

LOUIS CELLAURO

Palladio and Vitruvius: composition, style, and vocabulary of the *Quattro Libri*

Abstract

After a short preamble on the history of the text of Vitruvius during the Renaissance and Palladio's encounter with it, this paper assesses the Vitruvian legacy in Palladio's treatise, in focusing more particularly on its composition, style, and vocabulary and leaving other aspects of his Vitruvianism, such as his architectural theory and the five canonical orders, for consideration in subsequent publications. The discussion on composition concerns Palladio's probable plans to complete ten books, as an explicit reference to Vitruvius' treatise. As regards style, the article highlights Palladio's intention to produce an illustrated treatise like those of Francesco di Giorgio Martini, Sebastiano Serlio, and Giacomo Barozzi da Vignola (whereas the treatise of Vitruvius was probably almost unillustrated), and Palladio's Vitruvian stress on brevity. Palladio is shown to have preferred vernacular technical terminology to the Vitruvian Greco-Latin vocabulary, except in Book IV of the *Quattro Libri* in connection with ancient Roman temples. The composition, style, and vocabulary of the *Quattro Libri* are important issues which contribute to an assessment of the extent of Palladio's adherence to the Vitruvian prototype in an age of imitation of classical literary models.

Introduction

The *De architectura libri X* (Ten Books on Architecture) of the 1st-Century BCE Roman architect and military engineer Marcus Vitruvius Pollio was a text used by Andrea Palladio (1508-1580) and many other Renaissance architects both as a guide to ancient architecture and as a source of modern design. Vitruvius is indeed of great significance for Renaissance architecture, as his treatise can be considered as a founding document establishing the ground rules of the discipline for generations after its first reception in the Trecento and early Quattrocento.¹ His text offers a comprehensive overview of architectural practice and the education required to pursue it successfully. *De architectura* was based on Vitruvius' own experience, as well as on theoretical works by famous Greek architects such as Hermogenes.² The treatise covers almost every aspect of architecture, but it is limited, since it is based primarily on Greek models, from which Roman architecture was soon to depart decisively in order to serve the new needs to proclaim a world empire. Vitruvius' treatise is divided into ten books dealing in them with city planning and

1. An important study on this phase of reception of Vitruvius' treatise is Ciapponi 1960, 59-99.

2. For Vitruvius, see especially Gros 2006b, 366.

architecture in general; building materials; temple construction and the use of the Greek orders; public buildings (theatres, baths); private buildings; floors and stucco decoration; hydraulics; clocks, mensuration, and astronomy; and civil and military engines. While it is not the only book on architecture to have been written in ancient times (Vitruvius alludes to several even older texts),³ the *De architectura* is the only such text to have survived into the modern era. Although Vitruvius' text had been known throughout the Middle Ages, in the early fifteenth century its status shifted from a compendium of practical knowledge to the blueprint of architectural theory, and with Palladio it became a benchmark for design throughout Western and Eastern Europe and North America. Upon its rediscovery, translation, and publication in the Quattrocento, the work of the Augustan architect hereafter set the terms of architectural discourse for practising architects. Sebastiano Serlio (1475-1554) and Andrea Palladio referred to him as their "guide and unfallibile rule" and "master and guide" respectively.⁴ The rediscovery of Vitruvius during the Renaissance greatly fueled the revival of classicism during that and subsequent periods. Numerous architectural treatises, including Palladio's, were based in part or inspired by Vitruvius, beginning with Leon Battista Alberti's *De re aedificatoria* (On the Art of Building) (1485).

When Palladio published his treatise *I Quattro Libri dell'Architettura* (Four Books on Architecture) in Venice in 1570,⁵ he was sixty-two years old and had long been acquainted with Vitruvius' text, at least since his earliest documented encounter in the year 1538 with his first mentor, the Vicentine patrician and poet Gian Giorgio Trissino (1478-1550) (although he may have known Trissino from 1531).⁶ It was at his villa at Cricoli, on the outskirts of Vicenza, that Trissino founded an Academy, as a place to educate young Vicentine nobles along the lines of the famous humanist academies in Florence and Rome that promoted classical literature. According to Palladio's biographer, Paolo Gualdo (1553-1621), Andrea also benefited from Trissino's Academy, since, "finding Palladio to be a young man of very spirited character and with a great

3. See Granger 1934, vol. 2, Book VII, preface, 71-72: "Because, then, I observed that such beginnings had been made towards the method of my understanding, I drew upon these sources and began to go forward. For to begin with: Agatharcus at Athens, when Aeschylus was presenting a tragedy, was in control of the stage, and wrote a commentary about it. Following his suggestions, Democritus and Anaxagoras wrote upon the same topic, in order to show how, if a fixed centre is taken for the outward glance of the eyes and the projection of the radii, we must follow these lines in accordance with a natural law, such that from an uncertain object, uncertain images may give the appearance of buildings in the scenery of the stage, and how what is figured upon vertical and plane surfaces can seem to recede in one part and project in another. Subsequently Silenus published a work upon Doric proportions; Rhoecus and Theodorus on the Ionic temple of Juno which is at Samos; Chersiphron and Metagenes on the Ionic temple of Diana which is at Ephesus; Pythius on the temple of Minerva in the Ionic style which is at Priene; Ictinus and Carpius on

the Doric temple of Minerva which is on the Acropolis at Athens; Theodorus of Phocaea on the Tholos at Delphi; Philo [of Eleusis] on the proportions of temples and the arsenal which was in the harbour of the Pireus; Hermogenes on the pseudodipteral Ionic temple of Diana at Magnesia and the monopteral temple of Bacchus at Teos; Arcesius on Corinthian proportions, and the Ionic temple at Tralles to Aesculapius, whose image is said to have been carved by him; Satyrus and Pythius on the Mausoleum".

4. Serlio 1537, XLVI: "come guida e regola infalibile"; and Palladio 1570, Book I, *proemio ai lettori*, 5: "maestro e guida".

5. On the *Quattro Libri*, see especially Burns 2009, 113-150; and Burns 2010, 69-104.

6. The first documented encounter between Trissino and Palladio is dated 19 February 1538; see Beltramini 2014, 460-474 (especially 463).

aptitude for science and mathematics, Trissino encouraged his natural abilities by training him in the precepts of Vitruvius".⁷ Giangiorgio Zorzi lists eight of Palladio's drawings in connection with his early Vitruvian studies, which are now preserved at the Royal Institute of British Architects Library Drawings & Archives Collections: RIBA, XI/7 recto (half-elevation of a *diastylos* Doric temple); RIBA XI/7 verso (Doric entablature); RIBA XI/10 recto (half-elevation of an *eustylos* Ionic temple) (FIG. 1); RIBA XI/9 recto (half-elevation of a *systylos* Ionic temple); RIBA XI/9 verso (Ionic base and capital after Vitruvius) (FIG. 2); RIBA X/4 verso (elevation of the monopteral round temple); and RIBA VIII/6 (elevation of the peripteral round temple).⁸

Later in his career, Palladio contributed substantially to the 1556 and 1567 Italian and Latin editions of Vitruvius of the Venetian patrician and patron of the arts Daniele Barbaro (1514-1570), which mark the splendid culmination of the Renaissance tradition of Vitruvian studies.⁹ In the preparation of the work, begun probably in 1547 and taking – according to Barbaro himself – nine years to complete, he enjoyed the active collaboration of Palladio, who not only designed the most important woodcuts in books I-VI but also contributed his own fund of archaeological experience to the interpretation of Vitruvius' text.¹⁰ In Barbaro's acknowledgement of Palladio's assistance, he specifically cites his work on the ancient Roman theatre, temple, the basilica, and on the reconstruction of the Ionic volute.¹¹ Equipped with Latin and Greek and with extensive classical and mathematical knowledge, Daniele Barbaro was the ideal editor of Vitruvius. However, he clearly lacked architectural and archaeological experience, which probably prompted the collaboration with Palladio, who according to Barbaro, was designing buildings which rivaled those of classical antiquity.¹² Being thus no mere illustrator, Palladio was able to provide Barbaro with architectural and archaeological insights for the commentary.

This background in Vitruvian studies had a profound influence on Palladio's own remarkable magnum opus, *I Quattro Libri dell'Architettura*, which has been translated into every major Western European language. In the two centuries following its publication in 1570, it has been

7. Gualdo 1959, 93-104 (particularly 93): "Scorgendo esso Trissino il Palladio esser giovane molto spiritoso ed inclinato molto alle scienze matematiche, per coltivar questo ingegno s'indusse egli stesso ad esplicarli Vitruvio".

8. See Zorzi 1959, 121-122.

9. On Daniele Barbaro, see the short biographical article with good bibliography by Alberigo 1964, 89-95. See also Laven 1957 and Lemerle *et al.* forthcoming in 2015.

10. Barbaro's statement that it took him nine years to complete his edition of Vitruvius should be considered, however, in connection with Horace's *Ars Poetica* (lines 388-389), where Horace recommends waiting nine years before publishing one's compositions. This became something of a topos among classically educated Renaissance writers, and it may well be that Barbaro is referring to the conventional time of literary "gestation" rather than giving us precise information about the dating of the work.

11. Barbaro 1556, 40: "Ne i disegni delle figure importanti, ho usato l'opera di M. Andrea Palladio Vicentino Archi-

tetto, il quale ha con incredibile profitto tra quanti ho conosciuto, & di vista, & di fama, & per giudicio de uomini eccellenti acquistato la vera Architettura non solo intendendo le belle, e sottili ragioni di essa, ma anco ponendola in opera, si ne i sottilissimi, e vaghi disegni delle piante, de gli alzati, & de i profili, come ne lo eseguire e far molti & superbi Edificij nela patria sua, & altrove, che contendono con gli antichi, danno lumi a moderni, e daran meraviglia a quelli che verranno. Et quanto appartiene a Vitruvio, l'artificio de i teatri, de i Tempi, de le Basiliche, & di quelle che hanno più belle, & più di secrete ragioni di compartimenti, tutte sono state da quello con prontezza d'anima, & di mano esplicate e seco consigliate, come da quello che di tutta Italia con giudicio ha scelto le più belle maniere de gli antichi, e misurate tutte l'opere che si trovano".

12. Barbaro 1556, 40: "che contendono con gli antichi".

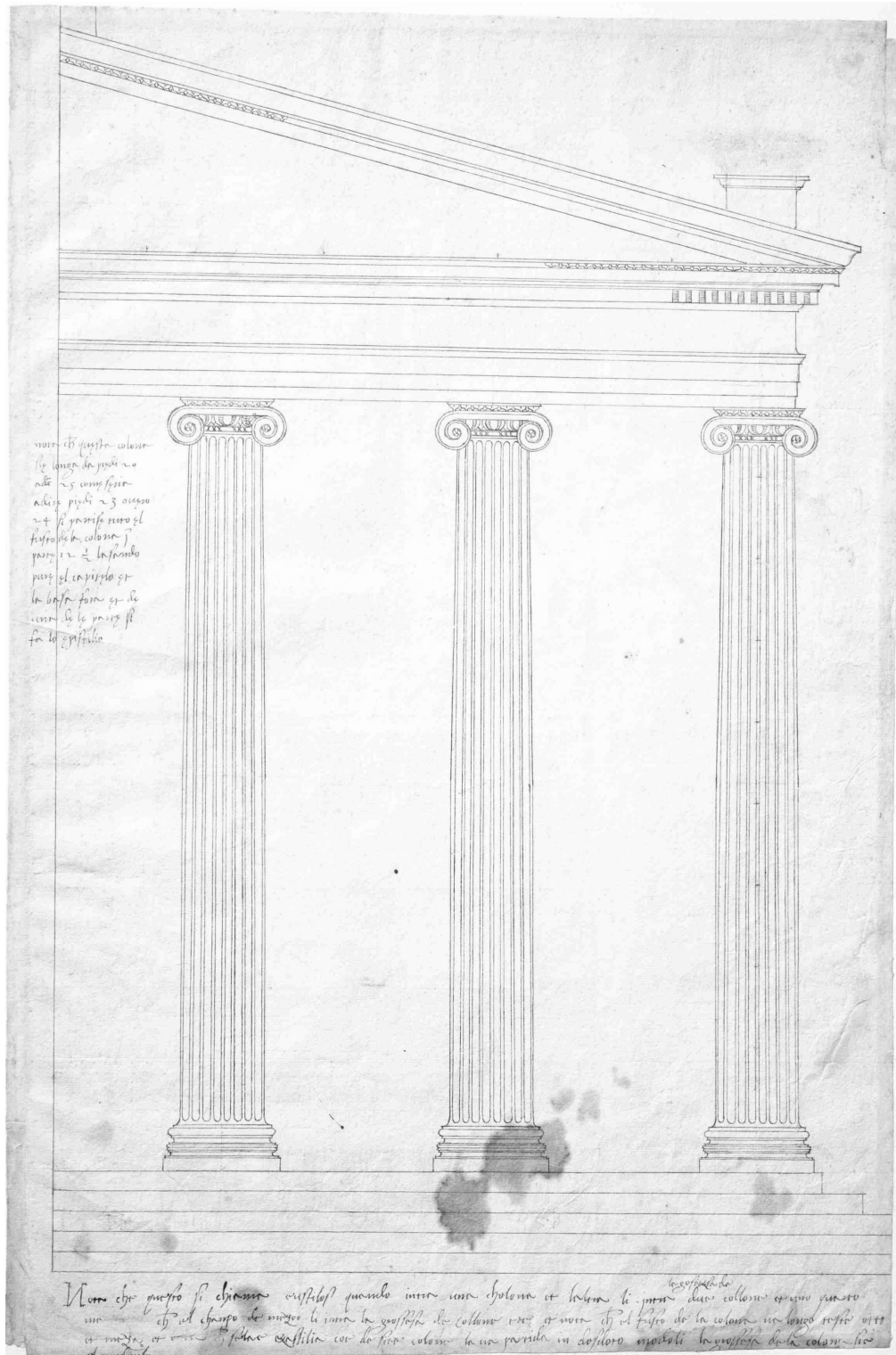


FIG. 1 – Andrea Palladio, *Half-Elevation of an Eustylos Ionic Temple*, RIBA XI/10 recto, Royal Institute of British Architects Library Drawings & Archives Collections (Photo: RIBA Library Drawings & Archives Collections, London).

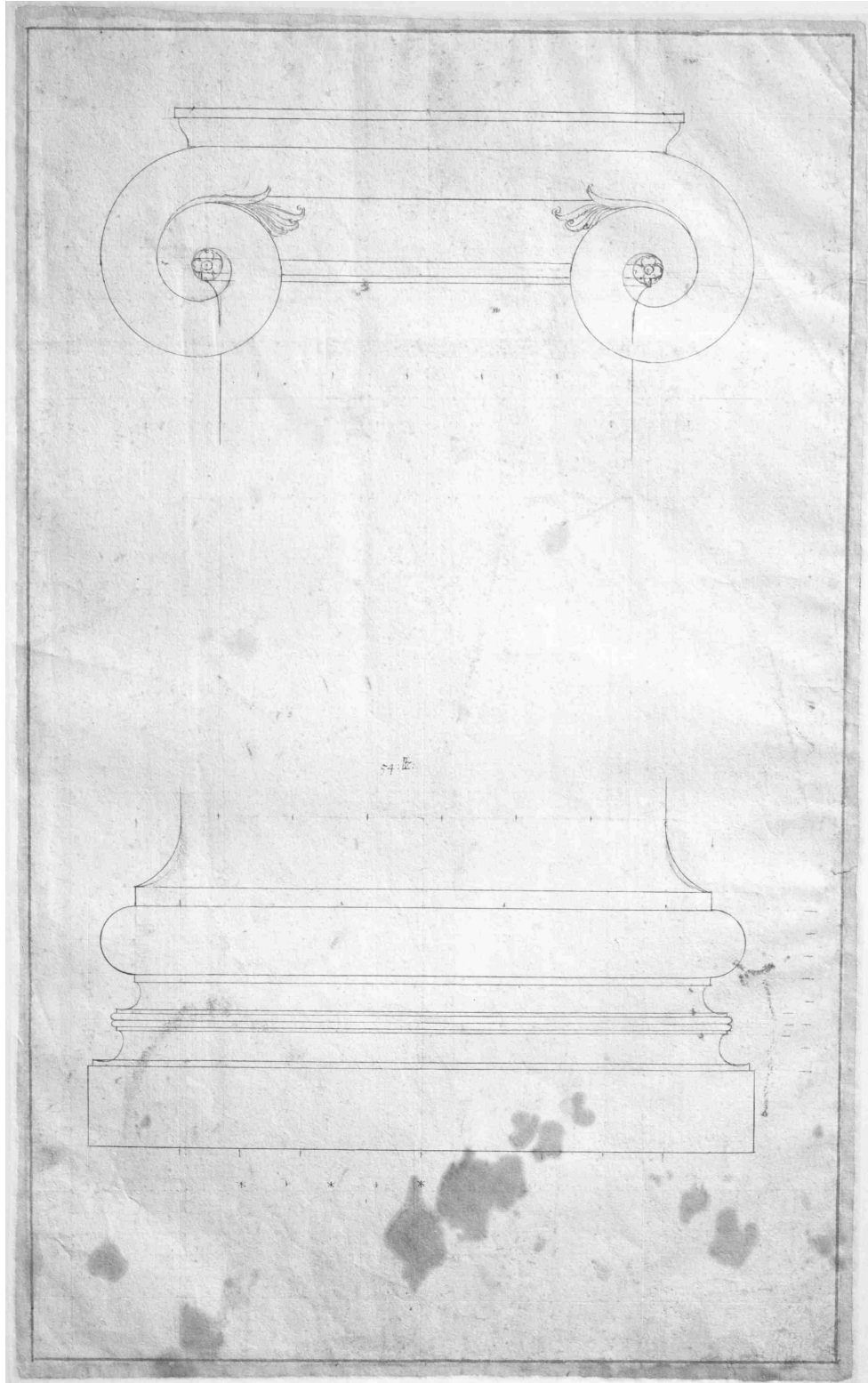


FIG. 2 – Andrea Palladio, *Ionic Base and Capital after Vitruvius*, RIBA XI/9 verso, Royal Institute of British Architects Library Drawings & Archives Collections (Photo: RIBA: Library Drawings & Archives Collections, London).

one of the most influential books in the history of architecture. In it Palladio offers a compendium of his architecture and of the ancient Roman structures that inspired him. The First Book is devoted to building materials and techniques and the five orders of architecture: Tuscan, Doric, Ionic, Corinthian, and Composite. Palladio indicates the characteristic features of each order and supplies illustrations of various architectural details. The Second Book deals with private houses and mansions, almost all of Palladio's own design. Shown and described are many of his villas in and near Venice and Vicenza (including the famous Villa Capra, or "The Rotonda"). Each plate gives a front view drawing of the building and the general floor plan. The Third Book is concerned with streets, bridges, piazzas, and basilicas, most of which are of ancient Roman origin. In the Fourth Book, Palladio reproduces the designs of a number of Roman temples. In all, the text is illustrated by over 200 magnificent woodcut illustrations, showing edifices, either of Palladio's own design or reconstructed by him from classical ruins or from Vitruvius' descriptions.

In the *Quattro Libri*, Palladio explicitly recognized his debt to Vitruvius in asserting that: "Guided by a natural inclination, I dedicated myself to the study of architecture in my youth, and since I always held the opinion that the ancient Romans, as in many other things, had also greatly surpassed all those who came after them in building well, *I elected as my master and guide Vitruvius, who is the only writer on this art* [my emphasis]. I set myself the task of investigating the remains of ancient buildings that have survived despite the ravages of time and the cruelty of the Barbarians, and finding them much worthier of study than I had first thought, I began to measure all their parts minutely and with the greatest care".¹³ In Palladio's relatively short treatise there are as many as seventy-two mentions of the name of Vitruvius and twenty-three reconstructions in Books I-III of ancient buildings described by Vitruvius, of which no fewer than thirteen are included in the Second Book dealing with private palaces and villas (FIG. 3).¹⁴ In the vast and impressive bibliography on Palladio, there is surprisingly little on the direct impact of Vitruvius' *De architectura libri decem* on the *Quattro Libri*. Only Erik Forssmann published in 1966 in the *Bollettino del Centro Internazionale di Studi di Architettura "Andrea. Palladio"* a short article entitled "Palladio e Vitruvio". Modern scholars have either focused on the influence of specific classical buildings and their details on Palladio's architecture¹⁵ or on the collaboration of Palladio with Daniele Barbaro for his 1556 and 1567 Venetian editions of Vitruvius. Barbaro's commentaries have indeed been studied in great detail by architectural historians since Wittkower's pioneering volume *Architectural Principles in the Age of Humanism* published by the Warburg Institute in 1949. Erik Forssman, Manfredo Tafuri, Vincenzo Fontana, Manuela

13. Palladio 1570, Book I, *Proemio ai lettori*, 5: "Da natural inclinatione guidato mi diedi ne i mei primi anni allo studio dell'architettura: e perche sempre fui di opinione che gli Antichi Romani come in molt'altre cose, così nel fabricar bene habbiano di gran lunga avanzato tutti quelli, che dopo loro sono stati: mi proposi *per maestro e guida Vitruvio* [my emphasis]: il quale è solo scrittore di quest'arte; & mi misi alla investigatione delle reliquie de gli Antichi edificij, le quali malgrado del tempo, & della crudeltà de' Barbari ne sono rimase. & ritrovandole di

molto maggiore osservazione degne, ch'io non mi aveva prima pensato, cominciai a misurare minutissimamente con somma diligenza ciascuna parte loro ...".

14. On Palladio and Vitruvius, see especially the recent book by D'Evelyn 2012.

15. See the numerous studies on this subject by Howard Burns or the recent book by Gros 2006a.

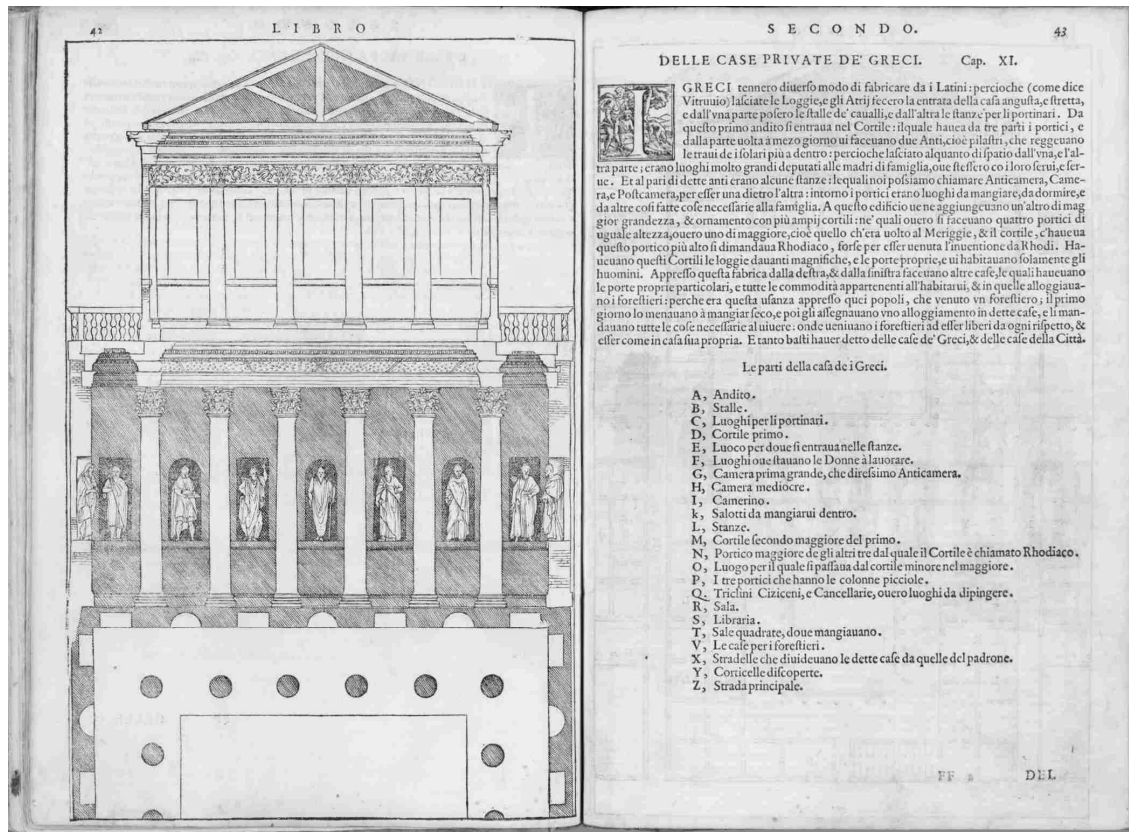


FIG. 3 – Andrea Palladio, *Reconstruction of the Egyptian Hall after Vitruvius*, From *I Quattro Libri dell'Architettura*, Libro Secondo, “Delle Sale Egittie”, page 41 (Photo: Centro Internazionale di Studi di Architettura “Andrea Palladio”, Vicenza).

Morresi, Annette Becker, Pierre Caye, Margaret M. D'Evelyn, Branko Mitrović, James Ackerman and Robert Tavernor have all published studies on Barbaro's commentaries on Vitruvius or related topics, and have contributed to the study of Palladio.¹⁶ In addition, I have myself published several significant studies on Barbaro's commentaries.¹⁷ Only the topic related to Palladio and Vitruvius' Roman House has been investigated in some detail by Linda Pellecchia and Pier Nicola Pagliara,¹⁸ but a comprehensive account of the influence of Vitruvius on the *Quattro Libri* as a whole is still lacking and of fundamental importance for the understanding of Palladio's relationship to the Classical past.

16. See Tafuri 1987, XI-XL; Morresi 1987, XLI-LVIII; Morresi 1998, 263-280; Ciapponi 1976, III, 399-409; Forssman 1966, 68-81; Fontana 1985, 39-72; Fontana 1978, 49-72; Becker 1991; D'Evelyn 1994; D'Evelyn 1998-1999, 157-174; D'Evelyn 1996, 83-104; Caye 1995; Mitrović 1996; Mitrović 1998, 667-688; Tavernor 2003, 105-133; and Ackerman 1996, 1-5.

17. Cellauro 2000, 87-134; Cellauro 2000/I, 45-57; Cellauro 2004, 293-329; Cellauro 2011b, 5-18. I also published a complete catalogue of Palladio's illustrations for Barbaro's 1556 and 1567 editions of Vitruvius (see Cellauro 1998, 55-128).

18. See Pellecchia 1992, 377-416 and Pagliara 1972, 23-37.

The purpose of this paper is to attempt to assess the Vitruvian legacy in Palladio's treatise, in focusing more particularly on its composition, style, and vocabulary, and leaving other aspects of his Vitruvianism, such as his architectural theory and the five canonical orders, for consideration in subsequent publications. The composition, style, and vocabulary of the *Quattro Libri* are important issues which contribute to an assessment of the extent of Palladio's adherence to the Vitruvian prototype in an age of imitation of classical literary models.

I - Composition

The creation of the *Quattro Libri* was a long-term project. It was well under way by 1555, the year Anton Francesco Doni mentions it in *La seconda libreria* as a work in progress, under the title "*Norme di vera architettura*".¹⁹ The work is referred to again by Daniele Barbaro in his 1556 edition of Vitruvius,²⁰ and by Giorgio Vasari in his 1568 edition of *Lives of the Most Excellent Painters, Sculptors and Architects*.²¹ The library and archives of the Correr Museum in Venice hold a manuscript datable to the period 1561-1565 with major sections of Books I-III (Cod. Cicogna 3617).²² Palladio's treatise was originally issued in two volumes by Domenico de' Franceschi, in 1570: *I due libri dell'architettura* (books I-II) and *I due primi libri dell'antichità* (books III-IV) (FIG. 4), but was quickly reorganized as a unified treatise in four books.

As is well known, Palladio's *Quattro Libri* is an incomplete treatise, only interrupted by his death, and it is likely that he planned to publish ten books, in explicit emulation of Vitruvius' *De architectura libri X*. Palladio writes in this respect: "I shall discuss therefore, private houses, and will then proceed to public buildings. I shall deal briefly with roads, bridges, squares, prisons, basilicas (that is places of judgement), xysti, palestrae, which were places where men took exercise, temples, theatres and amphitheatres, arches, baths, aqueducts, and finally I shall deal with the fortifications of cities, and harbours".²³ Palladio refers in his treatise occasionally to his "Books on Antiquities"²⁴ and to his "Book on Arches".²⁵ Gualdo stresses that Palladio "prepared the materials for another book [or more likely for other books], including many designs of Ancient Temples, Arches, Tombs, Baths, Bridges, Towers, and other public buildings of Roman

19. Doni 1555, 155: "[Palladio] ha scritto et disegnato molte e bellissime cose pertinenti a tutte le sorte di edifizij, le quali è grandissimo peccato che non si stampino. E 'l libro non ha titolo, ma quello che in esso si può imparare, si può chiamare *Norme di vera architettura*."

20. Barbaro 1556, 279: "sapendo che presto verrà in luce un libro delle case private, composto dal Palladio".

21. Vasari 1987, 198 [Sansovino's life]: "E perché tosto verrà in luce un'opera del Palladio, dove saranno stampati due Libri d'edifizii antichi et uno di quelli ha fatto egli stesso edificare, non dirò altro di lui, perché questa basterà a farlo conoscere per quello eccellente architetto ch'egli è tenuto da chiunque vede l'opere sue bellissime".

22. The codice Cicogna 3617 has been published in "Dai

Tre Libri' ai 'Quattro Libri dell'Architettura' con una 'Aggiunta' al 'Primo Libro', in Palladio 1988, 57-105; and Palladio 2005.

23. Palladio 1570, Book I, *Proemio ai lettori*, 6: "Io dunque tratterò prima delle case private, & verrò a' publici edificij; e brevemente tratterò delle strade, de' i ponti, delle piazze, delle prigioni, delle Basiliche, cioè luoghi di giudicio, de' i Xisti, e delle palestre, ch'erano luoghi, ove gli huomini si esercitavano, de' i Tempj, de' i Theatri, & de' gli Anfiteatri, de' gli Archi, delle Terme, degli Acquedotti, e finalmente del modo di fortificar le Città, & de' i Porti".

24. See Palladio 1570, Book I, 19 and 52.

25. See Palladio 1570, Book I, 19 and 51.



FIG. 4 – Andrea Palladio, *Title-Page*, from *I due primi libri dell'Antichità*, Venice, 1570, London, British Library, 50.f.7 (Photo: Author).

antiquity. Just when he was ready to have it printed he was overtaken by death, and all these noble efforts remained in the hands of his most devoted friend, the Venetian patrician [and influential senator] Sir Giacomo Contarini – who, as a great patron of such works, had a very beautiful studio in his house at Venice that was filled with the most beautiful things. But since that Senator died in turn everything was dispersed, and there has been no means of recovering the slightest bit of it.”²⁶ It is likely that in the original publishing project the number of books on

26. Gualdo 1959, 93-104 (particularly 94): “Avendo posto all’ordine un altro libro nel quale si contenevano molti disegni di Tempj Antichi, Archi, Sepulture, Terme, Ponti, Specole, ed altri pubblici edifici dell’Antichità Romana; e mentre era pronto per farlo stampare, essendo soprapreso dalla morte restarono tutte queste sue nobili fatiche in mano del sig. Giacomo Contarini, Nob. Veneziano suo intrinccchissimo amico, come quello

c’haveva gran gusto di simili professioni avendo in Venezia un bellissimo studio ripieno di bellissime cose. Ma venendo a morte anco il detto Senatore, il tutto s’è smarrito né vi è stato rimedio poter ritrovare cosa alcuna”.

Roman antiquities would have more or less matched those related to contemporary practice. The books on public buildings [Book III], temples [Book IV], arches, theatres and amphitheatres, baths, and aqueducts, comprising six distinct books, would have been combined with those of direct relevance to contemporary practice, such as the treatment of the orders [Book I], private palaces and villas [Book II], urban fortifications, and harbours. Many of Palladio's extant drawings, preserved at the Royal Institute of British Architects, and at the Museo Civico in Vicenza, may be connected to this publishing programme. Palladio seems to have followed the footsteps of Leon Battista Alberti (1404-1472), whose *De re aedificatoria* (written between 1448 and 1452, although printed only in 1485) consciously echoes the *De architectura* in its ten-book organization.²⁷ Similarly, the first and earliest version of the treatises of the Siennese architect, sculptor, painter, and engineer Francesco di Giorgio Martini (1439-1501), known as *Trattato I* (c. 1481-84), also comprises ten books, and is represented by the codices, Turin, Biblioteca Reale, *Codex Saluzziano 148*, and Florence, Biblioteca Medicea Laurenziana, *Codex Ashburnham 36*.²⁸ The later and revised version of the treatise – known as *Trattato II* (c. 1494) – is reduced from ten to seven books, and no longer follows the Vitruvian “classical” ten-book organisation as revived, before Francesco di Giorgio, by Alberti, and which Palladio later may have also had in mind when composing his treatise. At the beginning of the seventeenth century, Vincenzo Scamozzi (1548-1616) also organized his treatise *L'Idea dell'Architettura Universale* of 1615 in ten books as an explicit reference to Vitruvius' treatise.²⁹

Palladio did not apparently plan to include books on gnomonics and on mechanical technology in his projected treatise, despite the Vitruvian tripartite division of architecture as enunciated in Book I. iii. 1-2 of the *De architectura*: “The parts of architecture are three: *Aedificatio* or Building [Books I-VIII], *Gnomonica* or Dialing [Book IX], and *Machinatio* or Mechanics [Book X]”.³⁰ In his commentaries, Barbaro referred repeatedly to this Vitruvian tripartite scheme and considered also gnomonics or dialing and mechanical technology discussed in books IX-X as important subjects for contemporary architectural practice. Books IX-X, however, provided Barbaro with the opportunity to display his deep and encyclopaedic mathematical knowledge acquired in the Arts Faculty at Padua, for example, in hydraulics, astronomy, gnomonics, pneumatics and mechanical technology. This last subject was characterized by Barbaro as the “third principal part of architecture, which deals with the theory and practice of machines and scientific instruments; a beautiful, useful and marvelous part”,³¹ a subject most popular among the Venetian élite and Barbaro's circle, as it was of Italian humanists. In his commentaries on books IX and X, he cites Greek mathematical texts well-known to him, such as the pseudo-Aristotelian *Mechanica* and Hero's mechanical works, of which he completed an Italian translation with illustrations, now apparently lost.³² Although Palladio seems to have shared this interest in mechanical technology

27. On Alberti's treatise and its debt to Vitruvius, see the classic study by Krautheimer 1963, 42-52.

28. For Francesco di Giorgio Martini's treatises, see Martini 1967. For a critical appraisal of his treatises, see Fiore 1998, 66-86.

29. Scamozzi 1615.

30. See Granger 1934, vol. I, 32: “Partes ipsius architecturae sunt tres: aedificatio, gnomonice, machinatio”.

31. Barbaro 1567, 439: “terza parte principale dell'Architettura posta nella cognitione, & nella dispositione delle machine, & de gli strumenti, bella, utile, & meravigliosa pratica”.

32. See Argellati 1767, 290: “Erone Alessandrino degli Automati, traslati, emendati e figurati: Opera di Monsignor Daniello Barbaro MS”, and Barbaro (1567, 466): “... noi per diletto posto havemo nella lingua nostra I libri di questo autore [Hero]”.

Palladio seems to have shared this interest in mechanical technology with Barbaro,³³ he did not follow Vitruvius's tripartite division of architecture in including books on mechanical technology and gnomonics to echo the classical treatise and prototype.

II - Style

Palladio's and Vitruvius's treatises diverge on the important point that Palladio's chosen language was not Latin but the Tuscan *vernacolare*. It is not even known whether Palladio had enough knowledge of Latin to read Vitruvius. In the mid-fifteenth century, Leon Battista Alberti wrote the first treatise on architecture since antiquity to be circulated in Latin. This is both a commentary on and a modernization of Vitruvius's *De architectura*. Alberti's *De re aedificatoria* was written around 1452 and published for the first time in 1485, with subsequent Latin editions published in Paris in 1512 and in Strasbourg in 1541. It was probably meant to be read by learned patrons and antiquarians rather than used by practising architects, texts in Latin being confined to the educated elite. The first printed Italian translation, by Pietro Lauro of Siena, did not appear until 1546. Lauro's translation was, however, almost immediately eclipsed by a cleaner and more accurate version by Cosimo Bartoli, printed in Florence in 1550. Sebastiano Serlio's treatise on architecture in seven books, Books I–V, the *Extraordinario*, and Book VII, *On Accidents*, was published in separate parts between 1537 and 1575 in Venice, Paris, Lyons and Frankfurt. It was one of the first modern treatises on architecture to be published in Europe in a vernacular language and with illustrations. In the mid-sixteenth century, the Tuscan *vernacolare* was indeed increasingly used in books on architecture and on the other arts, culminating in Daniele Barbaro's 1556 Italian edition of Vitruvius, Serlio's treatise in seven books, the 1546 and 1550 Italian translations of Alberti's *De re aedificatoria*, Giacomo Barozzi da Vignola's *Regola delli cinque ordini* (1562), and Giorgio Vasari's *Le Vite de' più eccellenti pittori, scultori, e architettori* (Florence, 1550/1568).

The new Renaissance tradition of the architectural illustrated treatise, which appears to originate with Francesco di Giorgio, was not rooted in what Renaissance architects knew of the classical tradition, as embodied by Vitruvius' treatise. Unillustrated in the surviving medieval copies (the oldest is British Library, Harley 2767, ninth century),³⁴ it was probably assumed

33. See Burns *et al.* 1975, 177: "A brief passage in Giuseppe Ceredi's *Tre discorsi sopra il modo d'alzar acque da' luoghi bassi* (Parma, 1567) indicates that Palladio concerned himself not only with the design of villas and their farm complexes, but also with mechanical technology. Ceredi had been shown by Palladio a "very excellent" and still unpublished "machine for raising water to a medium height", which "had already been praised by the most honourable signor Marcantonio Barbaro, brother of the most reverent and learned Patriarch Elect of Aquileia, to whom rightly these

Venetian nobles refer judgement on almost all mathematical works". Palladio's machine is praised for its practicality by Ceredi, who makes it clear that it is some sort of Archimidean screw".

34. To this day some one hundred manuscripts of Vitruvius are known which date from the ninth to the fifteenth century. Only three date from the ninth to the eleventh centuries; more were copied after the twelfth century, and a larger number during the fifteenth century. See Krinsky 1967, 36-70.

during the Renaissance that Vitruvius' original manuscript had long since disappeared and that through the repeated process of copying, the illustrations had become more and more distorted, and eventually lost.³⁵ Many architects during the Renaissance were worried by this absence. It gave reason for suspicions like those raised by Antonio da Sangallo the Younger (1484-1546), who suggested that Vitruvius gave his manuscript to Augustus Caesar but kept the drawings for himself, so that "architetti ignoranti" in the imperial court could not steal his secrets.³⁶

However, like many other technical treatises of ancient times, the *De architectura* did originally include drawings, as is indicated within the text by the words *forma*, *schema*, *diagramma*, or *exempla*, and almost all appeared at the end of each book of the *De architectura* (*in extremo libro*), with the exception of two, which were found in *ima pagina* (at the bottom of the page).³⁷ All these drawings have been lost and the few sketches found in the margins of medieval Vitruvius manuscripts – with the exception of the wind-rose which appears in two of the oldest manuscripts³⁸ – are based purely on imagination and have no authenticity. Throughout *De architectura* drawings must have been few and far between. Less than ten illustrations are actually mentioned, from Book I to Book IX, while Book X contains no reference at all to an illustration. Pierre Gros has argued that Vitruvius chose to use drawings only when he had some difficulty in expressing clearly in words the procedure to follow when building an element of structure or decoration, as in the cases of the *entasis* or the *scamilli impares*.³⁹ It can therefore be concluded that Vitruvius' treatise was originally virtually unillustrated and so in this respect Francesco di Giorgio's treatises were not like it. Alberti's unillustrated treatise was closer in its form to the *De architectura* than Francesco di Giorgio's.

In following a pattern not immediately provided by Vitruvius in his *De architectura*, Francesco di Giorgio invented a new type of illustrated treatise, from which descend almost all the later sixteenth-century printed architectural books, including Palladio's. If Serlio's or Palladio's treatises appear remote in their layout from Francesco di Giorgio's, the latter certainly served as a starting point on which to improve and perfect. From illustrations confined to the outer margins of the page in Francesco di Giorgio's treatises (FIG. 5), sixteenth-century treatises evolved towards the full-page illustration, of which Palladio had 158.⁴⁰ A similar evolution appears in the techniques of representation, which shifted from the frequent use of linear perspective and the "cavalier" projection in Francesco di Giorgio's illustrations to the systematic use of the orthogonal projection, for plans, elevations, cross-sections, and architectural details, as in the illustrations of the treatises of Daniele Barbaro, Giacomo Barozzi da Vignola (1507-1573), and Palladio. Moving away from the predominance of text over illustrations in Francesco di Giorgio's treatises, Serlio and later Vignola and Palladio emphasized the illustrations over the text. In this respect, Palladio attempted to reduce the length of the written text to a strict minimum, limiting his comments accompanying the plates of his treatise to a few practical and

35. See Thoenes 2003, 14.

36. Thoenes 2003, 14.

37. For a detailed study of Vitruvius' original illustrations, see Gros 1997, 19-44; and Vitruve 1990, LXII-LXV.

38. On the probable authenticity of the drawing of the rose of the winds (I, 6, 12) which appears in two of the oldest manuscripts, see Vitruve 1990, 184.

39. For Francesco di Giorgio's role in the development of the Renaissance illustrated treatise, see Cellauro 2011a, 185-211.

40. For Francesco di Giorgio's role in the development of the Renaissance illustrated treatise, see Cellauro 2011a, 185-211.

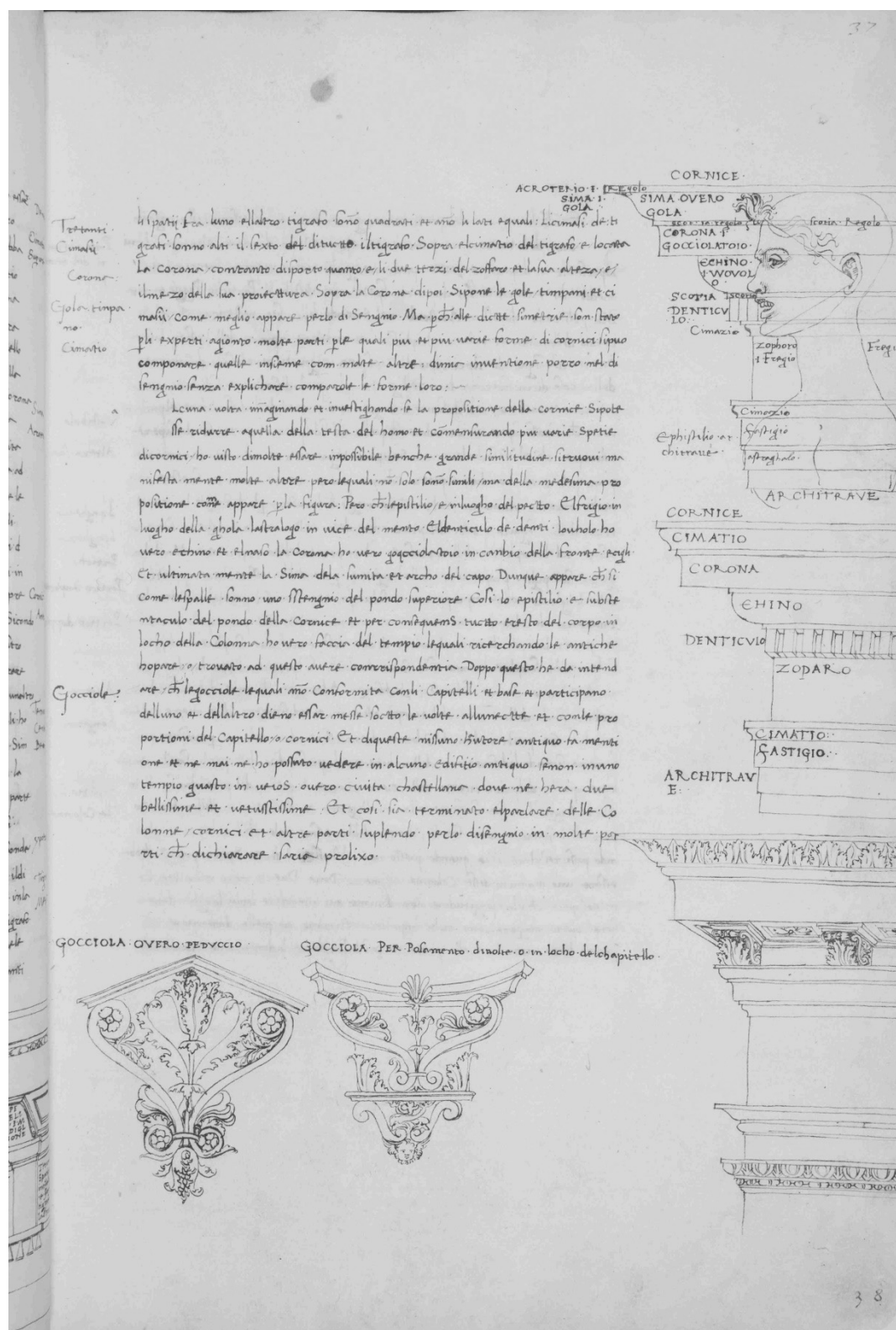


FIG. 5 – Francesco di Giorgio Martini, *Anthropomorphic interpretation of an entablature and Corbels*, from Codex Magliabechianus II. I. 141, Folio 37r, Biblioteca Nazionale Centrale, Florence (Photo: Biblioteca Nazionale Centrale, Florence).

theoretical matters of relevance to practising architects. In the proem of Book I, Palladio writes “In all these books *I shall avoid being long-winded* [my emphasis] [*fuggirò la lunghezza delle parole*] and will simply provide the advice that seems essential to me”,⁴¹ and in the proem of Book IV: “I will, as usual, talk *briefly* [my emphasis] about those rules that must be adhered to when building temples”.⁴² Palladio in fact applies to the short text of the *Quattro Libri* Vitruvius’s own stylistic tenets for architectural writing, expressed in the proem of the fifth Book of the *De architectura*: “even in our studies, the topic would allow this: namely, that in this treatise also, amplification would afford greater weight of authority. But that is not so convenient as it is thought. For writing about architecture is not like a history, or poems. Histories, of themselves, hold the reader. For they offer the varied prospects of novelty. Again in poems, the measures and feet of the music and the nice arrangement of words and opinions, the recital of verses distributed among the several characters, entice the thoughts of the reader and, without hindrance, lead him on to the very close of the book. But in architectural compositions this cannot take place. For the terms, used by the special necessity of the craft, by their unfamiliar sound seem obscure to the perception. Since therefore they of themselves are not obvious, nor is the nomenclature clear by customary use, so further the casual expression of rules – unless they are collected and explained in a few lucid phrases – renders uncertain the notions of the reader: for repetition and a cumbrous style are a hindrance. And while I enumerate, in accordance with the parts of buildings, the obscure terms and measurements, I will expound them briefly, so that they may be remembered. For thus the mind will be able to receive them more conveniently”.⁴³ Vitruvius defended brevity in architectural writing on the grounds of the unfamiliarity of the terms employed, and because a statement of rules in a few lucid phrases was the best way to make them memorable. Another reason for brevity, according to Vitruvius, was that an architectural treatise lacked the natural hold which a history book exercised over its readers owing to the continuous prospect of some novelty, and did not have the advantage of poetry which enticed readers to its end by the artifice of “meters and feet”, a device which a textbook could not employ. Brevity was, therefore, among the Vitruvian recommendations for the literary style to be adopted in architectural writing that Palladio applied to his treatise, and in this, he echoes Daniele Barbaro, who on several occasions makes similar comments. For example, Barbaro writes in his Vitruvian commentaries: “We will explain what Vitruvius meant with as much concision and clarity as is possible in dealing with such difficult matters”⁴⁴ “...When teaching a skill, one cannot use complex language or make the discussion too elaborate, because one would never finish. And, by dealing with a topic at length, the information would become more difficult to commit to memory as well as difficult to organise. In teaching, therefore, one needs to be brief...”⁴⁵ and elsewhere “I have sought not a

41. Palladio 1570, Book I, *Proemio à i lettori*, 6: “Et in tutti questi libri io fuggirò la lunghezza delle parole, & semplicemente darò quelle avvertenze, che mi parrano più necessarie”.

42. Palladio 1570, Book IV, *Proemio à i lettori*, 4: “Io brevemente, come son solito, dirò quelle avvertenze che nel edificare i Tempj si devono osservare”.

43. See Granger 1934, vol. II, 252-253.

44. Barbaro 1567, 428: “Noi esponeremo la mente di

Vitr[vio] con quella facilità & brevità che si può in cose tanto difficile”.

45. Barbaro 1567, 204: “perche non e lecito nello insegnare un’Arte, ampliarsi, & usare circuiti di parole, perche non si finirebbe mai, & tirandosi la cosa in lungo non servirebbe alla memoria, alla quale si conviene con la brevità, & con l’ordine porgere aiuto. Bisogna adunque insegnando esser breve”.

sophisticated style of writing, but rather [discerning] choice”.⁴⁶

It should also be stated that Palladio does not seem to have applied to his Italian text a variety of registers in the way that Vitruvius does for the Latin: high style for the prefaces or proems, middle style for the stories, low style for the technical discussions.⁴⁷ Indeed one of the keys to the *De architectura*’s enduring appeal is its ability to bridge the yawning social gap between the Roman patricians to whom Vitruvius explicitly addressed his treatise and the plebeians and slaves who were often the real masters of its various arts and crafts. Vitruvius’s written style, properly divided into high, middle, and low registers appropriate to a didactic *commentarium*, may have been enough to satisfy its varied readership.

As far as style is concerned, Palladio’s treatise can therefore be characterized as Vitruvian in its alleged application of the literary concept of brevity, although at the same time it is distinctly non-Vitruvian – as were Francesco di Giorgio’s treatises – in the large number of illustrations that it included. Despite the profound transformation of the Renaissance treatise during the course of the sixteenth century, Francesco di Giorgio must be credited with initiating the tradition of the Renaissance illustrated treatise, of which Palladio’s *Quattro Libri* appears as the peak of a century-long evolution and progress.

III - Vocabulary

The search for an appropriate Italian architectural vocabulary was an important issue for those attempting to find the appropriate terms to describe ancient architecture and its details. Renaissance architects were thus led to compare the ancient ruins with the terms used by Vitruvius in order to understand the meaning of his often obscure Latin vocabulary and then to translate those words intelligibly. The Milanese architect and painter Cesare Cesariano (1475-1543), who in 1521 published the earliest translation of Vitruvius, was largely forced to puzzle out the meaning on his own.⁴⁸ Characteristically, when a Latin word used by Vitruvius eluded him, he simply Italianized it, which usually meant no more than putting it into the ablative case. Valiantly he might try to explain its meaning in his commentary, but the translation itself remained, on occasion, a peculiar hybrid between Classical Latin, and Milanese *vulgare*.⁴⁹

In the preface to Book I, Palladio says that in his own treatise he will use the terminology employed by workmen, and in practice he is remarkably faithful to this policy, consistently seeking to use the vernacular. While dependent for many of his descriptions of ancient structures and architectural detail on Daniele Barbaro, who often gives Greek, Latin, Italian and even French names for architectural terms, Palladio tends to avoid the Vitruvian Greco-Latin vocabulary, where possible using Italian equivalents. This is particularly evident in his translation of the Vitruvian term *entasis* by *gonfiezza*, while the term *architrave* is used consistently by Palladio,

46. Barbaro 1567, 64: “ho cercato non l’ampiezza delle parole, ma la eletione & la chiarezza delle cose”.

47. See especially Nilsson Nylander 1992; and Callebaut 1972, 31-46.

48. The exact title of this edition of Vitruvius is *Di Lucio Vitruvio Pollione de architectura libri dece traducti de*

latino in vulgare raffigurati: commentati et in mirando ordine insigniti (Cesariano 1521).

49. A useful study on the question of vernacularizing classical terminology is Rowland 1998, 105-122. There are also several important studies by Marco Biffi, and it may be useful to consult Nencioni 1995, 7-33.

who never turns to the Vitruvian *epistilio*. His decision to use the vernacular is clear in his discussion of the architectural orders: the terminology he adopts is that of the Tuscan tradition which was being formulated in the sixteenth century, with rare concessions to Vitruvian Latinisms.⁵⁰ To take an example, we might consider the terminology for the Doric column: *vivo della colonna, cimbria, bastone di sopra, cavetto co' listelli, bastone di sotto, plinto overo zocco, cimacia, dado, basa, imposte degli archi*; for the entablature: *gola diritta, gola riversa, ovolo, cavetto, capitello del triglifo, metopa, tenia, prima fascia, seconda fascia, soffitto del gocciolatoio*; and for the capital: *cimacio, abaco, ovolo, gradetti, colarino, astragalo, cimbria*. The Tuscan matrix was such that some of these terms would be added to the *Vocabolario degli Accademici della Crusca* (which would become the key reference for written Italian in the following century) starting with the first edition in 1612: for example, *gocciolatoio, ovolo* (besides, of course, common/literary terms such as *colonna* and *capitello*). Combing through the entries we also find *gola rovescia*, while many terms that were never absorbed in the *Vocabolario degli Accademici della Crusca* would be added to Baldinucci's *Vocabolario dell'Arti del disegno* (for example, *cavetto*) and from there, in some cases, to the fourth edition of the *Vocabolario degli Accademici della Crusca* (an example being *gola*). In Baldinucci's dictionary one also finds many Vitruvian Latinisms: *metopa, triglifi, plinto, tenia, abaco*. Palladio's technical vocabulary is characterized, therefore, by an attempt to adhere to the Tuscan model that was slowly becoming established during the second half of the sixteenth century, the same vocabulary that dominated Barbaro's translation, and that would spread throughout Italy together with various terms of Vitruvian origin.

Curiously, Palladio also declares that he will use the Vitruvian terms in Book IV for ancient Roman temples, because it would be confusing if he did not and that in any case such terms "seem to have been adopted by our vernacular language, and which everyone understands".⁵¹ In connection with the seven types of temples described by Vitruvius, Palladio made use of a Greco-Latin vocabulary, as in *antis, prostilos, amphiprostilos, peripteros, dipteros, pseudodipteros, and hypethros*.⁵²

Similarly, for the five Vitruvian species of intercolumniation, Palladio adopted the technical terms of *areostilos, picnostilos, sistilos, eustilos, and diastilos*.⁵³ He concludes his comments by stating that he will also use this Vitruvian terminology in the accompanying woodcut illustrations.⁵⁴

Conclusion

The Vitruvian legacy in Palladio's *Quattro Libri*, as far as composition, style, and vocabulary are concerned, can only be seen in the division of his treatise in proems, chapters and books, and in the application of Vitruvius' own stylistic tenets for architectural writing. The many reconstructions after Vitruvius' descriptions in the Second and Third Books seem to serve to

50. See especially Biffi 2008.

51. Palladio 1570, Book IV, 9: "paiono già esser stati ricevuti dalla nostra lingua, e da ciascuno intendono".

52. Palladio 1570, Book IV, 7-8.

53. Palladio 1570, Book IV, 8-9.

54. Palladio 1570, Book IV, 9: "e però mi servirò ancho di loro ne i disegni de i Tempj che seguiranno".

imprint an *all'antica* character to Palladio's treatise. Despite his claim, Palladio's attitude to Vitruvius leaves a margin wide enough to permit him to raise the ancient treatise to the level of an authority and to choose Vitruvius as "master and guide", while allowing him to remain to some extent independent and not simply an inflexible adherent of Vitruvius.

Vitruvius, both a practising architect and the author of an architectural treatise, probably provided Palladio and other Renaissance architects with the ideal figure of an ancient Roman architect to emulate. This would have encouraged Palladio to plan to write a treatise from the time of his association with Trissino in the late 1530s. If his busy last decade and his death in 1580 had not prevented him from carrying out his full publishing programme, Palladio's completed treatise would have resonated among his contemporaries as a new *De architectura libri X* of the Renaissance age, paralleling in completeness Alberti's earlier *De re aedificatoria*, with the significant difference that it would have been fully illustrated. If Palladio could have implemented his publishing project in full, his legacy would certainly have been even more extensive and varied than it is, because the transmission of his architecture was mainly due to his illustrated treatise and its translation into many European languages.

Acknowledgements

I warmly thank John Newman, Charles Hope, and Michael Kauffmann for their corrections and suggestions to an early version of this paper.

Louis Cellauro

German Centre for Venetian Studies in Venice

Venice, Italy

Collegium Helveticum (ETH Zurich and Universität Zurich)

lcellauro@hotmail.com

BIBLIOGRAPHY

- Ackerman, J.S. 1996: "Daniele Barbaro and Vitruvius", in *Architectural Studies in Memory of Richard Krautheimer*, Striker C. L. (ed.), Mainz.
- Alberigo, G. 1964: "Barbaro, Daniele", *Dizionario biografico degli Italiani*, 6, Rome.
- Argellati, F. 1767: *Biblioteca degli Volgarizzatori, o sia Notizie dall'Opere Volgarizzate che scrissero in lingua morte prima del secolo XV*, vol. IV, Milan.
- Barbaro, D. 1556: *I Dieci Libri dell'Architettura di M. Vitruvio, tradutti et commentati da Mons. Daniele Barbaro eletto Patriarca d'Aquileggia*, Venice.
- Barbaro, D. 1567: *I Dieci Libri dell'Architettura di M. Vitruvio, tradutti et commentati da Mons. Daniele Barbaro eletto Patriarca d'Aquileggia, da lui riveduti et ampliati et hora in più commoda forma ridotti*, apresso Francesco Franceschi sanese e Giovanni Crugher Alemanno compagni, Venice.
- Becker, A. 1991: *Ammerkungen zu Barbaros Vitruv* (PhD thesis), University of Mainz.
- Beltrami, G. 2014: "Palladio, Andrea", *Dizionario biografico degli Italiani*, vol. 80, Rome.
- Biffi, M. 2008: "Osservazioni sulla lingua tecnica di Palladio", in *Palladio 1508-2008: il simposio del cinquecentenario*, Barbieri F. & Battilotti D. (eds.), Venice.
- Burns, H. 2009: "The 'Quattro Libri dell'Architettura': Book Design and Strategies for Presenting and Marketing Palladio's *usanza nuova*", *Saggi di letteratura architettonica da Vitruvio a Winckelmann* (Archivum Romanicum. Biblioteca dell'Archivum Romanicum. Sr. 1. Storia, Letteratura, Paleografia), Di Teodoro F. (ed.), vol. I, Florence.
- Burns, H. 2010: "Palladio and the Planning and Writing of the 'Quattro Libri'", *Saggi di letteratura architettonica da Vitruvio a Winckelmann* (Archivum Romanicum. Biblioteca dell'Archivum Romanicum. Sr. 1. Storia, Letteratura, Paleografia), Burns H., Di Teodoro F. and Bacci G. (eds.), vol. III, Florence.
- Burns, H., Fairbairn L., Boucer B., Arts Council of Great Britain 1975: *Andrea Palladio 1508-1580: The Portico and the Farmyard* (exh. cat.), London.
- Calibat, L. 1972, "Rhétorique et architecture dans le 'De architectura' de Vitruve", *Collections de l'Ecole Française de Rome*, 192, 31-46.
- Caye, P. 1995: *Le savoir de Palladio: architecture, métaphysique et politique dans la Venise du Cinquecento. Précédé du commentaire au "De Architectura" de Vitruve: livres 1, 2 et 3 par Mgr. Daniel Barbaro*, Paris.
- Cellauro, L. 1998: "Palladio e le illustrazioni delle edizioni del 1556 e del 1567 di Vitruvio", *Saggi e Memorie di Storia dell'Arte*, 22, 55-128.
- Cellauro, L. 2000/I: "Disegni di Palladio e di Daniele Barbaro nei manoscritti preparatori delle edizioni del 1556 e del 1567 di Vitruvio", *Arte Veneta*, 56, 45-57.
- Cellauro, L. 2000: "Daniele Barbaro and his Venetian editions of Vitruvius of 1556 and 1567", *Studi Veneziani*, n.s. 40, 87-134.
- Cellauro, L. 2004: "Daniele Barbaro and Vitruvius: The Architectural Theory of a Renaissance Humanist and Patron", *BSR* 72, 293-329.
- Cellauro, L. 2011a: "Francesco di Giorgio and the Renaissance Tradition of the Illustrated Architectural Treatise", in *Reconstructing Francesco di Giorgio Architect*, Hub B. & Pollali A. (eds.), Frankfurt am Main, Berlin, Bern, Brussels, New York, and Oxford.
- Cellauro, L. 2011b: "Giuseppe Porta's *Allegory of Architecture* for Daniele Barbaro's 1556 Edition of Vitruvius", *Storia dell'Arte*, 129, 5-18.
- Cesariano, C. 1521: *Di Lucio Vitruvio Pollione de architectura libri dece traducti de latino in vulgare raffigurati: commentati et in mirando ordine insigniti*, Como.
- Ciapponi, L. 1960: "Il *De Architectura* di Vitruvio nel primo Umanesimo", *Italia Medievale e Umanistica*, 3, 59-99.
- Ciapponi, L. 1976: "Vitruvius", in *Catalogus Translationum et Commentariorum. Medieval and Renaissance Translations and Commentaries*, Cranz E. F. (ed.), III, Washington DC.
- D'Evelyn, M.M. 1994: *Word and Image in Architectural Treatises of the Italian Renaissance* (PhD thesis), Princeton University.
- D'Evelyn, M.M. 1996: "Venice as Vitruvius's City in Daniele Barbaro's Commentaries", *Studi Veneziani*, n.s. 32, 83-104.
- D'Evelyn, M.M. 1998-1999: "Varietà and the Caryatid Portico in Daniele Barbaro's Commentaries", *Annali di Architettura*, 10-11, 157-174.
- D'Evelyn, M.M. 2012: *Venice and Vitruvius: Reading Venice with Daniele Barbaro and Andrea Palladio*, New Haven, Connecticut.
- Doni, A.F. 1555: *La seconda Libreria*, Venice.
- Fiore, F.P. 1998: "The 'Trattati' on Architecture by Francesco di Giorgio", in *Paper Palaces, The Rise of the Renaissance Architectural Treatise*, Hart V. & Hicks P. (eds.), New Haven, Connecticut.
- Fontana, V. 1978: "'Arte' e 'esperienza' nei trattati di architettura veneziani del Cinquecento", *Architettura*, 7, 49-72.
- Fontana, V. 1985: "Il Vitruvio del 1556: Barbaro, Palladio, Marcolini", in *Trattati scientifici nel Veneto fra il XV e XVI secolo: saggi e studi*, Vicenza.
- Forssman, E. 1966: "Palladio e Daniele Barbaro", *Bollettino del Centro Internazionale di Architettura "Andrea Palladio"*, 8, 68-81.
- Granger, F. (ed.) 1934: *Vitruvius on Architecture* (The Loeb Classical Library), 2 vols., Cambridge (MA) and London.
- Gros, P. 1997: "Les illustrations du *De architectura* de Vitruve: histoire d'un malentendu", in *Les littératures techniques dans l'antiquité romaine*, Nicolet C. (ed.), Vandoeuvres.

- Gros, P. 2006a: *Palladio e l'antico*, Venice.
- Gros, P. 2006b: *Vitruve et la tradition des traités d'architecture: fabrica et ratiocinatio. Recueil d'Études* (Collection de l'École Française de Rome, 366), Rome.
- Gualdo, P. 1959: "Vita di Andrea Palladio", *Saggi e Memorie di Storia dell'Arte*, 2, 93-104.
- Krautheimer, R. 1963: "Alberti and Vitruvius", *The Renaissance and Mannerism*, vol. 2, Princeton.
- Krinsky, C.H. 1967: "Seventy-eight Vitruvius Manuscripts", *JWCI*, XXX, 36-70.
- Laven, P.J. 1957: *Daniele Barbaro, Patriarch-elect of Aquileia, with Special Reference to his Circle of Scholars and to his Literary Achievement* (PhD thesis), University of London.
- Lemerle, F., Caye P. & Zara V. (eds.) forthcoming 2015: *Barbaro 500. Architecture, Musique, Peinture, Perspective* (Actes du Colloque du Centre d'Études Supérieures de la Renaissance, 13-15 novembre 2013), Tours.
- Martini, F. di G. 1967: *Francesco di Giorgio Martini. Trattati di architettura, ingegneria e arte militare*, Maltese C. (ed.), 2 vols, Milan.
- Mitrović, B. 1996: *The Theory of Proportions in Daniele Barbaro's Commentary on Vitruvius' De Architectura* (PhD thesis), University of Pennsylvania.
- Mitrović, B. 1998: "Paduan Aristotelianism and Daniele Barbaro's Commentary on Vitruvius' *De architectura*", *Sixteenth Century Journal*, 29/3, 667-688.
- Morresi, M. 1987: "Le due edizioni dei commenti di Daniele Barbaro 1556-1567", *I dieci libri dell'architettura tradotti e commentati da Daniele Barbaro* [reprint of the 1567 Italian edition], Milan.
- Morresi, M. 1998: "Treatises and the Architecture of Venice in the Fifteenth and Sixteenth Centuries", *Paper Palaces. The Rise of the Architectural Treatise*, New Haven, Connecticut and London.
- Nencioni, G. 1995: "Sulla formazione di un lessico nazionale dell'architettura", *Bollettino d'informazioni del Centro di Ricerche Informatiche per i Beni Culturali*, 5.2, 7-33.
- Nilsson Nylander, E. 1992: *Prefaces and Problems in Vitruvius' "De architectura"*, PhD thesis, University of Göteborg.
- Pagliara, P.N. 1972: "La casa romana nella trattatistica vitruviana", *Controspazio*, IV/7, 23-37.
- Palladio, A. 1570: *I Quattro Libri dell'Architettura*, Venice.
- Palladio, A. 1988: *Scritti sull'Architettura (1554-1579)*, Puppi L. (ed.), Vicenza.
- Palladio, A. 2005: *Delle case di Villa (1556 circa-1570); con un appendice su luoghi, materiali e tecniche del costruire*, Puppi L. (ed.), Turin.
- Pellecchia, L. 1992: "Architects read Vitruvius: Renaissance Interpretations of the Atrium of the Ancient House", *Journal of the Society of Architectural Historians*, 51, 377-416.
- Rowland, I. 1998: "Vitruvius in Print and in Vernacular Translation", in *Paper Palaces: The Rise of the Renaissance Architectural Treatise*, Hart V. & Hicks P. (eds.), New Haven, Connecticut.
- Scamozzi, V. 1615: *Idea della architettura universale di Vincenzo Scamozzi divisa in dieci libri*, Venice.
- Serlio, S. 1537: *Regole generali di architettura di Sebastiano Serio sopra le Cinque Maniere degli Edifici*, Venice.
- Tafari, M. 1987 "La norma e il programma: il Vitruvio di Daniele Barbaro", *I dieci libri dell'architettura tradotti e commentati da Daniele Barbaro* [reprint of the 1567 Italian edition], Milan.
- Tavernor, R. 2003: "Brevità without Obscurity. Text and Image in the Architectural Treatises of Daniele Barbaro and Andrea Palladio", in *The Rise of the Image. Essays on the Illustrated Art Book*, Palmer R. & Frangenberg T. (eds.), Aldershot.
- Thoenes, C. 2003: "Introduction", in *Architectural Theory from the Renaissance to the Present*, Köln.
- Vasari, G. 1987: *Le Vite de' più eccellenti pittori, scultori e architettori nelle redazioni del 1550 e 1556*, Bettarini R. & Barocchi P. (eds.), Florence.
- Vitruve, 1990: *De l'architecture. Livre I*, Fleury P. (ed.), Paris.
- Zorzi, G. 1959: *I disegni delle antichità di Andrea Palladio*, Venice.