←HAS_APPEARANCE	Person
<b>APPEARANCE</b>	APPEARS_AS_STATUS→	Status

### 6.3.3 Locations (yellow)

A total of 786 locations exist in the graph database, of which 636 are sourced directly from the 707 charters, and 150 were carried over from the GIS component of the project sourced from 30 historical maps of the palatinate.<sup>1357</sup> The Location node type contains the most properties of all node types in the graph database with an average of 7.5 and maximum of nine properties per node. These properties include:

- The LocID of the location from the spreadsheet
- The name of the location
- The type of location (i.e. village, castle, etc.)
- The modern city it currently belongs to
- The modern governmental district to which the location belongs
- The modern country to which the location belongs
- The coordinates of the location as latitude and longitude

These coordinate properties belong to 679 of the locations, allowing each one to be mapped in GIS. The discrepancy between the 679 locations with coordinate data and the total number of recorded locations is due to the absence of precise locations in 107 of the sites mentioned in the charters. These sites without coordinate information are locations with ‘fuzzy borders’—that is to say, locations that do not have precise and discrete boundaries that do not lend themselves to the hard edges of a vector object in GIS.<sup>1358</sup> An example of a non-discrete location would be LocID 500589, the *Farmstead of Simon Trems*<sup>1359</sup> which was recorded in the charters with only the name and no other information, making it difficult to map without more context.

The country, district, and city properties reflect the modern boundaries, whereas the name property refers to how the location was called in the charters. This was necessary to differentiate because the name of the location in the charter does not always match the name of the modern-day site. Examples of these more inconsistent name properties include the former *Allerheiligenstift* (St. Trinitatis) in the city of Speyer which was a ruin by the year 1794 and no longer exists,<sup>1360</sup> and

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<sup>1357</sup> Pattee et al., “Analysing the Medieval Landscape of the German Palatinate.” P. 40.

<sup>1358</sup> Conolly and Lake, *Geographical Information Systems in Archaeology*. P. 29.

<sup>1359</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern II*. Pp. 173-175. Also catalogued as Charter ID 10349 in the graph database.

<sup>1360</sup> Hans Ammerich et al., “Speyer, St. Trinitatis/Allerheiligen Kollegiatstift (Nebenstift des Speyerer Doms),” in *Pfälzisches Klosterlexikon: Handbuch der pfälzischen Klöster, Stifte und Kommenden*, ed. Jürgen Keddigkeit et al., vol. 4 S-Speyer, 5 vols., Beiträge zur pfälzischen Geschichte herausgegeben vom Institut für pfälzische Geschichte und Volkskunde

*Portus Naonis*, which is now the city of *Pordenone*.<sup>1361</sup> The type of location pertains to the specific type of place or building, such as a church, castle, cathedral, hamlet, monastery, village, or town. This assisted in filtering which sites could belong to the area of enfeoffment belonging to a castle, and in quickly identifying to the importance of a site discussed in a charter or where the charter was issued. A charter issued at a palace is typically of more significance than one issued at a non-imperial castle, and a charter issued at a cathedral is typically of more significance than one issued at a monastery—though in this second case, it depends on the regional significance of the both the cathedral and monastery as both could at times contend with one another in terms of regional influence. In turn, the realm properties of either Secular or Ecclesiastical allowed for a quick identification of the affiliation of locations in proceedings. For example, by scripting only for ecclesiastical sites, one can then filter out all secular sites when analyzing forest transactions.

Table 13: Relationships connecting to the Location Node.

NODE TYPE	RELATIONSHIP TYPE	NODE TYPE
LOCATION	←BUILT_AT	Building Phase
LOCATION	←PLACE_OF_ISSUE	Charters
LOCATION	←QUARRIED_FROM	Component
LOCATION	AFFECTED_IN_ITEM→	Item
LOCATION	←CONCERNING_LOCATION	Item
LOCATION	←HAS_LOCATION	Person
LOCATION	BELONGS_TO→	Realm
LOCATION	←REGARDING	Roombook

The Location node type has only two outgoing relationships connecting to the Realm and Item nodes (Table 13). Despite only having two outgoing relationships, Locations proved to be especially complex because they can be mentioned in different roles in the charters. A Location can be a place of issue in a charter that is modeled by a PLACE\_OF\_ISSUE relation between the Charter node and the Location node, as well as a specific place where an item is located—indicating more than one location per charter—modeled by the incoming CONCERNING\_LOCATION relationship. Furthermore, a location can be an actor affected by an item in a particular event. Examples of these

Kaiserslautern in Verbindung mit dem Institut für Europäische Kunstgeschichte der Ruprecht-Karls-Universität Heidelberg, 26.4 (Kaiserslautern, Germany: Institut für pfälzische Geschichte und Volkskunde Kaiserslautern, 2017), 297–329. P. 297.

<sup>1361</sup> The city of *Portus Naonis* is mentioned in a charter from May of 1232 sourced from the *Regesta Imperii Online*, and catalogued as Charter ID 10464 in the graph database.

occurrences include the activity of monasteries in proceedings regarding land or property rights, when the abbot or provost are not specifically mentioned. In these cases, the monasteries and their respective community of brothers are only generally mentioned, referring to the action as one taken on behalf of them all, and not upon the account of an individual. These are modeled by the outgoing `AFFECTED_IN_ITEM` relationships, linking the entire location, i.e. the monastery, to the item in question, rather than assuming the authority of the abbot or provost in the charter when neither is specifically mentioned. This again stresses the importance of modeling only what is known, though meta-nodes referring to aspects that are not distinctly mentioned but contextually implied, are also useful in modeling a network of proceedings as was previously described.

### 6.3.4 Charters Node (light purple)

All 707 transcriptions were entered into the *Charter* node type, consisting of an average of 5.8 properties per node. The six properties include:

- The cID of the charter from the spreadsheet
- The date of the charter's issue
- The name, which is actually a short description
- The LocID associated with the location of the charter's issue
- The source of the charter
- The page of the source

In contrast to the previously described node types, the Charter node type has only one outgoing relationship connecting it to the Location node type via the PLACE\_OF\_ISSUE relationship (Table 14). However, 601 of the 707 charters included a specific place of issue, connecting them to a location via the equivalently named relationship. The remaining 106 charters were not specified with a location and are therefore without a connection to the Location node type. Although the transcriptions of the charters provided the core of the information regarding the social and historical context of the ministeriales and the Reichsland of Lautern, they were not limited to one topic per text. Instead, some charters included multiple topics which, in turn, regarded multiple objects. Therefore the topics were catalogued in the Event node type and the specific items in the Item node type. This prevented certain proceedings from being lost in the connectivity of the graph database, as labeling a charter with one topic and connecting it along one relationship to a specific person resulted in a web of connections, preventing any discernable modeling of a specific proceeding.

Table 14: Relationships connecting to the Charters Node.

NODE TYPE	RELATIONSHIP TYPE	NODE TYPE
CHARTERS	←NONSPECIFIC_APPEARANCE_IN	Appearance
CHARTERS	←SOURCED_FROM	Event
CHARTERS	PLACE_OF_ISSUE→	Location



### 6.3.5 Events (red)

The Event node type catalogues the topics and types of proceedings within the charters—such as an enfeoffment—in order to separate different proceedings from the same charter. The six properties for each node include:

- The EventID of the event from the spreadsheet
- The date of the event
- The topic discussed
- The type of event
- The cID of the respective charter
- Whether or not it pertains the focus group

The key properties are the types and topics belonging to the events. In order to prevent a large number of varying terminologies pertaining to each property, I standardized a list for each in order to ensure that the events could easily be search for based upon those lists. These lists are found in the spreadsheets associated with the events. The relationships connected to the Event node type are shown in Table 15.

The proceedings within the Reichsland of Lautern resulted in 361 Items grouped into 253 Events sourced from 169 of the 707 total charters. The other 538 charters are omitted from this list because the contents pertain to areas outside of the royal estate, even if they included members of the focus group. As multiple events can occur within a single charter, it would be highly inaccurate to label a charter with only a single event if it is composed of more than one, considering that certain individuals may not play a role in every item that is mentioned. Additionally, an event can be a sale of several pieces of land, which are distinct from one another and from other actions that may take place within the same charter. A single charter may include many as seven different events containing eleven different items as is the case for a charter from 12 July 1404 concerning the enfeoffment of Beimond von Hoheneck that included escort rights for the Reichsland of Lautern and ownership of Castle Hohenecken.<sup>1362</sup> By creating a node representing the groups of items addressed between two or more parties regarding a particular topic, it is then possible to model all components of the proceedings within a charter. The purpose of modeling these specific proceedings is to determine the types and topics of the proceedings undertaken by the members of the focus group, particularly the von Lautern-Hoheneck and von Beilstein families. This assists in understanding the

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<sup>1362</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern II*. Pp. 378-379. Also catalogued as Charter ID 10295 in the graph database.

economic and political strategies employed by the families within the estate, in addition to identifying which lands or properties were most contentious, and which parties were most often involved in proceedings with one another.

Oftentimes people of lower overall status do not appear at the beginning of a charter, but are included in events later on within the same text. To generalize the significance of the text based upon the first event associated with a high status person, effectively excludes entire groups of people and their social activity who are found towards the bottom of a charter. It was therefore critical to analyze every event within the charters of the focus group, in order to reduce the chance of excluding less influential people who enhance the overall social network of the focus group by demonstrating their hierarchical position somewhere between nobles and servants.

Table 15: Relationships connecting to the Events Node.

<b>NODE TYPE</b>	<b>RELATIONSHIP TYPE</b>	<b>NODE TYPE</b>
<b>EVENTS</b>	OCCURRED_DURING_PHASE→	Building Phase
<b>EVENTS</b>	SOURCED_FROM→	Charters
<b>EVENTS</b>	CONCERNING_ITEM→	Item

The development of the Event node type consisted of reading every charter multiple times in order to identify all events relevant to the politics of the Reichsland of Lautern and the members of the focus families. In order to catalogue all of this information, I constructed a large JOIN table entitled *Topic\_Sites*, which contains all of the properties of the Events and Items nodes and the associated relationships. However, once I added the Items node type, I then separated the *Topic\_Sites* table into two separate JOIN tables that were easier to manage and had few columns. The resulting table with the information for the Events node then consisted only of the six properties for each node, from which relationships could then be made in order to connect the node with other nodes via script. This composed the largest challenge in the development of the graph database as it required a fair amount of rearranging of the data, though the flexibility of the graphical model made it manageable. In the future, events and items should be entered via script in the same way that the Appearance node type was constructed.

### 6.3.6 Items (dark blue)

The Item node type represents each of the specific items that were discussed in the charters regarding the Reichsland of Lautern. The six properties for each node include:

- The EventID of the event from the spreadsheet
- The ItemID of the specific item
- The LocID of where the item is located
- What the item concerns (e.g. a specific castle)
- The portion of the item under discussion
- The amount transacted for the item

The items themselves are oftentimes distinctly mentioned as an Item in the transcriptions of the charters, though sometimes they must be identified contextually. For example, a charter issued in December of 1284 concerned two events: a transaction regarding specific forests and a confirmation of land-rights.<sup>1363</sup> The transaction concerned five forest areas sold to the Abbey of Otterberg by Wirich II von Daun-Nanstuhl and his wife, Kunigund von Daun-Nanstuhl. In the same charter, King Rudolf von Habsburg confirmed land rights to Wirich II von Daun-Nanstuhl, Kunigund von Daun-Nanstuhl, and the Abbey of Otterberg. Meanwhile, Heinrich III von Lautern-Hoheneck was present at the issuing of the charter, though not directly involved. Therefore, two Events occurred with associated Items: 1. the transaction consisted of an Event topic entitled Forests, with five Items given to the Abbey of Otterberg by the von Daun-Nanstuhl couple; and 2. the confirmation consisted of an Event topic entitled Land-rights, with three Items linked to the von Daun-Nanstuhl pair and the Abbey of Otterberg. Heinrich III von Lautern-Hoheneck was then linked directly to the charter via a non-specific appearance as he was only a witness. Thus, an Item from an Events bundle, catalogues a specific thing that is affected by an event action. The relationships connected to the Items node are shown in Table 16.

Table 16: Relationships connecting to the Item Node.

NODE TYPE	RELATIONSHIP TYPE	NODE TYPE
ITEM	←APPEARS_IN_ITEM	Appearance
ITEM	←CONCERNING_ITEM	Event
ITEM	CONCERNING_LOCATION→	Location
ITEM	←AFFECTED_IN_ITEM	Location

<sup>1363</sup> Akademie der Wissenschaften und der Literatur, Mainz, "RI VI,1 n. 1872, Rudolf, 1284 Dec. 1, Lutree," Regesta Imperii Online, accessed September 10, 2020, [http://www.regesta-imperii.de/id/1284-12-01\\_1\\_0\\_6\\_1\\_0\\_2080\\_1872](http://www.regesta-imperii.de/id/1284-12-01_1_0_6_1_0_2080_1872). Also catalogued as Charter ID 10586 in the graph database.

### 6.3.7 Status (fuchsia)

I had originally not intended upon modeling the status of the individuals at the beginning of the project. However, after exploring the charters and the literature regarding the ministeriales and their development, it became clear that their position in society was a crucial theme. What I had begun to describe as Rank, quickly split into two separate categories, of which one was more permanent and the other more fluid. In addition to the property of Heritage attached to the majority of the individuals of the graph database, it is possible to see the proportion of statuses and administrator positions of the royal and imperial entourages among the nobiles and the ministeriales. Thus, Status and AdminPosition (short for administrator position) are the two main components that assist in modeling and contextualizing rank over time. Status refers to a more permanent social position of an individual such as a knight or count, or positions commission held for a lifetime, such as a priest. The node type includes the following three properties:

- The SID of the specific status title
- The name of the title
- The SuperStatus group—a title that groups multiple titles together. For example, *SuperStatus 4. Territorial Lord* includes Dukes, Margraves, and Archbishops; among others.

A total of 72 Status titles exist in the graph database that can be found in the *CITADEL Rank Schematic* in HeiDATA [here](#). The SuperStatus refers to the super-category of the *Status* titles which I partitioned into nine groups, in order to model rank as described in Section 2.4.4.1. The relationships connected to the Status node are shown in Table 17.

Table 17: Relationships connecting to the Status Node.

NODE TYPE	RELATIONSHIP TYPE	NODE TYPE
STATUS	←APPEARS_AS_STATUS	Appearance
STATUS	←HAS_STATUS	Person
STATUS	SHAS_REALM→	Realm

### 6.3.8 AdminPosition (pink)

The AdminPosition node type refers to more temporary administrator positions, or those by appointment, such as sheriff, marshal, or judge. For example, a knight could be a court judge, but if he lost the position at the court, he would still remain a knight. The group includes the following three properties:

- The aID of the specific AdminPosition title
- The name of the title
- The SuperAdminPosition group—a title that groups multiple titles together. For example, *SuperAdminPosition A. State Administrator* includes imperial chamberlain, imperial marshals, and papal legates; among others.

Both the Status and AdminPosition nodes include a distinction between the secular and ecclesiastical realm, while maintaining a relative equity between Statuses and AdminPositions of similar standing. The details regarding the development of the modeling of rank is described in Section 2.4.4.2. A total of 59 AdminPosition titles were mentioned in the charters which are partitioned into three SuperAdminPosition groups: State, Regional, and City/District Administrators (see *CITADEL Rank Schematic* in HeiDATA [here](#)). The relationships connected to the AdminPosition node are shown in Table 18.

Table 18: Relationships connecting to the AdminPosition Node.

NODE TYPE	RELATIONSHIP TYPE	NODE TYPE
ADMINPOSITION	←APPEARS_AS_ADMINPOSITION	Appearance
ADMINPOSITION	←HAS_ADMINPOSITION	Person
ADMINPOSITION	AHAS_REALM→	Realm

### 6.3.9 Realm (orange)

Realm refers to the nodes that are ecclesiastical or secular in nature, allowing different sets of AdminPositions, Building Types, Locations, and Status to be analyzed with regard to the proceedings modeled by the Item and Event nodes. An example to illustrate the use of this node would be to trace the amount of transactions from the von Lautern-Hoheneck family to ecclesiastical institutions in general, rather than having to list each type of ecclesiastical institution individually (i.e. the various monasteries). Therefore, one can analyze actions strictly within ecclesiastical rather than in secular settings (or vice versa). Furthermore, each of the building types identified from the construction research has an affiliation with the Realm node type. The relationships connected to the AdminPosition node are shown in Table 19. As the Realm node is strictly used for separating the secular from the ecclesiastical, it has only these two attributes as properties and therefore one property per node. In the future, it would be interesting to add in historical territories, such as territories, bishoprics, and monastic orders into this node type.

Table 19: Relationships connecting to the Realm Node.

<b>NODE TYPE</b>	<b>RELATIONSHIP TYPE</b>	<b>NODE TYPE</b>
<b>REALM</b>	←AHAS_REALM	AdminPosition
<b>REALM</b>	←REALM_TYPE	BuildingType
<b>REALM</b>	←BELONGS_TO	Location
<b>REALM</b>	←SHAS_REALM	Status

### 6.3.10 Building Type (dark green)

The 22 building types modeled in the database are the various buildings located at the four primary sites as determined by the construction research described in Chapter 4. Each type the following properties:

- The btID of the specific building type
- The name of the building type
- The realm that the building type is associated with (e.g. a chapel is ecclesiastical)

They essentially operate in much the same way as Events in that they bundle together the walls catalogued in the roombooks. Only two outgoing relationships radiate from the BuildingType nodes as shown in Table 20.

Table 20: Relationships connecting to the Building Type Node.

<b>NODE TYPE</b>	<b>RELATIONSHIP TYPE</b>	<b>NODE TYPE</b>
<b>BUILDING TYPE</b>	CATEGORIZED_AS→	Realm
<b>BUILDING TYPE</b>	EXHIBITED_AT→	Location

### 6.3.11 Element (dark purple)

The Element node type pertains to the various architectural elements found in the buildings such as portals, windows, or garderobes. They include only the following two properties:

- The uID of the specific architectural element
- The name of the architectural element

The node type is connected to the BuildingType and BuildingPhase nodes with two outgoing relationships (Table 21). The additional properties of the architectural investigation including Wall Numbers, components (e.g. large embossed ashlars), and substances (e.g. red sandstone) are included in the relationships connected to the Element node type. This served to decrease the overall amount of node types by packaging the additional information in the edges.

Table 21: Relationships connecting to the Element Node.

<b>NODE TYPE</b>	<b>RELATIONSHIP TYPE</b>	<b>NODE TYPE</b>
<b>ELEMENT</b>	BUILT_DURING→	BuildingPhase
<b>ELEMENT</b>	FOUND_IN→	BuildingType



### 6.3.12 Building Phase (beige)

The BuildingPhase node type models the 12 building phases identified at the four primary sites ranging from the years 1100 until 2015. They include only the following four properties:

- The bID of the specific building phase
- The name of the building phase (e.g. Romanesque IV)
- The year that the specific phase begins
- The year that the specific phase ends

As there are only 12 nodes, they have a high number of connections, especially regarding the relationship to the Events nodes. The purpose of modeling the connection between the Building Phase and Events nodes is to identify specific proceedings taking place in the royal estate during the identified construction phases at the primary sites. This assists in determining the purpose of an event and whether or not transactions could have been connected to construction projects. Additionally, it is possible to identify potential builders of the sites by modeling who was present at the events during the period of the building phases. The nodes are connected to the Element and Event nodes as shown in Table 22.

Table 22: Relationships connecting to the Building Phase Node.

<b>NODE TYPE</b>	<b>RELATIONSHIP TYPE</b>	<b>NODE TYPE</b>
<b>BUILDING PHASE</b>	←BUILT_DURING	Element
<b>BUILDING PHASE</b>	←OCCURRED_DURING_PHASE	Event

## 6.4 Querying the Heterogeneous Data

Organizing the information drawn from the various investigations into the graph database provided an avenue to query information at the intersection of the three objectives. The database is essential for recognizing trends within the individual investigations, and was incredibly helpful in the writing of this dissertation as I could quickly call upon lists of data that would otherwise take hours if not days to first organize. The results of the scripted queries can be displayed in both a visual form composed of nodes and edges, or in tabular form which can be exported as a csv. file. Both forms offer key advantages as it is easier to visualize clusters in a graphical form, whereas the comparison between distantly related data is more suited for a tabular export. Before analyzing the intersection of the social networks of the ministeriales and the architectural data, it is necessary to first examine the significance of the ministeriales as instrumental in the policies of the empire with an emphasis upon those activities within the Reichsland of Lautern.

### 6.4.1 Social Trends

The distribution of the individuals within the social hierarchy provides an interesting frame of reference for understanding the general demographics of the Reichsland of Lautern in order to analyze which groups were most represented, and which groups were most likely to be the receivers of a costly signal. Based upon the social hierarchy model involving status and administration positions as discussed in Section 2.4.4.1, Figures 91 and 92 illustrate the breakdown of all individuals into the various SuperStatuses and SuperAdminPositions. Generally speaking, the members of the focus group—which included many ministeriales—were predominantly located in SuperStatus group *10. Unspecified* due to their lesser status in the witness lists of the charters. As such, they were often listed without any specificities behind the more prominent members of society, who were mostly members of the non-focus group. Of the 322 individuals in the focus group, 191 were catalogued with a heritage property as NA (Not Available), 125 as ministeriales, and 6 as nobiles. The substantial lack of nobiles among the focus group was a result of the limited number of such families that lived in the Reichsland of Lautern. Although other royal estates may have had many nobiles living within their borders, the estate around Lautern was certainly not one of them. The range of titles among those in the data is remarkable considering that nearly every position—with the exception of pope—could be accounted as having visited the Reichsland of Lautern or been an inhabitant thereof. The two levels with the most ministeriales were *6. Entitled* and *10. Unspecified*. This is primarily because they were typically addressed as knights or honorable men, although certain ministeriales had been given counties or even duchies in the Kingdom of Italy, such as Markward I von Annweiler. Although interesting, they were truly anomalies and also relatively short-lived honors. Most ministeriales never surpassed level six, with the exception of having married a daughter of a count, such as Reinhard III von Lautern-Hohenecken had done. On the other hand, they were almost never specified as anything less than level six, indicating that many of those in level 10 may have been in level six. In contrast, the nobiles were rarely mentioned lower than level five. The analysis of the statuses among the individuals in the corpus indicates a social structure in which the members of the focus group were not represented among the highest levels. However, the analysis of the *SuperAdminPositions* reveals the opposite trend for precisely the same dataset.

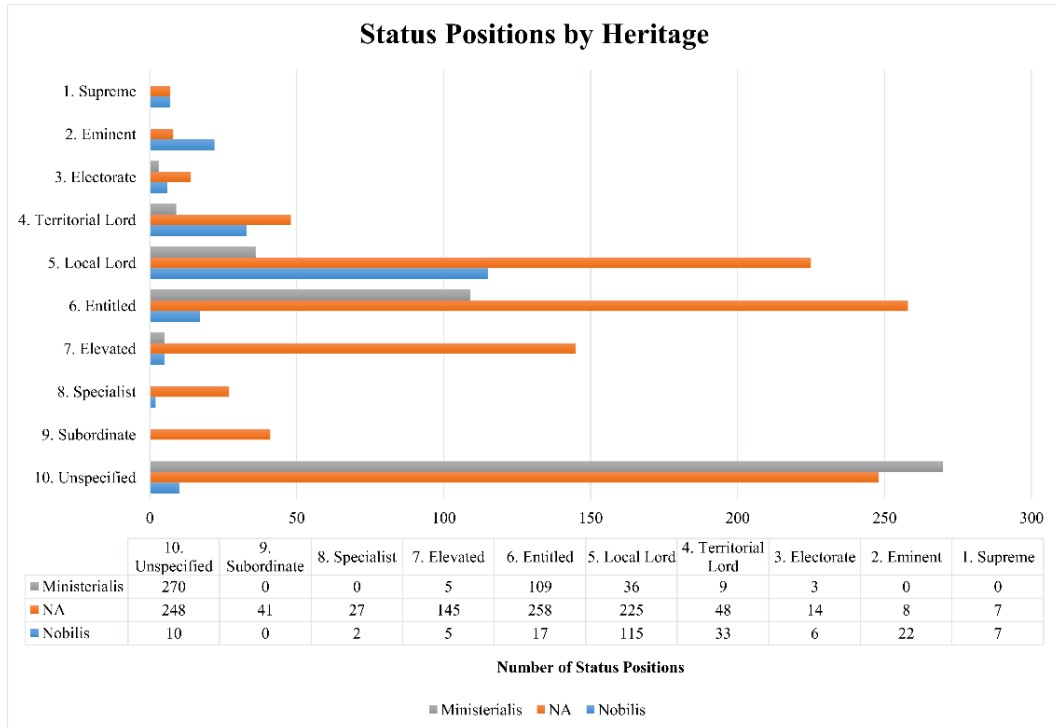


Figure 91: Distribution of status positions among all individuals in the LPG.

Throughout the 707 charters, there were 538 instances in which an individual was mentioned with an administrator position. However, the actual number of administrators was 334 indicating that some had more than one appearance as an administrator belonging to one of the three SuperAdminPosition groups. What is evidently clear from these results is that the ministeriales of the focus group were disproportionately represented among highest level of administrator positions as state administrators. The distribution of the administrator positions shows that the nobiles were rarely given such commissions. Instead, the ministeriales were chiefly commissioned with the highest level administrator positions such as imperial chamberlain, imperial cupbearer, etc. In fact, Heinrich I von Lautern was never mentioned with an administrator position below level *A. State Administrator*, indicating that when not in service of the emperor, he simply was not active in any proceedings. He was truly remarkable in this capacity because other ministeriales—including many of his own family—accepted to be promoted and demoted between the three levels, such as Eberhard I von Lautern-Montfort. Although it may seem as though the activities of Heinrich I von Lautern skew the data, it is simply the fact that the extant charters mentioned him more than any other person in the corpus.

Although my criteria for selection included predominantly charters cataloguing the proceedings of the ministeriales in the royal estate, many other families were mentioned in the texts and were modeled in this database. These various families were included as properties in the data, thus allowing for genealogies to be generated, but also assisting in analyzing which specific groups were active in the proceedings of the royal estate and who interacted with whom over time. Particularly in the case of assumed relations (e.g. the situation of Landolf von Wilenstein described in Section 3.5.1), the ability to search by families is a great advantage. Many of the charters specified individuals by their families allowing me to catalogue their heritage as ministeriales or nobiles, but 76% of all individuals lacked any genealogical data whatsoever. This indicates an area that should be explored more in depth in the future.

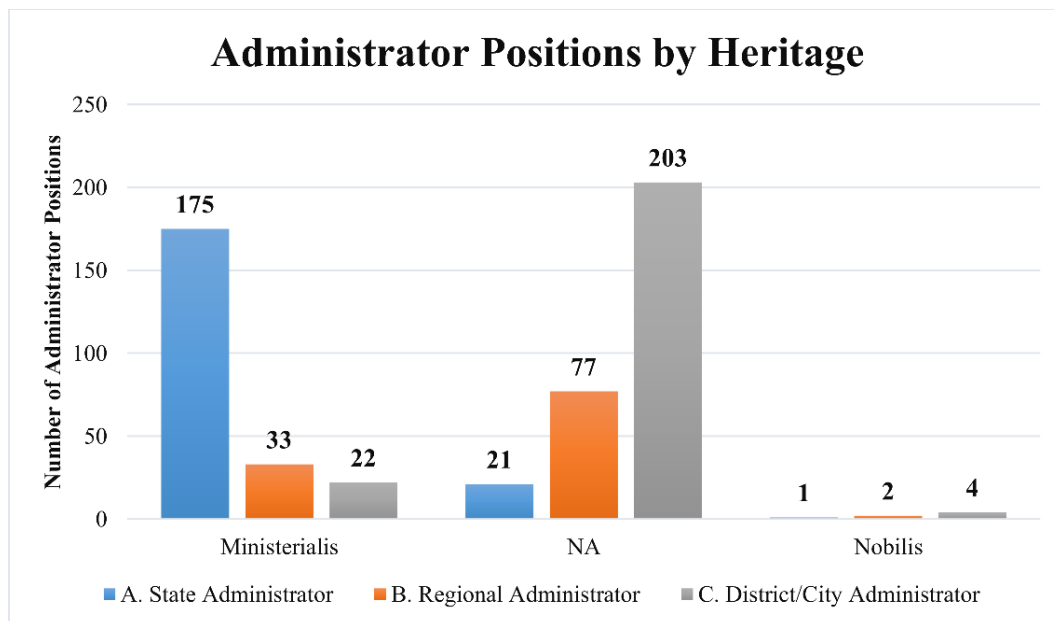


Figure 92: Distribution of administration positions among all individuals in the LPG.

When digging deeper into the data, the differences between the individuals of the focus and the non-focus groups become more pronounced. For example, 38% of the focus group consisted of ministeriales, yet they accounted for 65% of all appearances with a specified status (Figure 93). The ministeriales of the non-focus group, on the other hand, account for four percent of the total individuals of that group and only 4.5% of the appearances. This indicates that the ministeriales from outside the Reichsland of Lautern, who were in contact with those ministeriales from within

the estate, had a lower activity than the *nobiles* and certainly much lower than the *ministeriales* of the focus group. However, this could simply be because the other royal estates were not included in the dataset and therefore give the false indication that these other *ministeriales* were not very active. Had other royal estates been analyzed at the same level of detail, a larger network of *ministeriales* would emerge. This demonstrates that the *ministeriales* were inextricably bound to the areas in which they were commissioned and, unless in the service of a monarch or bishop on campaign, were rarely active outside the premises of their commissions.

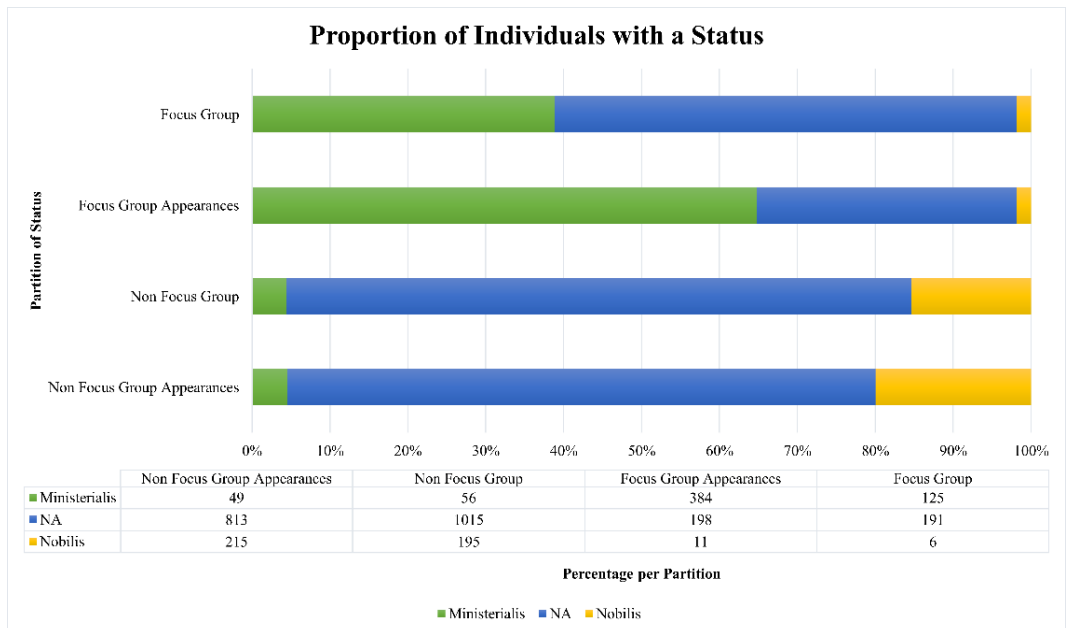


Figure 93: Proportion of individuals with specified status by focus group.

Of the 125 *ministeriales* belonging to the focus group, only 43 were ever mentioned as an administrator at any time. Within the chronological span of this project, 18 of these *ministeriales* belonged to the family von Lautern-Hoheneck accounting for 168 appearances, or 82% of all specific appearances by *ministeriales* in the focus group (Figure 94). The names of all *ministeriales* with specific appearances as administrators from the focus group are shown in Table 23.

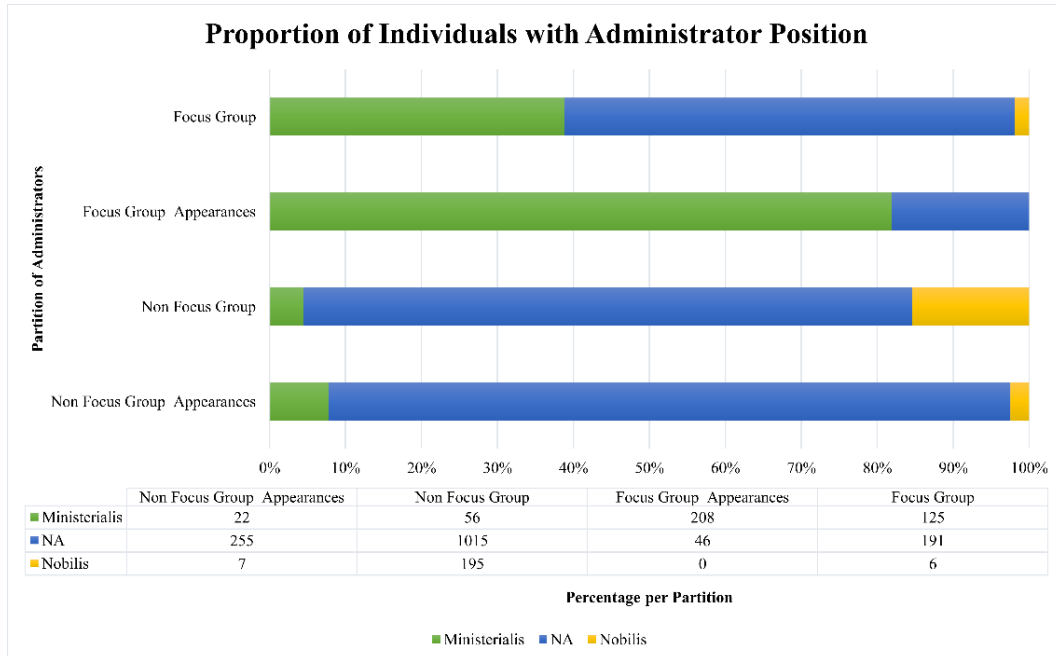


Figure 94: Analysis of Individuals with Administrator Positions.

Table 23: Names of the Family members with Administrator Positions.

von Lautern-Hoheneck	von Lautern-Montfort	von Beilstein-Wartenberg	von Wilenstein
Eckbert I von Lautern	Eberhard I von Lautern	Friedrich von Beilstein	Albero von Wilenstein
Erbo von Lautern		Herbod von Beilstein	Eberhard von Wilenstein
Heinrich I von Lautern		Johann (Hans) von Beilstein	Gerwin von Wilenstein
Heinrich II von Lautern-Hoheneck		Merbodo IV von Beilstein	Landolf II von Wilenstein
Johannes I von Lautern			Merbod von Wilenstein
Reinhard I von Lautern			Wirich [Wenzo or Werlich] von Wilenstein
Reinhard II von Lautern-Hoheneck			
Reinhard III von Lautern-Hoheneck			
Siegfried I von Lautern			
Siegfried II von Lautern-Hoheneck			

These results provide empirical evidence that the von Lautern-Hoheneck family was far more successful than the other ministeriales of the Reichsland of Lautern in acquiring administrator positions during the same time frame, particularly at the highest level. In turn, this placed certain members of the family in the intimacy of the reigning monarchs and among a multitude of others across all levels of the status hierarchy. Based upon the charters in this corpus, Heinrich I von Lautern had a social network of 197 people whom he met in 61 locations—mainly in Germany and Italy. His movements were mainly clustered in central Germany along the Rhine and in northern Italy in the Po Valley as shown in Figure 95. 22 different statuses from all ten status groups and 23 administrator positions from all three administrator position groups are represented in his network. Interestingly, he only visited two sites distinctly mentioned as castles throughout his travels, which included castle Nanstein in Landstuhl. However, he did visit six different royal palaces: Aachen, Frankfurt, Gelnhausen, Hagenau, Lautern, and Palermo. This means that Heinrich was very familiar with the elite standards of architecture at the end of the 12<sup>th</sup> century throughout the empire and the recently conquered kingdom of Sicily. The palace of Palermo is specifically relevant due to its large menagerie, as was described in Section 3.3.1.3 regarding historical account of the Palace of Lautern. The palaces at Aachen and Frankfurt also included large menageries in addition to nearby hunting grounds for the monarchs. As Heinrich was well acquainted with the highest standard of royal architecture and menageries, he would have been perfectly suited to assist in the development of the palatial grounds within the Reichsland of Lautern.

The dominance of the von Lautern-Hoheneck family within the Reichsland of Lautern is further illustrated by a brief comparison of the social network belonging to the first and second generations of their family, and of the von Beilstein family. The entire social network of the von Beilstein family, i.e. all those with whom members of the family had contact, within the lifespan of Heinrich I von Lautern (~1165 until ~1221) consisted of only 74 people across nine locations, representing only seven statuses and four administrator positions. The direct comparison between the entire family at the turn of the 13<sup>th</sup> century with that of only Heinrich I von Lautern highlights the early success of the von Lautern-Hoheneck family to gain notoriety and social connections. When compared to the 14 members of the first and second generations of the von Lautern-Hoheneck family, an even clearer picture emerges. The family had a combined social network of 338 other individuals across 82 locations, representing 24 statuses and 23 administrator positions. Their immense network indicates that they were active in procuring social connections and that they were well known throughout the region and empire. These early successes were further demonstrated by their economic proceedings, discussed in the following section.



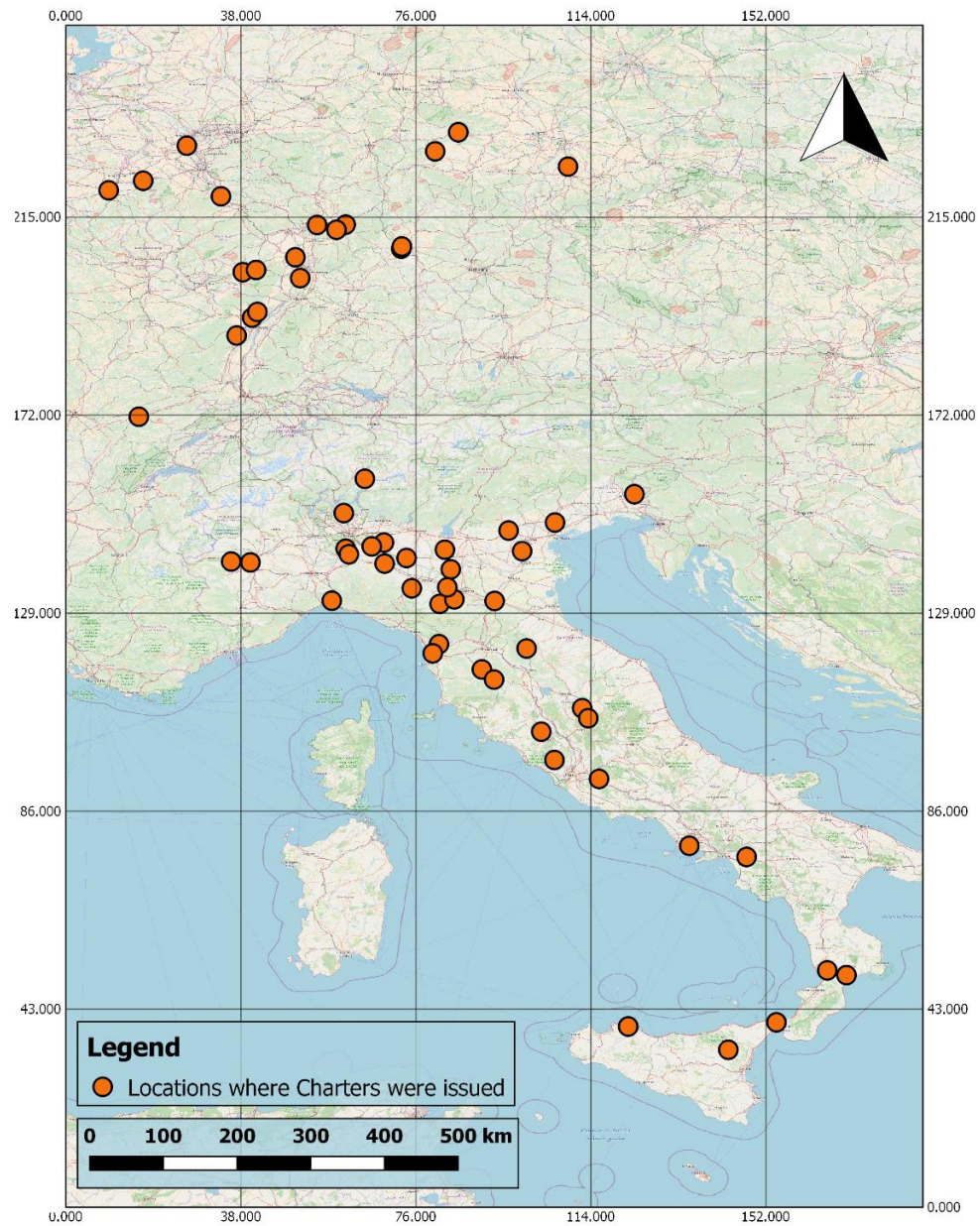


Figure 95: Movements of Heinrich I von Lautern throughout the empire between 1184 and 1223.

#### 6.4.2 Examination of the Events

The series of proceedings involving the various ministeriales families of the Reichsland of Lautern with the regional institutions, including the various monasteries, provides insight as to which families were successful in cultivating friendly relations with the foremost ecclesiastical institutions nearest their castles and commissions. A total of 75 detailed events took place in 60 charters within the chronological range between the years 1152 and 1273, accounting for 110 items, concerning 82 locations. The other 178 events modeled from the charters occur after 1273 and were done before I limited the chronological scope. The most often discussed location in the events was a place called Santbach (or Sambach), a small village directly north of the Palace of Lautern and directly west of the Abbey of Otterberg. It accounted for 13% of all locations in the events, and dealt with topics such as village rights, taxes, and water rights. This is rather significant as it is positioned along the Lauter River. Although only a shadow of its former self, the Lauter River once provided the power for many mills in the region but, as mentioned before, could have been used for floating materials to the construction zones at the palace. Just north of Santbach is the area known as the Waltmark, which in the 13<sup>th</sup> century, consisted of meadows and forests. These resources are indeed corroborated in four events from 1265 regarding the Waltmark in which meadows and logging-rights were dealt with. Curiously, Castle Hohenecken is the only of the four primary sites that was not a location under discussion in the events. The topics covered in the events are shown in Figure 96, depicting the topics and their respective occurrence of items every 20 years throughout the chronological scope of the project.

The immediate takeaway from Figure 96 is that the majority of events occurred between two sets of years: between 1211 and 1230, and between 1251 and 1273. These correlate roughly with the building phases Romanesque IV and V (respectively). During Romanesque IV (between 1194 and 1230) 183 identified architectural elements were constructed at Castle Hohenecken, 26 at Castle Perlenberg, and 26 at the Palace of Lautern. Romanesque V (between 1230 and 1270) included 54 identified elements at Castle Beilstein and a further 67 at Castle Hohenecken. These phases account for 52% of all architectural elements that were identified during the architectural analyses. The progression of construction, based upon the investigations of Chapter Four are shown in Figure 97.

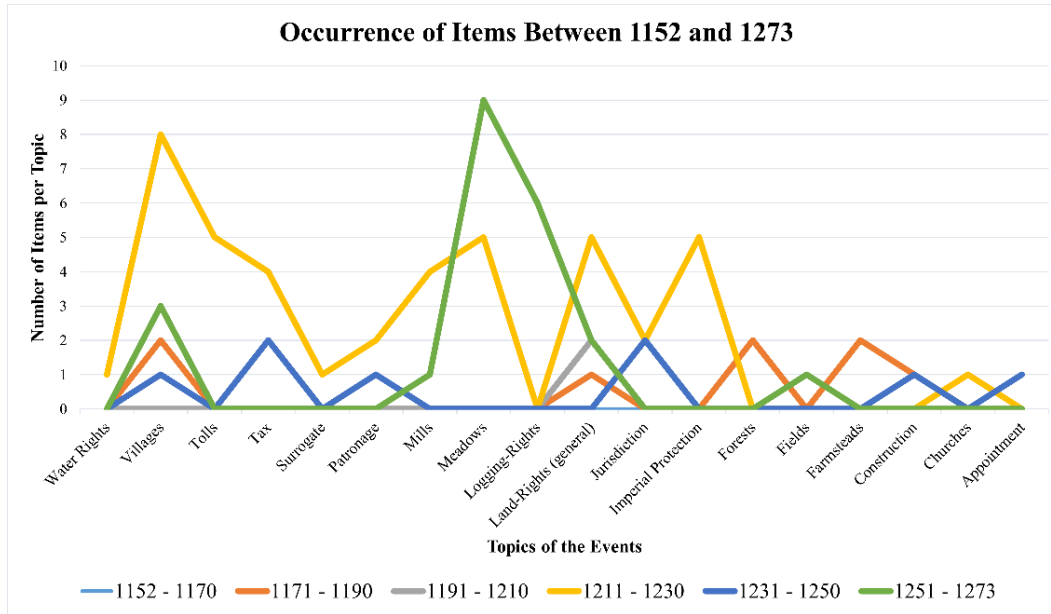


Figure 96: Occurrences of Items in the Events sorted by ~20 year periods.

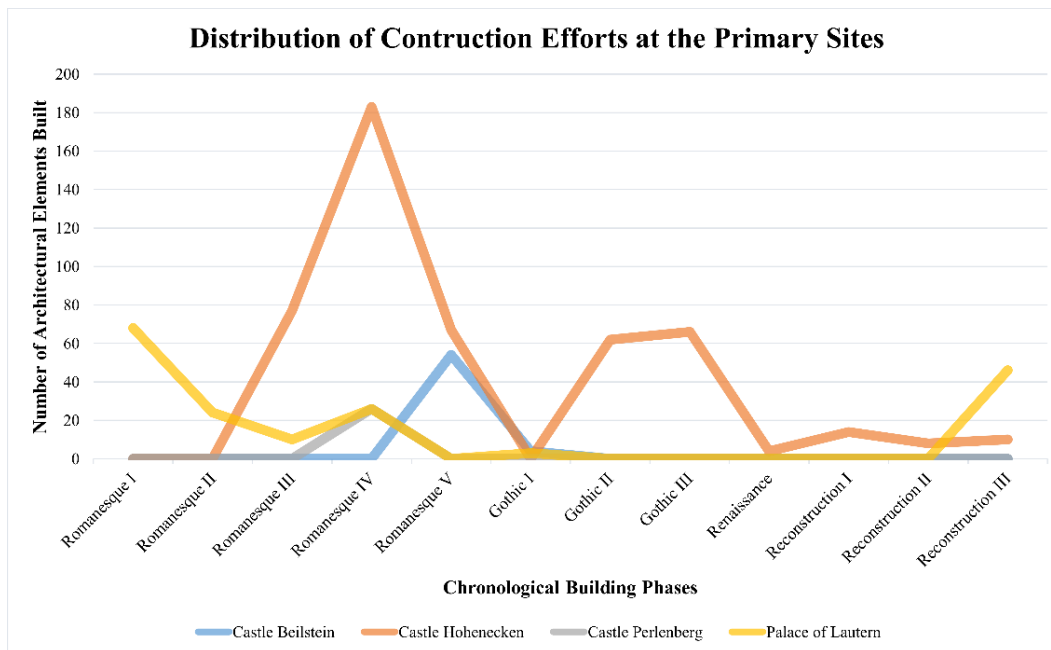


Figure 97: Distribution of Construction Efforts at the Primary Sites.

The largest building campaign according to the extant features at the primary sites was certainly the construction of Castle Hohenecken throughout the late 12<sup>th</sup> and entire 13<sup>th</sup> centuries. The Palace of Lautern currently only exhibits elements from the 12<sup>th</sup> and early 13<sup>th</sup> centuries, and the Castles Beilstein and Perlenberg really only have two major phases identifiable. Although the phases could be identified, the background knowledge of why the elements were constructed requires the assistance of the historical data catalogued in the events and items. It is possible to identify potential construction starting and ending points by analyzing when resources were acquired or sold. Within the time period between the years 1152 and 1210 very little was dealt with, economically speaking. This was due in part to the throne struggle following Emperor Henry VI's death in 1197 in which many ministeriales apparently waited to see where the winds of favor would guide their careers. It was due to the fact that the Emperors Barbarossa and Henry had embarked on massive construction projects throughout the empire, as noted in Section 3.3.1.2, using resources gained by war campaigns and ransoms to fuel their costly endeavors. As such, the ministeriales were not in a position of having to buy and sell resources, instead piggy-backing off the success of the monarchs. The two emperors also visited Lautern often, whereas Henry VI's son, Frederick II, was in Lautern eight times between the years 1212 and December 1219,<sup>1364</sup> but did not return after that point. The general overview of economic proceedings by the ministeriales was mentioned earlier, though it is possible to narrow it down even more to between 1215 and 1219, as well as the year 1265 as shown in Figure 98.

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<sup>1364</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. Pp. 105-106, 107-109, 112, and 138-139. Catalogued as Charter IDs 10075, 10922, 10921, 10923, 10925, and 10076. Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,1 n. 802." Catalogued as Charter ID 10442.

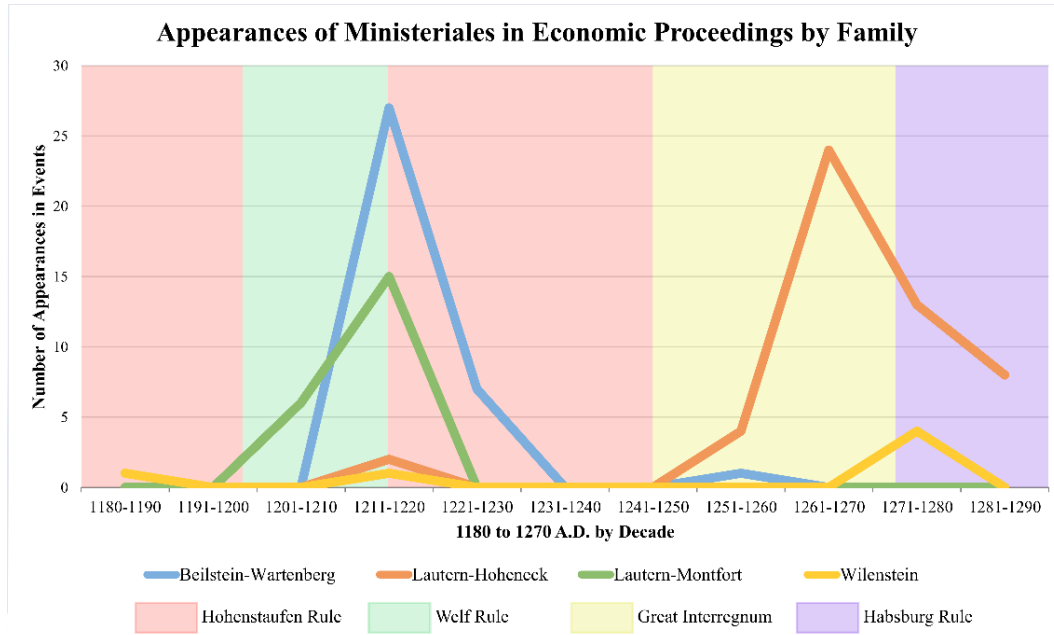


Figure 98: Appearances of ministeriales in economic proceedings by family from 1180 until 1290.

Even though the chronological scope ends with the election of Rudolf von Habsburg in 1273, it is necessary to extend the investigation of the events until 1290 as they show an important trend. The first trend is that the von Beilstein-Wartenberg and von Lautern-Montfort families become very active during the transition years from Otto IV (Welf family) to Frederick II (Hohenstaufen family), indicating a level of political and economic uncertainty not displayed by the von Lautern-Hoheneck family. This is probably due to the fact that the von Lautern-Hoheneck family controlled the position of sheriff in the royal estate until 1273. This also means that the administrator position of sheriff was more of a fixed position during transfers of power rather than a revolving door. All of the topics regarding the von Beilstein-Wartenberg family between the years 1214 and December 1219—the last time Emperor Frederick II stayed in Lautern—concerned general land rights and the control of villages. The village in question was none other than Santbach and the land-rights concerned the area around Morlautern. In both cases, the family either gave willingly or confirmed that they had willingly given the lands to the Abbey of Otterberg. This precedes the reconstruction of Castle Beilstein in 1234 and never mentioned any gain of resources in the actions. A charter from 19 February 1219 says that Werner I Kolb von Wartenberg relinquished all claims to the abbey. The same man appeared on 18 May 1227 alongside the entire von Beilstein-Wartenberg family in which they sold the village of Saulheim, a mill in Eichenbach, a mill in Reichenbach, and presented a title

all to the abbey of Otterberg. It is presumably during this time that the family cozied up to the future usurper Henry (VII).

The von Lautern-Montfort family, on the other hand, ceded even more property to the abbey including two mills, their rights to Santbach, patronage of the church in Santbach, meadows near Santbach, and various taxes from the village of Erlenbach in the year 1218. It is known that Eberhard I von Lautern-Montfort had served Otto IV, and perhaps members of the von Beilstein-Wartenberg family did as well. This demonstrates a sort of punishment orchestrated by the abbey with the assistance of the sheriffs of the family von Lautern-Hoheneck in setting the other two families back on the straight and narrow path in support of the Hohenstaufen dynasty. In addition to ironing out these regional competitors who moved about at the royal and imperial levels, the more insignificant von Wilenstein family was also forced to cede any claims to Santbach, though they acquiesced already in the year 1212 during the height of the throne struggle. This indicates that the von Wilenstein were not only easily tamed, but perhaps wanted to explore the world of higher level ministeriales by warming up to the von Lautern-Hoheneck family together with their strong regional ally, the Abbey of Otterberg.

The second major trend in Figure 98 shows a large spike by the von Lautern-Hoheneck family during the Great Interregnum. These economic actions include the tremendous endowment of lands to the Teutonic Knight Commandry at Einsiedel on 18 October 1253 (Section 3.4.1), and a spree of sales in 1265 to the Abbey of Otterberg. These included meadows and logging-rights in Brant and the Waltmark, fields near the Lampertsmühle (as well as the mill itself), meadows near the village of Rohrbach, and the entire village of Rinsbach. Noticeably absent from the list is the village of Santbach, though many of the other items are very close to the abbey. It is important to note that these consisted of selling the rights of the properties to the abbey, but not the properties themselves. It would also be an error to suggest that the von Lautern-Hoheneck family had fallen victim to the expansionist policy of the abbey as well, considering that the family was in charge of the royal estate during the interregnum, were the guardians of the imperial regalia in Castle Trifels, and were the administrators of the royal palace during King Richard of Cornwall's marriage on 16 June 1269. This means that the money gained was not used to pay off debts or as punishment for supporting the 'wrong' side, but inside indicates funding for a construction campaign. Considering that kings rarely visited the royal estate during the interregnum, very few funds were being funneled in for construction projects as had been the case in the second half of the 12<sup>th</sup> century. According to the architectural investigations, much of the western portion of Castle Hohenecken was constructed during Romanesque V (1230 – 1270) and can thus be more accurately pinpointed around the year

1265, following the sale of the lands to the abbey. This elated period that the family enjoyed soon ended with Rudolf von Habsburg in 1273 when he went so far as to not only remove the family from all administrator positions, but also enfeoffed Castle Hohenecken to the von Leiningen family who subsequently took control of the royal estate. The actions in the proceedings at that time were not simply outlining the sale of rights, but the properties themselves. Nine properties were sold by the von Lautern-Hoheneck family to the Abbey of Otterberg between the years 1274 and 1282. The von Wilenstein family was also subject to selling much of their property, albeit to the Benedictine Monastery of Hornbach.

### 6.4.3 Identifying the Builders of the Castles

In order to identify these individuals, the Event node was connected to the Building Phase node, to which the rest of the architecture-related node types were connected. By selecting only the Event type labelled *Transaction*, the years of appearances correlating to the chronologies of the various building phases, and selecting the specific site, a list of potential builders can be called upon. These lists concern only those who had been active in transactions according to the documented evidence and present potential builders of the four primary sites studied in this project. Based upon this query, 53 individuals<sup>1365</sup> could have been responsible for the construction of the royal palace from the years 1160 until 1450. When the *Confirmation* and *Enfeoffment* Event types are selected, the list extends to 140 individuals. However, these factors essentially added individuals who had already been in the previous list. The chronological focus of the project was limited to the time between the years 1152 and 1273, which also limits the accuracy of the results after 1273. Additionally, some of the individuals listed in the results of this query were members of less empowered ministerialis families, such as those of the von Wilenstein family at the turn of the 13<sup>th</sup> century, though their prospects increased towards the end of the 13<sup>th</sup> century under Rudolf von Habsburg, as the case was for the von Beilstein family as well. Furthermore, the ministeriales were commissioned as administrators at the palace, and individuals in the list with the property of NA were typically less active in events from the charters, requiring a selection for the ministeriales. The many historical factors involved in the interpretation of the generated list regarding the potential builders of the primary sites stresses the importance of the historical investigation, beyond simply adding the data in the tables composing the graph database. Thus, the most accurate list of potential builders takes into account the ministeriales of the von Lautern-Hoheneck or von Beilstein-Wartenberg families prior to 1273, and limits the Event type to Transactions. The results of these additional factors reveals a list of 12 individuals shown in Table 24.

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<sup>1365</sup> The lists are first removed of any duplicates, as the exports from the GDB result in up to 71,000 rows.



Table 24: Potential builders of the Royal Palace of Lautern.

Name	BuildingPhase	Begun	Ended
<b>Werner I von Lautern</b>	Romanesque III	1160	1194
<b>Johannes I von Lautern</b>	Romanesque III	1160	1194
<b>Eckbert I von Lautern</b>	Romanesque III	1160	1194
<b>Werner Kolb von Wartenberg</b>	Romanesque IV	1194	1230
<b>Reinhard I von Lautern</b>	Romanesque IV	1194	1230
<b>Merbodo II von Beilstein (Senior)</b>	Romanesque V	1230	1270
<b>Reinhard II von Lautern-Hoheneck</b>	Romanesque V	1230	1270
<b>Reinhard III von Lautern-Hoheneck</b>	Gothic I	1270	1330
<b>Heinrich III von Lautern-Hoheneck</b>	Gothic I	1270	1330
<b>Margarethe von Lautern-Hoheneck</b>	Gothic I	1270	1330
<b>Arnold von Lautern-Montfort</b>	Gothic I	1270	1330
<b>Hildegarde von Lautern-Montfort</b>	Gothic I	1270	1330

Based upon the historical investigation of Chapter 3, only those with active commissions as an administrator at the palace could have been in the position to oversee the construction. Those individuals are highlighted in green as the most likely administrators who oversaw and managed the construction of the palace from the late 12<sup>th</sup> to late 13<sup>th</sup> centuries. Similar queries can be made for the other three sites, in which only the location name and family properties are adjusted in accordance to the respective castle. In the case of Castle Hohenecken, a list of 10 individuals within the frame of the project chronology is revealed. However, the list includes potential builders during Gothic I—a building phase that was not identified at Castle Hohenecken. This stresses examining the lists in accordance to the architectural investigation as a quality control of the data. The results are very similar to those identified as potential builders of the royal palace. The redundancy is due to the fact that these same individuals were active in transactions within the Reichsland of Lautern and many possessed elite administrator positions. However, the most probable builders are highlighted in green in Table 25, leaving out Werner I von Lautern, for whom an actual administrator position was never documented, though he was a ministerialis.

Table 25: Potential builders of Castle Hohenecken.

Name	BuildingPhase	Begun	Ended
<b>Werner I von Lautern</b>	Romanesque III	1160	1194
<b>Johannes I von Lautern</b>	Romanesque III	1160	1194
<b>Eckbert I von Lautern</b>	Romanesque III	1160	1194
<b>Reinhard I von Lautern</b>	Romanesque IV	1194	1230
<b>Reinhard II von Lautern-Hoheneck</b>	Romanesque V	1230	1270

This list of potential builders correlates almost exactly with what I hypothesized in Section 4.4.6 regarding the architectural development of the site. The difference was my inclusion of Heinrich I von Lautern and the other brothers Siegfried I and Erbo. These three brothers never appeared in any charters dealing with transactions, nor were they involved with any events within the Reichsland of Lautern. This confirms that Siegfried I most likely remained as commander of the castle of Gavi<sup>1366</sup> during the 1190s until the expulsion of the ministeriales from Italy following the death of Emperor Henry VI as discussed in Section 3.2.1. Erbo's career progressed along a similar trajectory as he had also been in Italy during following Sicilian campaign alongside his brother Heinrich I,<sup>1367</sup> and probably for the majority of the 1190s. In fact, Heinrich I was rarely in the Reichsland of Lautern, as indicated by Figure 95, making it unlikely that he was heavily involved with the actual construction of the sites, though he certainly could have provided ideas for new elements, like the service lift between Inner Chambers A and B. Erbo's next appearance after the death of the emperor was on 31 July 1213 as chamberlain to King Frederick II, alongside other prestigious ministeriales.<sup>1368</sup> This absence from the written record correlates to the roughly the same absence of Heinrich I during the period after Emperor Henry VI's death. This was the same case for Johannes I von Lautern who was explicitly mentioned as an expellee on 8 January 1198.<sup>1369</sup> As all four brothers—Erbo I, Heinrich I, Johannes I, and Siegfried I—had been involved in Italy at the international level, it is likely that they were not involved in the construction of the royal palace or of Castle Hohenecken. Nevertheless, they represent the source of income for the family and notoriety

<sup>1366</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. P. 69. Also catalogued as Charter ID 10770 in the graph database.

<sup>1367</sup> Ibid. P. 96. Also catalogued as Charter ID 10882 in the graph database.

<sup>1368</sup> Akademie der Wissenschaften und der Literatur, Mainz, "RI V,1,1 n. 710." Also catalogued as Charter ID 10441 in the graph database.

<sup>1369</sup> Dolch and Münch, *Urkundenbuch der Stadt Kaiserslautern I*. P. 98. Also catalogued as Charter ID 10890 in the graph database.

corresponding to their elite administrator positions. Although they were not building the sites themselves, they were procuring the funds to do so. The family members who are left as potential builders are therefore Eckbert I, his son Reinhard I, and grandson Reinhard II. It is therefore not coincidental that the family line extending from Reinhard I is the most complete for any of those belonging to the von Lautern-Hoheneck family, as he was in the Reichsland of Lautern as the imperial sheriff from the years 1193<sup>1370</sup> until 1217.<sup>1371</sup> As one goes further on in the analyses of the builders of Castle Hohenecken, a trend emerges in which the builder was almost always named Reinhard, indicating the name most connected to the site.

The case for Castle Beilstein follows the same logic as for Castle Hohenecken in which the only changes are the selection of the von Beilstein family, specific exclusion of the von Lautern-Hoheneck family, and selection of the site name. The results consist of a smaller list composed of seven names shown in Table 26. The most probable builders are highlighted in green, as the other four were members of the von Wilenstein family. The exception is Merbod von Wilenstein, who was discussed in Section 3.5.1 regarding the commission of three men with the name of Merbods (or a variation of the name) as castellans of the royal palace under King Rudolf von Habsburg. The other two included Merbodo IV von Beilstein and Merbodo von Breidenborn. The von Breidenborn family first became heavily involved in events in the Reichsland of Lautern near the end of the 14<sup>th</sup> century and beginning of the 15<sup>th</sup> in which the Johann von Breidenborn was enfeoffed by Reinher von Hoheneck with multiple items. However, the family was less represented in the late 13<sup>th</sup> century charters—particularly regarding transactions—and are therefore not included in the list from the graph database. Merbodo IV von Beilstein presents a strange scenario as he was the son of Merbodo II von Beilstein. He was the fourth Merbodo, because Merbodo II's brother was named Merbodo III according to a charter from 1251.<sup>1372</sup> To add to the confusion, Merbodo II's nephew—the son of Werner I Kolb von Wartenberg—was Merbodo von Wartenberg. Considering the lack of events regarding transactions from the family after 1273, due to the chronological limit of the project, it is certainly possible that later charters would have chronicled more economic activities of the von Beilstein family. Therefore, the most accurate names are Werner Kolb I von Wartenberg and Merbodo II von Beilstein, considering that later construction phases correlate with the tapering end

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<sup>1370</sup> Ibid. P. 82. Also catalogued as Charter ID 10828 in the graph database.

<sup>1371</sup> Akademie der Wissenschaften und der Literatur, Mainz, “RI V,1,1 n. 898.” Also catalogued as Charter ID 10450 in the graph database.

<sup>1372</sup> Dolch and Münch, *Die Urkunden des Zisterzienserklosters Otterberg 1143-1360*. P. 131. Also catalogued as Charter ID 10412 in the graph database.

of the charters from which the events and items were modeled. The example of the database-generated list of potential builders for Castle Beilstein is not as accurate as for Castle Hohenecken, though this is largely due to a lack of data from later periods. If later periods were to be modeled with the same level of precision as the periods between the years 1152 and 1273, the graph database would certainly produce more accurate results. This underlines the advantage of this project as more data can be added to produce more accurate results.

Table 26: Potential builders of Castle Beilstein.

Name	BuildingPhase	Begun	Ended
<b>Werner Kolb von Wartenberg</b>	Romanesque IV	1194	1230
<b>Merbodo II von Beilstein (Senior)</b>	Romanesque V	1230	1270
<b>Wirich [Wenzo or Werlich] von Wilenstein</b>	Gothic I	1270	1330
<b>Merbod von Wilenstein</b>	Gothic I	1270	1330
<b>Jakob von Wilenstein</b>	Gothic I	1270	1330
<b>Johann II von Wilenstein</b>	Gothic I	1270	1330
<b>Albert von Wilenstein</b>	Gothic I	1270	1330

Castle Perlenberg is the only one of the primary sites lacking a medieval written documentation entirely. As such, the interpretation of its construction are based upon the architectural and geo-spatial analyses. However, the historical investigation of the Reichsland of Lautern is still incredibly useful as it models all of the known events and items within the proceedings beginning decades before the construction of the castle and ending decades afterward. This presents a substantial advantage for identifying the potential builders of a site without a written record. The same query was run for the analysis of the builders of Castle Perlenberg with a general selection of ministeriales and the selection of the site as the only changes. The results of the query are shown in Table 27. The section of the potential builders is essentially the same as that of Castle Hohenecken, though a few members of the von Beilstein family are included. Considering that the architectural investigation determined that the castle was built for the pleasure of the emperor and his entourage, only active ministeriales would have been in a position to oversee construction of the site. This excludes Werner I Kolb von Wartenberg, as he was never mentioned as an imperial or royal ministerialis in the charters. The narrowing of the selection to only those of the von Lautern-Hoheneck responsible for the construction of Castle Hohenecken is substantiated by the similarity of the masonry found on

the outside wall of Castle Perlenberg, and both the upper fourth of the shield wall and entirety of the Main Tower at Castle Hohenecken.

Table 27: Potential builders of Castle Perlenberg.

Name	BuildingPhase	Begun	Ended
<b>Werner I von Lautern</b>	Romanesque III	1160	1194
<b>Johann von Lautern</b>	Romanesque III	1160	1194
<b>Arnold I</b>	Romanesque III	1160	1194
<b>Eckbert I von Lautern</b>	Romanesque III	1160	1194
<b>Werner Kolb von Wartenberg</b>	Romanesque IV	1194	1230
<b>Reinhard I von Lautern</b>	Romanesque IV	1194	1230
<b>Merbodo II von Beilstein (Senior)</b>	Romanesque V	1230	1270
<b>Reinhard II von Lautern-Hoheneck</b>	Romanesque V	1230	1270

Given the seven individuals identified as the builders of the four primary sites within the chronological span of 1152 to 1273, the equations of perceived rank and temporal rank from Section 2.4.4.2 can be applied in order to determine who had the highest rank. Although some lived in different generations, the temporal rank that extends beyond one's own lifetime can still be tested. As the focus of this project is upon the primary sites and their effect upon society, only the seven builders were evaluated, rather than all members of the focus group. Provided the lasting effect that architecture has beyond a person's lifetime, and indeed its effect of time upon future societies, the architectural rank of an individual weighs more than their perceived rank within the broader context. Therefore, Reinhard II von Lautern-Hoheneck was evaluated as higher than his nephew Reinhard III, even though Reinhard III married into the nobiles and had been commissioned with a higher administrator position. On the other hand, Reinhard III's marriage and status as a local lord resulted in an evaluation above that of his great-grandfather, Eckbert I, and his grandfather, Reinhard I.

Table 28: Ranking the temporal ranks of the seven builders.

<b>Evaluation</b>	<b>Name</b>	<b>Temporal Rank</b>
<b>1</b>	Reinhard II von Lautern-Hoheneck	5B(I) + 6C(I) + Castle Builder (III)
<b>2</b>	Reinhard III von Lautern-Hoheneck	5A(I) + 6B(I) + Castle Builder (I)
<b>3</b>	Eckbert I von Lautern	A(I) + B(I) + Castle Builder (III)
<b>4</b>	Reinhard I von Lautern	B(I) + C(I) + Castle Builder (III)
<b>5</b>	Merbod von Wilenstein	6C(I) + Castle Builder (I)
<b>6</b>	Werner Kolb von Wartenberg	Castle Builder (I)
<b>7</b>	Merbodo II von Beilstein (Senior)	Castle Builder (I)

## 6.5 Summary

Chapter 6 presented the ‘nuts and bolts’ of the graph database, focusing upon the key advantages of the graphical model and the development of the schematic. The core of the chapter concerned the descriptions of the 12 different node types, their associated properties, and the 22 relationships connecting them to one another. The 20 different tables composing the data of the graph database include over 10,400 rows of manually inserted data drawn from over 707 transcriptions of charters, 76 architectural plans from the construction research of 4 castles, and the mapping of over 670 locations. These tables, the evolution of the project schematic, a list of queries, and a guide for installing Neo4j to explore the queries are found in HeiDATA [here](#).

The use of the graph database was instrumental in organizing the data of the entire project and provided an avenue for determining the potential builders of the primary sites. The malleability of the graphical model, and the fact that more data can be entered into the tables, makes this method both efficient and advantageous. The inclusion of the graph database presents a proof of concept for empirically determining historical phenomena that are otherwise lost or never explicitly stated. As such, it provides a methodology to test art historical and historical theories as to why certain buildings were constructed, how they were constructed, and by whom. The results of these analyses indicate that economic and social activities of the members of the focus group provide a wealth of information that can be used to corroborate the results of architectural investigations. Although the historical investigation covered most of this information, the ability of the graph database to call upon a list of specific individuals within a matter of milliseconds is a significant advantage when working with historical data. This allows researchers to focus more upon conducting quality control and providing evidence for their results, bypassing the lengthy phase of first identifying specific individuals from a corpus composed of thousands.





## 7 Discussion and Conclusions

This project presented a novel approach for combining digital methodologies in order to discover new conclusions regarding the function, network, and builders of historic sites. The case study sites consisted of four medieval castles in the former Reichsland of Lautern (a medieval estate), for which three investigations were completed using digital methods as the core investigative procedures. The first was an historical investigation using transcriptions of 707 medieval charters, whose contents were modeled in a graph database. The second was an architectural investigation using 3D photogrammetric models of the sites to conduct construction research. The third was a geo-spatial investigation using digital elevation data and geo-referenced historical maps to analyze the landscape surrounding the four sites. The combination of the results of the three investigations was conducted in a graph database that functioned as an organizational tool as well as a mechanism for testing historical hypotheses and theories. The use of the history of the Reichsland of Lautern as the main historical narrative proved fruitful, considering the extensive amount of information regarding the medieval period and existence of castles and monasteries throughout the area. The royal estate provided the ideal setting for testing the effectivity of the digital methodologies presented in Chapters 3 through 6, in order to test the theories from Chapter 2 and discover information previously unknown at the intersection of the heterogeneous data sources.

Each of the investigations were conducted using accessible information sourced from libraries, archives, online repositories, and recorded from cultural heritage sites. The collection of the data was then transformed into a robust network cataloging historical events, locations, and individuals using a highly malleable graph database. With the exception of the 3D photogrammetric software and tools, the investigations were largely conducted using free materials. This was a conscientious decision as the greater availability of the tools and software presented in this project allows more people to apply and test the approach. The application of the case study can change, depending upon different regional interests and hypotheses—the Reichsland of Lautern is not a limiting factor for its use. The adaptation of the case study was instrumental in viewing medieval royal estates from a new perspective in which the historical individuals, castles, and landscapes are interpreted as a complex system of nodes through which individuals and families expressed status and ambition.

## 7.1 Evaluating the CITADEL Approach

The integrative approach presented in this dissertation proved more viable and valuable than I could have hoped for at the inception of the project. What had begun as an investigation of four medieval sites with a focus upon their position within the landscape, developed into a new approach for examining various data sources regarding cultural heritage sites including hundreds of written sources, multiple 3D models, and numerous geo-spatial analyses. The combination of these investigations in the graph database was of immense value, as it organized all of the data while simultaneously providing a model for which to test certain hypotheses—such as the reasons for the construction of the sites and CST. However, it was not without a significant amount of work to first establish the schematic of the graphical model in order for it to accomplish this goal. The work consisted of parsing medieval texts into a series of events, analyzing the social networks of more than 1500 individuals, linking these networks to building phases, and then testing who could have been responsible for the construction of buildings of unknown origin. The various changes made to the graphical model, is a testament to both the necessity to change a model in order to account for unforeseen elements, in addition to the necessity of having a software that can accomplish that goal with the flexibility such a project requires. The application of the graph database proved not only instrumental in the success of the project, but also established an excellent tool for exploring history, learning about the medieval social structure, and analyzing architecture.

Now that the graphical model has been established, it is only a matter of adding more information—in the event that the German Palatinate should be modeled further—or applying it to a new region entirely. The sheer amount of data that was accumulated and combined in this project should serve as an encouragement to fellow researchers that this diversity of data sources can be integrated and called upon in both an effective and flexible manner. Regarding the actual case studies that were investigated in this project, there is still a brief discussion to be had in order to summarize the results. The next section recaptures the main themes that were discussed throughout the dissertation, focusing upon the connection between the case study sites and those who built them. It presents a new way of envisioning the medieval past, not as isolated occurrences and architectural peculiarities within a rigidly stratified society, but as a highly connected network in which people, buildings, and landscapes were inextricably, yet dynamically bound.

## 7.2 A Medieval Network of Nodes and Edges

The interpretation of the Reichsland of Lautern as having been insignificant with the exception of the Roman *via regia* by L.A. Doll in 1965,<sup>1373</sup> is a stark contrast to the interpretation of the 12<sup>th</sup> and 13<sup>th</sup> century palatial landscape as has been found in this project. Although others, such as Hans Werle, have interpreted the construction of the Palace of Lautern and the neighboring castles in the Reichsland of Lautern as part of a larger imperial defensive castle system,<sup>1374</sup> their assumption was more a reflection of castle studies during the 1960s and 1970s, than an interpretation that takes into account both aspects of function. The idea that the castles belonged to a larger network is correct, though the utility of the castles is far more nuanced, as they did not fundamentally serve as defensive points, despite certainly featuring militaristic elements. The conclusions drawn from this project identify the primary sites as physical network of nodes bound to one another by a common scheme of promoting the representative and utilitarian functions of royal and imperial policies. Not only did the castles of the primary, secondary, and tertiary sites serve as nodes, but so did the numerous properties from the proceedings. However, the connections between these nodes were the *ministeriales* and other members of the focus group. Without the involvement of these people, the sites themselves would not have existed. Therefore, it is best to think of the royal estate as a landscape punctuated with physical nodes whose development and maintenance were facilitated by the administrators commissioned in the estate. These administrators used the status and elite connections of their respective family members to alter this built landscape in such a way as to benefit their own families as well as the policies of the monarchs. Thus, finding the balance between the aspirations of one's specific family and the demands of the royal employer was the true strategic art behind maintaining an estate. Many examples of famous *ministeriales* were presented in this work, who composed the entourages of the kings and emperors of the 12<sup>th</sup> and 13<sup>th</sup> centuries. However, the administration of royal estates within imperial territories was a key advantage to those commissioned with the task, as opposed to those who sought social elevation at the continental level alone—as Markward von Annweiler had. The administration of such as territory meant that one's commission could continue beyond the death of the king or emperor to whom one owed the commission. It also meant that such a commission could extend over dynasties, if the proper strategy was pursued.

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<sup>1373</sup> Doll, "Das Reichsland Lautern im Mittelalter." P. 29.

<sup>1374</sup> Werle, "Wald und Herrschaft: Studien zur Geschichte der Reichswaldgenossenschaft Kaiserslautern." P. 54.

The social elevation of the ministeriales from unknown roots to repeated members of the royal and imperial entourages is a testament to the success of such strategies that involved movement within both the secular and ecclesiastical realms. As such, a complex system was required in order to coordinate the movements of each member of the family that also included high risk positions—such as Landolf I as Bishop of Worms—as well as more secure commissions, such as the Sheriff of Lautern. Both of these positions were inextricably linked to specific locations, in which the position was recognized by visitors as belonging to that place. In the case of the administrator positions at the royal palace, the relationship was more obvious, and represented something tangible. However, the administrator positions within the entourages of the kings and emperors were intangible as they lacked a physical component besides being at the monarch's side. These nuances are implicit in the determination of rank as discussed in Section 2.4.4.2, in which I compared the ranks of three men of ministerialis origin. The determination was that Markward von Annweiler possessed the highest rank, yet his family virtually disappeared shortly after his death, in stark contrast to the family of Eberhard von Lautern. The difference was that Eberhard had been involved in the construction of Castle Montfort, after which his family named themselves von Lautern-Montfort. This architectural component was the key to the success of the von Lautern-Hoheneck family who also had family members operating at similar level as that of Markward—e.g. Heinrich I von Lautern. Although Heinrich had been commissioned with elite tasks, such as imperial marshal, chamberlain, cupbearer, and envoy—three of the four main positions as described in Section 2.3.3.2—nothing is known of his direct descendants. However, we do know quite a lot about his brothers and their sons, and based upon the findings in this project, they were rather active builders. The family effectively managed to become a component of the entourages while establishing themselves as elements of the location in which they were commissioned. They had not only adopted the name von Lautern, they became synonymous with the representation of the palace.

### 7.2.1 The Palace as the Center-node of the Network

The centerpiece of the Reichsland of Lautern was the palace after which it was named. The grandeur of the medieval structure and social implications attached to its operation in the 12<sup>th</sup> and 13<sup>th</sup> centuries have already been discussed in the highest detail in Sections 3.3.1 and 4.3. Its connection to the other castles—particularly Castle Hohenecken—was touched upon throughout the architectural investigations, as was the position of the palace's Great Park determined by the architectural analysis of Castle Perlenberg in Section 4.6 and geo-spatial results in Section 5.2.2. What remains, is to complete the picture of the entire network, namely that the palace was not merely a pearl along the northern edge of the Palatinate Forest that needed protection by a series of castles. Instead, it is time to view the palace as having been a nexus for gathering motivated ministeriales who could put their abilities to the test in the protected arena of the royal estate, void of interfering *nōbiles*. The monarchs then rewarded those ministeriales who demonstrated their commitment to their respective tasks, thereby receiving ever higher levels commissions endowed upon their children and even grandchildren. In these specific cases, the palace was more than social nexus, it was a catalyst that transformed servile families into elites. In turn, these families of ministeriales constructed castles as extensions of the palatial estate in order to remain tangibly connected to the palace via the physical edifices of the castles, which communicated an intangible message indicating their status. As the castles were the abode of the families, the demonstration of high status architectural elements reflected not only the specific builder, but his entire family. Thus, the rank of the family, rather than the individual was communicated by the architecture, indicating a departure from most of the previous generation of ministeriales who relied only upon commissions.

Provided the highly visual culture of the Middle Ages, interpreting architecture as a demonstration of status was well suited for the time—as it still is. Of course the same could be said of all time periods in which elites construct large buildings or palaces, the importance of this analysis is that the visual appearance of the castles drew a direct connection to the royal palace. This indicated a connection of status between ministerialis families, whose ancestors cannot be traced beyond 1150, and the emperors of one of the most prestigious dynasties of the European *nōbiles*, whose ancestry already transcended centuries by that point in time. The piggy-back effect described in Section 2.4.2, applied not only the appearance of elite status based upon the connection just described, but also to the implications of what constituted a member of the *nōbiles*. As Hechberger described in Section 2.3.1, the most general definition of a medieval *nōbilis* is comprised of their ability to trace their

ancestry and confirm ownership of an estate.<sup>1375</sup> The connection between a family of unknown origin to the royal palace, who managed to construct a castle with a 30 meter tower of embossed ashlar and northern balconies, while controlling the positions of imperial sheriff, marshal, cupbearer, chamberlain, and envoy within a span of only 10 years, indicates a clear and targeted strategy. In the eyes of travelers unfamiliar with the precise owners of Castle Hohenecken, their likely interpretation upon seeing the site so near to the palace, would be to assume a noble character. The status associated with the palace impacted how the ministerialis families hoped to be received.

As for the ownership of an estate, the enfeoffment of various properties within the royal estate to the von Lautern-Hoheneck family again gave the appearance of ownership as the family oversaw the construction of Castle Perlenberg and sold many of these properties to the Abbey of Otterberg. Most importantly, the family used these properties to provide land and found the Teutonic Knight Commandry at Einsiedel in 1253 upon receiving the opportunity to be granted a papal indulgence. In the aftermath of the collapse of the Hohenstaufen regime and disastrous end of Bishop Landolf's tenure, as described in Section 3.2.1, the gifting of enfeoffed lands for ecclesiastical purposes realigned the family to the side of the papacy, but also indicated that they no longer honored the fact that the land had only been an enfeoffment, instead treating it as though they had owned it. This also occurred in the time period between 1234 and 1265 in which neither the Roman-German King nor Emperor had visited the royal palace, indicating that no one was of a higher station to prevent the family treating their enfeoffments as hereditary properties. The rapid confirmation of land rights to the local monasteries during that time gave the impression that they were not only in charge but that all others had been side-lined. The effect of this strategy was that they were clearly seen as a family worthy of induction into the *nobiles*, considering that Reinhard III married the daughter of the Count of Homburg mid-1260s. Further confirmation of their perceived status can be attributed to King Richard of Cornwall who married a *nobilis* woman from the German Palatinate, chose the Palace of Lautern as the site of his marriage in 1269, and also commissioned Reinhard III as protector of the imperial regalia in Castle Trifels. All of these success traced back to the commissions at the royal palace beginning in the mid-12<sup>th</sup> century and their elevation by the monarchs to ever higher positions of power based upon their competencies, from which the family von Lautern-Hoheneck could initiate their strategy.

In stark contrast to the strategy just described, the von Beilstein-Wartenberg family failed to maintain commissions at the palace after the turn of the 13<sup>th</sup> century, whose most elite member

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<sup>1375</sup> Hechberger, *Adel, Ministerialität und Rittertum im Mittelalter*. P. 3.

was Ulrich von Beilstein. As a prelate of the Bishopric of Worms, Ulrich did not have sons and apparently did not groom any nephews as members of the clergy; though neither had Landolf von Lautern-Hoheneck who became bishop. The von Beilstein-Wartenberg family seems to have rested upon the laurels of their past actions as *ministeriales* in Worms and in Lambrecht having served the Salian dynasty. After the death of Merbodo I, it took over 50 years for a member of the family to receive an administrator position within the Reichsland of Lautern. This was of course partially due to their involvement in the failed insurrection of King Henry (VII). However, their failure to maneuver themselves into the service of the successful Hohenstaufen monarchs may not have represented a lack of foresight on their behalf, but instead a different strategy altogether. Considering that their regional opponent was the highly successful von Lautern-Hoheneck family, whose very name was associated with one of the most coveted palaces in Europe—according to Rahewin—the competition was likely too great. In this regard, the strategy of the von Beilstein-Wartenberg family to increase their political and economic prospects was to marry into a variety of fellow ministerial families, who likely included some of the daughters of the von Lautern-Hoheneck family. In effect, the family spread themselves throughout the estate, creating a large network of relatives. These relatives then entered into the services of monasteries, bishoprics, and even the reigning monarchs over the course of the 13<sup>th</sup> century. Thus, their elevation in status occurred at the coattails of their regional opponent. This clever positioning meant that the success of the von Lautern-Hoheneck family also spelled success for the von Beilstein family—piggy-backing between two levels of *ministeriales*.

Due to the total destruction of Castle Beilstein, it is nearly impossible to determine how the architecture demonstrated this strategy. However, the location of the castle between the royal palace and the monastery of Lambrecht signifies a representative segue from the Salian dynasty in Lambrecht to the Hohenstaufen dynasty in Lautern. Following the Council of Lyon in 1245 and, the reshuffling of the political allegiances described at various points throughout the dissertation, the result was a stagnation of the family's open political and economic aspirations. The election of Rudolf von Habsburg demonstrated a second chance for the von Beilstein-Wartenberg family who almost immediately received commissions at the palace upon the removal of the von Lautern-Hoheneck family from all administrator positions. This corresponds with a reemergence of construction campaigns during the Gothic I building phase at Castle Beilstein and none at Castle Hohenecken. Thus, two distinct strategies can be gleaned from the combination of the investigations in this dissertation regarding *ministeriales* at the turn of the 13<sup>th</sup> century.

### 7.2.2 Castles Hohenecken and Beilstein as Key Supporting Nodes

The two strategies that were just outlined regarding the two main families that were analyzed in this project were interpreted from the combination of the three investigations. The castles Beilstein and Hohenecken were built for a variety of purposes, serving as vessels in which the families embarked upon the rough waters of the political torrent. In addition to their use as family homes, the castles were presumably used as guest houses during the imperial sojourns that included hundreds if not thousands of visitors. This explains why the castles were so close to the palace, and also along key roads in the logistical infrastructure of the royal estate. The relationships radiating from the palace to the surrounding castles had a number of properties, so to speak, functioning as a detailed network forming a schematic along which the ministeriales outlined their familial strategies. More concretely, the connection between the palace and Castle Hohenecken resembled a nearly constant feedback loop in which new architectural elements were constructed at the palace, resulting in similar additions at the castle, followed by the commission of a family member who would then act as administrator of the palace overseeing its maintenance. The relationship between Beilstein and the palace is more ambiguous due to the lack of physical material at the castle that can be studied and interpreted. Therefore, its connection is best interpreted as having passed through an intermediary node, namely, Castle Hohenecken. By the late 13<sup>th</sup> and early 14<sup>th</sup> centuries, the von Beilstein-Wartenberg and von Lautern-Hoheneck families began sharing many first names, indicating possible intermarriage between them. As it has already been discussed that the von Wilenstein family had married into both, a connection via a third party already existed. Nevertheless, it is clear that prior to the election of Rudolf von Habsburg in 1273, the von Beilstein-Wartenberg and von Lautern-Hoheneck families were antagonistic, if not only passively so.

The proceedings of the von Beilstein-Wartenberg family and its affiliates almost always included the presence of a member of the von Lautern-Hoheneck family in the witness lists, often times filling the role of sheriff. Although the evidence of two regional factions is abundant, the presence of a member of the von Lautern-Hoheneck family elevated the importance of the proceeding, even if it had been mandatory for one to be present as a witness. In short, the von Beilstein family had been positioned, either by chance or by choice, to constantly be in contact with the members of more powerful ministeriales. This enhanced their social network, even if it paled in comparison to that of the von Lautern-Hoheneck family.

To summarize, the success of the relationship between the palace and Castle Hohenecken was marked by a steady commissioning of its ministeriales at the court. These same ministeriales



oversaw the proceedings of less successful ministeriales who were marrying the daughters of the cousins of the main line of this influential ministerialis family. These relationships established a web of intertwined allegiances and incentives, which is almost certainly the reason as to why the two families never engaged in a documented violent feud. The social relationships were dependent upon the physical nodes of the castles which all traced back to the palace, representing a multi-layered mutualism bonding the sites and families to one another. Furthermore, access to the exclusive valley in which the palace was located, was only possible by passing the tremendous tower of Castle Hohenecken, acting as sentinel of the estate.

### 7.2.3 Castle Perlenberg and the Great Park of Lautern

In addition to the network just described, other nodes existed which have been less obvious, as was the case of Castle Perlenberg. No charters were issued at the site nor were any families named in its honor. Instead, it represented a node operating as an element that not only ornamented the landscape already bountifully adorned with castles, monasteries, and lakes, but as a venue for additional social elevation. As determined by the architectural and geo-spatial analyses of the site, it was an ornately built platform for viewing the hunt performed by the emperor, his entourage, and his guests. This presents clear evidence of a Great Park with accommodations for a daily excursion, including a luxurious privy. The position of Castle Perlenberg is also important to briefly discuss as it was located beyond the valley of the palace, and nestled within its own geographic basin, making it geographically and socially exclusive. Furthermore, Castle Perlenberg can be reached within a 45 minutes on foot from Castle Hohenecken. Paired with the high probability that Eckbert and his son, Reinhard I, oversaw its construction indicates that the von Lautern-Hoheneck family sought to establish an elite venue accessible only to the highest level of monarchical intimacy. Although Castle Perlenberg was a property of the emperor, and an extension of the palace, in order to access the site one had to pass by Castle Hohenecken on the way to and the back from the Great Park. The von Lautern-Hoheneck family cleverly placed Castle Perlenberg along a trajectory forcing visitors and other members of the entourage to view their castle while in the intimacy of the emperor. The funds for such a prestigious building in the center of a Great Park is justified by the distribution of the ransom money for Richard the Lionheart by the imperial envoy, Heinrich I von Lautern, whose brothers Johannes and Erbo also served the emperor. This interpretation is not entirely certain because written documentation does not exist for it. However, the use of recycled stones, employment of elite stone masons, and architectural similarity to Castle Hohenecken and the palace are clear signs that Castle Perlenberg was built by those overseeing the other two sites.

#### 7.2.4 The Designed Landscape of the Reichsland of Lautern

The addition of a designed landscape at a castle or palace did not have simply an ornamental purpose, but instead filled a number of roles, had complex histories and was experienced differently by different social groups.<sup>1376</sup> Frederick I's decision to renovate the palace in Lautern in the 1150s as one of the premier locations can be determined as the result of many factors. Constructing the palace atop a hill, such as the palace of Wimpfen,<sup>1377</sup> would certainly have fulfilled the requirement of being seen, but the fact that the Palace of Lautern is in a valley provides evidence that it was not intended to be the first thing that is seen. Instead, the entire landscape of the royal estate served as the backdrop for the palace, more akin to a pearl nestled in the folds of the hills, than an elevated structure overlooking its surroundings. In this case, the position of the palace designed landscape of the estate covered a large territory, featuring various castles and monasteries as ornamental additions. The chronology of construction and development of the sites is of key importance, as it is easy to project the combined histories of the sites onto the turn of the 13<sup>th</sup> century, when in fact many of the sites had not yet existed. It is essential to first view the Palace of Lautern and its designed landscape as a dynamic scenery that was added to by Frederick I's descendants, his royal successors, and the ministeriales families who were commissioned with administrator positions in the estate.

The Reichsland of Lautern offers a fascinating perspective regarding the complexity of the social hierarchy of the German High Middle Ages. The territory included secular positions of power in the form of royal palaces and castles, as well as ecclesiastical positions of power in the form of monasteries and churches. These physical locations provided venues for people of various statuses meet one another and conduct proceedings of political, economic, or religious character. The estate encompassed natural phenomena including forests, lakes, and rivers which were manipulated to serve as prestigious backdrops for leisure events. These activities served foremost as arenas for those invited to build connections with one another in the presence of the reigning monarchs. The palace was fundamentally a symbol of status, intended to broadcast the authority of the Roman-German Kings to his subjects, serving as a lasting monument of his dominion and legacy. By reconstructing large portions of the palace and initiating a monumental landscaping endeavor, Frederick I outdid his Salian ancestors, and at the same time, provided an avenue for the ministeriales of the estate to attain elite status by maintaining his estate and constructing their own monumental legacies.

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<sup>1376</sup> Liddiard, *Castles in Context: Power, Symbolism and Landscape, 1066-1500*. P. 98.

<sup>1377</sup> Gauert, "Zur Struktur und Topographie der Königspfalzen." P. 49. This is in reference only to the development of the palace of Wimpfen as a hill-top castle, not in reference to its symbolism.

### 7.3 Outlook

The flexibility of both the framework of the graphical model and the application of a case study makes this project highly adaptable to other research topics in the humanities. However, a few areas could be improved upon in future endeavors of its application. First, it is important to discuss the technological changes and modifications that could be applied. The application of an automated segmentation process for identifying the stones of sites that were recorded using SfM would allow for more sites to be added at a faster pace. It would of course necessitate quality control by an experienced construction researcher, but would bypass the lengthy task of manually outlining thousands of stones. With regard to the 3D models, it would be interesting to apply more aspects of Linked Data as opposed to the industry standard of *Building Information Modeling* (BIM) as described by Münster et al.<sup>1378</sup> Second, the use of *Radar Imaging* (InSAR) or *Terra SAR-X* data could be very useful for a more accurate modeling of the terrain, as was presented by Dr. Lindenbergh.<sup>1379</sup> These would also allow for more accurate analyses of roadways and waterways, in which watershed analyses could be conducted in order to identify river channels.<sup>1380</sup> However, the greatest addition that could be made to the project would be an interactive visualization tool connecting directly to the GIS maps and the graph database, enabling one to trace the movements of the ministeriales and depict network clusters across time and space. By adding more information into the database and the maps, a more complete picture of the movements of people and their networks could be analyzed with respect to the construction of castles and palaces. This would also facilitate a better overview of the events sourced from the charters as political and economic policies would be visually recognizable. The addition of more case studies and their respective inhabitants would also elevate the project along both the architectural and historical trajectories, for which the CITADEL approach was precisely designed to do.

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<sup>1378</sup> Sander Münster, Piotr Kuroczyński, and Heike Messemer, “Digital 3D Reconstruction Projects and Activities in the German-Speaking Countries,” in *Digital Heritage. Progress in Cultural Heritage: Documentation, Preservation, and Protection: 7th International Conference, EuroMed 2018, Nicosia, Cyprus, October 29–November 3, 2018, Proceedings, Part I*, ed. Marinos Ioannides et al., vol. 11196, Lecture Notes in Computer Science (Cham: Springer International Publishing, 2018), <https://doi.org/10.1007/978-3-030-01762-0>.

<sup>1379</sup> Roderik Lindenbergh, “Robust Geometry Extraction in Large Spatial Point Clouds” (Presentation, IWR Colloquium at the Interdisciplinary Center for Scientific Computing, Heidelberg, July 27, 2018).

<sup>1380</sup> Marcin Ciecholewski, “River Channel Segmentation in Polarimetric SAR Images: Watershed Transform Combined with Average Contrast Maximisation,” *Expert Systems with Applications* 82 (October 2017): 196–215, <https://doi.org/10.1016/j.eswa.2017.04.018>.

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## 9 Appendix

The appendix includes the entire roombook with overviews of the four primary sites, and lists of the equations, tables, figures, and architectural plans referred to throughout the text. All of the raw and processed data (with metadata) of the SfM and TLS scans, as well as the entire GIS package and all graph database materials are located in the online repository in HeiDATA [here](#). All 98 Figures of this dissertation, the 76 architectural plans, and the four low-resolution SfM models are available in HeidICON as referenced throughout the document.

### 9.1 The Architectural Roombook

The roombook provides the organizational layout of the architectural plans with regard to their respective building and position within that building. This allows one to quickly identify a specific architectural element, the wall number in which it is positioned, the subgroup of the building that wall composes, and the general area where the subgroup is to be found. All of these components are catalogued in the graph database as well, allowing one to query the architectural elements across time and by location.

The 76 architectural plans span only the primary sites of the Royal Palace in Lautern and the Castles Beilstein, Hohenecken, and Perlenberg. The plans are orthographic renderings of the walls of the *Structure from Motion* (SfM) photogrammetric models of the sites. These renderings were then annotated in which all visible stones were outlined, with the exception of some walls at the royal palace and the entirety of Castle Perlenberg due to the high resolution image quality. Although most of the renderings feature high resolutions, these aforementioned walls were particularly detailed and therefore did not require additional outlining to identify the stones. In total, 790 stones were identified at Castle Beilstein, 12,378 at Castle Hohenecken, and 1,190 at the Royal Palace of Lautern. The stones are color coded according to the *CITADEL Color Scheme for the Architectural Investigations* guide for identifying the building phases and the period in which they were constructed.

The architectural plans do not depict every wall of each site, as some of the walls are missing, covered with vegetation, badly damaged, or reconstructed in recent years so that very little historical relevance can be gleaned from them. It must also be stressed that the chronological scope of the project was between the years 1152 and 1273 A.D., and therefore, some of the earlier or later features are not described or discussed in such high detail. Nevertheless, these earlier and later periods are covered as a sort of point of departure for future research.

The site overviews at the end of the roombook document feature the ground plans of the four primary sites and highlighted areas where the building groups are to be found. This assists in orientating oneself as one reads through the architectural investigations of Chapter Four and when viewing the architectural plans. These overviews are also made from the scaled SfM models, which themselves are available in HeidICON for interactive viewing, but are not annotated. The associated overviews are available in sections 9.1.1 to 9.1.4, featuring aerial views of all four sites and annotations of their various architectural groups. These are also in numerical order according to the roombook beginning with Castle Hohenecken.

Table 29: CITADEL Roombook

PRIMARY SITE	GROUP	SUBGROUP	WALL NUMBER	ELEMENTS	
<b>Hohenecken</b>	1. Front Gate	1.1 Outside of Front Gate	1.1.1 Gate with Crest	Portal 1	
				Crest	
				1.1.2 Northern Gunport Inside	
				1.1.3 Southern Gunport Inside	
		1.2 Inside of Front Gate	1.2.1 Front Gate Inside Arch	Portal 1	
			1.2.2 Southern Wall of Rock Wall		
	2. Storehouse	2.1 First Floor of Storehouse	2.1.1 Eastern Wall Inside		
			2.1.2 Southern Wall Inside		
			2.1.3 Western Wall Inside	Window 1	
			2.1.4 Northern Wall Inside		
		2.2 Second Floor of Storehouse	2.2.1 Eastern Wall Inside		
			2.2.2 Southern Wall Inside		
			2.2.3 Western Wall Inside	Window 2	
			2.2.4 Northern Wall Inside		
	3. Outer Court	3.1 Outer Court A	3.1.1 Eastern Side of Shieldwall (75%)		
			3.1.2 Main Tower		
			3.1.3 Western Side of Rock Wall	Casemate 1	
			3.1.4 Northern Outside Wall of Storehouse		
			3.1.5 Eastern Side of Shieldwall (top 25%)		

<b>Hohenecken</b>	3.2 Outer Court B	3.2.1 Rehabilitation Wall South	
		3.2.2 Southern Side of Shieldwall	
		3.2.3 Southern Side of Main Tower	
		3.2.4 Western Outside Wall of Storehouse	Window 1
			Window 2
		3.2.5 Eastern Outside of Inner Chamber A	
	3.3 Outer Court C	3.2.6 Rehabilitation Wall	
		3.3.1 Southern Keep Outside	Window 3
			Window 4
			Garderobe 2
			Window 19
			Window 21
	3.4 Outer Court D	3.4.1 Southwestern Keep Outside	Window 10
		3.4.2 Western Keep Outside	Garderobe 3
	3.5 Outer Court E	3.5.1 Northern Keep Outside	Window 11
			Window 12
			Window 13
			Window 14
			Window 15
			Window 16
	3.6 Outer Court F		Garderobe 4
			Portal 21
		3.6.1 Northern Side of Rock Wall	
	4. Neck Ditch	3.6.2 Northeast Corner of Shieldwall	
		3.6.3 Northern Side of Main Tower	
		4.1 Neck Ditch East	4.1.1 Northern Gunport Outside
	4.2 Neck Ditch South		4.1.2 Eastern Wall of Storehouse Outside
		4.1.3 Southern Gunport Outside	
		4.2.1 Southern Wall of Storehouse Outside	

<b>Hohenecken</b>	5. Inner Chamber A		
	5.1 Inner Chamber A Western Wall	5.1.1 First Floor Western Wall	Service Lift
			Portal 2
		5.1.2 Second Floor Western Wall	Service Lift
			Portal 3
		5.1.3 Third Floor Western Wall	Portal 4
	5.2 Inner Chamber A Southern Wall	5.2.1 First Floor Southern Wall	
		5.2.2 Second Floor Southern Wall	Garderobe 2
			Window 3
		5.2.3 Third Floor Southern Wall	Window 4
			Window 21
	5.3 Inner Chamber A Eastern Wall	5.3.1 First Level	Spiral Staircase
	5.4 Inner Chamber A Northern Wall	5.4.1 First Level	Spiral Staircase
			Portal 24
	6. Inner Court		
	6.1 Southern Wall of Inner Chamber C Outside	6.1.1 First Floor Southern Wall	Portal 5
			Portal 9
		6.1.2 Second Floor Southern Wall	Window 5
			Portal 6
			Window 6
			Window 7
		6.1.3 Third Floor Southern Wall	Window 8
			Portal 7
		6.1.4 Rock Floor	Portal 10
	7. Inner Chamber B		
	7.1 Inner Chamber B Eastern Wall	7.1.1 First Floor Eastern Wall	Service Lift
			Portal 2
			Oven
		7.1.2 Second Floor Eastern Wall	Service Lift
			Portal 3
			Fireplace
		7.1.3 Third Floor Eastern Wall	Portal 4
			Chimney



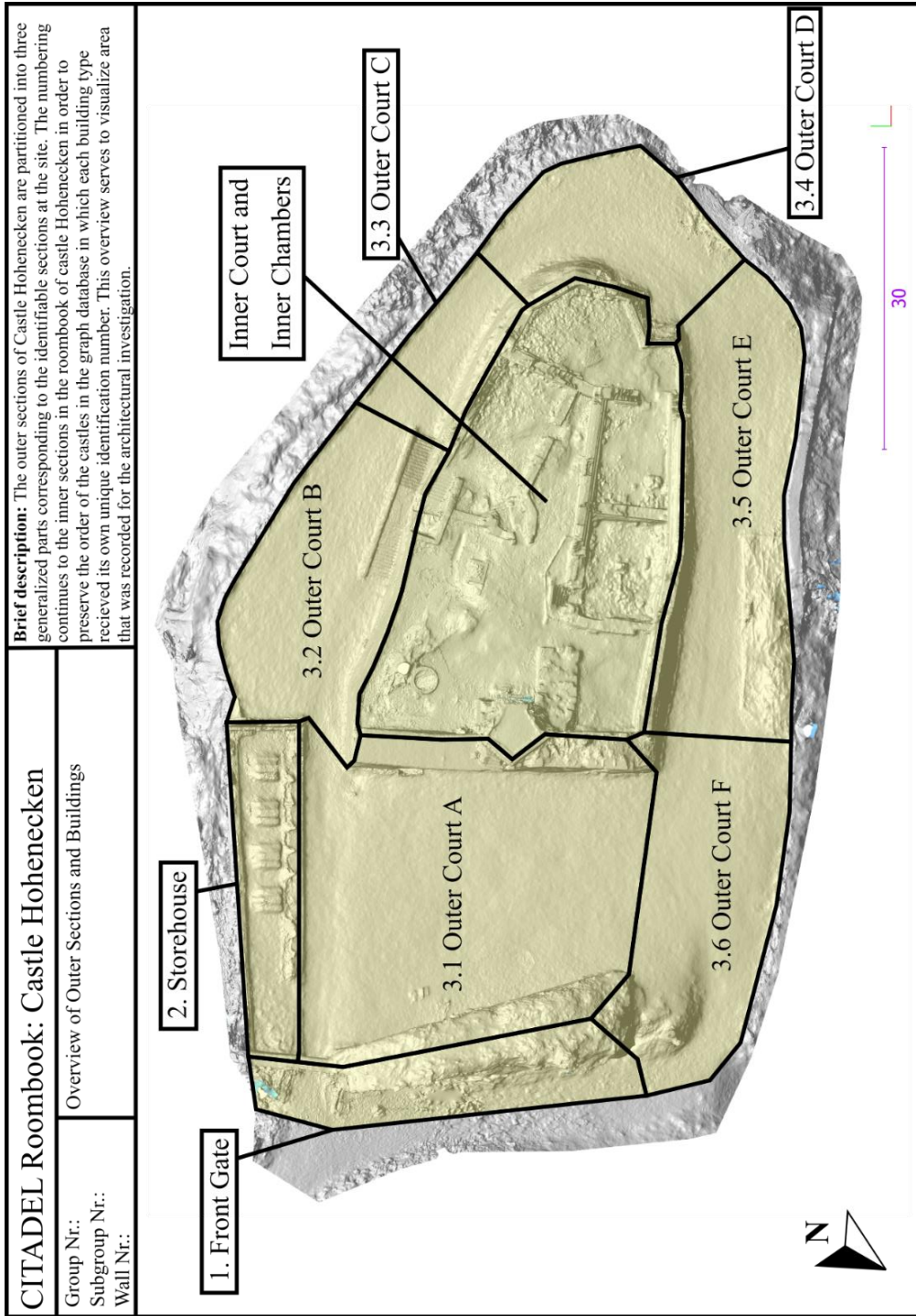
<b>Hohenecken</b>	7.2 Inner Chamber B Southern Wall	7.2.1 First Floor Southern Wall	Window 19	
		7.2.2 Second Floor Southern Wall	Window 9	
		7.2.3 Third Floor Southern Wall	Window 22	
	7.3 Inner Chamber B Southwestern Wall	7.3.1 First Floor Southwestern Wall		
		7.3.2 Second Floor Southwestern Wall		
		7.3.3 Third Floor Southwestern Wall	Window 10	
	7.4 Inner Chamber B Western Wall	7.4.1 First Floor Western Wall		
		7.4.2 Second Floor Western Wall	Window 20	
		7.4.3 Third Floor Western Wall	Garderobe 3	
	8. Inner Chamber C			
	8.1 Southern Wall of Inner Chamber C Inside	8.1.1 First Floor Southern Wall		Portal 5
				Portal 9
		8.1.2 Second Floor Southern Wall		Window 5
				Portal 6
				Window 6
8.1.3 Third Floor Southern Wall			Window 7	
		Window 8		
		Portal 7		
8.2 Northern Wall of Inner Chamber C Inside	8.1.4 Rock Floor		Portal 10	
	8.2.1 First Floor Northern Wall		Portal 21	
			Window 11	
	8.2.2 Second Floor Northern Wall		Window 12	
			Window 13	
			Window 14	
		Window 15		
	Window 16			
	8.2.3 Third Floor Northern Wall		Garderobe 4	
<b>Königspfalz</b>				
9. Inner Chamber D				
9.1 Western Section	9.1.1 Southern Wall		Sealed Portal 1	
			Portal 15	
	9.1.2 Eastern Wall		Sealed Portal 2	
9.2 Middle Section	9.2.1 Southern Wall		Sealed Portal 3	

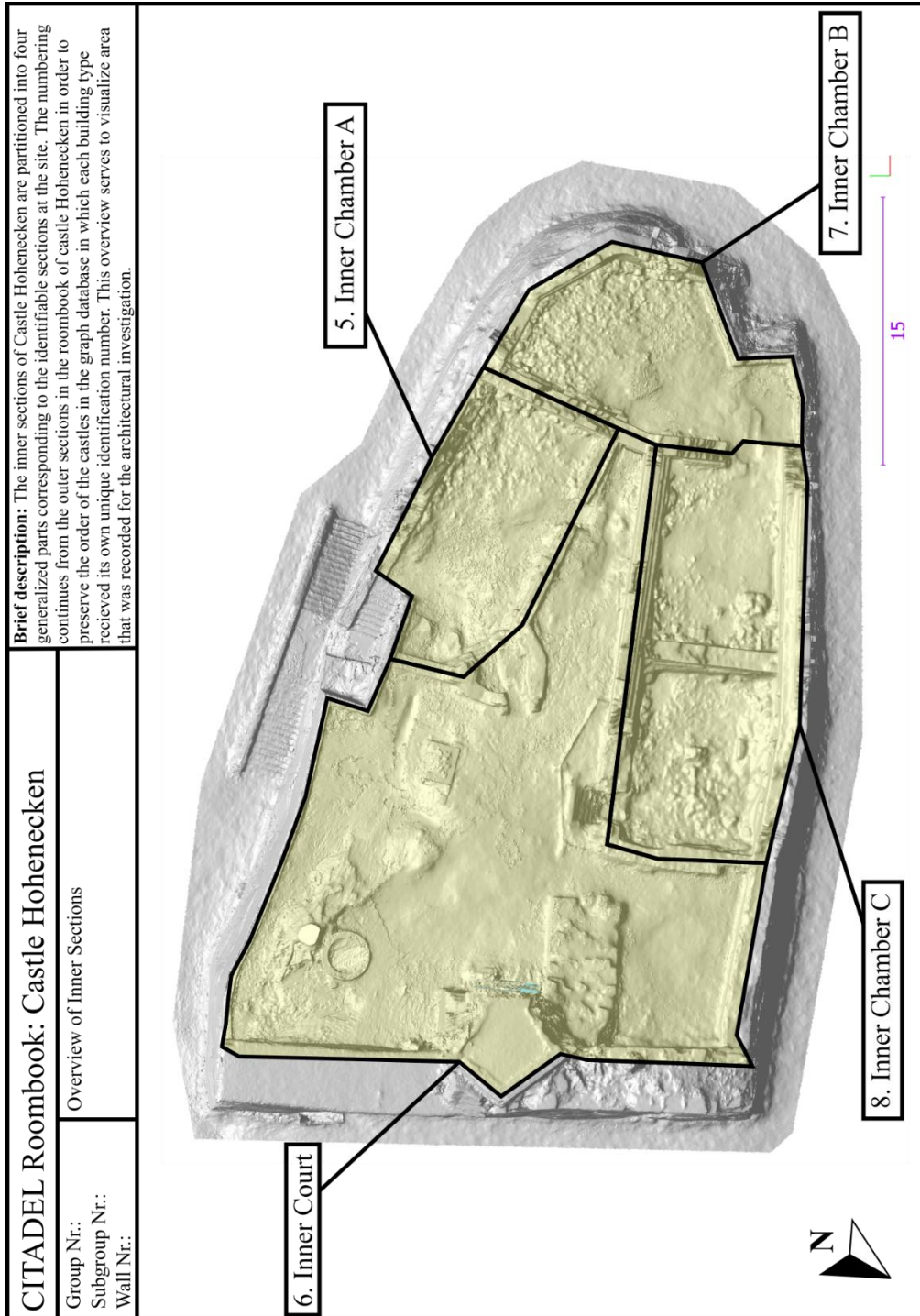
Königspfalz	9.3 Eastern Section	9.3.1 Western Wall		
		9.3.2 Southern Wall	Window 17	
		9.3.3 Eastern Wall		
	9.4 Northern Side	9.4.1 Northern Wall	Casemate 2	
			Casemate 3	
			Natural Rock	
	10. Chapel			
	10.1 Northern Foundations	10.1.1 Northern Wall		
		10.1.2 Western Wall		
		10.1.3 Southern Wall		
	10.2 Eastern Foundations	10.2.1 Eastern Wall		
		10.2.2 Northern side of Eastern Protrusion		
10.2.3 Eastern side of Eastern Protrusion				
10.2.4 Western Wall				
10.3 Southern Foundations	10.3.1 Northern Wall			
	10.3.2 Southern Wall			
	10.3.3 Western side of Southern Protrusion			
	10.3.4 Southern side of Southern Protrusion			
	10.3.5 Eastern side of Southern Protrusion			
	10.3.6 Southern side of Eastern Protrusion			
11. Main Hall				
11.1 Northern Basement	11.1.1 Southern Wall			
	11.1.2 Inside of Eastern Wall			
	11.1.3 Inside of Western Wall			
11.2 Western Basement	11.2.1 Northern Wall			
	11.2.2 Eastern Wall			
	11.2.3 Southern Wall			
	11.2.4 Western Wall	Portal 11		
11.3 Eastern Basement	11.3.1 Northern Wall	Well 2		
	11.3.2 Eastern Wall			
	11.3.3 Southern Wall			
	11.3.4 Western Wall			
11.4 Western Outer Wall	11.4.1 Western Side	Portal 11		

<b>Königspfalz</b>	12. Outer Ward Wall		
	12.1 Salian Wall	12.1.1 Southern Side	
		12.1.2 Northern Side	
	13. Curtain Wall		
	13.1 Southern Wall	13.1.1 Southern Side	Portal 12
		13.1.2 Northern Side	Portal 12
			Portal 23
	13.2 Eastern Wall	13.2.1 Eastern Side	Portal 13
			Window 18
			Portal 14
		13.2.2 Western Side	Portal 13
			Window 18
			Portal 14
<b>Perlenberg</b>	14. Tower Base		
	14.1 Outside Walls	14.1.1 Outer Wall Southeast	
		14.1.2 Outer Wall Southwest	
		14.1.3 Outer Wall Northwest	Garderobe 1
	14.2 Inside Walls	14.2.1 Inside Wall Northwest	Garderobe 1
			Portal 22
		14.2.2 Inside Wall Northeast	Portal 25
		14.2.3 Inside Wall Southeast	
	14.3 Wall Crowns	14.3.1 Wall Crown Southeast	
		14.3.2 Wall Crown Northeast	
		14.3.3 Wall Crown Northwest	Garderobe 1
			Portal 22
	<b>Beilstein</b>	15. Courtyard	
15.1 Southwestern Wall		15.1.1 Separating Wall East	Portal 17
			Portal 18
15.2 Northern Wall		15.2.1 Northern Wall	
15.3 Front Entrance		15.3.1 Southeastern Entrance Wall	
		15.3.2 Northwestern Entrance Wall	

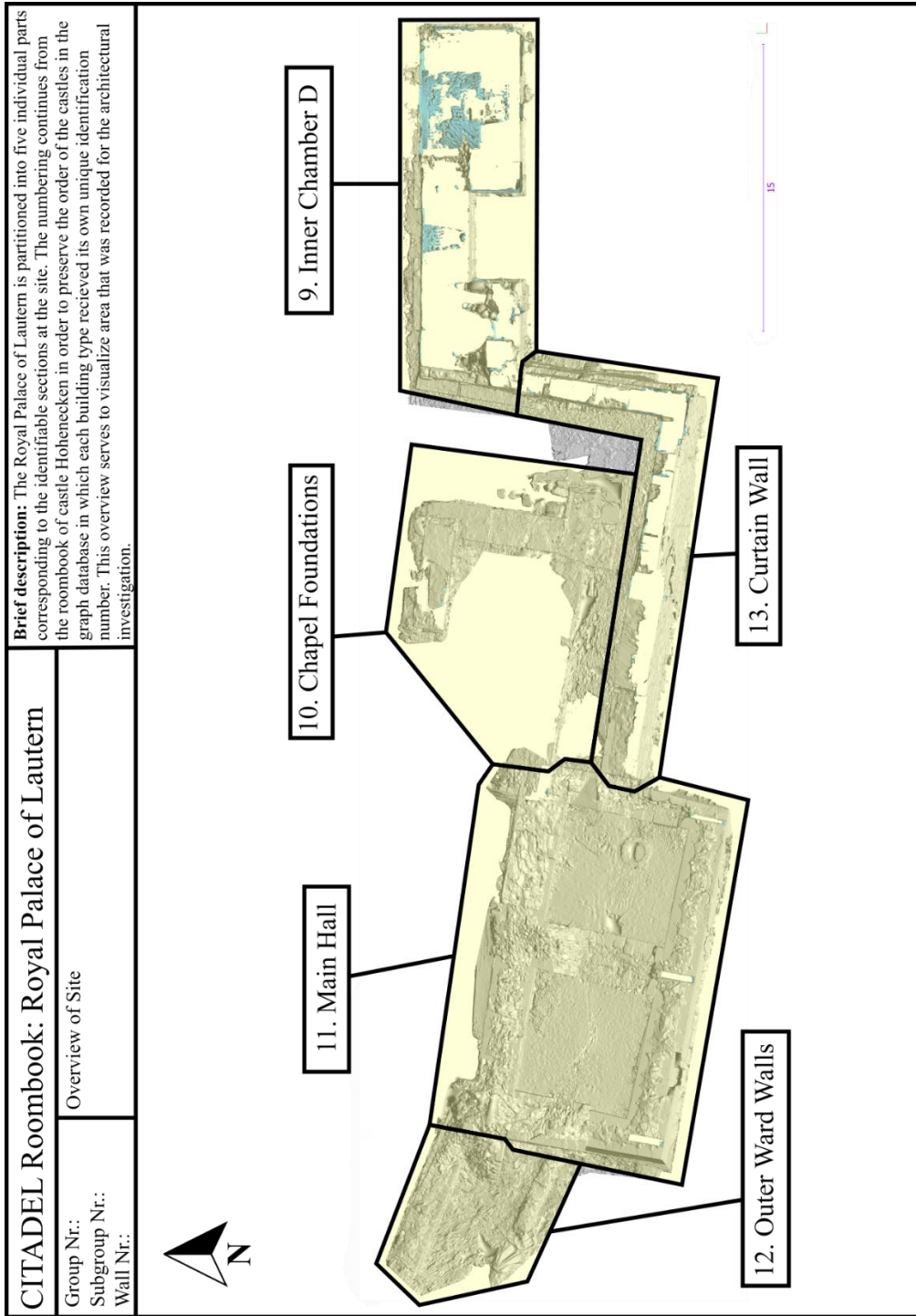
<b>Beilstein</b>	16. Inner Chamber E		
	16.1 Northwestern wall	16.1.1 Ground Floor	
		16.1.2 Lower Level	Portal 20
	16.2 Northeastern Wall	16.2.1 Separating Wall West	Portal 18
	16.3 Southeastern Rockwall	16.3.1 Lower Level	Cistern
	17. Inner Chamber F		
	17.1 Northwestern Wall	17.1.1 Northwestern Wall	
	17.2 Southwestern Wall	17.2.1 Southwestern Wall	
	17.3 Southeastern Wall	17.3.1 Lower Level	Portal 20
		17.3.2 First Floor	
	17.4 Northeastern Wall	17.4.1 Separating Wall West	
	18. Inner Chamber G		
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		18.1.3 Southwestern Wall	
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		19.1.3 Eastern Rock Wall	
	19.2 Northeastern Wall	19.2.1 Separating Wall West	Portal 17

9.1.1 Overviews of Castle Hohenecken

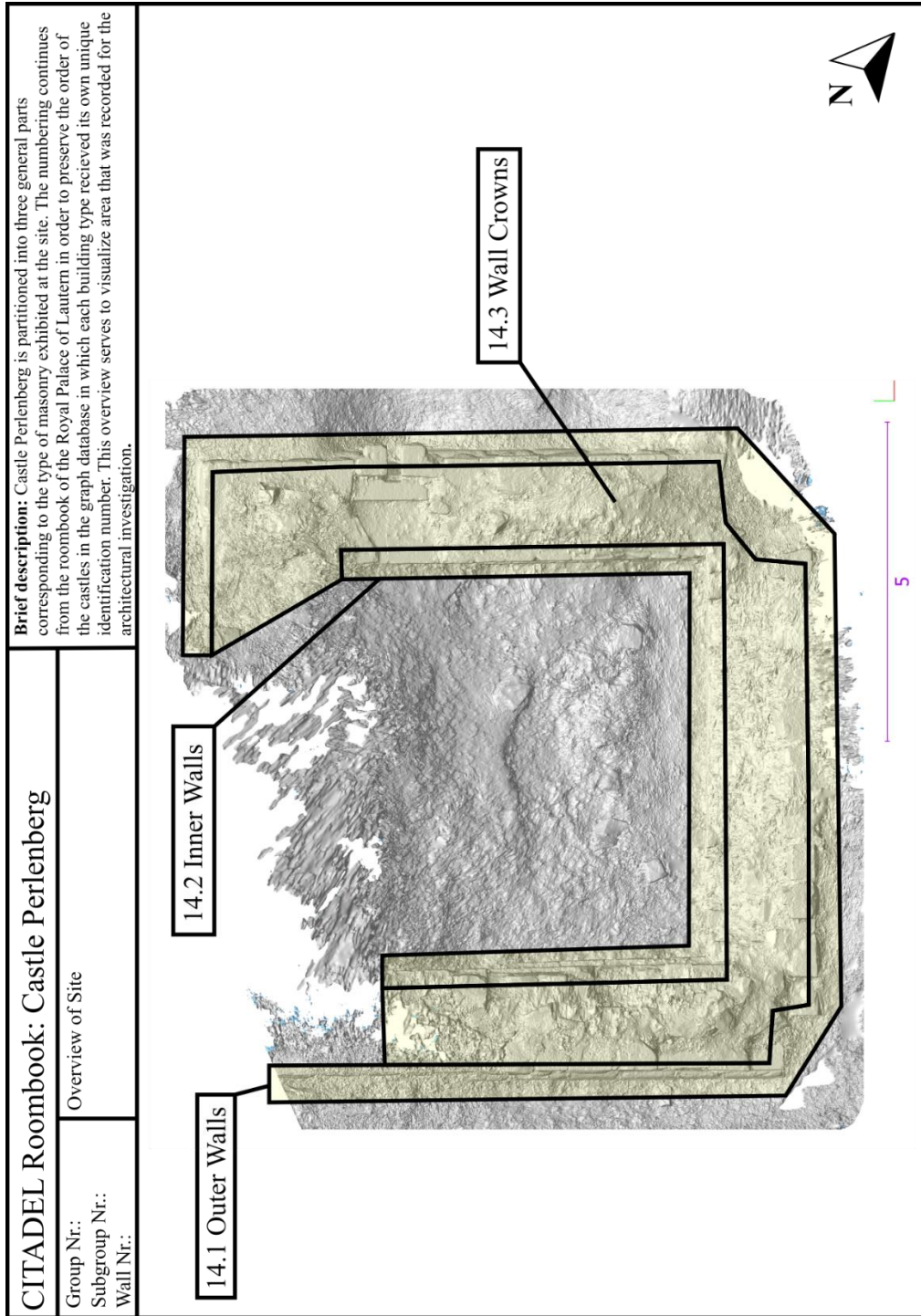




9.1.2 Overview of the Royal Palace of Lautern

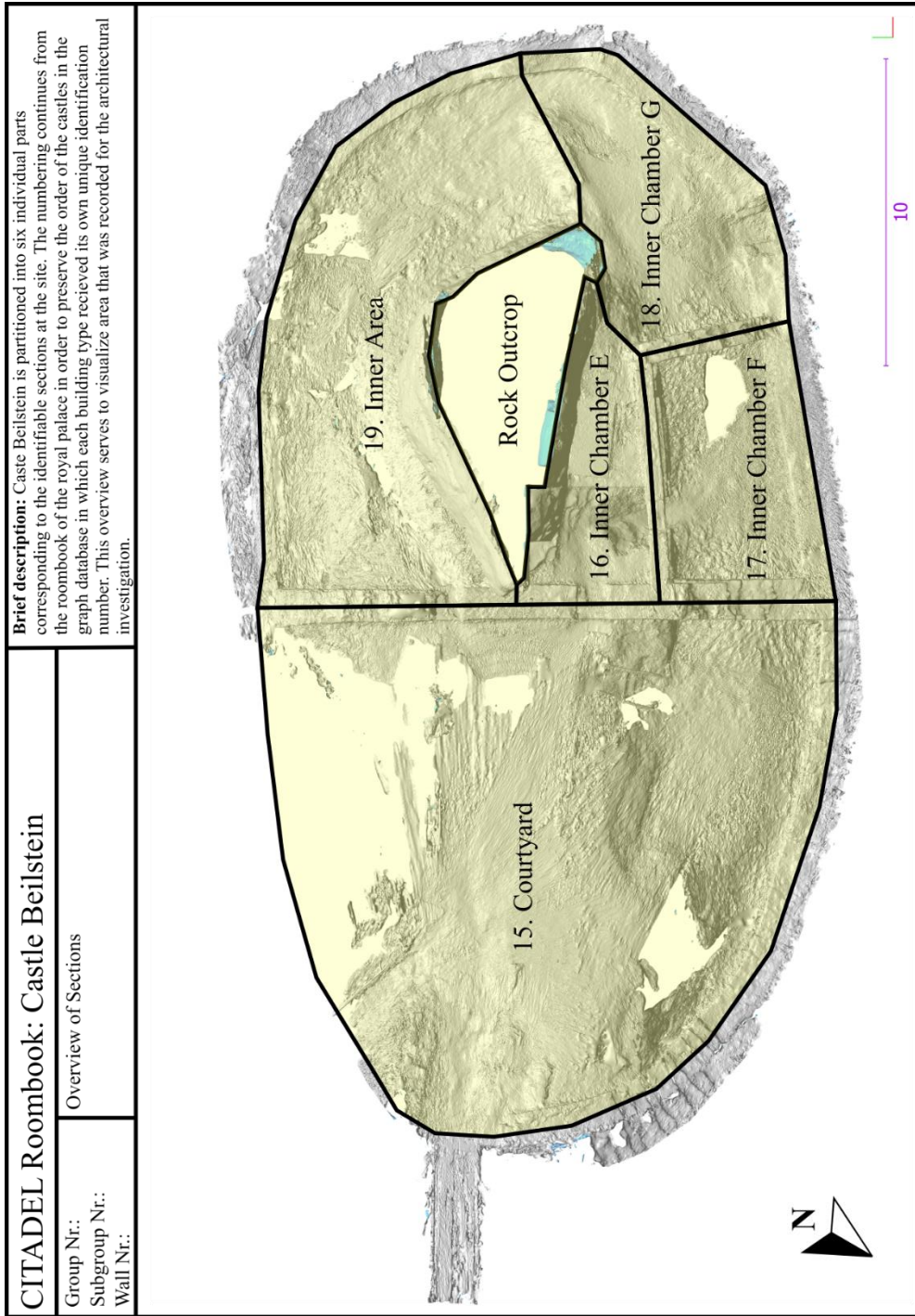


## 9.1.3 Overview of Castle Perlenberg





9.1.4 Overview of Castle Beilstein



## 9.2 Tables, Equations, and Figures

All tables were created by the author for the production of this dissertation as components of the CITADEL project. All figures are composed of photos, diagrams, graphs, and transformed maps generated by the author, unless otherwise stated. As such, they present original work for the purpose of this dissertation.

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