



FONTES  **Quellen und Dokumente zur Kunst 1350-1750**
Sources and Documents for the History of Art 1350-1750

FRANCIS BACON:
Of Building, Essay 45,

aus: FRANCIS BACON, *The Essayes or Counsels, Civill and Morall, of Francis Lo. Verulam, Viscount St. Alban* (London: Printed by Iohn Haviland for Hanna Barret, 1625)

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FONTES 16

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[Francis Bacon]

THE
ESSAYES
OR
COVNSELS,
CIVILL AND
MORALL,
OF
FRANCIS LO. VERVLAM,
VISCOVNT S^t. ALBAM.

Newly written.

LONDON,

Printed by IOHN HAVILAND, for

HANNA BARRET.

1625.

Essay XLV. *Of Building.*, pp. 257-265

FONTES 16



*Hon^m Francis^o Bacon^o, Baro de Veru-
lam Vice-Comes Sth Albani. mortuus 9 Aprilis,
Anno Dñi. 1626. Annoq, Aetat 66.*

Anon., Francis Bacon, Baron Verulam, Viscount St. Albans, engraving

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OUTLINE and STRUCTURE of FRANCIS BACON'S *Of Building*

Francis Bacon's essay, *Of Building*, can perhaps be understood most directly by first examining its form and content synoptically. The outline on the following pages, which is both diagrammatic and expository, facilitates an overview of the text which is, simultaneously, logically comprehensible and as well as visually demonstrative of the structural functioning of content.

Of Building [Houses]

[PAR. 1]

PART ONE: HOUSE (palace) vs. SEAT

- I. 1: OPENING: HOUSES are to live in, and not to look at.**
- I. 2: THUS: USE has **priority** over **UNIFORMITY** ('functionality' vs. 'beauty'), except where they are not in contradiction.**
- I. 3: ADVICE: Let poets build for beauty alone, for poets spend only words, and build on paper with no cost.**
- I. 4: CONCLUSION: The **fair house** on an **ill SEAT** = **a Prison**.**

PART TWO: THE SEAT: PRECEPTS

II. 1: Traits of the Seat defined by what is to be avoided. The characteristics of the '**ill seat**' are:

II. 1. a: air: unwholesome; unequal

II. 1. b: set upon a **knoll**, with higher hills around: **heat** of the sun pent in; **wind** gathers in troughs yielding extremes of **heat** and **cold**

II. 1. c: Also: **ill ways, ill markets, ill neighbours**.

II. 1. d: Also: **insufficiency** of **water, woods, shade, shelter, fertility, variable soil, view, level grounds; places for sports; too near the sea** (too far away), absence of **navigable rivers, too far from cities, or too near** (economic consequences)

All these avoidances (and, implicitly, their reverse sides) **are not to be found in a single seat**

II. 2: Concluding Example (anecdote): *Lucullus* and *Pompey* – summer and winter residences

PART THREE: THE HOUSE, or palace, in PRACTICE: **EXEMPLIFICATION** (of House, and not of Seat)

[PAR. 2]

III. 1. a: PROCEDURE AND TOPIC DEFINED: To pass from the **SEAT**, to the **HOUSE ITSELF**; we do as Cicero, who gives (1) the **precepts** of the art, and (2) **its realization** (“**perfection**”).

III. 1. b: “**We will therefore describe a princely palace, making a brief model of it.**”

III. 1. c: Bon mot: Huge Buildings in continental Europe (Vatican; Escorial), but no fair room in them.

III, 2: THE PERFECT PALACE – A MODEL / PATTERN:

[Approximate SUCCESSION OF PARTS:]

Green Court
2nd Court
Court before the Front (Façade)
Front Block
(offices-) Household Side – Center Tower – Banquet Side (-offices)
Household Side – Fair Court – Banquet Side (public)
'Garden' Court
Grotto
Garden

[Par. 3]

III, 3: The **perfect PALACE** has **TWO different SIDES: public and private spaces**

III, 3. a: Banquet Side (feasts and triumphs)

III, 3. b: Household Side (dwelling)

III, 4: FRONT:

III, 4. a: The TWO Sides are Wings but also part of the Front
(uniform on outside; differently partitioned inside).

III, 4. b: At Center: great TOWER (center of front)

III, 4. c: BANQUET SIDE: in **front**, above: a **great room** (40 ft. h.);
below: **dressing room**, or preparing place for **triumphs**.

III, 4.d: HOUSEHOLD SIDE: at front, divided into a **hall** and a **chapel**;
behind: a **winter** and a **summer parlour**. **UNDERGROUND:**
cellar, privy kitchens, butteries, pantries, etc.

III, 4. e: CENTER TOWER: two stories (each 18 feet higher than wings); lead roof; balustrade with statues. Divided into rooms. Stairs.

CONCLUSION to the (**FRONT III, 4**): Placement of Servants's Dining Room.

Postscript to Conclusion: height of stairs; height of lower room.

[Par. 4]

III. 5: [COURTS: Two courts behind the Palace]

III. 5. a.: 1st COURT (behind front): A **Fair Court**, much lower than the front on three sides. At the corners: 4 external staircases within low turrets (small towers). Unpaved to avoid extremes of heat and cold. Walkways on the sides and lateral and

longitudinal walks on central axes (cruciform). Quadrants in grass for grazing by domestic animals.

III. 5. b: [Partition of the BANQUET SIDE rooms]

Banquet-side Wing: divided into long, representative Galleries (with 3 or 5 Cupolas and coloured glass windows)

III. 5. c: [Partition of HOUSEHOLD SIDE rooms]

Household-side Wing divided in receiving rooms and sitting rooms, with some bedrooms.

III. 5. d: Partition of the THREE SIDES OF THE PALACE (House): All three sides partitioned into a double file of rooms, with windows on only one side of a room, so that rooms for the morning and for the afternoon are created.

III. 5. e: Additional Observations:

III. 5. e (1): Also plan **rooms for summer** (shady) and for **winter** (warm)

III. 5. e (2): **Avoid too much glass** window surface to avoid sun or cold.

III. 5. e (3): Bay Windows: Good for withdrawing to confer and protect from wind and sun, but plan only a few; and, in the city, flat windows are better, to conform to the “uniformity” toward the street.

[Par. 5]

III. 6: 2nd COURT beyond (inward court), surrounded by the garden on the outside, and, inside, cloistered on all sides, with arcade on the first story.

III. 6. a: On Ground level toward the garden: turn the loggia into a **grotto**, or a shady place for summer.

III. 6. b: Openings and windows only facing toward the garden; level with floor, not underground, to avoid dampness.

III. 6. c: Center of court: a **fountain** or statues; ground as 1st Court.

III. 6. d: Surrounding buildings:

III. 6. d (1): On the **second story**: private lodgings; private galleries; infirmary for prince or notables (with adjoining chambers, bed-chamber, antecamera, and recamera).

III. 6. d (2): At **ground level**: loggia with pillars.

III. 6. d (3): Third story: An open loggia on pillars with garden views, and with wall fountains.

III. 6. d (4): At both **corners** of the further side: two elegant or rich cabinets, paved, richly hanged, glazed with glass, and cupola in the middle.

III. 6: Conclusion: This is the model of the palace, with some

ADDITIONAL PROVISIONS:

III. 7: [Three **COURTYARDS** in front of the **Palace**:]

III. 7. a: A **Green Court** (grassed or planted), with enclosing wall

III. 7. b: A **Second Green Court**, with turret-topped walls

III. 7. c: A **Third Court** before the **Façade**, surrounded by earthen **terraces**, and **cloistered** within, with pillars (not arches).

III. 8: [**Offices: Service buildings**]

III. 8. a: OFFICES: set apart from the main building

III. 8. b: With Covered Connecting **PASSAGES** (Galleries)

INTRODUCTION

"A HOUSE IS TO LIVE IN, NOT TO LOOK AT": FRANCIS BACON'S ESSAY *Of Building*, 1625

Francis Bacon's brilliant and aphoristic words have lent themselves to being mined as a source of ready made quotations, serviceable on a multitude of occasions for countless speakers and writers. Bacon's most memorable architectural 'ready-made' is doubtless "A house is to live in, not to look at", and it is the architectural observation of Bacon that is most often repeated. And, while this maxim provided the point of entry for Bacon's essay *Of Building*, this essay does not entirely neglect the demands of 'beauty', the theme of another essay by Bacon, where he writes, "Virtue is like a rich stone, best plain set." – an aphorism suggesting that beauty need not be ostentatious, but can best be played in a low key. This accords with Bacon's view that the content of buildings, their uses and functions, have priority over formal aesthetic concerns of order and symmetry ('uniformity').

In Bacon's essay *Of Building*, the word 'architecture' is never mentioned, although Bacon knew it. Bacon's aphorism, „Houses are built to live in, and not to look on“, may be embraced by intellectuals who shop at IKEA and fill their houses with cosy clutter, but many modern day designers and their admirers might not share his view. In his own day, his view seemed to run counter to what continental architects had been propounding for more than a century, in a movement that had even begun to make headway in remote England. A modernist reading, which sees in Bacon an extreme functionalist approach, may be exaggerated, if not entirely mistaken. When Le Corbusier famously said, "a house is a machine for living in", his words undeniably (if perhaps unintentionally) echo Bacon's, and nevertheless Corbusier's vision of beauty informs, equally undeniably, his functionalist architecture.

Bacon has been mainly read 'forward' as a beacon to 'modernity', rather than read 'backward' as a participant in an ultimately Vitruvian discourse in which he stakes out a minority position. Bacon has been said to have inspired Henry Wotton's *Elements of Architecture*, which was published in 1624, the year before the appearance of the new edition of Bacon's *Essays*, which included for the first time the essay, *Of Building*. A re-edition of the earlier *Essays* in 1624 did not include it. It has not been asked if Wotton's small book on architecture did not provide instead the catalyst for Bacon's brief treatment of the same topic. Writers on British architectural theory often mention Bacon, but his brief treatise is seldom treated in detail, and often omitted from general surveys.

Of Building, PART ONE: Bacon's Opening Statement is very brief, comprising only ten lines in the 1625 edition. In its preference for "use" over "uniformity", it is usually viewed as a seminal statement of a rigorously functionalist position in architectural theory. "Let use be preferred before uniformity", writes Bacon, but he adds, "except where both may be had". In light of the remainder of his essay, more emphasis might be laid upon this qualification by Bacon of his preference for function, for Bacon is still operating within a system of competing demands which need find a perfect balance. The *Spannungsfeld* 'use versus beauty' is implicit in the classical conception of architecture (see 'Glossary'). Bacon presents a variation on the matrix of the Vitruvian triad '*utilitas-venustas-firmitas*' (newly minted by Henry Wotton as

firmness, commodity, and delight), one in which commodity is assigned the leading rôle, but the Vitruvian framework still determines the form of Bacon's discourse.

When Bacon suggests leaving the building of houses built for beauty alone to the poets, whose paper palaces in words cost nothing to build, he draws attention to the great expense of building, that is, to the economics of building, in the broadest sense a part of commodity.

The topic of Part Two, 'The Seat', or site, for building a house, is doubtless an aspect of commodity and function, but it constitutes only a single aspect of this topic, and it is not a full development of this theme, and thus it appears as a somewhat isolated, specialized, and fragmentary consideration, one which does not fully realize the promise of Bacon's opening remarks.

Of Building, PART TWO: The topic of Part Two, if viewed in terms of its elaboration, is that of the choice of a site for a land seat in the country. The seat is clearly in the country, and the potential builder-owner is, implicitly a country squire, or perhaps a nobleman, concerned with climate, access, liveability, neighbours, commerce, sport, and similar considerations, many of them economic, of interest to a builder who seeks a dwelling and a seat which might yield him profit. The characteristics discussed appear rather less applicable to the requirements of the great Lord or Prince (at least to the extent that he may be immune to or indifferent to a need for gain) implied in the discussion of the Princely Palace that follows.

This theme is extensively treated in Vitruvius's *De Architectura*, and it was a standard topic of the continental treatises of classical architecture inspired by Vitruvius. Many of the characteristics touched upon by Bacon in his discussion of siting are familiar ones: quality of air, wind, water, soil, *etc.*, but others strike a more individual note: nearby places for the sports of hunting, hawking, and races, and the considered treatment of the economic consequences of cities for country life, *etc.* Instead of defining the characteristics of the seat in terms of desirable traits to be sought in a building site, Bacon compiles a list of what to avoid, establishing criteria of avoidance with his concept of the 'ill seat'. These negative traits are listed above in the 'OUTLINE and STRUCTURE of FRANCIS BACON's *Of Building*'. In conclusion, Bacon observes that the positive characteristics implicit in his catalogue of vices of the ill seat will probably not all be found in a single building site, but the builder-owner should seek as many as possible in the site he chooses, and, if he owns several dwellings, seek in one what is missing in the others, again an approach which seeks to balance and offset priorities.

This same outlook is embodied in a concluding anecdote to Part Two that is drawn from the literature of classical antiquity. When Pompey saw the stately galleries and large, light-filled rooms of Lucullus, he said, "Surely an excellent place for summer, but how do you do in winter". To which Lucullus replied, asking if Pompey did not hold him to be as wise as the birds who change their home in the winter (Plutarch, *Life of Lucullus*, 39, and 'Glossary'). Considerations of summer and winter rooms are offered in Part Three.

In his transition from Part Two to Part Three, Bacon explains that his consideration of the Seat constitutes his precepts for building, his rules, but it is clear that these considerations do not constitute a comprehensive set of rules for building. He states that his verbal model for a Princely Palace, which follows, will exemplify the realization of his precepts, but, in reality, his model does not exemplify the seat so much as illustrate the realization of the 'House', which is, no longer, a typical country house, but the palace of a prince – of a great Lord or

even of a King. Thus, again, there is an element of disjunction among the three parts of Bacon's essay *Of Building*.

Of Building, PART THREE: To the extent that Bacon's Model of a Princely Palace is considered, it is usually said to be an illustration of Bacon's new functionalist approach to architecture. This is true to a limited sense, for functional considerations are repeatedly introduced. At the same time 'uniformity' plays a leading rôle at every turn in the design model that Bacon presents. Looking first at the functionalist aspect, the house is divided into two sides: a household side for dwelling and a banquet side for feasts and triumphs. This division also reflects a traditional one between public and private functions. Other functional considerations are: the functions of rooms for dressing, preparing for processions, kitchens, pantries, butteries, servants's rooms, functional outbuildings, sitting rooms, bedrooms, *etc.* (see 'Outline', *supra*). Moreover, there is a marked concern for lighting and for adjustment to the seasons, summer and winter.

Turning to 'uniformity', by which Bacon intends regularity, symmetry, order, and agreement among the parts, we see that the design that Bacon proposes is a perfectly symmetrical large building complex arranged around a central axis: three large forecourts, the body of the building with a main block ("front"), a central tower, and symmetrical lateral wings behind, enclosing a quartered fourth court and followed by a further fifth courtyard. The dimensions of the front and of the courts accord with one another. These elements are in their individual articulation and detail equally ordered and symmetrical. The large lateral wings are "uniform" on the outside (if variously partitioned on the interior). The great tower is placed in the middle of the façade. The three lower sides of the first interior court are all of the same height. At the four corners of this court, four exterior staircases enclosed in turrets are placed symmetrically, their height "proportionable" to the lower wings. The court ground has a cruciform plan, divided into quadrants. The 'galleries' are given, symmetrically, three or five cupolas. The fifth court also has a cruciform plan with a central fountain. Two cabinets with cupolas are placed at the corners. Service buildings are placed at either side of the main building, with covered connecting passageways. Bacon's description of the palace can be readily recorded in a drawn architectural plan which reveals the complete symmetry of his proposed building complex.

The scale of this complex does not seem destined to an ordinary country squire, and indeed Bacon speaks of a Model for a Princely Palace. This accords with his reference to the huge buildings of continental Europe. The Banquet side of the palace, destined for great feasts and triumphs, implies a princely or regal owner, one who can organize triumphal processions and events ("preparing place, at times of triumph"), typically urban phenomena and ones that take place near the centers of power. The great tower appears not only as an expression of magnificence but of hegemony as well. Bacon provides for an "infirmary" in the event of the illness of "the prince or any special person" and for "two delicate or rich cabinets, daintily paved, richly hanged, glazed with crystalline glass, and a rich cupola", where precious things, *e.g.*, a princely collection, may be preserved. One may ask if what Bacon describes is really conceived for a seat in the country distant from a city, and if it is not more fitting to an elaborate *Gartenanlage* in or near a city. Possibly it is related to building projects under discussion at the time Bacon wrote. Some writers have wished to see in Bacon's Verulam House, St. Albans, a practical demonstration of the principles laid down in his essay *Of Building*, with such novelties as centrally-placed chimneys and optical illusions.

AN ANTHOLOGY OF COMMENTARIES TO BACON'S *Of Building*

EDWARD ROBERT DE ZURKO, *Origins of Functionalist Theory*, New York: Columbia University Press, 1957, pp. 62-69:

“Francis Bacon (...) combined a scientific attitude with a utilitarian attitude toward knowledge. Although he rarely addressed his writings directly to artists or architects, he set down ideas rich in implications for the arts. Among these are ideas related to the functional and organic concepts of architecture (...).

Bacon abhorred an elaborate edifice of intricate reasoning based on a flimsy foundation or unfamiliarity with what is actually in nature, hence his ideas of organic form have an authority lacking in less scientific observers. (...)

Bacon found that the greatest of all hindrances to the advancement of science was mankind's failure to make utility the proper goal of knowledge. He found that much of the knowledge of his day, as well as of antiquity, was useless. This was a result of speculations divorced from natural phenomenon, hence he urged all men to abandon abstract principles and syllogistic reasoning for a closer acquaintance with the facts of nature. (...) A reverence for antiquity was keeping men back, “as by a kind of enchantment,” from progress in all fields of knowledge. Men must begin anew. “No one has yet been found,” he lamented, “so firm of mind and purpose as resolutely to compel himself to sweep away all theories and common notions, and to apply the understanding, thus made fair and even, to a fresh examination of particulars.”

Bacon rejected the idea of absolute beauty and the related idea that a thing of beauty was made up of parts which are each perfectly proportioned according to some absolute ideal. (...)

Occasionally Bacon applied his general philosophical ideas directly to the specific problems of art and architecture. (...) *The Essays or Counsels* contain a short essay on architecture. In this work Bacon states a very simple principle, that “houses are built to live in”. We are treated to a description of a house which Bacon has conceived in accordance with his simple principle. (...) Bacon's description of his concept of a liveable house reminds us of Alberti and Palladio, because it begins with the site, and throughout the description the conditions of the site and their relation to the form of the building are stressed. (...)

At another point Bacon seems to be a precursor of modern design when, in recommending a variety of types of rooms for summer or winter use, he calls for glazed rooms for warmth in winter and shaded rooms for protection from the summer sun. Bacon required very little embellishment for his ideal house.”

RUDOLF WITTKOWER, “English Literature on Architecture”, in: *Palladio and English Palladianism*, London: Thames and Hudson, 1974, p. 99:

“Over a half a century later, in 1624, Sir Henry Wotton published his equally remarkable *Elements of Architecture*. One of the most cultured men of his day, Wotton had spent many years abroad and ten of them as English ambassador in Venice. He had an impressive

knowledge of a wide range of sources, classical and modern, and handled them with great ability. His critical analytical method probably stems from his early friendship with Francis Bacon; his architectural terms of reference, from Vitruvius; his concept of the architect as “a diver into causes and into the mysteries of proportion”, from Alberti, and so forth. All this is, however, subordinated to the guiding thought of the moral influence exercised by architecture.”

JOHANNES DOBAI, *Die Kunstliteratur des Klassizismus und der Romantik in England*, vol. 1: 1700-1750, Bern: Benteli, 1974, pp. 365-367:

„*Of Building* von Francis Bacon ist Essay XLV in der zu Bacons Lebzeiten erschienenen letzten Ausgabe seiner *Essays* (1625). [...]

Ähnlich römischen Autoren und sich auf einen Aspekt bei Vitruv stützend, legt Bacon vor allem auf die gute Auswahl des Platzes für den Landsitz Wert, da ein Landsitz nach seiner Auffassung in ungesunder Gegend nichts anderes als ein „Gefängnis“ ist. Wichtiger als dies ist, dass ‚Use‘ mit ‚Uniformity‘ kontrastiert wird, da es ja ein Grundproblem der englischen Architektur der Renaissance und des Frühbarock war, symmetrische und asymmetrische Elemente sowohl im Grundriss wie auch im Aufriss und Massenwirkung in neuartige Harmonien zu bringen. [...]

Bacon beschreibt in dieser späteren Phase eine komplizierte große Anlage [...].

Eine Tendenz zur – theoretisch verworfenen – „Uniformität“ zeigt sich, wenn auf den ersten Hof ein zweiter folgt, „an inward court, of the same square and height“. Es befindet sich ringsherum ein Garten mit einer Grotte, mit Statuen und Fontänen, was an italienische Vorbilder oder aber an Fontainebleau erinnern könnte. Die Galerien, die zur Gartenseite hin offen sind, könnten ihrerseits die Nordwestfassade von Blois oder Château de Madrid in Erinnerung rufen. Es sind Säulengalerien in ihren Ecken mit Kabinetten „daintly paved, richly hanged, glazed with cristalline Glass“. Dies entspricht – wenn auch nur in vagen Zügen – jener Freude Bacons an technischer Perfektion, die auch in *Nova Atlantis* zum Ausdruck kommt, wo wissenschaftlich Zwecken dienende phantastische Strukturen einige Male erwähnt werden. Diese Vorstellungen sind etwas durchaus Neues, obschon sie in der Kultur der Renaissance verankert sind. Ähnliches wird sich in Bacons Vorstellung über eine ideale Gartenanlage zeigen [...].

HANNO-WALTER KRUF, *Geschichte der Architekturtheorie*, München: Verlag C. H Beck, 1985, Vierte Auflage, 1995, pp. 258-259:

„Außerordentlich interessante Aspekte trägt der Naturphilosoph und Politiker Francis Bacon [...] in die Architekturtheorie, indem er die Haltung des Naturwissenschaftlers mit utilitarischen Zielvorstellungen auf die Architektur anwendet. Von seinen „Essays“ ist der 45. der Architektur gewidmet („*Of Building*“). Bacon beginnt den Essay mit der programmatischen Forderung: *Houses are built to live in, and not to look on; therefore let use be preferred before uniformity, except where both may be had.* [...]

Der funktionale Aspekt (*use*) gibt für Bacon den Ausschlag in der Architektur, und er ist mit Recht als Protofunktionalist bezeichnet worden (*De Zurko; Dobai*). Ästhetische Prinzipien treten für Bacon hinter den funktionalen zurück; sein naturwissenschaftlicher Ansatz führt ihn

zu ästhetischer Empirie, das heißt, er weist Regeln und geometrische Proportionsgesetze zurück. [...] Bacon vertritt einen ästhetischen Relativismus und ist damit in gewisser Weise ein Wegbereiter der „arbiträren Schönheit“ von Claude Perrault. Bacon beschreibt ausführlich einen fürstlichen Palast, dessen Anordnung und Aussehen entsprechend seiner funktionalistischen Auffassung durch das Raumprogramm bestimmt ist. Den Vatikanpalast und den Escorial verurteilt er mit Hinweis auf ihren Mangel an brauchbarem Raum. [...]

Während Bacons funktionalistischer Ansatz auf naturphilosophischen Wurzeln beruht, ergab sich in der englischen Architektur und ihrer Theorie durch eine unmittelbare Hinwendung zu Italien in den Jahren nach 1600 eine neue Architekturauffassung, die eine erste Phase des englischen Palladianismus bildet und deren Repräsentant Inigo Jones (1573-1652) ist.“

TERENCE M. RUSSELL, in: *The Encyclopaedic Dictionary in the Eighteenth Century: Architecture, Arts and Crafts*, ed. Terence M. Russell, vol. 1, John Harris, *Lexicon Technicum, incorporating the works of Sir Francis Bacon and Sir Henry Wotton*, Aldershot: Ashgate, 1997, pp. 1-2:

„Sir Francis Bacon’s *Essays or Counsels Civil and Moral* were published between 1597 and 1625 and form an important adjunct to the larger philosophical works upon which his fame rests. (...) This text [*Novum Organum*] addresses what today we would term scientific method. Bacon argued the case for a new science and for a proper place to be given in human affairs to a rigorous system of natural philosophy that needed to be founded upon a new plan. He wished to free mankind from what he considered to be an excessively reverential attitude towards antiquity and the attitudes of mind and the precepts of mediaeval thinkers. He protested: “The knowledge whereof the world is now possessed especially that of nature, extendeth not to magnitude and certainty of works.” He argued for a “fresh examination of reality in all its detail.”(...)

Bacon’s *Civil Essays* reveal a mind forever “musing, searching, revolving new notions and ideas.” His writings inspired many of his own generation and Sir Henry Wotton (...) as Provost of Eton College recommended Bacon to be read “in my domestic college as an ancient author.

Bacon’s essay *Of Building* (...) is number forty-five in the sequence of fifty-eight that Bacon had compiled by 1625. (...) In his essay Bacon considers the importance to a building of the site and its prospect bearing upon the amenities of light, air and sunshine; planning is examined with respect to fitness for occasion and the fulfilment of everyday practicalities; also included is the place of works of art and craftsmanship in the adornment of cabinets, cloisters, pillars and arches.”

CARSTEN RUHL, in: *Architektur-Theorie: von der Renaissance bis zur Gegenwart*, ed. Bernd Evers-Christof Thoenes, Köln: Taschen, 2003, p. 408:

Insgesamt geht Wotton in seinem *Elements* von der empirischen Erfahrung als Regulativ architekturtheoretischer Prinzipien aus, womit er ein neues wissenschaftliches Modell aufgreift, das im Wesentlichen durch Wottons Zeitgenossen und Freund Francis Bacon begründet wurde.

Bacon hat es in seiner Grundlegung einer neuen Wissenschaft, dem *Novum Organum* von 1620 als eine Tugend bezeichnet, sich von den traditionellen Theorien zu emanzipieren und die Gegenstände unvoreingenommen zu betrachten. Diesem Diktum entspricht auch Bacons eigene Auseinandersetzung mit der Architektur, indem er sich in seinem Essay *Of Building*, 1625 auf den Aspekt der „utility“ konzentriert und hierüber zu seiner Architekturkritik gelangt. Auf der Basis alltäglicher Erfahrung wird festgestellt, dass Häuser nicht primär um ihre Schönheit willen, sondern wegen ihres Zwecks gebaut würden. Das Architekturschöne konnte nicht mehr von der kosmologischen Vorstellung des Universums hergeleitet werden, sondern hatte sich durch die empirisch nachvollziehbare *utilitas* der Architektur zu legitimieren. Die Architektur wird so bei Bacon entzaubert.

English edition: *Architectural Theory: From the Renaissance to the Present*, Taschen, 2003, p. 409:

All in all, in his *Elements*, Wotton consistently assumes that empirical experience regulates theories of principles, and in doing so takes up a new scientific model that was essentially founded by Wotton's contemporary Francis Bacon 1561-1626. After all, it was Bacon who, in 1620, when laying the foundations for new science in his *Novum Organum*, described it as a virtue to liberate one's self from traditional theories and to observe objects in an unbiased manner. Ultimately Bacon's own exploration of architecture meets this dictum, for in his essay *Of Building* (1625) he concentrates solely on the element of 'utility', and from it derives his critique of architecture. Based on everyday experience he asserts that houses are not built for beauty, but rather for reason of commodity. As such, architectural beauty could no longer be derived from the cosmological conception of the universe, but had to seek its legitimacy in the empirically identifiable *utilitas* of architecture. In this way Bacon demystifies architecture.”

LIANE LEFAIVRE – ALEXANDER TZONIS, *The Emergence of Modern Architecture: A documentary history from 1000 to 1810*, London: Routledge, 2004, p. 180:

“Bacon, the renowned English philosopher, upturned one of the basic tenets of Renaissance classicism – the search for aesthetic pleasure based on harmonious proportions and ornamentation – in favour of an extreme functionalist approach when he advocated that utility be the sole guiding principle in domestic architecture, even at the cost of ‘uniformity’. It marks one of the first precedents in what was to become the ‘rigorist’ revolt against the excesses of the baroque by Gallacini, Laugier and the followers of Lodoli.”

THE TEXT OF BACON'S *OF BUILDING*

NOTE:

In the text of Bacon's *Of Building*, given below, the Paragraphs have been assigned numbers from one to five, e.g., 'Par. I'. The bold face numbers between square brackets, e.g., '[257]', correspond to the page numbers of the 'London 1625' edition of Bacon's *Essays*, the first edition to contain the essay *Of Building*, as no. 45. Digital images of all pages of this edition of the work (as well as those of a number of early editions of it and many other works by Bacon) are found at the website 'Early English Books Online' (EEBO): <http://eebo.chadwyck.com/home>).

This is not an electronically readable full text, such as those found at a number of Internet sites.

EEBO is not an open access web site, but a subscription site produced by a commercial firm, Chadwyck Healey, in cooperation with public institutions, a site available to members and users of subscribing institutions and libraries and to private subscribers. The Deutsche Forschungs Gemeinschaft has acquired a *Nationallizenz* for Germany and, through the *Nationallizenz*, this website is presently accessible, without cost, in many German libraries. Residents of Germany may register (*private Anmeldung*) for the site through the Nationallizenzen Program of the DFG (*Nationallizenzen für elektronische Medien*) and access the site from private addresses without cost (www.nationallizenzen.de). The text below is a modernised text, with words, spellings, and punctuation conforming to current usage. The original text is rarely available in printed editions, but the first edition can be consulted in digital facsimile online at EEBO (*supra*).

THE TEXT

Of Building.

XLV.

[257] *Par. I.* Houses are built to live in, and not to look on. Therefore let use be preferred before uniformity, except where both may be had. Leave the goodly fabrics of houses for beauty only to the enchanted palaces of the poets, who build them with small cost. He that builds a fair house upon an ill seat, commits himself to prison. Neither do I reckon it an ill seat only where the air is unwholesome, but likewise where the air is unequal, as you shall see many fine seats set upon a knap of ground, environed with higher hills round about it. Whereby the heat of the sun is pent in, and the wind gathers as in troughs, so as you shall have, and that suddenly, as great diversity of heat and [258] cold as if you dwelled in several places. Neither is it ill air only that makes an ill seat, but ill ways, ill markets, and, if you will consult with Momus, ill neighbors. I speak not of many more: want of water; want of wood, shade, and shelter; want of fruitfulness, and mixture of grounds of several natures; want of prospect; want of level grounds; want of places at some near distance for sports of hunting, hawking, and races; too near the sea, too remote; having the commodity of navigable rivers, or the discommodity of their overflowing; too far off from great cities, which may hinder business, or too near them, which lurches all provisions, and makes everything dear; where a man has a great living laid together, and where he is scanted – all of which, as it is impossible perhaps to find together, so it is good to know them, and think of them, that a man may take as many as he can, and if he have several dwellings, that he sort them so that what he wants [259] in the one, he may find in the other. Lucullus answered Pompey well, who, when he saw his stately galleries and rooms so large and lightsome in one of his houses, said, “Surely an excellent place for summer, but how do you in winter?” Lucullus answered, “Why, do you not think me as wise as some fowl are, that ever change their abode towards the winter?”

Par. II. To pass from the seat, to the house itself; we will do as Cicero does in the orator’s art, who writes books *De Oratore* and a book he entitles *Orator*, whereof the former delivers the precepts of the art, and the latter, the perfection. We will therefore describe a princely palace, making a brief model thereof. For it is strange to see, now in Europe, such huge buildings as the Vatican and Escorial and some others be, and yet scarcely a very fair room in them.

Par. III. First, therefore, I say, you cannot have a perfect palace except you have two several [= *separate*] sides, a side for the banquet, as it is spoken of in the book of Hester, [260] and a side for the household, the one for feasts and triumphs, and the other for dwelling. I understand both these sides to be not only returns, but parts of the front, and to be uniform without, though severally partitioned within, and to be on both sides of a great and stately tower, in the middle of the front, that, as it were, joins them together on either hand. I would have on the side of the banquet, in front, only one goodly room above stairs, of some forty foot high, and under it a room for a dressing or preparing place at times of triumphs. On the other side, which is the household side, I wish it divided at the first into a hall and a chapel (with a partition between), both of good state and bigness, and those not to go all the length, but to have at the further end a winter and a summer parlour, both fair. And under these rooms, a fair and large cellar, sunk under ground, and likewise some privy kitchens, with butteries and pantries, and the [261] like. As for the tower, I would have it two stories, of eighteen foot high apiece, above the two wings, and a goodly leads upon the top, railed, with statues interposed; and the same tower to be divided into rooms, as shall be thought fit. The stairs likewise to the upper rooms, let them be upon a fair open newel and finely railed in, with images of wood cast into a brass color, and a very fair landing-place at the top. But this to be, if you do not point any of the lower rooms, for a dining place of servants. For otherwise, you shall have the servants' dinner after your own: for the steam of it, will come upward as in a tunnel. And so much for the front. Only I understand the height of the first stairs to be sixteen foot, which is the height of the lower room.

Par. IV. Beyond this front, there is to be a fair court, but three sides of it of a far lower building than the front. And in all the four corners of that court, fair staircases, cast into turrets, on the [262] outside, and not within the row of buildings themselves. But those towers are not to be of the height of the front, but rather proportionable to the lower building. Let the court not be paved, for that strikes up a great heat in summer and much cold in winter. But only some side alleys, with a cross, and the quarters to graze being kept shorn [= *shear/shorn = mowed, ant.*], but not too near shorn. The row of return on the banquet side, let it be all stately galleries: in which galleries let there be three, or five, fine cupolas in the length of it, placed at equal distance, and fine colored windows of several works. On the household side, chambers of presence and ordinary entertainments, with some bed-chambers, and let all three sides be a double house, without thorough lights on the sides that you may have rooms from the sun both for forenoon and afternoon. Cast it also that you may have rooms both for summer and winter, shady for summer and warm for winter. You shall have [263] sometimes fair houses so full of glass, that one cannot tell where to become to be out of the sun or cold. For inbowed windows, I hold them of good use (in cities, indeed, upright do better, in respect of the uniformity

towards the street), for they be pretty retiring places for conference, and besides, they keep both the wind and sun off, for that which would strike almost through the room does scarcely pass the window. But let them be but few, four in the court, on the sides only.

Par. V. Beyond this court, let there be an inward court of the same square and height, which is to be environed with the garden on all sides, and, in the inside, cloistered on all sides upon decent and beautiful arches as high as the first story. On the under story, towards the garden, let it be turned to a *grotta*, or a place of shade or estivation. And only have opening and windows towards the garden; and be level upon the floor, no whit sunken under ground to avoid all [264] dampness. And let there be a fountain, or some fair work of statues, in the midst of this court, and to be paved as the other court was. These buildings to be for privy lodgings on both sides, and the end for privy galleries. Whereof you must foresee that one of them be for an infirmary, if the prince or any special person should be sick, with chambers, bed-chamber, antecamera, and recamera joining to it. This upon the second story. Upon the ground story, a fair gallery, open, upon pillars, and upon the third story likewise, an open gallery upon pillars, to take the prospect and freshness of the garden. At both corners of the further side, by way of return, let there be two delicate or rich cabinets, daintily paved, richly hanged, glazed with crystalline glass, and a rich *cupola* in the middle, and all other elegancy that may be thought upon. In the upper gallery, too, I wish that there may be, if the place will yield it, some fountains running in divers places from the [265] wall with some fine avoidances. And thus much for the model of the palace, save that you must have, before you come to the front, three courts. A green court plain, with a wall about it, a second court of the same, but more garnished, with little turrets, or rather embellishments, upon the wall, and a third court, to make a square with the front, but not to be built, nor yet enclosed with a naked wall, but enclosed with terraces, leaded aloft, and fairly garnished, on the three sides, and cloistered on the inside, with pillars, and not with arches below. As for offices, let them stand at distance, with some low galleries, to pass from them to the palace itself.

GLOSSARY OF BACON'S *OF BUILDING*

The numbers between parentheses, *e.g.*, '(264)', refer to the page numbers from 1625, indicated in the Text of Bacon's "*Of Building*".

ANTECAMERA (264): (*Anticamera*: Italianate term) An outer room before a principal room of an apartment, where servants wait and strangers stay until the person to be spoken with is at leisure. Here an 'antecamera' to a bed chamber.

AVOIDANCES (265): Drains, outlets; 'avoidance' is the action of evacuation, or emptying a vessel, as a fountain.

BANQUET (259, 260): Ceremonial or state feast; a sumptuous entertainment of food and drink.

BECOME (263): Here, 'to become' means 'to go to', to come to a place.

BUTTERIES (260): Storeroom where general provisions are kept, or where ale, bread, and butter are kept.

CABINETS (two delicate or rich) (264): A retiring place in a fine apartment in a building, set apart for writing, studying, or preserving precious things.

CAST: 'Cast', to plan.

CHAMBER (264): In a building or apartment, a room ordinarily intended for sleeping.

CHAMBERS OF PRESENCE AND ORDINARY ENTERTAINMENTS (262): Public rooms of socio-political representation, or for reception, performance, and entertainment, as a Throne Room or Chamber of Presence, for kings and princes. Reception-rooms.

CHAPEL (260): A kind of little church, built apart and at a distance from the Parish Church.

CICERO (259): Marcus Tullius Cicero, Roman writer and orator (106-43 B.C.).

CLOISTER (263): A habitation surrounded with walls, and inhabited by canons and religious; such a courtyard, with buildings on each of the four sides of the court.

CLOISTERED ON ALL SIDES (263): Walled, or enclosed by building on all four sides.

CLOISTERED ON THE INSIDE (265): A courtyard surrounded by building, usually by a loggia or arcades.

COMMODITY (258): Convenience, of use and utility. In classical architectural theory, deriving from Vitruvius, architecture is a balance of Firmness (structure), Commodity (functionality), and Delight (aesthetic).

COURT (263): A space enclosed by wall or building, usually square or rectangular.

CUPOLA (264, 262): A small rounded dome forming a roof.

DE ORATORE (259): Cicero: *De Oratore*, three books dedicated to Quintus (55 BC).

ORATOR (259): Cicero: *Orator*, mainly autobiographical, dedicated to Brutus (46 BC).

DISCOMMODITY (258): Discommodius, disadvantageous, inconvenient.

ENVIRONED (257): Set; in a setting; in a surrounding area.

ENVIRONED (263): Surrounded by; encircled.

ESCURIAL (259): El Escorial, the Royal Monastery of San Lorenzo El Real, known as Monasterio de El Escorial or El Escorial.

ESTIVATION (263): Variant of *æstival*, *etc.* The spending of summer; summer retreat.

FAIR (257): Synonym for 'beautiful'; beautiful to the eye; of pleasing form or appearance; desirable.

FAIRLY GARNISHED (265): Fairly decorated, embellished, or ornamented.

FEASTS (260): Festivals or banquets (*q.v.*).

FORENOON (262): The part of the day before noon; morning.

FOUNTAIN (264): Jet of water made to spout and the structure for it.

FRONT (260): Façade; in architecture, the principal face or side of a building, or that presented to the chief aspect or view.

GALLERIES (259): Open galleries; loggias or porticoes. A covered place in a building, much longer than broad, and which is usually on the wings of the building, serving to walk in.

GLAZED (264): Glassed; fitted with glass panes.

GOODLY ROOM (260): A room, considerable in size and of good quality and appearance.

GREEN COURT PLAIN (265): A grassed courtyard, not covered in hard stones or brick.

GROTTA (263): 'Grotto' – a cavern or cave made for coolness.

HALL (260): A large room at the entrance of a fine house, palace, *etc.*

HESTER, book of (259): The Book of Esther, a book of the Old Testament; Esther, the wife of the Persian King Ahasuerus.

HOUSEHOLD (260): The part of the 'house' for living, dwelling, habitation, domestic life.

ILL SEAT (257): Poor or unfavourable seat; see SEAT.

IMAGES OF WOOD CAST INTO A BRASS COLOR (261): Possibly inlaid work or marquetry in the panelling or wainscoting of the staircase, but this is not certain.

INBOWED WINDOWS (263): Curved or arched, as bay window. The term is almost exclusively used by Bacon.

KNAP OF GROUND (257): Hillock, knoll; summit of a hill; rising ground.

LEADED ALOFT (265): Lead covered roof; lead roofing, a traditional and durable metal roofing.

LEAD, LEADS (261): 'Lead' – a coarse, heavy, impure metal, soft and fusible, much used in building, as a covering (roofs), and for gutters, pipes, and glass. Roofing.

LIGHTSOME (259): Here, in building, well lighted, bright.

LUCULLUS (259): Lucius Licinius Lucullus (c. 117-56 B.C.), Roman official, the last part of his life dedicated mainly to the art of elegant living.

LURCHES (258): 'Lurch' ('lurcheth') – to be beforehand in securing (something); to engross, monopolize (commodities); to pilfer, filch, steal.

MODEL (259): Here a verbal pattern, as a model of the design, in words, as a three-dimensional model in wood or pasteboard in material substance.

MODEL OF THE PALACE (265): See MODEL and PALACE.

MOMUS (258): 'Momos' – fault-finding personified; a literary figure, not mythological, although he occurs in Hesiod, among the children of night. In Lucian, he voices the author's satires on the conventional theology, or otherwise makes fun of the gods.

NEWEL (261): The upright post, which a pair of winding stairs turn about, or that part of the staircase which sustains the steps.

OFFICES (265): All the lodges and apartments that serve for the necessary services and occasions of a great house or palace, particularly those that have a relation to eating, as kitchens, parterres, brew-houses, confectionaries, fruiteries, granaries, *etc.*; commonly in the basse-cours, sometimes sunk underground, and well vaulted; *uffizi*.

OPEN GALLERY UPON PILLARS (264): see GALLERIES; PILLAR.

PALACE (265): A great house; *palazzo*. A royal house, a name generally given to the dwelling houses of kings and princes. In the course of time applied to the houses of other persons.

PAVED (262): Ground covered with pavement, a lay of stone, or other matter, serving to cover the ground of diverse places; a floor of stone or hard brick.

PERFECTION (259): Here, the ‘practice’, the completion or accomplishment of the art of oratory.

PILLARS (265): ‘Pillar’ – a pier, or kind of irregular or rectangular column, not usually in the proportion of a classical order, often serving to support arches, *etc.*

POINT (261): ‘Appoint’ – to name; designate as.

POMPEY (259): Gnaeus Pompeius, called Magnus (106-48 B.C.), Roman military commander.

PRECEPTS OF THE ART (259): The theory or rules of the art of oratory or rhetoric.

PRINCELY PALACE (259): Palace of, or worthy of a prince.

PRIVY LODGINGS (264): Private apartments or quarters.

PROSPECT (258): Prospective, perspective; as seen from a distance, from a vantage point.

RAILED (261): Horizontal members lying over and under ballisters in balconies, staircases, and the like, forming railings; as in a ballustrade, rows of little turned pillars, fixed upon terraces or rooflines.

RECAMERA (264): Probably a back room, or secondary adjacent room; a room located in the rear, reserved to certain people, or for withdrawal or confidentiality. ‘Recamera’ is an Italianate word, and in Italian (*rar.*) can signify “*corredo, guardaroba da viaggio*” (*ant.*; Battaglia), suggesting a closet (*ripostiglio, sgabuzzo*) or dressing room (*spogliatoio*), or similar (see: *Journal of the Society of Architectural Historians*, 44, 1985, p. 35: “*anticamera, camera, recamera*”). Retiring room.

RETIRING PLACES (263): Spaces for withdrawal for conferring, conversation, and discussion.

RETURN (262, 264); returns (260): A side or part which falls away, usually at right angles, from the front or direct line of any work or structure; a wing or side of a building. Wings running back from the front.

SCANTED (258): ‘Scant’ (*ant.*) – to become scant or scarce; to restrict, make small.

SEAT (257): The place where the building is built; the site and setting of a building; a seat, the place of a residence or mansion.

SEVERAL (259): Here, ‘separate’.

SEVERALLY partitioned within (260): Individually, diversely, differently.

SHORN (262): ‘Shear/shorn’ – mown, mowed (*ant.*).

SQUARE (263): Here, dimensions; rectangular or square surface width and breadth, of a square or quadrilateral area or piece of ground, plot.

SQUARE WITH THE FRONT (265): In alignment with.

STATE (260): Condition, physical condition.

TERRACES (265): 'Terrace' – a bank of earth, raised in a garden, court, *etc.*, above the level of the ground.

THOROUGH LIGHTS (262): 'Thorough-light' (*rar.*) – windows on opposite sides of a room so that the light passes through.

TOWER (260): A tall building, consisting of several stories, often round in form.

TRIUMPHS (260): Celebrative ceremonial procession in honour of something such as a victory.

TURRETS (265): Diminutive towers, usually part of a larger structure.

UNIFORM (260): Symmetry and agreement between the parts; architecturally ordered and regular.

UNIFORMITY (257, 263): see UNIFORM; as beautiful, implying the sources of architectural beauty (uniformity, regularity, proportion, order, simplicity, *etc.*).

VATICAN (259): The Vatican Palace, in the Vatican City, Rome.

WHIT (263): A small or the least portion or amount (*archaic*).

WITHOUT (260): Outside; out-of-doors

Many of the definitions of the headwords are based on ones found in the several lexica contained in *The Encyclopaedic Dictionary in the Eighteenth Century: Architecture, Arts and Crafts*, ed. Terrence M. Russell, Aldershot: Ashgate, 1997, 5 vol. Also useful were: *The Oxford English Dictionary* and *The Oxford Classical Dictionary*, Oxford, 1949. See further: the 'Glossary' in *FONTES* 8.

ARCHITECTURAL PUBLICATIONS IN ENGLISH UNTIL 1625

The following table lists published works in English on architecture until 1625, the date of publication of Bacon's essay *Of Building* (which may have been composed earlier, and also the year following the publication of Henry Wotton's *Elements of Architecture*, which the author states was composed in a brief period just before its publication. None of the other works remotely approach the intellectual or literary level of Bacon's or Wotton's considerations of architecture and building, which mark the beginnings of British architectural thought in printed form. It is scarcely an exaggeration to say that England had to wait for the eighteenth century for Bacon and Wotton to find worthy successors. It is often said that Henry Wotton's *Elements of Architecture* is the first significant British contribution to architectural theory, the first book devoted to this subject to be written in English and published in England, and it is noteworthy that Bacon's essay was at least first published only very shortly after Wotton's slender book, in the next year, and in a book dedicated to George Villiers, the Duke of Buckingham, whose favour Wotton also was attempting to gain and who was the employer of Balthasar Gerbier (*FONTES* 7-8).

In his study, "English Literature on Architecture", Rudolf Wittkower writes, "Let me summarize the result of this investigation: the seventeenth century had no English treatise written by an architect. With one or two exceptions, translators and editors were hardly qualified for their tasks; as a rule they belonged to the book-trade. Most English editions are translations of translations; *i.e.*, they are twice removed from the Italian originals, and, worse, they are only partial translations of longer treatises, often semi-literate, and on occasions they merely present abstracts or even abstracts of abstracts. Interest is focused on the orders, but this primary material is often smothered in irrelevant frills." (p. 102)

Among the treatises listed below, other than the translations, perhaps only John Shute's *First and Chief Grounds of Architecture* (1563) merits the name of an architectural treatise, but even Shute's book is very highly derivative (see: *Architektur Theorie von der Renaissance bis zur Gegenwart*, ed. Bernd Evers; Christof Thoenes, Köln: Taschen, 2003, pp. 400-405). In 1550 there had appeared a 32 page booklet, excerpted from an earlier work (*Dyetary*), by the physician, Andrew Boorde, *The booke for to learne a man to be wyse in buyldyng of his house for the health of body (...)*, London: Robert Weyer, 1550, which contains considerations about the siting of a house, especially with regard to salutary considerations (not cited in Harris, *infra*). Most of the other works, listed below, are technical and mensorial manuals and not genuine architectural treatises. Stephen Harrison's *Arch's of Triumph* does record and illustrate the architectural designs by Harrison, a "joyner", for arches erected on the occasion of King James I's passage through London on 15 March 1603/1604 in a book of engravings, engraved by William Kip, Gerbier's father-in-law. There was, of course, also John Dee's popular 'Mathematical Preface' to Henry Billingsley's influential translation of Euclid's *Elements of Geometry* (1570), where he saw the architect as the intellectual coordinator of the various skilled workmen, with a deep divide separating the architect from the craftsman, and architecture as a mathematical and hence liberal art (see Frances Yates, *Theatre of the World*, London 1969, pp. 11, 40; Yates suggests that the book was addressed to the middle-to-artisan class).

The Table is based on information contained in: Eileen Harris, British Architectural Books and Writers 1556-1785, Cambridge: Cambridge University Press, 1990, esp. pp. 513-514 ff.: "Chronological Index of Titles and Editions".

- 1556: Leonard Digges, *A Boke Named Tectonicon*, 1561, 1562, 1566, 1570, 1592, 1599, 1605, 1614, 1625, 1626, 1630, 1634 etc. (measuring) (Harris, no. 198).
- 1563: John Shute, *First and Chief Grounds of Architecture* (822); 1579/80, 1584, 1587, on the architectural Orders (no. 823).
- 1598: Giovanni Paolo Lomazzo, *Tracte containing the Artes*, the first art treatise translated into English, with some sections on architecture (no. 519).
- 1601: Hans Blum, *The Booke of Five Columns*, a translation of the *Quinque Columnarum* (no. 37).
- c.1604 Stephen Harrison, *The Arch's of Triumph*, (no. 323).
- 1611: Sebastiano Serlio, *The First [Fift] Booke of Architecture* (no. 817).
- 1614: Thomas Bedwell, *De Numeris Geometricis* (measuring) (no. 33).
- 1615: Walter Gedde, *Book of Sundry Draughtes, principaly serving for Glasiers (...)*, an architectural pattern book for leaded glazing; window designs (no. 247).
- 1616: Richard More, *The Carpenter's Rule*, measuring by the carpenter's rule (no. 562)
- 1624: Henry Wotton, *The Elements of Architecture* (no. 948)

What this table reveals is the effective rarity of English architectural writing until far into the seventeenth century, a circumstance which throws into relief the remarkable contributions of two first rate minds, Bacon and Wotton, very early in the tradition of English architectural thought.

For English architectural literature, see E. Harris (*supra*); *British Architectural Theory 1540-1750, An Anthology of Texts*, ed. Caroline van Eck, Aldershot: Ashgate, 2003; *FONTES* 7-8.

BIOGRAPHY OF FRANCIS BACON

Sir FRANCIS BACON, Baron Verulam, Viscount St. Albans (1561-1626), English courtier and statesman (Lord Chancellor of England), lawyer, philosopher, writer, and polymath. In 1592, he wrote: "I have taken all knowledge to be my province." Bacon was one of the founding figures of the scientific revolution, and he is to be counted among the most important figures in the intellectual history of Britain and of the western world. His life and works are treated in depth in general reference works and, increasingly, in Internet sites, many devoted to him. His importance was recognized by his contemporaries, and subsequently by many thinkers, among them John Dryden, Alexander Pope, Giambattista Vico, Immanuel Kant, Leibnitz, Huygens, Voltaire, Robert Boyle, John Locke, and John Stuart Mill.

Born on 22 January 1561 at York House (see *FONTES* 7-8), Francis Bacon was the younger son of Sir Nicholas Bacon, Elizabeth I's Lord Keeper of the Great Seal. At the age of twelve years and three months, in 1573, he matriculated at Trinity College, Cambridge, with his older brother, Anthony, and attended the University for two years. He then spent three years in France and in travel. At the death of his father, in 1579, he returned to England and took up the study of law again, becoming a barrister in 1582. He became a member of Parliament in 1584, where he played a significant rôle. His political career was fostered by the Queen's favourite, Robert Devereux, the second Earl of Essex. When Essex was tried for treason in 1601, after a failed revolt, Bacon was assigned to the prosecution of Essex. In 1603, Bacon was knighted, at the accession of James I. His rise through various positions was rapid. In 1617, he was named Lord Keeper, his father's old position, and, in 1618, he became Lord Chancellor, the highest legal post in the kingdom. In 1621, Bacon was charged with accepting bribes and corruption, and Bacon was constrained to retire into private life, in disgrace, although he had done no more than accept the usual fees of office. Bacon died at Gray's Inn on 9 April 1626.

Bacon's writings and legacy are infinitely more important than his public career. The primary literary result of Bacon's participation in public life are his *Essays*, ten published in 1597, and gradually expanded before his death to fifty-eight essays. The *Essays*, written in a concise and sententious style, are meditations on fundamental aspects of human life. His *De sapientia veterum* of 1609 (*The Wisdom of the Ancients*, 1619), popular in Bacon's day, draws the latent moral and physical lessons from ancient myths. This work has been reprinted as no. 20 in a mythographic series, *The Renaissance of the Gods*, New York: Garland Press, 1976. His *History of the Reign of Henry VII* (1622), an attempt to regain favour with the King, is a classic of Renaissance historiography, notable for its vivid characterization and clear political analysis.

Bacon's works may be divided into three classes – professional, literary, and philosophical and scientific. The professional works include writings on legal topics and English law; the literary works, Bacon's *Essays* (supra), the *Sapientia veterum* (supra), collections of jests, anecdotes, and apothegms, as well as historical works. Bacon's major works in science and logic, *The Advancement of Learning* (1605; as: *De augmentis scientiarum*, 1623) and the *Novum organum* (1620) belonged to his busiest years, as did the *New Atlantis* (published only in 1627). Bacon's ambitions are reflected in his titles: *Descriptio globi intellectualis* (1612; treating in detail the general classification of the sciences) and *Thema coeli* (1612). A brief summarization of his bold and expansive project for a new natural philosophy based on the empirical method, *Instauratio magna*, appears appended to the *Novum organum*, but all of Bacon's work develops similar ambitions.

Bacon's opposition to the widespread reliance on logic and authority of his time, his emphasis on the need for new methods to advance knowledge, and his insistence that investigation should begin with observable facts rather than theories make him a central figure in the history of scientific thought. His importance lies in the general stimulus he gave to scientific inquiry, as in his own claim that he "rang the bell which called the wits together".

Thomas Fowler, the author of important studies of Bacon and editor of his *Novum Organum*, remarks, in the *Dictionary of National Biography* (1, p. 832), the marvellous language in which Bacon clothes his thought. "His utterances are not infrequently marked with a grandeur and solemnity of tone, a majesty of diction, which renders it impossible to forget and difficult even to criticise them. He speaks as one having authority, and it is impossible to resist the magic of his voice. Whenever he wishes to be emphatic, there is the true ring of genius about all that he says. Hence, perhaps, it is that there is no author, unless it be Shakespeare, who is so easily remembered or so frequently quoted. Hence, too, perhaps, it is that there is no author so stimulating. Bacon might well be called the British Socrates."

FRANCIS BACON: *Bio-Bibliography*

Extensive information concerning Bacon is to be found in internet sites.

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See also: Encyclopaedia Britannica, ad vocem

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See further: the general bibliography

THE NEW ATLANTIS:

A milestone in the tradition of utopian thought, *The New Atlantis* is an account of an ideal commonwealth and of an imaginary voyage – at once a philosophical romance and a description of a scientific utopia in which the principles of the new philosophy are carried out by political machinery and under state guidance. Written in 1624, it was a work left unfinished at Bacon's death, and it was published first in 1627. Its title derives the name 'Atlantis' from the mythical Greek island Atlantis, and the work is in the tradition of Plato, where the island of Atlantis is the setting of a fictional state, and it owes much to the utopias of Cicero, Augustine, More, and Campanella. And, as a project for an utopian polity, it belongs to the tradition of town, city, and regional planning, and thus to the history of art and architecture.

The *new Atlantis* is the new island of Bensalem, located somewhere in the Pacific Ocean, and the *New Atlantis* is an account of the remarkable social and cultural order of the new island. The mythical ideal land, Bensalem, where "generosity and enlightenment, dignity and splendour, piety and public spirit" were the commonly held qualities of the inhabitants, is discovered by the crew of a European ship after they are lost in the Pacific Ocean west of Peru. The European narrator recounts some of the island's customs and, most importantly, its state-sponsored scientific institution. Christianity, miraculously revealed, is the religion; the highly prized family, the primary social unit, and, by implication, monarchy, the form of government. At the center of the State is Solomon's House, the College of the Six Days' Work, a center for research from which flows the scientific discoveries and inventions on which the well-being and happiness of the citizens depend. In this work, he portrayed a vision of the future of human discovery and knowledge. The plan and organization of his ideal college, "Solomon's House", envisioned the modern research university in both applied and pure science. The best and brightest of Bensalem's citizens attend a college called Solomon's House, in which scientific experiments are conducted in Baconian method in order to understand and conquer nature, and to apply the collected knowledge to the betterment of society.

Bacon's *Essays* include an essay on the Plantation (here Appendix I), a social microcosm, and some scholars believe that Bacon's vision for a Utopian New World in North America was laid out in his novel *The New Atlantis*. Here he envisioned a society where there would be greater rights for women, the abolishment of slavery, the elimination of debtors's prisons, the separation of church and state, and freedom of religious and political expression. Francis Bacon played a leading role in creating the British colonies, especially in Virginia, the Carolinas, and Newfoundland. His government report on "The Virginia Colony" was made in 1609. Francis Bacon and his associates formed the Newfoundland Colonization Company and in 1610 sent John Guy to found a colony in Newfoundland.

Hanno-Walter Krufft writes about the *New Atlantis* (p. 259):

"Seine Fragment gebliebene Staatsutopie "Nova Atlantis" (1624) war offensichtlich als Korrektur der 100 Jahre früher von Thomas More veröffentlichten "Utopia" geplant. Der geschilderte Inselstaat Bensalem im Stillen Ozean erweist sich als gigantisches Forschungslaboratorium, in dem die Natur dienstbar gemacht und die Entwicklung der modernen Zivilisation bis in Details vorhergesehen wird. Bacon kam nicht mehr dazu, die architektonische Organisation seiner Zukunftsgesellschaft zu beschreiben. Die Berufung auf Salomon und die Vorstellung von seinen verlorenen Werken lässt annehmen, dass Bacon

versucht hat, eine Brücke zwischen konventioneller Architekturtheorie und seiner neuen funktionalistischen Architekturfassung zu schlagen. Bacons Fragment endet mit der Beschreibung der *geräumigen und schönen Säulenhallen* eines Museums der Erfindungen und Erfinder, die sich wie ein Vorgriff auf das 18. Jahrhundert liest.“ (Hanno-Walter Kruft, *Geschichte der Architekturtheorie*, München: Verlag C. H Beck, 1985, vierte Auflage, 1995)

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THE DEDICATION OF THE “*Newly written*” *Essays* to the Duke of Buckingham, 1625

The new edition of Bacon’s *Essays*, printed in 1625, was dedicated to George Villers, the Duke of Buckingham, and, but recently, the Marquis of Buckingham, a favourite of King James I and an important protector of Bacon during long periods of his public career.

Francis Bacon was born in London at York House, which later became the property of George Villers, the Duke of Buckingham. In 1618 King James bestowed the honour of Lord Chancellorship upon Bacon, and by this time he had moved into York House, also the home of his father as Lord Keeper. Following Bacon’s imprisonment and subsequent liberation, in 1621, Bacon wished to return to York House, but it was made known to him that Buckingham desired York House for his own use. Unless Bacon surrendered it, he would not be given his full pardon, and, in March 1622, he surrendered York House to Buckingham. By February 1623 Bacon was in financial difficulties. He tried to sell his house Gorhambury to Buckingham, but the Marquis was at that time about to embark for Spain with Charles, the Prince of Wales, to pursue the proposal for the marriage of the King of Spain’s daughter to the Prince. When the provostship of Eton became vacant in April 1623, Bacon applied to the King for the position, which would have given him a position with a small income. But the post was awarded to Henry Wotton, and the King was unable to believe that his former Lord Keeper and Lord Chancellor was suitable for such a humble position. These circumstances form the background to Bacon’s dedicatory letter to George Villers, who retained Bacon’s affections and whose patronage Bacon hoped to regain.

Bacon held favour with Buckingham for many years, and numerous letters between the two men survive (see *The Works of Francis Bacon*, ed. Basil Montagu, London: William Pickering, 1830, vol. 12 (online at GOOGLE Books)). In a letter to his friend Tobie Matthew, in the service of Buckingham, of after 26 June 1623, Bacon mentions his plan to re-publish his *Essays*, including a Latin edition, suggesting that the new essays dated from the years following his fall in 1621.

TO
THE RIGHT HONORABLE
MY VERY GOOD LO[rd].
THE DUKE OF BUCKINGHAM
HIS GRACE, LO[rd]. HIGH ADMIRAL
OF ENGLAND.

EXCELLENT LO[rd].

SALOMON says; *A good Name is as a precious ointment*; And I assure myself, such will your Graces Name be, with Posterity. For your Fortune, and Merit both, have been Eminent. And you have planted Things, that are like to last. I do now publish my *Essayes*; which, of all my other works, have been most Current: For that, as it seems, they come home, to Mens Business, and Bosoms. I have enlarged them, both in Number, and Weight; So that they are indeed a New Work. I thought it therefore agreeable, to my Affection, and Obligation to your Grace, to prefix your Name before them, both in English, and in Latin. For I do conceive, that the Latin Volume of them, (being in the Universal Language) may last, as long as Books last. My *Instauration*, I dedicated to the King: My *History of Henry the Seventh*, (which I have now also translated into Latin) and my *Portions of Natural History*, to the Prince: And these I dedicate to your Grace; Being of the best Fruits, that by the good Increase, which *God* gives to my Pen and Labours, I could yield. *God* lead your Grace by the Hand.

*Your Graces most Obliged and
faithfull Servant,*

FR. ST. ALBAN.

LITERATURE ABOUT FRANCIS BACON

Francis Bacon is a major figure in the intellectual history of the world, and information about him is available through a wide range of reference works and through the Internet. Only selected references are given here. See further, the 'Bio-bibliography' and the anthology of critical texts about Bacon and his essay *Of Building* (*supra*).

FRANCIS BACON, *OF BUILDING*, ESSAY XLV, IN: *ESSAYS*, LONDON 1625:

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A good online treatment of Bacon's works is found at the *Stanford Encyclopedia of Philosophy* (SEO, an open access site): <http://www.seop.leeds.ac.uk/entries/francis-bacon/> (with extensive bibliography)

APPENDIX ONE: *OF PLANTATIONS*:

Bacon's projected utopia and his plans for and opinions about settlements in the New World are reflected in his essay *Of Plantations*. The text of the essay follows.

OF PLANTATIONS: Essays, no. XXXIII.

Plantations are among ancient, primitive, and heroical works. When the world was young, it begat more children, but now it is old, it begets fewer, for I may justly account new plantations, to be the children of former kingdoms. I like a plantation in a pure soil, that is, where people are not displanted, to the end, to plant in others. For else it is rather an extirpation, than a plantation. Planting of countries, is like planting of woods, for you must make account to leese [*lose*] almost twenty years' profit, and expect your recompense in the end. For the principal thing, that has been the destruction of most plantations, has been the base and hasty drawing of profit, in the first years. It is true, speedy profit is not to be neglected, as far as may stand with the good of the plantation, but no further. It is a shameful and unblessed thing, to take the scum of people, and wicked condemned men, to be the people with whom you plant, and not only so, but it spoils the plantation, for they will ever live like rogues, and not fall to work, but be lazy, and do mischief, and spend victuals, and be quickly weary, and then certify over to their country, to the discredit of the plantation. The people where with you plant ought to be gardeners, ploughmen, labourers, smiths, carpenters, joiners, fishermen, fowlers, with some few apothecaries, surgeons, cooks, and bakers. In a country of plantation, first look about, what kind of victual the country yields of itself to hand, as chestnuts, walnuts, pineapples, olives, dates, plums, cherries, wild honey, and the like, and make use of them. Then consider what victual or succulent things there are, which grow speedily, and within the year; as parsnips, carrots, turnips, onions, radish, artichokes of Hierusalem, maize, and the like. For wheat, barley, and oats, they ask too much labour, but with peas and beans you may begin, both because they ask less labour, and because they serve for meat, as well as for bread. And of rice, likewise comes a great increase, and it is a kind of meat. Above all, there ought to be brought store of biscuit, oat-meal, flour, meal, and the like, in the beginning, till bread may be had. For beasts, or birds, take chiefly such as are least subject to diseases, and multiply fastest, as swine, goats, cocks, hens, turkeys, geese, house-doves, and the like. The victual in plantations, ought to be expended almost as in a besieged town, that is, with certain allowance. And let the main part of the ground, employed to gardens or corn, be to a common stock, and to be laid in, and stored up, and then delivered out in proportion, besides some spots of ground, that any particular person will manure for his own private. Consider likewise what commodities, the soil where the plantation is, doth naturally yield, that they may some way help to defray the charge of the plantation (so it be not, as was said, to the untimely prejudice of the main business), as it hath fared with tobacco in Virginia. Wood commonly abounds but too much, and therefore timber is fit to be one. If there be iron ore, and streams whereupon to set the mills, iron is a brave commodity where wood abounds. Making of bay-salt, if the climate be proper for it, would be put in experience. Growing silk likewise, if any be, is a likely commodity. Pitch and tar, where store of firs and pines are, will not fail. So drugs and sweet woods, where they are, cannot but yield great profit. Soap-ashes likewise, and other things that may be thought of. But mill not too much under ground; for the hope of mines is very uncertain, and makes the planters lazy, in other things. For government, let it be in the hands of one, assisted with some counsel, and let them have commission to exercise martial laws, with some limitation. And above all, let men make

that profit, of being in the wilderness, as they have God always, and his service, before their eyes. Let not the government of the plantation, depend upon too many counsellors, and undertakers, in the country that plants, but upon a temperate number, and let those be rather noblemen and gentlemen, than merchants; for they look ever to the present gain. Let there be freedom from custom, till the plantation be of strength, and not only freedom from custom, but freedom to carry their commodities, where they may make their best of them, except there be some special cause of caution. Cram not in people, by sending too fast company after company, but rather hearken how they waste, and send supplies proportionably, but so, as the number may live well in the plantation, and not by surcharge be in penury. It has been a great endangering to the health of some plantations, that they have built along the sea and rivers, in marish and unwholesome grounds. Therefore, though you begin there, to avoid carriage and like discommodities, yet build still rather upwards from the streams, than along. It concerneth likewise the health of the plantation, that they have good store of salt with them, that they may use it in their victuals, when it shall be necessary. If you plant where savages are, do not only entertain them, with trifles and gingles, but use them justly and graciously, with sufficient guard nevertheless, and do not win their favour, by helping them to invade their enemies, but for their defence it is not amiss, and send often of them, over to the country that plants, that they may see a better condition than their own, and commend it when they return. When the plantation grows to strength, then it is time to plant with women, as well as with men, that the plantation may spread into generations, and not be ever pieced from without. It is the sinfulllest thing in the world, to forsake or destitute a plantation once in forwardness, for besides the dishonour, it is the guiltiness of blood of many commiserable persons.

APPENDIX TWO: *OF BEAUTY*

The themes of Bacon's essay *Of Building* are relevant to his essay *Of Beauty*, which links beauty to virtue, as, in building, uniformity is linked to use. The text of the essay follows.

OF BEAUTY: Essays, no. XLIII.

Virtue is like a rich stone, best plain set, and surely virtue is best in a body that is comely, though not of delicate features, and that has rather dignity of presence than beauty of aspect. Neither is it almost seen, that very beautiful persons are otherwise of great virtue, as if nature were rather busy not to err, than in labour to produce excellency. And therefore they prove accomplished, but not of great spirit; and study rather behaviour than virtue. But this holds not always: for Augustus Cæsar, Titus Vespasianus, Philip le Bel of France, Edward the Fourth of England, Alcibiades of Athens, Ismael the Sophy of Persia, were all high and great spirits, and yet the most beautiful men of their times. In beauty, that of favour is more than that of colour, and that of decent and gracious motion more than that of favour. That is the best part of beauty, which a picture cannot express, nor the first sight of the life. There is no excellent beauty that hath not some strangeness in the proportion. A man cannot tell whether Apelles or Albert Durer were the more trifler, whereof the one would make a personage by geometrical proportions, the other, by taking the best parts out of divers faces, to make one excellent. Such personages, I think, would please nobody but the painter that made them. Not but I think a painter may make a better face than ever was, but he must do it by a kind of felicity (as a musician that maketh an excellent air in (music), and not by rule. A man shall see faces, that if you examine them part by part, you shall find never a good; and yet altogether do well. If it be true that the principal part of beauty is in decent motion, certainly it is no marvel though persons in years seem many times more amiable; *pulchrorum autumnus pulcher*, for no youth can be comely but by pardon, and considering the youth as to make up the comeliness. Beauty is as summer fruits, which are easy to corrupt, and cannot last, and for the most part it makes a dissolute youth, and an age a little out of countenance; but yet certainly again, if it light well, it makes virtue shine, and vices blush.

‘NOTABLE THINGS’: Words, themes, topics, names, places in *Of Building*

air	house, houses
antecamera	household
arch, arches	illumination
banquet	infirmary
beauty	Lucullus
bed-chamber	model
buttery, butteries	Momus
cabinet, cabinets	offices
cellar	orientation
chamber, chambers	palace
chapel	pantry
Cicero	pillar, pillars
city, cities	Pompey
cloister	privy galleries
cold	privy kitchen
cold in winter	prospect
commodity	public rooms
court with side alleys, cross, and quarters	recamera
court, courtyard	seat, site
cupola	servants’ dining room
discommodity	servants’ rooms
drainage	setting
dressing room	shade
dwelling	shelter
economization	siting, situation
efficiency	stair, stairs
elevation	storey
Escorial	summer parlour
Europe	summer rooms
feast, feasts	sunbay windows
fertility	systematization of space distribution
fit, fitness	terrace, terraces
fountain	tower
front	triumph, triumphs
gallery, galleries	turret
garden, gardens	uniformity
glass	utility
<i>grotta</i> , grotto	Vatican
hall	view
heat	water
heat in summer	winter parlour
	winter rooms