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A Trans-Mundane Space in Glass, Water, and Light:

Lingzhao Xuan 靈沼軒 as "Crystal Palace"

in a Qing Imperial Garden, 1890–1920

vorgelegt von

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Abstract

This examination of the architectural site of Lingzhao Xuan 靈沼軒 in the Forbidden City 紫禁城 first and foremost deconstructs the predetermined dichotomy of "Chinese-ness" and "Western-ness" evident in previous studies. In doing so, one can then bring Lingzhao Xuan and other architectural outliers that incorporate foreign aesthetics into the global or international architectural context to further realize that those "Occidentalizing" traces themselves are in many cases eclectics. Meanwhile, the construction and restoration of Lingzhao Xuan itself is an eclectic process, having undergone several appropriations and integrations overtime.

Fundamental investigations that have taken up semiotic, social, historical approaches in this study reexamine Lingzhao Xuan's spatial narrative from much broader transcultural, transmedia and interdisciplinary perspectives. By applying both indigenous and foreign ideas and technology in novel ways, a "sacred mountain 仙山" and "auspicious pond 靈池" are formed. Lingzhao Xuan's design as a pavilion with an aquarium turns this site into an imperial "toy in architecture," more specifically a "Crystal Palace." This implies that it is meant to present a trans-mundane space to its target occupants, namely its imperial patrons. Under the "glass veil" that is realized through sophisticatedly employed industrialized crystal glass, integration of the concept of Chinese "Crystal Palace" (*shuijinggong* 水晶宮) into the spatial narrative of Lingzhao Xuan reinforces its existence as an architectural enclosure of the divine, the sacred, the precious, the royal, and the otherworldly.

Acknowledgment

The architectural site of Lingzhao Xuan 靈沼軒 as a research subject started to appeal to me when I was doing my internship in the Palace Museum in Beijing in 2016. Hidden in the courtyard of the Prolonging Blessing Palace (Yanxi Gong 延禧宮), this construction that calls to mind a European "Crystal Palace" is flanked by conventional imperial architectural structures dominated by high scarlet walls and golden tiles. This "abandoned" Lingzhao Xuan caught my attention right away with its airy iron structure and white marble façade covered with relief carvings in greyish tone. After some brief yet thought-provoking conversation with my supervisor at the Department of Architectural Heritage at the time, Mr. Zhao Peng 趙鵬, I decided to take up the assignment to do "a little" research on it, and that was where it all started. In hindsight, it was decision born out of simple curiosity, passion, and youthful boldness, and I made it without any hesitation and luckily with no shred of regret.

Tackling new research material is not all sunshine and roses, especially after all the excitement leaves one with only scattered primary sources. However, the collaborative endeavors contributed from all fields and disciplines to make a fine *kintsugi* out of the scattered and fragmental history of Lingzhao Xuan by carefully placing the missing pieces together for a stereoscopic vision of the design. The Palace Museum Beijing staff works tirelessly on this project: several research in terms of architectural materials and restoration have been carried out since 2003. In 2017, a digital visual simulation model of this site made quite a splash to the public. All these painstaking effects lay a solid groundwork for my current study.

Words cannot express my appreciation to my first supervisor, Professor Sarah E. Fraser, who gracefully balanced being a "strict master (*yanshi* 嚴師)" and a "helpful friend (*yiyou* 益友)" and encouraged me to always reflect on my own study critically but at the same time learn to reconcile myself to unexpected hindrances on the way as there is always room for

improvement. My sincere gratitude also goes to my second supervisor, Professor Lothar Ledderose, and to the whole team of the "Buddhist Stone Inscriptions in Northern China" research project from the Heidelberg Academy of Sciences and Humanities, where I have worked as a research assistant since 2014. Under the direct guidance of Dr. Tsai Sueyling and Dr. Claudia Wenzel, I benefited greatly by observing and learning from how they conduct their own academic work and organize a research group as an efficient team. On one occasion, I was lamenting to Professor Ledderose about the limited access to resources that hampered my research. After listening to me, he patiently advised me to simply make do with everything I already had and put all the current concerns and issues into a chapter that could pave the way for future research. It is only after I finished my dissertation draft that I have come to appreciate the deep wisdom in his seemingly simple words of advice. These have in fact benefited not only my research, but also my outlook on life as a whole:

"A journey of a thousand miles begins with a single step 千里之行始於足下."

On this journey, I have the opportunities and the privilege to conduct my research in many institutes and research units among the world, even in the most difficult era for travelling during the Corona pandemic. First and foremost, I would like to express my sincere appreciation that this research project has been supported by the China Scholarship Council under the Post Graduate Abroad Program since 2017. Throughout the research phase, I have been honored to conduct fieldwork on primary sources in Beijing and Shanghai with support from the Heinz-Götze-Scholarship for Chinese Art awarded by the Institute of Asian Art History, University of Heidelberg. On several occasions, I was travelling through Shaanxi province with my team from the "Buddhist Stone Inscription," where I learned the most on how to tackle on issues on site and how to interact and exchange ideas more effectively, especially with groups from diverse social, cultural, and religious backgrounds. At the writing stage, I appreciate the bridging grant that offered by the Faculty of Philosophy, University of Heidelberg that allowed me to concentrate fully on composing my work. My special thanks

also go to the German and French Centre for Art History (*Deutsches Forum für Kunstgeschichte*) in Paris and other related research institutes and libraries, a part of my most crucial arguments were refined by the materials that I came across during my academic stay in Paris, founded by the DFK Paris and the Getty foundation in 2019 and again by DFK in September 2020 as scholarship holder.

I also want to express my gratitude to Professor Zhang Jianwei 張劍葳 from the Beijing University, as a leading figure for the research of the engineering structure of Lingzhao Xuan, Zhang's professional opinions and pertinent evaluations helped to improve this study significantly. As a young scholar, still wet behind the ears, I received so much kindness, understanding and support of all kinds from so my seniors, peers, and friends. Without those exchanges, whether upon professional matters, personal experience, or vision and passion, I certainly could not have gone this far with my research. I would like to extend my utmost respect and great appreciations to those who helped me in any way, including those who read through and correct my text with great patience and those who offered me critical reviews without holding back.

Finally, for my beloved parents, who unconditionally accept and support me along this path, after almost three years apart, I cannot wait to embrace you again, definitely with tears of joy in our eyes and wineglasses in our hands. Your love, affection, and patience are always with me, like a light shining through even the darkest night.

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Introduction

The architectural site of Lingzhao Pavilion (Lingzhao Xuan 靈沼軒) stands out for its unconventional iron structure in the courtyard of the Prolonging Blessing Palace (Yanxi Gong 延禧宮) in the present-day Beijing Palace Museum (Beijing Gugong Bowuyuan 北京故宮博物院), which is housed in the Forbidden City (Zijin Cheng 紫禁城), the former palace and state residence of the Emperor of China from the Ming dynasty to the Qing dynasty.[1] By all appearances, Lingzhao Xuan leaves the striking impression of an outcast whose physiology strays from the stylized constraints of traditional imperial architecture in China. However, through the presentation of its architectural diagram, certain characteristics that are aligned with the conventions of Chinese imperial architecture within the Forbidden City are revealed.

Description

Location Within the Architectural Hierarchy of the Forbidden City

The south-north running axial and the east-west horizontal symmetry serve as the main principle behind the construction of the architectural compound within the Forbidden City.[2] The primary constructions are distributed along the central axis, while the secondary architectural structures within the architectural hierarchy of the Forbidden City embrace the center in a relatively less programmatic manner. The Forbidden City is hemmed in on all sides by the wall, with four gates and four corner towers.

[1] The historic site of the Forbidden City was built as imperial palace of Ming and Qing dynasties. The construction was initiated in the fourth year of Yongle 永樂 era (1402–1424) in the Ming dynasty, which was sustained from 1406–1420. From 1420 through to 1924, the imperial families of Ming and then Qing resided in the Forbidden City. In 1911, after the abdication of the last imperial period of the Qing dynasty, which was under the rule of the Emperor Xuantong 宣統 (1909–1911), the Qing imperial family continued to stay in the Forbidden City until 1924. Upon the commission of establishing a national Museum based on the former imperial palace, the imperial family was asked to retreat from the palace in 1924. In 1925, the Beijing Palace Museum was established.

[2] Zhou Qian 周乾, *Zijincheng gu jianzhu yingjian sixiang yanjiu* 紫禁城古建築營建思想研究 [Research on the Construction Concepts of the Ancient Architecture in the Forbidden City] (Beijing: Palace Museum, 2019), 7.

The six most extravagant architectural structures with significant meaning and status are placed along the axial line; among them are the frontal three main halls (*qiansandian* 前三殿), the Hall of Supreme Harmony (Taihe Dian 太和殿), the Hall of Central Harmony (Zhonghe Dian 中和殿), and the Hall of Preserving Harmony (Baohe Dian 保和殿), which together form the central official administration area. The rear three palaces (*housandian* 後三殿), which represent the counterpart to the administration court in the front, consist of the Palace of Heavenly Purity (Qianqing Gong 乾清宫), the Hall of Union and Peace (Jiaotai Dian 交泰殿), and the Palace of Earthly Tranquility (Kunning Gong 坤寧宫). The rear court serves as the center of imperial domestic space, which is surrounded by architectural compounds for leisure and entertainment. The administration area with the three main halls, which is surrounded by other administrative departments, forms a shape of the Chinese character "凸 (tu)," while the rear court forms a "凹 (ao)," which together indicate the *yang* (main) and the *yin* (supplementary) parts of the architectural compound.[3]

Among this architectural hierarchy, the Prolonging Blessing Palace, where the Lingzhao Palace is located, lies at the rear court in the north-eastern area of the architectural compound of the Forbidden City, alongside the Palace of Great Benevolence (Jingren Gong 景仁宫) to its east and the Palace of Eternal Harmony (Yonghe Gong 永和宫) to its south, which together belong to the eastern six wing palaces that are attached to the main three buildings of the rear court. While the main six buildings, both from the frontal court and the rear court, serve as the symbolic and functional center of the imperial space, where the emperor and empress resided in, the Palace of Prolonging Blessing, along with other buildings, was used by the imperial members with less importance in the imperial hierarchy.

[3] Zhou Qian 周乾, *Zijincheng gu jianzhu yingjian sixiang yanjiu*, 43.

Measurements and Current State

In the middle of the courtyard of the Prolonging Blessing Palace is the architectural compound of Lingzhao Xuan. The south-facing structural remains of Lingzhao Xuan measure 24.70 meters by 18.50 meters; the three-story building is 14.60 meters in height, resting in a pond; in total, the structure is 45 meters by 33 meters, and 3.40 meters in depth. The architectural site has an area of 460 square meters in total.[4] The color of Lingzhao Xuan in the *status quo* is monochrome. No color paints can be detected with the bare eye in its current state, and the restoration report of the German Archaeological Institute from 2016 does not mention any persevered traits of color.[5]

The architectural plan exhibits axial symmetry. The ground plan of the tank outlines an octagon that is formed by removing four congruent right triangles from a rectangle. In the south-facing frontal entrance, a trapezoid area is reserved for a bridge that connects the main entrance of Lingzhao Xuan building and the courtyard. Within the rectangular octagon of the pond, the polygonal main hall occupies the middle area. The ground plan shows a less strict symmetry between the corner towers. The two corner towers in the front, namely the south-eastern and southwestern towers, are octagonal; the two at the back, the north-eastern and north-western, are hexagonal. The outlines of the two front octagonal protruding pavilions, the two hexagonal pavilions, and the central octagonal pavilion, together comprising five, provide a relatively curvy form, in reference to the principle of geometry inherent in hemispherical heavenly cosmology (*tianyuan defang* 天圓地方).

The elevation demonstrates a slim waist drum shape that supports the main hall with protruding cupolas; the base comprises one-third of the whole architectural structure. The rectangular middle hall is rendered with four corner chambers attached. The corner chambers

[4] Ulrike Wulf-Rheidt et al., "Peking, Volksrepublik China. Der sog. Crystal Palace in der Verbotenen Stadt. Bericht über die Summer School 2016," *E-Forschungsbericht des Deutschen Archäologischen Institut*, v. 2, (December 2017):61–62, accessed Februar 27, 2022, https://publications.dainst.org/journals/efb/1989.

[5] Ulrike Wulf-Rheidt et al., "Peking, Volksrepublik China."

demonstrate piled-up octagonal stack layers, which bestow onto the base the silhouette of a slim waist drum. The base accordingly supports the ground floor hall, which shares a similar planar structure, and the window openings form a "foraminate structure" effect. Interpreted from the spatial planning perspective, the water realm is beneath the ground, the earth and the mundane rest in the middle, and the lofty pavilions point toward heaven.

Technology and Material

According to recent studies on its building materials, Lingzhao Xuan was most likely designed by a foreign trade company in China, through which iron from England, glass from Belgium, and ceramic wall tile panels from Germany were also purchased. The masonry work was rendered by local craftsmen.[6] With an awareness of the diversity of iron materials used in construction at the end of the nineteenth and beginning of the twentieth century, as well as their very different material properties, the summer school joint project of the Beijing Palace Museum and the German Archaeological Institute conducted a damage analysis of the architectural remains of Lingzhao Xuan. In doing so, they were able to identify construction methods of industrialized countries and European architectural elements that are most representative in its pavilion-like super structure made of iron and steel profiles, steel door castings and window frames, and masonry iron construction, with cast iron and steel supports sustaining the floor and ceiling. While balancing practical work on the object itself with the theoretical concepts of building archaeology and early iron construction, including cleaning and structural enhancement, the report reveals insights into the technology and materials selected to construct Lingzhao Xuan, which include cast iron, welding iron, and steel.[7]

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[6] Zhang Jianwei 張劍葳, *Zhongguo gudai jinshu jianzhu yanjiu* 中国古代金属建筑研究 [Studies on Metal Construction in Ancient China] (Nanjing: Dongnan University Press, 2015), 224. I would also like to extend my appreciation to Mr. Zhang Jianwei and Mr. Zhao Peng for providing me with advice and insights into this subject when I was working as an intern in the Architectural Heritage Department at the Palace Museum in Beijing from April to June 2016. It was a great honor to have taken part in field research at this site.

[7] Ulrike Wulf-Rheidt et al., "Peking, Volksrepublik China."

With its planed glass-and-iron structure and the application of engineering techniques borrowed from the industrialized countries of the time, Lingzhao Xuan has been celebrated as *xiyanglou* 西洋樓 (translated as "European building," "Occidental building," or "Western building" in previous studies) throughout history and referred to as a *shuijinggong* 水晶宮 (literally "Crystal Palace") as a reference to the British Crystal Palace built in 1851. Both terms provoked the reconsiderations and reassessments found in this study, which are based on my further scrutinization of Lingzhao Xuan.

Overview

Against the backdrop of global industrialization, high-profile international world's fairs and expos became events that prompted a vast array of experimental projects, ranging from iconic landmarks, such as the Crystal Palace in London, to individual pavilions, whose "architectural expression from materials and elements produced through new industrial processes" attracted sensational reputations that profited the projects in turn.[8] This trajectory of experimental architecture is especially salient in the garden and horticultural expos, which originated in England and France in the eighteenth century for garden and landscape designs with the ultimate end of decoration. In general, "a gradual shift in experimental works from prompting technological advances to addressing pressing contemporary questions of architectural provisions on a mass scale, and eventually to individual expression for the main purpose of branding and styling" could be observed throughout the twentieth century.[9] The complexity of Lingzhao Xuan, when considered from both conceptual and material perspectives, reciprocally demands a comparative methodology that can account for these intraregional and global histories.

[8] Ibid.

[9] Michael Hensel and Christian Hermansen Cordua, "Past and Present Trajectories of Experimental Architectures," in *Architectural Design* 85, n. 2 (March 2015): 21.

This study, above and beyond rethinking the Occidentalism found at the site of Lingzhao Xuan, further challenges the flatly interpreted narrative that refers to Lingzhao Xuan as *shuijinggong* 水晶宫 (alongside its English counterpart of the "Crystal Palace"), which evokes certain architectural images that vary among audiences from diverse backgrounds. The exhibition hall of the "Crystal Palace" of iron and glass built for the Great Exhibition in London in 1851 was celebrated as huge success not only in the history of world exhibitions, but also in the history of design and engineering. Lingzhao Xuan as a "Crystal Palace" obviously owes a debt to the accomplishments achieved concerning building materials and the engineering technics in the nineteenth and twentieth centuries Europe and North America. In the meantime, *shuijinggong* 水晶宫 in Chinese context calls forth images of a trans-mundane, otherworldly architecture related to shimmering water and colorful lights, which had been widely circulated prior to the architectural exchange between China and the countries beyond its border in the Qing dynasty.

Under either of these preconceptions, one will be struck by disappointment and confusion when confronted by the architectural remains of Lingzhao Xuan in its current physical conditions. The "Crystal Palace" has been stripped of its "crystal," and as for being a "palace," the scale and manner in which it lives up to this name are less monumental than expected. This is likely due to the fact that this construction remained incomplete from its initiation in 1909 through to 1911, and until the past few decades, less research interest and academic attention was directed to Lingzhao Xuan compared to other structures in the Forbidden City. In light of the architectural, material, and scientific exchange between China and countries beyond its borders on the threshold of the twentieth century, Lingzhao Xuan was reconsidered as a complex and significant case that could potentially reveal more about the nature of the appropriation process. As such, it has been widely studied and discussed in

architectural history with collaborative endeavors of historians, archaeologists, architects, engineers, materials scientists, and other researchers working within this space.[10]

The sensational architectural design tendencies of museums, theatres, libraries, train stations, covered or indoor markets, and arcades of iron and glass in the nineteenth-century Europe and North America are rooted in the tradition of building conservatories or winter gardens (As *Pflanzenhäuser* in German) that can be traced back to the eighteenth century.[11] In fact, the most significant milestone in the history of iron-and-glass construction, the exhibition hall of "Crystal Palace" in 1851, was meant to convert into "a great metropolitan conservatory or winter garden" after its exhibitory use and is a self-explanatory claim.[12] In the looking for future architectural models, this tradition of collecting exotic curiosities from all over the world was discovered and reinvented in nineteenth century architectural history through the massive progress achieved in material science and civil engineering.

Hence, as Lingzhao Xuan is an iron-and-glass construction, an examination of its architectural concept, type, and style will inevitably expend to a consideration of other architectural constructions in this category to achieve a broader and more comprehensive understanding of this movement and thus to avoid the examination of Lingzhao Xuan in isolation. In doing so, I consciously and repeatedly refer to the three principal methodological guidelines that Ruth-Maria Ullrich proposed in her study on the *Pflanzenhäuser*, with the

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[10] Zhang Jianwei, 2015; Zhang Jianwei, 2019; Chun Qing et al., 2018; Ulrike Wulf-Rheidt et al., 2017; Zhou Qian, Yan Weiming and Ji Jinbao, 2015; Fang Liyu, 2014; Qu Liang et al., 2013; Shan Jiayun, 2009; Zhu Qingzheng, 2006; Zhu Qingzheng, 2019; Yan Hongbin, 2011; Gu Bian, 2006; Wang Laiyin, 1991.

[11] Ruth-Maria Ullrich, *Glas-Eisenarchitektur: Pflanzenhäuser des 19. Jahrhunderts* (Worms: Werner, 1989),7. Ullrich listed architectural types of greenhouses (including the initial containers adjusted to smaller scales for plants) in terms of the following: architectural conservatory (both detached and attached), lean-to house, conservative wall, domical house, curvilinear house, span roofed house, ridge-and-furrow-house, roof top conservatory, underground conservatory, "hothouse for the million," glass corridor and flower passage, glass verandah and *Balcon-Serre*, plant cabinet flower porch, and Wardian case, see Ullrich, *Glas-Eisenarchitektur*, 49–50.

[12] Quoted from *Hereford Times* (July 19, 1851) which was originally extracted from the *Westminster Review* (April, 1850) as the following: "There is one object to which the extensive area of the Exhibition might be devoted – and that object of such utility that it would be important to promote it, even if the Exhibition were put aside altogether – that of a great metropolitan conservatory or winter garden" (accessed February 25, 2022, https://www.britishnewspaperarchive.co.uk/viewer/bl/0000396/18510719/029/0007.)

awareness that, first of all, the iron-and-glass Lingzhao Xuan built in the early twentieth century China was never a conventional Chinese structure, given the dominant timber tradition in Chinese architectural history; and, second, though Lingzhao Xuan could not be strictly identified as a "plant house," it is aligned with the tradition of building glass-and-iron structure for pleasure and entertainment that drew inspirations from and cast impacts on the development of conservatories in architectural history, the first guideline of which was confirmed by Ullrich herself.[13] With respect to the second guideline, which places the research on plant houses as necessarily occurring within their architectural environment, my study considers the integration of Lingzhao Xuan as an imperial garden structure for entertaining. To what extent were the foreign materials and technologies that would have regulated and altered the architectural climate of light, water and air adopted and adjusted into architectural space of Lingzhao Xuan. Furthermore, what purposes did these materials and technologies serve? Answering this question will reveal evidence of the technological landscapes and culture at play in the imperial Qing era, which can then be subject to further discourse and investigation. The third but most essential objective is to transcribe and read Lingzhao Xuan as an artificial creation in its most eclectic manner, comprised of indigenous and foreign influences, regardless of all the plausible ideological and philosophical influences at play.

In his attempt at "bridging the arts and sciences," Jacobsen proposed a schema of seven vantage perspectives for investigating the psychology of aesthetics (dischronia, ipsichronia, mind, body, person, situation, and content). Through the proposal of these tools, he notes that

[13] In Ullrich's *Glas-Eisenarchitektur: Pflanzenhäuser des 19. Jahrhunderts* (1989) for the comprehensive study on specifically on plant house (green house) that she studied under three categories: first, private greenhouses in castles, country estates, villas and city houses; second, plant houses in botanical gardens, horticultural societies, city and commercial nursery, and in world exhibitions; third, public winter gardens that attached to theatres, museums, art galleries or hotels, hospitals, schools, or combined with panoramas, zoos, aquariums, circuses, or in cities, seaside resorts, and health resorts. Alfred Gotthold Meyer first proposed the plant house as origin of all glass-and-iron construction in his *Eisenbauten, ihre Geschichte und Ästhetik* (Iron Architecture, Their History and Aesthetics) in 1907. Though Ullrich did not particularly mention that developments of glass-and-iron construction impacts brought about changes in the future construction of plant house at this point, it is reasonable to believe that the reciprocal exchange and interaction is bound to happen at some point. See Ullrich, *Glas-Eisenarchitektur: Pflanzenhäuser des 19. Jahrhunderts* (Worms: Werner, 1989), 8–9.

the "cornucopia of material provided by seven perspectives" could be extracted to understand the mental process behind aesthetic development.[14] In considering the possibility of a psychological aesthetic utopia, he took the design process of architecture as an example:

> Often, buildings are meant to convey a certain message. The architect intentionally incorporates this semantic aspect into the design process. In most cases, however, the user or observers, the person who will experience the building and should understand its message, are not included in this process. The expertise and spirit of the gifted, professional designer are relied upon. Empirical research, however, shows that there are substantial differences in the process of perception and evaluation of experts and nonexperts.[15]

In this study, I take up those approaches that reflect the discourse of anesthetic and synesthetic creation that are reflected in Jacobsen's "Beauty and the Brain,"[16] given that the complexity of both the conceptual and material aspects of Lingzhao Xuan calls for approaches that would benefit from a cornucopia of different perspectives. This is especially true due to Gestalt psychology's strong influence on the psychology of art and aesthetics in the late nineteenth century, when "the erstwhile philosophical and physiological problems of how we perceive form and space in effect gave way to the fledging psychological problem of how we appreciate or take delight in the characteristic of form and space. Implied in this subtle but at the same time dramatic shift was the analogous problem of how we might artistically exploit pure form and space as artistic entities in themselves."[17]

Tangible evidence of how this idea was conceived and masterminded was either destroyed or remained unnamed, thereby awaiting discovery. Hence, we are forced to disclose this building through memories and interpretations. I address the experimental spirits in Lingzhao Xuan over a lament of its physical incompleteness due to my conviction that, at the

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[14] Thomas Jacobsen, "Bridging the Arts and Sciences: A Framework for the Psychology of Aesthetics," *Leonardo* 39, n. 2 (2006).

[15] Thomas Jacobsen, "Bridging the Arts and Sciences," 161.

[16] Thomas Jacobsen, "Beauty and the Brain: Culture, History and Individual Differences in Aesthetic Appreciation," *Journal of Anatomy* 216 (2010): 184–91.

[17] Harry Françis Mallgrave, ed., *Empathy, Form, and Space: Problems in German Aesthetics, 1873–1893* (Santa Monica: The Getty Center for the History of Art and the Humanities, 1994), 2.

very least, the building belongs to "works that are clearly intended for implementation and demonstrate the application of novel ideas and approaches in full scale with all the associated risks and consequences."[18] While foreign technological and material input has been discussed to some extent by previous scholars, I seek to discuss the traditional architectural thinking that the creator of Lingzhao Xuan could have intended or hinted at, which has been less fully explored.

Throughout the extent of my research, multiple terms are employed to refer to the ideal architectural space, such as "trans-mundane space," "otherworldly space," and, in the last chapter, when Lingzhao Xuan is juxtaposed with glass architecture, the "glass utopia" and the notion of "utopian architecture." These are first and foremost applied in the discussion of architectural history rather than in reflecting on this term from a sociological perspective. As the investigation unfolds, the examination of the fictive characteristics of glass as building material unfolds the everchanging "utopian dream" that is constantly in the process of being fulfilled globally, and more "glass utopias" that manifested in diverse material forms are included in this discourse. These individual "utopias" were inevitably constructed under the influence of the social context in which they were built; nevertheless, I focus on the manifestation of a constructed "utopia," or "ideal world," that both their creators as well as their patrons sought to present. Also, I analyze how the sophisticated approach of employing industrialized glass optimizes the physical manifestation that reconciles one's unrealizable "glass dream" that is still worth pursuing with limited materials. In this study, any reference to utopia is not intended to bring forward an investigation into the origin and etymology of this word, but is rather an attempt to read Lingzhao Xuan in light of the "utopias of escape" and "utopias of reconstruction" in Mumford's line of thoughts.[19] The goal is to propose other ways

[18] Michael Hensel and Christian Hermansen Cordua, "Past and Present Trajectories of Experimental Architectures," in *Architectural Design* (2015): 17.

[19] For the notions of "utopias of escape" and "utopias of reconstruction," see Lewis Mumford, *The Story of Utopias* (New York: Boni and Liveright, 1922).

of reading the architectural space of Lingzhao Xuan, namely in terms of a spatial ideal, in which the architects, from transcultural and transmedia perspectives, attempt to construct an intriguing narrative on behalf of their patrons in the light of "utopian architecture."

Despite all the initial endeavors in the early twentieth century, the failed attempt of "utopia of escape" in Lingzhao Xuan ironically ends up illustrating the prejudice that the manifestation of a utopia is merely a dream. The silver lining to this is that, thanks to its very existence, which "shatters a given order," especially through its unconventional building materials and techniques, contemporary attempts at reading, analyzing and digital realizing of this unfinished "trans-mundane space" reflect the idea that "a utopia is […] always in the process of being realized."[20]

Dissertation Structure

Reconstructing and restoring the unfinished Lingzhao Xuan from an architectural heritage as well as an art historical perspective is a continuous process that demands painstaking collaborative endeavors. Inspired and motivated by those aforementioned works, I take up my role as an art historian by deploying various research approaches and drawing on my experience in both China and abroad in this "reconstruction" and humbly, as the saying goes, adding bricks and replenishing rooftiles (*tianzhuan jiawa* 添磚加瓦).

Specifically, I intend to focus on those areas that the aforementioned studies have neglected due to the limitations of the visual analogs that have been revealed so far. If one looks at Lingzhao Xuan in isolation, one easily loses track of its global context, wherein exposed iron-and-glass construction was hardly anomalous in structures designed for entertaining, exhibiting and showcasing collections. However, it is only when one starts to connect the dots of several seemingly irrelevant and "unique" architectures and artifacts that a much more

[20] In this I am following the French philosopher, Paul Ricœur's reading of Karl Mannheim's study of utopia, in Paul Ricœur, *Lectures on Ideology and Utopia*, ed. George H. Taylor (New York: Columbia University Press, 1986), 273.

complex and profound appropriation of the manifestation of a trans-mundane space at the site of Lingzhao Xuan begins to reveal itself.

To borrow from the tri-component theory of Chinese traditional architecture proposed by the structural engineer and architect Yu Hao 喻皓 (fl. 970) from the Northern Song dynasty (960–1127), which he addressed in his *Timberwork Manual* (*Mu Jing* 木經), "in any case of construction, the building is divided into three sections: the part above the roof beam is the upper section, the part above the ground is the middle section, and the area below the steps is the low section."[21] Traditional classical Chinese architecture has three essential divisions: the roof (*wuding* 屋頂), the structure of the walls and columns (*qiangzhu jiegou* 牆柱結構) and the stylobate (*taiji* 臺基).[22] Drawing on this theory, my "construction" of Lingzhao Xuan is divided into three parts by viewing the construction as a tri-component-based work of Chinese traditional architecture: the base, the main structure, and the roof, which together manifest, along with its architectural and historical contexts, as an integrated whole.

To contribute to **the base** of reconstructing Lingzhao Xuan, I establish a renewed history of Lingzhao Xuan by considering three major questions in **Chapter 1**: Why was Lingzhao Xuan proposed as a "Water Palace 水殿" at the very architectural compound of Prolonging Happiness Palace? Why was the project given a frosty reception by most contemporaries? How and why were those building materials that looked so out of place in the palace compound selected, and how does one comprehend the epithet of *shuijinggong* 水晶宮 in the making of a trans-mundane space of Lingzhao Xuan, apart from perceiving it merely as a reference to the European and North American glass-and-iron prototypes exemplified by the "Crystal Palace"

[21] Original: 凡屋有三分。自梁以上爲上分，地以上爲中分，階爲下分。The original manuscript of Yu Hao is lost. A polymath and statesman of the Northern Song dynasty (960–1127) named Shen Kuo 沈括 (1031–1095) recorded this first manuscript on wooden construction in Chinese history compiled by Yu Hao in his Brush *Talks from Dream Brook* 夢溪筆談 (1088).

[22] See related entries in Chapter 2 for Liang Sicheng's interpretation of Chinese traditional construction.

at the London Great Exhibition in 1851? Initially built in the name of "extinguishing fire (*zhenhuo* 鎮火)" due to geomantic concerns, the water element needed to be considered as part of the construction process, because the Palace of Prolonging Happiness Palace suffered from several fires. Despite these glorified intentions, Lingzhao Xuan was widely regarded as a self-indulgent extravagance on the part of its imperial patron, the Dowager Empress Longyu 隆裕太后 (1868–1913), and her confidant, the last Imperial Eunuch Supervisor 太監總管 of the imperial palace, Zhang Lande 張蘭德 (1876–1957). As for the epithet "Crystal Palace" in the naming of Lingzhao Xuan, the Chinese term *shuijinggong* is attested to in Chinese textual and architectural contexts prior to the introduction of the European and North American countries architectural ideas into China. Indeed, the term *shuijinggong* in Chinese is partially conflated with the English term "Crystal Palace" in late nineteenth- and early twentieth-century China; specifically, the term "Crystal Palace" was generally (but not exclusively) associated with the exhibition hall in the Great Exhibition in London 1851, which was built in glass and iron. As such, Lingzhao Xuan, at once a "water palace" and "Crystal Palace," is a life-sized manifestation of an idealized Chinese trans-mundane "underwater wonderland." Borrowing the European and North American concept of the "Crystal Palace," with its leading technologies and materials, iron-and-glass construction, and modern pumping system, would have allowed the manifestation of a transparent space emerging out of the water, replete with glittering colors and dreamy scenes. In Lingzhao Xuan, this interpretation is delicately merged with the Chinese "Crystal Palace" concept, which offers an imaginary otherworldly space under the water domain, inhabited by mysterious beings and deities. Lingzhao Xuan is therefore a microcosm of the universe, wherein the powerful imperial patrons' dream of harmoniously governing the domain of water, earth and air is given material form, which is to be further evaluated as the formation of sacred mountain (*shan* 山) and an arrangement of auspicious water (*shui* 水) in the following chapters, respectively.

The **main body** of the dissertation focuses on the two fundamental elements of Lingzhao Xuan, as addressed above, the "mountain" and the "water." In **Chapter 2**, I assign myself the tasks of fully examining the Chinese essence of Lingzhao Xuan. To reveal this essence, I have divided the chapter into three sections. In the first section, I deconstruct and analyze the Chinese name of Lingzhao Xuan 靈沼軒 from both philological and historical perspective to demonstrate its alignment with the Confucian concept of "benevolent governance (*renzheng* 仁政)," which was believed to bring blessings to the imperial architectural constructing system. Meanwhile, the expectation of simulating a trans-mundane space at the architectural site of Lingzhao Xuan is reflected both in its naming and its demonstrated functions. To further address the idea of the creation of a trans-mundane space, I take a step further and scrutinize the structural system and physical characteristics of the building in the second section, which allows me to shed light on the "earthly paradise" that Lingzhao Xuan presents by deploying the concept of "immortal mountain rising from numinous pond 靈山仙池" from the Chinese classic imperial garden arts. The third section is dedicated to a study of the Chinese aesthetic methods of "borrowing sceneries to provoke sentiments 借景生情" as applied in the construction of Lingzhao Xuan, which intends to and has achieved an atmosphere of "nature and human being harmonious in one 天人合一," an essential component of Daoist philosophy. Reading the design of Lingzhao Xuan in light of Chinese aesthetics, the delicate arrangement of a Chinese trans-mundane space comes into full understanding. I argue that the idea of a trans-mundane space in the Chinese sense provided imperial patrons with a familiar atmosphere and psychologically eased the introduction of European building materials and engineering technologies into the making of the architectural site of Lingzhao Xuan.

While the main building—a "sacred mountain"—is fully studied in Chapter 2, **Chapter 3** is designed to shed light on the arrangement of water at the site. Specifically, I study the basement "aquarium," which is hidden from plain sight, and propose that the mediality of the

aquarium allows a living picture to be viewed *en face* instead of looking down at it from the outside. The arrangement of Lingzhao Xuan's basement provides a vivid moving picture of swimming fish; the adaptation of aquarium as media shifts the traditional perspective of fish contemplating and self-contemplating, which simulates the state of vortex that is often described as "emptiness," "selflessness," or emblematic of the *se madréporiser* effect. Through this perspective, the souls are in their pristine condition, and consciousness lies beyond the identification of form and comparison to the environment. As an organic whole, the "mountain" (terrestrial) and the "sea" (aquatic) in an exposed glass-and-iron structure, and as such, Lingzhao Xuan is reminiscent of a domestic aquarium, a paludarium, or a fountain aquarium, as well as a miniature of the universe and a microcosm and simulacrum of water, earth, and air domains, all in one. Meanwhile, this line of reading offers a new perspective through which to consider the household aquarium of iron and glass on a small scale as emerging from nineteenth- and twentieth-century European and American design and proposes expanding the spatial narrative to existing readings of Lingzhao Xuan.

The **roof**, which at the current stage consists of **Chapters 4** and **5**, and as visually provoking as it is in Chinese imperial architecture, invites even bolder and broader discussion and rethinking, and in doing so, to explore the as-yet unacknowledged characteristics of Lingzhao Xuan and to link its construction to a comparative or global history. In **Chapter 4**, the term of *xiyanglou* (literally European Building or "Western" Building) in reference to Lingzhao Xuan is further examined and questioned. It is shown that the activities of collecting architecture, which were transmitted from the concept of "borrowing landscape 借景" in the aesthetics of Chinese gardens, were applied to actually construct an architectural replica in the Qing imperial garden, since landscape and scenes were continuously and gradually "collected" and "transplanted" in the Imperial Garden of Qing dynasty. As with all other collected art objects, the collections serve the personal interests of their patron, and the personal interests and political ambitions of the rulers had a strong impact on the development of imperial

gardens. This "collecting process" first starts with the collection of Jiangnan gardens that emerged during the Kangxi reign in the late Qing era, and which manifested in the built architecture an eclectic appearance.[23]

Chapter 5 further reflects the permeating concerns of this study, namely the creation of trans-mundane space at the architectural site of Lingzhao Xuan. All of its manifested functions as an imperial studio, attached aquarium, and decorative element contribute to the interpretation of the latent function of Lingzhao Xuan as a trans-mundane space, which I demonstrate in earlier chapters in light of Chinese traditional aesthetics and philosophies. The focus of this chapter, however, lies on the application of industrialized crystal glass at this site that resonates with the concept of *shuijinggong* introduced at the very beginning of this study. This reading of Lingzhao Xuan in light of "utopian architecture" provides another line of inquiry that aims to replenish the entrenched historicist view. The textual evidence that I present in the first chapter leads to the conclusion that the notion of the "Crystal Palace" is considered divine, precious, sacred, royal, and otherworldly in Chinese tradition. On the basis of the historical, transcultural, and critical accounts of the "Crystal Palace" in China prior to the modern era, I extend my study by shedding light on the material agency, the medial efficacy of industrialized glass, and the fictive characteristics of glass as a built material that provide multiple interpretations and readings of the constructed spatial narrative in the architectural space of Lingzhao Xuan. I argue that understanding industrialized crystal glass as a material medium is the crucial component in simulating a divine, precious, sacred, royal, and otherworldly halo or aura at the site of Lingzhao Xuan, both when considered from a distance and with regard to its interior experience. Both the phenomenal and literal transparency of the pure, transparent glass

[23] I originally propose that there is a structural resemblance between the exposed structure of Lingzhao Xuan and the colonial Oriental buildings that were popularly appropriated from world exhibitions (also known as *expositionens universelles* in France and the World's Fairs in the United States) from the mid-nineteenth to the early twentieth centuries. By providing evidence of plausible prototypes and skeuomorphs of the structure of Lingzhao Xuan, I argue that the construction showcases the appropriation of multiple cultural elements and should be considered more profound than simply exhibiting a dichotomy of "Chinese" and "European" aesthetics. In fact, traces of Indian and Mughal aesthetics found in the structure of Lingzhao Xuan demonstrate the persistent modernity of the site at a time that witnessed the dramatic rise of mass reproduction.

are fully stressed in the making of the trans-mundane space of Lingzhao Xuan. The sophisticated employment of glass to maximize the opportunity of visual transparency in the space of Lingzhao Xuan, thereby allowing for the manifestation of a conceptual "Crystal Palace" in myth, endows this space a sense of mysterious and divine. It is only because of this endowment that the "novelty in visual perception, formal memory and optical consciousness," in contrast to Benjamin's claim, that the glass veil envelops the space of Lingzhao Xuan and induces an otherworldly aura.[24]

Thus far, the eclectic nature of Lingzhao Xuan has revealed another level of interpretation that awaits further discourse and determination. Picard read the style of "eclectic" as "happily lifting bits from any style it fancied, without being true to any of them."[25] The eclectic nature of this site and the making of a trans-mundane space that encompasses multiple plausible connotations from different background demonstrates the very attitude toward the rapid exchanges and interactions with the outer world that had emerged at this time. As Nancy Steinhardt argues, when possibilities of modernizing architecture first came to China, there was no thought about tearing down the past, as the architecture that entered from outside, visually if not technologically, had to fit into the existing system.[26] This diachronic syncretism is very prevalent at the architectural site of Lingzhao Xuan; its eclectic nature serves profoundly to emphasize its essence as manifesting a trans-mundane space at the very least in the Chinese imperial landscape at the late Qing court. All the "bits from any style" that lifted, proven consciously or intentionally, strive to realize the dream of a Chinese "Crystal Palace."

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[24] Liu Lihong, "Glass Containers' Aura: The Gestalt of Material Milieu," in *Association for Art History*, v. 44, n. 1 (February 2021): 111.

[25] Lisa Picard, *Victorian London: The Life of a City 1840–1870* (London: Weidenfeld and Nicolson, 2005).

[26] Nancy S. Steinhardt, "Chinese Architecture on the Eve of the Beaux-Arts," in: *Chinese Architecture and the Beaux-Arts*, edited by Jeffrey Cody, Nancy Steinhardt and Tony Atkin (Honolulu: University of Hawai'i Press, 2011), 5.

Chapter 1 "Water Palace" Manifested as "Crystal Palace"

"[A] palace was erected in the middle of the water, [...] Whoever steps into it, shall feel as if they are exposed in glass world.[27]

宮立水中央，[...] 入其中者，如置身琉璃世界。"[28]

As suggested in the introduction, current research on Lingzhao Xuan has primarily examined its building materials, especially the use of metal and glass, from the perspective of technological advances in the architectural history in China. In this chapter, I establish a history of the construction of Lingzhao Xuan 靈沼軒 (1909–1911) by first considering the background of Lingzhao Xuan being built as a "water palace (*shuidian* 水殿)" at the Prolonging Happiness Palace and by presenting the reception by the majorities of its contemporaries. Why were those building materials that looked out of place in the palace compound selected, and how to comprehend the epithet of *shuijinggong* 水晶宮 (literally translated as and hereafter as "Crystal

[27] The term "glass" which I use on occasions of translation of Chinese texts in my study, is written in Chinese as either *liuli* 琉璃 or *boli* 玻璃. Both refer to the similar material, but the former term emphasizes the translucent colored characteristics while the latter highlights the transparency of glass from a philological perspective. For a more focused study on the material of Chinese glass and the development of Chinese glass compositions, see Gan Fuxi, *Development of Chinese Ancient Glass* (Shanghai: Fudan University, 2005) and Gan Fuxi, R.H. Brill and T. Shouyun, eds., *Ancient Glass Research Along the Silk Road* (Singapore: World Scientific Publishing, 2009). An integrated interdisciplinary study of glass has been conducted by Julian Henderson that incorporates aspects of archaeology, history, chemical analysis, materials science, geology and botany. My current study, which mainly taking up approaches of art history also benefits crucially from the chapters of "Glass as a material: A technological background in faience, pottery and metal?" (Henderson, 1–22) and "Glass chemical compositions" (Henderson, "China and Southeast Asia," 118–126) when it concerns material science of glass. For the more comprehensive study of glass, see Julian Henderson, *Ancient Glass: An Interdisciplinary Exploration* (New York: Cambridge University Press, 2013). It is suggested that the Chinese started their indigenous glass technology rather later than other civilizations because the usage of jade as translucent colored materials for jewelry and the usage of wood or metal for vessels reduced the demand for glass. In medieval China, glass was associated with wealthy Buddhist monasteries and often perceived as prestigious and rare. However, the early barium-rich Chinese glasses (which dates back to the Warring States [221–476 BCE] and Han dynasties [202 BCE–220 CE] was invented by Chinese) were probably manufactured to copy the appearance of jade or increase the jade-like translucent materials, see Henderson, 118–119.

[28] Lu Baoxuan 陸保璿, *Manqing Baishi* 滿清稗史 [Miscellaneous History of Manchu Qing], v. 15, (Beijing: Xin zhonghua shuju, 1913), 1111. Translated by author.

Palace") in the making of Lingzhao Xuan, apart from perceiving it merely as a reference to the European and North American glass-and-iron prototypes exemplified by the "Crystal Palace" at the London Great Exhibition in 1851?

The first issue is addressed by evidence presented in textual sources that suggest Lingzhao Xuan was intended as a "water palace" to "suppress (or extinguish) the fire [element] (*zhenhuo* 鎮火)" and "prevent the fire (*fanghuo* 防火)," both conceptually and physically; the former conceptualized the physical design of the latter and is reinforced and materialized by the latter in turn. From a geomantic perspective, the "water (*shui* 水)" element was crucial for construction projects planned in the Prolonging Happiness Palace due to the fact that this historic compound had suffered several conflagrations, a sign that the fire and water elements were out of kilter by the accounts of Chinese geomantic tradition (*fengshui* 風水).[29]

Despite these glorified intentions, Lingzhao Xuan was widely regarded as a self-indulgent extravagance on the part of its imperial patron, the Dowager Empress Longyu 隆裕太后 (1868–1913) and her confidant, the last Imperial Eunuch Supervisor 太監總管 of the imperial palace, Zhang Lande 張蘭德 (1876–1957). Zhang reputedly initiated this project to serve his own agendas: first, to please the imperial patrons, the undecisive Empress Dowager and the young unworldly Emperor who were largely unaware of the unsettling political changes in China; and second, to make a fortune by embezzling the project funds to line his pockets for retirement. While the subject was obviously intentionally avoided by other high-ranking imperial members and imperial records were completely silent about this building,

[29] *Fengshui* means literally "wind (風 *feng*) " and "water (水 *shui*)," in Derek Walters' *Chinese Geomancy* (1989), which is based on J.J.M. de Groot's seminal study, he describes the system of *Feng Shui* as a "quasi-scientific system, [that is] supposed to teach men where and how to build graves, temples and dwellings, in order that the dead, the gods and the living may be located therein exclusively, or as far as possible, under the auspicious influences of Nature;" see Derek Walters, *Chinese Geomancy* (Longmead, Shaftesburg, Dorset: Element Books, 1989), 13. Further fundamental research in English language on this issues that relate closely to the religions in China, see Jan Jakob Maria de Groot, *Religion in China, Universism: A Key to the Study of Taoism and Confucianism,* American Lectures on the History of Religions 1910–1911 (New York and London: The Knickerbocker Press, 1912).

contemporary apocryphal tales and literary sources that attack this iron-and-glass imperial garden architecture as a waste of public resources offer a glimpse of its reception history.[30]

With the awareness of limited and fragmented primary documents on the history of the construction of Lingzhao Xuan, I turned to the epithets of s*huijinggong* 水晶宮 (Crystal Palace) and *xiyanglou* 西洋樓 (Western Building) that have been given to Lingzhao Xuan mainly concerning its atypical building materials in comparison with its architectural environments in the Forbidden City; however, they revealed a disproportionate academic focus on its European heritage. To direct the attention to Lingzhao Xuan being collaborative endeavors of both Chinese concept of *shuijinggong* and industrialized glass-and-iron architectural imagery of a "Crystal Palace," I first examine the literary *topos* of the term *shuijinggong* in Chinese, which is literally translated as "Crystal Palace." In glass architecture fantasies in ancient China, it has been assigned spiritual meanings and connotations that mostly refer to a trans-mundane space inhabited by deities or otherworldly creatures. Shimmering water and colorful light appear in those narratives constantly, which is understandable due to the visual effects that appear when interactions of those materials take place. Even though a handful of references to *shuijinggong* appears in architectural records, the term relates to myths, and there is no physical evidence of a "Crystal Palace" prior to Lingzhao Xuan. It was not until the mid-nineteenth century onwards that Qing officers commissioned to travel abroad coined the Chinese *shuijinggong* and the English "Crystal Palace" in their journals that indicates a more direct architectural exchange and interaction between China and other countries beyond its borders.

[30] "Reception" is a concept of German origin (*Rezeption*) that is used in literary theory to refer to "studies of the reading, interpretation, (re)fashioning, appropriation, use, and abuse of past texts over the centuries." I use this term here with the awareness that there is no permanent "correctness" in reading an *objet d'art*, as in reading of texts and I remain critical and open for an everchanging "fusion of horizons" between the examined object and further interpretations being revealed to me after this stage of research. For more on the term of reception, see the entry in the Oxford Classical Dictionary, accessed February 22, 2022, https://doi.org/10.1093/acrefore/9780199381135.013.5507.

At the site of Lingzhao Xuan, the imaginary Chinese fantasies of *shuijinggong* are manifested in full bloom. By applying cutting-edge building materials and engineering technologies, especially metal, glass, and pumping systems, Lingzhao Xuan would have been a real "water palace" where the water was mechanically circulated from the pond to the roof fountain. With its underground aquarium gallery that separates the main hall from the water domain with water-proofed glass, it invited imperial patrons to an immersive experience in a mysterious underwater fantasy land where everchanging moving views of the underwater flora and fauna catch the full attention of the contemplators. The living picture brings about a surreal illusion that the imperial patrons of Qing experienced twenty years before the invention of movies.[31] Along with the dazzling carvings of landscapes, flowers and fruits, birds and bats,[32] the glittering, colorful effect evoked by glass, water and light, a trans-mundane space of "Crystal Palace" is manifested.

1.1 "Water Palace" that "Suppresses/extinguishes Fire"

The reference of "water palace (*shuidian* 水殿)" has been addressed in textual sources when the question of the water at the site of Lingzhao Xuan comes to the subject matter. The building in the middle of a pond gives the first impression as a "water palace" that physically surrounded by water body on all sides (**figs. 1.1–1.4**), as Wu Shijian 吳士鑑 (1868–1934), an epigraphist in Qing dynasty (1644–1912), in his *Poetry of Qing Court* 清宮詞 of 1912 recorded:

> To the east of the inner court of imperial gardens, there was an area with a patch of earthen mounds, it has been declared unsuitable for construction all this while by geomancers. In the year of Jiyou in the regime of Xuantong [1909], a water palace was constructed, surrounded by ponds on [all] four sides and irrigated with water from Mount Jade Spring that encircles the palace. The windows, the ceilings, and doors, none of them have glass installed in them. Empress Dowager Longyu herself adorned the entrance plaque with her calligraphy, naming [the structure] Lingzhao Xuan, which was popularly called Crystal Palace.

[31] See Chapter 3 for full discussion on the water arrangement at the architectural site of Lingzhao Xuan.

[32] See Chapter 2 for full discussion on the creation of an imagery of universe at the site of Lingzhao Xuan.

> In the winter of the year Xinhai [1911], the construction had yet to be completed.[33]

Not only that, an underground aquarium that is not mentioned in Wu's writings belongs to the second physical evidence to the theme of a "water palace," as the whole underground floor is constructed an underwater domain by applying waterproof glass to separate the observers in the basement hall from the observed scene in the pool.[34] In order to keep the water clean and floating in a closed system, water pumping systems were planned and plausible fountain devices set on the top of the iron pavilions.[35] It is physically self-explanatory that the water arrangement was delicately calculated at this architectural site.

Aligned with scattered sources that corroborate and contextualize Lingzhao Xuan, one reason to justify the building of a specific "water palace" is out of geomantic concerns (i.e., *fengshui*). It should be stated that historically, the Prolonging Happiness Palace, in whose courtyard the construction of Lingzhao Xuan stands, was never an uneventful place. At least two conflagrations took place in this architectural compound during the Qing dynasty: one recorded in the twenty-fifth year (1845) of the Daoguang 道光 era (1820–1850) and another in the fifth year (1855) of the Xianfeng 咸豐 era (1850–1861), which inflicted extensive damage

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[33] Original: 大内御花園之東，有土阜一區，向以日者之言，不宜建築。宣统己酉，興修水殿，四圍浚池，引玉泉山水環繞之。殿上窗櫺、承塵、金鋪，無不嵌以玻璃。隆裕太后自題扁額曰："靈沼軒"，俗呼為"水晶宫"。辛亥之冬尚未畢工。In *Qinggong ci* 清宫詞 [Poetry of Qing Court] (Beijing: Guji chubanshe, 1986), 17. *Gong ci* 宫詞 (Court Poetry) as a term is a literary genre that can be traced back to Tang dynasty (617–907) by a poet Wang Jian 王建 (765–830): they are verses or poems about life at court that offer comments and perspectives as well.

[34] See Chapter 3 for discussion on the function of aquarium at the site of Lingzhao Xuan.

[35] For research on its structure and water system, see Ulrike Wulf-Rheidt et al., "Peking, Volksrepublik China. Der sog. Crystal Palace in der Verbotenen Stadt. Bericht über die Summer School 2016," *E-Forschungsbericht des Deutschen Archäologischen Institut*, v. 2, (December 2017): 59, accessed Februar 27, 2022, https://publications.dainst.org/journals/efb/1989. For more studies on the building materials and engineering technology, see Chun Qing 淳慶 et al., "Gugong Lingzhao Xuan cansun fenxi ji jiegou xingneng yanjiu" 故宫靈沼軒殘損分析及結構性能研究 [Research on damage to and structural performance of Lingzhao Xuan in the Forbidden City], *Wenwu baohu yu kexue kaogu* 文物保護與科學考古 [Sciences of Conservation and Archaeology] no. 1 (2018), 40–46. Qu Liang 曲亮 et al., "Gugong Lingzhao Xuan jinshu goujian de binghai fenxi ji qi chengyin yanjiu" 故宫靈沼軒金屬構件的病害分析及其成因研究 [Disease analysis and cause of architecture metal components of Lingzhao Xuan in the Forbidden City], *Gugong bowuyuan yuankan* 故宫博物院院刊 [Palace Museum Journal], no. 2 (2013): 125–128. Also see Zhang Jianwei, *Zhongguo gudai jinshu jianzhu yanjiu*, 218–233.

on the architectural complex.[36] The former caused significant damage to the main hall, the revert hall and the side halls on the West and the East Wings. In total, all twenty-five rooms of the original architectural complex had to be torn down. These fires led to the complex being abandoned for decades in accordance upon the advice of the geomancers (*feng shui* practitioners, *fengshuishi* 風水師), namely the "Divination (*Ri Zhe* 日者)" mentioned in Wu's text. Another attempt to rebuild the Palace in the eleventh year of Tongzhi 同治 era (1872) was put on the agenda but never carried through.[37] Due to unfavorable *feng shui* forecast, the edict reported that the project could start with prospecting the site, but construction should be postponed.[38] After that, the architectural compound of Yanxi Palace was left unbuilt, due to its unsuitability for construction.

In the first year (1909) of Xuantong 宣統 era (1909–1912), the "broad-minded" and "unconventional"[39] Empress Dowager Longyu broke the taboo and ordered the construction of

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[36] I cite here the information from Zhu Qingzheng, who presents in his research a record that recounts the event in detail: "In the 25th year of the Daoguang era, on the 22nd day of the fifth lunar month, at the beginning of the Hai 亥 hour, the Yanxi Palace caught fire due to negligence. The fire started from the Eastern Pendant Hall, razed to the ground five rooms in the main wing, six rooms in the Western and Eastern Wings, five rooms in the rear wing, and three rooms in the Eastern water storage building, totalling twenty-five rooms. According to the archives, the kitchen was within the palace compound, in the third room of its Eastern wing, with two hearths and furnaces near the south side against the gable, where the fire started." See Zhu Qingzheng 朱慶徵, "Fangcun zhijian de gongting jianzhu" 方寸之間的宮廷建築 [Palace architecture that are compacted (by the architecture models) in miniature], in *Zi Jin Cheng* 紫禁城 [Forbidden City], v. 7 (2006): 89–90.

[37] Gu Bian 顧邊, "Women zhidao de zijincheng yanxigong" 我們知道的紫禁城延禧宮 [What we know about the Yanxi Palace in the Forbidden City], in *Zi Jin Cheng* 紫禁城 [Forbidden City], v. 7 (2006): 91.

[38] In the eleventh month of the eleventh year of Tongzhi era (1872), a reconstruction proposal was put forward by Eunuch Zhang Ling 張伶喜: "The construction project in Yanxi Palace should abide by the regular standards, according to the Imperial Household Department, the geomancy [*feng shui*] in the next year was not favorable, so they suggested taking surveys and measurements first, and only starting on the construction if the geomancy issues were resolved the next year after that 延禧宮工程，普照式修建。經總管內務府奏，明年方向有礙，拟先勘估，如後年方向相宜，即行修建。" Original text cited in Zhu Qingzheng, "Fangcun zhijian de gongting jianzhu," 89–90. Translated by author.

[39] Cai Dongfan 蔡東藩, *Qingshi yanyi* 清史演義 [The Historical Romance of Qing], v. 2, (Shanghai: Wenhua chubanshe, 1981), 405. Historical romance is a literary genre in China, and it is essentially fictional in nature, hence its historical accuracies various and requires close examination when quoted as historical sources. Nevertheless, I cite here the description of Empress Dowager Longyu's dispositions due to two considerations: first, as the leading female figure that played significant role in the abdication of the last Emperor in China the end of the Great Qing's reign, this figure has been given scant attention by historical records; second, to a certain extent, this description offers supplementary information to the image of the Empress Dowager, as Isaac Taylor Headland in his *Court Life in China: The Capital, Its Officials and People* (New York: F.H. Revell, c.1909) recalled to be a rather soft and gentile figure, probably easily persuaded and undecisive either, see below.

Lingzhao Xuan. Even so, it has been suggested that Lingzhao Xuan, the "Crystal Palace," was intended to "suppress the fire [element] (*zhenhuo* 鎮火)," [40] following the preconceptual instruction of geomancy, and to "prevent the fire (*fanghuo* 防火)" as Shan Jiayun mentioned, as the construction contains a pond that could also serve as a reservoir.[41] Both statements again demonstrate a close linkage to the element of water at this site, and to the image of a "water palace." In 1909, under the pretext of having an auspicious "water palace" representing the "water element" balanced with the "fire element" in the architectural environment of the Prolonging Happiness Palace, which was damaged and left unbuilt after a fire in the Xianfeng era, the construction of Lingzhao Xuan had begun. In June 1910, the Empress Dowager Longyu edicted the Department for Public Electric Light in Fengzhen Garden 西苑電燈公所 to install electric heaters, electric fans, and electric lights in the building.[42]

Despite the notoriety of this project and how apocrypha relate massive corruption, a newspaper published in China reports positively about the construction process in 1911, not long before the project was abandoned, in which it mentioned that the epithet "Crystal Palace" in English and articulate its purpose of being a recreational venue for the young Emperor Xuantong (r. 1908–1912) commissioned by the Empress Dowager Longyu:

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[40] In the eleventh year of Tongzhi era (1872), a proposal of reconstruction has been put forward but never carried out. In his essay Gu Bian addresses *What we know about Yanxi Palace* with the history of the construction and mentioned that, after the death of Cixi Dowager 慈禧太后 and Guangxu Emperor, Longyu Dowager seized power, however her intelligence and actions failed her ambitions to be a real leader like her aunt. She was bored with life at court, which caused her great grief. The Eunuch Zhang Lande came out inform the Dowager that due to the several fire incidences in the Yanxi Palace, a building should be built to suppress the fire. According to five elements tradition, there should be plenty ways of suppressing the fire, but Longyu favored Zhang's suggestion. See Gu Bian, "Women zhidao de zijincheng yanxigong," 91.

[41] Shan Jiayun 單嘉筠, "Zhu Qiqian de qinbixin tanji qinggong shuijinggong 朱啟鈐的親筆信談及清宮水晶宮 [Letter from Zhu Qiqian (to Shan Shiyuan) upon the "Crystal Palace" at the Qing court] ," in *Yingzaolun: ji Zhu Qiqian jinian wenji* 營造論：暨朱啟鈐紀念文選 [Theories on Construction: Selected Papers Serving as a Memorial to Zhu Qiqian], eds. Cui Yong 崔勇 and Yang Yongsheng 楊永生 (Tianjin: Tianjin University Press, 2009), 244–246.

[42] Gu Bian, "Women zhidao de zijincheng yanxigong," 91. More on the introduction and application of electricity in the Qing imperial architectural compound, see Zhang Fuhe 張復合, *Beijing jindai jianzhu shi* 北京近代建築史 [The Modern Architectural History of Beijing from the End of 19th Century to 1930s] (Beijing: Qinghua University, 2004), 165.

> The building of the above palace by order of the Empress Dowager Lung Yu has been progressing rapidly toward completion. The details of the building have appeared in the Press now and then. The Empress Dowager recently sent an edict to their Excellencies Chi Lu and Ku'ei Chün,[43] the two Presidents of the Board of Imperial Household, stating that in view of the near date at which the Emperor will enter school, the said Presidents are to select skilled and trustworthy workmen immediately to hasten the completion of the Crystal Palace within this Chinese month in order to afford the Emperor a place of recreation where his Majesty may enjoy the fresh air, a bright outlook and pleasant scenes after school-time or during intervals of studying his lessons, which thus will not make him feel weary. Her Majesty's consideration as regards the Emperor's education is, indeed, much to be admired.
>
> It is reported that the Crystal Palace will con'sin three storeys, all to be lifted up with electric light, even within the glass walls, the glass floors and the glass pillars. So, at night-time, when the electric lights are turned on, all the apartments would look like a veritable fairyland or some place of enchantment.[44]

As mentioned, with its "glass walls," "glass floors," and "glass pillars," all lit by electric lights at night, the structure and its aquarium, once finished, would have truly been transformed into a "fairyland." However, in fact, this seemly convincing and exciting representation of Lingzhao Xuan the "Crystal Palace" far surpasses reality. The construction of Lingzhao Xuan as the "Crystal Palace" was unfortunately never fully finished. Literal and pictorial evidence as well as archaeological evidence suggest, the construction was left without neither glittering glass wall nor pictorial fish swimming scene. As photograph taken in the 1920s, visual evidence of this unfinished "fairyland" is presented (**fig. 1.5**). The Imperial Noble Consort Wenjing 瑾妃 (1873–1924), also known as Dowager Imperial Noble Consort Duankang 端康太妃, of the Manchu Bordered Red Banner Tatara clan, who was a consort of the Guangxu Emperor 光緒皇帝 (r. 1875–1908), stands in the middle of photograph. From where she stands is the front courtyard of the Prolonging Happiness Palace. The Imperial Consort faces southeast, holding

[43] The identifications of these figures await further inquiry due to currently limited access to archives, which could contribute further to the construction history of Lingzhao Xuan.

[44] "con'sin" is a typo in the original, probably "contain." Anonymous, "Notes on Native Affairs: A Crystal Palace," *The North-China Daily News*, August 22, 1911, 7.

the edge of a wooden barrel (*muhai* 木海), which may have contained goldfish.[45] Two young female attendants stand on both sides, both gazing down into the water, as if they were looking at the swimming fish. Around the figures are at least two other barrels, probably even more ceramic ones, which are hard to identify but slightly recognizable in the background behind the Imperial Noble Consort Wenjing. In the background on the left side of the photograph is part of the unfinished "Crystal Palace," the southwest tower of the building. By the time this photo was taken, the project remains obviously unfinished since no glass was applied between the iron columns of the porch. The fish, which were supposed to stay in the wooden and ceramic jars outside in the courtyard, instead fulfill the imagination of "World of Glass 琉璃世界" with "swimming fish 游魚." The female attendant on the right-hand side of the Imperial Noble Consort Wenjing is indentified as Tang Yiying 唐怡瑩 (1904–1993, original Tatara Yiying 他他拉·怡瑩, also Tang Shixia 唐石霞), who belongs to the Manchu nobility, the Tatara (他塔喇氏), the activities of contemplating fish in the Prolonging Happiness Palace was mentioned. At that time, Tang was married to Pujie 溥傑 (1907–1994), the brother of the Emperor Puyi. In her memoirs, she recalled accompanying her fourth ant (namely the Imperial Noble Consort Wenjing) in the garden and listening to her stories about the "Western Building (*xiyang loufang* 西洋樓房)," although she did not reveal details about the stories.[46]

Beyond the fact that construction was itself abandoned before accomplishment, the intended "auspicious blessings" of a "water palace" seemed fail its mission and brought no better fortune for this architectural compound. In 1912, Yuan Shikai 袁世凱 (1859–1916) took

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[45] Wang Laiyin 汪萊茵, "Duankang guan yu" 端康觀魚 [Duankang Watching Fish], in *Zi Jin Cheng* 紫禁城 [Forbidden City] v. 1 (1991): 14–15, and 46. Wooden containers were the traditional container for goldfish in China, but there were also other types, such as the Eight Immortals Table 八仙桌 (old-fashioned square table that could seat eight people) or wooden screens 屏风 that were fitted with glass panels to hold the fish. See Li Zhen, *Chinesische Goldfische*, trans. Dai Shifeng (Beijing: Verlag für Fremdsprachige Literatur, 1988).

[46] Tang Yiying 唐怡瑩, *Wo yanzhong de modai huangdi: Aixinjueluo Pujie furen koushu shi* 我眼中的末代皇帝：愛新覺羅·浦傑夫人口述史 [The Last Emperor in my Eyes: A History told by the Lady of Aisin Gioro Pujie] (Beijing: United Publishing, 2016).

control of his Beiyang Army (*beiyangjun* 北洋軍) to crush the revolution in Wuhan at the Battle of Yangxia 陽夏之戰 (October 18–December 1, 1911). After taking the position of Prime Minister and creating his own cabinet, Yuan Shikai went as far as to ask for the removal of Prince Zaifeng 載灃 (1883–1951), the Young Emperor's biological father, from the regency.[47] On 12 February 1912, after several rounds of negotiations, the Dowager Mother Longyu issued an imperial edict bringing about the abdication of the child Emperor Puyi, which brought the Qing reign to an end. In the political upheaval during the warlord period, the northern section of the architectural complex was bombed in 1917. The Manchu Restoration (July 1–12, 1917) was attempted by the royalist General Zhang Xun 張勳 (1854–1923).[48] During this time, construction was paused. The North of the Prolonging Happiness Palace was bombed in a political upheaval on the morning of July 1, 1917, by Zhang Xun, who took advantage of the unrest and entered the capital, proclaiming the restoration of Puyi as Emperor of China with a small entourage and reviving the Qing monarchy.[49]

During the time the Republic of China, the imperial family were asked to retreat from the Imperial Palace on November 5, 1924. The Palace Museum was set up in October 1924. There was a nearly ten–month pre-construction period. A Commission was set up to resolve any remaining issues with the Imperial family.[50] The commissioner was Li Yuying 李煜瀛 (1881–1973), who was the son of the scholar Li Hongzao 李鴻藻 (1820–1897) in Late Qing.[51] Under Li's commission, from 1924 to 1925, Zhu Qiqian 朱啓鈐 (1872–1964) was invited to

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[47] Further information on this figure, see *Qing Shi Gao* 清史稿 [Draft History of Qing], v. 221, ed. Zhao Erxun (趙爾巽, 1844–1927).

[48] Zhang Naiwei 章乃煒, ed., *Qing Gong Xuwen* 清宮述聞 [Narrated Story of Qing Court], v. 15, (Beijing: Ancient Books Press, 1988).

[49] Gu Bian, "Women zhidao de zijincheng yanxigong," 91.

[50] Shan Jiayun, "Zhu Qiqian de qinbixin tanji qinggong shuijinggong," 244.

[51] Also known as Li Shizeng 李石曾, who had studied in France and returned to China to teach in the Beijing University in 1917. A biography of Li, see Paul Bailey, "Li Shih-tseng", in *Biographical Dictionary of Republican China*, v. 2, ed. Howard L. Boorman, et al. (New York: Columbia University Press, 1968), 319–321.

supervise the field research of the architecture at the Palace Museum, where Zhu corresponded with Li mentioned about the condition of Lingzhao Xuan. In 1931, the Palace Museum built a warehouse in the backyard of the Yanxi Palace and transformed the architectural compound into deposition to store antiques paintings and manuscripts.[52]

In the 1970s, the underground of Lingzhao Xuan was buried by clay and dirt dumped from the building of an air raid shelter. It was later cleaned up. Until the early twenty-first century, the Beijing Palace Museum started to organize professionals to campaign on the construction and prepare for restoration and preservation.[53] From 2005 onwards, the construction surrounding the construction of Lingzhao Xuan has remained the Centre for Ancient Calligraphy and Paintings and the Centre for Ancient Porcelain of the current Palace Museum.[54]

In the recent two decades, the Palace Museum has promoted several projects around the restoration of the construction and its architectural environment, the director Shan Jixiang 單霽翔 (term of office: 2012–2019) announced in the sustainable development of cultural heritage academy in Ningbo on the December 8, 2013 that the Prolonging Happiness Palace would be converted into a museum for foreign historical relics, to fill a longstanding gap in China of no dedicated museum for foreign heritage.[55] In the summer of 2016, workshops organized by the Beijing Palace Museum and the German Archaeological Institute (*Deutsche Archaeologisches Institut*) conducted a thorough study on the entire architectural site. In alignment with the Palace

[52] Zhang Naiwei, ed. *Qinggong Xuwen*, v. 15 (Beijing: Ancient Books Press, 1988).

[53] See unpublished manuscript by Gugong Gujianbu Shejishi 故宮博物院古建部設計室 [Design Office in the Heritage and Architecture Department of the Palace Museum], "Yanxi Gong nei Lingzhao Xuan (Shuijing gong) weixiu baohu gongcheng sheji zuofa shuoming" 延禧宮內靈沼軒（水晶宮）維修保護工程設計做法說明 [Plan and Instruction of the Engineering Restoration and Preservation for Lingzhao Xuan (Shuijing gong, i.e. "Crystal Palace") within the Yanxi Palace], 2014.

[54] Gu Bian, "Women zhidao de zijincheng yanxigong," 91.

[55] Wang Wei 王威, ed, "Yanxi Gong jiang gai cheng 'Waiguo Wenwu Guan'" 延禧宮將改成 '外國文物館' [Yanxi Gong is to be rebuilt into a museum for foreign arts and heritage], *Xinmin Wanbao* 新民晚報 [Xinmin Evening News], November 12, 2013, accessed February 22, 2022, http://hn.cnr.cn/hngbly/201312/t20131211_514371893.shtml.

Museum's policy of recovery of cultural relics and protection of heritage building entity in digital museum, Lingzhao Xuan is under "reconstruction" in a digital form as a virtual restored heritage building. As a result, the three-dimensional model recovers more than the actual situation of the construction, combining imaginary details to create a completed "Crystal Palace" and "water palace."[56] Since 2019, the Visual Reality model of the site of Lingzhao Xuan has been accessible online (**fig. 1.6**).[57] The unfinished "water palace" has thus been revived and manifested in the digital world.

Perceived from a historical distance, in the time of burgeoning culture of advertising and mass communications, Lingzhao Xuan and the Prolonging Happiness Palace represent the life of the court ladies and their intrigue-filled relationships with each other and to the emperor. While these embellished narratives satisfy the public nostalgia for a romanticized past, the scattered remains of Lingzhao Xuan cast a rather unsavory light on this period in history, one that is: scandalous and notorious.

1.2 Scandal-Ridden Project

The narrative surrounding the construction of Lingzhao Xuan implies at least three characters of high profiles at the Late-Qing court. First is the Dowager Empress Longyu, who was the main patronage of building a "Crystal Palace" in the middle of Imperial Palace, was proved to be very keen on the construction. After the death of the Dowager Empress Cixi 慈禧太后 (1835–1908), Longyu rose to the position that her aunt, the formidable Dowager Empress Cixi, held for forty-eight years. Shan Jiayun mentions in essay that Longyu tried to model her behavior on that of Cixi, and adopted the strategy of "administering the state from 'behind the

[56] Wang Qifeng 王歧豐, "Gugong Yanxi Gong lanweilou jiang bei shuzi fuyuan" 故宫延禧宫"爛尾樓"將被數字復原 [Yanxi Palace, the "Abandoned Building" in Palace Museum is to be restored digitally], *Beijing chenbao* 北京晨報 [Beijing Morning News], September 9, 2014, accessed February 22, 2022, http://culture.people.com.cn/n/2014/0909/c22219-25622538.html.

[57] Digital Museum of Lingzhao Xuan, Palace Museum in Beijing, accessed February 22, 2022, https://www.dpm.org.cn/vr/lingzhaoxuan/south.html.

veil' (*chuilian tingzheng* 垂簾聽政)," while the birth father of the last Emperor Puyi, the Prince Chun held the position as Regent.[58] By all accounts, however, the Dowager Empress Longyu was less a political ambitious figure, "without self-assertion" was the impression she gave, which gave her confidant Zhang Lande, the last imperial eunuch supervisor of the palace, opportunities to interfere in matters by planting his own ideas into Longyu's mind;[59] as mentioned above, Zhang initiated this project to serve his own ends: pleasing his majesty, who was unaware of the unsettling political change in China, making his fortune by embezzling from the project, which he then later invested in his private mason in Tianjin after he fled the imperial city.[60]

The attempt to determine the identity of multiple architects or designers, including, possibly, foreign figures active in the late Qing imperial court is hampered by both archival and

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[58] Shan Jiayun, "Zhu Qiqian de qinbixin tanji qinggong shuijinggong," 244. Also see Isaac Taylor Headland, *Court Life in China: The Capital, Its Officials and People* (New York: F.H. Revell, c.1909), accessed February 27, 2022, https://sourcebooks.fordham.edu/eastasia/headland-courtlife.asp#XIII%20The%20Ladies%20of%20the%20Court.

[59] "Mrs. Headland tells me that 'Yehonala is not at all beautiful, though she has a sad, gentle face. She is rather stooped, extremely thin, her face long and sallow, and her teeth very much decayed. Gentle in disposition, she is without self-assertion, and if at any of the audiences we were to greet her she would return the greeting, but would never venture a remark. At the audiences given to the ladies she was always present, but never in the immediate vicinity of either the Empress Dowager or the Emperor. She would sometimes come inside the great hall where they were, but she always stood in some inconspicuous place in the rear, with her waiting women about her, and as soon as she could do so without attracting attention, she would withdraw into the court or to some other room. In the summer-time we sometimes saw her with her servants wandering aimlessly about the court. She had the appearance of a gentle, quiet, kindly person who was always afraid of intruding and had no place or part in anything. And now she is the Empress Dowager! It seems a travesty on the English language to call this kindly, gentle soul by the same title that we have been accustomed to use in speaking of the woman who has just passed away." Ibid.

[60]Zhang Lande 张兰德 (1876–1957), popularly known as Xiao De Zhang 小德张, also Xiangzhai 祥斋, styled name Yunting 云亭. "Hengtai 恒泰" is his given by the Imperial Dowager Cixi. Zhang serves as the last Imperial Eunuch Supervisor at the Qing court. A hamartography of Zhang is found in *Qing bai lei chao* 清稗類鈔, in which he was claimed to be from Hejian County 河間府. The biography focuses on how Xiao De Zhang made his fortune by abusing the Empress Dowager's trust on him and colluding with officials at court in the political chaos. Zhang was accused mostly of his corruption and dishonesty; he was criticized and loathed. Zhang was infamous for his corruption and dishonesty. Stories about how he stole money from projects that he has involved in were recorded in the *Qing bei lei cha*, for instance, how he prompted the Empress Dowager Longyu to maintain several Buddhist ritual sites in the Forbidden City, so that he could withhold money which was for the construction. Rumours of his greediness and misconduct are countless. Records also suggest his tight connections with another notorious figure in the late Qing dynasty, Yuan Shikai, as well as the Prince Qing, who forms the first constitutional cabinet in the May 1911, who later bought the house that Zhang designed in Tianjin as his own residence. A brief biography includes his former address in Beijing is found on the Beijing online gazetteer *Donghua liuyun* 東華流韻, accessed February 27, 2022, http://www.bjdclib.com/subdb/laneculture/famousperson/200906/t20090629_2674.html.

historical challenges.[61] The archival challenge is that the scattered sources on this subject matter demonstrate obvious political orientations that could obscure an objective documentation of the architectural facts. The historical challenge is due to the fact that before the first foreign-trained students who sought to learn and practice craft and profession of what is called architecture in the developed Western countries (*jianzhu* 建築 in modern Chinese), who then later became the first generation of Chinese architects (*jianzhushi* 建築師 in modern Chinese) in the 1920s, builders in traditional Chinese architectural practice were positioned as *jiangren* 匠人 (literally "craftsmen") who were rarely named and their works were considered to be collaborative efforts rather than personal masterpieces. Jeffery Cody argues that "Chinese architecture is the art of anonymous builders and craftsmen."[62] Nevertheless, the involvement of Zhang in this project at some level is confirmed by several accounts; however, that confirmation needs, in turn, to be read with discretion due to the reasons mentioned above.

Unlike the public faith in the London "Crystal Palace" in 1851, which was largely welcomed and celebrated for its technological advances,[63] Lingzhao Xuan was poorly received. With almost no official records on either the materials or the designer(s), an objective observation become even harder when critics from the press of the time, which varied from short stories, verses, and satire to news, all in the same condemning tone, some taking pleasure in the unfished status of it. As at the end, no word can be found that shows enthusiasm for this construction, which was if nothing else a novelty. The image of Lingzhao Xuan as the "Crystal Palace," fell victim to the decline Qing reign, at a state of domestic upheavals and foreign troubles. In the then public perception, Lingzhao Xuan was deemed to be another example of

[61] See Zhang Jianwei for his study on the plausible links to trace down the foreign collaborative parties for the constructing project of Lingzhao Xuan.

[62] Jeffrey Cody, Nancy Steinhardt and Tony Atkin, eds., *Chinese Architecture and the Beaux-Arts* (Honolulu: University of Hawai'i Press, 2011), 18.

[63] Indeed, the building of the "Crystal Palace" has also provoked some debates: see for example Ufuk Ersoy, "The Fictive Quality of Glass," in *Architectural Research Quarterly*, v. 11, n. 3–4 (December 2007): 237–243.

the incompetence and decadence of the Qing Imperial rulers and was easy fodder for rumors and scandals on the eve of the Xinhai Revolution 辛亥革命 and even to foresee a coming of the dynasty's fall, as Lingzhao Xun is placed in juxtaposition of other extravagant garden compound which were famous, because the rulers were corrupt and people were exploited to the point that they revolt:

> [Ying] zheng of Qin [dynasty] built the E'pang Palace, not long after the rebel of Chen She rises; Emperor Hui[zong] of Song [dynasty] constructed the Gengyue, not long after the Jurchen invades. As for Puyi of Qing [dynasty], even though he is still young, we can compare the immoral things that he has done with [Ying] zheng of Qin and Emperor Hui[zong] of Song. Let's not probe to the bottom for now, [but] only watch for the time being since he has ascended to the throne. [He] then built [a] Crystal Palace, in order to serve his adopted mother [the Dowager Empress Longyu]. This has people plenty to talk about. For the location of the Palace lies several *zhang* East to the Ningshou Palace, [where] the earth is dug into a pond, to a depth of more than one *zhang* [...]. Ah, the nation's coffers are empty, the financial officers look helplessly up to the heavens and. [The reign] comes to a dead end and people are living in misery. It is at a time of financial crisis, [and the government] just concerns about adoring [their] palaces and indulging [their] mind. [There is] a theatre built in the Yihe yuan [garden], which has already cost two million [silver pieces]. To build a glass building in the Ningxi Palace, again waste one million. Exploit the people to support one man's lavish spending. No wonder that the people are worried and upset.[64]

The phraseology of this text is not hard to find in other textual evidence of Lingzhao Xuan. A satire by Gao Shu 高樹 (1848–1931) voiced a condemnatory attitude toward the construction as well. He writes in a mocking tone, sneers at the one who are not the Goddess of River Luo herself, who is an iconographic figure, amphibious deity lives in water area and could rides above waves, but daydreaming of living that kind of life by constructing a palace of glass:

> [The weather in] the palace grounds were clear and cool, [thus] summer was easy to live through, [though] they are not the Goddess of the River

[64] Original: 秦政建阿房宮。不久而陳涉之難作。宋徽營艮嶽。不久而女直之禍侵。清之溥儀。年方就傅。其失德之事。比之秦政宋徽爲何如。姑弗深究。第觀於登極之後。遂建水晶宮。以奉養其嗣母。有足以貽人口實者。蓋是宮之地點。在寧壽宮東數丈。掘地爲池。深丈餘，[...] 嘻。府庫空虛。司農仰屋。由窮水盡。民不聊生。值財政窘迫之時。惟知崇宮室。侈心志。頤和園造一戲臺。已糜欵至二百萬。凝禧宮造一玻璃樓。又糜欵至一百萬。竭百姓脂膏。供一人揮霍。又何怪民之悁悁而悲也。Ningxi gong 凝禧宮 as mentioned in the text is possibly a typo, and may instead refer to Yanxi gong. Lu Baozhen, *Manqing beishi*, I–II.

> Luo, they aspire to ride the waves. Glass covers the floor and traverses the deep pond, underfoot are swimming fish playing among lotus blossoms.[65]

Another comment referred to the Dowager Empress without using her name:

> [I] heard [that] in the inner court in recent years there is this new style of house [it is] created by from a certain Empress Dowager [here referring to Empress Dowager Longyu without mentioning her name directly, as a mark of scorn].[66]

As mentioned in the comments of Wu upon the dedication of the "Crystal Palace" to Puyi's adoptive mother, and the implication of Gao upon "a certain Empress," all refer to the same figure, the Dowager Empress Longyu, the actual promoter of the construction of Lingzhao Xuan. Longyu showed very keen spirit in the construction, which she herself adorned the entrance plaque with her calligraphy and saw to the progress of construction and financial support herself on several occasions. At one point, she even spent her own money to purchase glass to realize the idea of "Crystal Palace": in a report of April 23, 1910, of the North-China Daily News, a short note reads:

> The Long Yü [Longyu] Empress Dowager has issued Tls. 1000, 000 from the Privy Purse for the purchase of glass to turn the Chang Shou Palace into a Crystal Palace.[67]

In her essay about a six-page correspondence between her father Shan Shiyuan and Zhu Qiqian on June 14, 1958, Shan Jiayun mentions that Lingzhao Xuan was briefed by Zhu to Shan. Zhu, as one of the people involved, reveals some of the details on the historical backgrounds, and how the construction ended up unfinished. The original wood structure that was torn down in

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[65] Original: 宮禁清涼暑易過，人非洛女欲淩波。玻璨布地穿深沼，足下游魚戲芰荷。Gao Shu 高樹, *Jinluansuo ji* 金鑾瑣記, in *Qinggong ci* 清宮詞 [Poetry of Qing Court] (Beijing: Guji chubanshe, 1986), 66. Translated by author.

[66] Original: 聞内庭近年有此新式之屋。某后所爲。Ibid., translated by author.

[67] Original: 隆裕太后已從其私用金中發放 1,000,000 銀兩，這是爲了購買玻璃，使長壽宮變成水晶宮。In *The North-China Daily News (1864–1951)*, April 23, 1910. This quotation from Chinese news was translated from the Chinese press, without indicating the sources, but rather listed with another four news items concerning affairs related to material trades with foreign countries. The report is incorrect; the palace was actually Yanxi Palace, and not Changchou Palace.

the process of constructing Lingzhao Xuan was said to be secretly brought out of the palace by Zhang for his own benefit. The officials were too intimidated to stand up against it.[68]

Even more anger and condemnation in the public domain could be found to support this claim, which was toward the last Imperial Eunuch Supervisor Zhang Yuanfu, who was accused to be the "only one man behind this."[69] Zhang was deemed to have urged the Dowager Empress Longyu to push forward the project on the one hand, and on the other hand, sabotaged the process by embezzling the money for the construction. As a servant, he was deemed to be too powerful and well connected at court. He was accused of abusing the Empress Dowager Longyu's trust and stealing money from official projects. In a short bibliography of him in the *Manqing Baishi* 滿清稗史, his notorious act and his agenda of exploiting the construction of Lingzhao Xuan the "Crystal Palace" for his own interests was addressed:

> Enter Zhang Yuanfu, the last eunuch who rose to prominence in the Manchu-Qing court (when the Manchu-Qing court was ongoing?). [He] was popularly known as Xiao De Zhang (The little De Zhang). He succeeded An [Dehai 安得海] and Li [Lianying 李蓮英] in the post [of the Grand Supervisor]. However, Zhang's influence gradually grew greater than that of An and Li. This was the time when the two Majesties [The Emperor Guangxu 光緒皇帝 and The Empress Dowager Cixi 慈禧太后] had just passed away, and the mourning clothes had yet to be taken off [However, even at this time, Zhang] was already arranging at the court rehearsals for theatre plays. Whatever others did not dare to do, Yuanfu just arrogantly did. [There were] no other reasons but him being specially favored and trusted by the Empress Dowager Longyu. [They] started the project of renovating the Yan Palace, namely the building of the Western-style iron construction. Although the construction was in name decreed by Empress Dowager Longyu, but in reality, it was Yuanfu himself being the main driving force [behind the project].
>
> Because during national mourning, big [construction] projects [should] not [be] started, the exchequer could not be mobilized. Although [Zhang] wanted to unravel his schemes to fill his coffers [with ill-gotten gains], [he was] vexed that there were barely any loopholes to make use of. Therefore [he initiated] the campaign of renovating the Yanxi Palace [and] brought in the Empress Dowager Longyu. Once the Empress Dowager Longyu gave her approval, Yuanfu had reached his

[68] See Shan Jiayun, "Zhu Qiqian de qinbixin tanji qinggong shuijinggong," 244–245.

[69] Original: 而實出於元福一人之主謀。Lu Baozhen, *Manqing beishi* 滿清稗史, v. 22 (3), 347–348.

> goal. The project had no completion date, nor was there a fixed budget. [Zhang] was given free rein to tinker with the palace and to spend the public funds as he pleased. Over time [he] spent the savings of the former Express Dowager Cixi; the ingots may not have had wings, but they [all] flew into [his] private purse.[70]

Zhang's exploitation must have gone further beyond his mason near Anding Gate 安定門, Historical record mentioned his participation in the design of the Tianjin Prince Qing Residence, which might support the claim that he was involved in the design of Lingzhao Xuan, or at least suggest that he stayed connected with some foreign trade companies (*yanghang* 洋行) that were active at the time.[71]

The twenty-sixth chapter of an apocryphal bibliography of Zhang published in 1986 contains a story entitled, "His idea was just half-baked."[72] It is a vivid apocryphal tale of how Xiao De Zhang persuaded Longyu to build the "Crystal Palace." The story describes how Xiao De Zhang talked Longyu into it for his own purposes, but complaints were brought to the

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[70] Original: 張元福者。滿清宮中發生最後之閹宦也。俗呼爲小德張。得安李衣鉢。而勢力之擴張。較之安李。尤過數倍。方兩宮殂謝後。國服未除。已在宮內。排演戲劇。他人所不敢爲者。而元福傲然爲之。無他。爲隆裕后所嬖故也。興修延宮。西式鉄樓。雖隆裕有懿旨宣布於外。而實出於元福一人之主謀。蓋国服期内。大工不興。則内帑不動。雖欲肆其侵蝕手段。而苦於無隙可乘。乃以新修延熙宮之役。運動隆裕后。迨隆裕一首肯。則元福之目的達矣。工無竣期。欵無定額。宮廷任其折毀。帑項恣其浪。用久之而孝欽顯皇后之積蓄。金不翼而飛入於私囊内。Ibid., translated by author.

[71] Also, "[You must] see the alley around the Jile monastery near the Anding Gate [for yourself], gleaming and magnificent, there are over hundred buildings and houses. Who was the owner of the building? It was Zhang Yuanfu. [Looking at] the things that furnished in its interior, there is a ceiling-to-floor openwork screen of *nanmu*, decorative ornaments, and others. It also has two living rooms in the *Yi dian yi juan* style (一殿一卷式). Electric lights filled its courtyard [and] remained lit throughout the night. The electric machinery that belonged to the Luanyi Palace in the Southern Sea (the Nanhai compound), was also taken over and placed in the garden of the residence. A telephone line connecting to the palace was likewise installed in the residence. Apart from those, objects placed on the table was also [stolen] from the inner court, alongside ornamental porous stones in the garden, the fishponds, and the splendid hallways, the hexagonal pavilion, all of them moved here from Jianfu Palace. These might actually all have been bestowals from the Empress Dowager Longyu; otherwise [it is possible that Zhang] had stolen them and kept the Empress Dowager in the dark 不見夫安定門。極樂寺。胡同内。美倫美奐。之樓房百余間乎。屋主爲誰。則張元福也。陳其内者。有楠木桌案。楠木雕花落地罩。及裝飾等物。並有兩殿捲之客廳。電燈滿院。照耀通宵。又取南海鑾儀殿所有之電機鍋。移設與其宅之花園内。又於宅内設德律風通至宮中。餘如几案所陳之内廷器皿。及園中之太湖石。魚池華廳。六方涼亭，皆自建福宮移置於此者。其果爲隆裕后所賞給耶。抑乘其不知而盜取之耶." In *Manqing beishi* 滿清稗史, v. 22 (3), 347–348. Also see an entry in Beijing online gazetteer *Donghua liuyun* 東華流韻, accessed February 27, 2022, http://www.bjdclib.com/subdb/laneculture/historybuilding/200908/t20090802_14697.html., accessed February 22, 2022.

[72] He Feng 禾豐, *Meng duan gongyuan: Qinggong taijian Xiao De Zhang chuanqi* 夢斷宮苑: 清宮太監小德張傳奇 [A Dream ends at the Palace: tales on the Eunuch Xiao De Zhang at Qing court] (Taiyuan: Beiyue Literature and Art Publishing House, 1986), 265–273.

Regent Prince Chun. Prince Chun is described as very intimidated by the Dowager Empress; he held a satirical sketch that was found at the building site of Lingzhao Xuan and handed to him by an official from the Ministry or Board of Revenue.[73] In this sketch, Zhang was depicted with official clothing, holding gold in his aims and standing in front of the unfinished site of the "Crystal Palace." Prince Chun was meant to bring up the corruption issue, but the Dowager Empress Longyu was emotionally biased and wouldn't listen. So, Prince Chun took another tack by warning the Dowager Empress of the danger of Yuan Shikai and that money should be spent on the military to prevent revolution, and he also warned her about the association between Zhang and other powerful political figures at the time and that his uncontrolled growing influence might harm the power of the Qing court. Upon hearing that, the Dowager Empress was talked out of her obsession with the "Crystal Palace."

Details of the matters can no longer be confirmed with any certainty, but this apocryphal tale hints that the construction of Lingzhao Xuan as the "Crystal Palace" at Qing court was imbued with political intrigues to such a level that nearly all records of the construction refuse to speak from an impartial perspective. Another short political note suggests that Prince Regent Chun was aware of this construction and should have been involved in the financial matters and probably even in the other aspects, which makes his personal distance from this issue even more unusual:

> [Upon] Nanhai zi park and "Crystal Palace": [it is reported that] the Dowager Empress getting warmer, and the palace is getting hot, [so she] is planning to move to lodge in Nanhai. On February 27, [she] specifically called up the Regent, Prince Chun, to come to the inner court to discuss the details involved. From the day on, to repair the palace. The expense will be more than one million Tls. Then commission on the repairing of the "Crystal Palace," Expense requires six hundred thousand.[74]

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[73] The Ministry or Board of Revenue was one of the Six Ministries under the Department of State Affairs in imperial China.

[74] Original: 南海子與水晶宮: 呈太后以天氣漸暖。宮中燥熱。計將移駐南海。二月二十七日。特召監國[醇親王]入內告以飭在事人員。即日修理。閒所費需百餘萬。又飭從新修理水晶宮。需費六十萬。" Kun Lun, Nanhai zi and Shuijing gong, in *Benguo da jishi* 本國大事記 [National Events] (selected from local papers from 15 February to 20 March), 1911, v. 4, 47–48. Nanhai zi 南海子 park locates twenty *li* away in the South of

Strangely, the Regent himself shows indifference in this matter, as he appeared to have no issue with the project of Lingzhao Xuan at all according to his personal diaries, in which he recorded details of his activities for his political and personal lives. Prince Chun took notes and keep dairies industriously from the Gengzi year (1900) to the Rengeng year (1951).[75] In June 1901, when he was 18, he was appointed as a Special Ambassador to offer regrets on behalf of the Qing government to Germany at the insistence of the foreign powers, for the murder of German diplomat Baron von Ketteler. In July, Prince Chun left for Germany by sea and met Kaiser Wilhelm II in Berlin in September. He allegedly refused to kneel in front of the Kaiser even when the Germans insisted; the diplomatic slight was forgiven thanks to the negotiation skills of his adviser, Liang Cheng.[76] The Guangxu Emperor died on November 14, 1908. On the same day, Empress Dowager Cixi issued an imperial edict proclaiming Prince Chun's eldest son, Puyi, as the successor. Puyi was "adopted" as the Guangxu Emperor's son. Prince Chun was appointed Prince Regent to assist the new emperor. Cixi died the following day, ending her 47-year-long control over China, while Prince Chun ruled as regent for the next three years. As the Emperor was still young, Prince Chun dedicated himself to saving the Empire from ruin.

As suggested before, Prince Chun must have been aware of the construction of Lingzhao Xuan, or even involved. Regrettably from a historical perspective, he demonstrated an attitude of unconcern. As suggest in his writing and his experience, Prince Chun demonstrates a curious but rational attitude towards foreign issues. He took interest in astronomy and was a keen collector of telescopes. He describes his journey to Germany in detail and mentioned his visits

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the city. See Liu Tong 劉侗 and Yu Yizheng 于奕正, *Dijing jingwu lue* 帝京景物略记 [Survey of Scenery and Monuments in the Imperial Capital] (Beijing: Guji chuban she, 1983).

[75] The dairies range from 1900–1912, from the time of the Yihe Tuan 義和團 movement and Eight Troupes, to the time his was forced to resigned from the position as Regent, were sorted out and published in 2014, see Aisin Gioro Zaifeng 愛新覺羅·載灃, *Chun Qinwang Zaifeng riji* 醇親王載灃日記 [Dairies of Prince Chun Zaifeng] (Beijing: Qunzhong chubanshe, 2014).

[76] Liang Cheng, "The 'Diplomatic Hero,'" in *Cultural China* (Shanghai: News and Press Bureau), archived from the original on October 23, 2012, accessed May 20, 2022, https://web.archive.org/web/20121023161302/http://history.cultural-china.com/en/47History11546.html.

to the Berlin zoological gardens and aquarium. He was certainly impressed by interested in this, course in his diary it shows that he visited the experimental field of agriculture which was also a field for zoology, in the intensive interval between July 13 of the 33th year of Guangxu (the first time) to October 5 of the 34th year.[77] In the diaries of Prince Chun, he mentioned seven times of his visits to the agricultural experimental field, in which specials birds and animals are kept. He was apparently very interested in paying visit although he did not mention any serious matters apart from sometimes having breakfast or lunch there.[78] It is notable that for a man who was directly involved in the construction and certainly very keen on this issue, took absolutely no notes on the construction of this very "European Building," Lingzhao Xuan. Experienced in foreign matters and a firm supporter and promoter of the constitutional revolution in the late Qing court, Prince Chun was considered progressive and reasonable as in his nature character without judging from his position as a member of the Imperial family. As someone who is progressive, open-minded and obviously had more insights on matter of this "foreign novelties," who also carefully wrote down details of life, from mentioning his trip to various gardens, to descriptions of other capital projects, as well as his obvious interests in the field of zoology, it is surprising that there is word in his personal diaries about Lingzhao Xuan as the "Crystal Palace." Undoubtedly the Prince was strategically keeping his distance from this matter, at least in his writing. The indifference he could show from the other side, apart from all sorts of rumors, that the project of Lingzhao Xuan was indeed considered scandalous but rather unimportant.

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[77] The Qing Agriculture Experimental Farm 清農事試驗場, established by the Qing the Imperial Ministry for Agricultural 商部 in 1906, grounds originally housed an imperial manor during the Ming dynasty, which later became part of the estate of the general Fukanggan 福康安 (1753–1796) during the Qing dynasty. The Experimental Farm consisted of an experimental farm, a botanical garden, a small menagerie of 1.5 hectares (3.7 acres). The farm was opened to visitors on June 16, 1908, and became the earliest public zoo in China and the oldest public park in northern China. The farm was known as the "Garden of Ten Thousand Beasts (Wanshou Yuan 萬壽園)." One of the buildings preserved in this field is the Pavilion of Pleasant View (Changguan Lou 暢觀樓), a Baroque-style country-palace designed by a French architect and built in 1908.

[78] The firth time was on 13 October 13 (v. 9, 255), the second time on 19 May (v. 10, 283), third time on 11 June (v. 10, 285). Fourth time on 4 July (v. 10, 286). On 20 July the fifth time (v. 10, 288) and on the 25 the sixth (v. 10, 288), the seventh on the fifth October (v. 10, 294), see Aisin Gioro Zaifeng 愛新覺羅·載灃, *Chun Qinwang Zaifeng riji* 醇親王載灃日記 [Dairies of Prince Chun Zaifeng] (Beijing: Qunzhong chubanshe, 2014).

To this point, an image of the project at the time has been established: the construction of Lingzhao Xuan, financially and emotionally invested in by its main patron, the Dowager Empress Longyu, and keenly promoted by the notorious last Grand Supervisor, Zhang Yuanfu, who personally benefits from this project. Meanwhile, contemporary documents and comments on Lingzhao Xuan, as well as apocryphal tales on the stories of construction has given it an air of disfavor. The only clear-cut points on this matter were available in the then-flourishing press, who took a strong attitude against Lingzhao Xuan as a political issue rather than celebrating it as an inspiring architectural innovation.

1.3 Lingzhao Xuan as Crystal Palace

The fundamental studies on the Chinese epithet of *shuijinggong* 水晶宮 (literally "Crystal Palace") aim to demonstrates that Lingzhao Xuan owes a debt of iconographic tradition to both imaginary and actual glass architecture in Chinese architectural history. From a material perspective, Lingzhao Xuan's glass-and-iron structure draws superficial parallels to its European and North American counterparts, of which the exhibition hall of the London Great Exhibition in 1851 stands out as a pioneer and classic prototype. The Chinese term *shuijinggong* and its iconographic tradition exists in both architectural fantasies and built architecture in China prior to the peak of early modern Chinese material engagement with the European countries during the eighteenth century. Even without physical evidence, it is safe to claim that *shuijinggong* fantasies in Chinese tradition could have already taken every possible form imaginable prior to the construction of Lingzhao Xuan in the early twentieth century.

Chinese "Crystal Palace" fantasies

The architectural imaginary of *shuijinggong* in Chinese literary sources pre-dates any existing visual evidence and built architecture and bears mythological connotations of domains that relate to light and water, where the shimmering effect is visually connected to the fictive

characters of glass.[79] Glass was never a conventional built material in Chinese architectural history, so any mentions of glass architecture or crystal metaphors are more often related to space that gives an impression of the rare, the otherworldly, or the divine. Among those metaphors, the notion of a "Crystal Palace" or "water palace" for underwater deities eventually became common in Ming and Qing literature.

While the physical characteristics of crystalline bodies evoke the associations of soft, refracted, milky-white light with soothing, uplifint feelings, it is comprehensible that the moon is often described as a "Crystal Palace" in Chinese. The Moon Palace (Yue gong 月宮), is also famous as the Palace of Expanding Coldness (Guanghan gong 廣寒宮) in accordance with the legendary tales upon a deity (Chang'e 嫦娥) who fled from the earth and resided on the moon with only a jade rabbit (*yutu* 玉兔) for company. In the Poem of Ye Jinneng 葉淨能詩 of the Dunhuang Version (S6836),[80] the term Crystal Palace was mentioned in reference to the moon palace. The emperor was allowed to pay a visit to the moon palace only in the company of Jinneng and he further explains that "the Moon Palace is the upper realm, [a trans-mundane space that] differs from the human world 月宮上界, 不同人間." The emperor was able to visit it because he has the spirit of a deity (*xianfen* 仙分). The emperor asks what he should wear to visit the moon, and Jinneng suggests a white silk and cotton garment "because there are buildings and palaces of crystal and hence there is penetrating coldness in the air 緣彼是水晶樓殿, 寒氣凌人." This vision of the moon was "totally different from the earthly world 全殊異世." "Crystal was used to make windows, crystal was used to construct buildings and terraces 以水晶爲户牖, 以水精爲樓臺."[81] Similar connotations appear in literary texts and poetry, for

[79] See Chapter 5 for the discussion of the fictive characters of glass as built material.

[80] Ye Jingneng 葉淨能 (?–710), S6836, in the collection of The British Library in London, here cited from Jin Ronghua 金榮華, "Du Ye Jingneng shi zhaji" 讀葉淨能詩札記 [Reading Ye Jingneng's poems], *Dunhuang xue* 敦煌學 [Dunhuangology], v. 8, (Taibei: Xinwenfeng Publisher, 1984), 40–42.

[81] Ibid.

example, in the poem *Spring in the Moon Palace* 月宮春 of Mao Wenxi 毛文錫 (date unknown) from the Five dynasties and Ten Kingdoms period (907–979): "Osmanthus is in full blossom in the Crystal Palace, deities come visit several times."[82]

In the novel *Dream of the Red Chamber* 紅樓夢, written in the mid-eighteenth century, Cao Xueqin 曹雪芹 (1715–1763) describes the fictional Grand Prospect Garden 大觀園,[83] a massive landscaped interior garden with wide coverage. One can also find analogues of the Moon Palace and Crystal Palace. From the description of Shi Xiangyun 史湘雲, two spots of the garden dedicated to moon viewing are the "bright [moon light] on the high 凸碧" and the "crystal in the hollow 凹晶." The former is lcoated on the top of a hill while the latter lies at the foot of the hill where the lake is. When Lin Daiyu 林黛玉 and Xiangyun went for a walk after a gathering for celebrating full moon they found themselves in the "low spot" where the moon reflects on the water and they feel they are in the "Crystal Palace and the Room for the underwater creature 晶宮鮫室."[84] In these contexts, the occasional mentions of glass or crystalized materials as build materials complete the line of narrative that describes a bright, dreamy space or transparent architecture to the image of "Crystal Palace."

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[82] Original: 水晶宮裡桂花開，神仙探幾回。Mao Wenxi 毛文锡, *Yuegong Chun* 月宮春 [Spring in the Moon Palace].

[83] *Dream of the Red Chamber*, also called *The Story of the Stone*, written by Cao Xueqin, is one of China's Four Great Classical Novels 四大名著. The novel provides a detailed, episodic fictional life and romance in the two families of the wealthy, aristocratic Jia (賈) clan—the Rongguo House (榮國府) and the Ningguo House (寧國府)—who reside in large, adjacent family compounds in the capital. It has long been considered a masterpiece of Chinese fiction and the "Redology 紅學," namely the field of study, is devoted exclusively to this work. Jonathan Spence, *The Search for Modern China* (New York: Norton, 1990), 106–110. Grand Prospect Garden 大觀園 is built within the compounds of the Rongguo Mansion (榮國府). In Chapters 16 and 17, the garden was built for the purpose of Jia Yuanchun's first visit home as an Imperial Concubine. After Yuanchun leaves, the Garden is made at her own request the home of her brother, half-sister, sister-in-law, and cousins, which made the garden the setting for much of the story.

[84] Original: 二人遂在兩個竹墩上坐下，只見天上一輪皓月，池中一個月影，上下爭輝，如置身於晶宮鮫室。

The "Crystal Palace" is, however, the abode of female deities as well. For example, in *Jātaka* 本生經 (Bensheng jing),[85] it refers to a palace floating on the sea where four female deities live and where the Kāśyapa Budda 迦葉佛 (Jiaye Fo) met them and spent seven days practicing austerity just before attaining enlightenment. Also relate closely to bodies of water, instead of being floating on the sea, the "Crystal Palace" of the dragon king's abode is closely linked to the "water palace" in underwater divine domain. In the *Transmission of the Lamp* 續傳燈錄,[86] a monk asks the Chan Master Shan Sui 善隨禪師 in the Mountain of Dragon King in Tan County (潭州龍王山): "What does the territory of the Dragon King look like?" The Master replies: "Like a Crystal Palace 水晶宮殿." In the *Chinese Deities in Business* 中國行業神 from Li Qiao, one item mentions the Dragon Kings and their Crystal Palaces under wells. In modern Chinese dictionaries, "Crystal Palace," i.e., *shuijinggong* 水晶宮, is also called *Longgong shuifu* 龍宮水府, which means dragon palaces and the water residences.[87] In the *Xuyiji* 述異記, King Helü built a Crystal Palace, [to preserve] all things precious and novel, all coming from the Water Palace 闔閭構水晶宮，尤其珍怪，皆出之水府.[88] In several circulated tales of miracles (*zhiguai xiaoshuo* 志怪小說), among them the *Journey to the West* 西遊記 (printed ca. 1592), another one of the Four Great Classical Novels as the *Dream of the Red Chamber,* and *Prince Nezha's Triumph against Dragon King* 哪吒鬧海, the image of the

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[85] *Jātaka* 本生經 (N#18,31: 0311a06): 因其在迦葉佛世時守戒結果，於海上之水晶宮遇四天女，彼親近彼女等，度七日間之幸福生活。

[86] *Xu Chuandeng lu* 續傳燈錄 [Transmission of the Lamp] (T#2077,51: 0586b02): 潭州龍王山善隨禪師。僧問。如何是龍王境。師曰。水晶宮殿。曰如何是龍王如意寶珠。師曰。頂上髻中。僧禮拜。師曰。莫道不如意好。

[87] Wilt Idema and Lloyd Haft, *A Guide to Chinese Literature* (Ann Arbor: Center for Chinese Studies, The University of Michigan, 1997).

[88] Helü refers to the King of Wu from 514 to 496 BCE toward the end of the Spring and Autumn period of ancient China. His given name was Guang and was initially known as Prince Guang. Sima Qian, *Records of the Grand Historian*, v. 66. Here, "水晶宮" is written as "水精宮," see *Nanchao Liang Renfang Xuyiji* 南朝梁任昉述異記, v. 1.

"Crystal Palace" as the Dragon King's Palace is widely appropriated and reproduced in the folk literature in the Ming and Qing China.[89] This widespread and accepted metaphysical connection between "Crystal Palace" and an otherworldly underwater "water palace" is an interesting phenomenon that is reflected in reports of drownings: printed obituaries during the Qing dynasty used the euphemism "went to the 'Crystal Palace' 赴水晶宮."

From being a metaphor for the moon or the "Moon Palace," to the underwater abode for amphibious divine creatures, the architectural imaginary of "Crystal Palace" appears in the literary imagination for divine and otherworldly architecture or space, normally beyond the reach of earthly sentient beings, yet miraculously accessible on special occasions, a trans-mundane space where the boundaries between illusions and realities are vague.

The ineffability of a "Crystal Palace" is to elaborate with an even more abstract analogy in Chinese tradition. In the Chan Buddhist tradition, the term of *shuijinggong* is used for rhetorical purpose, in which it refers to a state of absolute emptiness or enlightened in the realm of the mind. In the twenty-four *Mountain-Dwelling Poems* 山居詩 of Guanxiu 貫休 (832–913), the most sought-after Buddhist writer of his day in the Tang dynasty (618–907), the term *shuijinggong* appears in the last verse and was compared metaphysically to a mind without thought (*wuji* 無機), or as Thomas Mazanec's translation as "no motive":

> Memory is in every way a tin-ringed rod of affliction,
> Having no motive should be considered a crystal palace.[90]

This *topos* was then adopted by the Chan Master Yuanwu Keqin 圓悟克勤 (1063–1135), who is famous for compiling of the famous collection of Chan case studies *Biyan lu* 碧巖錄 (Blue

[89] This genre of fictional literature appears in Han dynasty and was further developed in the Tang. It was among the first Chinese fiction and deals with the existence of the supernatural, rebirth and reincarnation, gods, ghosts, and spirits. Robert Ford Company, *Strange Writing: Anomaly Accounts in Early Medieval China*. Chiang, Sing-chen Lydia: *Collecting the Self: Body and Identity in Strange Tale Collections of Late Imperial China*.

[90] Original: 有念盡爲煩惱錫，無機方稱水晶宮。Translation adopted from Thomas J. Mazanec, "Guanxiu's 'Mountain-Dwelling Poems': A Translation," in *Tang Studies*, v. 34, n. 1 (2016): 122–123, accessed February 17, 2022, https://eastasian.ucsb.edu/wp-content/uploads/2019/11/Mazanec-Thomas-Guanxiu-s-Mountain-Dwelling-Poems-A-Translation.pdf.

cliff record), in which he compared the "Crystal Palace" to the empty state of mind (*wuxin duan* 無心端) in a poem:[91]

> One, two, three, four, five, six, seven 一
> This morning is the first of this very month.
> Last night, a great fire flowed back west, an autumnal wind shook the earth, a whistling and wailing sound.
> A whistling and wailing sound is the great beginning of total comprehension.
> If we invite it to enter straightaway, will it be fully comprehensible?
> Memory is in every way a shackle of affliction;
> No-mind is certainly a crystal palace.[92]

In these later abstract literary analogies of *shuijinggong* 水晶宮, the attempt is made to describe or materialize the ineffable state of mind by comparing it to an architectural space that itself is everchanging, formless, transparent, which in turn reinforces the image of an architectural structure whose physical form intertwines intensively with its flowing environments, with the shimmering water or colorful light, hence physical boundaries between realms of dreams and realities are blurring and deceiving.

Built architecture as "Crystal Palace"

To the best of our knowledge, dispersal traces in Chinese sources corroborate and contextualize the existence of built architecture as *shuijinggong* 水晶宮 (Crystal Palace) while providing few details. In the era of political upheaval and division in the tenth century (The Five Dynasties and Ten Kingdoms period 五代十國, 907–979), a certain *shuijinggong* 水晶宮 (Crystal Palace) built by the Prince Si 嗣王 in the prefect of Jian Prefecture 建州 (in modern Nanping 南平, Fujian). The Prince Si's name was Wang Yanhan 王延翰 (courtesy name Ziyi

[91] This verse is originally part of the "Mountain-Dwelling Poems" written by Guanxiu which is adopted by the Chan Master Yuanwu Keqin 圓悟克勤 (1063–1135), who is famous for compiling of the famous collection of Chan case studies *Biyan lu* 碧巖錄 (Blue Cliff Record), see *The Recorded Saying of Chan Master Yuanwu Foguo* 圓悟佛果禪師語錄, T#1997,47: 0735c10.

[92] Original: 一二三四五六七。今朝此月當初一。昨宵大火還西流。金風動地聲蕭瑟。聲蕭瑟圓通門大啟。便請直截入。還委悉麼有。念盡為煩惱鎖。無心端是水晶宮。In *The Recorded Saying of Chan Master Yuanwu Foguo* 圓悟佛果禪師語錄 (T#1997,47: 0735c10), translation adopted from T. Mazanec, "Guanxiu's 'Mountain-Dwelling Poems': A Translation," 100.

子逸) and he declared himself the King of Min in either December 30, 925 or November 13, 926 after the death of his father Wang Shenzhi 王審知 (862–925, Prince Zhongyi 閩忠懿王). This "Crystal Palace" was briefly mentioned in the official dynastic *History of the Ten States* (十國春秋, the Spring and Autumn Annals of the Ten Kingdoms) that written and compiled by the Qing dynasty scholar Wu Renchen 吳任臣 (c. 1628–1689), without description of the building or further details:

> The King is extravagant and dissipated, [he commanded to] build a palace more than ten *li* alongside the Western Late in the west town, which is called "Crystal Palace."[93]

The existence of this "Crystal Palace" was also confirmed by another short note in the *Record of Min* 閩都紀 complied by Wang Yingshan 王應山 (1531–?) in the Ming dynasty, where Wang briefly mentions that "it has been pointed out that the original site of the 'Crystal Palace' [of the Prince Si] located plausibly in the small mountain in the middle of the [West] Lake."[94] In the *Gugong yilu* 故宮遺錄 [Records on Legacy of the Former (Yuan) Palace] compiled by Xiao Xun 蕭洵 (1192–1261), who was positioned as an officer in the Ministry of Public Works in the Ming dynasty (1368–1644) and participated in the abolition of the Former Palace of the Yuan dynasty that commanded in the first year of Hongwu 洪武元年 (1368), two "Crystal Palace" were recorded:

> Alongside the Haizi park, follow the Jinshui River, walk to the Sui Rivier, the front part of the Western Garden locates southwards. In front of the garden is a new Palace partly near the Sui River. […] Behind the new Palace, there are two circular Crystal Palaces, erected in the middle

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[93] Original: 王自是驕淫奢侈，跨城西西湖築室十餘里，號稱水晶宮。(*li* 里, unit of length, equal to 500 metres.) Wang Yanhan declared himself as *guowang* (國王) in Chinese, which is translated as "king" here in opposition to a bare title of *wang* 王, which, while translatable as either "prince" or "king," will be translated as "prince" to show its lower status to *guowang*. See "Si Wang shijia" 嗣王世家 [Family history of Si Wang], in *Spring and Autumn Annals of the Ten Kingdoms* 十國春秋, v. 91, 1321–1328. Just two months after he was overthrown and killed in a revolt by his adoptive brother Wang Yanbing 王延稟 (died in 931) and younger biological brother Wang Yanjun 王延鈞 (died November 17, 935) in January 14, 927. Bibliography of Wang Yanhan, see Zizhi Tongjian 資治通鑑, v. 274 and v. 275.

[94] Original: 人指湖中小山爲水晶宮故址非是。Wang Yingshan 王應山, *Min Du ji* 閩都紀 [Record of Min], v. 9, n. 7, 48.

> of water, completely embellished with glass, [the whole buildings immersed in] color effects caused by refracted sunlight, as if [they are] Water Palace. [95]

Without further addressing the functions of these "Crystal Palaces," the metaphor of "water palace" decorated with glass and the glimmering effects that reflecting the sunlight into colorful lights, is again connected with the "Crystal Palace."

In the architectural history of China, before the glass panels largely came to usage from the late Qing dynasty, apart from dispersed similar imagery of "Crystal Pavilion (Shuijing Ting 水晶亭)" that built for preserving swimming fish for contemplation or settings in smaller scale that probably partly applied "Crystal (水晶, sometimes written as 水精)," only a handful of structures were praised or recorded as "Crystal Palace." Meanwhile, it is noteworthy that "Crystal Palace (*shuijinggong* 水晶宮)" is the most popular reference among various expressions, for instances Crystal Pavilion (Shuijing Que 水晶闕) or Crystal Space (Shuijing Yu 水精域)," that were applied to corroborate and contextualize built architectures with glass or jade-like stone as built materials or furnishings, or architectures that present the visual effect that similar to the transparency or translucency characteristics of glass. That said, a complete examination on these varieties is beyond the scope of this current study. When referred to, built *shuijinggong* 水晶宮 in Chinese architectural history often refers to architecture located near a body of water or in the middle of water, while the glittering colorful effects caused by the

[95] Original: 沿海子，導金水河，步邃河，南行為西前苑。苑前有新殿，半臨邃河 […] 新殿後有水晶二圓殿，起於水中，通用玻璃飾，日光回彩宛若水宮。The original manuscript was attained and by Zhao Qimei (趙琦美, 1563–1624) in the Winter of the forty-fourth year of the Wanli era (萬曆四十四年, 1616) in the Ming dynasty and in his colophon, he mentioned a fire. On the 22th of the second month of the Winter (i.e. November in Lunar calendar) in the forty-fourth year of the Wanli era (萬曆四十四年仲冬廿二日, i.e. December 30, 1616 in Gregorian calendar, accessed February 28, 2022, https://sinocal.sinica.edu.tw), he wrote "大內又火延禧殿" on the 20th (二十日四鼓, December 28, 1616 in Gregorian calendar), which could be understood as either "within the imperial Palace another fire extended to the Xi Palace 禧殿," or "within the imperial Palace again another fire extended to the Yanxi Palace 延禧殿," because the character "火 *huo* (fire)" could be both use as noun or verb to mean "burning," while the character "延 *yan*" means to extend or prolong. If the note is to understand as the second meaning, then there was a Yanxi Palace (Prolonging Happiness Palace) in the Ming imperial Palace. This is no more than a note for further investigation.

interaction of glass, water and light are often mentioned to indicate a trans-mundane, otherworldly atmosphere that the architecture turns its environment into.

Glass house as "Crystal Palace" in Qing

Lingzhao Xuan is known as the Chinese "Crystal Palace" currently because of its iron structure[96] and proven application of glass panels that reference to the "Crystal Palace" (1851) in London. The Chinese term *shuijinggong* (Crystal Palace) was associated largely but not exclusively with the exhibition hall in the Great Exhibition in London 1851 in the late nineteenth and early twentieth centuries. In the early journals of Qing intellectuals, who were sent on official visits to Europe, *shuijinggong* (Crystal Palace), *boli ju shi* (glass big house) appeared to record the types of architecture that were unusual in China, specifically iron-and-glass construction in garden architecture, botanic greenhouses, aquaria, exhibition architecture or other structures with exposed metal skeletons and glass panels. In the fifth year of the Tongzhi reign (1866), in the *Notes on a mission of Investigation* 乘槎筆記 by the Qing official Binchun 斌椿 (1804–1871), a description of the London 1851 "Crystal Palace" can be found, and as Bin did not understand English, he transliterated the name of the building phonetically:

> [May] 21. Sunny. [We] travel towards south of the capital [London] to a *ge li si da ba lei si* (the translator said it is called "Crystal Palace"). The hill is high, a construction is built, two *li* in height, three *li* in width. Two towers are seen on south and north side. The one in the north has eleven stories, forty *zhang* in height. [They are] all made by glass, chunk of shining when viewed from the distance. Within the construction, architecture, figures, fur and feathers from different countries are built, all imitated after the original manner. […] a three-story small building, extravagant and lovely, all the galleries are covered by glass. Galleries were wreathed with wisteria in bloom, flora of peonies and azaleas are bigger than those in middle land [Qing China], different kinds of grass and flowers are planted between them, green lawns cover the land, resplendent and impressive.[97]

[96] Lingzhao Xuan is "a stone-iron construction with cast iron and steel supports for floor and ceiling construction, pavilion-like super structures with iron and steel profiles, even steel door castings and window frames." For more details on its metal structure, see Ulrike Wulf-Rheidt, et al., "Peking, Volksrepublik China," 59–68.

[97] Original: 二十一日。晴。往都南二十五里'各里思答尔巴累思'（譯言水晶宫也）山上地勢甚高，建大廈，高二里，廣三里。南北各一塔。北十一级，高四十丈。皆玻璃爲之，远望一片晶莹。其中造各国屋宇人物鸟兽，皆肖其国之象。[……] 小楼三层，精彩可人，穿廊咸罩玻璃。绕廊紫藤盛开，红药、杜鹃皆大于中土，间以杂色花草，绿茵铺地，璀璨可观。(*Zhang* 丈, also traditional Chinese length unit. One *li*

As mentioned before, the *ge li si da ba lei si* refers phonetically to "Crystal Palace," and added that "the translator said it means *shuijinggong*," referring to the three translators who were selected from the School of Combined Learning to accompany Bin's visit.[98] That is to say, in the context of translating and explaining the exhibition architecture in the London Sydenham in 1866 to Bin Chun, the English translator Zhang and Fengyi combine the English term "Crystal Palace" and Chinese *shuijinggong* merge into one in describing modern iron-and-glass construction. Zhang, being a very industrious journal writer himself who wrote eight journals about his overseas experiences, recorded the Chinese term *shuijinggong* to refer to the architecture and describe it:

> After [we] took the train for forty-four miles, [we] arrived at *Shuijing gong*. This palace was built thirteen years ago by official commissioner Paxton [here he translated Paxton's name into phonetically similar Chinese characters], it used iron as columns, up and downs and four sides all applied with glass, viewed from the distance it glittering and splendid, very pleasing for both minds and eyes, so it was named the Crystal Palace.[99]

He continues sketching the scenes he saw in the "Crystal Palace," mentions "Temples and Palaces from every countries were reconstructed, from Egypt, Greek, Rome, Muslim countries, Turkey, Italy," also there were "six fountains, […] and another round iron skeleton, there are a

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equals 150 *zhang*.) In Bin Chun's *Chengcha biji* 乘槎筆記 [Notes on a mission of Investigation], here quoted from the edited version from Zhong Shuhe, in *Zouxiang shijie cong shu* 走向世界叢書 [Walk towards the World] (Hunan: Yuelu chubanshe, 1985), 109. Translated by author.

[98] The School of Combined Learning, or the Tongwen Guan 同文館 was a government school for teaching Western languages (and later scientific subjects), founded at Beijing, China in 1862 during the late-Qing dynasty, right after the conclusion of the Second Opium War, as part of the Self-Strengthening Movement. More information, see Michael Lackner and Vittinghoff, Natascha, eds. *Mapping Meanings: The Field of New Learning in Late Qing China* [International Conference "Translating Western Knowledge into Late Imperial China," 1999, Göttingen University] (Leiden: Brill, 2004).

[99] Original: 後乘火輪車行四十四里，至'水晶宮'。此宮系在十三年前，官派伯爵柏四屯所建，以鐵爲樑柱，上下四旁鑲嵌玻璃，遙望之金碧輝煌，悅人心目，故名爲水晶宮。In Zhang Deli, in *Zouxiang shijie cong shu* 走向世界叢書 [From East to West] (Hunan: Yuelu chubanshe, 1985), 501.

pair of octagonal decorated pavilions, also named as narcissus temple, both more than six *zhang* in height, spacious inside and walled outside, cast iron are painted, all appears colorful."[100]

From these accounts, *shuijinggong* 水晶宮 in the pre-modern Chinese context is related to the actual iron-and-glass exhibition hall in London, which was originally designed by Joseph Paxton (1803–1865) in 1851, and reconstructed on Sydenham Hill in 1852. It is also the first official record of a Qing official experiencing the European World Exhibition.[101] As Bin Chun mentions further in his journal:

> [May] 24. The American Commissioner (Meitens, who was on home leave) took us to the public institute where the matters of building every country's house and palace in Paris were discussed. Then we again come to a glass house, about ten *zhang* in height, several times longer in width. There are countless famous paintings stored inside, which really are vivid. Traveling seven or eight *li* to the west, there are official gardens, with trees and flowers in bloom, and countless birds and beasts of all kinds. The special kinds are the one in the sea with scales, they are all kept separately in glass houses. Inside are also seaweed, stone etc. all from the ocean.[102]

This is the discussion of Bin Chun's encounter on the preparation of *Exposition Universelle 1867* in the following year and glass houses and aquarium exhibition.[103] Zhang Deyi described glass houses where fish were kept:

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[100] Original: 仿埃及、希臘、羅馬、回回、土耳其、義大利各國之王宮廟宇, 六座水法，[……] 又一圓鐵花架，[……] 一對八角翠花亭，又名水仙廟，高皆六丈餘，中通外直，鐵鑄油漆，顏色五彩. In Zhang Deli, 502–503.

[101] Actually, the Qing was invited by the French government to take part in the World Exhibition; however, the government turned down the offer, see Meredith Martin 2019, "Staging China, Japan, and Siam at the Paris Universal Exhibition of 1867," in Petra ten-Doesschate Chu and Jennifer Milam, eds., *Beyond Chinoiserie: Artistic Exchange between China and the West during the Late Qing Dynasty (1796–1911)* (Leiden: Brill, 2018), 125.

[102] Original: 二十四日。美稅司（名里登，告假回國者）偕往公所，係各國在巴黎修造屋宇繪圖議事處。又至玻璃居屋，高約十丈，寬廣倍之。內貯名畫無數，真繪水繪聲之筆。又西行七八里，爲官家花園，花木繁盛，鳥獸之奇異者，難更僕數。尤奇者，海中鱗介之屬，均用玻璃房分類畜養。內貯藻荇、水石，皆海中產也。 In Zhang Deli, in *Zouxiang shijie cong shu*, 501. Bin Chun's note made a mistake here, because Méitens was French. Eugène, Baron de Méritens was a Commissioner of Customs in Foochow, more details on Bin Chu's mission in Paris and things between him and Méritens, see "The Pin Chun Mission," in Richard Smith, John K. Fairbank, Katherine Bruner eds., *Robert Hart and China's Early Modernization: His Journals, 1863–1866* (Harvard: Harvard University Asia Center, 1991).

[103] It is noteworthy that the World Exhibition in 1867 was the first time every country had a separate exhibition building. See Zeynep Çelik, *Display the Orient: Architecture of Islam at Nineteenth-century World's Fairs* (Berkeley: University of California Press 1992), 2. Die Qing government sent its first delegation to attain World fair was in the Louisiana Purchase Exhibition in St Louis in 1904, to which I will come back later in my discussion. Zhang Deyi's *Strange Tales from Over the Ocean* 航海述奇 records this event as well: "On twenty-four, the Day

> [We] then entered a tall house, where the fish were kept. The fish were all from foreign countries, the one from sea were kept with seawater, sand and stones; those from river were kept in water from river with weeds. There is a tank, about seven *chi* in height, six *chi* in width, both up and down has air tube, warm air is put into for fish that prefer living in warm water, and cold air is pumped into the tank for fish that like cold water. The ground and the wall, fish swiping their heads and tails, floating and sinking, the scenery was like a painting.[104]

An interestingly similar description of glass container in which to keep fish may have been written to describe Lingzhao Xuan the "Crystal Palace" in the early 1900s:

> [The construction] […] use glass as wall and offered unblocked/bright and effulgent panoramic views of the surroundings. One who entered the space had the impression of being in a world of glass. Between walls there was water, where fish were kept. The lowest level also had a floor made of glass. Bending one's head and looking down, [one is] able to count the fish in the pond one by one. Floating heart and duckweed were [abundantly grown] in different heights and lengths, verdant as in a painting.[105]

The application of glass to achieve a transparent framed screen that separate the space between the viewer and the viewed objects are in the focus of these description. At the current stage, there is no trace of glass remains at the site of Lingzhao Xuan, yet application of glass is recorded. As addressed in the second chapter, it was a stone-iron construction with cast iron

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of Kuiwei 癸未. Sunny. In the morning, Méritens was a Commissioner of Customs in Fuzhou, who is on his home leave, came to visit. [……] (We) came to the institute of engineering in France. There were several officials in high profiles drinking tea upstairs. Someone with Ivan as family name said: The French Emperor wanted to reconstruct huge square into huge architectural compound, to set up a "Square of Examining Products 考產廠," or "Meeting of Displaying Specials 炫奇會." (The buildings) will imitate constructions of all countries, for bigger countries there would be more than ten buildings, for smaller countries five to six buildings, while for the even smaller one two to three buildings. [……] Around summer next year, all will be gathered in Paris. 二十四日癸未。晴。早有告假回國之福州稅務司美里登來拜。[……] 至法國工程處。有大官數員，上樓飲茶。有伊姓者雲：法君欲將百里教場，改建百里樓房，作'考產廠'，又名'炫奇會'。按天下國都造樓，國之大者備樓十數間，小者五六間，再小者二三間。[……] 約在次年夏間，在巴黎斯會齊。" Also see "The Pin Chun Mission," in *Robert Hart and China's Early Modernization: His Journals, 1863–1866*, ed. Richard Smith, John K. Fairbank and Katherine Bruner (Harvard: Harvard University Asia Center, 1991), 354.

[104] Original: 後入一高房，系養魚之所。魚皆來自外邦，海產者養以海水細石，河產者養以河水荇藻。有玻璃池，高約七尺，寬六尺，上下有氣管，魚喜熱者則通以熱氣，冷者通以冷氣。地在牆中，是以魚之鰭鱗首尾，以及浮沉往來，歷歷如繪。In Zhang Deli, in *Zouxiang shijie cong shu* 走向世界叢書 (Hunan: Yuelu chubanshe), 429. *Chi* 尺, a traditional Chinese unit of length, whose present value is around one-third of a metre.

[105] Original: 以玻璃為墻。四望空明。入其中者。如置身琉璃世界。墻之夾層中。置水蓄魚。下層地板亦以玻璃為之。俯首而窺。池中游魚一一可數。荇藻參差。青翠如畫。In Huang Hongshou 黃鴻壽, *Qingshiji benmo* 清史紀事本末, v. 75, (Shanhai: Shanghai shudian, 1986), 2.

and steel supports for floor and ceiling construction, pavilion-like super structures with iron and steel profiles, steel door casings and window frames.[106] The construction remains physically unfinished. While the description of the lavish glass palace in the poems might sound convincing and fascinating, in reality, the glass panels were never installed. Zhu Qiqian confirmed once in his correspondence to Shan Shiyuan and mentioned on his engagement with the building. He also mentioned in the correspondence his suggestions to preserve the materials and machinery for further scientific research.[107] Shan Jiayun, researcher in the Palace Museum, also daughter of Shan Jixiang, talked specifically about the archaeological evidence of the glass panels in six sizes in her essay, in which she mentioned:

> In the working diary of my late father on January 25, 1959, [my father] counted the stored Crystal Palace glass tiles for the following six in different forms and sizes: 63 [?], 27[?], 30[?],30[?], 6 in square form, 22 in semicircle form, apart from these, there were 259 others which still awaited inventory. [My father] gave them to the engineering team for preservation and asked them to keep them safe. Later, I remember that my late father talked about this matter to others and mentioned, there were also glass panels in semi-transparent form, all 2 centimeters in width, [my father] specially exhorted to preserve them well as for [the sake of] historic sites, however [the wish of my father] was unfulfilled. Seemingly before or in the beginning of the Cultural Revolution, [the glass and maybe the other materials that were originally for the building of Lingzhao Xuan] were considered the "Four Old Things," along with the tools of the Imperial Workshops, and disposed of as waste materials.[108]

From the Journal of 1866 to the later description of "European Building," it could be confidently said that during the construction of Lingzhao Xuan as the "Crystal Palace," namely from 1909 to 1911, "Crystal Palace" and "Glass big house" are Chinese terms that were applied

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[106] Ulrike Wulf-Rheidt, et al., "Peking, Volksrepublik China," 59–68, also refer to this source for more pictures of the archaeological research.

[107] Shan Jiayun, "Zhu Qiqian de qinbixin tanji qinggong shuijinggong," 245.

[108] Shan Jiayun, "Zhu Qiqian de qinbixin tanji qinggong shuijinggong," 245–246. Translated by author. The Four Olds or the Four Old Things (四舊) was a term used during the Cultural Revolution by the Red Guards in the People's Republic of China in reference to the pre-communist elements of Chinese culture they attempted to destroy. The Four Olds were: Old Customs, Old Culture, Old Habits, and Old Ideas. Jonathan Spence, *The Search for Modern China* (New York: Norton 1999), 575. The Imperial Workshops 造辦處, and the glass manufactory in the Forbidden City established in 1697 in the assistance of Kilian Stumpf (1655–1720), a German Jesuit and the history of the production of the manufactory. See Reil Sebald, *Kilian Stumpf 1655–1720. Ein Würzburger Jesuit am Kaiserhof zu Peking* (Münster: Aschendorff, 1978), 61–63.

in the context of archicture of exhibitions, aquaria, botanical gardens etc. Meanwhile, in Chinese gardens, archicture with "glass" decoration were viewed as fancy novelties with a foreign touch, so the construction of Lingzhao Xuan, which is "Five-colored glass [meeting] the winds of the four directions…very exquisitely built,"[109] popularly known as a "European Building," is plausible. It was known as "European" because of the foreign built materials: metal (namely wrought iron, cast iron, and steel) and glass, which were all commonly used in modern archicture in the European and North American continent.

In sum, the travelogues of Chinese officials visiting Europe and North America from 1866 onwards (for instance Bin Chun, 1804–1871) show us that in mid-nineteenth and twentieth-century China, terms as *shuijinggong* (crystal palace) or *boli jushi* (huge glasshouse) were most often used to describe iron-and-glass structures in European zoological and botanical gardens, as well as aquaria and glass structures in exhibition architecture. For this reason, subsequent studies use *shuijinggong* to refer to modern Chinese glass structures that emerged under the influence of European engineering techniques, rather than the mythological interpretation of the term. Featuring cast iron, wrought iron, steel, and glass — sure signs of foreign influence in the late Qing context — Lingzhao Xuan was known as a "European building" from the moment it was conceptualized. From the textual and visual evidence presented in this section, I argue that the use of these building materials on a "European building" in a late-Qing Chinese garden was an attempt to merge the mythical Chinese "Crystal Palace" with the palace of the same name in London, a mark of Europe's progress in engineering. This happened against a backdrop of increasing interaction between China and the world beyond its borders.

By studying the Chinese term for "Crystal Palace (*shuijinggong* 水晶宮)" in its textual and architectural context, I demonstrate that far from simply being a reference to European and

[109] Original: 五色玻璃四面風，水晶新殿製尤工。In *Qinggong Ci* 清宮詞 [Poem of Qing Palace] (Beijing: Guji chuban she, 1986), 58. Translated by author.

North American glass-and-iron prototypes, this term pre-dates the introduction of European and North American glass-and-iron construction in Chinese architectural history. Conservative connotations of *shuijinggong* refer to mythical palaces in watery realms mostly inhabited by amphibious deities. Also, in the Chan (Zen) Buddhist tradition, the term *shuijinggong* is used for rhetorical purposes to refer to a mental state of absolute emptiness.[110] This term evokes a sense of the mythical because it was used to refer to spiritual realms and imaginary structures, which, even if they had been constructed at some point in Chinese history, have left no physical evidence of their existence. It was Lingzhao Xuan that manifested the imaginary Chinese concept of *shuijinggong* in tangible form. Thanks to the application of then-cutting-edge building materials and engineering techniques borrowed from the industrialized world, Lingzhao Xuan, once completed, would have been both a real "water palace" and a real "Crystal Palace." With its underground aquarium, it invites the visitor to embark a tour of an underwater realm with spontaneous moving views of marine flora and fauna, as if they were contemplating a motion picture two decades before film was even invented. The imperial patrons would have been drawn into a trans-mundane space where they could transcend through water, earth and air, detached themselves from their worldly obligations, and cultivated their minds to achieve a state of emptiness and "no thought/no motion (*wuji* 無機)."

Conclusion

In this chapter, three major questions are answered to outline a historical context in which Lingzhao Xuan was built. In the first section, evidence was presented relating to the term of "water palace (*shuidian* 水殿)" to make the argument that Lingzhao Xuan was designed to "suppress fire (*zhenhuo* 鎮火)" according to geomantic principles in the Chinese building

[110] Comparing the characteristics of glass to sensations exists in other social contexts, as Turgeon in his study of "Beads, bodies and regimes of value: From France to North America c. 1500–c. 1650" (In *The archaeology of contact in settler societies*, ed. T. Murray, Cambridge: Cambridge University Press, 2004) points out: during the sixteenth and seventeenth centuries, native Indians in North America equated glass with the properties of mind, knowledge and life. Information attained from Julian Henderson, *Ancient Glass: An Interdisciplinary Exploration* (New York: Cambridge University Press, 2013), 2.

tradition and to "prevent fire (*fanghuo* 防火)," with its pond functioning as a reservoir in response to the fact that the Palace of Prolonging Happiness, where Lingzhao Xuan is located, had been the site of several fires. Discussion on its contemporary reviews is the focus in the second section. Lingzhao Xuan as an imperial garden structure was poorly received and even criticized in apocryphal sources as a self-indulgent waste on the part of its imperial patron, the Dowager Empress Longyu and her confidant, the last Imperial Eunuch Supervisor, Zhang Lande. In the last section, the term *shuijinggong* and the ideal architectural space it represented in Chinese tradition are under scrutinization alone with the construction history of Lingzhao Xuan. As for the epithet "Crystal Palace" in the case of Lingzhao Xuan, the Chinese term *shuijinggong* is attested in Chinese textual and architectural contexts prior to the introduction of ideas of the European and North American countries on architecture into China. The term *shuijinggong* in Chinese is partially conflated with the English term "Crystal Palace" in late nineteenth- and early twentieth-century China; specifically, the term "Crystal Palace" was largely (but not exclusively) associated with the exhibition hall in the Great Exhibition in London 1851 built in glass and iron. As such, Lingzhao Xuan, at once a "water palace" and "Crystal Palace," is a life-sized manifestation of an idealized Chinese trans-mundane "underwater wonderland." Borrowing the European and North American concept of the "Crystal Palace," with its leading technologies and materials, iron-and-glass construction and modern pumping system, would have allowed the manifestation of a transparent space emerging out of the water, with glittering colors and dreamy scenes. In Lingzhao Xuan, this interpretation is delicately merged with the Chinese "Crystal Palace" concept, which offers an imaginary trans-mundane space under the water domain that resides with otherworldly beings and deities. Lingzhao Xuan is therefore a microcosm of the universe, where the powerful imperial patrons' dream of harmoniously governing the domain of water, earth and air is given material form, which is to be further evaluated as the forming of sacred mountain (*shan* 山) and arrangement of auspicious water (*shui* 水) in the following chapters, respectively.

Chapter 2 "Pavilion Rising in Auspicious Pond": Creation of Sacred Mountain

"The Jade Spring of three hundred *Hu* streams into [Lingzhao Xuan],
the [Buddhist] Bright Realm in glass arises.
引得玉泉三百斛，光明世界現瑠璨。"[111]

As demonstrated in the former chapter, at several junctures over the century, perceptions of the architecture of Lingzhao Xuan mainly went through three stages when scrutinised and understood against the background of China's relations with the world beyond its borders. Beyond all controversies, however, one issue remains without being further reflected and questioned: Lingzhao Xuan in glass-and-iron construction, is a "European Building (*xiyanglou* 西洋樓)" in Chinese Imperial garden. However imprudent this statement is, the focus on appreciation and research of Lingzhao Xuan's European heritage is understandable: Visual and physical contradictories that the construction provokes is vividly against its imperial architectural environment: as an glass-and-iron construction, the black-and-white Lingzhao Xuan with greyish tones is surrounded by conventional imperial architectures, which are audaciously applied with scarlet red colour on the wall, while the orange roof tiles and colourful

[111] Quoted from *Poetry of Qing Court* 清宮詞 of 1912, composed and edited by Wu Shijian 吳士鑑 (1868–1934), an epigraphist in Qing dynasty (1644–1912), see related entry in Chapter 1. The Jade Spring 玉泉 refers to the Jade Spring Hill 玉泉山 that locates to the west of the Summer Palace in Beijing, China. Jade Spring is named the "greatest spring in the world" by the Emperor Qianlong 乾隆 (r. 1735–1796) of the Qing dynasty. From Ming dynasty (1368–1644) onwards, after the capital was established in Beijing, Jade Spring was used for royal purposes, and its water was transported from Jade Spring Hill around Xizhimen Gate 西直門 to the imperial palace by cart. More historical and geographical details on the Jade Spring Hill, see *[Imperially Endorsed] Investigations About Hearsay of Old Matters from Under the Sun* 日下舊聞考 (1785–1787) and *Brief Guide to Scenes and Ancient spots in the Imperial Capital City* 帝京景物略 (1635). *Hu* 斛 is an ancient measuring vessel in China and also unit of measurement equal to about five or ten *Dou* 斗; equals around fifty litres in modern measurement, here is used as a stylistic device for hyperbole. Bright Realm (*Guangming shijie* 光明世界) refers to the Buddhist world of Brightness and Solemnity (*Guangming Zhuangyan* 光明莊嚴), a Buddhist term originates from the Sanskrit term: *Vairocana-raśmi-pratimaṇḍitā*. More details see Oda Tokunō 織田得能, *Bukkyō Daijiten* 佛教大辭典, expanded edition 補訂版 (Tōkyō: Ōkura shuten, 1929), 771-2-28.

painted lintels 闌額 and bracket set 斗拱, blue, green with specks of red and gold, reinforce the lavish play of colours (**fig. 2.1**).[112] Yet the unawareness of appropriations of Chinese concepts brought about biases in a full perception and understanding of Lingzhao Xuan construction. Hence in this chapter, I assign myself the tasks to examine the Chinese essence of Lingzhao Xuan in full, before I re-join the studies upon the "European characteristics" in the following chapters, to which I will examine the construction's additional function as an aquarium which borrows the ideas of aquarium and engineering technologies in the nineteenth and twentieth centuries in Europe and North American countries.

In order to reveal the Chinese essence of Lingzhao Xuan, I design my research from the following three perspectives: in the first section, I deconstruct and analyse the Chinese name of Lingzhao Xuan from both philological and historical perspectives, in order to demonstrate its alignments with the Confucian concept of "benevolent governance (*ren zheng* 仁政)" which is believed to bring blessings to the Imperial architectural constructing system. Meanwhile, the expectation of simulating a trans-mundane space at the architectural site of Lingzhao Xuan is reflected both in its naming logics and its demonstrated functions. To further address the idea of the creation of a trans-mundane space, I take a step further to the scrutinization of the structural system and physical characteristics of Lingzhao Xuan in the second section, and to shed light on the "earthly paradise" that this construction presents by adopting the concept of "Immortal Mountain rising from Numinous Pond 靈山仙池" in the Chinese classic imperial garden arts. The third section is dedicated to a study of the Chinese aesthetics methods of "borrowing sceneries to provoke sentiments 借景生情" applied in the construction of Lingzhao Xuan, which intend to and have achieved an atmosphere of "nature and human being harmonious in one 天人合一" that is essential in the Daoist philosophy. Reading the design of

[112] On the color and paints employed essentially for the protection of the timber structure in Chinese traditional architecture, see Liang Sicheng 梁思成, *Chinese Architecture: Art and Artifacts* 為什麼研究中國建築 (Beijing: Foreign Language Teaching and Research Press, 2001), 13–14.

Lingzhao Xuan in the light of Chinese aesthetics and concept, a delicate arrangement of a Chinese trans-mundane space comes into full understanding. I argue that the idea of a trans-mundane space in the Chinese sense prepares the imperial patrons with a familiar atmosphere and psychologically ease the introduction of European building materials and engineering technologies into the making of this architectural site. Beyond doubt, a pure “European Building” at the heart of political hub was doomed to fail the approval of the Qing rulers in the first place, with these fundamental appropriations of Chinese thoughts and aesthetics, the designer of Lingzhao Xuan, whose identities remain unrevealed till these days, succeed in bring in the “European” aquarium, alone with the modern building materials and engineering technologies into the making of an underwater wonderland, which further affirm the creation of a trans-mundane space at the site of Lingzhao Xuan.

2.1 Lingzhao Xuan 靈沼軒: “Pavilion in Auspicious Pond”

As mentioned above, the overwhelming physical contradictions of Lingzhao Xuan and its architectural environment led to an inevitable emphasis on its European charisma; the “European Building 西洋樓” has become a well-known epithet of this intriguing cultural and aesthetic amalgamation. Without describing its architecture visually, this section delves straight into the philology and etymology of Lingzhao Xuan in Chinese to explain its auspicious connotations and the naming philosophy behind the architectural site’s Chinese name, which is aligned with the Confucian concept of “benevolent governance” and the idea of praying for heavenly blessing in the tradition of Chinese imperial architecture. The remarkable conceptual transformation of this architectural site is represented in both its official name, *lingzhaoxuan*, and its epithet, *shuijinggong*. The complexity of identity in the Chinese architectural tradition is manifested through the anonymity of architects and the significance of naming scenic spots and architecture in China. With the blurring or erasure of the identities of individual architects, the identities of the architectural sites themselves are gradually strengthened and brought to

fruition throughout the construction process. This near anthropomorphizing of architecture is first and foremost illustrated through the complexity of designated names, which describe certain characteristics of a building or enclosed space. These given names can reveal or hint at certain functions, geological features, religious or auspicious connotations, or literary or historical allusions. Moreover, the consideration of *fengshui* beliefs and owners' personal tastes and visions can further complicate this process.

On the surface, the name of the architectural site of Lingzhao Xuan identifies it as an independent site in three ways:

First, reference to features of the topography, with the *lingzhao* indicating its location near an auspicious pond.

Second, reference to its function as studio, with the *xuan* indicating a construction with plausibly lofty structures.

Third, allusions to the political benevolence aligned with Confucian literati garden tradition that achieved its efflorescence in the Northern Song dynasty.[113]

Prior to the Northern Song dynasty, the names of sites were derived from "simple references to the location, surrounding scenery, or function of a site."[114] Along with the gardening that flourished among the scholar–officials (*shidafu* 士大夫), the naming of sites became an activity of significant importance due to site names' "obvious allusions to historical or literary themes."[115] In contrast, there has been a conscious effort to view garden designing

[113] Harris notes that "during the Northern Song the art of gardening began to function in scholarly culture in the same way that poetry had for centuries—as a means of self-expression, as a language shared by people of similar education and background that could be enriched by historical and literary allusions and by autobiographical references. When gardens achieved this status, the importance of the site names they contained and the presence of language in the garden environment acquired new significance." In Robert E. Jr. Harris, "Site Names and Their Meanings in the Garden of Solitary Enjoyment," *The Journal of Garden History* 13, n. 4 (1993): 201, https://doi.org/https://doi.org/10.1080/01445170.1993.10412488.

[114] Harris, "Site Names and Their Meanings," 202.

[115] Ibid.

and constructing as "a means of self-cultivation and an expression of the garden owner's most deeply-held values […] in which the garden reflected the mind that created it."[116]

There is tangible architectural evidence of the diachronicity, and complexity involved in the naming process. Throughout Chinese architectural history, the individuality of architectural sites has been accentuated. While the names of gardens in secular architecture are primarily references to the owners' preferences, the naming of the architecture can sometimes undergo several reinventions during or after construction to ensure alignment with the finished view or environment. If there is any entanglement with a foreign culture, constructions receive names with foreign references or are named using homophonic puns that echo their foreign names. Meanwhile, in architecture with religious functions, the names of constructions are often directly relevant to religious conventions or rituals related to gods or deities. This phenomenon is not entirely unfamiliar in sacred architecture beyond Chinese tradition. For instance, Christian churches are sometimes named after saints or spirits.

In Chinese architecture, the existence of an independent soul is attached to an architectural site. This can be understood as analogous to a child who was birthed and is an individual who is experienced/perceived by whomever encounters it yet remains independent from its creator—the nameless architect in the case of Chinese architecture. However, in Chinese architectural conventions, sites or views with inscriptions written on plaques, stelae, or rock faces are ubiquitous.[117] To further emphasize these designations and to complete a site's identification, a structure's name is often physically confirmed with a name plaque placed above the lintel of the main entrance. Thus, the following philological investigation of the name Lingzhao Xuan will explore various allusions and references to shed light on the meaning of this architectural site.

[116] Harris, "Site Names and Their Meanings," 201.

[117] Harris, "Site Names and Their Meanings," 199.

Reading Lingzhao Xuan from a philological perspective

The character *ling* 靈 ("灵" in modern simplified Chinese) is to be read earliest in the Chinese bronze inscriptions in the Spring and Autumn period 春秋時期 (771–476 BCE) and was written differently (from the modern version) as "[靈+示]." The upper part "*ling* 靈" is the ancient character of *ling* 零 which means "zero" in modern Chinese, refers to the "rains," or "raining" as well in ancient Chinese. As a part of the character *ling* 靈, it functions as a phonological component. Along with the lower part *shi* 示, which represents a sacrificial altar, *ling* 靈 could be read as praying, which indicates the meaning of the character is linked to serving the gods, and the dancing shaman who prays to the gods.[118] Both in ancient and modern Chinese, *ling* 靈 would mean gods, soul, spirit or intelligence. The character *zhao* 沼 contains the *shui* 氵 part which indicates the water element and the *zhao* 召 which gives the character its phonetic element. The character is explained in the oldest Chinese dictionary *Explaining Simple and Analysing Compound Characters* 説文解字 (121) as a small area of ponding. The character *xuan* 軒 has several meanings which relate to construction of architectural element. It could mean the "eaves," "front of a palace under the eaves," or as in some ancient Chinese poetry, it refers to window as well.[119] When as indication as the function of a construction, *xuan* refers to balcony that is airy and open, hence often it is applied in naming for studio or tea house.[120]

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[118] *The Origin of Characters* 字源, ed. Li Xueqin and Zhao Ping'an (Shenyang: Liaoning People's Publishing House, 2013), v. 7, 24. In the oldest Chinese character dictionary *Explaining simple and Analysing compound characters* 説文解字 (121 CE), the lower part is written as "*yu* 玉" (meaning: jade) instead in the Warring States period 戰國時期 (475–221 BCE), which means to present the jade to serve the gods. In the Qin dynasty 秦朝 (221–207 BCE), the lower part is written as "*wu* 巫" instead, which indicates the development of the character: it now represents the dancing shaman who prays to the gods. The simplified version of "*ling* 灵" appears around Song dynasty (宋朝, 960–1279), which contains the "*ji* or *xue* 彐" part that indicates a hand and the "*huo* 火" part that means the fire, see Gu Xiangui ed., *Dictionary of Chinese Characters' Origins* 漢字源流字典 (Beijing: Chinese Publishing House, 2008), 518.

[119] Details on these meanings see *Collection of Rhymes* 集韵 (1037).

[120] In the poetry *Rhyme of Summer Night* 夏夜嘆 (759) of Du Fu 杜甫 (712–770) for example: "Open the window to feel the chilly wind 開軒微納涼."

In the *A Paradise Lost: The Imperial Garden Yuanming yuan*, Wong Young-Tsu translated *xuan* into "galleries" in the context of imperial garden architecture. According to his theories, *xuan* take after the model of the ancient Chines carriage, which looks spacious and lofty, so they are also known as "carriage galleries," in which case *xuan* means a high-fronted, curtained carriage. They are built in high open space to capture the best view. In sum, reading from philological perspectives, the Chinese word "Lingzhao Xuan 靈沼軒" bears the meaning of a studio, a tea house or a pavilion with or within an auspicious pond with heavenly blessings. Water, together with rocks are compositional elements in Chinese Classic gardens, Lingzhao Xuan with the character *zhao* 沼 indicates references to water element at this architectural complex.[121] Heavenly blessings reflects by the character *ling* 靈 gives an auspicious sentiment to the name as well. In the context of Chinese imperial garden, A *xuan* 軒 could be an imperial studio or tea pavilion, which combines the function of studying, entertaining and socialising.[122]

Lingzhao 靈沼 in the originate context of "benevolent governance 仁政"

As stated above, the Chinese term *lingzhao* 靈沼 as a combination is easily perceived and understood as a numinous pond, or a water area with blessing. Furthermore, aligned with the naming tradition of Chinese imperial architecture, the naming of Lingzhao Xuan could trace its root back to the Confucian philosophy which the Chinese imperial rulers adopt to construct their ruling principles of "benevolent governance (*ren zheng* 仁政)."[123]

The word *lingzhao* has its own etymological background tracing back to the political discussion between Chinese Confucian philosopher Mencius 孟子(372–289 BCE) and the king

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[121] Bianca M. Rinaldi, *The Chinese Garden in Good Taste: Jesuits and Europe's Knowledge of Chinese Flora and Art of the Garden in the 17th and 18th Centuries*, (Karlsruhe: Peter Lang Verlag, 2005), 189.

[122] With the open galleries, and protruding pavilions with lattice work on the top, Lingzhao Xuan would have indeed made a fine example of a *xuan* construction. On the one hand, the inner space on the ground floor is planned for studio or a salon. However, the additional function of an aquarium in the underground floor is doomed to reflect in Chinese word of Lingzhao Xuan, on which I will further examine in my following chapters.

[123] Zhou Qian, *Zijincheng gu jianzhu yingjian sixiang yanjiu*, 76–83.

Hui of Liang (Liang Hui Wang 梁惠王, also Wei Hui Wang 魏惠王, 400–319 BCE), which is documented in the *Classic of Poetry · Greater Odes of the Kingdom · Auspicious tower* 詩經·大雅·靈臺 (1046–771 BCE). The term *lingzhao* 靈沼 as "auspicious pond" emerges under a famous discussion on the political and philosophical agenda of "happy with the people together 與民偕樂": [124]

> Mencius, another day, saw King Hui of Liang. The king went and stood with him by a pond, and, looking round at the large geese and deer, said: "Do wise and good princes also find pleasure in these things?" Mencius replied: "Being wise and good, they have pleasure in these things. If they are not wise and good, though they have these things, they do not find pleasure. It is said in the Book of Poetry: 'He measured out and commenced his auspicious tower [靈臺]; He measured it out and planned it. The people addressed themselves to it, and in less than a day completed it. At the beginning, one has not ask/require eagerly/anxiously/urgently/repeatedly, however the people come to help on their own. The king is in the auspicious garden [靈囿], the does reposed about, the does so sleek and fat, and the white birds came glistening; the king is by the auspicious pond [靈沼], how full was it of fishes leaping about!" King Wen of Zhou used the strength of the people to make his tower and his pond, and yet the people rejoiced to do the work, calling the tower "the auspicious tower," calling the pond "the auspicious pond," and rejoicing that he had his large deer, his fishes, and turtles. The ancients caused the people to have pleasure as well as themselves, and therefore they could enjoy it. In the *Declaration of Tang* it is said: "O sun, when wilt thou expire? We will die together with thee." The people wished for Jie's death, though they should die with him. Although he had towers, ponds, birds, and animals, how could he have pleasure alone?[125]

According to Zhou Qian, Confucian philosophy serve as main principles and sources for the naming of imperial architecture in in Beijing's Forbidden City architectural complex.[126] The

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[124] The agenda originally means that the ruler applies the policy of benevolence, shares the common weal and woe with the people, so that in the harmonious society, the ruler could be "happy with the people together 與民偕樂."

[125] Original: 孟子見梁惠王，王立於沼上，顧鴻鴈麋鹿，曰："賢者亦樂此乎？"孟子對曰："賢者而後樂此，不賢者雖有此，不樂也。《詩》雲：'經始靈臺，經之營之，庶民攻之，不日成之。經始勿亟，庶民子來。王在靈囿，麀鹿攸伏，麀鹿濯濯，白鳥鶴鶴。王在靈沼，於牣魚躍。'文王以民力為台為沼。而民歡樂之，謂其台曰靈臺，謂其沼曰靈沼，樂其有麋鹿魚鱉。古之人與民偕樂，故能樂也。《湯誓》曰：'時日害喪，予及女偕亡。'民欲與之偕亡，雖有台池鳥獸，豈能獨樂哉。"Translation of this Classical text refers to the translation in the Chinese Text Project by James Legge. The author however reconsiders and makes some adjustments, accessed July 10, 2021, https://ctext.org/mengzi/liang-hui-wang-i/.

[126] Zhou Qian, *Zijincheng gu jianzhu yingjian sixiang yanjiu*, 77.

abundancy and complexity of Confucius philosophy and concept is beyond question, when coming to political ideals, it could be concluded in three terms: Rule of Virtue (*dezhi* 德治) and Rule of Etiquette (*lizhi* 礼治) and Rule of Man (*renzhi* 人治). Under this concept of "benevolent governance (*renzheng* 仁政), the ruler claims himself to be "An Inner Sage So As To Rule The Outer World (*neisheng waiwang* 内聖外王)." The word *lingzhao* hence appears in the context of political discussion on "Inner Sageliness and Outer Kingliness," which is aligned with the naming system of the imperial architecture in Forbidden City.

Lingzhao 靈沼 in the context of kingly garden for keeping beats and fish

The auspicious garden (*lingyou* 靈囿) and the auspicious pond (*lingzhao* 靈沼) in the abovementioned political discussion refer exactly to kingly architectural complex for keeping animals and beats. In China, as in many other cultures, since antiquity it has been a privilege of the ruler to have a park at his disposal. According to legend, the mythical Yellow Emperor 黃帝 (legendary r. 2698 BCE–2598 BCE) still raised dragons in his park.[127] His descendances in the less golden ages of Shang 商 (c. 1600 BCE–c. 1046 BCE) and Zhou 周 (c. 1046 BCE –256 BCE) had to content themselves with more earthly beasts. Beside the purpose of producing food, another major purpose in keeping animals was a religious need. Animals had to be available continuously for ritual sacrifices, and such sacrifices could take place within the precinct of the park, which is referred to as the auspicious garden and auspicious pond.

Origins of these names emerged from the architectural complex in the Zhou dynasty, as Mencius mentioned the reign of the Emperors of Zhou, in the context of the imperial architectural complex called *Piyong* 辟雍.[128] The Qing scholar Wei Yuan 魏源 (1794–1857),

[127] The Yellow Emperor is a deity in Chinese religion, one of the legendary Chinese sovereigns and culture heroes included among the mytho-historical Three Sovereigns and Five Emperors (*sanhuang wudi* 三皇五帝)and cosmological Five Forms of the Highest Deity (*wufang shangdi* 五方上帝). More details on the Annals of the Five Emperors, see Sima Qian, *Records of the Grand Historian* 史記 (c. 100 BCE), Chapter 1.

[128] The discussion on the imperial architectural system *Piyong* in the Han dynasty, also its association with *Mingtang* 明堂, and *Lingtai* 靈臺, see Cao Chunping 曹春萍, *Piyong yu pangong chutan* 辟雍與泮宮初探 [A

who was among one of the progressive man of letters in the Late-Qing dynasty, who first "open eyes to see the world 睜眼看世界" after the First Opium War (1839–1842), also discuss about the *Piyong* and the institution setting upon it:

> Emperor Wen [of Zhou dynasty] has his own system for the constructing the Capital Fengdu, Emperor Wu [of Zhou dynasty] has his own system for constructing the Capital Gaojing, Emperor Cheng and Master of Zhou have their own system for the Capital Yingluo, the three are unidentical. In the system of Emperor Wen [of Zhou dynasty], the water area that surrounds the construction of *piyong*, in which fish and turtles live, is the *lingzhao*. That is why in the *Rhyme of Zhou Dynasy* the meaning of *piyong* is the palace on the water, course the palace is built above the pond. In this interpretation, *piyong* means the water area that consists of auspicious platform, auspicious garden with, and auspicious pond with fish, which is direct adjacent to the political hub the Bright Hall. [129]

Wei Yuan also mentioned that in the system of Emperor Wu, as *Different Discussion on Five Classics* 五經異議 quotes *Bibliography of Zuo* 左氏:

> The auspicious platform of the Son of the Heaven is within the Royal Ancestral Temple, the water area surrounds this complex is the auspicious pond, this pond is called *piyong*. In this context, *piyong* equals the *lingzhao*.[130]

As Mencius, Wei Yuan addresses the benevolent policies of Emperor Wen which is documented in the *The Poetries of Han* 韓詩:

> The virtue of Emperor Wen: from the flying birds in the sky, to the fish and turtle in the pond, (Emperor Wen) shares the auspicious garden with animals and auspicious pond with his people.[131]

Brief Study on the Piyong and pangong system], in *Huazhong jianzhu* 華中建築 [Huangzhong Architecture] n. 2, (1996): 66–69.

[129] Original: 有文王豐都之制，有武王鎬京之制，有成王、周公營洛之治，三者不可合一。文王 [.....] 而辟雍圍之以為水，水必有魚鱉，即是靈沼。故《周頌毛傳》釋:"辟雍"爲"澤宮"，蓋作宮於池澤之上。漢宮玉帶上《黃帝明堂圖》，中有一殿，四面無壁，以茅蓋通水，水圍宮垣，是明堂前之沼，即是辟雍也。[.....] 此文王豐都之辟雍，與明堂三靈同處。凡治岐之王政，皆於中行之。故曰：明堂者，王者行政之堂也。Wei Yuan was famed by his *The Illustrated Treatise on the Maritime Kingdoms* 海國圖志 (1843) and in which he promoted the idea of "learning advanced technologies from the barbarians in order to fight back 師夷長技以制夷."

[130] Original: 故《五經異議》引《左氏》說：天子靈臺在太廟之中。壅之靈沼，謂之辟雍。

[131] Original: 文王之德，上及飛鳥，下及魚鱉，則靈囿靈沼與民同樂也。*Complete Works of Wei Yuan* 魏源全集, v. 1, jia (Changsha: Yuelu Publish House, 1989), 83.

Without getting further into the discussion of the definition of lingzhao’s form in different legendary sites, the main issue is that the auspicious pond originates from the context of benevolent governance from Zhou dynasty, with the auspicious garden together, are kingly construction within the imperial garden complex, where animals, fur and feathers, fish and turtles are kept by the emperors. Intriguingly, this idea will be combined with the idea modern European zoological garden in the case of Lingzhao Xuan, which the idea of Chinese traditional imperial gardens for precious species and the idea of European exhibition of animals and new specials merged together, however would be the main issue of the following chapter.

2.2 “Immortal Mountain Rising from Numinous Pond 仙山靈池”

In this section, examination of the structural system at the architectural site of Lingzhao Xuan is conducted to further confirm the design of creating a trans-mundane space out of this place. Beside the cultural and philosophical impact from Chinese traditional garden aesthetics, the physical appearance of Lingzhao Xuan demonstrates the creation of a trans-mundane space as well. Sitting on a *xumi* base 須彌座 (i.e. *Sumeru* in Buddhist mythology) while the reserved eaves reaching out to the sky to pray for harmonious alignments with the universe, the structure of Lingzhao Xuan symbolize an earthly paradise in Chinese landscape tradition with the realisation of “Immortal Mountain rising from Numinous Pond 仙山靈池.”[132] Meanwhile, the visual simulation of immortal landscape is accomplished by the asymmetrical and spontaneous arrangement of the stone carvings. These physically borrowing from Chinese solemn and heavenly architecture further contributes to the realisation of a trans-mundane atmosphere that the Chinese imperial patrons are familiar with, which provokes the curiosity to lure them to walk into this visually and physically rather unfamiliar space. In short, the design embraces the

[132] The idea of Chinese “Early Paradise” is set forward by Ledderose in his article “The earthly paradise: religious elements in Chinese landscape art,” in *Theories of the Arts in China*, ed. Susan Bush and Christian Murck (Princeton: Princeton University Press, 1983): 165–181.

Chinese idea of immortal world to open the opportunity of introducing the European building materials and engineering technics into the construction, which further reinforce the idea of a trans-mundane world.[133]

Xumi base 須彌座 and Indication of Religious or Imperial Architecture of Importance

Despite looking compositionally very "European" when perceived frontally, as Zhang Jianwei interprets in his *Studies on Metal Construction in Ancient China* (2015), and containing iron and glass that borrows from European engineering of the nineteenth and twentieth centuries,[134] Lingzhao Xuan construction embodies the imagery of "immortal mountain rising from the sea," if its *xumi* base that indicates the sacred mountain of *Sumeru* in Buddhist mythology, which also contain the underground floor and sunk in the pond that is built around is viewed as an organic part of the construction (**fig. 2.2**). To further explain the idea, I divide the composition of Lingzhao Xuan into three parts, however different from the reading of current studies (**fig. 2.3**):[135]

(A) Base: from the line of the ground floor to the base line of the pond

(B) Main structure: from the ground to the joint of the bricks and the iron structures[136]

(C) Roof: the cast iron tiers with five pavilions

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[133] See Chapter 3.

[134] Zhang Jianwei reads the composition of Lingzhao Xuan from the European architectural perspective without considering the basement. The Sumeru base to that basement is crucial to my interpretation. For an interpretation of Lingzhao Xuan as a European building based on its three-part composition, see Zhang Jianwei, *Zhongguo gudai jinshu jianzhu yanjiu*, 221. The iron structure is present at the current stage while no trace of glass has been found. Nevertheless, glass was purchased and meant to be applied to the construction, yet failed due to several reasons. A newspaper on 23 April 1910 confirms the planned application of glass to Lingzhao Xuan as well: "[Chinese News translated from the Chinese Press] The Longyü Empress Dowager has issued Tls. 1000, 000 from the Privy Purse for the purchase of glass to turn the Changshou Palace into a Crystal Palace." For details on glass panels meant for Lingzhao Xuan, see Shan Jiayun, "Zhu Qiqian de qinbixin tanji qinggong shuijinggong," 245–246.

[135] The essential difference between my interpretation and Zhang's lies in our views of the basement, which I refer to as the "base." I first proposed this though on the structural features of Lingzhao Xuan at the Graduate Archaeology at Oxford Annual Conferences in 2019, which was included in *Approaches to Disruptions and Interactions in Archaeology*: *Proceedings of the Graduate Archaeology at Oxford Annual Conferences in 2017-2019*, Penny Coombe and Ying Tung Fung eds., (Oxford: Archaeopress Publishing, 2022): 82–98. Certain information is included here considering the structural integrity and completeness of this dissertation. On structural composition in Chinese architectural tradition, also see the seminal studies on Chinese architecture from Liang Sicheng.

[136] I will discuss on the main structure in terms of the carvings in the next section.

The marble basement is mostly hidden in the pond, only the upper part of the base is viewed above the ground from afar. As we can see from the front view, the base is fundamentally tri-sectional: the bottom, the middle and the top. The middle is slightly constricted, while the top has the same width as the bottom. Viewing from a two-dimensional perspective, this represents the silhouette of the base of Mount *Sumeru*. According to the iconographic research on the Buddhist universe of Ataru Sotomura, there are at least four types of cross-sectional shape of Mount Sumeru.[137] In the case of Lingzhao Xuan, the underground base provides a silhouette fitting the description of hourglass-shaped, which sometimes said to be like an Asian hand drum (*gu* 鼓). In sum, from a two-dimensional perspective, the main structure and the top pavilions sit on a *Sumeru* base, i.e. *xumi* base in Chinese architectural context.[138]

Mount *Sumeru* (Xumi Shan 須彌山) as a term originates from Buddhism in which Mount *Sumeru* towers in the centre of the Buddhist view of the universe. Mount *Meru* (Sanskrit: मेरु), also recognized as *Sumeru*, *Sineru* or *Mahāmeru*, is the sacred five-peaked mountain of Hindu, Jain, and Buddhist cosmology and is considered to be the centre of all the physical, metaphysical and spiritual universes.[139] A vast number of two-dimensional presentations of Mount *Sumeru* in various materials were rendered in Buddhist context and over time in three-dimension as well, for example in many famous Buddhist temples and similarly Jain as well as Hindu temples have been built as symbolic representations of Sumeru mountain. In the Chinese traditional architectural history, "*Sumeru* Throne (*xumi zuo* 須彌座)" enters China with the

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[137] Sotomura's studies exclude the discussion of three-dimensional *Sumeru* base, however, I here refer to the two-dimensional form, namely the silhouette of the base of Lingzhao Xuan. For more information on Mount Sumeru, see Ataru Sotomura, "Mt. Sumeru 須彌山: Source Manual for Iconographic Research on the Buddhist Universe," *Nalanda-Sriwijaya Centre*, n. 6 (September 2011): 2, accessed May 26, 2022, http://www.iseas.edu.sg/images/pdf/nsc_working_paper_series_6.pdf.

[138] History of Sumeru base developed as xumi base in the Chinese architecture, see below, also see Liang Sicheng, *Complete Works of Liang Sicheng* 梁思成全集, vol. 6, (Beijing: China Architecture and Building Press, 2001), 239. Also see Yang Xinping 楊新平, "Qiantan xumi zuo" 淺談須彌座[A Brief Study on Sumeru Throne], *Nanfang wenwu* 南方文物 [Relics from South], v. 1 (1993): 78–81.

[139] Madan Gopal and K.S. Gautam eds., *India through the ages* (Publication Division, Ministry of Information and Broadcasting, Government of India, 1990),78

spread of Buddhism from India, while over time it becomes a common feature the base of Buddhist sculpture and in base of religious or imperial architecture, the application of "*Sumeru* Throne" gives substance of greatness and solemnness to the architecture on its top. According to Liang Sicheng's studies on the history of base in Chinese ancient architecture, Chinese word *xumi* appears in Buddhist scripts, originally is a name of a mountain, also translated in Chinese as *mixiulou* 迷修樓, which is the ancient pronunciation of the Mountain Himalayas.[140] The Buddhist script addresses Mountain Himalayas as sacred mountain, the Buddhist base as Meru base, which means that Buddha rises above the sacred mountain, to demonstrate the greatness of Buddha and the respect towards Buddha.

In the context of Chinese ancient architecture, the earliest *xumi* base in China appears in the Yungang Caves 雲崗石窟 in Datong 大同, Shanxi, which was built by Emperor Xiaowen 孝文帝 (r. 471–499) in Northern Wei dynasty 北魏 (386–534). The architectural *xumi* base in this period is simplified and has obvious impact from Buddhist art.[141] With the development of Buddhist architecture, *xumi* base slowly adopted by superior architecture. When the *Sumeru* base first arrived in China, it must have been applied to Buddhist sculpture, and only later adopted into the Chinese architectural tradition.[142] By the time of the Tang (618–906), *Sumeru* bases were commonly seen. The widespread use of the *Sumeru* base in Chinese religious architecture of the Tang era is evident both in literature and mural painting.[143] From the Tang

[140] Liang Sicheng, 2004. v. 6, 238.

[141] See Zhao Peng 趙鵬, Guo Hong 郭鴻 and Zhang Jie 張傑, Gugong jianzhu xumizuo de chidu goucheng yu zhuangshi wenyang 故宮建築須彌座的尺度構成與裝飾紋樣 [Scaling composition and decorative patterns on the Sumeru base at Palace Museum]." *Gujian yuanlin jishu* 古建園林技術 [Traditional Chinese Architecture and Gardens], v. 4 (2011): 34.

[142] Liang suggests that even the Sumeru base, as many other forms of Buddhist art, could trace its origins to the Greek tradition. In classical Europe, bases played an important role in architecture. However, from the start of the Common Era, bases became thinner and waned in significance. Up until the Renaissance, the so-called high basement is divided, strictly speaking, from the meaning of a base. Base were only used in sculpture or stelae, i.e. as pedestals. For further details see Liang Sicheng, *Complete Works of Liang Sicheng* 梁思成全集, v. 6, (Beijing: China Architecture and Building Press, 2001), 239.

[143] Liang Sicheng, *Complete Works of Liang Sicheng* 梁思成全集, v. 6, 238–239.

mural paintings, *xumi* base is applied in actual architecture, rather than just as base of Buddhist sculpture, and only the most important architecture in the central axis is allowed to sit on a *xumi* base. According to Mo Wei's studies, at least from Tang onwards, *xumi* base is accepted in Chinese architectural context as a superior form of base for architecture of religious or imperial importance.[144] Until Song dynasty, the development of *xumi* base in architecture of importance reaches the peak and starts to formulise, which are precisely documented in the Song official construction manuscript, the *Treatise on Architectural Methods or State Building Standards* 營造法式 in Song dynasty.[145] From Song dynasty onwards, the *xumi* base in architecture is basically identical with the later tradition of *xumi* base in architecture.[146] From Yuan dynasty onwards, the process of simplifying starts and until the Ming and Qing dynasties, when the Forbidden City was built, the official *xumi* base is further simplified as documented in the Qing official construction manuscript.[147]

In the Forbidden City complex, there are mainly four types of *xumi* base: the first one is the basic *xumi* base without balustrades nor hornless dragon head (*chi shou* 螭首);[148] the second one is *xumi* base with balustrades; the third type is with both balustrades and hornless dragon head; the four type is multi storage *xumi* base. The *xumi* base of Lingzhao Xuan can be roughly include in the third type because mysterious animal heads are carved on the cornice of the base

[144] Mo Wei 莫畏, "Xumi zuo tanyuan 須彌座探源 [Probing into the Origin of Sumeru]," in *Jilin jianzhu gongcheng xueyuan xue bao* 吉林建築工程學院學報 [Journal of Jilin Architectural and Civil Engineering Institute], n. 3 (September 1999): 22–26.

[145] This is a technical treatise on Chinese traditional architecture and craftsmanship written by Li Jie 李誡 (1065–1110), the Directorate of Buildings and Construction during the mid-Song dynasty of China. Liang Sicheng translates this manuscript into modern Chinese and English in the purpose of researching and preserving the theories, technics in Chinese ancient architecture, and also to dedicate respect to the ancient Chinse craftsmen who were considered less artists and architects than working forces, see Liang Sicheng's study.

[146] See Liang Sicheng about the difference between xumi base in the Song manuscript of construction 宋營造法式 and the Qing manuscript of construction 清營造法式.

[147] Surveys on the *Sumeru* base have been carried out by the Palace Museum, which mentions 75 Sumeru bases within the architectural complex of the Forbidden City and ten representative sites outside the complex.

[148] chi, one of the mysterious animals in Chinese tradition, according to Zhou Xin and Wu Wei, chi can be evil beast, one of dragon's descendants, hornless dragon or female dragon.

(**fig. 2.4**). Pattern of waves and fish are carved on the upper cornice as well which are uncommon in *xumi* base in the imperial architectural complex (**fig. 2.5**).

Surveys on the *xumi* base have been carried out by the Palace Museum, which mentions 75 *xumi* bases within the architectural complex of the Forbidden City and also ten representative sites outside the complex. In Figure 1 of this essay, in which the proportions of some *xumi* bases are listed, Lingzhao Xuan was missed. I am currently unable to access the list of all 75 sites and am uncertain as to whether the survey considered the base of Lingzhao Xuan as a *xumi* base. The *xumi* base, as I will dub it, is a base with several horizontal mouldings that expand outwards in tiers (**figs. 2.6–2.7**).[149] The *xumi* base of this structure might fall out of the conventional construction of *xumi* base in the architectural complex in the Forbidden City, yet the form and proportions of the tiers indicates a *xumi* base in its own style, as innovated as Lingzhao Xuan *per se*. The application of a *xumi* base in this building indicates its alignment of solemn architecture that contains either religious or imperial connotations in the architectural complex in the Forbidden City. In short, Lingzhao Xuan is meant to contain a construction of importance or holiness.

"Reverse to Response to the Universe 反宇" and Roof of Lingzhao Xuan

While the marble base of Lingzhao Xuan provides a solemn and spiritual sentiment for the construction, the roof tier of the five iron pavilions in black ton protrude into the sky in a rather light and airy manner.[150] The three octagonal pavilions, the south-eastern one, the southwestern one and the central one, are rendered with domes with eaves curved upwards. These curved eaves of Lingzhao Xuan demonstrate the alignment with the philosophy of "Nature and Human being Harmonious in One 天人合一" that reflects in the imperial

[149] Liang Sicheng, *Complete Works of Liang Sicheng* 梁思成全集, v. 6, (Beijing: China Architecture and Building Press, 2001), 238.

[150] In the digital visualization version of Lingzhao Xuan construction, the roofs are applied with white paint. See the models in Fang Liyu, "The interdisciplinary research of virtual recovery and simulation of heritage buildings. Take Lingzhao Xuan in the Palace Museum as an example," *Conservation Science in Cultural Heritage* v. 2, (December 2014): 189–205.

architecture in the Forbidden City. The flying roof forms a character of *ao* 凹 (means concave), which indicates the feminine energy (*yin* 陰) that is completed and interacted with the masculine energy (*yang* 陽) from the universe, this is addressed as "covert to the universe 反宇" in the imperial architecture in the Forbidden City.[151] Furthermore, from the perspective of Chinese geomancy (*fengshui* 風水) in the Chinese ancient architecture and space arrangement, the iron appears to be black, which probably agrees with the black element that means water in the Imperial architecture in order to prevent the site from fire.[152] In premodern China, construct a building was never only material and functional. The believes in *fengshui* practice claims a harmonization between the construction with its surrounding environment. The construction of Imperial Palace adopts *fengshui* theories that have been developed and adopted from different sources in the Chinese culture: the Confucianism, the Daoism, the Buddhism, tradition from *River Map and Luo Book* 河圖洛書, totem culture and folk culture.[153] In the specific case of the architectural site of Lingzhao Xuan, which locates in the Yanxi Palace, is said to build the suppress the "fire."

In the aforementioned comment from Wu Shijian, the construction of Lingzhao Xuan is also referred to as a "water palace 水殿," as its physically configuration with a building in the middle of a pond suggests.[154] The last Imperial Eunuch Zhang Lande brought up the idea of renovating the Yanxi Palace with a fancy "European architecture" in order to bright the Dowager Empress Dowager Longyu from her boredom up.[155] Under the pretext of having an

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[151] Zhou Qian, *Zijincheng gu jianzhu yingjian sixiang yanjiu*, 16–28.

[152] Ibid.

[153] Wang Shuyi, "*Yijing* de xiang, shu, moshi—yi *He Tu*, *Luo Shu*, *Ba Gua* shiyi 《易經》的象、數、模式—以河圖、洛書、八卦釋義 [The symbol, mathematic and mode of "Yijing"—interpretation by *He Tu*, *Luo Shu*, and *Ba Gua*]." Totemism is a belief associated with animistic religions. The totem is usually an animal or other natural figure that spiritually represents a group of related people such as a clan. Master thesis, 2017, Danjiang University, Taibei.

[154] On the poetry written by Wu Shijian, see note 33.

[155] On the anecdote of Zhang Lande and his legend of persuading the Empress Dowager Longyü for even more construction of Buddhist Temples for his own agenda, see Chapter 1.

auspicious “water palace,” which represents the “water element”, to balance the “fire element” in the architectural environment of Yanxi Palace, which was damaged and left unbuilt after a conflagration in the Xianfeng reign (1850–1861), the construction of Lingzhao Xuan the “Crystal Palace” has been started.[156]

The Yanxi Palace, in whose courtyard the construction stands, was historically never an uneventful place. As some suggest that Lingzhao Xuan as a “Crystal Palace” was intended to “suppress the fire” when depart from believes of geomancy or, to “prevent the fire” as Shan Jiayun mentioned, as the construction physically contains a pond which could serve as a reservoir. Both statements demonstrate a close linkage to the image of water, or to the “water palace.” The emphasis on the water elements and the consideration of having a “water element” to bring balance to the “fire element” in this architectural compound was related to the Yanxi Palace’s history of conflagrations. At least two conflagration took place in this architectural compound during the Qing dynasty, one is recorded in the twenty-fifth year (1845) of Daoguang 道光 (1820–1850) era and another one is in the fifth year (1855) of Xianfeng 咸豐 (1850–1861), which caused a lot of damages to the architectural complex. The fire in the twenty-fifth year of Daoguang torn the main hall, the revert hall and the side halls on the West and the East, in all twenty-five rooms down. These might as well lead to the complex to be fully abandoned for decades in accordance with the suggestions of the geomancy. It is said another attempt to rebuild the Palace in the eleventh year of Tongzhi 同治 (1872) has been made but never fulfilled. Because the geomancy forecasts the unsuitable situation for the building, so the edict said the project could started with prospecting the site, and the construction however should be postponed.[157]

[156] In his research on the history of Yanxi Palace, Gu Bian mentions this apocryphal tale that claims the initial idea of Lingzhao Xuan the “Crysyal Palace” was suggest by Zhang Lande, see Chapter 1.

[157] See Chapter 1 for related entries.

In sum, the arrangement of the roofs of Lingzhao Xuan is aligned with the idea of "covert to the universe" in the Imperial architecture in the Forbidden City that reflects the philosophy of "Nature and Human being Harmonious in One" which will be further discussed in the third section of this chapter. Furthermore, according to the traditional Chinese geomancy theories in the traditional architecture, the coldness that reflects in the physical appearance which brought in by the water element and the iron element seems to convince the saying that Lingzhao Xuan, as a "water palace" is built to suppress the "fire" element that course the area to suffer in the prehistory.

Earthly Paradise: "Immortal Dwelling rising from Numinous Pond"

From the philological and historical context of Lingzhao Xuan, to the manifestation of its physical appearance, the idea of creating a trans-mundane space has been further affirmed and an "earthly paradise" start to manifest. From the Han dynasty (206 BCE-220 CE) onwards, the belief that gods and immortals dwelt on mountains is integrated into Chinese architecture. In Chinese imperial parks, high towers are erected for these heavenly beings.[158] Zhou Weiquan addressed the issue of creation of trans-mundane space in imperial gardens in his *History of Chinese Classic Garden* (1990), which he views the Lanchi Palace (Lanchi Gong 蘭池宮) built in the Qin dynasty (221–207), as one of the earliest example of imperial architecture having function of manifesting for godly blessings since then, besides the original function of providing a place for hunting, producing and relaxing.[159] In which case the intention was demonstrated in the arrangement of digging a hole and building an isle in the middle to visualise an immortal mountain rising from the sea. In his article "The earthly paradise: religious elements in Chinese landscape art," Ledderose tackle on a rather later example, the Jianzhang

[158] Liang Sicheng, *Chinese Architecture: Art and Artifacts* 為什麼研究中國建築 (Beijing: Foreign Language Teaching and Research Press, 2001), 18.

[159] Zhou Weiquan, *Zhongguo gudian yuanlin shi* 中國古典園林史 [History of Chinese Classic Garden] (Beijing: Qinghua University Press, 1990), 25.

Palace (Jianzhang Gong 建章宮, 104 BCE) of the Emperor Wu of Han 漢武帝 (r. 141 BCE–87 CE) which is built after he had travel to the sea island[160] of Penglai 蓬萊 in the Northern Shandong Peninsula 山東半島 and sacrificed to the immortals. Ledderose views it as a specific religious symbolism and designed as a replica of the islands of the immortals in the paradise garden in Chinese landscape tradition.[161] Ledderose mentions that earthly paradise in Chinese three-dimensional landscape, the "basic design of a paradise garden" demonstrates a "striking simplicity," with which the architectural site of Lingzhao Xuan, when perceived in this light, is aligned: "A hole is dug in the ground and filled with water; the earth gained in this way is piled up into a mountain." [162] If Lingzhao Xuan's physical alignment of the idea of "immortal island" in the Chinese imperial garden tradition has been detected, the emphasis of "European Building" might probably less addressed. The thoughts of immortals and deities in China originates at the end of Zhou dynasty and flourishes in Warrior period. The two systems of immortal mountain are the immortals in Eastern Sea and the Kunlun mountain (Kunlun Shan 崑崙山). The number of sacred mountains varies however in different legends, some mentions five and others say three. There are five sacred mountains on the sea: Daiyu 岱嶼, Yuanqiao 員嶠, Fanghu 方壺, Yingzhou 瀛洲 and Penglai 蓬萊. According to *Master Lie·Question from Tang* 列子・湯問:

> "The mountains are thirty thousand *li* in height, the width on the top of the mountains is nine *li*, the distance between every mountain is seven *li*, are all adjacent to each other. Platforms on them are all made of gold and jade, animals living in them are all in white. Immortal trees

[160] A study of Island culture in China has been conducted by Bin Luo and Adam Grydehøj, they question the overly focus on the "Western Island culture" and propose continual studies on Non-Western island culture from a postcolonial or decolonial perspective. Luo and Grydehøj, "Sacred islands and island symbolism in Ancient and Imperial China: an exercise in decolonial island studies," *Island Studies Journal*, v. 12, n. 2 (November 2007): 25–44, accessed January 29, 2022, https://islandstudiesjournal.org/files/ISJLuoGrydehojSacredIslandsChina_0.pdf.

[161] Ledderose, "The earthly paradise: religious elements in Chinese landscape art," 168.

[162] In this article, Ledderose argues that aesthetic values are generated in a religious sphere and gain autonomy as religious values decline. During the process of secularisation, religious concepts and connotations tend to persist, and continue to palpably influence perceptions of aesthetics. See Lothar Ledderose, "The earthly paradise: religious elements in Chinese landscape art," 165–181.

> everywhere, flowers and fruits are all delicious, one eats them will become immortal. Creatures who live here are all immortals and deities. … the five mountains are floating on the sea because they don't have roots. … At the end, two of them float away and disappear. Only three of them, the Fanghu, Yingzhou and Penglai left.[163]

The imperial paradise garden centring around a main mountain in Chinese garden found its way back to the Zhou dynasty 周朝 (1046 BCE–256 CE), and this legend of three sacred mountain has an essential impact on arrangement of water area and garden and parks the in ancient China. When Emperor Wu built a garden in his Jianzhang Palace 建章宮 which is designed as a replica of the islands of the immortals as aforementioned:

> [Emperor Wu of Han] constructs a pond in the North, set a platform for about twenty *zhang* in height. The pond is called *taiye* pond, in which four mountains *Penglai*, *Fangzhang*, *Yingzhou* and *Huliang* are arranged as sacred mountains in the sea, which is full of fish and turtles.[164]

Until later in the Ming and Qing dynasty, the model of building an immortal island in the middle of sacred water is still popular in the imperial garden, more examples of this type, though varied in different from, are to find: as in the Western Garden (Xi Yuan 西苑), there are Qionghua 瓊華, Yunshuixie 水雲榭, and Yingtai 瀛臺 three mountains, in the Qingyi Garden (Qingyi Yuan 清漪園), there is a Kunming pond, in which three immortal dwellings are set: Temple of the Dragon King (Longwang Miao 龍王廟), the Hall of Contemplating Ornate (Zaojian Tang 藻鑒堂), and the Reflection Pavilion (Zhijing Ge 治鏡閣), and the Immortal Abode on the Fairy

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[163] Original: 其山高下周旋三萬裡，其頂平處九千里，山之中間相去七萬裡，以為鄰居焉。其上台觀皆金玉，其上禽獸皆純礬。珠玕之樹節叢生，華實皆有滋味，食之皆不老不死。所居之人皆仙聖之種，一日一夜飛相往來者，不可勝數。而五山之根無所連箸，常隨潮波上下往返。 [.....] 最後二山飄去不知蹤跡，只剩下方壺、瀛洲、蓬萊三山了。

[164] Original: 北治大池，漸台高二十餘丈，名曰太液池，中有蓬萊、方丈、瀛洲、壺梁象海中神山，龜魚之屬。*The Records of the Grand Historian* (*Shiji* 史記, c. 94 BCE), is a monumental history of ancient China and the world finished by the Western Han dynasty (202 BCE–220 CE) official Sima Qian (司馬遷, c. 145–86 BCE) after having been initiated by his father, Sima Tan (司馬談, c. 165–110 BCE), Grand Astrologer 太史令 to the imperial court. The work covers a 2,500-year period from the age of the legendary Yellow Emperor to the reign of Emperor Wu of Han in the author's own time. More Details on Sima jian and the *The Records of the Grand Historian*, see William Nienhauser, "Sima Qian and the Shiji," in *The Oxford History of Historical Writing*, ed. Andrew Feldherr and Grant Hardy, v. 1, *Beginnings to AD 600* (Oxford University Press, 2011), 463–484.

Terrace (Penglai Yaotai 蓬島瑤臺) in the Garden of Perfect Clarity (Yuanming Yuan 圓明園) and the Mind-Opening Isle (Haiyue kaijin 海岳開襟).[165]

In transforming the site of Lingzhao Xuan into a trans-mundane space, the ideal of this "immortal island in sacred water area" is evident: taking its tank, which would have been filled with water and fish, its *Sumeru* base and the structure on the ground as a whole, one may say that the design of Lingzhao Xuan embodies the concept of an immortal dwelling. With a sacred "mountain" in the "divine ponds and numinous pools," where auspicious species were brought together, Lingzhao Xuan becomes a microcosm of heavenly space. All these allusions to Chinese and Buddhist mythology would have provided imperial patrons a suite of familiar references, easing their entry into the physically rather unconventional structure built with materials and techniques imported from Europe, and simultaneously stimulating their desire to explore and be impressed. While the concept of an immortal dwelling is integrated into the structural design of Lingzhao Xuan to transform it into a numinous space (*yiqing* 移情), carvings of auspicious plants, animals and studio scenes of humans living in harmony with nature reflects another concept in the tradition of literati gardens in China: the concept of "Nature and Man Harmonious in One," which address not only the man's strength of creating an adapting space for their own needs, but also appreciate the wildness of the nature to some certain degree so that some of its spontaneity is best left untamed. This arrangement contributes without doubt on the manifestation of a trans-mundane space, an immortal dwelling at the architectural site of Lingzhao Xuan.

[165] Ledderose mentions in his article about similarity between this Chinese type and the Japanese type of the shinden zukuri 寝殿造 type, which are aristocratic mansions with the main construction placed behind a pond. The tradition seems to trace back to the pre-Buddhist paradise gardens of the Han dynasty in China, "with their two constitutent elements of pond and mountain." See Ledderose, "The earthly paradise: religious elements in Chinese landscape art," 171.

2.3 “Landscape that Lends 借景”

The structure of Lingzhao Xuan appears to be symmetrical at the first glance, namely, flanking the main structure in the middle are four towers with opening iron galleries.[166] The whole remained structure radiates solemn and graceful beauty in its symmetrical proportions, while the asymmetrical sculptured decorations on the stone carvings awakes a sense of mysterious and spontaneity, which reminds one of the Chinese natural garden that merges with the phase of aesthetic awakening in the history of the visual arts in China in the Six Dynasties (220–589).[167] Studies on its iron structure have been successfully conducted in several occasions by different leading institutes thanks to the appreciation of its European heritage, which left space and inspiration for the studies on the abundant stone carvings and motivate the present attempt in this section towards a close reading of the carvings. In order to take one more step near towards the manifestation of the final vision of a divine space, the designer appropriates the Chinese aesthetic and philosophy of “landscape that lends” to forge the carvings of Lingzhao Xuan and aims at provoking emotion of retreating into a trans-mundane space and experiencing the sense of “Nature and Human being Harmonious in One” by providing abundant visual stimulations of boundless and timeless scenes.[168]

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[166] I will come back to this issue in Chapter 5.

[167] Ledderose mentions in his “earthly paradises” two types of gardens, the paradise garden and the natural garden, the later one is rendered though with less auspicious animals and plants, however still “aiming at the quality of nature.” This art of design with “an unprecedented aesthetic consciousness” came alone with the phase of aesthetic awakening in the history of the visual arts in China in the Six Dynasties, see Ledderose, “The earthly paradise: religious elements in Chinese landscape art.” As an entertainment architecture, Lingzhao Xuan functions as a political retreat, in this light, it is understandable that the design adopts aesthetics of “natural garden.”

[168] Borrowing scenery (Jiejing 借景) is first proposed by the Chinese garden designer Ji Cheng 計成 (1579–1642) in his *Yuanye* 園冶 [Forging Garden], published in or shortly after 1635, during the Chongzhen 崇禎 era (1628–1644) of the Ming dynasty. The title of the last chapter of this treatise is the same word, *jiejing* 借景. Wybe also reflects on why Ji Cheng applies the term *jing* 景 instead of the more familiar term *shanshui* 山水 in Chinese two dimensional art and argues that *shan* 山 and *shui* 水, mountain and water, the two essential elements in Chinese landscape paintings are not equally focused while the former one is more of the main subject of landscape paintings. However, in the three dimensional arrangement of garden, the relationship between architecture, rocks, mountain, body of water is more subtle and complicated, Ji Cheng hence needs a new term to “introduce the broader idea of jing 景 (scene) as something that not only belonged to literature and painting, but could also be forged and redone to become part of a garden.” Meanwhile, Wybe Kuitert discusses on the translation of the term of *jiejing* 借景 in his essay which specifically dedicated to this last chapter and suggests the translation of

"Landscape that lends 借景" from the profound nature

Discourse on human activities and nature is an essential issue in architecture. In the classical European garden tradition, two types of gardens stand out for their rather opposite ideal of arranging the garden architecture and their environment. The French garden strikes for order, symmetry and the complete power over nature, while its English contemporary went the opposite direction and their garden architecture scattered like dots in the nature setting. Meanwhile, their counterpart, the Chinese gardens are on the restless seek of harmonious interactions between nature and human activities, which reflects on the essential philosophy of garden making, namely the "Landscape that lends."[169] Zong Baihua discusses on ethic aesthetics in his essay Consciousness of Space and Aesthetics Perception of Space, he argues that ancient Chinese were eager to stay in touch with the nature through the building and the windows: "…Unlike the Ancient Greek, who were unconscious about the view/the nature, for the Chinese aesthetics, the construction is meant to hidden in harmony with the nature."[170]

The ground floor of the construction of Lingzhao Xuan has in total six openings on the south (two windows and an entrance), the north (two windows and an entrance), the east (a side entrance), and the west (a side entrance). While at the same time, twenty-four windows in total are rendered on the four corner pavilions. This arrangement creates an airy and open space with views from all directions which is aligned with the ideal described in the *Forging Garden* 園冶，treatise on garden making by Ji Cheng 計成 (1579–1642):

"landscape that lends" instead of "borrowing scenery." See Wybe Kuitert, "Borrowing scenery and the landscape that lends — the final chapter of Yuanye," *Journal of Landscape Architecture*, v. 10, n. 2 (2015): 32–43.

[169] Wybe Kuitert examines in his article the chapter "Jiejing 借景" [Landscape that lends] from the perspective of a garden maker and suggests that the chapter is "an unambiguous, self-evident, and comprehensive conclusion of this book on garden making." "Landscape that lends" is more than "borrowed scenery as a single design idea but the essence of landscape design philosophy in its entirety." See Kuitert, "Borrowing scenery and the landscape that lends — the final chapter of *Yuanye*."

[170] Zong Baihua 宗白華, "Zhongguo shihua zhong suo bianxian de kongjian yishi" 中國詩畫中所表現的空間意識 [Consciousness of Space and Aesthetics Perception of Space in Chinese Poetry and Painting], in *Xin Zhonghua* 新中華, v.12, n.10 (May 1949): 311–336.

> Pavilions and columns are arranged well situated on rising ground, there are plenty of windows openings create an effect of maze and dazzle the eye. Through these windows, as if the scene of boundless ocean is captured, and the brilliant scenes of four seasons are beheld.[171]

Zong further quote poetries from Du Fu 杜甫 to explain the idea more concretely: "The window contains the thousand years of snow on the Western mountain ridge. The door holds the ten thousand mile travelling boat from Eastern Wu," also "cutting the window and door to excavate the emerald green."[172] The idea of perceiving the immeasurable and boundless possibilities from a limited frame (windows and doors), and the timelessness through the relatively permanent space (windows and doors). The bigger picture awaits to be unfolded through the small lens, which allows the transmission of time comes through the set frame. The abundancy of the nature is not only addressed by its endless range of different specifies but also by the timeless sceneries. This arrangement of Lingzhao Xuan offers a perfect opportunity to "lend landscapes" from "the distant, the nearby, the above, the below,"[173] and what it lends, is "responding to time."[174] In order to lend the landscape, one must first of all set the architecture at the suitable site as Ji Cheng further suggests in the *Forging Garden*, then it "would not be an issue no matter the scenes borrowed are from afar or nearby." [175] As aforementioned, the carvings of Lingzhao Xuan borrowed motifs from "afar" to create a trans-mundane vision in sight. With the carvings, the designer aims to achieve the ideal of one garden contains a whole microcosmic: "The body of water is not merely for chilling in summer, hundreds Mu[176] of filed

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[171] Original: 軒楹高爽，窗戶虛鄰，納千頃之汪洋，收四時之爛漫。*Forging Garden* 園冶, 44.

[172] Original: 窗含西嶺千秋雪，門泊東吳萬里船。鑿翠開戶鏞。 Zong Baihua, "Zhongguo shihua zhong suo bianxian de kongjian yishi," 311–336.

[173] Original: 遠借，隣借，仰借，俯借。*Forging Garden* 園冶, 41.

[174] Original: 應時而借。Ibid.

[175] Original: 得景則無拘遠近。Ibid.

[176] mu 畝 is a Chinese measuring unit currently equivalent to 666 and 2/3 meters squared in Mainland China, here is used as rhetoric to generalise an amount of fields.

is not merely to breed the spring, keeping deer in order to have company, breeding fish in order to catch them." [177]

This ideal is captured by the carvings on the wall of Lingzhao Xuan (**fig. 2.8**). If one steps into Lingzhao Xuan, views are provided as if one is "gazing from a highland into the boundless distance; far away peaks are aligned like a screen."[178] One of these unrolling Chinese landscape scrolls hanging on the wall of the Northwest (**fig. 2.9**): the scene of crane and deer celebrate the spring 鶴鹿同春 (**fig. 2.10**). While the crane with a lingzhi mushroom 靈芝 (auspicious healing plants) in its beak on the right side of the scene is spreading its wings and about to take off, the deer beneath gazing upwards in a response position.[179] To inhale the fresh chill of summer, one could trace the fragrance of lotus flowers lingers in the pond to contemplate on the birds chirping among the dense emerald green, the swaying pink and white (**fig. 2.11**). Without a sense of the passing time, it transits from late autumn into winter, and luckily, one come to the realisation in time to "behold a last chrysanthemum flower on the bamboo fence and it is time to call on the warm hillside for a first plum (**figs. 2.12–2.13**)."[180] "It would appear to be unusual for flowers not to wither, but picking from landscape always generates something new." [181] These is aligned with the very beginning of the chapter "landscape that lends":

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[177] Original: 一灣僅於消夏，百畝豈爲藏春，養鹿堪遊，養魚可捕。*Forging Garden* 園冶, 44.

[178] Original: 高原極望，遠岫環屏。Ibid.

[179] This motif is an auspicious motif in Chinese arts celebrating harmonious and flourish spring, often combined with pattern of flowers and pine trees. More on "crane and deer celebrate the spring 鶴鹿同春," see Wu Shan 吴山, ed., *Zhongguo gongyi meishu da cidian* 中國工藝美術大辭典 [Dictionary of Chinese Arts and Crafts]. (Nanjing: Jiangsu meishu chubanshe, 1999), 994. Liu Bo 刘波, ed., *Zhongguo minjian yishu da cidian* 中國民間藝術大辭典 [Dictionary of Chinese Folk Arts] (Beijing: Wenhua yishu chubanshe, 2006). Arts in the same motifs see "crane and deer celebrate the spring" (68 x 52 cm) with the Chaozhou embroidery 廣繡 methods, in Palace Museum. A Hanging scroll (175 x 88 cm) from Li Shan 李鱓 (1686–1757) rendered in year 1746.

[180] Original: 但覺籬殘菊晚，應探嶺暖梅先。English translation adopted from Wybe Kuitert with slight changes by the author.

[181] Original: 花殊不謝，景摘偏新。Ibid.

> There are no fixed rules in garden creation; it all depends on what the landscape lends. The four seasons are essential, but is there any relation to the eight directions?[182]

Without any pre-set principles and fixes standards, the landscape lends itself to "elicit sentiments: depending on the eye, as well as what touches the heart." [183] This idea is demonstrated by the arrangement of scenes on Lingzhao Xuan's carvings in a whole as well: the four walls on the respectively four entrances (two main entrances on the south and the north, two side entrances on the east and the west), the total twenty-four walls of the four corner pavilions are decorated with natural vegetarians, miniature landscape in trays (*penzai* 盆栽), auspicious creatures, domestic animals, insects and birds, auspicious patterns, shelf for the connoisseur of antiquities (*bogu jia* 博古架); on upper part of the base, patterns of waves and sea creatures are carved as well as aforementioned. These scenes vary in a random, spontaneous manner, or, if one comes from the seventeenth-century transcultural background and with knowledge of Japanese garden would addressed it as the *sharawadgi* style: "Irregular but agreeable." [184] This indication of abundancy of nature, boundlessness and timelessness successfully achieves the ideal of "though constructed by men, yet as created by the universe."[185] Once this abundancy of nature, a boundless and timeless space is manifested, one, an educated elite, could put off all the mundane responsibilities and liabilities and invite oneself

[182] Original: 構園無格，借景有因。切要四時，何關八宅。Ibid.

[183] Original: 然物情所逗，目寄心期。Ibid.

[184] The irregularity and asymmetry of the carvings awaits further research. Here I will take one panel on the southeast tower as an example to address the issue: On the top of the panel, a sprig of plum blossoms is shown on the left and peonies on the right. Beside the window, a similar motif of plants in spontaneously arranged pots is evident, where branches stretch out without any rigid symmetry. Also asymmetrical is the lotus motif derived from the Buddhist tradition, *baoxiang hua* 寶相花, on the window frame. This deliberate arrangement of asymmetries and spontaneities in the carvings on Lingzhao Xuan are probably relevant to the fact that the craftsmen use albums as draft, hence the books on model provide different kind of drawing possibilities of one subject, the craftsmen chose differently when they are commended to carve. I thank Dr. Wang Lianming for this thought-provoking information, personal discussion in July 2021.

[185] Original: 雖為人作，宛如天開。Chen Zhi, *Yuanye zhushi* 園冶注釋 [Comments on Garden Arrangement (of Ji Cheng)], v. 3, 233–237.

to step into space Lingzhao Xuan to indulge oneself with all the activities with fine tastes in the studio.

"Spot-suits-mind 會心處": man's intimacy with nature and the concept of "nature and man harmonious in one 天人合一"

To retreat into one's studio hidden in the natural garden, an educated elite in Ancient China steps into a space "beyond the confinement of the common world."[186] In this safe sphere, one could detach oneself from the political and social liabilities and responsibility and be content with one's own in this "spot-suits-the-mind."[187] Differ from the encounter between heavenly beings and men which is to expect in the paradise garden, the focus of natural garden shifts to the interaction between nature and men. The abundancy of vegetarians and animals symbolize man's intimacy with the nature and their gratitude and appreciation towards the boundlessness and timelessness of the nature. In either case, a space of trans-mundane is await to manifest, in which "thoughts beyond the vulgar world suddenly arise, as if one enters a painting to travel inside it."[188] In this space, one could free all thoughts and imaginaries and achieve the stage of "Nature and Man harmonious in One."[189]

In construction of imperial architecture in the Forbidden City, "Nature and Man harmonious in One" belongs to most essential leading principles. Zhou Qian explains in his

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[186] Ledderose, "The earthly paradise: religious elements in Chinese landscape art," 172.

[187] "The spot that suits the mind isn't necessarily far away. By any shady grove a stream one might quite naturally have such thoughts as Chuang Tzu (Zhuang Zi) had by the rivers Hao and P'u, where unselfconsciously birds and animals, fowls and fish, come of their own accord to be intimate with men." Quoted from Ledderose, "The earthly paradise: religious elements in Chinese landscape art," translated by Richard B. Mather, in *Shih-shuo Hsin-yü: A New Account of Tales of the World*, Minneapolis, 1976, 60.

[188] Original: 頓開塵外想，擬入畫中行。Translation adopted from Wybe Kuitert.

[189] The Daoist ideology of "Nature and Man harmonious in One" from Chinese indigenous philosophy, one of the spiritual thoughts that has the essential impact and influence on China and Chinese identity, demonstrates an admiration and humbleness towards the nature and presents the openness to the course of nature and the willingness to take a harmonious path. The "Nature and Man harmonious in One" is a basic principle for ancient Chinese to reflect on the relation between human being and nature, as well as to deal with conflicts and differences that occurred in the interaction between the two. This is a philosophy that reflects a wisdom of response rather than react, which offer harmonious and sustained guidance and method that is too evident in Chinese art, especially in the Chinese architecture, course the interaction between the nature and the human being is enormous in this field.

Study on Concept and Idea of the Ancient Architecture in the Forbidden City in Beijing (2019) upon the concept of “nature and human (harmonious) in one” that, in his understanding, the concept could be understand in the context of imperial architecture as below: the character sky 天 refers to the universe and the nature forces that are recognizable such as wind, rain, thunder, and lightening, while the character man 人 refers to the social activities that human being carry out (in order to survive and adjust themselves to the nature.) The meaning of “nature and human (harmonious) in one” in the context of imperial architecture could be understood from two perspectives: Human being and universe appear in different forms yet share the identical essence; Activities of human being hence should path or mirror the force or law of nature or universe in order to harmonise with the environment. This philosophy is fully and abundantly applied and presented in the largest-scaled and most well-preserved imperial architectural complex, namely the Forbidden City in Beijing.[190] Meanwhile, the imperial garden appropriates elements from other Chinese garden arts, one of them is the literati Suzhou garden, which is one of the elegant types and reveals the ideological connotation and artistic rules with its profound cultural deposits.

Lingzhao Xuan’s carvings demonstrate these profound inspirations furthermore: the representation of elite fine tastes and activities through carvings addresses the ideal of “nature and man harmonious in one.” Scenes are lent to the greatest extend where the inner setting of an elite studio reveals itself to show what exactly “touches the heart” and “suits the mind.” Continuing with the concept of bringing profoundness under a microcosmic is the miniature landscape in trays (*pengjing* 盆景) on the wall.[191] Through the dense Bamboo groves that grow

[190] Zhou Qian, *Zijincheng gu jianzhu yingjian sixiang yanjiu*, 16–28.

[191] The carvings of Lingzhao Xuan demonstrates the adaptation of European painting technics that are introduced into Chinese paintings by the missionary painters at Qing court, for instance, the perspective technic. The European and Chinese hybrid painting from the Jesuit painter at the Qing court, Giuseppe Castiglione 郎世寧 which adopts the highlight technics and perspective technics was exemplifies in the colour patterns 彩畫 on the architecture in imperial garden at the Tongzhi era (1861–1875). This demonstrates that this style is well accepted in Qing imperial garden stone decoration as well. I withdraw from the discussion on the perspective technics in the current study,

above the roofs (indicated by the carving panel beneath the window), one is like a bird to catch a glimpse of the elite garden, and to be amazed by the plants of Buddha's hand (bergamot citron) flourishing between branches of peony and Granada flowers (panel of carvings on the top of the window). While the plants of Buddha's hand are well taken care of and already bearing fruits, the Granada is still on its flower season (**fig. 2.14**). Even in one's studio, an elite indulges oneself among the plants and miniature landscape to cultivate his heart and mind.

This is the visual representation of philosophical concept that are preserved in Chinese culture and aesthetics. The material visualization of these thoughts and idea has a broad and profound philosophical background. The ideology "nature and man harmonious in one" is not only the essence of traditional culture, but also the composition principle with which our Chinese ancient buildings complied. In terms of the concept of "Nature and Man harmonious in One 天人合一" in the Chinese Daoist philosophy, the character sky (*tian* 天) could mean the supreme force of the universe, the boundless nature, or the highest principle. "Harmonious in one (*heyi* 合一)" indicates and expects that, the both forces of nature and human (*ren* 人), despite the stage of constant contradictory, are inseparably reliable on each other, in order to pursuit a stage of harmonious existence, by the means of "exploring both boundaries of nature and the mankind and reaching the ends of the changes from the past and present,"[192] which itself indicates an restless and endless process of pursuit of harmony.

Beside industrious study of classics, another way "reach the ends of the changes from the past and present" is to study the antiquities. To have extensive knowledge of antiquities is a symbol of knowing the past as well. Shelf for the connoisseur of antiquities (*bogu jia* 博古架) in one's studio demonstrates the fine taste and the wide erudition of the owner. Painting of

but simply pointing out these technics contribute on creating a more vivid three-dimensional effects in the Chinese paintings and as well as in the case of Lingzhao Xuan's carvings.

[192] Original: 究天人之際，窮古今之變。see Sima Qian, Bao Ren'an Shu 報任安書, in *Records of the Grand Historian* 史記 (c. 100 BCE).

antiquarian studies originate from Song dynasty, when the Emperor Huizong ordered to paint and collect images of the imperial collection of antiques (*jinshi guwan* 金石古玩) into *Paintings of Antiquarian Studies in Xuanhe Era* 宣和博古圖 in thirteen volumes. Paintings that depict antiques were addressed as Painting of antiquarian studies (*bogu tu* 博古圖) ever since. After Ming dynasty, pictorial decoration of erudite for antiquarian studies started to emerge in mural paintings, geography, sculpture, prints and other crafts art, in the field craft art, in ceramics, weavings, metal works, lacquers, wood carvings, brick carvings.[193] Nie Chongzheng compares still-life painting in European tradition and painting of Antiquarian Studies in Chinese tradition and suggests that they are coincidently familiar with each other, apart from the different approaches, still-life painting in European tradition and painting of antiquarian studies in Chinese tradition reach the equally satisfactory results, even though they serve different purpose. The European still-life comes from the Flemish genre which use human skull, candles, sandglass to represent death, flowers and fruits to symbolize the circle of nature,[194] the Chinese "still-life" representation mostly serves the purpose of wishing for blessing, happiness, safety and harvest.[195] There are in total six panels of *bogu* scenes depiction, and they are all on the south façade, i.e., the main entrance. Four are rendered on the window frames and two are on the panels beneath the columns on both sides of the entrance, indicates the enter of a space of studying and contemplating. (**figs. 2.15–2.16**) One feels like incarnating to an auspicious phoenix (On the right side of the picture) and taking a nap in a safe space surrounded by classics.

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[193] There are two types of paintings for antiquarian studies, one is with figures and narrative, mostly with emperor and imperial servants, another one is still objects, more details see Yang Xiaojun 楊小軍, "Juanzhouhua zhiwai de bogutu" 卷軸之外的博古圖 [Motifs of studying antiquities outside Paintings], *Zhongguo shoucang* 中國收藏 [China Collection], (2014): 88–91. Famous examples of paintings of Studying Antiquities are the one painted by Liu Songnian 劉松年 (?–ca. 1225) in 1211, also Ren Bonian 任伯年 (1840–1895) in 1882.

[194] Micropædia volumes. The twelve-volume Micropædia is one of the three parts of the 15th edition of Encyclopædia Britannica.

[195] Nie Chongzheng 聶崇正, "Jingwu hua yu bogu tu" 靜物畫與博古圖 [Still-life Painting in European Tradition and Painting of Antiquarian Studies in Chinese Tradition], *China Academic Journal Electronic Publishing House* v.6 (1995): 60–62.

The misty fragrance from the incense burner is floating around the precious vase, while the visual contradictory of the emerald green banana leaf and the sweet pink peony brings one back to the reality.[196] Feeling like in a snap, the ideal of paradise gardens and natural gardens in Chinese tradition delicately merge into a whole at the architectural site of Lingzhao Xuan: as the descendances of the heaven, the imperial patron immerse in the light of heavenly blessing for their “benevolent governance.” While at the same time, they are blessed to retreat from the mundane world for indulging themselves in complete free spirit. In both scenarios, Lingzhao Xuan is transformed into a timeless trans-mundane space, away from the realm of mortal and temporal existence.

Conclusion

The profoundness of the universe, the boundlessness and timelessness of the nature, the “ten thousand things” of the mundane world merges into the architectural site of Lingzhao Xuan into a whole microcosmic that manifests a trans-mundane world. Whether in the context of a paradise garden with the idea of governing benevolently and sharing wealth and happiness with people in order to pray for blessings from the divine force in the universe, or in the context of natural garden with the vision of retreating from politics and works to indulge themselves in literati activities such as antiquarian studies and to cultivate their mind in the nature by observing the changing sceneries and abundancy provide by time and space, the design of Lingzhao Xuan aim at offering the visitor a timeless trans-mundane space, where the visitors forget all their mundanely burdens and responsibilities and feel like entering into a crystal clear, transparent “Bright realm.”

The landscape of “earthly paradise” is created with the two essential complementary elements, namely mountain and water is turned into a “microcosmic replica of universe” with

[196] The auspicious motif of banana leaves and peonies together demonstrates the wish of happy and long lasting connections and love.

the arrangement of selected minerals, plants, and animals as aforementioned.[197] Perceived in this light, the architectural site of Lingzhao Xuan is also a cosmic garden "in a more concentrated form."[198] Of all reasons that why the imperial patrons in the late Qing dynasty in China approved the project of constructing a "European building" in the imperial garden, the embrace of Chinese traditional philosophical and aesthetics concepts and the sophisticated arrangement and integration of both Chinese and non-Chinese heritage allowed the success of the construction of Lingzhao Xuan. As interpreted in this chapter, the imperial endowed name of Lingzhao Xuan is both aligned with the tradition of "benevolent governance" and with the tradition of constructing garden and water area to keep auspicious animals for religious purpose or for praying for heavenly blessings. Physically perceived, Lingzhao Xuan creates a symbol of "sacred island rising from auspicious sea" that originates from the tradition of Chinese earthy paradise, which further address the intention of creating a trans-mundane space in this spatial context. "Landscape that lends" from the profound nature, which surrounds the main marble structure of Lingzhao Xuan and gives the aureole of boundlessness and timelessness allows the architectural space to become a whole, a microcosmic that promises a peaceful and joyful retreat and adventure into a trans-mundane world to achieve the divine feeling of "Nature and Man harmonious in One."

The imperial audiences who are familiar with the Chinese essence of an auspicious setting are invited to imagine themselves entering a space which provides familiar visual provocations that are aligned with the Chinese garden traditions, the concept of nature and man harmonious in one that presented in the carvings motifs as well as in the arrangement of spontaneity and asymmetry. The familiar provocation ludes the audience to be curious, relax and open to walk into the rather cold-and-colourless, which is rather sinister, unfamiliar and uninvited in Chinese aesthetics, where the European engineering and technics complete the

[197] Ledderose, "The earthly paradise: religious elements in Chinese landscape art," 165–181.

[198] Ibid.

transformation from a mundane garden of a trans-mundane immortal timeless space. More intriguingly, the ideal of “Nature and Men harmonious in One” and the vision of creating a trans-mundane world at the site of Lingzhao Xuan is further affirmed by manifesting an underwater world wonderland in the underground, which will be unfolded in the following chapter in the light of the interaction between the European “Crystal Palace” for exhibitions and the Chinese *shuijinggong* 水晶宮 (Crystal Palace) for deities dwellings, in which the planned aquarium which appropriated the then building materials and engineering technologies of European and North American countries await a detailed and refreshing scrutinization.

Chapter 3 Crystal Palace as Imperial Fishpond: Arrangement of Auspicious Water

"Glass covers the floor and [it allows the vision to] pass over the deep pond, underfoot are swimming fish that play among lotus blossoms

玻璩布地穿深沼，足下游魚戲芰荷。"[199]

Studies of *topos* and concepts of *shuijinggong* 水晶宮 (Crystal Palace) in Chapter 1 demonstrate that, in the Chinese architectural context in the Qing dynasty (1644–1911), this Chinese term refers both physically to architecture and parabolically to one's enlightened state of mind, which all relate to the physical proprieties of glass: translucency, polychrome, and impermeability.[200] In this chapter, the study extends further to discuss the physical realisation of a "Crystal Palace" at the site of Lingzhao Xuan, whose underground aquarium was built to

[199] On the written character of *li* 璩, which is slightly variated from the modern standard character "璃" and the term of glass (*boli* 玻璩 or 頗黎, also 玻璃 in modern Chinese), see *Characters with Radical "Jade"* (*yu bu* 玉部) in *The Kangxi Dictionary* or *Compendium of Standard Characters from the Kangxi Period* (*Kangxi Zidian* 康熙字典, 1716), where it mentions the "jade" of glass is a national treasure of "the West" (*xi guobao* 西國寶) that was recorded in the *Broad Rimes* (*Guang yuan* 廣韻, 1008). "Court Eunuch of Three Treasures (三保大監 Sanbao Dajian, namely Zheng He 鄭和, 1371–1433/1435)" of the Ming dynasty (1368–1644) commanded expeditionary treasure voyages to "the West 西洋" (actually Southeast Asia, the Indian subcontinent, Western Asia, and East Africa) from 1405 to 1433 and brought back craftsmen for glass-making which led to the price of glass in China to decline rapidly. The glass produced by these foreign craftsmen were and light and full of air bubbles. The satirical poem is cited from Gao Shu 高樹, see relevant entries in Chapter 1.

[200] I use the term *topos* here from a literary perspective to refer to theme and motif. *Topos* comes from classical Greek rhetoric and has been studied by Ernst Robert Curtius (1886–1956) as "commonplaces (Gemeinplatz)," themes common to orators and writers who re-produced them according to occasion. Ernst Robert Curtius, *Europäische Literatur und lateinisches Mittelalter*, 11. ed., (Marburg: Francke Verlag, 1993). The term "Crystal Palace" in English and *shuijinggong* 水晶宮 (Crystal Palace) in Chinese undoubtedly evoke varying perceptions among audiences from diverse backgrounds. My argument is that in the case of Lingzhao Xuan, both terms merge in one place and create a fantastical image that both Chinese and foreign audiences could relate to. Please refer to the third section of Chapter 1 for a full discussion of this. Depending on the technologies of glass production, translucency is distinguished from transparency, especially because using transparent glass for architecture was never a tradition in ancient Chinese architecture. The reasons to this lie beyond the scope of my recent study. Also, the polychrome effect is produced sometimes due to the interaction between glass and light that without having pigments in the glass *per se*.

simulate an underwater realm for deities, and the contribution of its design to achieve the state of "emptiness (*kong* 空)."

Mountains and water (*shanshui* 山水) are two constitutive elements that compose a landscape in China.[201] As the "sacred mountain" – the main building – is given material form, the "auspicious water" is accordingly delicately managed, transforming the site of Lingzhao Xuan into a "Crystal Palace (*shuijinggong* 水晶宮)" that manifests an underwater trans-mundane space, where the imperial patrons could achieve complete relaxation and the mental state of emptiness and selflessness when they are bedazzled by otherworldly *tableaux vivants* of the arranged underwater flora and fauna.[202]

While the exposed iron-and-glass structure on the ground catches the eye even from afar, the "aquarium" that in the underground floor is less conspicuous at first sight. First, the application of glass and a pumping system that would have allowed the construction of a modern aquarium at Lingzhao Xuan led to it being dubbed a "Crystal Palace" in a global industrialised context.[203] Second, this layout provides a vivid moving picture of swimming fish when viewed from inside the underground hall, and specifically thanks to these technical features, an underwater trans-mundane space is manifested that approaches the ideal of a Chinese "Crystal Palace", an underwater realm for amphibious deities. As an "Earthly Paradise" is manifested by the "sacred mountain," the underwater "Crystal Palace" contributes to a revolutionary shift of perspective in the tradition of contemplating fish in China. Making use

[201] This applies to traditional Chinese landscape painting as well. For more information on Chinese landscape painting, see Michael Sullivan, *Chinese landscape painting* (Berkeley: University of California Press, 1980).

[202] Meaning "Living Polyrama", the Polyorama Panoptique, an optical toy popular from the 1820s through to the 1850s, was invented by Pierre Seguin as development of the earlier "protean view". The device was based on Daguerre's Diorama and was a reduced and simplified version for domestic use. It consisted of a portable box-camera designed to take printed and painted cards. More information on the device, see Eric Kluitenberg, Siegfried Zielinski, Bruce Sterling, and Erkki Huhtamo, *The Book of Imaginary Media: Excavating the Dream of the Ultimate Communication Medium* (Rotterdam: NAi Publishers, 2007).

[203] For information on the engineering design of the aquarium at the site of Lingzhao Xuan, see Ulrike Wulf-Rheidt et al., 2018. Several attempts have been made by researchers from different fields to explain the arrangement of the aquarium on the basement by mostly comparing it to the nineteenth-century European Grotto-aquarium.

of an aquarium integrates the experience of "losing oneself/selflessness" and "*se madréporiser* (transform oneself to Madrepora)" that is not unfamiliar in every culture into the traditions of contemplating fish, ultimately transforming one's mind into a translucent "Crystal Palace" as in the Chinese context.[204]

With "aquarium" as a secondary function, Lingzhao Xuan is simply aligned with the tradition of fish contemplation in conventional Chinese garden aesthetics and can be considered an imperial household entertainment architecture. The ambition of building a scientific research station can be ruled out in this case, and so can a tourist attraction because of its location within Inner Court of the Forbidden City. As an organic whole, the "mountain" (terrestrial) stylised in an exposed glass-and-iron structure and the "sea" (aquatic) in an underground floor with glass separating the observants and observers, but what encapsulates the "uniqueness" of Lingzhao Xuan among other amusement architecture in the Qing imperial garden is actually reminiscent of a domestic aquarium in the Europe and North America, like a paludarium, or a fountain aquarium, which represent miniature of universe, a microcosm and simulacrum of the realms of water, earth, and air, all in one as well, however, taking up more of the modern scientific approaches of marine studies in the nineteenth and twentieth century.

To this end, when the imperial patrons of the Qing stepped into the "Crystal Palace" of Lingzhao Xuan, which was a privilege of the imperial household at the time, they entered a mystic trance that in a sense analogous to a drowsy daydream, where they shared the same experience that was described in the *Great and Most Honoured Master* 大宗師 in *Zhuangzi* 莊子: "The world and I being born together, I am continuous with all things."[205]

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[204] Jules Laforgue to Théophile Ysaÿe, letter written in June 1885, in *Oeuvres completes* (Lausanne: L'Age d'Homme, 1995), v. 2 (1884–1887), 766.

The term *shuijinggong* 水晶宮 (Crystal Palace)" appears in the Chan Buddhist tradition (chan zong 禪宗) for rhetorical purposes to refer to a mental state of absolute emptiness, see Chapter 1 for more details.

[205] Original: 天地與我并生，萬物與我爲一。Roger T. Ames's translation, in Roger T. Ames and Takahiro Nakajima, *Zhuangzi and the Happy Fish* (Honolulu: University of Hawai'i Press, 2015), 266.

3.1 Fish Tank to *Tableaux Vivant*: Lingzhao Xuan as Aquarium

As details demonstrated in Chapter 2, the main construction sits in a pond, which structure is less uncommon in a Chinese garden setting and is ties to the symbolized "sacred mountain" in the imperial garden tradition (**figs. 2.2–2.4**).[206] Nevertheless, the design of the underground floor of Lingzhao Xuan takes a step further from the conventional imperial fishpond. The visions of this "fishpond" have been widened. Apart from watching fish in the courtyard directly to the pond, another perspective is now available, namely from the main hall in the underground floor, visitors could observe the image of the pond from transparent and waterproof glass windows and imagine themselves entering a gallery-like space to enjoy an exhibition (**figs. 3.1**–**3.2**). In this an integral part of the "auspicious mountain raising from a numinous sea," the infinity of another domain, the underwater wonderland, is obtainable regardless the physical constriction of a human body.

As discussed in the first chapter, Lingzhao Xuan is commonly referred to as the "Crystal Palace" at Qing court, first and foremost, due to its glass-and-iron structure. Thanks to the current studies that focus industriously on building materials and engineering techniques, the fact that its extravagant iron structure which draw its reference back to the "Crystal Palace" in the London Great Exhibition in 1851 is beyond question.[207] Nevertheless, reasons of Lingzhao

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[206] The pond is 45 x 33 m, and 3,4 m in depth, which forms a square that are rather out of fashioned at the time. The trend of square pond 方池 comes from the Jiangnan gardens, however was replace by the ideal of pond without rigid form from the Ming dynasty onwards. See Gu Kai 顧凱, "Chongxin renshi jiangnan yuanlin: zaoqi chayi yu wanming zhanzhe" 重新認識江南園林：早期差異與晚明轉折 [New Understanding on Jiangnan Gardens: Difference in the Early History and Transition in the Late Ming], in *Jianzhu xuebao* 建築學報 [Journal of Architecture], n. 4 (March 2009): 106–110.

[207] Lingzhao Xuan is "a stone-iron construction with cast iron and steel supports for floor and ceiling construction, pavilion-like super structures with iron and steel profiles, even steel door castings and window frames." More details on its metal structure, see Wulf-Rheidt, Ulrike et al. Peking, Volksrepublik China. Der sog. Crystal Palace in der Verbotenen Stadt. Bericht über die Summer School 2016. E-Forschungsbericht des Deutschen Archäologischen Institut, 2 (December 2017): 59–68, accessed December 5, 2021, https://publications.dainst.org/journals/efb/1989.

Also see Chun Qing 淳慶, et al. "Gugong Lingzhao Xuan cansun fenxi ji jiegou xingneng yanjiu" 故宮靈沼軒殘損分析及結構性能研究[Research on damage to and structural performance of Lingzhao Xuan in the Forbidden City], in *Wenwu baohu yu kexue kaogu* 文物保護與科學考古 [Sciences of Conservation and Archaeology], 1 (March 2018): 40–46.

Xuan being a "Crystal Palace" are far more profound than that, namely, at this architectural site, a dream of the Chinese "Crystal Palace" also gained material, with the very support of the cutting-edge building materials and engineering technics from Europe and America.

While the choice of building materials allows an exposed glass-and-iron structure to create an airy and extravagant effect, the materials used in the underground are far more than merely for decorative purpose, as for an "aquarium" to function, a planned "modern fish pool" with waterproof glass that separate the observers and the observants and plumping device that build a closed water system come into play.[208] It is legitimate to claim that, there is a secondary function of an aquarium[209] at the site of Lingzhao Xuan, which is mainly realised by the basemen and the tank, and plausibly also the five pavilions on the second floor.[210]

The German Archaeological Institute proposed in their studies in 2018 which mainly focus on cleaning and structural improvement that the possibilities of western aquaria inspired the "vision of the last Emperor of China of a modern fish pond with clear water to gain shape."[211] As discussed in the first chapter, historical visual and textual evidence also indicate the intension of keeping fish for entertaining purpose at the site of Lingzhao Xuan as well, as in many cases in the imperial garden ponds. However, differ from the conventional observation from the water side with a rather unclear water quality, the architectural site intends to provide

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[208] These form a semi-closed, or closed water system at the site of Lingzhao Xuan. In contemporary description, Lingzhao Xuan is said to directly linked to water area outside the Palace with a cannel that could travel boats, with which could claim the water system to be semi-closed ("[...] The floor could also be opened and shut and was lifted open at times. [One could] ride a small boat to go straight outside of the palace. [...] 地板又可開闔。時或揭起。駕小舟直達宮外。" In Lu Baoxuan, *Manqing Baishi*, v. 15, 1111. Translated by author. However, there is no physical evidence to confirm this claim, so the water system of Lingzhao Xuan is a closed one. More details on the waterwork of this site, see Wulf-Rheidt, Ulrike et al. 2017.

[209] On the history of the home aquarium: J. W. Atz, "The Balanced Aquarium Myth," *Natural History*, n. 58 (1949): 72–77, 96; L. Barber, *The Heyday of Natural History: 1820–1870* (London: Cape, 1989), Chapter 8; P. H. Gosse, *Handbook to the Marine Aquarium* (London: Van Voorst, 1855); J. Harper, *The Sea-Side and Aquarium*, or, *Anecdote and Gossip on Marine Zoology* (Edinburgh: William P. Nimmo, 1858); E. Lankester, *The Aquavivarium, Fresh and Marine Being an Account of the Principles and Objects Involved in the Domestic Culture of Water Plants and Animals* (London: R. Hardwicke, 1856); and G. H. Lewes, *Sea-Side Studies at Ilfracombe, Tenby, the Scilly Isles, & Jersey* (Edinburgh and London: W. Blackwood, 1858). William Alford Lloyd, "Aquaria: Their Past, Present, and Future," *The American Naturalist* (1876).

[210] Ulrike Wulf-Rheidt et al., "Peking, Volksrepublik China," 64–66.

[211] Ulrike Wulf-Rheidt et al., "Peking, Volksrepublik China," 60.

an experience from the aquarium gallery from the underground floor with the help of European pumping water system to keep the water flow and clear.[212]

As aforementioned, the building of Lingzhao Xuan is set in a 45 x 33 m tank, which is 3,4 m in depth.[213] The stone base sits in the tank with its upper part of the cornice slightly protruding the ground, which allow tiers of the cornices to be viewed from the ground. Unlike the wall façades of the ground floor, which are abundant with carvings and sculptural figures, the wall façades of the base are less decorated with carvings. Trace of waves are to detect on the cornice of the base while figures of goldfish and octopus are randomly arranged, which enhance the image of water domain (**figs. 3.3**). There are 27 openings (windows) on the basement wall, 3 on the south, 4 on the north, 1 each on the east and the west, 4 each on the southeast and southwest corners, 5 each on the northeast and northwest corners. As suggested afore, these openings are meant to fit with waterproof glass to separate the observants in the underground hall and the observed swimming fish and floating seaweed in the pond, and as result, observants could have strolled and dwell in this underwater gallery after descending by the stairs arranged inside the four corner towers.[214] They would be amazed at the scene of an underwater wonderland through the glass, as if contemplating a scene in front of a moving painting. From an entry in the *Notes from the Beginning to the End of the Qing History* 清史記事本末, published in 1914 by a certain Huang Hongshou 黃鴻壽 (date unknown), this sensational effects are mentioned. Regardless of some unproven exaggerations about this building, Huang's text points out the revolutionary aspects of Lingzhao Xuan as a spot for fish observation:

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[212] Details on the pumping system that realized by the European engineering design, which should have allowed the water re-circling from the pond to the top of the pavilions, please refer to the studies on engineering technics which is conducted by the cooperative team from the Palace Museum Beijing and the German Archaeological Institute (Deutsches Archäologische Institut).

[213] Ulrike Wulf-Rheidt et al., "Peking, Volksrepublik China," 61–62.

[214] In the recovery image of Lingzhao Xuan, plausible staircases are rendered in the four corner towers, to allow visitors to descend from the first floor to the basement. However, at the site of Lingzhao Xuan, stairs are hard to identify in its current condition.

> [...] (A) palace was erected in the middle of water, all together (count) three stories. Every story has nine rooms, [in addition to these], there are four pavilions on the four corners [to the main construction], [which make the whole building) count thirty-nine rooms. [The construction] use bronze as column, use glass as wall, and offered unblocked/bright and effulgent panoramic views of the surroundings. One who entered the space had the impression of being in a world of glass. Between walls there was water, where fish were kept. The lowest level also had a floor made of glass. Bending one's head and looking down, [one is] able to count the fish in the pond one by one. Floating heart and duckweed were [abundantly grown] in different heights and lengths, verdant as in a painting. The floor could also be opened and shut, and was lifted open at times. [One could] ride a small boat to go straight outside of the palace. Glass was also used for the middle and top floors (of the structure). On the roof of the upper floor, there were even several glass tanks, [which are] for the use of rearing fish. All the stairs were located outside the palace. [The stairs which were set starting] inside the south-eastern pavilion meandered upwards so gradually that one does not realize [he is ascending steps].[215]

It is evident that a three-story building is standing in the middle of the water, the materials of metal and glass, alone with the effect of translucency are mentioned. However, the ground of the first floor, i.e. the ceiling of the basement, and the ceiling of the first floor are laid with glass panels in his description is beyond the current physical evidence: The outside-located stairs that mentioned in text are untraceable, according to both current research and visual evidence, neither nor the openable floor. Meanwhile, the water system of the site is independent, which means possibilities to "ride a small boat to go straight outside the palace" from there is out of the question. However, the "several glass tanks" on the roof refer obviously to the current steel remaining structure of the five pavilions on the top, which provide a possibility that they are also planned to use as aquarium, even though this is not proven by any contemporary research on the structure, the idea of using glass to achieve the a much wider view of an underwater

[215] Original: 宮立水中央，凡三層。層九間，又四角各有一亭，記三十九間。以銅作棟，以玻璃爲墻，四忘空明。入其中者，如置身琉璃世界。墻之夾層中，置水蓄魚。下層地板，亦以玻璃爲之。俯首而窺，池中游魚，一一可數。荇藻參差，青翠如畫。地板又可開闔。時或揭起。駕小舟直達宮外。中上層地板亦用玻璃，上層頂更有玻璃鋼數事，爲蓄魚之需。樓梯皆置宮外。由東南亭内。曲折環繞。漸升而不自知也。In Huang Hongshou, *Qingshi jishi benmo*, v.75, 563.

world is evident.[216] To keep the water clear, modern water installation was set up, so that water in the pond can pump up through tube system to a ton in the central pavilion, where the water spring out and float down as in a fountain setting (**fig. 3.4**).[217]

The "Crystal Palace" is built for the sake of the young emperor, who might need "fresh air, a bright outlook and pleasant scenes after school-time or during intervals of studying his lessons," simply put, it is built for novelty and enjoyment. Without mentioning the underground "aquarium," the construction with "glass walls," "glass floors," "glass pillars," and with the electric lights at night is transforming into a "fairyland."[218] Until in the report of the German Archaeological Institute in 2017, researchers put forward the term of aquarium and propose the Berlin aquarium (1869–1910) as the structural prototype of Lingzhao Xuan from an engineering perspective.

As interpreted in Chapter 2, the site of Lingzhao Xuan manifest a cosmological space itself, which is also similar to the paludarium, as a self-sufficient system.[219] Without doubt one could address Lingzhao Xuan as also an "one-of-a-kind," not from the perspective of mechanical realisation, but rather from the sense of its hybrid concepts: A Chinese "Crystal

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[216] No current research touch on the plausible function of the five iron pavilions, in the report of Ulrike Wulf-Rheidt et al., researcher mention the airy pavilions indicates the "harmony between water, earth and the air (Harmonie zwischen Wasser, Erde und Luft)" at the site, without further discussion on their function. See Ulrike Wulf-Rheidt et al., "Peking, Volksrepublik China," 65.

[217] Similar setting of glass windows and fountain with European engineering are also found in other site in China. For instance, in the Xu Garden 徐園 built by Xu Lishan (徐棣山, 1843–1901) in Shanghai, "stones are piled up as artificial mountain, windmills are rendered on the top of the mountain, when the wind comes, the machine moves, the pumping machine pumps the water upwards, again to the fountain in the pond, from which the water stream is sprayed out for the height of more than one *Zhang*. 累石為假山，山上張風車，風來車動，吸水機則吸水上升，復注入池中之噴水機，由此機噴出，高可丈許。" Similar device is also mentioned in the Tao Garden 韜園 in Nanjing (First Public Garden 南京第一公園). The original Tao Garden was built by Cai Hepu (蔡和甫, ?) in the first year of Xuantong (1909) on the east side of the Fucheng Bridge 復成橋 alongside the moat of the former Ming Palace. To his wish for "concealing one's capabilities 韜光養晦", Cai built a hidden garden in a hybrid manner with both Chinese and Foreign influence. Meanwhile, the Yihong Garden 宸虹園 (also known as Garden of Family Zhao 趙家花園) in Shanghai was built in "European manner," though without further mentioning on fountain. More on public and private gardens in the Qing dynasty, see Xu Ke 徐珂, ed., *Qingbai Leichao* 清稗類鈔 [Anthology of Qing Miscellany] (Beijing: Zhonghua shuju, 2010).

[218] To confirm the application of electric light on this site, more research awaits to be done.

[219] See below.

Palace (*shuijinggong* 水晶宮)," an extravagant water palace that stimulates the atmosphere of a trans-mundane space, while diving into a pictorial underwater wonderland would have provide a visual maze and take one's mind off the mundane world, the reference to the indigenous myths and convention evokes the feeling of comfort and safety. For these, the concept of European "Crystal Palace," with its leading technologies and materials, the iron-and-glass construction and the pumping system, would have allowed the manifestation of a translucent space with floating water, glittering colours and dreamy scenes.[220]

On the whole, Lingzhao Xuan's design is revolutionary among others in the imperial architectural complex, first of all, because it borrows the mediality of modern aquarium to achieve a new angle of fish observation in Chinese imperial garden and provides the imperial patrons a simultaneous experience of leisure entertaining in an underwater palace.[221] This experience could have easily resonated with the audience's understanding of Chinese tradition of divine creatures, especially the dragon king. This technical arrangement delicately merges with the image of "Crystal Palace (*shuijinggong* 水晶宮)," which first of all offers an imaginary trans-mundane space under the water domain that resides with otherworldly species and deities. At the site of Lingzhao Xuan, an underwater wonderland is manifested, where the imperial patrons could have identified themselves as the amphibious deities in fairy tales and experience the infinity of the underwater world without concerning the physical constriction of

[220] Beyond questioning, building material of Lingzhao Xuan imported respectively from Belgium (glass), England (iron and steel), Germany (ceramic tiles) are catalogized to massive reproduction without having to know if the production was specifically made for the site, not to mention the idea of modern aquarium has flourished to its full and Lingzhao Xuan aquarium is certainly a replica of an aquarium (Discussion on its prototype is still ongoing.) On the theory of reproduction of art, see Walter Benjamin's "The Work of Art in the Age of Mechanical Reproduction," *Illuminations*, ed. Hannah Arendt, trans. Harry Zohn, from the 1935 essay (New York: Schocken Books, 1969), 217–252.

[221] The term mediality refers to a new approach in the discussion of media. More studies on this term, see *Medialität*, Christian Kiening, Martina Stercken, Zürich: Chronos, 2019. The term of "media" is commonly associated with conventional communication, writing, images, radio, TV, film, etc., while the approach of "mediality" shifts the discussion to the ways and means of mediation. The fact that the access to history is conditioned by media is beyond questioning, so the study of this term is to describe medial situations rather than to define what a medium is than to: moments of the in-between, where the function of a medium is assigned to things, and moments where mediation or effects of mediating become aware.

a human body, while the tradition activities of fish contemplation in the imperial garden have been maintained and renovated.[222]

3.2 Happiness of Swimming Fish: A Shift of Perspective

Prior to the "aquarium" of Lingzhao Xuan, the contemplation of fish has long been a pastime in the Chinese garden tradition. Among the literati, the activity symbolizes the yearning for freedom and immersion in nature. Through cultivating one's mind and heart in the nature, one reaches the state of "emptiness" (to use the Buddhist term), while being perfectly engaged in the moment. As Zhang Qiande 張謙德 (1577–1643) says in the preface of his first monograph of "Goldfish (*jinyu* 金魚) or the red-white fish," *the Book of Vermilion Fish* 硃砂魚譜, complied in the twenty-fourth year of Wanli 萬曆 (1596) in the Ming dynasty (1368–1644):[223]

> "My nature is steeped in quietness without other indulgences, and I am fond of being alone, and enjoy dipping water from a clear spring to nourish my vermilion fish, and often watch the delight of their coming out and going in, forgetting my weariness all day long, whenever I reach the state of communion. Though Hui Shih found that since Chuang Chou was not a fish, he did not know what fish enjoy; how could I say that?"[224]

Indeed, the activities of fish contemplating is associated to the seeking of mental relaxation and a metaphysical use for transcending oneself to another world to release oneself from worldly

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[222] Further inquiries on furniture that were designed to contain swimming fish for contemplation are still on going, such as Eight Immortals Table 八仙桌 (old-fashioned square table that could seat eight people) or table screens (*pingfeng* 屏風) that were fitted with glass panels to hold the fish, I came across this information in this online blog, which awaits further academic inquiry, accessed February 22, 2022, https://kknews.cc/history/a6e68zn.html.

[223] In the twelfth chapter, "Fish and Cranes/Birds (*yuhe ge* 鱼鹤笺) of *Desultory Remarks on Furnishing the Abode of the Retired Scholar* 考槃余事 (also called *Art of Refined Living or Pastimes Most Entertaining*) compiled by Tu Long 屠隆 (1543–1605) in 1590, he writes "So I knew that the colours had been from the beginning naturally various, and that 'goldfish' was an intentional general name. 因知其色相來自本異，而金魚特總名也。" Translation after Arthur Christopher Moule, *A Version of the Book of Vermilion Fish* (Leiden: E. J. Brill, 1950), 16.

[224] Original: 余性沖澹，無他嗜好，獨喜汲清泉養硃砂魚。時時觀其出沒之趣，每至會心處，竟日忘倦。惠施得莊周非魚不知魚之樂。豈知言哉？In *Zhusha yupu* 硃砂魚譜 [Book of Vermilion Fish], in *Meishu congshu* 美術叢書 [Collections of Art Theory], v. 2, n. 10, (Shanghai: Shenzhou guoguang she, 1936).

burdens. Among one of the popular anecdotes upon fish watching is the philosophical discourse unfolds around this activity is the story of "Watching fish on the bridge of River Hao (*haoliang guanyu* 濠梁觀魚)," as mentioned in Zhang's preface, happens between the Master Zhuangzi 莊子 (around 369–286 BCE) and Huizi 惠子 (370–310 BCE):

> Zhuangzi and Huizi were strolling on the dam of the Hao River. Zhuangzi said: "How these minnows jump out of the water and play about at their ease! This is fish being happy!" Huizi said: "You, sir, are not a fish, how do you know what the happiness of fish is?"
>
> Zhuangzi replied: "You, sir, are not me, how do you know that I do not know what the happiness of fish is?" Huizi said: "I am not you, sir, so I inherently don't know you; but you, sir, are inherently no fish, and that you don't know what the happiness of fish is, is [now] fully [established]."
>
> Zhuangzi replied: "Let's return to the roots [of this conversation]. By asking "how do you know the happiness of fish," you already knew that I know it, and yet you asked me; I know it by standing overlooking the Hao River."[225]

In this philosophical discourse between the two masters, one could see that obviously they operate the issues from different states, while Huizi viewing this from a mental level, meaning knowing the happiness of swimming fish mentally by "looking at it from the outside, by comparing it with other things, by analyzing it and defining it (by thinking of it)," whereas the great master of Zhuangzi knowing it spiritually only by becoming it (only by thinking from it).[226] The image of "carefree and unfettered (*yaoxiao* 逍遙)" swimming fish later became a metaphor for Chinese intellectuals and officials, who yearns for spiritual freedom from unpleasant thoughts and physical freedom from mundane responsibilities. As the poet Bai Juyi 白居易 (772–846) "sits all day long to contemplate fish on the river shore, and sometimes walks

[225] 莊子與惠子遊於濠梁之上。莊子曰："儵魚出游從容，是魚樂也。"惠子曰："子非魚，安知魚之樂？"莊子曰："子非我，安知我不知魚之樂？"惠子曰："我非子，固不知子矣；子固非魚也，子之不知魚之樂，全矣。"莊子曰："請循其本。子曰'女安知魚樂'云者，既已知吾知之而問我，我知之濠上也。" Zhuangzi, Chapter 17. Trans. Meyer, "Truth Claim," modified by Lea Cantor, in "Zhuangzi on 'happy fish' and the limits of human knowledge," 335.

[226] Neville Goddard, "Power of Assumption," in *Power of Awareness* (New York: G. and J. Publishing 1952).

alone the mountain following deer 尽日观鱼临涧坐，有时随鹿上山行," he wonders mournfully, "who is able to put all the mundane issues behind and share the passionate life together? 谁能抛得人间事，来共腾腾过此生?"[227] Philosophical discourse and literary recreation aside, the activity of fish contemplating is associated with mind-soothing and heart-cultivating leisure, where one could forget oneself and indulge oneself fully in the moment. Prior to the aquarium of Lingzhao Xuan, the achievement of this state of peace or "emptiness," was mostly satisfied merely by "standing overlooking" from the shore with downcast eyes. At the underwater gallery of Lingzhao Xuan, a new standpoint of "on the ocean floor" was adopted. The borrowing of the mediality of an aquarium, as mentioned above, provides a revolutionary shift in perspective, from looking down to viewing *en face*, which without doubt would have offered an immersive experience in full; as if one found oneself in the water among the underwater creatures, unable to tell if one is still human.[228]

Lingzhao Xuan is popularly known as *shuijinggong* 水晶宫 (Crystal Palace) both in Chinese record and English report, which mainly focus on the application of its iron-and-glass structure that reminds of the Exhibition Hall in the London Great Exhibition 1851. Nevertheless, the Chinese term of *shuijinggong* pre-exits in China in textual and seemingly also in architectural context, which primarily perceived as a space beyond the common world that human beings are living in, i.e. a trans-mundane space, an enlightened space of mind,

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[227] Bai Juyi 白居易, "Da Yuan Yuanba Langzhong Yang Shi'er boshi 答元八郎中杨十二博士" [Reply to Doctor Shi'er, Counselor of Yuanba].

[228] More on the issue of animalism in Daoist treatises, see for example Paul J. D'Ambrosio, "Non-humans in the Zhuangzi: Animalism and anti-anthropocentrism", in *Asian Philosophy* (UK: Taylor and Francis online), accessed January 8, 2022. https://www.tandfonline.com/doi/abs/10.1080/09552367.2021.1934218. The process of "transforming with things [in nature] (*wuhua* 物化)" of the Daoist philosophy is developed by Zhuang Zi through his treztiese "Qiwu lun 齊物論 [On the Equality of Things and Views]". During the Six dynasties (BCE 220–589), function of garden changes from "being a pleasure ground of fishing and hunting to being an aesthetic space featuring *shanshui* (literally, 'mountain and water')" or natural landscape as the scenic leitmotif." The garden goer visited the landscape and scenes that embodied the "true meaning" of Dao to "merge[s] oneself with nature and achieve[s] absolute freedom in the ultimate reality," as Pan Da'an also suggests while discusses the influence of Daoist philosophy on Chinese landscape garden. See Pan Da'an, "Decoding Sharawadgi: Taoist influence on the Chinese landscape garden," in *Landscape Research*, v. 20, n. 1 (1995), 13, accessed January 21, 2022. https://www.tandfonline.com/doi/abs/10.1080/01426399508706450.

somewhere that glittering because of the interaction of light, water, and colour. In the case of Lingzhao Xuan, the "Crystal Palace" is beyond the material and technical perspective, but further aligned with the idea of creating a trans-mundane space, which the basement aquarium and the underwater wonderland it represents further contributes to. The mediality of aquarium at the site of Lingzhao Xuan allows a living picture to be viewed *en face* instead of looking downcast from the outside.

Lingzhao Xuan is popularly known as the "Crystal Palace (*shuijinggong* 水晶宫)," both in Chinese records and English reports, which referred to the application of its iron-and-glass structure that recalls the Exhibition Hall of the London Great Exhibition 1851. However, the underground aquarium at the site of Lingzhao Xuan makes a Chinese underwater wonderland, a Chinese "Crystal Palace" gained material form. As the study demonstrates in Chapter 1, the Chinese term *shuijinggong* 水晶宫(Crystal Palace) exists in China in textual and seemingly also in architectural contexts, where it is primarily perceived as a space removed from the common world, i.e. a trans-mundane space, an enlightened space of mind, somewhere beyond the glittering interaction of light, water, and colour. In the case of Lingzhao Xuan, a "crystal palace" is beyond the material perspective, but further aligned with the idea of creating a trans-mundane space, which the basement aquarium and the underwater wonderland it represents further contributes to. The image of a Chinese "Crystal Palace" evoked by fairy tales is given a material form that fits the expectation of the Chinese imperial patrons. With the introduction of European building materials, especially glass and iron, and engineering techniques, the design of Lingzhao Xuan is of a "water palace" with window openings that are separated with double-glazed glass, which would contain the water in the pond and allow visitors to contemplate underwater creatures similar to those in nineteenth- and twentieth-century European and North American aquaria. Glass panels were placed between the iron and steel frame on the first floor and the iron pavilions on the top to accomplish a shining "crystal palace." The "underwater wonderland" contributes to the full manifestation of a trans-mundane space.

From the second half of the nineteenth century onwards, aquarium serve as epistemic objects as well as medium speculation for both natural scientists and amateurs of marine world, in the days where the rise of natural science encourages both public interest in marine studies and prompts poetic and aesthetic means to demonstrate the discovery and reveal the mystery.[229] The mystery of marine world, the underwater flora and fauna, is concretized, objectivated and lent material forms in the settings contained by glass, on the other hand, virtualized, subjectivized and simulated.[230] This *Mise-en-scène*,[231] as Adamowsky's studies suggest, is "invented realities," however, to some extend fulfill the dream of delving into the underwater world to have an immersive experience (without considering physical conditions and first of only provided visually) and satisfy the itch to catch a glimpse into the infinite darkness (**fig. 3.5**).

When Lingzhao Xuan is in construction, at the beginning of the twentieth century, modern aquarium has by now reached their peaks in the European continent and the North American countries.[232] As mentioned in the beginning of this chapter, aquarium, or precisely

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[229] Apart from illustrated scientific works from pioneer marine scientists such as Philip Henry Gosse (*The Aquarium an unveiling of the wonders of the deep sea*, 1856), Ernst Haeckel (*Art Forms in Nature*, 1899–1904, with lithographs rendered by Adolf Giltsch), many writers and artists were attracted and inspired by the marine world and created works surround the myths and truth, authenticity and illusion of the marine domain: among them are Odilon Redon (1840-1916), Alfred Kubin (1877–1959), Gustav Klimt (1862–1918), Hermann Obrist (1862–1927), Paul Klee (1879–1940), Emile Gallé (1877–1959), Henri Bergé (1870–1937), Eugène Feuillatre (1870–1916) Francois Rousseau (1827–1890), René Binet (1866 –1911) and others; for images of their works, see Harter, Ursula, *Aquaria: in Kunst, Literatur und Wissenschaft* (Heidelberg; Berlin: Kehrer, 2014).

[230] Adamowsky, Natascha, *The Mysterious Science of the Sea, 1775–1943* (New York: Routledge, 2015), 102.

[231] *Mise-en-scène* is a French term for stage design and the arrangement of actors in scenes in theatre or film; the phrase literally translates to "placing on stage" or "what is put into the scene". For more details on the term, see Bordwell, David and Kristin Thompson, The Shot: Mise-en-Scène, in: *Film Art: An Introduction* (New York: McGraw Hill, 2010), 175–228.

[232] Both of Gosse and Warington are pioneer contributors to the name of "aquarium". The term "aquarium" is first proposed by Philip Henry Gosse in the eleventh chapter of his book *The aquarium: an unveiling of the wonders of the deep sea*, where he explains his understanding of 'vivarium', 'Aqua-vivarium' and his adaptation of the name 'aquarium' from botanists for his collections of aquatic plants and animals. Since for him, what he has been experimenting on was "not an alteration, but only an extension. The growth of aquatic plants is still a most important and pleasing feature of our pursuit, and the addition of aquatic animals does not at all detract from the appropriateness of the appellation. Let the word Aquarium then be the one selected to indicate these interesting collections of aquatic animals and plants, distinguishing it as a Freshwater Aquarium, if the contents be fluviatile, or a Marine Aquarium, …" (London: John Van Voorst, 1856), 256–257. A physiological chemist, Robert Warington (1807–1867) was experimenting on how underwater flora and fauna interact with underwater at about the same time as Gosse ("On Keeping Marine Animals and Plants Alive in Unchanged Seawater," *Annuals of Natural History*, v. 19, n. 2 (1852): 263–268) and has published his experimentation with tanks containing seawater

speaking, using glass devices to preserve underwater flora and fauna from the sea starts to take shape in the mid-nineteenth century.[233] Between 1775 and 1800, members of the prosperous middle class took to investigating the beaches and the broad expanses of the Wadden Sea exposed at ebbtide.[234] From then onwards to around 1852, aquariums were mostly "cylindrical glass containers with a few fish or invertebrates inside."[235] After that, they have been developed into "living space for a marine community and an idealized miniature landscape."[236] Craze for aquarium unfolded alongside with the rise of natural science, especially Darwin's theory of evolution. Both public enthusiasm for large-scale aquarium in almost all the largest cities of the European and North American world,[237] and popularity of aquariums in laboratories and domestic environment emerged in parallel.[238] The establishment of public aquariums in Europe and in North American was parallel to the history of competition as in the history of world exhibitions, in French *expositions universelles* and in the USA world fairs, a competition and provocation between the industrialised countries, the Great Britain, France and the United States to showcase their technology and discovery. From the 1840 onwards, invention of device that raising animals and plants was in a boom. In the London Great Exhibition in 1851, this device that was still called "Aquatic-vivarium" were exhibited in the "Crystal Palace" designed

in the *Annals of Natural History* in November 1853. Also see Robert Warington, "On Preserving the Balance Between the Animal and Vegetable Organisms in Sea-Water," in *Annals of Natural History*, v. 2, n. 12 (1853): 319-324.

[233] The Wardian case, which was named after its inventor Nathaniel Bagshaw Ward (1791–1868), is a device of a sealed protective container for plants. It was the direct prototype of the modern terrarium and vivarium and also the inspiration for the glass aquarium. More information on botany, botanic gardens, and plants conservation, see Allaby, Michael, *Plants: Food, Medicine, and the Green Earth* (New York: Facts on File, 2010).

[234] Natascha Adamowsky mentions the possibility of dragnets used to collect marine animals in 1750 in Italy. See Adamowsky, *The Mysterious Science of the Sea, 1775–1943* (New York: Routledge, 2015), 54.

[235] Adamowsky, *The Mysterious Science of the Sea, 1775–1943*, 115.

[236] Ibid.

[237] Pioneer aquarium in the world from the mid-nineteenth century: Fish House in the Regent Park in London, (1853), Barnum's American Museum in New York (1856, burned down in 1865), Zoologischer Garten in Frankfurt, (1858), Jardin d'Acclimatation in Paris (1859); also Boston (1858), Vienna (1860), Hamburg (1864), Hannover (1866), Brusels, Le Harve and Cologne (1868) Berlin (1869); Brighton and Naples (1872); Washington (1873); Manchester and Southport (1874); Yarmouth and Westminster (1876); Edinburgh (1878); Amsterdam (1880); San Francisco (1894); New York (1896); and Sebastopol (1897).

[238] Adamowsky, *The Mysterious Science of the Sea, 1775–1943*, 112.

by Joseph Paxton's (1803–1865).[239] Later on, the Secretary of the Zoological Society, David W. Mitchell (1813–1859), conceived the idea of "living museum" on the model of Paxton's "Crystal Palace" and the Fish house in Londoner Regent's park was opened to the public in 1853 with the donated collection of zoophytes and annelids from Philip Henry Gosse (1810–1888), a naturalist and popularizer of natural science, especially of marine biology.[240] This first public aquarium with a simple greenhouse construction with an array of water tanks that were placed on pedestals (**figs. 3.6–3.7**).[241]

Aquarium history, first in Britain, at the coast of the United States, also in France and Nord Germany, public aquariums were built as "Theater von neuer Art (**fig. 3.8**)."[242] After the first attempt of aquarium, it did not take long before other European countries started to build construction for displaying aquatic life. A. Lloyd devised a water-circulation system with sand filtering, and he published a book about them. The invention of modern aquarium is a combination of activities of fish contemplation in Asian culture and the curious cabinets in European culture. In other words, leading sciences and technics promotes the curiosity of marine world, at the same time, of other continents and other culture, in which goldfish breeding

[239] In 1854, Joseph Paxton's Crystal Palace by was removed from its temporary site in Hyde Park and reconstructed in its more permanent location at Sydenham. The derelict basement site, which was left after several fire events since 1866, was opened as a marine aquarium with salt water on the 22 August 1871.

[240] Nadamowsky, *The Mysterious Science of the Sea, 1775–1943*, 107. In Duffy's research, she also refers to aquarium as "an object which was once filled with water, plants, and animals in a museum setting."

[241] "[…] The careful observer may here trace the almost imperceptible change from vegetable to animal life, and the strange connections between the creatures of earth, air, and water…The cases or tanks for fish are formed of plate glass and are supplied with water in a peculiar manner. Inside the cases are rocks and grottoes, picturesquely arranged. The groundwork is of pebbles of various of colors sand & c.; here and there the water plants raise their graceful forms from the bottom; others float upon the surface. Our engraving will give some idea of the arrangement but fails in conveying a notion of the effect produced by the clearness of the whole; the variety of the colors of the rocks and pebbles, and the delicacy of the green tints of the plants, and the appearance of liberty enjoyed by the finny inhabitants. That feeling of pain with which we have often witnessed the confinement of goldfish, &c., in narrow limit, is not here felt." See [J.B.?], "Improvement at the Zoological Gardens in the Regent's Park," *Lady's Newspaper and Pictorial Times*, January 01, 1853, accessed December 08, 2021, https://www.britishnewspaperarchive.co.uk/viewer/bl/0002254/18530101/170/0032.

[242] Philip Henry Gosse, *The aquarium: an unveiling of the wonders of the deep sea* (London: John Van Voorst, 1856), 91.

become trend in the European and American continents and later develop into "aquarium mania" as aquarium in large scale are successfully built (**fig. 3.9**).[243]

This combination of authenticity and illusion that has been achieved long ago in the path of aquarium development would have been realised at the site of Lingzhao Xuan, as planned. No matter what kinds of underwater or amphibious creatures were to put into and arrange in the pond of Lingzhao Xuan, this *mise-en-scène* is still beyond full control. Despite of the performativity which combines and separates flora and faunas, the scenes are rather unpredictable: the rhythms of seaweed and algae waving, the movement of fish breathing or turning, the dance is improvised while the stage allows more depth for viewing, it is not merely a shift of perspective, but also a broaden of depth and dimension, provided by a better water condition. The change is now from moment to moment basic.[244] Hence this immersive experience must have been more dense, intensive and dazzling, this optical intensity in turn grasps all the attention of the observer and the state of forgetting oneself, selflessness and unconscious is achieved. This is however also not an isolated experience of Zhuangzi and other Chinese philosophers, but also a sharing experience as Jules Laforgue describes his feeling visiting the Berlin aquarium in a letter to his friend Théophile Ysaÿe: "Je me madréporise (I transform [myself] into a madrepore)," meanwhile, writers, poets, artists in fin-de-siècle share the common experience. meanwhile, *fin-de-siècle* writers, poets, and artists in share the common experience and express it in even more diverse forms and media.[245] These are all

[243] Hadden Dine, "A 19th century aquarium: How collaboration informed the technical study and treatment" (paper presented at the annual student conference of The Association of North American Graduate Programs in Conservation, hosted by Queen's University, April 5–7, 2018), accessed January 3, 2022, http://29aqcgc1xnh17fykn459grmc-wpengine.netdna-ssl.com/anagpic-student-papers/wp-content/uploads/sites/11/2019/04/Dine-ANAGPIC-2018.pdf.

[244] As André Bazin (1918–1958) describes the aesthetic of *mise-en-scène* as emphazing choregraphed movement within the scene rather than through editing (Pramaggiore, Maria, and Tom Wallis, *Film: A Critical Introduction*. Boston: Laurence King, 2005), the *mise-en-scène* in an aquarium is even more so.

[245] See note 229 and Harter, Ursula, *Aquaria: in Kunst, Literatur und Wissenschaft* (Heidelberg; Berlin: Kehrer, 2014).

inspired by the shift of the contemplating perspectives that until then could only have been dreamt of.

In the Chinese history of garden arrangement, attempts were indeed made to achieve this simulated environment to contemplate fish from an eyelevel perspective, not with tanks digging into the ground though, but with glass panels set up to build a container. The earliest "Crystal Palace" appears in record of Tang dynasty. According to the *Miscellaneous Notes of Cloud Deities* 雲仙雜記 (dated in Tang dynasty) of Feng Zhi 馮贄 (date unknown), a famous eunuch official of Tang dynasty (618–907) Yu Chao'en 魚朝恩 (722–770) has manifested once such a "Cave of Fish and Algae" in his residence:

> By the Account of the Notes of Nankang, Yu Chao'en processes a cave room, where the four walls built with glass panels set from both sides and in the middle of the glass walls, water from river is preserved as well as algae, different sorts of fish and shrimps, it is called the cave of Fish and Algae.[246]

The technology for rolled (flat) glass panels had not been developed in the Tang dynasty.[247] A plausible way to achieve useable glass panels is to fix them into wooden or metal frames and piece them together to form a "glass wall." Without calling it a "Crystal Palace," the application of colourful glass panels and the preservation of sea creatures for entertaining purpose is to some extend aligned with the ideal of underwater wonderland. There is also a record of a "Crystal Pavilion (*shuijingting* 水晶亭)" in the account of Li Cai 李材 (ca. 1297–1335) in the Yuan dynasty (1279–1368), which is owned by El Temür (Yantie Mu'er 燕帖木兒, 1285–1333),[248] in Li's *Talks after Hangover* (*Jiexing yu* 解酲語):

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[246] Original: 魚朝恩有洞房，四壁夾安琉璃板，中貯江水及萍藻，諸色蝦，號魚藻洞。

[247] It was the German commission Kilian Stumpf (1655–1720) who contributed to building the first glass works at the Qing court in China. More details on this topic, see Sebald, Reil, *Kilian Stumpf 1655–1720. Ein Würzburger Jesuit am Kaiserhof zu Peking* (Münster: Aschendorff, 1978).

[248] According to El Temür's bibliography complied by Song Lian 宋濂 (1310–1381) from the Ming dynasty (1368–1644), he was a Kipchak officer who was behind the coup d'état that installed Tugh Temür (Tutie Mu'er 圖帖睦爾, 1304–1332) as the Yuan emperor in the capital Khanbaliq in 1328. See "The 25th Volume of Bibliography 列傳第二十五" of the *History of Yuan* 元史.

> El Temür lives an extravagance life, […] [he then] again in his residence erect a "Crystal Pavilion," the four walls of the pavilion are transparent glass, water is put in them to preserve five colour fish, cut duckweed and blooming rosy "Kiss Me O'er the Garden Gate" to put over the water. Balustrade of amber are set up and embed with eight jewels and previous stones, all is sheltered by red and white, glorious and exquisite, there was nothing comparable in the previous time.[249]

The function of these "Crystal Pavilions" is to preserve colourful fish in a transparent wall setting as well, which could have allowed the viewers to have an *en face* view of the moving picturesque image (**figs. 3.10–3.11**). However, without any physical evidence of their existence, one could draw the conclusion that the perspective shift that was planned to achieve in the underground aquarium, something that had been attempted but never fulfilled in the traditional Chinese garden. When the construction process was stopped and the building left uncompleted, fish contemplating at the site of Lingzhao Xuan were continued in the traditional way, with wooden vessels in the courtyard.

3.3 Creation of Microcosmic and Imperial Household Paludarium

The water palace is not without conceptual pedigree in Chinese architecture. As I have pointed out in Chapter 2, the ideology of Chinese Universism was fully embraced in Chinese imperial architecture, and the construction of Lingzhao Xuan is aligned with this ideal beyond doubt.[250] To this end, the diversity of the underwater world is symbolized by the flora and fauna in the underground aquarium, while the diversity of the earth is delicately symbolized by the

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[249] Original: 燕帖木兒奢侈無度 [……] 又與第中起水晶亭，亭四壁皆水晶鏤空，貯水養五色魚其中，剪綵為白蘋紅蓼等花置水上。壁內置琥珀欄杆，鑲以八寶奇石，紅白掩映，光彩玲瓏，前代無有也。See the 30th scroll, the He Yu Pu 鶴魚譜 [Scroll of Cranes and Fish] in the *Erru Ting Qunfangpu* 二如亭群芳譜 [Notes on all various herbs and others of Erru Pavilion], which is a compendium on plants, cranes and fish compiled by the Ming period 明 (1368–1644) scholar Wang Xiangjin 王象晉 (1561–1653), courtesy name Wang Jinchen 王盡臣 or Wang Zijin 王子進, style name Wang Kangyu 王康宇.

[250] For more on the discussion of the ideology of universism and religions in China, see J.J.M. De Groot, *Religion in China, Universism: A Key to the Study of Taosism and Confucianism* (New York and London: G.P. Putnam's Sons and The Knickerbocker Press, 1912).

carvings on the stone wall.[251] Meanwhile, the "Reverse to Response to the Universe (*fanyu* 反宇)" demonstrates on the eaves of the iron pavilions on the top of Lingzhao Xuan symbolized the receipt of blessings from the heaven and hence the alignment with the infinity of the universe.[252] From the perspective of its design philosophy, a microcosm is fully manifested at the site of Lingzhao Xuan, where it is possible to transcend earth, water and air.

As mentioned above, the function of an imperial studio at the site of Lingzhao Xuan is demonstrated in its design as well as in the character of *xuan* 軒 in its name.[253] The secondary function of an aquarium is to fulfil the purpose of decoration and entertainment. As the aquarium in Europe and America at the time was more of a combination of science and aesthetics, at this site, the possibility of its aquarium functions as a research station is easily ruled out by both physical and textual evidence.[254] Meanwhile, the initial intention of building Lingzhao Xuan did not include making it a tourist attraction, which it has now become.[255] Its location within the Forbidden City indicates that access was limited to members of the imperial family. Hence the architectural site serves as an imperial household aquarium built for aesthetic and leisurely enjoyment.[256]

From the visual simulation image of the site of Lingzhao Xuan, a closed or semi-closed water system is rendered. That means the water runs through the pumping system to keep it

[251] The motifs range from plants, insects, and animals to figures of deities to scenes of the four seasons and aims to present an infinite universe. See Chapter 2 for full discussion.

[252] See Chapter 2.

[253] Ibid.

[254] According to Adamowsky, the discussion on "whether [the] aquarium reflects the utter truth of the sea or else" started in the 1920s. See Natascha Adamowsky, *The Mysterious Science of the Sea*, 1775–1943 (New York: Routledge, 2015), 105.

[255] The Yanxi Palace and Lingzhao Xuan have become a magnet for tourists who visit to the Palace Museum due to the popularity of television dramas that romanticize the lives of courtiers in the Qing dynasty and the love affairs between the emperors and their lady companions, see Introduction.

[256] Also see below, the discussion on the Ten Thousand Beasts/Lives Garden (*Wansheng yuan* 萬生/牲園), another imperial zoological garden built for scientific research and public interest around the same time.

clean, without directly connecting to a living water source.[257] The water pumped to the top of the iron roofs runs out through fountains decorated by iron structures shaped like birds.[258] This setting is indeed not merely a symbol of a microcosm that functions on its own but is also physically realised.[259] As aforementioned, modern aquaria began to grow as natural science developed rapidly. Aquaria represent the marriage of science and art. On the one hand, the aquarium is an epistemological apparatus, where a fully new domain is kept and studied, where the processes of life, which are fully mysterious to our then epistemology, evolve in a man-made environment.[260] It is a process of discovery, experience and development, all of which happen almost simultaneously. On the other hand, the knowledge that developed from observation of aquaria was "based on a media aesthetic" that also inspired literature and art, which are reproduced and re-imprint the knowledge of marine world to some extent. Intriguingly, the exposed iron-and-glass structure at the site of Lingzhao Xuan is reminiscent of a domestic aquarium if placed in a broader geological context: the style of the building bears a remarkable resemblance to paludaria, parlor aquaria, and fountain aquaria in the then-industrialised countries, which were also understood as miniatures of the universe, microcosm and simulation of the realms of water, earth, and air all in one. They belong to the category of household aquaria that differ themselves from aquaria as scientific laboratories or tourist attractions, despite many similarities between the three of them in terms of manufacture and use.[261]

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[257] Fang Liyu, "The interdisciplinary research of virtual recovery and simulation of heritage buildings. Take Lingzhao Xuan in the Palace Museum as an example," *Conservation Science in Cultural Heritage*, v. 2, (December 2014), 195.

[258] For early filter technologies and pumps, see Delbeek, J.C. and J. Sprung, *The reef aquarium science, art et technology* (Coconut Grove: Ricordea Publishing, 2005).

[259] Ricardo Calado, Ike Olivotto, Miquel Planas Oliver, and Joan Holt, eds., *Marine Ornamental Species Aquaculture* (Chichester: Wiley-Blackwell, 2017), 4.

[260] For discussion on aquaria as models of thought, the discrepancy between the imaginary ideal and the realistic effects, see also Karl August Möbius (1825–1908)'s discussion on "natural conditions" for functional aquariums, in Adamowsky, *The Mysterious Science of the Sea 1775–1943*, 105–106.

[261] Adamowsky, *The Mysterious Science of the Sea 1775–1943*, 106–107.

The concepts of keeping fish for entertainment extend back much farther than the development of the modern aquarium. In ancient China, the imperial tradition of keeping fish is mentioned in the local geography of the ancient capital region around Chang'an 長安 (modern Xi'an 西安, Shaanxi), the *Yellow (or Imperial) Maps of the Three Metropolitan Areas* 三輔黃圖, edition complied in the 42th Year of the Qianlong reign, i.e. 1777).[262] In the fourth volume, which is dedicated to imperial gardens and ponds, an Auspicious Pond (*ling zhao* 靈沼) is recorded as being thirty *li* west of the capital Chang'an under the reign of Emperor Wen (Wen Wang 文王, r. 1112–1056 BCE) in the Zhou dynasty (1050–771 BCE), and the author remarks "how full was it of fishes leaping about 於牣魚跃."[263] There are two ponds, the Fish Pond Platform (Yuchi Tai 魚池臺) and the Wine Pond Platform (Jiuchi Tai 酒池臺), at the site of the Palace of Long Happiness (Changle Gong 長樂宮), where the first Imperial Palace of the Western Han 西漢(202 BCE–9 CE) was rebuilt based on the former Detached Palace (*ligong* 離宮, Palace for Entertaining), the Palace of Happiness and Enjoyment (Xingle Gong 興樂宮) of the Qin dynasty (221–207 BCE). In the fourth year of Yuanshou 元狩 (119 BCE), the Emperor Wu 武帝 built an artificial pond called Kunming 昆明 in the imperial Garden of Shanglin (Shanglin Yuan 上林苑), which runs from the west to the south of the capital of Chang'an for about ten *li*. The pond was initially built for practicing naval battles, but the garden

[262] The book was compiled by an unknown author during the Southern and Northern dynasties period (Nan Bei Chao 南北朝, 300–600) or earlier. Sun Xingyang 孫星衍 (1753–1818) and Song Liankui 宋聯奎 (1870–1951) considered it as a book compiled during the Later Han period 後漢 (25–220), while Chao Gongwu 晁公武 (1105–1180) dated it to the Liang 梁 (502–557) or Chen period 陳 (557–589), the original book was one volume (*juan* 卷) long and later rearranged in 6 or 2 volumes, depending on the edition. There are three versions of the *Sanfu huangtu,* the one I quote here is included in the reprint series *Complete Library in Four Sections, Imperial Collection of Four* 钦定四庫全書 (1773–1803) and Guanzhong congshu 關中叢書. There are also two other editions by Bi Yuan 畢沅 (1730–1797) and by Sun Xingyan 孫星衍 (1753–1818). There is a modern edition and commentary by Chen Zhi 陳直 (1901–1980), the *Sanfu huangtu jiaozheng* 三輔黃圖校證 (1981), and one by He Qinggu 何清谷 called *Sanfu huangtu jiaoshi* 三輔黃圖校釋 (2005), further information also see http://www.chinaknowledge.de/Literature/Science/sanfuhuangtu.html (accessed January 3, 2022).

[263] This term is discussed in detail in Chapter 2.

was for stroll and enjoyment (*youxi* 游戲) as well: "fish were also bred for ritual ceremonies in various imperial mausoleums 養魚以給諸陵祭祀." Later on, an Observatory for Fish and Birds (Yuniao Guan 魚鳥觀) is recorded to have been built in the same garden, and another Fish Platform (Yu Tai 魚臺) was built as well.[264] To this point, keeping fish to be "observed" or "watched" (*guan* 觀) as pets or for their ornamental looks is officially recorded in the history of imperial garden in ancient China.[265] In his study on keeping "goldfish" as ornamental pet, Arthur Christopher Moule mentions that goldfish were kept and cared for no earlier than the tenth century; before that even goldfish kept in private gardens might would have ended up on the dinner table.[266] Regardless of which species of fish were bred, as mentioned above, the Observatory for Fish and Birds (Yuniao Guan 魚鳥觀) and Fish Platform (Yu Tai 魚臺) existed in the same imperial garden in Han, which indicates the diverse functions of the spots from the name and confirm the practice of observing or watching fish and birds. In Moule's comprehensive studies on the tradition of "goldfish" from the 1950, he suggests that the "evolution of modern fancy fish" did not begin until the very late fifteenth century; he then lists passages about "goldfish" from treatises from the sixteenth and seventeenth century. To put the discourse on species of different ornamental fish, the "goldfish", or sometimes "five-colour-fish (*wuse yu* 五色魚)," it is to observe that it was hardly a rare novelty for imperial gardens to have fish pond. In the Jin dynasty (1115–1234), a Pond of Fish and Algal (Yuzao Chi 魚藻池), later Taiye Lake (Taiye Chi 太液池) was built for fish observation.[267] In the fifth year of Chunxi

[264] Plausibly for fishing activities.

[265] I exclude my studies from specific specimens of ornamental fish, including *carassius auratus* (*ji* 鯽) and carp (*li* 鯉), as well as their development, because I wish to focus on the keeping of ornamental fish in imperial gardens. For detailed studies on various species of goldfish that are mentioned in Chinese sources, see Li Zhen, *Chinesische Goldfische,* trans. Dai Shifeng (Beijing: Verlag für Fremdsprachige Literatur, 1988).

[266] Arthur Christopher Moule, *A Version of the Book of Vermilion Fish* (Leiden: E. J. Brill, 1950), 6.

[267] In the *Survey of Scenery and Monuments in the Imperial Capital* 帝京景物略 (17th century) written by Liu Tong 劉侗, the "Gold Fish Pool" built during the Jin dynasty is recorded: "The Gold Fish Pool: Long ago in the Chin (Jin), there was the Fish-weed Pool. The old gazetteer says, above the pool is a hall with a jasper pool at the side. The foundation of the hall cannot now be traced. The pool is deep. The residents have bounded it with a bank;

淳熙 (1177), the official of Southern Song dynasty, poet and man of words, Zhou Bida 周必大 (1126–1204) recorded his honour and pleasure to company the Gaozong Emperor 宋高宗 (r. 1127–1162) to stroll around the complex of Virtues and Longevity Palace (Deshou Gong 德壽宮) located near the Temple of Lingyin (Lingyin Si 靈隱寺), where he mentions a pond for fish observation called Flowing Bluegreen (*xiebi* 瀉碧), which was part of the artificial lake that was built to draw water from the Western Lake 西湖.[268] He even sent servants to catch fish for his reservoir in the thirteenth Year of Chunxi 淳熙 (1186), one year before his death.[269] As in the Yuan dynasty, as mentioned above, an attraction of "Crystal Pavilion (*shuijingting* 水晶亭)" was likely owned by an imperial official, the El Temür to preserve ornamental fish. From the Ming dynasty (1368–1644) onwards, as fish breeding for ornamental purposes flourished and became even more popular in China, treaties and passages about "goldfish" were also easier to find, as in the monograph of Zhang Deqian in 1596, which marks the beginning of independent research on goldfish breeding in China.[270] To this point, pond fish as attractions in gardens and for entertainment was hardly a novelty.

In the Qing imperial gardens, apart from several locations that are famous for ornamental fish breeding, there was a zoological garden worth mentioning: the Ten Thousands Beasts/Lives Garden (Wansheng Yuan 萬生/牲園) established in the Year of Dingmo 丁未 in

willows droop over it. The yearly breeding of goldfish has become a trade. 金魚池：金故有魚藻池。舊志云。池上有殿。榜以瑤池。殿之址。今不可尋。池泓然也。居人界而塘之。柳垂覆之。歲種金魚以為業。 Translation after Arthur Christopher Moule, *A Version of the Book of Vermilion Fish* (Leiden: E. J. Brill, 1950), 23.

[268] In *Chunxi Yutang Zaji* 淳熙玉堂雜記 [Jade Hall Notebook of the Chunxi Era], v. 1. On this occasion, the emperor praises the pine trees that allows one to "transcend thousand and ten thousand years, in order to comfort my heart. 越千萬年，以慰我心。"

[269] Qian Shuoyou, (Xianchun) Lin'an Zhi (咸淳) 臨安志 [Gazetteer of Lin'an of the Xianchun Era] (Hangzhou: Guji chubanshe, 2012).

[270] See Moule's research for a detailed list of some important passages of the sixteenth and seventeenth centuries. Also see Hervey, George F., *The goldfish of China in the XVIII century* (London: China Society, 1950). Wang Chunyuan, *Chinese Goldfish* (Beijing: Jindun Press, 2000).

Guangxu's reign 光緒 (1907) by the Qing Department of Agriculture, Craftmanship and Business 農工商部, which "imitates museum style (*fang bowuyuan shi* 仿博物院式)" and also functions as an experimental field of agriculture (Nongshi shiyan Chang 農事實驗場):

> There are four or five Western Buildings in the courtyard, through the corridor turns right over the stream, and that is where the zoologist garden is. […] There are more than ten vessels of Goldfish at the front of the courtyard. Walk further, near the stream, and you will see two warm houses built alongside the stream. They are rectangular, but only one of them is open, in which mostly are glass windows at the front wall and the rear walls are built with cages that contain various birds of more than a hundred of species.[271]

Two observations are worth mentioning here: first, the Ten Thousand Beasts/Lives Garden is established for the purpose of "offering studies for old farmers and old botanists 供老農老圃之研求" and "offering research for naturalists 供博物學家之稽考" regardless of the fact that certain imperial garden retreats were built in the architectural complex.[272] Conversely, Lingzhao Xuan served no scientific or research purposes and was only accessible by the imperial patrons. Second, fish and birds were also kept in the Ten Thousand Beasts/Lives Garden where fish were preserved in vessels and birds were kept behind glass. Records of keeping precious birds in glass cages in China can be traced back to the Han dynasty as well.[273] In the *Imperial Readings of the Taiping Era* 太平御覽 compiled from 977 to 983, Li Fang 李昉 (925–996) records construction of "Platform for Avoiding Cold (Bihan Tai 避寒臺)" that used "Crystal (*shuijing* 水精)" as windows for a certain precious exotic birds built in the reign

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[271] Original: 庭内有西式屋四五幢，穿廊右行過小溪，動物園在焉。庭前有金魚十數缸。再行，臨小溪，溪側築溫室二，形長方，僅啟一戶，前壁多置玻窗，后壁配樊笼，則鳥之種類奚止百十[…]。Xu He, ed., *Qingbai Leichao* 清稗類鈔 [Anthology of Qing Miscellany] (Beijing: Zhonghua shuju, 2010).

[272] In "Category of Garden (Yuanlin Lei 園林類)," in *Qingbai Leichao* 清稗類鈔 [Anthology of Qing Miscellany] (Beijing: Zhonghua shuju, 2010).

[273] In very early in Chinese records, descriptions upon glass and the use of glass in the Rome Empire (Da Qin 大秦) are to find. Architecture applied with glass decorations and glass panels are depicted and are praised as "Crystal Palace 水晶宮," so the usage of the Chinese term *Shuijing Gong* 水晶宮 (Crystal Palace) to refer to architecture with glass features was not really an invention in the late dynasties.

of Wu Emperor of Han 漢武帝, which "allows light to transcend through in and out and also prevents the wind and the rain 使内外通光而風露恒隔." In the Three Kingdom dynasties (220–280), the Ming Emperor of Wei 魏明帝 (206[?]–239) also preserved this kind of bird. In his fifth year of reign, the Ming Emperor built garden for auspicious beasts (*ling shou* 靈禽), which are presented by other countries. There is this Exhale Gold Bird (*shujin niao* 嗽金鳥) given by the Kingdom of Kunming 昆明國, which was extremely rare and precious because it exhaled "bits of gold the size of millet grains (*jinxue ru li* 金屑如粟)."[274] To sum up to this point, even though there is no direct reference to the function of the top pavilions that applied iron wire and glass as well, at the site of Lingzhao Xuan, it is possible that birds were meant to be kept on the top pavilions for viewing through glass panels. Though without exact evidence that prove the keeping of birds in the five glass pavilions at the top, it would not be a surprise since then the separation of three structural divisions represents spatially the sea, the earth and the sky that all contain their own infinities.

To observe these as a whole, the flora and fauna in the water, the "plants and beasts" on the earth, and the feathers on the top are arranged at the site of Lingzhao Xuan as the microcosmic in miniature is manifested. At this point, domestic decorative aquaria in glass and iron were being made beyond the border of imperial China. If one takes this into account, it is not hard to detect the similarities between the construction and contemporary ornamental household aquaria in Europe and America, from which the design of this architectural site could very plausibly have drawn reference from.[275] The first and most important similarity is the

[274] In "Platform (*taixia* 臺下)" in the sixth volume of Residences (*juchu buliu* 居處部六) *Imperial Readings of the Taiping Era* (Taiping Yulan 太平御覽).

[275] Exposed iron and glass pavilions were built for the Worlds Exhibitions and also in other extravagant events that meant to celebrate the triumph of industrialization. I will further explore the style of the exposed iron structure of Lingzhao Xuan in Chapter 4, where I will point out that "Oriental elements" (defined in the context of colonial architecture in the modern history) that may have originated from Indian and Muslim countries, were first appropriated by colonial architecture in Europe and America to evoke a feeling of exotic foreignness, and these are later included in the construction of Lingzhao Xuan, while exposed iron and glass structure is adopted in this building.

concept of all-in-one, a microcosmic system, which symbolically and also functionally concentrate "mountain/reef" (terrestrial) and the "sea/water" (aquatic) scenes in one, the architectonic of Lingzhao Xuan is more of a resemblance of a domestic fountain aquarium, though it does seem somewhat too large for a normal household (**fig. 3.12**).

Meanwhile, as aforementioned, there are three types of aquaria in general at the time, namely, scientific laboratories, tourist attractions and household aquaria. In this light, the construction of Lingzhao Xuan is strictly speaking intended to be a whimsical toy that does not consider scientific benefits or public interest as suggested before. Moreover, its structure is the exposed and extravagant ornamental style to which public and laboratory aquaria did not aspire. Domestic aquaria for decorative purposes tend to contain more eye-catching elements in an exposed manner, in which a harmonious combination of fish, plants and birds is placed in a same setting (**fig. 3.13**). Besides, as suggested by the study of Lingzhao Xuan's structure, water that has been brought up to the top of the roofs by the pumping system is meant to be sprayed out like a fountain.[276] These again demonstrate less influence from the indigenous architecture tradition but rather bear striking resemblance to domestic aquarium fountains that are embellished with decorative iron and glass (**figs. 3.14–3.16**).

Intriguingly, there is another "one-of-a-kind"[277] domestic aquarium that could have helped to showcase a similar design of Lingzhao Xuan's aquarium, in which one floor of the structure sits under the water level to form an underwater gallery that could provide a view of the sea from within. The Winterthur aquarium, dated back to the late nineteenth-century America, survives to provide us three-dimensional evidence of a utopian ideal with the

[276] See Ulrike Wulf-Rheidt et al., "Peking, Volksrepublik China," 64–66.

[277] Hadden Dine, "A 19th century aquarium: How collaboration informed the technical study and treatment" (paper presented at the annual student conference of The Association of North American Graduate Programs in Conservation, hosted by Queen's University, April 5–7, 2018), 3, accessed January 3, 2022. http://29aqcgc1xnh17fykn459grmc-wpengine.netdna-ssl.com/anagpic-student-papers/wp-content/uploads/sites/11/2019/04/Dine-ANAGPIC-2018.pdf.

assistance of different medium (**figs. 3.17**).[278] Purchased by H. F. du Pont from George McKearin in 1948, this metal and glass aquarium is set in an octagonal tank. While the main structure bears the features of both Neo-Palladian and American Second Empire style vocabularies, the indication of the water line provides the vision of a villa sitting atop "a sunken arcade of an Atlantean world."[279] Though thorough research and conservation have failed to determine whether this object was ever used as an aquarium or only for decoration, it involves submerging part of a building under water to create a gallery with viewers within.[280] It bears a striking resemblance to the design of Lingzhao Xuan's architectonic language. Although a connection between the two has yet to be proven, I point out here this global analogue in the context of Lingzhao Xuan's mixed architectural heritage to emphasise how so many of its features still lack plausible aesthetic prototypes.

Conclusion

At the site of Lingzhao Xuan, a "Crystal Palace (*shuijinggong* 水晶宫)" of both global and indigenous concepts is manifested in one architectural complex. Borrowings of the then cutting-edge building materials and engineering techniques give the impression of a "Crystal Palace" with immediately apparent connections to exposed glass-and-iron constructions in Europe and America, which were widely celebrated as symbols of the triumph of industrialisation since the first "Crystal Palace" from the Great Exhibition in London in 1851. Meanwhile, beyond the physical realisation of an imaginary ideal of a Chinese underwater

[278] Basic information on the artefact: the object is 60.3 cm in height and 56.2 cm in diameter, with tinned sheet iron, pewter, glass, iron, paint, silk, paper, iron wire, bronze powders, and plastic. Bequest of Henry Francis du Pont, Winterthur Museum, 1965.2192 A, B. Image Courtesy of Winterthur Museum. Duffy dates the object from 1870 to 1910, probably from New Jersey or New York, a time frame which is rather close to the building of Lingzhao Xuan. See Rebecca Duffy, "The age of aquaria: the aquarium pursuit and personal fish-keeping, 1850–1920." (Master thesis, Winterthur: University of Delaware, 2018), accessed January 3, 2022, http://udspace.udel.edu/handle/19716/23740. The Winterthur Aquarium is octagonal and composed of a tinned sheet iron frame and glass panels. It is a replica of a house "informed by both Neo-Palladian and American Second Empire vocabularies, ideas contemporary to the shape and materiality of the tank itself."

[279] Ibid.

[280] Ibid.

trans-mundane space, where legendary amphibious deities reside, the design of the site further pursues the achievement of an ideal state of emptiness. More than giving the Chinese imaginary "Crystal Palace" its material form, Lingzhao Xuan was where one could transform one's mind into an enlightened "Crystal Palace" through a visual experience achieved by a revolutionary shift of perspectives in the tradition of contemplating fish. The two elements of Chinese garden aesthetics, mountains and water (*shanshui* 山水), are delicately arranged at this site to achieve the harmonious balance, where the infinity of the earth and the infinity of the water are symbolized in diverse ways, and specifically in the terms of the water arrangement, concept of "Crystal Palace" in a global industrialised context comes into interaction with the indigenous concept. As an organic whole, the design of Lingzhao Xuan is considered revolutionary in several ways when viewed from the standard of the conventional Chinese fishpond, with the "mountain" (terrestrial) and the "sea" (aquatic) in an exposed iron-and-glass structure. Nevertheless, the secondary function of the aquarium was aimed less at scientific discovery or public sensation and more at the amusement of the imperial household. Intriguingly, the exposed iron-and-glass structure is reminiscent of a domestic aquarium if placed in a broader geological context: the style of the building bears remarkable resemblances with paludaria, parlor aquaria, or fountain aquarium in the then-industrialised countries, which were also understood as miniatures of the universe, microcosm and simulacrum of the realms of water, earth, and air, all in one.

Chapter 4 "Collecting Novelties and Beauties": Architectural Collections in Qing Imperial Garden and Eclectic Nature

"Briefly imitating the essence [of the origins], adapting to the contours of the nature [of the current situation], while not forsaking one's own merits.
略師其意，就其自然之勢，不捨己之長。"[281]

Long before George Wightwick (1802–1872) conceived of an imaginary architectural museum in his *Palace of Architecture,* published in 1840, the idea of collecting architecture, or "borrowing scenes and landscape (*jiejing* 借景)" in Chinese gardening had been fully embraced in the design and construction of the Qing Imperial landscape.[282] As park palaces, hunting parks, travel palaces, and a variety of designed landscapes had represented the imperial statecraft of the Qing dynasty since its inception, this fusion of materials, technologies, and concepts incorporated, on either a conscious or unconscious level, a confrontation, negotiation, or quest for reconciliation with respect to the various social, political, and economic conflicts. As Whiteman demonstrates, the Qing imperial landscapes "embodied contemporary and particular imperial interests and needs, including Lamaist Buddhism, filial piety, Han literati culture and

[281] In the Qianlong Emperor's "Preface of the Eight Poems for Huishan Garden 惠山園八景詩序." Huishan Garden locates in the Qingyi Garden (清漪園), commanded by Qianlong Emperor in 1750 as a gift for the sixtieth birthday of his mother, the Empress Chongqing (崇慶皇太后) in 1751. In this imperial architectural compound, the imitations of the Gu mountain 孤山 and the Western Lake 西湖 from the City Hang Zhou are rendered as the Wanshou Mountain 萬壽山 and the Kunming Lake 昆明湖. More on the Huishan Garden, see Huang Xiao and Liu Shanshan, "Cong Jichang yuan dao Huishan yuan" 從寄暢園到惠山園 [From Jichang Garden to Huishan Garden], *Zijin Cheng* 紫禁城 [Forbidden City], n. 4 (2014): 92–105.

[282] George Wightwick, *The Palace of Architecture: A Romance of Art and History* (London: James Fraser, 1840). In this chapter, I use the terms surrounding the act of collecting and collections in parallel with other terms, which have mostly been interpreted by scholars in terms of the appropriation or imitation of Jiannan landscapes and gardens.

'Europeanoiserie.'"[283] These architectural sites, however, went through diachronic changes under different regimes.[284]

In the early Qing dynasty, these activities of constructing designed imperial landscapes were fervently prompted by the Kangxi 康熙 Emperor (r. 1661–1722), who ordered his gardeners to replicate the impressive landscapes and scenery that he saw during his Southern Inspection Tours to the Jiangnan area. Landscapes and scenes from the others were then gradually borrowed and transplanted into the imperial gardens in northern China. His successors, especially the Qinglong 乾隆 Emperor (r. 1735–1796), promoted *collecting precious novelties and beauties* to an extreme: at least forty-seven *scenes* and architecture are *borrowed* from the Jiangnan and distributed in twelve different imperial gardens or palace compounds, while religious temples of different sects, as well as *Western buildings* appropriated from Europe, were included bit by bit from the sixth year (1741) to the forty-ninth year (1784) of his reign.[285] Until the very end of the Qing dynasty, this "collecting beauties style (*jijin shi* 集錦式)" that flourished in the Qianlong era, dominates the layout of the imperial gardens. According to Benjamin Elman, the "Manchu court favored" this syncretism of architectural styles and tastes in Yuanming Yuan as "part of their efforts to create a universal vision of their power in Asia and then in the world." Therefore, it is easy to envision that they

[283] Stephen H. Whiteman, "From Upper Camp to Mountain Estate: Recovering Historical Narratives in Qing Imperial Landscapes," *Studies in the History of Gardens and Designed Landscapes* 33, n. 4 (August 2013): 249–50.

[284] Stephen H. Whiteman, "From Upper Camp," 249, points out the ambivalent potential of these designed landscapes in the Qing dynasty as "diachronic sources" and "pitfalls" for historical study, as the garden construction could easily be perceived as a static existence or as changes, whether physical, nominal, or conceptual. Moreover, the construction and reconstruction history of architectural sites tends to be overlooked.

[285] A detailed list of these forty-seven scenes and architecture, as well as their dates, locations and plausible original prototypes, see Appendix II in Chen Pao-chen, "Kangxi he Qianlong erdi de nanxuan jiqi dui Jiangnan mingsheng he yuanlin de huizhi yu fangjian" 康熙和乾隆二帝的南巡及其對江南名勝和園林的繪製與仿建 [Kanxi and Qianlong Emperor's Southern Inspection Tours and their paintings and imitations of famous landscapes and gardens in the Jiangnan area], *Gugong xueshu jikan* 故宮學術季刊 [The National Palace Museum Research Quarterly], v. 32, n. 3 (2015): 40–46.

would also have tolerated or favored this idea in terms of the construction of *Western buildings*.[286]

This activities of "borrowing landscape and scenes 借景," which was applied in the imperial gardens to master the physical environment, or *collecting scenes*, which I discuss later in this chapter, ranged from architectural decoration indicating scenes transcending time and space to actual architectural settings in the style of a certain area or the exact replicas of certain gardens.[287] In the imperial gardens, the display of foreign, ethnic, or historic architecture was deeply influenced by the personal interests and tastes of the rulers as well as their own experiences. This was reflected in the later phase of Qing imperial gardening as well, as female imperial patrons, specifically the Dowager Empress Cixi acquired more power and had more of a say in both domestic and national issues. To that end, it was the memories, feelings, and emotions provoked by the landscape and architecture that counted, and the details of the replicas must not be restricted by their origins or prototypes. so that the creations are "interdependent and interchangeable in a state of perpetual balance and harmony."[288] Emperor Qianlong himself went on to address the adaption to "the contours of the nature [of the current situation] 自然之勢," and the importance of not "forsaking one's own merits 不捨己之長" in the "Preface of the Eight Poems for Huishan Garden 惠山園八景詩序."

Hence, the process of appropriation and re-creation in the Qing imperial gardening resulted in the eclectic nature of the garden architecture. In the case of Lingzhao Xuan, the commonly applied term of "a fusion of China and the West (*zhongxi hebi*, 中西合璧, literally

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[286] Benjamin Elman, *Science in China 1600–1900* (Singapore: World Publishing), 98.

[287] See Chapter 2 for the stone carvings of Lingzhao Xuan as a fine example, where I apply the term of "landscape that are lent" and "borrowing scenes" (both for the Chinese term "*jiejing* 借景") while tackling the fragmental scenes of the carvings rather than a single example of architecture or a whole architectural complex as in the current chapter.

[288] For the profound influence of Daoist philosophy on the landscape gardens in China through poetry and painting in the Six Dynasties, see Pan Da'an, "Decoding Sharawadgi: Taoist influence on the Chinese landscape garden," *Landscape Research*, v. 20, n. 1 (1995): 11–18, accessed January 21, 2022, https://www.tandfonline.com/doi/abs/10.1080/01426399508706450.

"Chinese and Western [elements] together in one")" is less satisfying due to the dichotomy of China and the *West* and the ignoring of other plausible influences. In decoding the architectural language of Lingzhao Xuan by studying it alongside with the exhibition architecture, appropriations of *Oriental* elements indicating *borrowed* and *transplanted* features of Rajput and Moghul architecture from India are detectable.

Against the backdrop of colonial architecture in the world exhibitions of the nineteenth and twentieth centuries, which aimed to demonstrate the triumph of the economies and natural science of European and North American countries, certain characteristic *uniqueness* of Lingzhao Xuan can be seen to be more common when placed in juxtaposition with other structures with a hybrid nature in the global context. In the end, the Qing imperial patrons' desire to "collect novelties and beauties 集錦" and their ideology of "everything under heaven belongs to the Empire 普天之下莫非王土" are demonstrated in the eclectic nature of architectural collections in the Qing imperial garden, whether intentionally or not.

In short, Lingzhao Xuan encompasses a variety of components, including some, if not all, of the aspects mentioned so far. This appropriation, involving a diachronic bleaching, whether through active alteration, passive adaptation, or both, manifested in this case as an eclectic architecture.[289]

[289] Despite the lack of textual evidence at the current stage, abundant visual evidence questions this dichotomy. While my focus is on the European heritage that is obviously present through the building materials, several other plausible influences were coded in the building, such as traces and influences of Rajput and Mughal architecture. I propose the most plausible contemporary counterparts for both revealing the yet unacknowledged message that Lingzhao Xuan bears and for connecting the making of this architectural site with comparative or global history. Further research on similar architecture should be conducted in the Dutch East Indies, especially in the *Chinese city* of Semarang, which was impacted by Chinese, European, and Indian traditions that could have probably catalyzed architecture such as Lingzhao Xuan. It could be necessary to expand the study cases to Qingdao, Guangzhou. When read in the context of the colonial architecture of world exhibitions, *expositions universelles*, and World's Fairs in the nineteenth and twentieth centuries, we see that strikingly similar structures were juxtaposed. These were intriguingly symbolized as the *Oriental world* in the then *Occidental* audience's eye, which demonstrates the fusion of the aesthetic influences. Although the reconstruction of the exact appropriation process of Lingzhao Xuan awaits further inquiry, one of the missing pieces of the puzzle has been found: Lingzhhao Xuan inherited the fleeting nature of the exhibition architecture in an era of massive production. This fleeting nature explains in one way the stereotypical construction of *Oriental worlds*: besides indifference to and ignorance of other cultures, it reflected the accelerated perception of the world.

4.1 “Collecting Novelties and Beauties 集錦”

The collection of landscapes and scenes in the Qing dynasty Imperial Gardens starts with the collecting of Jiangnan which were manifested in three ways in general: introducing methods and technics of the Jiangnan Gardens;[290] appropriating famous themes and recreating them; imitating certain gardens and architectures and expanding the surroundings.[291] These activities were initiated by the Kangxi Emperor and took to an extreme by his grandson the Qianlong Emperor due to his personal affection for the sceneries in the Southern China, which was so intense that the Emperor even felt the urge to excuse and defend himself in his latest days.[292] The activities of adopting and collecting novelties illustrating foreign manners and customs at the Qing court reflect the eclecticism in their governing as well as in their aesthetic tastes. From religious temples of different sects to Mongolian nomads’ *gers*, to the “Western Buildings” appropriated from the European continent, the Qing Emperors’ “architectural museum” reflects the picture of “everything under heaven belongs to the Empire” they envisioned by blurring the geographical boundaries within their gardens.

As for the spacious arrangement of these collections, I adopt the term “Collecting Beauties Style (*jijin shi* 集錦式),” which was proposed by Zhou Weiquan in his study of Chinese Classic Gardens, where Zhou mentions that, in order to avoid too much empty space and to refine the layout in the rather spacious Imperial garden compounds, as well as the arrangement of mountains and water, there are often only one or handful of large-scale scenes,

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[290] Actually, the act *per se*, the “landscape that lend 借景” is one of the crucial aesthetics method that proposed in the *Crafts of Gardens* 園冶 (1631) complied by Ji Cheng 計成 (1582–1642) as mentioned in Chapter 2, which became a very important reference for the methodologies in the early Qing imitation of Jiangnan Gardens. Also see Chen Pao-chen, ““Kangxi he Qianlong erdi de nanxuan jiqi dui Jiangnan mingsheng he yuanlin de huizhi yu fangjian,” 19.

[291] Zhou Weiquan, *Zhongguo gudian yuanlin* 中國古典園林 [History of Classical Gardens in China] (Beijing: Qinghua University Press, 1990), 188.

[292] Emperor Qianlong reflected on his enthusiasm for garden construction in at least two of his writings, the “Zhiguo lun” 知過論 [Essay of Knowing one’s flaws] (1780) and “Tuanhe xinggong jishi” 團河行宮即事 [Issues on Imperial Palace in Tuanhe] (1784), see Chen Pao-chen, “Kangxi he Qianlong erdi de nanxuan jiqi dui Jiangnan mingsheng he yuanlin de huizhi yu fangjian,” 29–30.

mostly right next to the central water area. Other landscapes and scenes are scattered but organized into sub-gardens according to different themes and functions, which creates this effect of theme parks or gardens within gardens, i.e. the Collecting Beauties Style (*jijin shi* 集錦式).[293] This arrangement provide a certain sense of "irregularity" or "disorder" that later was coined into the term of "*Sharawadgi* (with various versions of spelling)" by Sir William Temple (1628–1699) in his "Upon the Gardens of Epicurus," in which he juxtaposes the symmetries of European formal garden with the Chinese garden "without any order or disposition of parts."[294] Nevertheless, as Pan Da'an also suggests, in the eyes of Chinese garden connoisseurs, the layout or arrangement focuses less on "irregularity" and more on the relationship between *xu* 虛 (meaning empty, unreal, or nonbeing) and *shi* 實 (meaning full, real, or being), which is derived from Daoist philosophical relationship between *yin* 陰 and *yang* 陽.

From the earliest "Buy-and-Sell Street (*maimai jie* 買賣街)" (probably after the twenty-third year [1684] or twenty-eighth year [1689] of Kangxi) that imitated the Suzhou street market, The Kangxi Emperor collected architecture and scenes from Jiangnan for the construction of Changchun Garden 暢春園, for which he consulted a certain garden designer called Ye Tao (葉洮 or 葉陶) from the region, and the Summer Palace 避暑山莊(completed in 1711) in Chengde, Jehol, respectively.[295] The latter contains thirty-six sceneries that were named by the emperor himself in four-character phrases inspired by literary and history classics. By addressing the beauty of his garden rather than actual Jiangnan scenery he successfully imitates

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[293] Zhou Weiquan, *Zhongguo gudian yuanlin* 中國古典園林 [History of Classical Gardens in China] (Beijing: Qinghua University Press, 1990), 187.

[294] For discussion on the possible origin of Sharawadgi, see Wybe Kuitert, "Japanese Art, Aesthetics, and a European Discourse: Unraveling Sharawadgi," *Japan Review*, n. 27 (2014): 77–101, accessed January 21, 2022. https://www.jstor.org/stable/23849571?seq=1#metadata_info_tab_contents. Ciaran Murray, "Sharawadgi Resolved," *Garden History*, v. 26, n. 2 (Winter, 1998): 208–213. Also see Lang S. and N. Pevsner, "Sir William Temple and Sharawadgi," *The Architectural Review*, no. 106 (December 1949): 391–393. Also see H. Monk. S, ed., *Five Miscellaneous Essays by Sir William Temple* (Ann Arbor: University of Michigan Press, 1963), 30.

[295] Chen Pao-chen, "Kangxi he Qianlong erdi de nanxuan jiqi dui Jiangnan mingsheng he yuanlin de huizhi yu fangjian," 19–20.

Jiangnan landscapes and gardens.[296] As Chen Pao-chen suggests, the imitation must have been based on the pictorial documents that were commanded during his six Southern Inspection Tours, which are later rendered in the twelve scrolls of *The Southern Inspection Tour Painting of Kangxi Emperor* 康熙皇帝南巡圖. Similarly, *the Southern Inspection Tour Painting of Qianlong Emperor* 乾隆皇帝南巡圖 (1769) commissioned by Qianlong Emperor serves as a pictorial record of these grand Imperial inspection tours on the one hand, on the other hand certainly explains the strong personal interests in these famous landscape and ancient scenes (*mingsheng guji* 名勝古蹟) and gardens arts of the Jiangnan area, especially in the case of the Qianlong Emperor, who had more personal interest in it than the Kangxi Emperor.[297]

The imperial patrons represent the highest power of the Qing reign, imperial gardens hence documents and reflects sensitively the drastic politic, social and economic change. The development of Imperial gardens in the Qing dynasty went through ups and downs. In the regime of Qianlong 乾隆 (1735–1796) and Jiaqing 嘉慶 (1796–1820), imperial gardening reached its peak in terms of scale and aesthetics. The most significant example is the Yuanming Yuan, which contributed to international renown of Chinese garden art. To adjust to domestic and international transitions, imperial gardens are accomplished at embracing and appropriating foreign architectural elements and aesthetics, especially after European missionaries were commissioned to design and construct the garden of Yuanming Yuan. Related to this, private gardens formed their regional styles: Jiangnan 江南, Northern 北方 and Lingnan 嶺南. Another style that is less mentioned but is no less significant is the Xizang style 西藏, which embraces natural forms, in most circumstances with religious connotations, also under the influence of the Han culture. In the planning of imperial gardening on a large scale, there were lots of

[296] Ibid.

[297] For more about Qianlong Emperor and his personal involvement in the creation of literal and art works on the landscapes and gardens in the Jiannan area, see Chen Pao-chen, "Kangxi he Qianlong erdi de nanxuan jiqi dui Jiangnan mingsheng he yuanlin de huizhi yu fangjian," 13–18.

innovations and adaptations of gardening techniques from the Jiangnan region. With the decline of feudal society, and the invasion of foreign forces, however, the empire was left damaged and gardening diminished. The interactions between the imperial gardens and local gardens increased, the function of garden as objects of arts and cultivation of mind transformed into a multifunctional entertainment centre. These weakened the natural effects and hindered creativity which led to an inevitable tendency of formalism. However, revolution was achieved in some specific cases. Lingzhao Xuan is certainly one of the significant attempts from the late Qing period.

All collections reflect the agendas and tastes of their collectors, and the imperial gardens were certainly designed to please their master. Apart from constructing immortal landscapes in the imperial gardens, as discussed in earlier chapters, the Qing Imperial Gardens draw reference to actual scenes that are then “borrowed” to be constructed according to the commissioner’s personal interests and tastes. The “Buy-and-Sell street (*maimai jie* 買賣街)” borrowed from the city of Suzhou, which was also known as Suzhou Street (Suzhou Jie 蘇州街), simulates a complete system of the waterfront of Jiangnan area in Yihe Garden (Yihe Yuan 頤和園).[298] It was the most famous of the European gardens in the Changchun Palace (Changchun Yuan 長春園).

As indicated before, architecture and scenes that were “collected” into the imperial architectural compound depended strongly on the personal tastes and interests of the rulers. When the Dowager Empress Cixi had the privilege to conduct her own garden projects, she also commissioned some projects that reflected her own interests and state of mind. In the entry titled “Dowager Empress Xiao Qin amuses herself with scenes of county markets (孝欽后以

[298] Zhou Weiquan, *Zhongguo gudian yuanlin* 中國古典園林 [History of Classical Gardens in China] (Beijing: Qinghua University Press, 1990), 246.

村市景自娛)," stimulating activities on country markets in the architectural complex of the Qing Imperial Gardens were recorded: [299]

> "Dowager Empress Xiao Qin [resides] in the Three Seas, [she] arranged fields of more than ten acres, where vegetables were planted everywhere. There are sellers of all kinds of steamed foods, sellers of teas, as in the countryside. Xiao Qin often went there and bought food with money; the sellers are allowed to bow [to show respect] but not to worship on bended knees. […]"[300]

On some occasions, the Dowager Empress was even addressed by the sellers as "Old Lady" (*lao taitai* 老太太)," as if she were indeed just some old lady living in the countryside going to the open-air market as part of her daily life.

This simulacrum of foreign scenes or scenes of "other worlds" roots deeply on the desire of a way of life and less on the exact details of an architecture. Surely the "European gardens" or "borrowed landscapes" in the Imperial Garden must not be reduced to view as mere stage sets for a simulation, however, the urge to have every possible lifestyle within reach is definitely surpass a scientific absolute copy of a specific architecture or scenes. In such settings, the fascination with the harmoniously arranged "ten thousand things" of the imperial families was transformed into an eclectic style of "foreign buildings": the openness to the unknown and the other is absolutely represented in the aesthetics. In the case of construction of Lingzhao Xuan, the personal enthusiasm of the person most plausibly involved in this project, the last Imperial Eunuch Supervisor Zhang Yuanfu, is evident. He later designed and supervised a mason in the European manner in Tianjin in 1923, which he then reluctantly "sold" to the Prince Qing. This

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[299] Empress Xiao Qin 孝欽后 is an abbreviation of the Dowager Empress Cixi's posthumous name, the Empress Xiaoqin Cixi Duanyou Kangyi Zhaoyu Zhuangcheng Shougong Qinxian Chongxi Peitian Xingsheng Xian (孝欽慈禧端佑康頤昭豫莊誠壽恭欽獻崇熙配天興聖顯皇后).

[300] Original: 孝欽在三海，置地十餘畝，遍種野菜，有賣各種蒸食者，有賣茶者，儼如鄉村。孝欽常自以錢購食物，準賣者較低昂，不准跪拜。In Xu, He 徐珂 (1869–1928), ed., *Qingbai Leichao* 清稗類鈔 [Categorized Anthology of Petty Matters from the Qing Period] (Beijing: Zhonghua shuju, 2010), v. 1, 395. Three Seas (Sanhai 三海) refers to area of the the Nothern Sea (Beihai 北海), the Middle Sea (Zhonghai 中海) and the Southern Sea (Nanhai 南海), where the Qing Imperial garden of the Western Garden (Xiyuan 西苑) located.

estate later became famous as the residence of Prince Qing in Tianjin (Tianjin Qingwang Fu 天津慶王府).[301]

4.2 Lingzhao Xuan as "European Building 西洋樓"

Initially, since the Portuguese first settlement in Macau Peninsula (澳門, currently Macao Special Administrative Region), residential and religious architecture that adopted Portuguese customs were gradually transplanted to China starting in 1554, which started the interaction between exotic[302] and the indigenous architecture in South China.[303] As for the capital of Beijing, the first two Christian churches were constructed under the supervisor of the Italian missionary Giovanni di Monte Covino (1247–1328) in 1299 and 1305.[304] As the first exchange between China and the countries beyond its borders since the late Ming dynasty and the early Qing dynasty grew, curiosity about European culture and technologies started to grow among the ruling class. Yet not until a "complex of western style buildings (*xiyanglou shi* 西

[301] The historical Mansion of Prince Qing locates in the "Five Avenue Historic Building Area" in Tianjin. Information on the building awaits further research, hence the figure of Zhang Yuanfu was reluctant to reveal any details of his involvement when he served as a eunuch at the Qing court. The historical Mansion of Prince Qing currently hosts a "cultural hotel" since 2012, where "High-end services and top facilities are available for cultural tourism, catering and leisure, and conference accommodation, meeting all needs of modern life", accessed January 18, 2022, https://web.archive.org/web/20140201210654/http://www.qingwangfu.com/news_1.aspx.

[302] The word "exotic" originates from the Latin *exōticus*, which literally means "from the outside." It would be more appropriate to translate it into Chinese as "*bolai* 舶來," which, intriguingly, could be perceived from the figural structure of the Chinese characters: (things that) come by big boats (from the outside).

[303] For more on the marine exchange between Macau and Portugal during the Ming dynasty, see John E. Wills, "Relations with Maritime Europe, 1514–1662," in *The Cambridge History of China: Volume 8, The Ming Dynasty, 1368–1644*, ed. Denis Twitchett and Frederick W. Mote, v. 2 (Cambridge: Cambridge University Press, 1998), 333–375. Colonial architecture.

[304] Zhang Fuhe mentions wood as a building material in the correspondence from Covino, which demonstrates the fusion of exotic and indigenous architectural traditions. This also points out the eclectic nature of "Western building" in China from the very beginning. Zhang Fuhe, *Beijing jindai jianzhu shi* 北京近代建築史 [The Modern Architectural History of Beijing from the End of 19th Century to 1930s] (Beijing: Qinghua University Press, 2004), 5–7. In Zhang's Style Study of modern architectural history of Beijing, he suggests a three main period in the latitude of time, i.e., Foreign Style Period, Independency Period, and Turbulence Period, and in a four main architectural style in longitude of form, i.e., Occidental Building Form, Foreign Trend, Tradition Revival, Neo-Traditionalism.

洋樓式)" in "forms of eclecticism" were accomplished in the Imperial Garden of Yuanming Yuan, a trend of "Western Building Style (*yangfeng* 洋風)" was gradually established.[305]

Emperor Yongzheng 雍正 (r. 1722–1735) was the first ruler commanded Scenic Illusion Paintings (*Tongjing hua* 通景畫) with European painting technics as wall decoration, which further became Emperor Qianlong's obsession.[306] Meanwhile, it was under the reign of Qianlong Emperor that the appropriation of "Western architecture" began to shift from two-dimensional wall decoration to actual architecture.[307] The origins of Imperial architectural collecting of European buildings on a large scale dates back to one of the grandest architectural endeavours of the imperial garden in the Qing dynasty: Yuanming Yuan.[308] Intriguingly, this attempt of collecting exotic building in an architectural complex to stimulate a certain sense of being somewhere else and "borrowing the scenes" is early found in the design of the Qing Imperial Garden, to which the "European section" in the north of the External Spring Garden 長春園 is one of the finest examples in the history of Chinese architecture. As a "garden of ten thousand gardens (*wanyuan zhi yuan* 萬園之園)," Yuanming Yuan owed its style to scattered collections of European buildings before the "architectural museum" of European buildings in the External Spring Garden was built. As Patricia Berger observes in her *Empire of Emptiness*, Qianlong's awareness of organizing his collection of Buddhist and Daoist works as a "beaded

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[305] Ibid.

[306] Ren Wanping, "Qianlong chao Wanshou qingdian tu juanshang de xiyangjianzhu" 乾隆朝[萬壽慶典圖]卷上的西洋建築 [The Western Buildings on *Scroll of Celebration of Ten thousands Birthdays* from the Qianlong era] (paper presented in Liang'an Gugong disanjie xueshu yantaohui: shiqi, shiba shiji zhongxi wenhua jiaoliu 兩岸故宮第三屆學術研討會：十七、 十八世紀（1662–1722）中西文化交流 [the third academic symposium between the two Palace Museum: Cultural Exchange between China and the West in the seventeenth and eighteenth centuries, 1662–1722] (Taibei: Gugong bowuyuan, 2011), 435–451. Kristina Kleutghen, "Tongjing hua yu langshining yichan yanjiu" 通景畫與郎世寧遺產研究 [Scenic Illusion Paintings and The Castiglione Legacy], in *Gugong bowu yuan yuankan* 故宮博物院院刊 [Palace Museum Journal], v. 3 (2012): 77–88.

[307] Ren Wanping, "Qianlong chao Wanshou qingdian tu juanshang de xiyangjianzhu," 441.

[308] I use both conventional terms of "Western Building (*xiyanglou* 西洋樓)" and "Western Styled Buildings (*xiyanglou shi* 西洋樓式)" to refer to imperial garden architecture that bears foreign architectural elements for this stage. By Zhang Fuhe's definition, the former refers to the European architecture in Yuanming Yuan, while the latter refers to a trend of imitating the former in the late nineteenth and early twentieth century Beijing. However, I hesitate to distinguish the two in such simplified terms due to their eclectic nature.

grove (*zhulin* 珠林)" was also reflected in the spatial arrangement of the collection, namely, objects are stored in diverse building or palace compound according to their contents, type, and function.[309] Aligned with this seemingly reasonable concept, his "collected buildings and scenes" of the "West (*xiyang* 西洋)" are distributed in the "Chinese Versailles," or "les palais européens du Yuan-ming-yuen (the Western-Style Buildings, *xiyanglou* 西洋樓)," the first attempt of Chinese substantial European architecture project in an imperial garden commissioned by the Emperor Qianlong.[310]

As in the process of imitating Jiangnan gardens, where impressive scenes and architecture were documented pictorially and later became blueprints or stimulation of actual replica of architecture in the Imperial gardens, Qianlong's ambition of collecting "Western buildings" started to turn from pictorial depiction to building actual full-scale structures in the "Western Style." From the twelfth (1747) to the forty-eighth year of Qianlong (1783), this European section started to manifest, under which are Xieqiqu 諧奇趣, Huanghua Zhen 黃花陣, Yangque Long 養雀籠, Fangwai Guan 方外觀, Haiyan Tang 海晏堂, Yuanying Guan dashuifa 遠瀛觀大水法, Xianfa Shan 線法山 and Xianfahua 線法畫.[311]

After they were looted and destroyed by the French and British troops in the tenth year of Xianfeng 咸豐 (1860), "Western Buildings" were still constructed in the process of reconstruction in the Qing imperial gardens, but in the manner of individual architecture rather than collected in a whole garden complex. The Boat of Calmness and Tranquillity (Qingyan Fang 清晏舫) is one of these early examples of Western-style building that attempted to imitate

[309] See Berger for a detail explanation of the term "*Zhulin* 珠林" that was used to the collection of works, "*lin*" with a Chinese character with two woods "林" means "collection," like the English "garden of verse," as Berger suggests. Patricia Berger, *Empire of Emptiness: Buddhist Art and Political Authority in Qing China* (Honolulu: University of Hawai 'i Press, 2003), 65 and 78.

[310] Young-Tsu Wong, *A Paradise Lost: the Imperial Garden Yuanming Yuan* (Honolulu: University of Hawai'i Press, 2001), 51–69.

[311] Ren Wanping, "Qianlong chao Wanshou qingdian tu juanshang de xiyangjianzhu," 435–451.

the initial “Western Buildings” in Yuanming Yuan. The “boat” was made of marble while the initial pavilion of woods was burned down in 1860. In 1893 a two-story “Western Style” pavilion was commissioned by the Empress Dowager Cixi to imitate the military steamboat of Flying Phoenix (*Fengxiang* 翔鳳) with iron hull,[312] which belongs to one of the steamships that the Imperial Chinese Navy ordered and purchased from the Tianjin Machine Manufacturing Bureau, established by the Qing government in 1867.[313] The Broad View Building 暢觀樓, located in the Garden of the Third Price 三貝子花園, is also another fine example built in 1898 as an imperial lounge for the Empress Dowager on her journey between the Forbidden City and the Yihe ganden 頤和園.[314]

From 1886 onwards, the Empress Dowager started the construction project in the Imperial Western garden 西苑, which includes the Middle Sea 中海, Southern Sea 南海 and Northern Sea 北海, i.e., the Three Seas 三海, to prepare for her retreat. After her main residence in the Middle Sea, the Yiluan Palace was set alight when the Eight-Nation Alliance 八國聯軍 invaded Beijing in 1900 in response to the Boxer . The Empress Dowager rebuilt her Palace from 1902–1904, for which she accepted the suggestion of applying Western building styles.[315] As Zhang Fuhe argued, the “Western Building” designed by the leading European painter at Qing court, Giuseppe Castiglione (known in China as Lang Shining, 1688–1766), as well as Michel Benoist (Chin. name: Jiang Youren 蔣友人, 1715–1774) and Jean-Denis Attiret (Chin. name: Wang Zhicheng 王志誠, 1702–1768) and assisted by Chinese court painters Shen Yuan,

[312] Zhang Fuhe, *Beijing jindai jianzhu shi* 北京近代建築史 [The Modern Architectural History of Beijing from the End of 19th Century to 1930s] (Beijing: Qinghua University Press, 2004), 16.

[313] For Industrialization in the Jiangnan Arsenal and Fuzhou shipyard as well for a general picture of the history of shipbuilding technology modern China, see Benjamin Elman, “Toward a History of Modern Science in Republican China,” in *Science and Technology in Modern China 1880s–1940s*, ed. Jing Tsu and Benjamin Elman (Leiden: Brill, 2014), 183–193.

[314] Zhang Fuhe, *Beijing jindai jianzhu shi*, 17.

[315] Zhang Fuhe, *Beijing jindai jianzhu shi*, 19–22.

Sun Gu and others should be distinguished from the "Western Styled Buildings" after the reconstruction in the nineteenth century. The former by his definition led to the popularity of the latter at the turn of the twentieth century in Beijing, which were less imperial "huge toys (*juxing wanju* 巨型玩具)" in a thriving and prosperous time but more props staged by the late Qing rulers as they struggled to present a regal facade and sugarcoat the decadence of their empire. Nonetheless, it is undeniable that both "Western buildings" and "Western-style buildings" are, more or less, fusions of diverse architectural elements and the result of foreign and indigenous endeavours and the appearance of these replicas in imperial gardens of Qing. "Western buildings" is simply a standard category of the imperial collection of architecture first established by the Qianlong Emperor. Lingzhao Xuan, with its eclectic nature and cocreation, falls into this category and is part of the imperial architectural collection.

Apart from permanent garden architecture, temporary architecture and scenes set up for imperial birthday ceremonies also reflect Emperor Qianlong's obsession with collecting architecture, which, due to their impermanent nature, are now only to be seen in both textual and pictorial documents, as Ren Wanping reminds us. In both the *Scroll of Celebration of the Ten Thousand Birthdays of the Chongqing Empress Dowager* 崇慶太后萬壽慶典圖 (the sixteenth year of Qianlong, 1751) and the *Scroll of Celebration of Ten Thousand Birthdays of the Qianlong Emperor* 乾隆帝萬壽慶典圖 (the fifty-fifth year of Qianlong, 1790), "Western buildings" are depicted while the latter contains an obviously larger quantity.[316] At the time the Western Building section in the Yuanming Yuan was accomplished, it provided a temporary constructed mock-up architecture abundant and mature prototype.[317] In a study of "Western building" in the Scroll of Celebration of Ten Thousand Birthdays of the Qianlong Emperor in

[316] Chen Pao-chen, "Kangxi Huangdi Wanshoutu yu Qianlong Huangdi Baxunwanshoutu bijiao yanjiu" 康熙皇帝《萬壽圖》與乾隆皇帝 《八旬萬壽圖》的比較研究 [A Comparative Study of Paintings Showing Birthday Celebrations of Emperor Kangxi and Emperor Qianlong of the Qing Period], *Gugong xueshu jikan* 故宮學術季刊 [The National Palace Museum Research Quarterly], v. 30, n. 3 (2013): 45–122.

[317] Ren Wanping, "Qianlong chao Wanshou qingdian tu juanshang de xiyangjianzhu," 435.

2011, Ren Wanping compares textual and pictorial depictions of the "Western buildings" that were set up for parades. Altogether he identifies 26 Western-style buildings in the pictorial depiction.[318] The *Scroll* provides a pictorial memory for the celebration ceremony of the Qianlong Emperor's eightieth birthday, which reflects his personal interest in Western architecture. The architecture and scene built along Yuanming Yuan to Xizhi Men 西直門, then further to Xihua Men 西華門 were to provide the Emperor a moving scroll of scenes that allowed His Majesty to "travel" and marvel at the scenes unfolding along the landscape.[319]

These constructions were demolished after the ceremony, but the pictorial depiction preserves this memory. The buildings were physically scaled-down replicas of a world intended to provide infinite experience. In doing so, it provides the imperial residents a sort of a kaleidoscope of landscape to some extent, with which one could have a glimpse of infinity and indulge oneself in their own imaginary world of "ten thousand things."[320] As Kaufmann argues that the fleeting exhibition architectures "like the casts and fragments of earlier architectural museums, the national pavilions invoked the rhetorical power of fragments to suggest grand but invisible generalities, which were now sought in the abstract but emotionally laden sphere of nationhood and the march of civilization,"[321] it is worth to pose the question about these

[318] The Scroll has two volumes, which were also collected in the 八旬萬壽盛典 in the collection of the Complete Library in Four Sections (*Siku Quanshu* 四庫全書), 661, v. 79 and v. 80 were also the textual narration of the pictorial depiction in the v. 77 and v. 78. Ren also identifies three pictorial depicted buildings which were not textual recorded, while there is also one mentioned in v. 78 text but not depicted in v. 80, see Ren Wanping, "Qianlong chao Wanshou qingdian tu juanshang de xiyangjianzhu," 436.

[319] Ren examined in the direction from Yuanming yuan back to the Forbidden City, for which he first studied the 80/78 and then the 79/77 volumes. In his studies he identified three missing constructions from the textual narration in v. 80 and one missing construction in v. 79. In v. 80, the scene of the street was from Yuanming Yuan 圓明園 to Xizhi men 西直門; in v. 79, the scene is from Xizhi men 西直門 to Xihua men 西華門, see Ren Wanping, "Qianlong chao Wanshou qingdian tu juanshang de xiyangjianzhu," 436.

[320] A comprehensive study of the Kanxi and Qianlong Emperor's Southern Inspection Tours has been conducted by Chen Pao-chen, in which he addresses three main issues: the dates of these tours and related issues; paintings of Scenes of the South from Qianlong Emperor himself and from court painters; and the imitated views and gardens from the Jiangnan Area (江南地區, nowadays Jiangsu and Zhejiang province) in Imperial garden architecture from Kangxi to Qianlong era. Chen Pao-chen, "Kanxi he Qianlong erdi de nanxuan jiqi dui Jiangnan mingsheng he yuanlin de huizhi yu fangjian," 1–62.

[321] Edward N. Kaufman, "The Architectural Museum from World's Fair to Restoration Village," *Assemblage*, n. 9 (June 1989): 22.

imperial temporary architecture and ask that whether this replica focuses on the exact details of the architecture or more on the sensation and emotion that evoke within the building's frame. In other words, imitations of foreign architecture were imitated to create certain scenes that could allow the imperial rulers to "travel" without restriction, to gain control of everything "under the universe (*tianxia* 天下)" within their grasp. A similar desire for the otherworld is certainly reflected in the modern architectural display from the museology perspective, which owes its style to the nineteenth-century world fairs.[322] These activities of collecting landscapes and scenes certainly demands contribution of replica of certain architecture, nevertheless, the essence of these collecting acts is collecting personal memories and sentiments more than exact reproduction of architecture. They are places for "hearts" over "mind."

4.3 Displaying and Encompassing Otherness

During the second half of the nineteenth century, collecting and exhibiting architecture from the others in the global context stepped into a phase of integrated development in European and American countries starting with the separated national pavilions at the 1867 *Exposition Universelle* in Paris, which was the first museum of architecture to present entire buildings.[323] These laid the groundwork for both the development of period rooms and the outdoor architectural museum of the twentieth century in Europe and America, as Edward N. Kaufmann argues.[324] Since then, architectural collections in the form of outdoor museums and period rooms "represented a reaction against the traditional museum presentation of

[322] See Edward N. Kaufman, "The Architectural Museum from World's Fair to Restoration Village," *Assemblage*, no. 9 (June 1989): 32.

[323] As Kaufmann points out, in the strict sense, this is hardly the first time when exhibition pavilions have been presented as defined realms of foreignness. At the Great Exhibition of 1851 in London, large-scale mock-ups of architecture labelled as courts of "Medieval," "Grecian," and "Alhambra" were rendered within the Crystal Palace. See Kaufmann for more discussion, "The Architectural Museum from the World's Fair to Restoration Village," *Assemblage*, no. 9 (1989): 22.

[324] Ibid.

architecture through casts and fragments”[325] and the architecture museums entered into all-around development in Europe and North America. Meanwhile, creation of the Qing imperial gardens stagnated and mainly shifted to maintenance and reconstruction after they were looted and destroyed by the French and British troops in the tenth year of Xianfeng 咸豐 (1860). As the reign of the Qing dynasty continued downhill, the Empress Dowager Cixi who was in charge of the reconstruction of Qingyi garden (Qingyi Yuan 清漪園, i.e. the later Yihe Yuan 頤和園) in the fourteenth year of Guangxu 光緒 (1888) was said to have to embezzled funds allocated for the Imperial Chinese Navy.

Certainly, under the continuous reconstruction of imperial garden in Qing, some former collected scenes and architecture even became convention referred to for later reconstruction, and new collections were added as well, as the latter section has pointed out. As the collection process of architecture from *others* was a continuous process of rearrangement and recreation, which developed parallel to the increased exchange between China and the world, it means that closer attention to the “style” of the architecture is required. The eclectic nature of Lingzhao Xuan under the category of *Western building* was beyond question, since, as suggested before, *Western buildings* constructed in the imperial gardens were, from the very beginning, fusions of selected styles of European and indigenous endeavours. However, if one is to decode the architectural language of Lingzhao Xuan, it is necessary to untangle some minor plausible influences from the significant indigenous and European influences, which were often demonstrated in the term *a fusion of China and the West* (*zhongxi hebi*, 中西合璧, literally “Chinese and Western [elements] together in one) whilst referring to its style. Interpreted within the history of engineering and technology, it is beyond question that Lingzhao Xuan is a fine example of influences from European and North American countries in the nineteenth and

[325] Ibid.

twentieth centuries. Meanwhile, the design delicately embeds the Chinese heritage of garden aesthetics as discussed throughout this whole study.

Hybrids of indigenous and foreign decorative elements are scattered all over the building while in most circumstances, indigenous carving motifs are rendered into a European architectural frame, as demonstrated by the detailed study of the stone carvings in Chapter 2. Details of the capital of the composite column on the entrances represent this *fusion of China and the West* principle as well with the styled acanthus leaf replaced by a lotus leaf and the fleuron styled after a peony (**figs. 4.1–4.2**). Nevertheless, reducing the style to a dichotomy of "China and the West (*zhongxi hebi* 中西合璧)" might have hampered the further investigation of the cross-cultural essence of Lingzhao Xuan. Even reasonable doubts should be given to some ongoing working theories until this stage, visual evidences brought about in this section demonstrate a very convincing connections between Lingzhao Xuan and exhibition architecture in the nineteenth and twentieth centuries that also demonstrate the extravagant decorative eclecticism to the full, in the era when the zeitgeist of great exhibitions as "a utopian prototype of international harmony" was promoted by Prince Albert since the very beginning of "bringing all nations into one international family."[326]

Striking structural similarities between Lingzhao Xuan and certain exhibition architecture that was promoted as representative of the "mysterious Orient" indicates that the fusion of architectural elements in Lingzhao Xuan exceeded the simplified influences of "China" and "the West" and reflected an even broader involvement of elements from "the East" and "the West" at the time. Lingzhao Xuan is an amalgam that awaits further investigation against the backdrop of an increasingly globalised world.[327]

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[326] Christina Henderson Harner, "Rebuilding the World at the Crystal Palace: Architectural Discourse at the 1851 Great Exhibition," *A Journal of Culture and Literature*, n. 136 (Winter 2019): 140, accessed February 7, 2022, https://doi.org/10.1353/vct.2019.0015.

[327] The application of vocabularies as "East" and "West" are to understand in their historical context. The early collection of "oriental" scenes and architecture throughout the stage of world exhibition (*Universelle Expositions* and World Fairs) share similar issues as the collection of architecture "from the others" in the Qing imperial gardens, namely, "the others" are appropriated to satisfy one's own imaginary rather than presented the accurate

Lingzhao Xuan as "bizarre international architectonic koiné"

Despite the current scrutinization that allows the decoding of "Chinese-ness" and "Western-ness," several standout structural characteristics of Lingzhao Xuan fail to be attributed to either of them at first glance. The first worth noticing is the architectural composition of the five light and airy pavilions. To demonstrate its anomaly, with help of Lingzhao Xuan's floor plan, it occupies a horizontal rectangular platform running in an east-west direction, to which four polygons (two hexagons in the southeast and southwest; two octagons in the northeast and the northwest) are attached to the four corners that shape the main chamber into a flat, rectangular octagonal form (**fig. 4.3**). In the middle of the central hall, an octagonal pavilion sits on the top of the roof, which joins the other four corner pavilions to form a "five-step-pagoda (*wuta* 五塔)" that might at the first glance bearing superficial similarities to the *Vajrasana* Pagoda, also known as the Diamond Throne Pagoda (*jingang baozuo ta* 金剛寶座塔) that have the composition of a vajra-base with mainly five-step-pagoda on the top as well.[328] *Vajrasana* Pagodas in China went through a rather long appropriation and recreation process since their introduction from India during the Northern dynasty (386–581). They further developed during the Ming (1368–1664) and Qing dynasties into various forms, yet the main composition of the main five pagodas that features that Mandala remains to demonstrate its symbol as a sacred altar. The process of transmission and evolution hence is under the influence

facts in their context. As a "fusion of decor and collection", the collected "aesthetics" presented in exhibition architecture were derived from a certain sense of self-celebration and parades of economic and natural science among the industrialized countries.

[328] For more research on the Diamond Throne Pagoda in China, see Liang Sicheng, *Chinese Architecture. A Pictorial History: A Study of the Development of Its Structural System and the Evolution of Its Types* 圖像中國建築史 (Hong Kong: Joint Publishing, 2015). More current research on the Diamond Throne Pagoda in China, see Zheng Qi, "Zhongguo jingang baozuo tanwei" 中國金剛寶座探微 [Vajrasana Pagoda in China], *Huazhong jianzu* 華中建築 [Huazhong Architecture], v. 26 (2008): 170, in which the author lists twelve sites of Diamond Pagoda in China and discusses them.

of not only cultural exchange between India and China, but also ethnic exchanges of Han, Manchuria, and Tibet.[329]

Nevertheless, floor plans show that, unlike the Vajrasana Pagoda in China, the four pavilions at the corners of Lingzhao Xuan are attached to a rectangular central chamber rather than the five pagodas set atop a square. According to the plan arrangement, the only structure with similar plan is the Flowery Pagoda 廣惠寺華塔 (1200), which also takes this form of four pagodas attached to an octagonal chamber. However, it still exhibits significant differences between the arrangement of the five pavilions in Lingzhao Xuan and the most cases of *Vajrasana* Pagoda in China.[330] Meanwhile, the affiliations of this five-pagoda structure could be sought elsewhere. This arrangement is more reminiscent of the horizontal plan with five projecting elements in Mughal architecture, such as *I'timād-ud-Daula*'s tomb, a fine example of Mughal architecture merged with the Hindu tradition.[331] Apart from these, the four side-pavilions of Lingzhao Xuan evidence obvious influence of the Rajput *chattri*. The eaves of the porch consist of two tiers of metal frames, which protrude and join at some point to form an umbrella-like sloping projection (**fig. 4.4**). Unlike the "flying roofs" of traditional Chinese pavilions, these eaves share more similarities with the *chajja* in Indo-Islamic architecture, a sloping projection adopted from Hindu architecture to block out the sun and drain rainwater. In the nineteenth century, Mughal architecture absorbed influences from the British Empire. British architects and city planners such as Swinton Jacob (1841–1917) brought about a change in Indian architecture by amalgamating Mughal, European Baroque and Hindu elements into the so-called Indo-Saracenic architecture, otherwise known as Mughal Revival or Empire Civic

[329] Ibid.

[330] More details on the architectural structure of Vajrasana Pagoda in China, refer to the pictures in Zheng Qi's study.

[331] Mughal architecture is, as mentioned above, produced by the fusion of Hindu and Islamic architectural elements in Mughal India. More details, see E. B. Havell, *Indian Architecture: Its Psychology, Structure, and History from the first Muhammadan Invasion to the Present* (London: John Murray, 1927).

Monumental.[332] To this point, it is certain that Lingzhao Xuan absorb aesthetics and elements that wider than those already have been identified. Hence questions await answer are that from what context emerge these influences into the making of this construction, is its design an intentional individualised custom product for the imperial garden or a modularized massive reproduction?

As this point, Lingzhao Xuan appears to be a "bizarre international architectonic koiné," if the analysis in the later section is taken into account. In this section, similarities between Lingzhao Xuan and exposed decorative exhibition architectures in the nineteenth and twentieth centuries contribute further to the argument that the manifestation of this architectural site was a cross-cultural amalgam.[333] Perhaps the best-known example of exposed iron architecture from the world exhibitions is London's famed Crystal Palace, built in in 1851. From then to 1909, when Lingzhao Xuan was under construction, various countries in Europe and North America exported and celebrated products of the Industrial Revolution while simultaneously importing and embracing cultures and ideas from elsewhere. World exhibitions at the time reflected economic, political and social changes, sampling architectural styles from all around the globe in a seemingly realistic fashion.[334]

The world exhibitions served primarily as platforms for "self-congratulation" on the part of European and North American societies on their economic and industrial triumphs.[335] There, these countries showcased their industrial products, technological innovations and experience of other cultures.[336] By contrast, Asian cultures were viewed through the sometimes demeaning

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[332] Ferd R. Holmes and Ann Newton Holmes, *Chariots of Stone: The Message of Rajput Chattris* (Jodhpur: Mehrangarh Museum Trust, 2015), 182–183.

[333] Fernando Vegas and Camilla Mileto, "World's Fairs: Language, Interpretation, and Display," *Change Over Time*, v.3, n. 2 (Fall 2013): 178, accessed February 5, 2022, https://muse.jhu.edu/article/523420.

[334] Zeynep Çelik, *Display the Orient: Architecture of Islam at Nineteenth-century World's Fairs* (Berkeley: University of California Press 1992), Introduction.

[335] Çelik, *Display the Orient: Architecture of Islam at Nineteenth-century World's Fairs*, 2.

[336] Ibid.

and patronising lens of colonialism and the white man's burden, being essentialised and reduced to vague and generalised impressions of the real thing.[337] Exhibition architecture at world exhibitions thus often reflected a patchwork appropriation from different cultures and aesthetic traditions. The "West" broke the culture outside the *West* into pieces, removed them from their architectural context, then brought them to the *West* and patched them together and as a summary of the culture of *the Other*.[338] The *Oriental* architecture that fed their exotic fantasies is a product of just such a process.

Thus, in the "outdoor architectural museum" of world exhibitions, Asian architectural styles were claimed on the one hand to be authentic, but on the other hand, they were contorted by stereotypes and misconceptions of *the Other*.[339] From the architecture at the *Exposition Universelle 1867* in Paris, in which nations had separate pavilions, to the Louisiana Purchase Exhibition 1904, architecture at world exhibitions sought to be provocatively exotic. Mixing and matching architectural elements from different countries into one architectural style was common at these fairs.

International expositions of the nineteenth and twentieth centuries were characterized by their fleeting nature. The vast majority of all materials structures, including buildings and pavilions, were usually planned with a view to immediate demolition after the event's closure and were, in Simmel's words, "intended for temporary purpose only." This reproduction of certain conceptual models is not a unique phenomenon but can be found throughout the construction of imperial architecture. Recent studies also demonstrate a process of copying some favourite cases as standardized models of certain architecture. For example, in her lecture

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[337] For a discussion on colonialism and modernity in architecture, see Arif Dirlik, "Architectures of Global Modernity, Colonialism, and Places," *Modern Chinese Literature and Culture*, v. 17, no. 1 (2005): 33. Dirlik mention a term called "localised Orientalism" when he discusses the architecture in Shanghai adopting flying roofs and pagodas as decorations to demonstrate their Chinese-ness, I see the same demonstration of Chinese-ness in Lingzhao Xuan.

[338] Çelik, *Display the Orient: Architecture of Islam at Nineteenth-century World's*, Introduction.

[339] Çelik shares the same opinions on his study on the Islamic architecture in the world exhibitions.

in 2020, Yang Qing mentioned the process of adopting the model of the first Chinese Library, Tianyi ge 天一閣, in Ningbo into the later built seven Imperial Libraries that built for the collection of *The Complete Library in Four Sections* 四庫全書.[340]

Even on this superficial level, however, striking resemblances emerge between the very structure of Lingzhao Xuan and the rather prototypical "oriental buildings" in the fields of exhibition architecture, complete with extravagant decorations and exposed structure. It is intriguing that parallel development of a similar structure with four corner towers attached to a central hall reveals itself in different continents on several occasions, mostly among exhibition architecture. Nevertheless, one should hesitate to make claims of any accurate links between Lingzhao Xuan and exhibition stands at the time, especially due to the fact that documents of building materials are either missing or have yet to be found.

At the current stage of this study, I am content with the fact that examples of "patchwork" of oriental fantasy confirm my theory that the "five pavilions" are not always connected with religious connotations since the appropriation and fusion of multiple culture in the colonial architecture. Lingzhao Xuan, as an indubitable product of mass production among the glass-and-iron entertaining architecture, certainly could have received the influence under this flow without consciously identified the other "oriental elements" besides the indigenous Chinese ones.[341] By juxtaposing the striking similarities of the structure of Lingzhao Xuan and the

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[340] Yang Qing 楊箐, Yu Jia 于嘉, and Wang Xiao Shi 王笑石. "Siku qige fang tianyi suo fanying de qingdai huangjia yuanlin xie fang Jiangnan de sange jieduan" 四庫七閣仿天一閣所反映的清代園林寫仿江南的三個階段 [The three phases of Qing Imperial Gardens imitating the Jiangnan Gardens, reflected by the seven replicas of Tianyi Pavilion of the Imperial Libraries built for the Complete Library in Four Sections.], *ArchiCreation* 建築創作, v. 5 (2017):138–143.

[341] It is worth mentioning that a painstaking process of studying the so-called Indo-Saracenic architecture is still ongoing and beyond all working theories of the appropriation process, which I assign myself as plausible further research sources. But one thing is for sure, the remarkable eclectic nature of the sufficient "thirteen divisions" that awaiting to expend into "even a great number" is an incontrovertible fact that results from the historical and geographical exchanges and interactions where the architecture emerges in the nations existed in the Western Asia between Mediterranean and the Indus. A very detailed study of divisions of Indian architecture is conducted by James Fergusson, *A History of Indian and Eastern Architecture*, ed. James Burgess and R. Phené Spiers, v. II (London: John Murray, 1910).

exhibition architecture that absorbs diverse aesthetics elements at the backdrop of colonial architecture, the dichotomy of "China and the West" is further questioned.

Traces of Lingzhao Xuan bearing the legacy of "oriental fantasy" presented mostly in world exhibition architecture are evident, and yet to this stage, despite the abundance of visual evidence, research is still hampered by the lack of direct links between the objects. I could only draw the conclusion that any direct influence from exhibition stands to the construction of Lingzhao Xuan could not be eliminated, yet this is a subject for further research. One of the hesitations of conducting a direct parallel comparison of its structure and exhibition architecture also due to the fact that they serve fundamentally different purposes. The former is an imperial garden attraction, while the latter was built for showcasing products of industrial and economic progress. However, at this point, it is important to consider the eclecticism of Lingzhao Xuan as a plausibly unconscious creation of "a new architectonic language based on the manipulation of one or several existing architectonic styles" and abandon the label of "fusion of China and the West" for the sake of further research.[342]

Displaying and Encompassing Otherness

Through the juxtaposition of imperial and Han official scholarly identities, the syncretism of Buddhism, Daoism, and Confucianism, and the breadth of its ambition, particularly its aim to embrace *all under the heaven*, with all things considered, the Qing imperial garden design first seeks for a display of varieties and collections; second, it aims for a harmony within this encompassment. This coincides to some extent with the essence of exhibition architecture construction since the very beginning of the use of glass and iron construction in botanic garden landscapes.

In 1851, in Great Britain, one of the leading industrialized countries, Prince Albert proposed "a plan for facilitating global peace through constructing a miniature world that

[342] Fernando Vegas and Camilla Mileto, "World's Fairs: Language, Interpretation, and Display," *Change Over Time*, v. 3, n. 2 (Fall 2013): 178, accessed February 5, 2022, https://muse.jhu.edu/article/523420.

modeled such unity"; thus Crystal Palace was conceived.[343] Despite a diverse range of attitudes, the architectural discourse surrounding Crystal Palace, which was mainly set in the social and economic context of London, demonstrates a confrontation with the building's international audience from distinct nations, classes, and races and the plausibility of bringing them under a "utopian prototype of international harmony."[344]

Henry Cole, one of the initiators of the Crystal Palace project, when commenting on Paxton's building, noted that it was not so much the materials used to create the building that was remarkable as the way those materials were deployed.[345] The usual arrangement under the categories of raw materials, machines, manufactured goods, and sculptures and fine arts was replaced by a division according to geography and nation-states, with the aim of housing "the various corners of the globe in one vast, enclosed space," which was a shared vision of Prince Albert, Henry Cole, and the other initiators.[346] Against the backdrop of violence on the European continent, the initiators, through their architectural determinism, possessed the faith and conviction that the Crystal Palace of the Great Exhibition could lead the world to a future of international discussion.[347] The erection of this building took place under difficult circumstances. The re-erection of Crystal Palace in semi-rural Sydenham in south London was meant to transform the iconic architecture of the temporary exhibition into "a permanent venue for education and pleasure."[348] The amazing reputation of the first Crystal Palace was due more to its scale and translucence, which gave the impression of a "supernatural creation," offering

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[343] Lisa Merrill, "Exhibiting Race 'under the World's Huge Glass Case': William and Ellen Craft and William Wells Brown at the Great Exhibition in Crystal Palace, London, 1851," *Slavery & Abolition* 33, no. 2 (June 2012): 139.

[344] Christina Henderson Harner, "Rebuilding the World at the Crystal Palace: Architectural Discourse at the 1851 Great Exhibition," *Victorians: A Journal of Culture and Literatur*e no. 136 (Winter 2019): 140.

[345] Harner, "Rebuilding the World," 147.

[346] Harner, "Rebuilding the World," 144.

[347] Sharon Marcus defines architectural determinism as the belief "that spatial environments determine the social arrangements, daily behaviors, and political status of those who inhabit them." Information from Harner, "Rebuilding the World," 140.

[348] Crystal Palace Company *Prospectus*, May 17, 1852; *Times*, May 14, 1852, 8. Information from Robert Thorne, "The Rebuilding of the Crystal Palace 1851–54," *Construction History* 33, n. 2 (2018): 45.

a "fairy-like" experience, described by the historian T. B. Macaulay as "a most gorgeous sight; vast graceful; beyond the dreams of the Arabian romances."[349]

Regarding its function of display as exhibition architecture, Lisa Merrill proposes that the architectural environment of Crystal Palace had the two-fold intention of to "see and to be seen."[350] The crystal showcase was a glass enclosure for "rare and exotic flora and fauna," as in a hothouse, and a palace displaying the glamour and goods of imperial and industrial Great Britain to its foreign guests. Meanwhile, Crystal Palace was a stage set that "served as a site for international encounters between British spectators and visitors from all over the world, who—like the objects displayed—were perceived (and regarded each other) as visible representations of their particular culture, class, race and/or nation."[351] Merrill points out that the Great Exhibition "served as a prototype for a nascent mode of spectating," involving "difference and Otherness—whether in material products or in people—as spectacle: a commodity to be gazed or gawked at along with other objects of art and industry."[352] To this end, the spectatorship that was made possible by setting a stage within the space of Crystal Palace for all the world to see and be seen was another aspect of the revolutionary "visual rhetoric" of glass and iron exhibition architecture.[353]

This visual rhetoric of glass and iron construction was inherited in the construction of Lingzhao Xuan. As addressed in the last section, consciousness of the theatrical potential of the imperial family in the wake of the Qing dynasty's decline could be seen in political and diplomatic events as well as in more private settings. The spatial environment of a Chinese Crystal Palace, realized in Lingzhao Xuan, was unprecedented. Once accomplished, it could be seen as displaying awareness and curiosity about waking up to the industrial superiority

[349] Information from Throne, "The Rebuilding," 46.

[350] Merrill, "Exhibiting Race," 322.

[351] Ibid.

[352] Merrill, "Exhibiting Race," 323.

[353] Ibid.

represented by industrialized building materials and technology, as in the case of the British Crystal Palace, which was built to "assert British cultural and industrial superiority."[354] The intention behind the construction of Lingzhao Xuan can be seen as the simultaneous promotion of imperial household interests and domestic economic interests following the imperial awakening to the idea of its decline.

Nonetheless, it is to be noted that commercial exhibition was one of the most significant aims of London's Crystal Palace as well as of other similar temporary exhibition architecture, while the international encounters that were set within the *stage* of Lingzhao Xuan only showcased the privilege access of its imperial patronage. However, the spirit of display and encompassment was inherited from such examples of exhibition architecture. Juxtaposed against its international predecessors and counterparts, Lingzhao Xuan's inherited eclecticism can be interpreted through the lens of two aspects:

> **First**, display of the *others* in a conceptualized mini universe: its eclectic architectural design in terms of its material, technological, and aesthetic aspects was aligned with the initial intention of exhibition architecture.
>
> **Second**, encompassment of a *global harmony* seeking to integrate all components: this was affiliated with the function of exhibition architecture, which was "intentionally built and strategically designed to model unity."[355]

On the other hand, the architectural divisions of Lingzhao Xuan reinforce the hierarchies of heaven, earth, and human beings by adopting and displaying the conventional architectural system presented earlier. Meanwhile, they demonstrate diversity by allowing the asymmetrical arrangement of decorative elements. Diverse realms, or the possibility of multidimensional experience, are encompassed in this spatial setting, permeating the chronological and geographical boundaries of the mundane world. In this light, I am content that Lingzhao Xuan,

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[354] Information from Footnote 4 in Harner, "Rebuilding the World," 139.

[355] Ibid.

built more than half a century after the London Crystal Palace, still followed this schema of displaying exotics and arranging them in a certain harmony.

Conclusion

Activities of collecting architecture transmitted from the concept of “borrowing landscape 借景” in the aesthetics of Chinese garden to actually construct architectural replica in the Qing imperial garden, even since landscape and scenes were continuously and gradually “collected” and “transplanted” in the Imperial Garden of Qing dynasty. As all other collected art objects, the collections serve the personal interests of their patron, and the personal interests and political ambitions of the rulers make a strong impact on the development of imperial gardens. As, for example, in Emperor Qianlong’s architectural collection, his almost overly keen interest in Jiangnan gardens is mirrored in the garden construction while his growing interest in European culture and technology certainly played a crucial part in his initiation of constructing “Western Buildings” that eventually resulted in the grand accomplishment of a complex of “Western Building” in Yuanming Yuan.

The “collecting process” starts first with the collecting of Jiangnan gardens in the Kangxi reign that were manifested in three ways: introducing methods and techniques of the Jiangnan Gardens; appropriating famous themes and recreating them; imitating certain gardens and architectures and expending the surroundings. During the Yongzheng Emperor’s reign, as the exchange with European countries grew, the emperor took a personal interest in introducing decorative European architectural elements into imperial architectural decoration and individual “Western Buildings” were built. Until the Qianlong period, a “European section” in the Yuanmingyuan garden was rendered to manifest a theme-park like landscape for the Qianlong Emperor’s satisfaction. Meanwhile, due to the emperor’s interests in exotic architecture, temporary architecture of “Western Style” were mocked up for in his Birthday celebration parade, which afforded him a “moving scene” on his way back to the Forbidden City from the Yuanming Yuan. To that end, these architecture and scenes “from the others”

serve the purpose for entertaining and "to simulate the experience of travel, the object of which, however, lies less in the buildings than in the social customs they support,"[356] which could be the same as the building of the exhibition architectural compounds in the nineteenth and twentieth centuries, even though the former were a privilege for the Qing imperial family while the latter certainly functioned alone with other considerations.

Thus, regardless of the extent of the appropriation of garden architecture, foreign architectural characteristics were constructed to enrich the architectural collections categorized as *Western buildings*. Due to its eclectic nature and the cocreation of both foreign and indigenous endeavors, Lingzhao Xuan undoubtedly falls into this eclectic category. However, the term *a fusion of China and the West*, which was popularly applied to refer to these architectural examples, is less satisfactory if other plausible influences are taken into consideration, especially in terms of the construction.

In terms of its spatial arrangement, Lingzhao Xuan showcases the features of display and the encompassment of otherness, which are aligned with the examples of European and North American exhibition architecture in glass and iron. In addition to the syncretistic arrangement of Buddhist, Daoist, and Confucianist notions, the integration of novelties from beyond the Chinese borders is significantly evident. The harmony and transcendence of different times and spaces are embodied, intertwined in the spatial environment and visual rhetoric of Lingzhao Xuan. The global harmony that was envisioned by experimental exhibition architecture is thus revealed in the features of Linzhao Xuan.

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[356] Edward N. Kaufman, "The Architectural Museum from World's Fair to Restoration Village," *Assemblage*, no. 9 (June 1989): 21.

Chapter 5 Trans-Mundane Space in Crystal Glass

"One can think of the halo, in this sense, as a zone in which possibility and reality, potentiality and actuality, become indistinguishable."[357]

The all-encompassing issue of this dissertation is the creation of a trans-mundane space. The concept of a micro-universe that accommodates "possibility and reality, potentiality and actuality" embedded in Lingzhao Xuan is discussed in the previous chapters through the examination of the architectonic physiognomy of the architectural complex. The three interdependent and fusional components, divided into the basement contained in the pond, the main hall on the first floor and the five protruding pavilions on the top. These respectively function as an aquarium, a studio, and decorative elements, respectively. Taken together, they provide images of water, mountain, and sky in the light of the *shanshui* 山水 (mountain and water) in Chinese aesthetics, which work in tandem to sustain an organic whole.[358] All these manifest functions contribute to the interpretation of the latent function of Lingzhao Xuan, a trans-mundane space in the light of Chinese traditional aesthetics and philosophies, as examined and addressed in the previous investigations.

In this chapter, the focus will be on the application of industrialized crystal glass at this site that resonates well with the inquiry of the concept of *shuijinggong* 水晶宮 (Crystal Palace) as imaginary and built architecture in China prior to Lingzhao Xuan at the very beginning of this study. Lingzhao Xuan, as has been addressed by current scholars of Chinese architecture, belongs in the category of industrialized reproduction, which hampers the appreciation of the

[357] Giorgio Agamben, *The Coming Community*, trans. Michael Hardt, (Minneapolis and London: Minnesota University Press, 1993), 55–56.

[358] Possible function of the five pavilions as birdcages, see Chapter 3 for my concluded assumption made for the current stage.

project's artistic creativity. Reading Lingzhao Xuan as a piece of "utopian architecture" provides another line of thought that aims to go beyond the entrenched historicist view.

Based on textual evidence, I demonstrated in very beginning of my study that the "Crystal Palace," either in imaginary or built form, is considered in Chinese tradition as divine, precious, sacred, royal, and otherworldly.[359] On the basis of those historical, transcultural and critical accounts of "Crystal Palace" in China prior to the modern era, I extend my study by shedding light on the material agency and medial efficacy of industrialized glass and the fictive characters of glass as a built material that provides multiple interpretations and readings of the constructed spatial narrative in this architectural space. I argue that industrially produced crystal glass as a material medium is the crucial component in simulating a divine, precious, sacred royal, and otherworldly halo or aura at Lingzhao Xuan, both when viewed from a distance and experienced from within. Both the phenomenal (figurative) and literal transparency of the pure, transparent glass are stressed in full in the making of the trans-mundane space of Lingzhao Xuan. The application of glass to maximize visual transparency in this construction manifests the concept of a mythical "Crystal Palace." In turn, this endows the space with a sense of the mysterious and the divine, stemming from the "novelty in visual perception, formal memory and optical consciousness" that glass provides, contradictory to Benjamin's claim.[360]

Using glass for Lingzhao Xuan, a structure in the imperial palace far removed from the commoners' experience, clearly accentuates the sense of privilege enjoyed by members of the imperial court. Hence, completing Lingzhao Xuan's aura was this sense of exclusivity and privilege the structure embodied, as it was only meant to be experienced by its imperial patrons. The ineffable effect of being in a Chinese "Crystal Palace" that situated in the realm of dragon kings was to perceive, remember, and contemplate by an audience aware of the pre-contextual

[359] My point of departure was from the architectural context. For more on the religious usages of glass in other material forms, see Liu Lihong, "Glass Containers' Aura: The Gestalt of Material Milieu," in *Association for Art History*, v. 44, n. 1 (February 2021): 108–129.

[360] Liu Lihong, "Glass Containers' Aura: The Gestalt of Material Milieu," in *Association for Art History*, v. 44, n. 1 (February 2021): 111.

connotations. In other words, the physical involvement of the imperial patrons was the crucial last step in completing the formation of a divine, precious, sacred, royal and otherworldly trans-mundane space in Lingzhao Xuan.

What underpinned the aura more than anything else was the "container"—referring to Lingzhao Xuan as an architectural cover, and the "contained"—its imperial patrons—"mutually [enhancing] each other's auratic effects in the formation of a whole."[361] Forms must begin as a *tabula rasa*. The application of glass in Lingzhao Xuan endows the architectural space with an aura of the precious, sacred, and royal, such that when the imperial patrons' own perception, memory, and experience come into play, they could have appreciated it as an inviting divine space from afar and have felt like they were in the limitless otherworldly realm of the dragon king when in the enclosed space. In this study, I interpret the spatial narrative of Lingzhao Xuan as forming a "utopia of escape" in conjunction with the idea of a "Crystal Palace" in other cultures.

5.1 Fictive Quality of Glass and "Glass Aura"

In Joseph Paxton and Bruno Taut's glass houses, glass acts "as a substitute for traditional stone as they pursued alternate connections between people and nature."[362] While masonry work still plays an essential part in the construction of Lingzhao Xuan from a technical perspective, the application of industrially produced crystal glass that is unconventional in Chinese architectural tradition prompts reflection on its material agency. I discussed in Chapter 4 that the exhibition house, along with the exposed iron structure that evokes "Oriental" fantasies, is a plausible structural influence on Lingzhao Xuan despite the lack of evidence of

[361] The "contained" refer to the sacred and precious objects that were placed under the glass surrounds in Liu Lihong's study on glass surrounds at the Qing court, see Liu Lihong, "Glass Containers' Aura: The Gestalt of Material Milieu," 112.

[362] Ufuk Ersoy, "The Fictive Quality of Glass," in *Architectural Research Quarterly*, v. 11, n. 3–4 (December 2007): 237–243.

foreign designers' involvement in the project. Although Lingzhao Xuan's initial purpose was not to function as a piece of exhibition architecture – unlike its possible prototypes, Crystal Palace (1851) and *Glashaus* (1914), which were designed to "[instigate] debates on industrialisation"—these structures have in common the latent function as a "glass utopia," something that gels well with the interpretation of Lingzhao Xuan as an otherworldly trans-mundane space.[363]

Glass and crystal metaphor

All manifested functions of Lingzhao Xuan, as a studio complete with fish gallery and possible birdcage reveals the latent function of Lingzhao Xuan of creating a trans-mundane space as I addressed in the former study. This is in the light of Chinese traditional aesthetics and philosophies, most specifically connected with the imaginary *shuijinggong* (Crystal Palace). As the interpretation of this study suggested, however, that this Chinese glass dream, is to understand it as a planned "utopia of escape" that further exaggerates the privilege of the Qing imperial patrons. At the same time, other manifested glass utopias, such as the creations of Joseph Paxton and Bruno Taut, were tasked with the mission of being "as a substitute for traditional stone as they pursued alternate connections between people and nature," which were promoted as the hope of realising architecture that optimized the use of glass.[364] In Ufuk Ersoy's study on the fictive characters of glass, juxtaposed with Paxton's Crystal Palace and Taut's *Glashaus*, reveal that the creators of both glass utopias "did not value glass as a corollary of industrialisation," but rather "the substance appealed to them by virtue of its fictive attributes."[365] Ersoy further addresses the metaphor of architecture and narrativity proposed by

[363] I thank Dr. Ufuk Ersoy from Clemson University School of Architecture for his support on my study by providing reading materials and visual materials. This historical archives of Bruno Taut's *Glashaus* were monochrome, I am also grateful to have had access to pictures of the model built in 2021 for the "Luminous City Exhibition" in the City Gallery of Charleston, South Carolina, by a student group at the Clemson School of Architecture under the guidance of Dr. Ufuk Ersoy, to demonstrates the colorful effect of the Bruno Taut's *Glashaus*.

[364] Ersoy, "Fictive quality of glass," 238.

[365] Ibid.

the French philosopher Paul Ricœur, in which he mentions the renouncement of the "ability of any material medium to represents ideas," which can be traced back to Plato.[366] This line of thought can be applied to my reading of the application of industrialized crystal glass in the creation of the trans-mundane space at the site of Lingzhao Xuan.

Glass and crystalline bodies are used to contain, preserve, and reveal, but at the same time arrange the truth that spark imagination in many cultures and civilisations, although not always on a homogenous level. The preindustrial allure of glass could lie in the following four factors: glass is a simulacrum of naturally occurring but rare and therefore precious crystals or jewels; truly clear glass is difficult to produce; glass objects were usually small and brittle.[367] All these qualities together make glass on the one hand intriguing and on the other hand hard to handle on a large scale in the preindustrial era; nevertheless, ideas of manifesting these crystal architectures can be found in many ancient civilizations. The ideal of "glass utopia" stems from the same desire, though it was eventually manifested in different physical forms.

As the first chapter of this dissertation argues, when looked at in isolation, Lingzhao Xuan is the first Chinese "Crystal Palace." The building materials and engineering technologies of the industrialized countries at the time contributed a great deal to this visual realisation. But when one looks over the edge, one come to the realisation that the "Crystal Palace" is a shared dream that is consistently revisited and reinvented in both literature and art in multiple religions and cultures. Its architectural realisation has blossomed with the advancement of science and technology that have allowed the mass production of glass as a building material. As the connotations of *shuijinggong* 水晶宮 (Crystal Palace) in Chinese context that I presented and the "Crystal Metaphor" that is discussed by Rosemarie Bletter demonstrate, the pursuit of a "Glass Paradise" or "Crystal Palace" is a continuous attempt throughout human history. Similar

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[366] Ibid.

[367] Jeffrey T. Schnapp, "Crystalline Bodies: Fragments of a Cultural History of Glass," in *A Journal of Decorative Arts, Design History, and Material Culture*, v. 20, n. 2 (Fall–Winter 2013): 173–194, accessed March 27, 2022, https://www.jstor.org/stable/10.1086/674728.

to the phenomenon in ancient China, isolated fragments reveal the iconographic tradition of the "glass house" in medieval and Muslim architecture, as Bletter examined. Bletter's research traces the long literary prehistory of glass rooted in the legend of King Solomon, in whose palace a glass floor was rendered to reveal the magic of the Queen of Sheba.[368] Despite the fictional narratives of King Solomon depicted him building an underwater dome of glass and aerial city of crystal and medieval stories about the search for the Holy Grail and Gothic cathedrals, quest for the Stone of Wisdom, the imagery of architecture as a social agent disappears and reduced form of the philosopher's stone, were passed down as legends. In the twentieth century the technical revolution allowed financier Whitaker Wright (1846–1904) to build a hemispherical underwater smoking room with glass panels that included a perspective view to see through the wall and the celling into an underwater world of the lake. The structure was hidden and was only recently rediscovered in the abandoned private estate at Witley Park in Surrey, England (**fig. 5.1**).[369] This creative "utopia of escape" was built around 1890, before the reinvention of glass utopia promoted and led by the German polymath Paul Scheerbart and architect Bruno Taut after the First World War. Glass as a building material in the manner of industrial reproduction served a functional purpose until the imagery of glass utopia returned to the architectonic realms. Glass as a building material in the manner of industrial reproduction served a functional purpose until the imagery of glass utopia returns to the architectonic realms, however, idea and design of these constructions, including Lingzhao Xuan, strongly indicate the reflection on reconciliation of ideals and function-focused materials at the juncture of

[368] Rosemarie H. Bletter, "The Interpretation of the Glass Dream-Expressionist Architecture and the History of the Crystal Metaphor," in *Journal of the Society of Architectural Historians* v. 40, n. 1 (March 1981): 20–43.

[369] Witley Park, formerly known as Lea Park, is an estate dating from the nineteenth century. I newly came across the information on this hidden ballroom under the lake, more details on the construction and its history await further inquiry. A brief introduction on this estate and some photographs in the collection of Godalming Museum, accessed May 22, 2022, http://www.godalmingmuseum.org.uk/index.php?page=witley-park. At the current stage, I put this architecture in juxtaposition with other "glass utopias" to address the point of "glass dream" manifested in diverse physical forms.

twentieth century.[370] It is in fact shared dream with diverse manifestations in different time and space that intertwined with the specific social, cultural, and material circumstances. Nevertheless, they all originate from the human creative imaginary realm. As Bruno Taut suggests in his essay "Glass Architecture":

> The present: not what we've built, but what we build, and if at this moment we cannot physically build that which we desire (which, by the way, is a blessing for us), it is nonetheless building in us and will therefore eventually have to manifest itself in material.[371]

On the cusp of the twentieth century, when crystalized materials renovated and accelerated the visual experience, glass, with its precious characteristics, established its place in the realisation of the myths of "utopia" in architectural history. The more sophisticated reproduction and application of industrialized crystal glass in architecture, along with the aesthetic and philosophical debates on the materials allow the ultimate ideal to manifest in physical forms that tell their own stories from social, political, aesthetics, religious, and material science perspectives.

Crystal glass veil as aura

Walter Benjamin, in his comments on modern architecture in the new glass era, claims that "objects made of glass have no 'aura.' Glass is, in general the enemy of secrets. It is also the enemy of possession."[372] Benjamin saw the new glass era in modern architecture as "the enemy of intimacy and private and society must protect its citizens' right to such concepts."[373] In Islami's discourse on the opacity of glass, he questioned Benjamin's claim that glass

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[370] Rosemarie Haag Bletter, "Fragment of Utopia: Paul Scheerbart and Bruno Taut" in: Josiah McElheny and Christine Burgin, eds., *Glass! Love! Perpetual Motion!!! A Paul Scheerbart Reader* (Chicago: University of Chicago Press, 2014), 20–43, also "Paul Scheerbart's Architectural Fantasies," in *Journal of the Society of Architectural Historian*, v. 34, n. 2 (May 1975): 83–97.

[371] Bruno Taut, "Glass Architecture," in Josiah McElheny and Christine Burgin, eds., *Glass! Love! Perpetual Motion!!! A Paul Scheerbart Reader* (Chicago: University of Chicago Press, 2014), 120.

[372] Walter Benjamin, "Experience and Poverty," in *Selected Writings* (1927–1934), v.2, trans. Rodney Livingstone and et. al., eds. Michael W. Jenning, Howard Eiland, and Gary Smith, (Cambridge, Massachusetts, and London, England: The Belknap Press of Harvard University Press, 1999), 734.

[373] Seyed Yahya Islami, "The Opacity of Glass: Rethinking Transparency in Contemporary Architecture," in *International Journal of Architecture and Urban Development* v.1, n.2 (Autumn 2011): 40.

architecture has no aura by clarifying the phenomenal transparency and the literal transparency of glass as built material. Islami also points out in his study that Benjamin's critics on Scheerbart's vision on glass utopia was not justified because it is "light, colour and translucency […], rather than clear transparency or exposure" that Scheerbart's glass utopia promotes, and Scheerbart himself actually reflects on the adjustments that humanity needs to make to harmonize with the new conditions if everything is made of glass in future architecture.[374] Islami further addresses the phenomenal transparency that glass as built material possess which is separated from the literal transparency:

> Phenomenal transparency shifts the emphasis from the penetration of surfaces for visual and conceptual clarity, to surface design, or surface expression to arrive at visual complexity and interpretive diversity. Such concepts demonstrate that transparency does not necessitate glass, the thinning-out, disappearance or puncturing of surfaces, nor an association with tectonic exposure or conceptual clarity. In other words, it is possible to be transparent, without being clear and it is possible to be communicative without being literal. Phenomenal transparency highlights the richness of implication and the significance of surface expression. It also demonstrates that allusions to depth can be compressed to the surfaces, a process that can be called surfacing depth. Further still, phenomenal transparency offers the possibility of seeing glass and architectural openings (such as windows, doors, or screens) as the continuation of the architectural surface, rather than visual holes in the wall.[375]

This applies to comprehending the "glass veil" on Lingzhao Xuan. The fictive character of glass with its "utopian characteristics" are drawn upon differently to achieve the manifestation of glass myths.[376] The glass veil that surrounds the space of Lingzhao Xuan is to perceived from afar as an aura that indicates a domain of the sacred, divine, and otherworldly in the Chinese imperial architectural context when perceived along with the crystalized body metaphors in the Chinese *shuijinggong* (Crystal Palace) that pre-dated the making of Lingzhao Xuan. In Liu

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[374] Ibid.

[375] Islami, "The Opacity of Glass," 42.

[376] Ufuk Ersoy, "To See Daydreams: The Glass Utopia of Paul Scheerbart and Bruno Taut," in *Architectural History and Criticism Commons* (2011): 1–28, accessed March 27, 2022, https://tigerprints.clemson.edu/cgi/viewcontent.cgi?article=1005&context=archetecture_pubs.

Lihong's study on issues of the "glass aura" in relation to the crystal glass containers that applied to sacred and religious objects at the imperial court of the Qing dynasty (1644–1911), she reads the surrounding glass of an object as "an enveloping membrane or ornamental halo that materialised and enhanced religious objects' aura." In a related sense, the mediality of industrialized crystal glass panels is the crucial component for the making of the otherworldly Lingzhao Xuan by placing the space within a glass veil. Hence, the space is endowed with an aura of the divine, the sacred, and the otherworldly. This glass veil on this "sacred mountain" and "auspicious pond" serves as "a spatial enclosure, a material barrier, a protective veil, a partitioning tissue and above all, an interacting domain that actively mediated its content with its surroundings."[377]

5.2 Transparency and Spatial Expansion

As the disjuncture of glass and aura in modern architecture raised by Benjamin has already been questioned in the first section, I now further investigate the coalescence between glass and aura by centralizing the use of industrially produced glass in the basement aquarium in the present inquiry. For a distance, the visual experience at the distance is intensified through the glass' opacity, which shrouds the space in an aura of brightness, sacredness, and divinity as mentioned before; meanwhile, the pure transparency of glass in the aquarium gallery contributes to the endowment of a spiritual, mysterious, and otherworldly aura by allowing a heretofore unseen otherworld to unfold like a moving painting.

Transparency expands perception of space

As the sequence of the term *shanshui* (山水, mountain [and] water) reveals, in Chinese arts, the unmovable *shan* is considered more the dominant or agentive subject (*zhu* 主), while the flexible *shui* surrounds the mountain as the ancillary or passive object (*bin* 賓). In Lingzhao

[377] Liu Lihong, "Glass Containers' Aura: The Gestalt of Material Milieu," 109.

Xuan, as former studies present, the experience of mountain and water achieve an equilibrium, giving the revolutionary arrangement of the water system at this site as discussed in the previous chapters.

Lingzhao Xuan has been scrutinized as an industrially produced building ever since its beginning. After the establishment and flourishment of glassworks at Qing court in the eighteenth century, thanks to early modern globalisation, "the reception of crystal glass as a material marvel ushered people into a new age of visual, optical and spatial experience."[378]

The reading of diverse spatial configuration in this section with reference to Bruno Taut's *Glashaus* reveals the intriguing interior spatial narratives that enhance the myths of Lingzhao Xuan. Even though in both constructions, the fictive characters of glass are addressed: the emphasis on glass's transparency stands out in Lingzhao Xuan, while the glass utopia of Bruno Taut aimed to achieve a dangling visual effect via his application of prism coloured glass.[379] In the case of Lingzhao Xuan, the transparent quality of reveals the myths of an underwater wonderland, which contributes to the making of a micro-universe at this site, while in the case of Bruno Taut's *Glashaus*, the coloured glass is praised for achieving a "kaleidoscope effect" (**fig. 5.2.–5.3**).[380] Bruno Taut distinguishes his glass architecture from those, though combining utilitarianism with aesthetics, but mainly under the category of markets and arcades, museum and exhibition halls, railroad stations and greenhouses. He claims in the opening of his *Glashaus* that even though initially intended as an exhibition structure at

[378] Liu Lihong, "Glass Containers' Aura: The Gestalt of Material Milieu," 111.

[379] The term "utopia," literary meaning "nowhere place," or "place that does not exist," was coined in 1516 by Sir Thomas More. In further research, I aim to examine the Chinese concepts of an ideal or perfect society, the "utopia" in Chinese concepts, i.e. Great Harmony (*datong* 大同) and Peach Blossom Spring (*Taohua yuan* 桃花源). Here, the utopian architecture after the industrialized world that I aim to tackle in this study with the reference with Lingzhao Xuan is an idea inspired by utopianism, which ranges not only from the individual "utopias" that I investigate here, but also include the garden city movement proposed in 1898 by Ebenezer Howard and the city of Telosa to be established in the US desert announced by Marc Lore in 2021. Studies on Garden City that promoted by Ebenezer Howard, Frank Wright, Paolo Soleri, O. Simpson etc. belong to further investigation.

[380] Noam M. Elcott, "'Kaleidoscope-Architecture': Scheerbart, Taut, and the Glass House," in: Josiah McElheny and Christine Burgin, eds., *Glass! Love! Perpetual Motion!!! A Paul Scheerbart Reader* (Chicago: University of Chicago Press, 2014), 111–117.

the Cologne *Werkbund* Exhibition 1914, the *Glashaus* serves no purpose other than to be beautiful, and despite its fleeting nature as an exhibition architecture, "should be a beautiful source of ideas for 'lasting' architecture."[381] The kaleidoscope effect is technically realised by an innovative type of glass tiles named Luxfer Prisms, which "carries light into the dark recesses of rooms."[382] Taut claimed that the *Glashaus* has no purpose other than to be beautiful adopted definition of beauty from Kant's concept of purposelessness (*zwecklos* in German), but they functioned primarily as exhibition architecture for glass production to promote glass as an innovative building material, which actually demonstrates the pursuit of the perfect balance between beauty and functionality.

When it comes to Lingzhao Xuan, even though the fictional narration of the construction addressed that the "five-colored glass [meeting] the winds of the four directions, the new crystal palace is very exquisitely built,"[383] there currently is no evidence of any prismatic glass in Lingzhao Xuan, although it was technically available from glassworks in Chicago starting in 1897. This could have created an effect "capable of turning the 'scientific prose' of the glass 'into the language of poetry and art'."[384] The "five-colored" effect was presumably achieved by the refractive interaction between glass and natural light sources. According to the current published archaeological record, we are in no position to speculate upon the planned effect of glass in Lingzhao Xuan, including whether prismatic glass was applied or whether it was even possible or whether transparency was the main focus. But at the core level, both are expressions

[381] Bruno Taut, "Glashaus Werkbund-Ausstellung Cöln 1914," translated by Anne Posten, in Josiah McElheny and Christine Burgin, eds., *Glass! Love! Perpetual Motion!!! A Paul Scheerbart Reader* (Chicago: University of Chicago Press, 2014), 98–105.

[382] Elcott, "Kaleidoscope-Architecture," note 2. For the history of the naming of the company, also see Dietrich Neumann, "The Century's Triumph in Lighting: The Luxfer Prism Companies and Their Contribution to Early Modern Architecture," in *Journal of the Society of Architectural Historians*, v. 54, n. 1 (March 1995): 24–53, note 14.

[383] In the case of Lingzhao Xuan, the declination of the Imperial Qing, the patron of imperial garden is a more reasonable factor than technical and artistic circumstances for the interruption of the project, either way, as long as the historical record remains unfounded, the details stay in the myths.

[384] Ersoy, "To See Daydreams: The Glass Utopia of Paul Scheerbart and Bruno Taut," 9.

of the ideal of endless possibilities. If one reads Lingzhao Xuan in the light of the *sachliche Kunst* proposed by Scheerbart, the site is indeed a synthesis of *Sachlichkeit* and "fantasy," the application of glass that contributes to the *Sachlichkeit* of the building, for instance the fish gallery, serves the ultimate purpose of constructing a fantasy in its own narratives. When it comes to the aquarium of Lingzhao Xuan, as the study in Chapter 3 presented, double-glazed panels were used to control the physical qualities of the interior space. By making the underground an aquarium, the denial of the present wall is realized through the transparent characteristics of industrialized glass.

Both the projection kaleidoscope in Taut's *Glashaus* and the "kaleidoscope" scenes of Lingzhao Xuan relied strongly on the sophisticated employment of glass materials, with their refracted, translucent or transparent, transcendent characteristics, contribute to the ever-changing effects that provide an illusion of a trans-mundane world. The "kaleidoscope effects" in Lingzhao Xuan lies more in the embodiment of the "ten thousand scenes" in one everchanging universe, while the kaleidoscope of Bruno Taut's *Glashaus* is conjured by strongly emphasizing the constantly changing color and light achieved by the application of prism glass. Nonetheless, it is the provisional potentials of glass as building materials that would allow the dreams of glass utopia to be created, the trans-mundane to be materialized by the mundane, *in perpetuum*.

In the French philosopher Paul Ricoeur (1913–2005)'s essay *Architecture et narrativité* (Architecture and Narrativity), architecture is an analogue to written speech, a sort of fiction that externalises human thoughts through a material medium. Ricoeur, who sees the act of "building" as a spatial reflection of "narrating" that takes place in time, draws a parallel between the author's and the architect's creations.[385] An otherworldly experience is achieved by the adaptation of transparency of glass since the eighteenth century, from conservatory to aquarium

[385] More precisely, Ricoeur tends to interweave the "architectural configuration of space" with the "narrative configuration of time," in Ersoy's "To See Daydreams," 1–4.

to immense experience in an Englishman's underwater smoking room as mentioned above (**fig. 5.4**). Both constructions present a narrative of an ideal to expand the visual experience of an enclosed architectural cover, both taking up the fictive characters of glass as tools; however, the manifested spatial narrative reveals the ideal of both cases individually. It is intriguing for one to read these utopias of diverse concepts, names, and languages together to come to the realisation that, to some extent, the same glass dream is shared. From the trans-mundane space that Lingzhao Xuan stands for, to the "Nowhere land" of all kinds, the fictive quality of glass is adopted in different situations and manifested in different ways. The concepts along with all the forms, "trans-mundane space," "utopia" and others are all manifestations of an ideal that is germinated, rooted, varied, and developed in the cultures, societies, and religious of their birth, all about the search for or the realisation of perfect happiness and fulfilment.

Bruno Taut introduces his *Glashaus* by suggesting a new environment and subsequently a new culture that could be brought forth by promoting glass as a building material:

> We live for the most part in closed rooms. These form the environment from which our culture grows. Our culture is to a certain extent the product of our architecture. If we want our culture to rise to a higher level, we are obliged, for better or worse, to change our architecture. And only becomes possible if we take away the closed character from the rooms in which we live. We can only do that by introducing glass architecture, which lets in the light of the sun, the moon, and the stars, nor merely through a few windows, but through every possible wall, which will be made entirely of glass – of coloured glass.[386]

This very idea of expanding living space by introducing visual elements to cheat the senses was not at all unheard of at the imperial court's interior decoration. The scenic illusion painting (*tongjinghua* 通景畫) on the ceiling of the Studio of Exhaustion From Diligent Service (Juanqin Zhai 倦勤齋) depicts Chinese wisteria drooping down from a bamboo frame like purple rain. The wisteria is depicted in such a manner that a single vine rises from the earth and spreads like

[386] Bruno Taut, "Glashaus Werkbund-Ausstellung Cöln 1914," 100.

a waterfall over a bamboo trellis.[387] In this setting in the inner room, the scenic illusion painting serves the purpose to expend the vision of the inner space and to place the audiences in an imaginary outdoor garden. As mentioned in Chapter 3, the description of a dreamy "Crystal Palace" at the site of Lingzhao Xuan transcend the reality. Where on several occasions it is mentioned that glass was also used for the middle and top floors of the structure. If glass ceilings were applied and fish really did swim inside, the glass would have allowed "scenic illusion paintings" at the Qing court to be brought to a new level: with living fish swimming above and below the occupants of the space would indeed have been relaxing in a heaven under the sea.[388]

It is theoretically plausible that industrialized crystal glass as a building material applied here is meant to be aligned with the use of European monumental illusionistic painting techniques which, as Kleutghen argues, were never intended to bear any original European connotations but instead serve the purpose of pleasing the Emperor's personal ego and tastes.[389] Regardless of the variations of materials or technologies that applied to either the "scenic illusion paintings" in the early Qing or the manifestation of a "Crystal Palace" in Lingzhao Xuan, the intention was always to accommodate views and attractions beyond the actual visual barriers (i.e. the wall, the floor etc.) and to expand the sense of space.

Transparency enhances the mythical aura

The purposelessness that has acquired purpose as exhibition architecture is readily apparent in the case of Taut's *Glashaus*. In the architectural composition design of Lingzhao Xuan, even though it did not function primarily meant as exhibition architecture, the architect exhibits the infinity of the universe in a physically limited space. All the functions that

[387] This motif symbolizes the wish for blessing of fertility and fruitful, see Wang Zilin, *Zijin Cheng yuanzhuang yu yuanchuang* 紫禁城原狀與原創 [Original State and Creation of the Forbidden City] (Beijing: Forbidden City Publishing, 2007), 284.

[388] See Chapter 3 for related entries.

[389] Kristina Kleutghen, "Tong Jing Hua yu Lang Shining yichan yanjiu 通景畫與郎世寧遺產研究 [Scenic Illusion Paintings and The Castiglione Legacy]," in *Gugong bowuyuan yuankan* 故宮博物館院刊 [Palace Museum Journal], v.3 (2012): 77–88.

displaying the *la vie primitive des profondeurs*. The earth, and the air are secondary, but serve the purpose of becoming an organic whole of a universe. The sophisticated employment of transparent glass provides a change for revealing the myths in the ocean, which in turn enhances the myths by revealing an arranged milieu that indicates the potential limitlessness of the depths that evoke curiosity and inspire the pursuit of the unknown world.

Using decoration to create an illusory of space was hardly unknown at the imperial Qing court. This was regardless of conventional auspicious motives that evoke certain fantasies or the beloved scenic illusion paintings from the Qianlong reign onwards that adopted the techniques of perspective from European paintings. Glass as a medium, however, allows this to shift from a two-dimensional attempt to multiple dimensions. Glass would have allowed the audience a wider view in every direction and surprising glimpses into scenes on the wall or around the Palace. It blurs the boundaries between the illusory immortal space (the otherworld) and the physical reality (the here and now). Hence, the dimensions are multiplied through sense perception and hence the otherworldly is manifested. It is the feeling of moving freely and being in control of changing events. It is not meant to exclude the mundane space (the actual architectural environment), but to accommodate it. In doing so, one can transform one's mind into a "Crystal Palace," unifying oneself into this space that is both empty and contains the universe.

As far as the gaps between appearance go, these are a combination of "scientific curiosity" and "artistic creativity," even though Lingzhao Xuan strikes one as more aligned with the conventional glass architecture that reinforces the chemical and technological advances of the material, such as in conservatories. The design aims at expressing an ideal of the world, by means of going along with the conventional Chinese pictorial expression, while at the same time, the "expressionists" created their utopia in more abstract, architectonic language. Both ways of expressions or physical manifestation, however, are rooted in the essential fantasy of a nowhere land made of glass, water, and light. They are different building narratives, but the

same glass dream. To interpret cases of "utopia" on a mental level, architects and artists at the dawn of twentieth century sought to express the ideal of utopia with the knowledge that there is none but the strength of one's resolve and a never-ceasing pursuit of the ideal space.

It is to be expected that in this space of Lingzhao Xuan that the arts and sciences merge harmoniously together and reinforce each other in turn. The line between dream and reality is vague. The secret of keeping the balance in between is to indulge oneself in the moment of contemplating all the vividly moving pictures that fuse with light and colour, while all thoughts merge into one that transforms the mind of fleeting thoughts into a crystal palace of constant visual stimulation.

5.3 Aura Cloaked Trans-Mundane Space

Inspired by the line of thoughts that Ersoy claims in his essay on the "fictive characters of glass" that his "attempts to identify the occupant that they [Paxton and Taut] imagined and observe the metaphors on which they drew to reconcile industrialized glass with representational principles of architecture,"[390] I consider Lingzhao Xuan a "utopia of escape" for its targeted occupant, i.e., the imperial patrons, and accordingly, the reconciliation of the ideal trans-mundane space for the imperial rulers and the glass as an auxiliary building material at this site.

As argued in the previous sections, in the making of Lingzhao Xuan, the transparency of glass that allows a partial reveal of the myths of the underwater world endows it with a mysterious, divine aura when experience from inside the space, while the refractive colourful effects shroud the space with a mysterious veil. Industrially produced glass simulates an aura of otherworldly, divine, sacred, royal for the "contained" space of Lingzhao Xuan evoked by the Chinese connotation, perception, and memory of a "Crystal Palace," which resonates with

[390] Ibid.

the inquiry of historical and cultural connotation of "Crystal Palace" in Chinese context. Hence the very point that must also be addressed is that the physical involvement of the imperial patrons in the manifestation the precious, sacred, and royal space of Lingzhao Xuan plays a crucial part and is the last step of the process.

Liu Lihong's study on glass that surrounds, contains, covers, or imbues objects with religious or spiritual connotations also illuminates that "auratic experience is not antithetical to technological reproduction (such as mass-produced crystal plate glass) but is mediated by, as perception, memory, and experience come into play."[391] The spiritual states of "nowhere" and "enlightenment" achieved in these special narratives consist of two main steps: expanding the interior to an endless imaginary world and perceiving by the targeted audience. For instance, in the scenic illustration painting, the abundance of the mundane and the achievement of emptiness both require and stimulate the capacity of imagination. Only then is the physical limitation blended out and the creation of one's own memory starts. The achieved state of being "nowhere," or being in the void, which, if successfully achieved in the individuals' mind, prompts further desire and even effort to construct one's own utopia in every possible way. The promotion of glass in those architectural creation allows the experience of transcendence that the creator of those utopias (trans-mundane space, nowhere land, devoid of any names or forms) intends to be manifested to the audience.

The last chapter argues that on a physical level, Lingzhao Xuan can hardly be considered unusual if it is placed alongside the exhibition architecture of the nineteenth and twentieth centuries that clamoured for attention with their extravagant designs. As visual evidence demonstrates, the cultural amalgam of Lingzhao Xuan encompassed a profound cosmic mysticism and ideal of a trans-mundane world, apart from its function as a studio with an underground aquarium gallery attached. These trans-mundane and otherworldly concepts of

[391] Liu Lihong cites Hansen's reading of Benjamin, in Liu Lihong, "Glass Containers' Aura: The Gestalt of Material Milieu," 112.

glass architecture turn out to be a universal human dream. Glass has always served to protect, preserve, and contain. It is layers of media that separate the truths from the reflected seeming realities perceived solely by individuals that lead to inevitable divergencies of the ultimate truth. The application of glass indeed contributes a great deal to humans' endeavours to flatten the distance of space and time. From the eighteenth century onwards, glass devices for importing, preserving, and cultivating exotic plants were rapidly developed by European natural scientists. These innovations were deeply rooted in our nature to be curious about the unknown and the need to discover and study it. Lingzhao Xuan exists as architectural evidence of the flowing exchange at the turn of twentieth century in several ways: first, the global or international collaboration in terms of design process and building materials, which extends even until the present day in terms of the preservation process. Second, the design offers a manifestation of the ideal of trans-mundane space in crystal, the idea of a glass utopia that features in several religions and cultures, from the imaginary palace of crystal of the King Solomon to the exhibition pavilion *Glashaus* by Bruno Taut. Lingzhao Xuan's architectural design remains a delicate example of a "Crystal Palace" that accommodates multiple interpretations.[392] Stepping into the otherworldly realm of Lingzhao Xuan, burdensome thoughts are dropped from one's consciousness because one is now absorbed or lost in the constantly changing scenes that embody the boundlessness of the universe.

As Jeffrey Schnapp in his "Crystalline Bodies: Fragments of a Cultural History of Glass" says, materials "body forth the tangled fabric of beliefs, ideas, imaginings, exigencies, rituals, and social practices that compose a culture in a variety of palpable, practical, immediate form."[393] Glass as built material is appropriated in diverse manifestations of but one "glass dream". All "Crystal Palaces" in form or imagination speak symbolically to that part of the

[392] Islami, "The Opacity of Glass," 39–44.

[393] Jeffrey T. Schnapp, "Crystalline Bodies: Fragments of a Cultural History of Glass," in *West 86th: A Journal of Decorative Arts, Design History, and Material Culture*, v. 20, n. 2 (Fall–Winter 2013), 173–194.

world that differs from their own. The architectonic language of one is clear to those who share the same, but symbolic to others, and vice versa. In other words, a shared dream of "Crystal Utopia" as it is, the technique of expression is vastly different.[394]

More than "toys in architecture"

William Chambers (1723–1796) called those imitated garden architectures in Chinese taste "toys in architecture" to highlight their inconsequential role in architectural history. As an abandoned project built in foreign manner in a declined imperial household, Lingzhao Xuan has suffered academic neglect for almost a century. As the investigation conducted in this study unfolds, this "unfinished" toy certainly encompasses much more than it lets on. This section takes on another example of "glass utopia" to examine the plausible inspiring impacts this imperial toy could have brought about to its targeted occupants.

The imperial rulers held a vision of an ideal balanced life between "statecraft (治國 *zhiguo*)" and "regulation of the family (齊家 *qijia*)," so a certain physical setting for their doing and being was established to enhance their existence. The aquarium, the tea salon, and the birdcage as elements of an entertaining architecture could be recognized as the manifest functions if following Robert Merton's line of thought; nevertheless, they all contribute to the latent function as a "utopia of escape" for imperial patrons, as permeating re-examined throughout the whole research, which ironically proves the unrealisable utopia dream, since it was ultimately abandoned.

Moreover, viewed in this light, I argue that the construction of Lingzhao Xuan was a temporary manifestation of an ideal of spatial narrative that would (consciously or unconsciously) have inspired further experimentation and pursuit of the balance between idea and reality. My aim is to address the spatial experience that the creator of an individual "utopian

[394] As Bray suggested: "Neither technological landscape nor technological culture will be homogeneous in any society. The technological landscape will include multiple, distinct or overlapping repertoires and assemblages of materials, tools, skills, knowledge and styles." In Francesca Bray, "Science, Technology and Late Imperial History," in *The Chinese Historical Review*, v. 24, n. 1 (2017): 93–104.

architecture" sought to provide under certain co-influences of the designer and the patrons. The vision of the construction of Lingzhao Xuan was to manifest a trans-mundane space for the privileged imperial patrons, as suggested by a report mentioned in the former discussion,[395] especially for the young emperor, to enjoy and relax himself after his lessons. Lingzhao Xuan is therefore indeed a "toy in architecture," considering the emperor's youth.

The *Glashaus* was built in 1914 in order to promote colourful glass as a building material and inspire the younger generation to take on this mission, a small-scale version of the toy glass blocks known as *Dandanah*, or "Fairy Palace," invented by Paul and Blanche Mahlberg, modelled and designed by Bruno Taut.[396] These building blocks were made of solid glass and packaged in an octagonal wooden box (27.8 x 27.7 x 4 cm) with a lithographed colour illustration on the lid. The wooden box is dark brown with a multi-coloured illustration.[397] The intention of the design is to give hidden suggestions to children of unpredictable and inspiring imagination, as Yagou argued in her essay. Even though they are intended for children, adults designed the toy and probably would have initially guided the children to play with the blocks, hence the hidden agency was "their [the adults'] preoccupations, concerns and fantasies."[398]

Intriguingly, the construction of Lingzhao Xuan as a toy for the young emperor could easily appreciate this function as inspiring tools for the young emperor awaiting guidance and understanding of the world beyond the borders of the Qing reign. The aspect of introducing on-edge technologies and building materials, as well as foreign ideas and knowledge that came along with the design, is far more profound than just constructing amusing architecture, even if it was unintentional (as proven by recently revealed documents). In both situations, the very

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[395] See Chapter 1.

[396] Artemis Yagou, "More than a Toy Box: *Dandanah* and the Sea of Stories," in *Boxes: A Field Guide*, Susanne Bauer, Martina Schlünder, and Maria Renzetzi, eds., (Manchester: Mattering Press), 206, accessed May 7, 2022, https://www.matteringpress.org/books/boxes.

[397] The size of the box provided by Yagou differs slightly from that by the Badisches Landes Museum, probably because they measured different sets. See Yagou, "More than a Toy Box: *Dandanah* and the Sea of Stories," 205.

[398] Ibid.

application of glass as "building materials (in *Dandanah* both "building material" as in the fantasy world awaits construction as well, in the sense of materials chosen for designing the toy)" is targeted at its revolutionary characteristics in modern architecture that served to inspire visions and potentially the future construction of "utopia of reconstruction." Nevertheless, in the very moment of both cases, both Lingzhao Xuan and *Dandanah* are merely a "utopia of escape." Curiosity, eagerness, and openness to the unknown and the acknowledgements and acceptance of infinity is a human characteristic worth encouraging. Apart from this wish, the design of the *Dandanah* box, along with the glass bricks in it, was intended to inspire "future architects," for children to set their imaginary mind free using toys with which they could build their own glass palace. In this sense, Lingzhao Xuan should be perceived as more than a "toy in architecture;" a plaything for the imperial patrons, yes, but one that embodies their understanding of the cosmos and provokes reflections in the mind of the targeted occupants.

In this sense, Lingzhao Xuan could have been more than an instance of amusing structure, but by manifesting a trans-mundane space with the mundane approaches that demonstrates respect for the universe and the imitation of the craftsman of the universe. Furthermore, even though the core of a Chinese trans-mundane space is solid, as discussed in the previous chapters, the psychological and mental battles between "Chinese substance, Western application 中體西用" and "Western substance, Chinese application 西體中用" are reflected in the construction itself. It is in some sense a discussion that never ever really ended during the turbulent end of the Qing. This is at the same time reflected in the construction process, which awaits exploration in future investigations. To some extent, it is an attempt to continue the discourse of the "substance" and the "application" in the architectural battlefield.

The "Utopian architecture" studied in this chapter provides tangible shapes to glass dreams and crystal palaces that manifested individually according to their environment and their creators' spatial narratives. The "spirit of the material" must be overcome, which forces

the adjustment to a reality that inevitably kills the utopia.[399] Nevertheless, at the very end, not all dreams can come true, or even be manifested in a physically, before they are manifested in the imaginary mind. This is the perpetual pursuit of the ideal that brings us forward and upward. As a reflection on "utopian architecture" (also referred to in this study as "trans-mundane" and "otherworldly") demonstrated, the adoption of the fictive characters of glass as a building material for the ever-changing "utopian dream" are seen in several civilisations that indicate the constant pursuit of an ideal and the never-easing process of fulfilling the ideal. The individual "utopias" in this discussion are inevitably under the influence of the social context in which they are built. Their creators seek to optimize the physical manifestation of a "glass dream." To read Lingzhao Xuan in the light of the "utopias of escape" and "utopias of reconstruction" in Mumford's line of thought, or from a cross-cultural perspective of "utopian architecture," despite all the endeavours, the attempt of "utopia of escape" in Lingzhao Xuan ironically ends up illustrating the prejudice that a utopia is merely a dream.[400]

Adolf Behne, the contemporary critic who discusses Taut's *Glashaus* and its function in his essay "Gedanken über Kunst und Zweck, dem Glashause gewidmet (Thoughts on Art and Function, dedicated to the *Glashaus*)" was able to shed light on the ideal that Taut's glass architecture was intended to by attaching it "fully to higher philosophical and Idealist meanings":[401]

> The longing for purity and clarity, for glowing lightness and crystalline exactness, for immaterial lightness and infinite liveliness found a means of its fulfilment in glass – the most ineffable, most elementary, most flexible and most changeable of materials, richest in meaning and inspiration, fusing with the world like no other. This least fixed of materials transforms itself with every change of atmosphere. It is infinitely rich in relations, mirroring what is above, below, and what it

[399] Ersoy, "The fictive quality of glass," 237. Also see Ricœur's reading of the utopia idea of Karl Mannheim, see Ricœur, *Lecture on Ideology and Utopia*, 272.

[400] For the notions of "utopias of escape" and "utopias of reconstruction," see Lewis Mumford, *The Story of Utopias* (New York: Boni and Liveright, 1922).

[401] Kai K. Gutschow, "From Object to Installation in Bruno Taut's Exhibit Pavilions," in *Journal of Architectural Education* (1984–), v. 59, n. 4, *Installations by Architects: Ephemeral Environments, Lasting Contributions* (May, 2006): 68, accessed on March 24, 2022, https://www.jstor.org/stable/40480632.

> below, above. It is animated, full of spirit and alive … It is an example of a transcendent passion to build, functionless, free, satisfying no practical demands – and yet a functional building, soulful, awakening spiritual inspirations – an ethical functional building.[402]

The use of glass to cheat the senses or to reveal the "truth," as in the legend of Solomon's glass floor, or to put it in a more spiritual way, to reduce the interruption of human senses and permit the imaginary to wander, is the central essence of applying glass, translucent or transparent, to the manifestation of a glass utopia. It is the eternal pursuit of "nowhere." As Taut said, "Paul Scheerbart's poetic and wonderful proposal cannot be dismissed as mere utopianism,"[403] or as Hollyamber Kennedy put it, "the impossibility of utopia, which must nevertheless attempt to construct, *in perpetuum*."[404] Glass as a building material reinforces on the one hand the limitless and boundless possibilities or architectural utopia and on the other hand renews the ideal by making it visible and tangible. The architectural ideal becomes an architectural body that has the potential to be shaped, perceived, and reshaped over time. These pursuits or attempts have never been abandoned despite the inevitable failure to achieve the ultimate perfection.

Conclusion

As the discussion of Lingzhao Xuan as an organic micro-universe that represents the Chinese ideal of "earthly paradise" unfolds, this chapter aligned Lingzhao Xuan with other significant glass structure of the late nineteenth and early twentieth centuries in order to further contribute to the study of utopian architecture and the roles that glass as a building material played. Echoed with the investigation of the term *shuijinggong* as glass utopia in Chinese architectural context, this juxtaposition indicates that manifestation of "glass dream," as in

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[402] Adolf Behne, "Gedanken über Kunst und Zweck, dem Glashause gewidmet," in *Kunstgewerbeblatt* N.F. 27, n. I (October 1915): 4.

[403] Bruno Taut, "Glashaus Werkbund-Ausstellung Cöln 1914," translated by Anne Posten, in Josiah McElheny and Christine Burgin, eds., *Glass! Love! Perpetual Motion!!! A Paul Scheerbart Reader* (Chicago: University of Chicago Press, 2014), 104.

[404] Hollyamber Kennedy, "Untimely Meditations and Other Modernisms: On the Glass-Dream Visions of Bruno Taut and Paul Scheerbart," in Josiah McElheny and Christine Burgin, eds., *Glass! Love! Perpetual Motion!!! A Paul Scheerbart Reader* (Chicago: University of Chicago Press, 2014), 150.

Lingzhao Xuan is not an isolated phenomenon. Focusing on glass’ fictive characters as built material, this study sheds new light on its material agency and medial efficacy, and to provide multiple interpretations and readings of Lingzhao Xuan’s spatial narrative.

The phenomenal transparency of glass allows from one hand the visual attraction of shining, shimmery, refractive colourful at a distance, from the other hand, for interior experience, the literal transparency of glass succeeds in separating space and expanding the sense of space. Both the extra and interior experience are achieved by the endowed aura of otherworldliness and dreaminess. This “auratic containment created by glass” in the making of Lingzhao Xuan as an otherworldly realm can be understood through juxtaposition with several other cases of “glass utopia,” such as the co-creation by the German architect Bruno Taut and the writer and philosopher Paul Scheerbart and the glass chain community at the beginning of the twentieth century.

The employment of industrialized crystal glass plays an essential role in the making of this trans-mundane world shrouding the space an aura of divine, sacred and precious that evokes by the fictive characters of glass. Aligned with my reading of the creation of Lingzhao Xuan as a trans-mundane space, which, as the previous chapters demonstrate, the industrialized crystal glass contributes in completing the spatial narrative of an otherworldly realm from two perspectives. From afar, the refractive effect of crystalized glass would have insinuated at the existence of a divine, sacred, trans-mundane space among the conventional wooden structures in the imperial architectural complex, when perceived alone with the pre-contextual connotation of the Chinese “Crystal Palace” metaphor. Within the enclosed architectural space of Lingzhao Xuan, the transparency of crystal glass, especially in the underground aquarium gallery, provides on the one hand a clear vision and revolutionary perspective to observe the underwater world, which was a myth to the human perception until the rapid development of marine studies in the nineteenth century; on the other hand, it provokes reflection on the limitlessness of the universe and curiosity about the possibilities of this world, as it is still

arranged conditionally and only partially revealed in the setting of the aquarium. Hence, the mysterious aura of another world is enhanced by the experience to immense in-between "possibility and reality, actuality and potentiality" achieved by the phenomenal transparency of crystal glass.

"The technological advancement of purifying, the visible tints in crystal palace […] The visual newness of crystal glass was constructed principally due to its absence of colour, making it apparitional, pristine and pure."[405] The interactive and dynamic processes through which the material and fictive characters (or unmaterial effects as in Liu's study) of crystal glass participate in the making of a precious, sacred, otherworldly space in the architectural complex of Lingzhao Xuan. For this spatial narrative to be fully completed, the involvement of the targeted occupants must be considered. In the manifestation of the trans-mundane space of Lingzhao xun in the Qing imperial garden, the imperial patrons, alone with their memory, perception and experience would have witnessed and been amazed by the reconciliation of the conventional ideal of a Chinese glass dream and the industrialized glass as built material, in turn transforms the architectural compound of Lingzhao Xuan into a divine, sacred, royal trans-mundane space.

When one enters the spatial narrative of Lingzhao Xuan, one is meant to identify oneself with the state of being one with the "story" that is told by the creator, which requires a deliberate abandonment of analysis, interpreting it instead at the psychological level and achieving a state of emptiness in the deliberate setting of endless, ever-changing possibilities. The spatial narratives provided by the designer are supposed to help the occupants achieve the state of mind of an empty "crystal palace" before the manifestation of an imaginary "Crystal Palace" gaining shape. Bearing these in mind, whoever the designer was, they were conscious of the metaphor

[405] Liu Lihong, "Glass Containers' Aura: The Gestalt of Material Milieu," 113.

on which they drew to reconcile industrialized glass with representation principles of architecture.

Conclusion

The development of Qing imperial gardens and philosophy reveals the political and social ideals of the Qing rulers. Ethnically distinct from the Han majority, from the very beginning the Qing rulers cleaved to an ecumenical or a universal ideal when it came to political, cultural, and religious issues. Reading the spatial narrative of Lingzhao Xuan in this light, more space for investigation broadens in terms of its architectural prototypes and plausible influence, as the visual and textual evidence presented in the latest chapters proposed. Meanwhile, the comparative analysis that has taken up trans-cultural, trans-median, and interdisciplinary methodologies aims to provoke more reflection and discussion that further contributes to filling the gaps between cultures and epochs to provide a continuous picture of the architectural history that offers more suggestive than exhaustive answers.

Dismantlement of "Chinese-ness" and "Western-ness"

As Kleutghen observes in her essay on Chinese *Occidenterie*, the Chinese terms that connoted "the West 西 (*xi*)" were applied interchangeably and ambiguously to both foreign imports and domestic *Occidenterie*. All were period terms whose geographic connotations shifted over time.[406] Among them is the Chinese term *xiyang* 西洋 (literally "Western oceans"), which was used most frequently in both historical and contemporary textual sources concerning Lingzhao Xuan but was never a clearly defined term from a geographical perspective. The earliest record of the term can be traced back to the Five Dynasties in the literary notes

[406] Kristina Kleutghen questions the term *Euroiserie* that has been proposed to catalyze produced occidentalizing works of Chinese arts and offers a new reference "Occidenterie," in "Chinese *Occidenterie*: the Diversity of 'Western' Objects in Eighteenth-Century China," in *Eighteenth-Century Studies*, Special Issue, *Eighteenth-Century Easts and Wests*, v. 47, n. 2 (Winter 2014): 117–135, accessed March 2, 2022, https://www.jstor.org/stable/24690358. Also see Ouyang Zhesheng for connotation shifts of related terms, among which are *Xifang* 西方 (Western direction), *Xiyu* 西域 (Western area), *Xitian* 西天 (Western Heaven), and *Xiyang* 西洋 or *Xihai* 西海 (Western Oceans), and *Ouluoba* 歐羅巴 (Europa), *Taixi* 泰西 or *Yuanxi* 遠西 (Far West), and *Jixi* 極西 (Extreme West). Ouyang Zhesheng 歐陽哲生, *Gudai Beijing yu xifang wenming* 古代北京與西方文明 [Ancient Beijing and the Western Civilization] (Beijing: Beijing University Press, 2018).

Fragmental Notes of Western Mountain 西山雜記 in an official title as "Counsellor for Western Transports 西洋轉運使" positioned in the City of Zhan Cheng 占城 (Currently Chiêm Thành in Vietnam), where *xiyang* could plausibly refer to the current marine area of Peninsular Malaysia and Sumatra. The term started to filter through in the Song dynasty as the geographical areas referred to expanded to the Southeast of the Indonesia.[407] Throughout the Yuan dynasty (1279–1368), the usage of this term to refer to a geographical area became widely accepted, adopted, and integrated.[408] It was not until the early Ming dynasty (1368–1644) that the meanings of the term *xiyang* kept absorbing further interpretation and definitions and became even more widely appropriated in different fields that could be finally divided into two groups: it has a narrow sense and a general one. Narrowly defined, it includes contemporary South and Southeast Asia, from Indonesia to the Persian Gulf, and the Red Sea Coast of North Africa; in some instances, the term refers specifically to Southeast Asia, West Asia, East Africa, or Indonesia but excludes Europe.[409] Moreover, meanings of *xiyang* integrated into a symbolic term that refers to countries overseas or foreign countries in a general sense.[410]

The clarification of the complexity of this term fundamentally shakes our general understanding of the category of *xiyanglou* 西洋樓 in the Chinese imperial architectural context. It is now reasonable to reflect on the long-standing focus on European heritages in the imperial architectural compound, to reassess and readjust the approaches and directions of study concerning foreign influences and appropriations, to look beyond the geographically, culturally, religiously fixed borders, and to realize that in terms of the appropriation of garden

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[407] Further details on the geographical change of this term in the Song dynasty, also see Ouyang Zhesheng's study.

[408] Ibid.

[409] Ibid., also Wan Ming 萬明, "Cong Xiyu dao Xiyang" 從西域到西洋 [From "Western Area" to "Western Oceans"], in *Zhenghe xia Xiyang Yanjiu Wenxuan* 鄭和下西洋研究文選 [Research Anthology on Issues of the "Voyages to the 'Western Oceans' of Zhenghe"] (Beijing: Ocean Publishers, 2005) and Xiang Da 向達, anno., *Lingzhong haidaozhen jing* 兩種海道針經 [Two Versions of Books of Marine Compasses], (Beijing: Zhonghua shuju, 1961).

[410] Wan Ming, "Cong Xiyu dao Xiyang," 107.

arts in China, a question should be proposed: is it wise to throw all examples of imperial garden architecture that bear unfamiliar charms into one pot of "European/Western/Occidental Buildings" without recognizing the profound diversities and possibilities that even varied individually and provide a visual and material spectrum of the exotic?

Even prior to discussing and answering this question, one need to accept the eclectic nature of these individuals by abandoning the dichotomic *zhongxi hebi* 中西合璧 (literally "fusion of China and the West") frame of comparison and look into Lingzhao Xuan with the attitude of a fresh start. As Elman observes for example, in the Long Spring Garden (Changchun Yuan 長春園) inside Yuanming Yuan (The old Summer Palace, Garden of Perfect Clarity or as in Lofty Pavilion Elman's book), the crescent shape of the Belvedere (Fangwai Guan 方外觀) built in 1759 and designed by the Italian Jesuit architect Ferinando Moggi (1684–1761) evoking Islam.[411] To do this, this dissertation conducts first and foremost research on the structure in order to deconstruct the predetermined dichotomy of "Chinese-ness" and "Western-ness" of Lingzhao Xuan from the previous studies before bringing in further discussions on other hypotheses. In doing so, one could then bring Lingzhao Xuan and other architectural outliers with Occidentalizing aesthetics into the global or international architectural context to further realize that these Occidentalizing traces themselves are in many cases eclectics an amalgam that underwent several appropriations, integrations and promotion processes throughout the history.

Underground Aquarium and Daoist Grotto Heaven

For future research, I aim to explore further the cosmological context in which Lingzhao Xuan was placed. The basement aquarium is observed externally from outside to this stage; however, a spatial perception from within opens a plausible interpretive perspective. The grotto

[411] Benjamin A. Elman, *Science in China 1600–1900. Essay by Benjamin A. Elman*, edited by Ho Yi Kai. (Hackensack: World Century Publishing and Singapore: World Scientific Publishing, 2015), 97.

as a metaphor for sacred or mythical cosmic is a universal theme in both Europe and China, according to Franciscus Verellen.[412] From my observations, certain conceptual analogies between the European grotto aquarium and the Daoist grotto heavens and blissful lands (*dongtian fudi* 洞天福地):

> **First**, they are considered gateways to travel through time and space, where the experience of a glitch in time and space is often expected.
>
> **Second**, they also serve as a junction of interconnected worlds, where darkness and myths enhance the otherworldly experience.
>
> **Third**, water serves as an indispensable medium and access to a secret entrance in the mountainous area.

The Daoist theories of grotto-heavens and blissful places belong to the Daoist sacred geography and cosmology. It promises the transcendence of parallel realities that co-exist with humanity's living space (大天世界). The thirty-six grotto heavens or the ten grotto heavens and seventy-two blissful places are meant to be located within sacred mountains in China, which are innately connected and channeled. Low-ranking spiritual beings or hermits are said to dwell in these spaces.[413] Darkness and myths are the first impressions of entering a passage that leads to a grotto; the darkness is perceived as open to the possibility of the unknown. In Franciscus Verellen's essay on the grotto heaven in the Chinese Daoist context, where he places the grotto vision into the concept of the Daoist sacred mountain, he examines the development of the grotto heaven in the Daoist cosmography and its significance as the epitome of interiorized ritual space and some mythological themes evoked by the notion of heaven contained within

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[412] Franciscus Verellen, "The Beyond within: Grotto-heavens (dongtian) in Taoist ritual and cosmology," in *Cahiers d'Extrême-Asie*, n. 8 (1995), 266.

[413] Zhang Guangbao 張廣保, "Daojiao de dongtian fudi lilun de qiyuan ji lishi fazhan 道教的洞天福地理論的起源及歷史發展 [The origin and historical development of Daoist theory of grotto heaven and blissful lands]," 1, accessed on July 9, 2024, https://www.thepaper.cn/newsDetail_forward_25454067. Original in Zhang Guangbao, *Daojia de genben daolun yu daojiao de xinxing xue* 道家的根本道論與道教的心性學 [The Fundamental Theory of Daoism and the Daoist Theory of Mind], (Chengdu: Bashu shushe 2008), 588–648.

the mountain. Verellen hence draws attention to the metaphors of grotto as womb, grotto as tomb, and grotto as paradise, which all "share with Taoist grottoes the idea that they are places of transcendental passage."[414]

Independent, yet Connected

As I argued earlier in this chapter, the Sumeru shape of the basement structure already indicates the sacred mountain analogy. As the sacred mountain is surrounded by an auspicious water body, Lingzhao Xuan underground easily lures one's imagination to understand that "a grotto connects to the heavens and the earth; there is nowhere that a grotto cannot reach 洞者，洞天，洞地，無所不通也."

This allows first and foremost the interconnected relationships between grotto heavens and the interaction between grotto heavens and the world of sentient beings. In Zhang Guangbao's study on the Daoist sacred geography of the Five Peaks (wuyue 五嶽) and grotto heaven, Zhang discusses the Daoist religious geographical theories that originated from Ancient Chinese cosmology and geography. These ancient cosmological theories proposed a void, an underearth world whose interior space is separated and supported by earth columns (dizhu 地柱) and the earth's axis (dizhou 地軸), hence interconnected.[415] The Daoist religious geography appropriated this system and hence believes in an internal connection between all the grotto heavens, which was described by Zhang Hua 張華 (232–300) from the Western Jin dynasty as "among the famous mountains and rivers, holes and cavity are connected with each other 名山大川，孔穴相內."[416]

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[414] Franciscus Verellen, "The Beyond within: Grotto-heavens (dongtian) in Taoist ritual and cosmology," 283.

[415] Zhang Guangbao 張廣保, "Daojiao de dongtian fudi lilun de qiyuan ji lishi fazhan" 道教的洞天福地理論的起源及歷史發展 [The origin and historical development of Daoist theory of grotto heaven and blissful lands], 24, accessed July 9, 2024, https://www.thepaper.cn/newsDetail_forward_25454067.

[416] Information from Zhang Guangbao, Zhang also discussed the main junctions of those grotto heavens mentioned in the *Bowuzhi* 博物誌 [Records of Diverse Matters], which are the huayang 華陽, linwu 林屋, and xixuan 西玄, see Zhang Guangbao, "Daojiao de dongtian fudi lilun de qiyuan ji lishi fazhan," 24.

Zhang also argues that since the grotto heavens are geographically among the mundane world within mountain areas, they have an inevitable interaction with the mundane world where sentient beings reside. According to Daoist Cannon, the realm of the grotto mainly plays a political and diplomatic role between heaven and the mundane world, which is also reflected in the assigned deities dwelling in the grotto and their transitional positions and functions. There are two precise connections between the grotto heavens and the mundane world:

First, the destiny, life, and death of human beings are predetermined by deities dwelling in grotto heavens.

Second, the traditional dragon king deities, who determine the meteorology and rainfall in the mundane world, and their residential area, the dragon palace, belong to the grotto heaven system.[417]

Through these grotto heavens, connected with each other from within, an underground network of "parallel realities" is connected, in which an independent solar system is observed where "a separate sun and moon dispense their light in turn to shine within."[418] Verellen notes that this "laconic remark reveals two striking features of these separate worlds: the grotto beneath and within the mountain is like the heavens above and beyond, and inside the confines of the mountain, heavenly bodies mark out the space and time of another universe. They do so according to their own scale and rhythm: night is turned into day, inside becomes outside, and generations elapse in the space of instants – experiences imaginatively elaborated in the narrative literature about journeys across the threshold between the world of human imagination, such inversions and time-lapses were not isolated phenomena peculiar to these worlds."[419]

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[417] Zhang Guangbao, "Daojiao de dongtian fudi lilun de qiyuan ji lishi fazhan," 25.

[418] Franciscus Verellen, "The Beyond within: Grotto-heavens (dongtian) in Taoist ritual and cosmology," 270 and Footnote 22.

[419] Franciscus Verellen, "The Beyond within: Grotto-heavens (dongtian) in Taoist ritual and cosmology," 270.

Though accessible for both heavenly and human beings, the grotto heaven provides different entrances for the heavenly dweller, the divinity, or for the unexpected intruders from the mundane, the conscious dweller, and the unconscious intruders of the mythical space. Apart from that, the water serves as a complementary yet indispensable element of those heavenly sites, either alluding to the mythical passage that connects the interior mythical worlds or isolating and ambivalently connecting the mountain area from the outside world. The water, or stream, is the gateway that indicates "the grotto is not unbridgeably separated from the world of human habitation and human concerns."[420]

Glitch of Time and Space

Barnhart observes in his "Peach Blossom Spring" essay that another characteristic of the otherworldly grotto is "the suspension of all time and space except for the pattern of the nature."[421] In other words, those who transcend into the grotto heaven experience the glitch of time and space.

According to Zhang Guangbao, the transcendence of the time and space of the Daoist grotto-heavens is evident. In terms of spatial perception, entering another space, the grotto heavens could form a three-dimensional entrance, for example, as in the tale of "Peach Blossom Spring,"[422] where the fisherman accidentally came across a passage that leads to a grotto heaven where exiles from the former dynasties reside. There is a more fascinating way to enter another world as well, namely through a two-dimensional means, diving into a landscape painting as a portal, for instance. Meanwhile, a to-and-fro transcendence from three to two dimensions is also possible. In terms of time transcendence, the rate of time is much slower than those in the

[420] Franciscus Verellen, "The Beyond within: Grotto-heavens (dongtian) in Taoist ritual and cosmology," 267.

[421] Richard M. Barnhart, *Peach Blossom Spring: Gardens and Flowers in Chinese Paintings* (New York: The Metropolitan Museum of Art, 1983), 16.

[422] Tao Qian's "Peach Blossom Spring" seeks direct inspiration from the Daoist cannon concerning the grotto paradise, according to Stephen R. Bokenkamp. See Stephen R. Bokenkamp, "The Peach Flower Font and the Grotto Passage," in *Journal of the American Oriental Society*, n. 106, v. 1 (1986): 65–77.

humanly mundane world, as reported by those who traveled into the grotto-heavens and back to the normal world; these are often experienced through an unconscious drowsy state.[423]

Escape to and transcendence between unlimited universes is not solely a Daoist vision. It is widely incorporated among the Chinese scholar-official and their views on individual freedom. Barnhart observes that the concept of individual freedom was scarcely found in traditional Chinese society and almost solely in Daoist thinking. "Locked inside the grid of obligations, duties, responsibilities and expectations to which he was subject throughout his life," Wolfgang Bauer is content for the Chinese traditional scholar to find release either in madness (probably self-imposed madness from my view) or find comfort in nature.[424] The philosophy of the Chinese literati garden that celebrates the garden as an enclosed space where "the clock of obligation, duty, and office stopped" and "a state of detachment from the world outside" arises began with the poet Tao Qian of the Six dynasties.[425] Inspired by Tao Qian and individuals in the Han dynasty, Sima Guang constructed his famous Garden of Solitary Pleasures in 1073, in which he rendered seven sites to pay tribute to the historical hermits. While distancing oneself from the mundane and dwelling in the "ineffable beauty of simple existence" in the universal comic realm of nature, "one is absorbed within another sphere of existence, that of timeless and historic; until fundamental truths not otherwise encountered are glimpsed."[426]

"The Peach Blossom Spring" fable by Tao Qian provides such a vision of timeless paradise on the other side of the mountain that hides behind a forest of magical blossoming peach trees, which could only be discovered in an unconscious state and traveled through at the

[423] For a detailed study on the Daoist theories of multiple dimensions and their interconnections, see Zhang Guangbao, 2008.

[424] Richard M. Barnhart, "Peach Blossom Spring and T'ao Ch'ien and the Ideal of the Garden," *Peach Blossom Spring: Gardens and Flowers in Chinese Paintings* (New York: The Metropolitan Museum of Art, 1983), 13–16.

[425] Barnhart, "Peach Blossom Spring and T'ao Ch'ien and the Ideal of the Garden," 13.

[426] Barnhart, "Peach Blossom Spring and T'ao Ch'ien and the Ideal of the Garden," 14.

end of a grove by following a spring. Barnhart calls Tao Qian's "Peach Blossom Spring out of this world" a story analogous to the experience of the Chinese garden, where the otherworldly "suspension of time and space" occurs and "worldly time has stopped."[427] Since then, Tao Qian's vision of "Peach Blossom Spring" became the spiritual sustenance of Chinese scholar-officials who seek for a moment of inner peace.

At this stage, my study reads the supremeness that the construction of the underground basement demonstrates through the lens of the Chinese syncretism of Buddhism, Daoism, and Confucianism. Lingzhao Xuan's exterior form represents the auspicious water and sacred mountain iconography, while the interior creates a fusion of "profane space" and "sacred space" that travel through the Chinese literati studio and the mythical underwater otherworld.[428] Lingzhao Xuan should be considered a result of the Qing imperial belief in syncretism among Daoism and other mainstream traditions of beliefs, including Buddhism and Confucianism. The immaculateness of the grotto-heaven in Daoist beliefs promises "eremitic cultivation in mountains in order to stay away from the mundane world," while the concept of an earthly paradise is also an everchanging syncretism of traditional Chinese beliefs.[429]

The long-developed syncretism in Chinese aesthetics has managed to develop a way of organizing itself that initially seems chaotic and entropic. In Paracka's insightful essay on three teachings and the relationship of heaven, earth and humanity, he observes that "syncretism is integral to a very pragmatic Chinese culture: the idea of the three teachings coming together in relationship to form a more holistic worldview dates back at least as far to the Song dynasty."[430] He proposes a triad of interconnected relationships between Buddhism, Daoism, and

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[427] Barnhart, "Peach Blossom Spring and T'ao Ch'ien and the Ideal of the Garden," 16.

[428] Mircea Eliade discussed notions of "profane space" and "sacred space." See Chai Mengyuan, "Idealizing a Daoist Grotto-Heaven: The Luofu Mountains in *Luofu Yesheng* 羅浮野乘," in *Religions* v. 13, n. 1043 (2022): 2 and 12.

[429] Chai Mengyuan, "Idealizing a Daoist Grotto-Heaven," 13.

[430] Daniel J. Paracka, "China's Three Teachings and the Relationship of Heaven, Earth and Humanity," *Worldviews*, n. 16 (2012): 78. https://doi.org/10.1163/156853511X617803.

Confucianism, which, respectively, represents the Chinese views of heaven, earth, and humanity. According to Paracka, Buddhist thoughts are fundamentally more concerned with the psychological perspectives, impermanence, interdependence, compassion, and spirituality; the Daoist doctrines tend to concern physical, ecological, and medicinal issues, balance, and longevity; Confucianism concerns society, politics, family, community, and prosperity. His contention is that "the contemporary relationship among Chinese three teachings provide a culturally relevant and viable space [and] a religious syncretism that aimed to balance and unite the forces of heaven, earth, and humanity."[431]

Mountains, despite all the distinguishability, are sacred to all three teachings and provide a space where heaven, earth, and humanity come together.[432] This is, in the reverence for mountainous space lies the syncretism of the Chinese three teachings. The admiration of rocks in Chinese garden aesthetics and grotto heavens in Daoism is intertwined from several perspectives, one of which is the reverence for the domain of darkness that represents the supreme yin (*taiyin* 太陰). While the famous literati Mi Fu (米芾, 1051–1107) expressed admiration for his favorite mini rock, he was fascinated by the mysterious interior connections, which "the lower cave bonds three times and communicate with the upper cave; have often journeyed in spirit within them." The transcendentalities between the "interior" and the other worlds are made possible through the "cavities."[433] "In the Daoist imaginary, the grotto-heavens are natural utopias where the immortals live or earthly paradise that are immune from any kind of catastrophe."[434] Externally, Lingzhao Xuan presents a conceptual image of an auspicious pond and sacred mountain. The interior spatial perception at this stage, along with the features

[431] Daniel J. Paracka, "China's Three Teachings and the Relationship of Heaven, Earth and Humanity," 73.

[432] Daniel J. Paracka, "China's Three Teachings and the Relationship of Heaven, Earth and Humanity," 83–89.

[433] John Hay, *Kernels of Energy, Bones of Earth: The Rock in Chinese Art* (New York: China House Gallery), 1985.

[434] Chai Mengyuan, "Idealizing a Daoist Grotto-Heaven: The Luofu Mountains in *Luofu Yesheng* 羅浮野乘," 8.

of the basement aquarium in Lingzhao Xuan, mainly evokes darkness and myths, transcendental passages, and water. Thus, I am content that Lingzhao Xuan demonstrates religious sacredness by imaginatively reconstructing Daoism-inspired grotto heaven and the interlocking system of the Daoist grotto heavens is realized at Lingzhao Xuan through an architecturally wholesome perception.

Though the unfinished dream of a trans-mundane space in form of "Crystal Palace" with industrialised glass was merely half-baked at the beginning of the twentieth century, it continues and manifests in this era in a temporary, digitalised disguise. These "nowhere lands" with glass as the ultimate hope of utopia, the otherworldly, trans-mundane space, as discussed in diverse occasions in this work, with or without religious sentiments, regardless of diverse social, political context, agree on a universal ideal that seems to (and ought to be) ultimately unachievable, the one and only goal worth forever seeking. In other words, the glass dreams are shared, and it never manifested homogenously.

Pro tanto, the essence of Lingzhao Xuan as a trans-mundane space becomes more comprehensible, the "base," the "wall," and the upturned "flying roof" that indicates an opening and receiving gesture of this dissertation together forms metaphysically a trans-mundane space for the discussion and exchange of "glass utopia" within traditional architectural context in China and those beyond this geographical border. In the future research, I will continue the inquiry revealed only by the scant sources that mentioning electricity was planned for the site of Lingzhao Xuan. Perhaps one could establish a correspondence between the application of electricity and the concept of Moon Palace in Chinese Convention. I have not yet investigated in this issue, but it is noted for further research. It is reasonable to believe that as the newspaper suggests, at night, the glass would interact with the electric light and reinforce the image of a bright, otherworldly space that indulges the fantasy of being in an underwater palace, or even a palace on the moon, as in the tales of in the Broad Coolness Palace 廣寒宮. Further, I intend to

investigate the issues of "glass utopia" in light of the concept of "diaphanous structure," which will demand further study on optical and textual connections.[435] The term of "Diaphaneity" that used by Hans Jatzen in his *On Gothic Church Space* (1927) is derived from "diaphanous," which refers to a phenomenon that the lightness that is penetrable. Nonetheless, the very origin of "diaphanous" seems to be far from the quality of being transparent and this issue certainly await further investigation.[436]

As Victor Hugo said, "there is nothing like a dream to create the future. Utopia today, flesh and blood tomorrow." The constant pursuit of abstract ideals and the physical manifestation allowed by material science and engineering techniques are the two aspects of one "truth" that interact in every "utopia." They develop side by side through cross-fertilization. However, one should bear in mind that no matter what compromises have been made by the creator, in this case, our architectural narrators' aims must always have been on making sure that the audience at the very least, shares the same immense experience of this spatial memory and convincing them that the both aspects achieve a temporary one in this space, ideally, no discrepancy between the reality and the ideal is supposed to be detected. To echo the German philosopher Theodor W. Adorno's proposal that "none of the abstract concepts comes closer to fulfilled utopia than that of eternal peace," the meditative state of mind of the occupants in Lingzhao Xuan, as discussed in former text, could be this "fulfilled utopia" achieved by "eternal peace," as so, the "Crystal Palace" that "having no motive" or encompass "emptiness" is solidly built in one's mind and unfold in front of one's mind's eyes, as the Chan master said:

> Thought is in every way a tin-ringed rod of affliction.

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[435] I thank Prof. Ledderose for personal exchange on this issue in May 2024.

[436] According to Aristotle in his *De Anima* and *De Sensu*, "diaphaneity is a quality within things that makes them visible […] through sight and optics." Information from Stepan Veneyan. Veneyan also argues that the concept of "diaphanous structure" coined by Hans Jatzen is "subconsciously" adopted by Sedlmayr in his monumental *The Origins of the Cathedral* (1951), which "can be seen as an almost universal aspect within a wide variety of contexts." See Stepan Veneyan, "Jatzen and Sedlmayr: Diaphaneia an impossible presence?" In *Interstices: Journal of Architecture and Related Arts*, n. 19 (December 2019), 54–63, accessed on July 29, 2024. https://doi.org/10.24135/ijara.v0i0.555.

> Having no motive should be considered a crystal palace.[437]

At the very beginning of this journey, I started with only a handful of evidence and primary sources I acquired for the research on the architectural compound of Lingzhao Xuan, yet the drive for me to come alone this far was initially a vague feeling of alienation without understanding of the entelechy, the "actualization of the potential inherent."[438] I wish to end this work with the words of Ernst Bloch (1885–1977):

> In ourselves alone the absolute light keeps shining, a *sigillum falsi et sui, mortis et vitae aeternae* [false signal and signal of eternal life and death itself], and the fantastic move to it begins: to the external interpretation of the daydream, the cosmic manipulation of a concept that is utopian in principle. Finding this concept, finding the right for whose sake it behoves us to live, to be organized, to have time — this is where we are headed, why we are clearing the metaphysically constitutive trails afresh, calling for what is not, building into the blue that lines all edges of the world; this is why we build ourselves into the blue and search for truth and reality where mere factuality vanishes.[439]

These resonate well with the thoughts throughout my study that it is the permeating pursuits that matter the most.

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[437] Original: 有念盡爲煩惱錫，無機方稱水晶宮。See related entries in Chapter 1.

[438] Heinrich Wölfflin, "Prolegomena zu einer Psychologie der Architektur," in *Empathy, Form, and Space: Problems in German Aesthetics, 1873–1893*, ed. Harry Françis Mallgrave (Santa Monica: The Getty Center for the History of Art and the Humanities, 1994), 156–159.

[439] Ernst Bloch, *Man on His Own: Essays in the Philosophy of Religion*, trans. E. B. Ashton, (New York: Herder and Herder, 1959), 43.

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