VISUAL AND MATERIAL CULTURE, 1300-1700

Edited by Elizabeth Merrill

Creating Place in Early Modern European Architecture

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Abbreviations

ADN	Archives départementales du Nord, Lille
ANTT	Arquivo Nacional Torre do Tombo, Lisbon
ASPVe	Archivio Storico del Patriarcato di Venezia
ASR	Archivio di Stato di Roma
ASSi.	Archivio di Stato di Siena
ASVe	Archivio di Stato di Venezia
BAV	Biblioteca Apostolica Vaticana
BMCVe	Biblioteca del Museo Correr
BNCF	Biblioteca Nazionale Centrale Firenze
BnF	Bibliothèque nationale de France
BSB	Bayerische Staatsbibliothek, Munich
MET	The Metropolitan Museum of Art, New York City
MLUB	Universitätsbibliothek Kassel, Landesbibliothek und Murhardsche Bibliothek
NA	Nationaal Archief, The Hague
OAR	Oud Archief van Rijnland, Leiden
ONB	Österreichisches Nationalbibliothek
SLUB	Sächsische Landesbibliothek, Staats- und Universitätsbibliothek, Dresden
SUB	Niedersächsische Staats- und Universitätsbibliothek, Göttingen

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Introduction: Embracing Specificity, Embracing Place

Elizabeth Merrill

A place is defined both by geographical location and human experience. Place is space, occupying real physical form, which has been arrogated for a given social use. The Roman concept *genius loci* recognizes the spirit of place as independent and unique to each location. Architecture, in turn, can be understood as an activity that both signals and responds to place in the recognition, delimitation and establishment of confines. Distinguishing between the site and the structures erected on it, Aristotle defined place as the immobile surface of the containing body in direct contact with the contained body. There is place that is physically marked, as well as place that is more nebulously defined by institutional factors, political borders and sensorial elements. Yet places are by no means passive, objects to the actors of human ingenuity. They contain the capacity for generation and are inherently generative, their innate qualities – in the sense of a landscape, climatic zone or geographical environment – being formative in the creation of architecture. A place can serve as a locus of a project, directing architecture's discovery of what already exists, and illuminating roots, outlines and unvarying constants.[1]

This book explores the construction of place in architecture in early modern Europe (1400-1750).[2] Each of the book's ten essays takes a distinct historical subject and examines the wider relationships between environmental categories (place, site and context), different stages in the design process, the interaction between project and construction, and the contextual use of tools and materials. 'Architecture', as explored here, corresponds to that of the period considered, and encompasses the built environment in its entirety, as well as the tools and machines applied

1 This definition of place draws upon Casey, 'How to Get from Space to Place in a Fairly Short Stretch of Time'; de Sola-Morales, 'Place'; Lefebvre, *The Production of Space*; Norberg-Schulz, *Genius Loci*; Summers, *Real Spaces*; and Cosgrove and della Dora, 'Introduction'.

2 The decision to characterize this period as 'early modern', as opposed to 'medieval' or 'Renaissance', is deliberate. Whereas the latter terms carry distinct historiographic connotations, 'early modern' is more inclusive.

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in its production. The objects of examination include mills and machines, dams, sluices and scaffolding, foundations and fortifications, as well as church balconies, imposing palaces and canonical theories. Archival evidence takes the form of patent records, workaday drawings and graphic models, maps, musical scores, workshop inventories and legal texts. Collectively, the essays show how the making of early modern architecture was inseparable from context, and from the social relations, institutional supports and strategic processes upon which it was founded.

The contributions to this book were originally developed as part of a workshop dedicated to 'The Spaces of Early Modern Architectural Production', hosted in May 2017 at the Max Planck Institute for the History of Science in Berlin. Our common interest lay in the manifold practices, materials and social structures that contributed to the production of architecture in the early modern period. The aim was to combine approaches of the history of science and the history of architecture, moving away from the inordinate focus typically placed on the individual – whether this be the singular architect or the unparalleled construction – and instead to call attention to systems of knowledge and more quantifiable practices. Assembling a group of scholars expert in different epochs of European architecture and building, the meeting also presented an opportunity to look beyond modern political boundaries and national historiographies. The coherence of the contributions was in part due to planning, and in part by chance. While all of the meeting's participants came prepared to speak on space and architectural production, as we proceeded it became increasingly clear that the collective concern was not generic, homogenous and isometric 'spaces'. Rather, we were interested in more distinct *places*, and the architectural practices that were enacted on or derived from a given site and culture.

As the product of this collective research endeavour, this volume investigates topics that are highly site (and place) specific, concerning Amsterdam, Ulm, Rome and Venice, a given workshop, a singular church, a specific drawing. The fact that nearly all of the essays are heavily based on primary source materials is telling. To study place is to study in detail. Individually, each of the ten essays enriches a more specific subfield to which it belongs, whether this be geographically, thematically or temporally defined. But united in their investigation of common questions about the structures of architecture – whether these be intellectual, creative or physical – the contributions join a common dialogue.

Between Space and Place in Early Modern Architecture

As an examination of place, this volume joins an expansive body of literature. The philosophies of Gaston Bachelard and Henri Lefebvre are definitive, along with

the phenomenological studies of Edward Relph and Yi-Fu Tuan.[3] There is likewise an informative body of architectural theory that examines place, primarily in the context of the modern and contemporary built environment. The formulations developed by Christian Norberg-Schulz, Alfonso Acocella and Kenneth Frampton have provided useful models in the development of this project.[4]

Although there has been no significant study of place in regards to the making of early modern architecture specifically, the concepts of space and place are foundational to the discipline. The history of early modern art is saturated with studies on the site-specific aspects of artistic production. Beginning with Vasari, historians of the period almost instinctively define their subjects according to place. A more explicit engagement with the concepts of space and place has likewise produced some of the definitive intellectual frameworks for considering early modern art. Erwin Panofsky's *Perspective as Symbolic Form* paved the way for an extensive body of scholarship on the theoretical conception of space and the Renaissance 'invention' of pictorial space.[5] His conceptualization of the Renaissance itself as a place offered an intellectual framework for historians of the discipline to draw ties between social, cognitive and technical practices.

Although not limited to the early modern period, the growing concern with world art history and the globalization of the discipline has underscored the concepts of place and space.[6] In the studies of Thomas DaCosta Kaufmann, space is traced in terms geographical coordinates and locales of cultural interchange. David Summers' call for the study of places as real social spaces, examined in terms of universal principles, provides a new framework for understanding works of art across cultural and temporal epochs. The model of *Real Spaces* has been informative to the conception of this volume and our collective aim to examine conditions of architectural planning and production across distinct contexts. The globalization of art history has also brought early modern scholars to recognize the hoary concepts of centre and periphery. Benefitting from the canonical models of Ferdinand Braudel and William McNeill, among others, historians of architecture and art have given increased attention to what were previously considered 'marginal' locales. Recent

3 Bachelard, *The Poetics of Space*; Lefebvre, *The Production of Space*; Relph, *Place and Placelessness*; Tuan, *Space and Place*. Casey, *The Fate of Place*, provides the philosophical history of the idea of place from antiquity to the modern period.

4 Acocella, *Architecture of Place*; Frampton, *Technology, Place & Architecture*; Norberg-Schulz, *Genius Loci*.

5 See, among others, Damisch, *The Origin of Perspective*; Field, *The Invention of Infinity*; and Edgerton, *Renaissance Rediscovery of Linear Perspective*.

6 DaCosta Kaufmann, *Toward a Geography of Art*, also addresses architecture, but the focus is primarily art in its geographical dimensions. See DaCosta Kaufmann, Dossin and Joyeux-Prunel, 'Reintroducing Circulations'.

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years have brought incisive new studies on Renaissance architecture in Eastern Europe, Central America and South America.[7]

Related to the themes of globalization and circulation is historians' increasing interest in mobility and the urban nodes of cultural exchange. Scholars like Luca Molà, David Kim, Frits Scholten and Joanna Woodall have called attention to the physical migration of artists and craftsmen as a deeply embedded cultural practice. Travel was a determinate factor in the advancement of artistic and technological innovations, and implicitly reinforced the importance of place.[8] In the study of cities and urban planning, the predominant focus remains on social structures and sensory experience. In the past decade, the important studies of Marvin Trachtenberg and Manfredo Tafuri have been joined by those of Niall Atkinson, Donatella Calabi and Elena Svalduz, and Fabrizio Nevola, which look at the articulation of spaces of social and symbolic significance, and examine their physical forms as a reflection of local practices.[9]

The essays of this volume might be considered as extensions to this broad body of literature. Within these pages, we consider the creation of specific places, as well as the transfer of ideas and models between places, and the theoretical tools employed to envision place. The contributions are exceptional in their express interest on the systems, tools and conditions that directed early modern architecture and building practices. Paging through the index, the reader will find few references to the period's signature architect-protagonists. Indeed, in the study of Ludovica Galeazzo, a group of nuns dictate the major building developments. In Paul Brakmann and Sebastian Fitzner's contribution, the little-known Johannes Faulhaber takes centre stage. In Edward Triplett's, it is the surveyor Duarte de Armas. While the research assembled here does consider some of the era's most notable structures and sites, it is not in terms of their characteristic forms. The essay of Stefan M. Holzer and Nicoletta Marconi concerns the estimable St. Peter's Basilica, but looking past the contributions of Bramante and Michelangelo calls attention to the systems of scaffolding and building machinery that enabled the structure's continual maintenance. Merlijn Hurx looks at Amsterdam Town Hall from literally the ground up, with a focus on its subterranean foundations and piles.

7 On the importance of the work of Braudel and McNeill in the development of global history see, DaCosta Kaufmann, Dossin and Joyeux-Prunel, 'Reintroducing Circulations', 8-9. Lee, 'Introduction', underscores multidirectional cultural transfer in Europe in the fourteenth and fifteenth centuries. Among the recent studies of Renaissance architecture outside of Western Europe are those of Arciszewska, 'Architectural Crossroads', and 'Early Modern Conceptualizations of Medieval History'; and Schreffler, *Cuzco*.

8 Kim, *The Traveling Artist in the Italian Renaissance*; Molà, 'States and Crafts'; Scholten, Woodall and Meijers, *Art and Migration*.

9 Atkinson, *The Noisy Renaissance*; Calabi and Svalduz, *Il Rinascimento italiano e l'Europa*; Nevola, *Street Life in Renaissance Italy*; Tafuri, *Ricerca del Rinascimento*; Trachtenberg, *Dominion of the Eye*.

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My own contribution highlights Siena's Santa Maria della Scala, with an emphasis not on the celebrated spaces of its *casa grande*, but rather on the myriad grange complexes it constructed in the Sienese *contado*. Federico Bellini's study begins in the spaces of the Baroque churches of Bernini and Borromini, examining their well-known sculptural forms in relation to the invisible mechanisms that shaped their design: music, musical composition and performance.

The book thus expands the history of early modern architecture and provides new models for understanding its creation. The European-wide focus is unique. Aware of our inherent biases, we have sought to look beyond the 'place'-specific confines of our studies, and to delineate parallels and points of intersection across geographic and temporal confines. While architectural history is still very much shaped according to distinct national 'schools', this study highlights the ubiquity of certain ideas and practices. Looking forward, historians of early modern architecture – like the remarkably transient and cosmopolitan subjects of their study – are invited to look beyond borders, geographic and disciplinary, and to consider architecture in terms of the practices by which it was made rather than the art of a single 'genius'.

'Place' in the Early Modern Period

The concept of place as a specific entity, something that *holds* and *contains*, and that in turn, generates, had a strong presence in early modern thought. The intensely self-reflexive and identity-driven nature of the period made it particularly inclined to think in terms of places.[10] In Italy, the contemporary practice among artists of assuming a moniker according to their place of origin – here, it is perhaps sufficient to name Leonardo da Vinci, Giuliano da Sangallo, and Pietro da Cortona – speaks to the close association between the individual and the identity of a given location. The artistic development of linear perspective – the 'symbolic form' of Renaissance culture – might likewise be considered to reflect a distinct concept of place. In creating perspectival landscapes, trompe l'oeil stages, and volumetric cityscapes, artists were not merely representing space – empty and infinite – rather, they were constructing specific places, delineated with concrete contours and occupied by objects and figures.[11]

10 This idea has been repeated in numerous studies, from Burkhardt, *The Civilization of the Renaissance in Italy*, to Greenblatt, *Renaissance Self-Fashioning*. Recently, Enenkel and Ottenheym, 'Introduction', linked the creation of identity in the early modern period to contemporary political, intellectual and religious developments.

11 As a system for visualizing and ordering the real world, the use of linear perspective also reflexively defined place by fixing the distance and location of visual appearances. Cropper, 'The Place of Beauty in the High Renaissance and Its Displacement in Art History', 59-60; Kanerva, *Between Science and Drawings*, 153.

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Within the case studies presented here, there is little evidence that the individuals involved in the creation of architectural places explicitly recognized them as such. However, the essential concept of place, as something that bore a distinct social identity and that responded to topography, was latent in their thinking, embedded in a cultural tradition that extended back to antiquity. In writings of classical philosophy, from ancient Greece through the medieval period, 'place' is commonly understood according to the Aristotelian definition, as the immobile surface of the containing body in direct contact with the contained body. The Greek term for place, *ho topos*, was translated in Latin as *locus*, and distinguished from *spatium* (space) and *ubi* (literally 'where'). As used by classical authors, *spatium* refers to the distance between two points, and more generally, as a measure of quantity, area and time. In Latin it is often used as a geometric term, designating the area enclosed within a geometric figure, tangible and measurable, or in the heavens and infinite.[12]

Within Western history there is a strong correlation between a given locale and the cultural production it fosters. In the study of natural history, conditions related to geography, climate, location and topography are recognized as key factors that affect the quality of a place and its air (*aira*), and by extension, the people of that place and their production. The categorization of works of art and architecture according to their place of origin appears in the writings of Herodotus, Lucian and Pliny.[13] Vitruvius, in his *De architectura*, speaks of place within the context of *firmitas* (strength), *utilitas* (utility) and *venustas* (beauty).[14] Place relates to the suitability of a given site, its weather, environment and resources.[15] He likewise addresses 'places' (*locis*) in the context of a given city, distinguishing public places, including the plan of the walls and the layout of the public buildings, from private ones.[16] Places, and specific individuals and monuments located therein, are also associated with the creation of the columnar orders and their appropriate use. Although Vitruvius was certainly not concerned with theorising the concept of place as such, he clearly recognized places as specific environments, distinguished by conditions that were either natural or man-made. Space (*spatium*), in turn, was more neutral, and he used this term more generally denote an area, as in a plot of land to be surveyed.[17]

12 On the Aristotelian concept of place, see Casey, *The Fate of Place*, 50-71; see also Grant, 'The Concept of *Ubi* in Medieval and Renaissance Discussions of Place'; Rowland, 'Renaissance Ideas of Space', 1.

13 DaCosta Kaufmann, 'Introduction', 1-3; see also Kim, *The Traveling Artist in the Italian Renaissance*, 44-46; DaCosta Kaufmann, *Toward a Geography of Art*, 1-17.

14 For a basic overview of these concepts, Kruft, *A History of Architectural Theory*, 24-27, is instructive.

15 Vitruvius, *Ten Books on Architecture*, book I.4, and throughout book 2, on materials.

16 Ibid., book I.3

17 Ibid., books I.5 and I.6. Rowland underscores Vitruvius' use of *spatium* in reference to a certain location beneath the heavens, the *spatium caeli*.

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Expanding upon the Vitruvian tradition, writers on early modern architecture captured the importance of place, although rarely in strict theoretical terms. Within the literature, the idea of place is evoked with multiple terms. In Italian, place is associated with '*luogo*', '*paese*' and '*terra*'; in French with '*lieu*'; in German with '*Platz*', '*Ort*', '*situs*', and '*Grund*'; and in Dutch with '*plaats*' or the nearly synonymous '*plek*'. The plurality of terms employed for 'place' speaks to the complexity of the concept, which bears both tangible and intangible qualities.

Beginning with Leon Battista Alberti, the first published theorist of early modern architecture, we see a nuanced understanding of place, which carries both metaphysical and practical connotations. The conditions of a place – in terms of its natural environment, accessibility and resources – affected the health and character of its inhabitants, and were even considered determinative of their prosperity, government and laws.[18] In his *De re aedificatoria* (c. 1450), Alberti underscores air quality as a crucial factor when selecting a building site: 'Who can have failed to notice the extensive influence that climate [*aria*] has on generation, growth, nourishment and preservation?'[19] In the second book of the treatise, he again addresses place within the context of architectural siting and foundations.

> Having constructed these models, it will be possible to examine clearly and consider thoroughly the relationship between site and the surrounding district [*situm & areae ambitum*], the shape of the area, the number and order of the parts of a building, the appearance of the walls [...] and in short the design and construction of all the [building] elements.[20]

The idea that the building plan essentially unfolds from the condition of the site is again emphasized by the German theorist Walther Ryff, in his 1548 commentary of Vitruvius, in which the terms '*Platz*' and '*Ort*' are used to describe a structure's site and foundations.[21] In the seventeenth century the English architect Henry Wotton went so far as to personify place in regards to the 'seat' and 'situation' of a construction. 'I must say that in the *Seating* of our selves (which is a kinde of *Marriage* to a *Place*) *Builders* should bee as circumspect as *Wooers*.'[22]

Francesco di Giorgio pursues a similar path of inquiry in the second rendition of his *Trattato di architettura* (c. 1490) – reflecting on the determinative qualities of

18 Alberti, *I libri della famiglia*, 228-230; Alberti, *The Family in Renaissance Florence*, 182-183. On Alberti's discussion of place, see also the contribution of Nele De Raedt in this volume.

19 Alberti, *On the Art of Building in Ten Books*, book I.3.

20 Ibid., 34. For the original Latin, Alberti, *De re aedificatoria* (Florence, N. di Lorenzo, 1485), book II.

21 See Ryff, *Vitruvius Teutsch*, book IV.

22 Wotton, *The Elements of Architecture*, 6. Italicized text is in accordance with the original.

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topography, climate and materials – as does his Sienese follower, Pietro Cataneo.[23] Expounding upon city planning in his *I quattro primi libri di architettura* (1554), Cataneo explains that the conditions of place (*luogo*) determine the character of its inhabitants, and in turn, their architecture. 'And wanting to enlarge or fortify the site [...] to make it an honourable city, there are clear indications of good air, good water, and good soil, if the men who live in such places are attractive, well proportioned, with good colour, and happy appearance, and if they have many children.'[24]

Cataneo's reference to the strength of a site and its inhabitants introduces the centrality of the place concept in the field of early modern defence design, which was revolutionized with the ascendency of firearms. Francesco di Giorgio opens with the topic in his *Trattato di architettura*, as transmitted in the codex Saluzzianus 148 (c. 1485), asserting that 'First of all is to be considered the site [*sito*] and the quality of the place [*loco*]', as weak topographical features must be buttressed against attack. He then follows with a reference to Vitruvius, noting that 'we see the ancients placed [*avere posto*] all of their forts in the most strong and eminent places [*luoghi*] they could find, and most in the defended cities and for their conservation'.[25] Albrecht Dürer's *Etliche underricht, zu befestigung der Stett, Schloss und flecken* (1527) gives equal emphasis to place, methodically specifying the city's ideal site, topography, plan and organization.[26] Tellingly, Daniel Specklin of Strassburg, active as a military architect, cartographer and engineer, opened his *Architectura von Vestungen* (1589) with a discourse on the site survey, linking '*Ort*' with the practice of '*Chorographia*'.[27] The substantial *Architettura militare* (1599) of Francesco de Marchi again reiterates the importance of place, asserting that it is the architect's responsibility to design according to the dictates of a specific place. De Marchi, active in the Low Countries and Italy, advised: 'skilful and ingenious soldiers and architects will be able to build both impregnable and beautiful works,

23 In book one of the *Trattato*, conserved in the codex Magliabechianus II.I.141, Martini, *Trattati di architettura*, vol. 2, 303-310.

24 Cataneo, *I quattro primi libri di architettura*, book I.3 (3v): 'e si disiderasse con aggrandirlo e recingerlo di mura farne honorata città; seranno indicii manifesti di buon'aria, buon'acque, e buon'erbe, se gli huomini di tal luoco seranno belli, ben proportionati, di vivo colore, & lieto aspetto, con la multiplication grande di lor figli'.

25 Martini, *Trattati di architettura*, vol. 1, 3: 'In prima è da considerare el sito in qualità del loco, imperò che altro richiede un loco montuoso, altro un piano, e così secondo i luoghi più o manco debili, da quella parte dunde più offesi sieno a quella principalmente è da riparare. [...] [N]oi vediamo gli antichi avere posto tutte le fortezze ne' più forti e eminenti luoghi che hanno trovato, e massime nella città a defensione e conservazione d'essa.' This passage, which also addresses the well-composed and proportioned human body, is discussed by Noam Andrews in this volume.

26 See the commentary and transcription of Fara, *Albrecht Dürer*.

27 I am grateful to Sebastian Fitzner for this reference. See Specklin, *Architectura von Vestungen*, 1v.

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in accordance in with the dictates of the site [*sito*], that will comply with the rules of art, put into execution [*posta in essecutione*] by a man of skill and ingenuity'.[28]

The idea that the 'skilful and ingenious' architect should bring place- and site-specific knowledge to his work is echoed in the discussions of Philibert de l'Orme. Reflecting on the character of the architect in his *Le premier tome de l'architecture* (1567), de l'Orme reiterates that plan and theory are not enough. It's essential that the architect 'choose and find good master masons who know how to properly execute and implement'. Likewise, he must be able to draw, know well the project, and be able to 'take measures, set the schedule, and give place to the workers [*lieu aux ouvriers*]'.[29] Philibert's use of place in this context underscores the patent association between practice and place. This is similarly captured in the 1577 treatise of the Dutch architect Hans Vredeman de Vries, who emphasizes the need to align form and practice with place. Instead of following 'the antique Italian manner', he advocates for a more flexible interpretation, which takes into account local conditions and building practice. In strengthening his argument, he cites the famous Netherlandish masters Cornelis II Floris and Jacques Du Broeucq, who had accommodated ancient models to the 'necessities and customs of this country'.[30]

The discussion of Vredeman de Vries reflects early modern theories of architectural decorum, the principle, adopted from classical rhetoric, that a building's form should not only accord to its function, environment and position, but should uphold established social norms. In this context, place is understood not only as a physical locale, but also as something that can be crafted and defined according to prescribed social norms. The idea that architectural decorum was linked to place is epitomized in Sebastiano Serlio's Book VI, *Of Habitations Suitable for All Grades of Men*, which puts forth an order for domestic building types, organized

28 De Marchi, *Architettura militare*, 6v: 'Però li valenti, & ingeniosi Soldati, & Architetti, potranno in simil sito far cose inespugnabili, & belle, per la commodità del sito, che ubidirà all'arte, posta in essecutione da valent' huomo ingenioso.'

29 De l'Orme, *Le premier tome*, book IX.9: 'Je dirai encore davantage sur ce propos pour avertir les architectes et ceux qui font profession de conduire bâtiments, que ce n'est pas assez d'entendre bien tous les traits pour savoir montrer et enseigner ce qu'il faut faire, mais bien plutôt de choisir et trouver de bons maîtres maçons qui le sachent proprement exécuter et mettre en œuvre [...] et signamment si l'architecte n'a lui même tracé les pierres, jaçoit que ce ne soit son état, ni chose à propos, et à laquelle il sut fournir, pour avoir le soin à tant d'autres choses auxquelles il lui faut pourvoir, pour donner les mesures et commander en temps et lieu aux ouvriers, pour les affaires qui se présentent.' Notable also is the discussion of place by de l'Orme, *Le premier tome*, in book III.8: 'The firmness of a place to be grounded can be seen and known in various ways, and signally by the nature of the land' ('La fermeté d'un lieu pour faire fondement se peut voir et connaître en diverses sortes, et signamment par la nature des terres'). He again addressed place when speaking of antiquities and the appropriate use of specific practices and models. See de l'Orme, *Le premier tome*, book V.1.

30 Thanks to Merlijn Hurx for this reference.

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according to location and social hierarchies.[31] As given by Serlio, residences placed in the country inherently differ from those placed in the city; and within a given social order, the residence of the prince finds its 'place' higher than those of the merchant, craftsman and peasant.[32]

In Serlio's widely circulated printed treatises, a building, and the place it occupies, follow certain formulae as distinct commonplaces or *topoi*.[33] Upon initial reflection, this formulation seems to invert the notion of place as something one-of-a-kind and entirely unique. But if we consider place itself as a commonplace – place as providing a framework by which architecture is structured – then the concept opens itself for further specification. The *topoi* delineated by Serlio were places for the insertion of inventions. Like so many of his contemporaries, Serlio sought to codify rules, but ultimately put forth a formulae that allowed for free interpretation and embellishment. Put in different terms, the *topoi* of early modern architectural theory constitute a pattern by which a discourse, taking the form of a building process, might be realized.

Architecture as Discursive Practice

Rhetorical metaphors are often coupled with discussions of place. Understood in literal terms, places – physical entities that may be identified by geographical coordinates – are often associated with specific languages and dialects. In the art of memory, places take form in images; they are the *loci* of the memory systems that sustained rhetoric and writing prior to the ascendancy of printing.[34] As a theoretical concept, the definition of place is also dialectical. The discourses implicit in describing place are subjective and at time even contradictory, as place is delineated both by what it is and what it is not.[35] Histories and theories of European architecture have likewise drawn analogies between language and architecture. Architecture, understood as a language or discourse, extends beyond the design of buildings; it is a means of communication, built upon specific vocabulary and grammar, and adheres to distinct social customs and practices. For Renaissance theorists, the architecture-language analogy undergirded the search for a canon

31 Serlio, *On Architecture*, book VI: 'Of Habitations'. Serlio, *On Architecture*, book VII: 'On Situations', also discusses residential building types and their placement, as well as building ornament and gates. The place-specificity of these designs is implicit, but Serlio says little about the study of place or site.

32 Here, I benefit from Summers' discussion of 'place, relation and hierarchy' (*Real Spaces*, 123).

33 For discussion on Serlio's book VI, see Carpo, 'The Architectural Principles of Temperate Classicism'. Carpo introduces the idea of Serlio's printed palace plans as a type of *topos* (p. 148).

34 Yates, *The Art of Memory*.

35 Vos, 'Introduction', xi.

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of architectural forms and rules, and sanctioned practices of imitation as akin to those of the great classical authors.[36]

While the analogies between language, architecture and place are not the focus on this book, in our concern with the latter two subjects, the concept of discursive practice provides a useful heuristic. As given by Foucault, a discourse creates its subjects. Language *uses* individuals, and various forms of speaking, or discursive practices, offer places for various kinds of subjects.[37] If we define architecture as a discourse, it follows that architecture creates the architect, not vice versa. This is to say, the place of architecture – itself a *topos* – is more important than the individual there engaged. In this formulation, architecture (as language) is a continuum, into which a given architect (as a speaker) is only temporarily engaged. The actualization of the discourse, moreover, requires a certain kind of speaker, as statements and *topoi* within a given language cannot be made by anyone. The value and efficacy of such statements reside in their delivery by someone who is qualified to make them.[38] The idea of architecture as discursive practice thus draws attention to the mechanisms involved in the making of places and buildings.

The analogy helps to clarify our thinking about the notoriously vague figure of the architect in early modern Europe.[39] In this period, the architect was not defined solely by his work, as this might easily include actions that had nothing to do with art, building, or spatial design. As is well known, moreover, the architect pursued no explicitly delineated course of training or apprenticeship. His duties were defined less by a distinct professional profile than they were by the project at hand.[40] The difficulty of understanding the early modern architect is further compounded when we expand the geography of our focus or seek to draw comparisons across between distinct polities. The training and practice of 'architect' in Rome was different than that in Paris, Amsterdam and Nuremberg. Further, professional titles were often misleading, as an individual considered an 'architect' in one city might well be considered an engineer, surveyor, painter or master carpenter in another. But considering architecture in terms of discursive practices allows us to sidestep the innumerable theoretical stalemates that arise when examining the

36 For an overview on the analogy between language and the visual arts in the Renaissance, see Clarke and Crossley, 'Introduction', 1-7.

37 Schapiro, *Language and Political Understanding*, 63.

38 Ibid., 146; see Foucault, *Archaeology of Knowledge*.

39 On the character of the Renaissance architect, see Biral and Morachiello, *Immagini dell'ingegnere*, 11-15; Ettlinger, 'The Emergence of the Italian Architect during the Fifteenth Century'; Keller, *A Theatre of Machines*, 1-4; Kemp, 'From "Mimesis" to "Fantasia"'; Merrill, 'The "*professione di architetto*" in Renaissance Italy'.

40 It has been said that in the early modern period the title 'architect' was contingent on active practice. Trachtenberg, *Building-in-Time*, 106, comments that 'there was no such thing as an unemployed architect', and that in the practice of architecture, the architect defined himself.

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title, background and character of the early modern architect. The essays of this volume consider the architect in relation to the work he executed. The discipline of architecture, in this context, involved not solely the artistic practices and products related to the planning, designing, and constructing of buildings; architecture also encompassed the broader spectrum of processes by which place was constructed, delineated and embodied, factors that were inseparable from context.

The protagonists of these studies vary considerably and many were not 'architects' according to a modern understanding. But regardless of how they were defined, these individuals were conversant in a common architectural language; they partook in and fostered a shared body of knowledge. In this sense, the architecture-language analogy facilitates our investigation beyond place. While each contribution examines a distinct place, the systems, practices and themes disclosed within are more universal. By defining the practices inherent in local dialogues and site-specific conditions, and then mapping their intersection across regions, cultures and epochs, we are able to better understand the creation of architecture in early modern Europe, and to further delineate the practices and knowledge that defined the 'architect'.

The Narrative

In examining early modern architecture, the historian first looks to the buildings themselves, if they remain. Secondary sources are also essential to understand a given construction, its forms, function, and making. Drawings and models help to tell this part of the story, as do printed representations, archival records, commentary and theories on architecture. But there is much in early modern architecture that cannot be captured in an image, explained in a document or even perceived in a site visit, hundreds of years after construction commenced.

In emphasizing the place of architecture – something it is embedded in and inseparable from – the chapters of this volume seek to offer a more holistic understanding of early modern architecture. In this light, our purview extends from the elemental and often intangible elements of building design – including its administrative and cultural functions, and mediated social norms that conceptually mark its place – to the more concrete processes and tools that enabled a structure's realization. The structure of this volume reflects this range, the essays divided into three parts, which address architecture's engagement with place in increasingly tangible forms.

Wolfgang Lefèvre's essay on 'Architecture on Paper' provides an instructive starting point, examining the localization of architectural production in the form of drawings. As argued by Lefèvre, the development and use of perspectival drawing across early modern Europe served as the lingua franca among practicing architects.

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The wide range of drawings considered here span from those physically tied to place, including those traced on a cathedral wall, to those that, having been printed are made transient, translating what was a singular physical place into something that is ephemeral, common and mundane.

The specificity of a site is explored in terms of social, theoretical and cultural determinants in book's first part, 'Marking Place'. In these studies, the 'place-ness' of architecture is extends beyond its visual and three-dimensional character. In Federico Bellini's study of sonorous spaces in sacred buildings, the function and even the form of music is translated into the architecture of Baroque churches like Sant'Ivo alla Sapienza in Rome. In the case of the Santacroce in fifteenth-century Rome, discussed by De Raedt, the family's place along the Via in Publicolis is delineated by civic law. Following the Santacroce's conflict with the Della Valle, the Roman *civitas* sought to erase its presence, both by physically exiling certain members of the family and destroying their residential properties. For Andrews, early modern architecture may be mapped using contemporary cosmological discourses and theories on the celestial realm. Unlike the Baroque churches and Santacroce family palaces in Rome, the places addressed by Andrews are out of grasp, taking form in visualizations, outer space and theory. But the architectural practices to which they relate are real. The three essays align in showing how non-architectural discourses of the early modern period had real impact on design and building practices.

The book's second part, 'Teaching Place', casts light on places of architectural education, and the knowledge codified therein, taking examples from fifteenth-century Siena, seventeenth-century Ulm, and Rome and central Europe in the period from roughly 1650 to 1850. In my own contribution, the landholdings of the Spedale di Santa Maria della Scala in Siena may be collectively understood as a place. By managing and developing its properties over centuries, the hospital institution came to serve as both a building contractor and an architectural school, in which knowledge was developed, uniting a group of Sienese-based practitioners, and perpetuated through copy drawings and two-dimensional models. The transmission of architectural knowledge, and specifically, the knowledge amassed at a certain place, is likewise central to the articles of Paul Brakmann and Sebastian Fitzner, and Stefan M. Holzer and Nicoletta Marconi, which address, respectively, the *Kunstkammer* of Johannes Faulhaber in Ulm and the *Fabbrica* of St. Peter's in Rome. Faulhaber's *Kunstkammer*, a place of architectural production, collection and education, was mediated through a series of publications, by which knowledge of the Ulm collection came to be distributed throughout much of Europe. The technical tradition of St. Peter's *Fabbrica* was similarly codified and propagated in print, through teaching and the publication of sequential editions of *Castelli e ponti*. As discussed by Holzer and Marconi, the workshop of St. Peter's in Rome, as

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a distinct place, served not only as the physical backdrop for the construction of the great church, but also provided the epistemological foundation for this work. It was within the workshop that new structural systems and scaffolding were developed, which were employed in the Vatican and elsewhere in Rome. Nicola Zabaglia was one protagonist of this space, but as the authors show, the tradition of the *Fabbrica* extended far beyond this one figure.

The volume's final part, 'Excavating Place', addresses place in its most concrete form, examining practitioners' direct contact with the natural world in the physical delineation of spatial contours. The essay of Merlijn Hurx finds its place in the 'hollow land' of the Low Countries, with an analysis of seventeenth-century deep pile foundations. Citing archival reports and drawings, Hurx demonstrates that Dutch deep pile foundations constituted its own place-derived field of expertise. Yet, far from a generic, tradition bound body of knowledge, the design and construction of Dutch pile foundations were explicitly site-specific. The practices of plotting, planning and surveying outlined by Hurx bridge his essay with the final two contributions, which explore the creation of place in fifteenth-century Venice and sixteenth-century Portugal. The essays of Ludovica Galeazzo and Edward Triplett explore what might be termed 'liminal place': the articulation of place through the creation of boundaries. Both studies grow out of a close analysis of property records, which actually record or describe landscapes, in the real and legal sense. The places mapped, however, also have a 'place' dimension beyond their real spatial contours. Galeazzo's discussion of the urban construction of the *insula dei Gesuiti* in Venice provides an insightful account of property creation in the early modern period, by which the boundaries of the lagoon were physically altered. But as the product of contemporary social, political and ideological conditions, this new land also assumed an identity and form that was distinctly Venetian. Whereas in Galeazzo's study a place was physically made from where there had previously been water, in Triplett's examination of the Portuguese fortification and border maps of the *Livro das fortalezas*, the physical sites existed, but were virtually fashioned into distinct places through Duarte de Armas' chorographic representations. Triplett's own images, created using GIS and 3D modelling technology, mediate the depicted place of the *Livro das fortalezas* with the topographical place, as it exists today.

The essays of this book are intended to provide fresh insights into the history of early modern architecture in Europe and to offer new models for future study. Taken together, the contributions reveal an emphasis on the modes of architecture, including the training of the architect (or whoever designed and realized buildings in the early modern period), the means by which designs and places were virtually transmitted, networks and processes of communication, worksite structures, social conditions that drove certain ideological and formal developments, and the physical tools, foundations and machines that enabled architecture's ascent. The information

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and ideas presented are by no means absolute or unequivocal. A volume like this invariably has limitations, in terms of its geographic and temporal scope, the types of subjects examined, and the methods employed. Given the breadth of our guiding concept, much more can still be written on how place related to the creation of early modern architecture. In the years to come, we look forward to reading these studies. And we look forward to learning more about all the conditions and characters – extraordinary and run-of-the-mill – that shaped early modern architecture.

Bibliography

Acocella, Alfonso, *An Architecture of Place* (Rome: Laterconsult, 1992).

Alberti, Leon Battista, *De re aedificatoria* (Florence: N. di Lorenzo, 1485).

Alberti, Leon Battista, *The Family in Renaissance Florence*, trans. by Renée Neu Watkins (Columbia: University of South Carolina Press, 1969).

Alberti, Leon Battista, *On the Art of Building in Ten Books*, trans. by Joseph Rykwert, Neil Leach and Robert Tavernor (Cambridge, MA: The MIT Press, 1988).

Arciszewska, Barbara, 'Architectural Crossroads: Migration of Architects and Building Trade Professionals in Early Modern Poland 1500-1700', in Konrad Ottenheym (ed.), *Architects without Borders: Migration of Architects and Architectural Ideas in Europe 1400-1700* (Mantua: Il Rio Arte, 2014), 61-75.

Arciszewska, Barbara, 'Early Modern Conceptualizations of Medieval History and Their Impact on Residential Architecture in the Polish-Lithuanian Commonwealth', in Karl Enenkel and Konrad Ottenheym (eds), *The Quest for an Appropriate Past in Literature, Art and Architecture* (Leiden: Brill, 2019), 649-681.

Atkinson, Niall, *The Noisy Renaissance: Sound, Architecture, and Florentine Urban Life* (University Park: Pennsylvania State University Press, 2016).

Bachelard, Gaston, *The Poetics of Space* (Boston: Beacon Press, 1994).

Biral, Alessandro and Paolo Morachiello, *Immagini dell'ingegnere tra quattro e settecento* (Milan: Franco Angeli, 1985).

Burkhardt, Jacob, *The Civilization of the Renaissance in Italy* (New York: Random House, 1954).

Calabi, Donatella and Elena Svalduz (eds), *Il Rinascimento italiano e l'Europa. VI. Luoghi, spazi, architetture* (Vicenza: Angelo Colla, 2010).

Carpo, Mario, 'The Architectural Principles of Temperate Classicism: Merchant Dwellings in Sebastiano Serlio's Sixth Book', *RES: Anthropology and Aesthetics* 22 (1992): 135-151.

Casey, Edward, *The Fate of Place: A Philosophical History* (Oakland: University of California Press, 2013).

Casey, Edward, 'How to Get from Space to Place in a Fairly Short Stretch of Time: Phenomenological Prologeomena', in Steven Feld and Keith H. Basso (eds), *Sense of Place* (Santa Fe: School of American Research, 1996), 13-52.

Cataneo, Pietro, *I quattro primi libri di architettura* (Venice, 1554).

Clarke, Georgia and Paul Crossley, 'Introduction', in Georgia Clarke and Paul Crossley (eds), *Architecture and Language: Constructing Identity in European Architecture, c. 1000-c. 1650* (Cambridge: Cambridge University Press, 2000), 1-20.

Cosgrove, Denis and Veronica della Dora, 'Introduction: High Places', in Denis Cosgrove and Veronica della Dora (eds), *High Places: Cultural Geographies of Mountains, Ice, and Science* (London: I.B. Tauris, 2008), 1-17.

Cropper, Elizabeth, 'The Place of Beauty in the High Renaissance and Its Displacement in Art History', in Alvin Vos (ed.), *Place and Displacement in the Renaissance* (Binghamton, NY: Medieval & Renaissance Texts & Studies), 159-205.

DaCosta Kaufmann, Thomas, 'Introduction', in Thomas DaCosta Kaufmann and Elizabeth Pilliod (eds), *Time and Place: The Geohistory of Art* (Aldershot: Ashgate, 2005), 1-19.

DaCosta Kaufmann, Thomas, *Toward a Geography of Art* (Chicago: University of Chicago Press, 2004).

DaCosta Kaufmann, Thomas, Catherine Dossin and Béatrice Joyeux-Prunel, 'Reintroducing Circulations: Historiography and the Project of Global Art History', in Thomas DaCosta Kaufmann, Catherine Dossin and Béatrice Joyeux-Prunel (eds), *Circulations in the Global History of Art* (Surrey and Burlington: Ashgate, 2015), 1-22.

Damisch, Hubert, *The Origin of Perspective*, trans. John Goodman (Cambridge, MA: The MIT Press, 1992).

de l'Orme, Philibert, *Le premier tome de l'architecture* (Paris, 1567).

de Marchi, Francesco, *Architettura militare* (Brescia: Comino Presegni per Gaspare dall'Oglio, 1599).

de Sola-Morales, Ignasi, 'Place: Permanence or Production', in *Differences: Topographies of Contemporary Architecture* (Cambridge, MA: The MIT Press, 1996).

Edgerton, Samuel, *Renaissance Rediscovery of Linear Perspective* (New York: Harper & Row, 1976).

Enenkel, Karl and Konrad Ottenheym, 'Introduction: The Quest for an Appropriate Past: The Creation of National Identities in Early Modern Literature, Scholarship, Architecture, and Art', in Karl Enenkel and Konrad Ottenheym (eds), *The Quest for an Appropriate Past in Literature, Art and Architecture* (Leiden: Brill, 2019), 1-11.

Ettlinger, Leopold, 'The Emergence of the Italian Architect during the Fifteenth Century', in Spiro Kostof (ed.), *The Architect: Chapters in the History of the Profession* (New York: Oxford University Press, 1977), 96-123.

Fairclough, Norman, *Discourse and Social Change* (London: Polity Press, 1992).

Fara, Giovanni Maria, *Albrecht Dürer: teorico dell'architettura. una storia italiana* (Florence: Leo S. Olschki Editore, 1999).

Field, Judith Veronica, *The Invention of Infinity: Mathematics and Art in the Renaissance* (Oxford: Oxford University Press, 1997).

Amsterdam University Press

Foucault, Michel, *Archaeology of Knowledge*, trans. by A.M. Sheridan Smith (New York: Pantheon, 1972).

Frampton, Kenneth (ed.), *Technology, Place & Architecture: Jerusalem Seminar in Architecture* (New York: Rizzoli, 1998).

Grant, Edward, 'The Concept of Ubi in Medieval and Renaissance Discussions of Place', *Manuscripta* (1976): 71-80.

Greenblatt, Stephen, *Renaissance Self-Fashioning from More to Shakespeare* (Chicago: University of Chicago Press, 1980).

Horodowich, Elizabeth and Lia Markey (eds), *The New World in Early Modern Italy, 1492-1750* (Cambridge: Cambridge University Press, 2017).

Kanerva, Liisa, *Between Science and Drawings: Renaissance Architects on Vitruvius's Educational Ideas* (Helsinki: Finnish Academy of Science and Letters, 2006).

Keller, Alex G., *A Theatre of Machines* (London: Chapman & Hall, 1964).

Kemp, Martin, 'From "Mimesis" to "Fantasia": The Quattrocento Vocabulary of Creation, Inspiration and Genius in the Visual Arts', *Viator* 8 (1977): 359-360.

Kim, David, *The Traveling Artist in the Italian Renaissance* (New Haven: Yale University Press, 2014).

Kruft, Hanno-Walter, *A History of Architectural Theory from Vitruvius to the Present* (New York: Princeton Architectural Press, 1994).

Lee, Alexander, 'Introduction: A Wider Renaissance?', in Alexander Lee, Harry Schnitker and Pierre Péporté (eds), *Renaissance? Perceptions of Continuity and Discontinuity in Europe, c. 1300-1550* (Leiden: Brill, 2010), 245-267.

Lefebvre, Henri, *The Production of Space*, trans. by Donald Nicholson Smith (Cambridge, MA: Blackwell, 1991).

Martini, Francesco di Giorgio, *Trattati di architettura ingegneria e arte militare*, ed. by C. Maltese, 2 vols (Milan: Edizioni il Polifilo, 1967).

Merrill, Elizabeth, 'The "*professione di architetto*" in Renaissance Italy', *Journal of the Society of Architectural Historians* 76.1 (2017), 13-35, DOI: 10.1525/jsah.2017.76.1.13.

Molà, Luca, 'States and Crafts: Relocating Technical Skills in Renaissance Italy', in Michelle O'Malley and Evelyn Welch (eds), *The Material Renaissance* (Manchester: Manchester University Press, 2007), 133-153.

Nevola, Fabrizio, *Street Life in Renaissance Italy* (New Haven and London: Yale University Press, 2020).

Norberg-Schulz, Christian, *Genius Loci: Towards a Phenomenology of Architecture* (New York: Rizzoli, 1979).

Relph, Edward, *Place and Placelessness* (London: Pion, 1976).

Rowland, Ingrid D., 'Renaissance Ideas of Space: Introduction', *Memoirs of the American Academy in Rome* 58 (2013), 1-2.

Ryff, Walther, *Vitruvius Teutsch* (Nuremberg, 1548).

Serlio, Sebastiano, *On Architecture, Volume Two, Books VI-VII of "Tutte l'opere d'architettura et prospetiva" with "Castrametation of the Romans" and "The Extraordinary Book of Doors"*, trans. by Vaughan Hart and Peter Hicks (New Haven: Yale University Press, 2001).

Schapiro, Michael, *Language and Political Understanding: The Politics of Discursive Practices* (New Haven: Yale University Press, 1981).

Scholten, Frits, Joanna Woodall and Dulcia Meijers (eds), *Art and Migration: Netherlandish Artists on the Move, 1400-1750* (Leiden: Brill, 2014).

Schreffler, Michael J., *Cuzco: Incas, Spaniards, and the Making of a Colonial City* (New Haven and London: Yale University Press, 2020).

Specklin, Daniel, *Architectura von Vestungen* (Dresden: Miethe, 1712).

Summers, David, *Real Spaces: World Art History and the Rise of Western Modernism* (New York: Phaidon Press, 2003).

Tafuri, Manfredo, *Ricerca del Rinascimento: principi, città, architetti* (Turin: Einaudi, 1992).

Trachtenberg, Marvin, *Building-in-Time: From Giotto to Alberti and Modern Oblivion* (New Haven: Yale University Press, 2010).

Trachtenberg, Marvin, *Dominion of the Eye: Urbanism, Art, and Power in Early Modern Florence* (Cambridge: Cambridge University Press 1997).

Tuan, Yi-Fu, *Space and Place: The Perspective of Experience* (Minneapolis: University of Minnesota Press, 1977).

Vitruvius, *Ten Books on Architecture*, trans. by Ingrid D. Rowland (Cambridge: Cambridge University Press, 1999).

Vos, Alvin, 'Introduction', in Alvin Vos (ed.), *Place and Displacement in the Renaissance* (Binghamton, NY: Medieval & Renaissance Texts & Studies, 1995), ix-xxii.

Wotton, Sir Henry, *The Elements of Architecture* (Charlottesville: University of Virginia Press, 1968).

Yates, Frances A., *The Art of Memory* (London: Random House, 1992).

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