

# The Value of Measurements, in Desgodets and Palladio

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## Abstract

*In 1682, Antoine Desgodets published Les édifices antiques de Roma dessinés et mesurés très exactement, confirming the imprecision of the data published by the Italian architects of the previous century, singularly by Palladio in his Quarto libro dell'architettura, whose errors he does not cease to denounce in his book. This is a question that raises the confrontation of two attitudes in the face of the knowledge of antiquity that refers to the very objective of architectural representation. Between the indisputable value of data and the ambiguity of intuitive knowledge. Between Desgodets's drawings, of unquestionable quality, but limited to what he can verify, and Palladio's compositions, of an almost radical abstraction, capable of incorporating what Raphael understood as "seeing as painters", without renouncing the orthogonal drawing of plant, section and elevation.*

*Keywords: Antoine Desgodets, Andrea Palladio, fragment.*

## Introduction

In 1674 Antoine Desgodets was sent to Rome to measure its ancient buildings. The commission came from the Minister Jean-Baptiste Colbert, who three years earlier had created [1] the *Académie royale d'architecture*, with the aim of establishing the official doctrine of good architecture. Desgodets' specific mission was to accurately measure the ancient buildings of Rome, as they were then, in order to resolve the discrepancies that had been detected between the data provided by Sebastiano Serlio, Antonio Labacco and Andrea Palladio, and denounced by Roland Fréart de Chambray, in his *Parallèle de l'architecture antique avec la moderne* [Fréart de Chambray 1650]. Colbert aspired to build a system of fixed rules and concrete models that he could apply in state-building policy and that would build

on the undisputed prestige of ancient Roman architecture. Colbert aspired to build a system of fixed rules and concrete models that would be based on the policy of state building and that would be based on the undisputed prestige of the architecture of ancient Rome [Herrmann 1958, p. 23]. Desgodets's exact surveys should allow the proportions of the correct architecture to be deduced, surveys that would be the closest thing for "owning" the building, similar to have plaster copies of the sculptures. Desgodets's work, which was finally published in 1682 [Desgodets 1682], was a radical change from previous surveys, both for its rigor and for the engravings with which he illustrated the results, and for a long time was a model of reference of similar studies. The precision of his

measurements evidenced the errors made by the preceding authors and particularly by Palladio [Palladio 1570], whom he accused of an incomprehensible carelessness and an apparent lack of rigor, while at the same time that this undermined the theoretical basis on which the studies of some of the leading academics were based [Herrmann 1958]. But the knowledge of the exact measurements of the buildings did not change the valuation of them, nor did it affect the prestige of these authors. Nor was the ultimate goal pursued by Colbert achieved because antiquity was not such a perfect system, reducible to precise rules and concrete models, and Colbert continued without "having" the buildings of ancient Rome, nor the rules of "great architecture" [Gros 2010, p. 25] and had to rely on the *pensionnaires* sent to Rome to experience what made them remarkable buildings.

Faced with this apparent crisis, it is worth asking what value the measures had or what was left out of them. The aim here is not to reproduce the analyzes already made on Desgodets' criticisms of Serlio or Palladio, nor on the coherence of the proposals of these authors, but to see how the drawings they published allow us to understand the objectives of their research, comparing some drawings by Desgodets and Palladio, since it is to the latter that the main criticisms of the former are directed. Before starting, two important issues should be considered, so that the formal aspect does not affect the result. First of all, it would not be fair to compare the drawings without taking into account the conditions in which they were made. In the case of Desgodets, it was a specific commission, made in a short period of 16 months, in which he surveyed 49 monuments, although only 25 were published, when he was 21 years old [Lemonnier 1917, p. 216]. In the case of Palladio, as in that of other Renaissance architects, it was the result of a complementary activity to the professional one, dilated in the time, that many began without arriving to complete. A work that Palladio redone when he was already advanced, that he could mature and that he published when he was 62 years old and was already an architect with recognized prestige. Secondly, it must be taken into account that they were published with different engraving techniques, with copper plates, the work of Desgodets, and with wooden plates, that of Palladio, the same technique that was used by Serlio, because, in Venice, the use of woodcut went on longer than in Rome or Paris, which earlier adopted the use of copper plates, with burin or with acid.

## The Pantheon

In addition to the accuracy of the measurements, Desgodets's work is much more extensive, with 302 pages in total, excluding the dedication, the preface and the index, which he uses to show 25 buildings, while Palladio's *Il quarto libro dell'architettura* [2], occupies a total of 123 pages, without considering the prologue or the theoretical introduction, and shows 26 buildings. If, to better understand the differences, we look at one of the buildings, the Pantheon, which both consider the most important [3], the former uses 60 pages to describe it, while Palladio uses only 12. This difference should also be nuanced.

In the 60 pages of the Pantheon, Desgodetz contributes 23 plates, of which 6 occupy two pages each (fig. 1). The remaining pages are of text, although this does not occupy them completely and much of it is used to compare their data with those of Palladio, Serlio and Roland Fréart de Chambray, pointing out their errors and omissions. In no case, nor in the other buildings in the book, does he combine text and image on the same sheet. As in the rest of the buildings, the images are complete orthogonal projections, except for the details of the orders, which, according to the convention, are compositions of parts. These plates are: the ground floor, which includes the drawing of the pavement, the upper floor, composed of the halves of two different levels (that of the attic and that of the beginning of the vault, with the coffering), a front elevation, a lateral one, the longitudinal and the transverse section, in which it composes two halves of opposite orientations (towards the inside and the outside). These are the plates that occupy 2 pages each. Another 2 plates contain the cross section of the portico and the elevation of one of the interior altars, and the remaining 15 are details of orders and ornamental elements. The engravings are of a high graphic quality, with a good definition of contours, an expressive chiaroscuro and a good use of solar shadows, with which curvature and depth are suggested, taking advantage of the capabilities of engraving with copper plates. In some details of capitals, he adds a zenith plan (from below) that he composes with different rooms, in which he removes layers to better understand their composition (fig. 2). In this way, he follows the models that Jacopo Barozzi da Vignola published in the *Regola delli cinque ordini de l'architettura* [4], with the same operation that he applies in the compositions of the upper plans and the cross section. All



Fig. 1. The 60 plates of the Pantheon. Desgodets 1682.

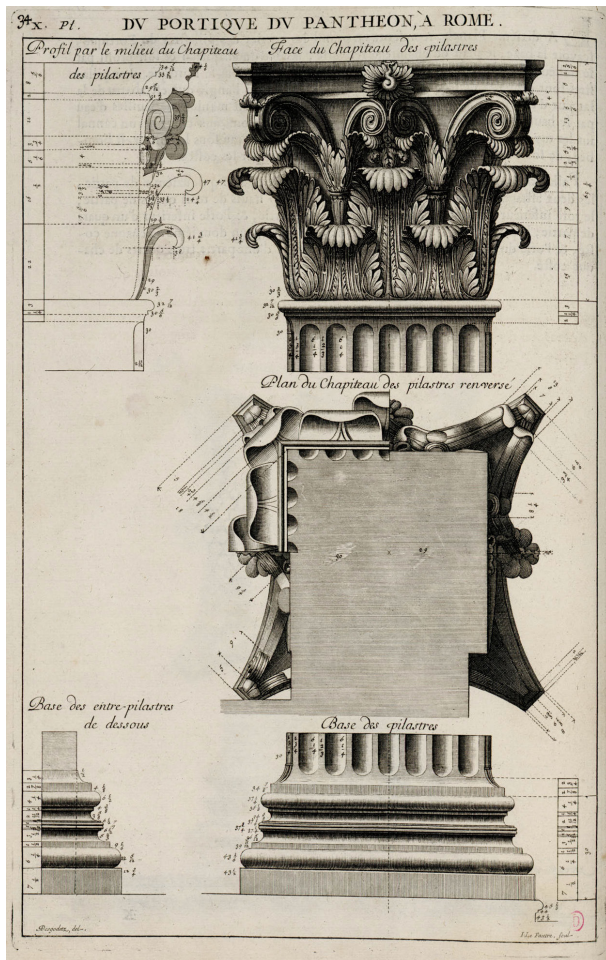


Fig. 2. Pilaster of the portico of the Pantheon. Desgodets | 1682.

the projections completed with abundant measurements, excessive according to its critics, taking into account that it also provides a graphic scale and a drawing of precise contours. Overall, it is a good example of what the drawing of the academies was: the culmination of a process begun in the Renaissance to recover the perception of three-dimensionality that orthogonal projection drawing prevented.

For his part, Palladio does not begin his exposition with the Pantheon and moves it to position 15. Of the 12 pages he uses, 10 are plates with images (fig. 3) and 2 only with text, the first of these with the description of the building and the second with the index of the plates and a concise title for each one. With this reduction of the text, Palladio fulfils what he already announces at the beginning of the *Primo libro*, of avoiding the excess of “words” [5], following the laconic style that Labacco and Vignola had used before. These plates are: the plan, the symmetrical half of the main elevation, the opposite half with the cross section of the portico, the side elevation of the portico and its connection with the cylindrical body, the longitudinal section of the portico and its connection with the interior; the symmetrical half of the cross section, a fragment of the interior elevation, centred on one of the interior altars, and two plates with capitals and other parts of the decoration. As in the rest of the plates in the book, there is limited use of shadows, used to suggest curvature and some change in depth. The incorporation of measures is moderate, taking into account the size of the drawing, except for the plates of the orders, in which they are abundant.

More than the numbers, the important difference between the two approaches is the composition of the plates. Desgodets determines the scale of the projections on the first sheet, the ground floor, leaving an acceptable margin between the projection and the page boundaries. This scale is the one that applies in the rest of the projections of plans, elevations and sections, except in the cross section of the portico, in which the scale is smaller to take advantage of the available space, allowing the drawing to be larger. This portico appears isolated, as if it were an autonomous piece, without references to the main body of the building that could be seen behind. Posed in this way, the projections are more or less centered on the plate [6], with a perimeter margin that is used to locate the dimensions, a graphic scale and the titles. It is a composition that could be

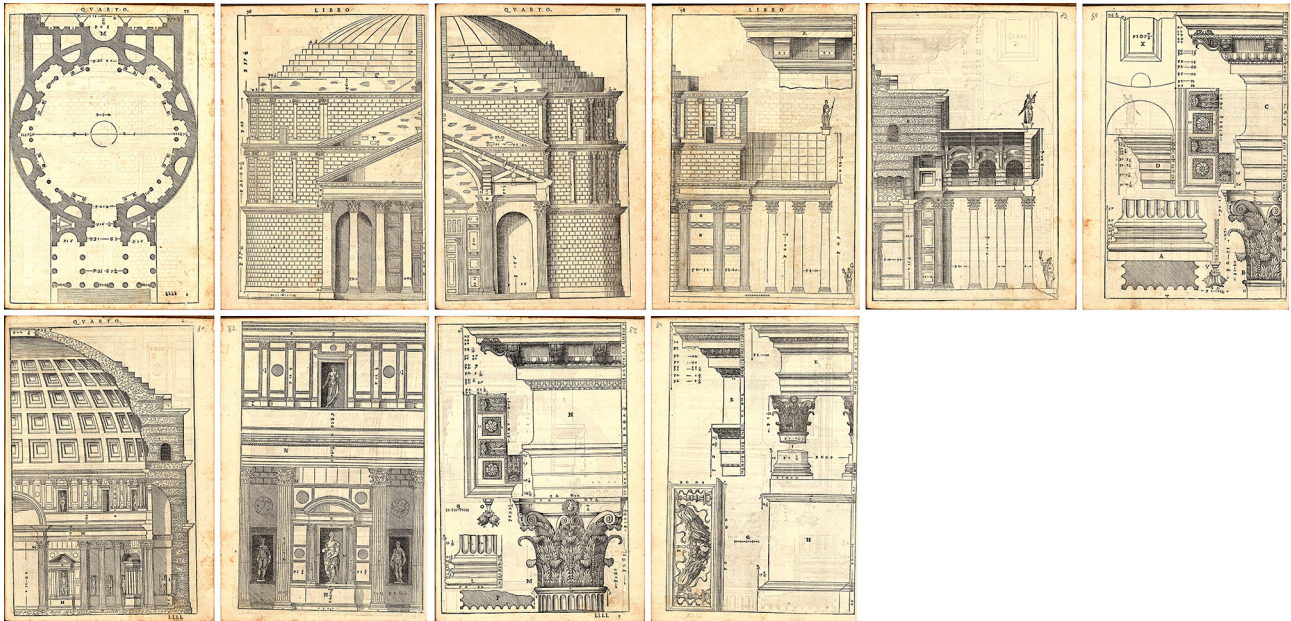


Fig. 3. The 10 plates of the Pantheon. Palladio 1570.

considered conventional. In the plates of the orders, he follows the Vignola model, even in the drawing of the alignments between projections and in the incorporation of a schematic profile of the capital that facilitates the placement of the dimensions.

For his part, Palladio reduces the scale of the projections to the maximum, trying to make the drawing as large as possible, reducing to a minimum the perimeter margin, and draws a rectangular frame adjusted to the final size of the projection, in such a way that sometimes it coincides with the projection lines. Outside this frame is only the title of the book and the page number. In this way he constructs the plate of the Pantheon plan, which shows completely, with the frame “glued” to the lower and upper limits and with the sides tangent to the circle of the plan. The frame appears to make more sense in following plates, with the halves of the front elevation, in which the frame coincides with the “cutting” limit of the projection. By using the page space only for half of the elevation, it achieves that the drawing dimension larger, and by placing

the two halves on facing pages of the book, it offers the reader the complete image of the elevation. This compositional solution had already been tried by Palladio in Daniele Barbaro’s edition of *De architettura* in 1556 [7], solving the problem of composing the two projections in the same drawing [8]. Apparently, Palladio had qualms about it, due to the confusion it could cause in the reader and, when he had to compose them, he did so by faking a break in the façade wall that exposed the interior, which was an image that the reader could understand (fig. 4). A proof that confirms these objections is a drawing from the reissue of *De architettura* by Daniele Barbaro, from 1567, in which a combination of this type was solved by adding two letters over the projections, with a comment that clarified that one part was the elevation and another section (fig. 5) [9]. Unlike Desgodets, Palladio shows the cross section of the portico with the elevation of the rear body of the building, and not isolated, which he could have dispensed with because it already appears, symmetrical but identical, in the previous sheet.

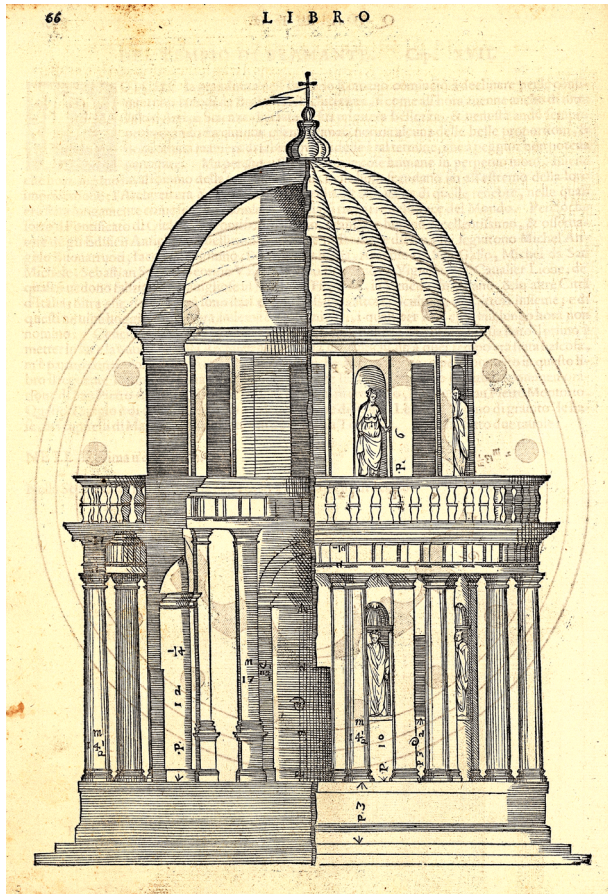


Fig. 4. Bramante's Temple. Palladio 1570, IV, p. 66.

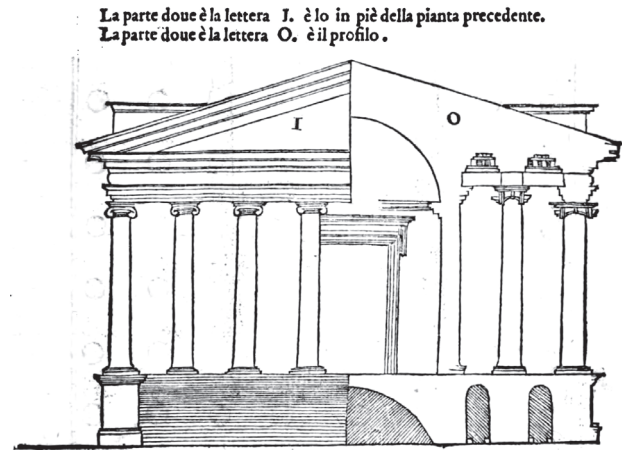


Fig. 5. Elevation and section of a temple. Barbaro 1567, p. 32.

If in the plan and in these elevations, the frame coincides with characteristic limits of the projection (one end or the axis of symmetry), in the next two plates (the side elevation and the longitudinal section of the portico) the projection is not the one that determines the contours of the frame: its dimension and the scale of the projection are those of the previous sheet and, instead, it is the frame that sets the limit of the projection, without coinciding with any singular element of it. Strictly, the frame delimits a fragment whose limits we could consider undefined. Like Desgodets, in the plates of the capitals it also follows the models of Vignola's *Regola* [10].

The graphic exhibition of the plates is consistent with the will to show large images, but with an extreme abstraction that does not soften to adapt the drawing to the usual conventions, despite the originality of the solution, which manages to resolve with an undeniable appeal.

### The fragment

The only cases in which Desgodets shows fragments are, in reality, either buildings that were incomplete by partial demolition, in which he valued showing what was still preserved, or buildings with buried parts that he could not fully measure. But even in those cases what he shows on his plates are full projections. These are cases that should

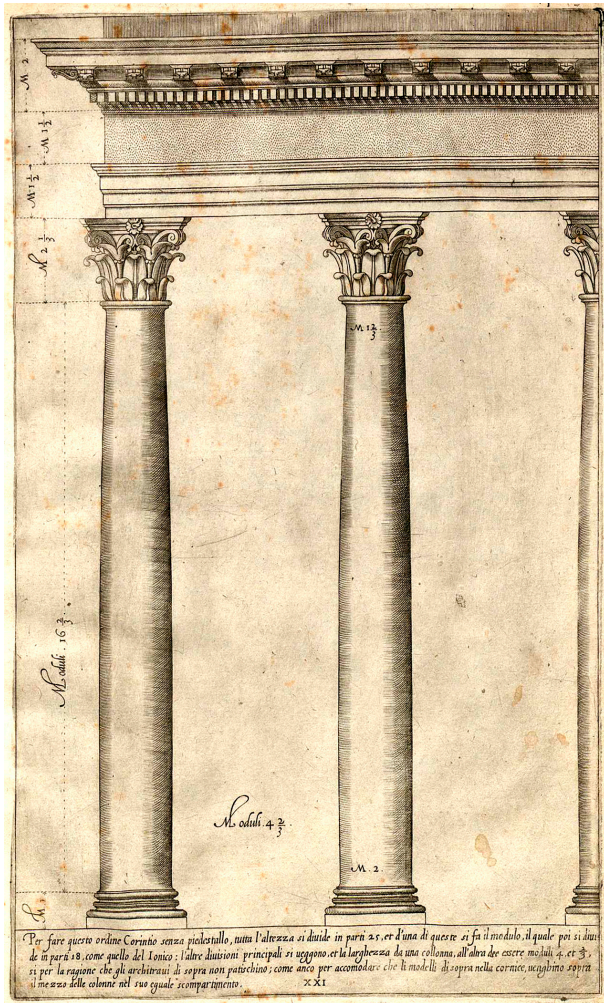


Fig. 6. Corinthian order. Vignola, Regola, lam. XXI.

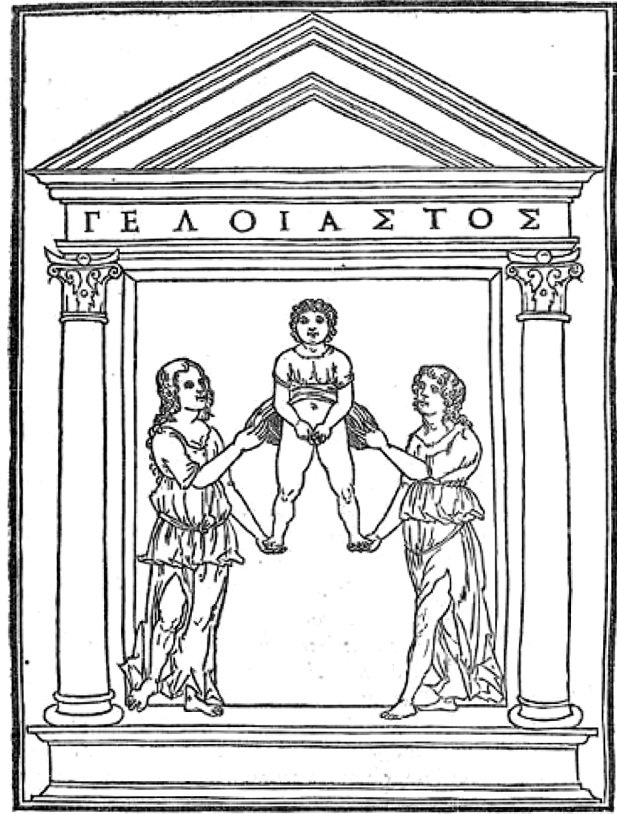


Fig. 7. Colonna 1499, p. 75

not be considered as fragments, in the sense that we are giving here. By contrast, in Palladio's case, the fragment has a singular value that should be noted.

Possibly, due to the long elaboration of *I quattro libri*, all its plates are not resolved in the same way, although they always have a careful composition, which pretends to be uniform in the plates of each book. However, there are some features that are common in most plates, such as the relationship of the frame with the drawing it delimits, the composition of the different projections on the plate and the role of the fragment.

The frames to delimit the drawings had already been used in the editions of Vitruvio's *De architettura*, by Giovanni Gi-

## TRIVMPHVS



## PRIMVS



Fig. 8. Colonna 1499, pp. 153 and 154, faced.

ocondo, in 1511, and Cesare Cesariano, in 1521, although perhaps the most decisive influence was from Vignola's *Regola* [11] (fig. 6), which must also have influenced Palladio's interest in the composition of the sheet, as a fixed system, solid in its construction and effective for communication. Although, strictly, the frame adjusted to the measurements of the drawing has an earlier precedent, in the engravings of the *Poliphili Hypnerotomachia*, by Francesco Colonna, of 1499 [12] (fig. 7), which also contained engravings bound on facing pages that, together formed a single image (fig. 8).

The *Quarto libro* is perhaps the most irregular, with 99 plates of drawings, of which 7 also have text and 83 have frame. Of these 99 plates, 29 are of details of capitals and ornamental elements, 35 plates are conventional plates, with complete images of plan (19), elevation (5), elevation-section (3) or composition of projections (8), and 35 are plates with incomplete projections (fragments). Of the latter, 20 are dihedral compositions of elevation or section with a fragment of the plant that helps to understand them better. I would like to draw attention to 11 of these last plates, in which, to the description of the temple, the environment that surrounds it is added [13]. It should be clarified that they are temples that Palladio rebuilds based

on what is preserved and what he knows about them, but that he could not see complete or standing.

One of these plates is the longitudinal section of the portico of the temple of Nerva Traiano, which Palladio titled *Diritto del fianco del portico, & per gli intercolumnij si vede l'ordine delle colonne che erano intorno la Piazza*, pointing out the two aspects to consider in it (fig. 9) [14]. The temple stands at the end of the Foro de Nerva, or Foro Transitorio, a rectangular "piazza", long and narrow, bounded by a perimeter of columns and a continuous wall behind them (fig. 10) [15]. The plate shows the section of the portico and a fragment of the plan placed below, with no separation margin. The frame coincides with the beginning of the access staircase and extends beyond the wall of the *cella*. As the title makes clarifies, behind the columns of the portico you see the perimeter columns of the square, but the floor plan is not provided: they are only the background that "you see" behind the portico. It is a fragment of the temple in front of a fragment of the perimeter wall, superimposed in an image without depth that, despite the austerity of the graphic resources, compose a drawing that is understood and attractive. It can be deduced that they are entities that complement each other, that exchange reciprocal qualities that make up the same aes-



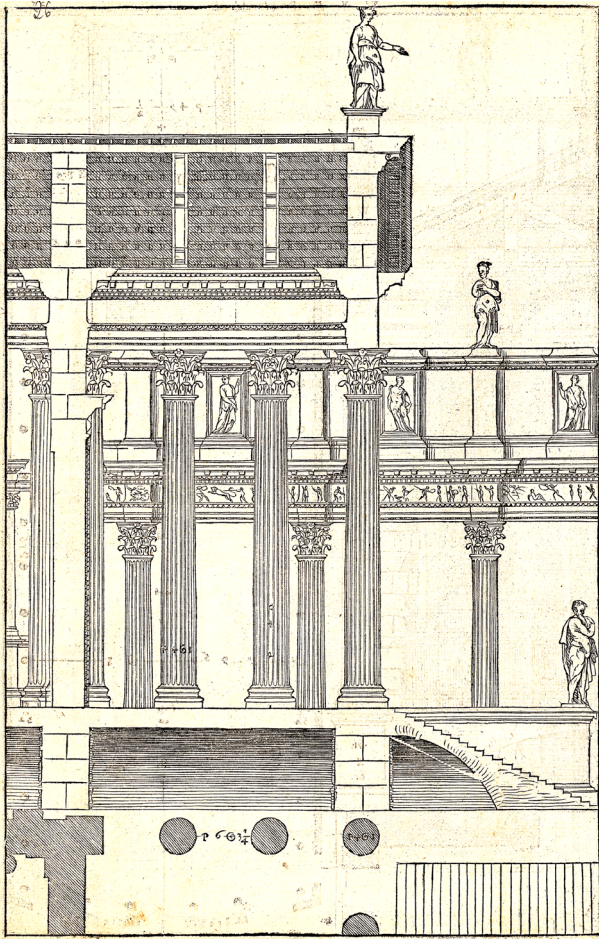


Fig. 9. Portico section of the Minerva's Temple. Palladio 1570, IV, p. 26.

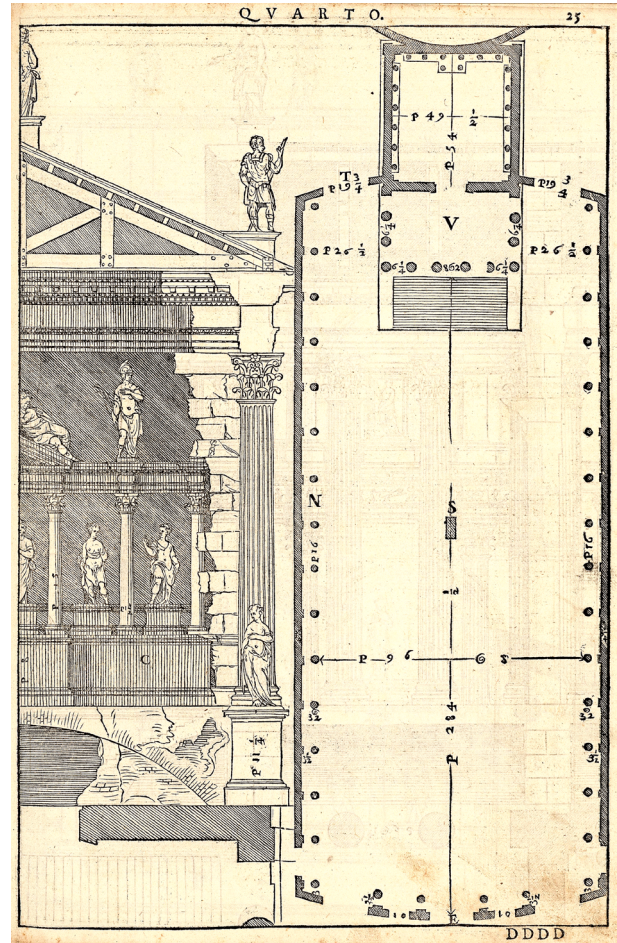


Fig. 10. Elevation of the portico of the temple and plan of the Forum of Nerva. Palladio 1570, IV, p. 26.

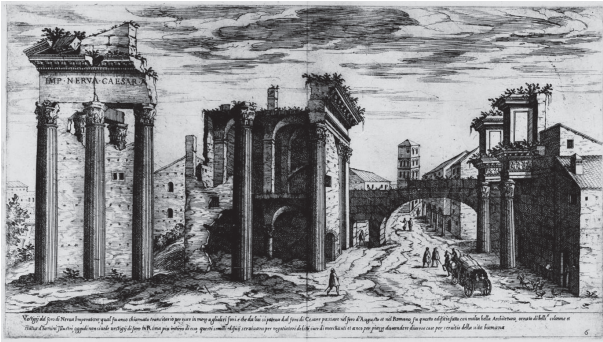


Fig. 11. Forum of Nerva. Dupérac 1575, lam. 6.

thetic experience. Stated in this way, the incorporation of the environment in this section translates the “look of the painter”, to which Raphael referred, into a drawing that does not lose its architectural character. Raphael’s comment was contained in the letter he addressed to Pope Leon X, in fulfilment of the commission that he had given him, around 1515 [16], to draw and measure the buildings of ancient Rome, to deduce how it must have been what had been lost and, from there, try to rebuild it. In the letter, Raphael justifies that he draws them like the architects, in plan, elevation and section, in order to have the exact measurements of the buildings, but that he also does it in perspective, to better understand the distant parts, recommending that this own method of the painter be used also by architects because with it they can better imagine buildings [Bonelli 1978, pp. 482, 483]. It was a comment that was justified in the difficulty of “seeing” the buildings with the architect’s drawings, and in an attitude that had the support of Cicero, who said *that painters see in the shadows and with clarity what others do not see* [17]. But Palladio was an architect and could not literally apply that recommendation. “Seeing as the painters” implied incorporating the presence of the environment, the idea that it conditions the perception and valuation of the building, but also the ability to “see” from the fragments that determine the field of vision, extracting from reality a fragment that allows transmitting the aesthetic content of a relationship.

Currently, of the Foro Transitorio, only two perimeter columns remain, but Palladio could see part of the temple of Nerva (or Minerva) partially standing, as it appeared

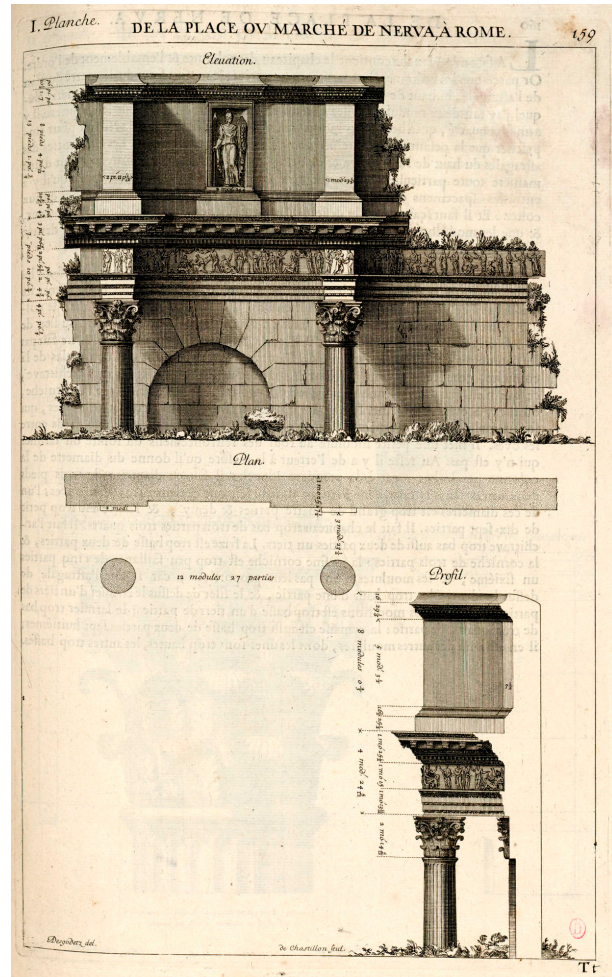


Fig. 12. Forum of Nerva. Desgodets 1682.

in the drawings by Maerten van Heemskerck, Bernardo Gamucci [Gamucci da Gimignano 1565, p. 52] or Étienne Dupérac [Dupérac 1575, p. 6] (fig. 11), before the interventions of Pio V and Paulo V had just brought it down. Desgodets could only see the two current columns and it is the only thing he drew, such that he announced that he would do at the beginning of his book (fig. 12), avoiding venturing the original state. For his part, Palladio, in *Proemio ai Lettori del Quarto Libro*, says that, in a general way, from the remains that are standing of the buildings, from the study of the foundations and with the teachings of Vitruvius, he will deduce how “they must have been when they were whole” [18]. His objective was not to make an exact survey, but to show the shape and ornaments of these temples “so that each one can know in what form the churches should be made and with what ornaments” [19]. His interest was not the antiquity as it stood but “the imagined antiquity” that survives eternal [Gros 2010] and that can continue in modern activity. Based on the knowledge he had of ancient architecture and in view of the parts that were preserved, Palladio could not help deducing what the building must have been like and drawing it, as he says in the prologue of the *Primo libro*: “understand

[the building] and in drawing reduce it” [20]. Palladio’s gaze seems to see beyond what the remains show: it is a critical gaze, which interprets what he sees.

## Conclusion

As Desgodets explains in the prologue to *Les édifices antiques de Rome*, it is very likely that Palladio did not believe that the value of these buildings depended on that precision [21] and that he was looking for something different in them. For Desgodets they were models that he had to measure exactly and in their scrupulous compliance lay the merit of his work. They were the exemplary models that were to allow the rules of good architecture to be set. For Palladio, they were the remains of an incomplete puzzle that could be put back together, the starting point of a reflection that had to allow continuity (Gros 2010, p. 25). The antiquity of Rome was for the most part fragments, buildings in ruins or buried, and the imagination was necessary to put the process back together. As if they were pieces of a “non finito”, which activates the curiosity to discover what is missing.

## Notes

[1] Formally the founder was King Louis XIV, on the initiative of Colbert.

[2] Palladio 1570, divided into four books, the *Quarto* is the one that Palladio dedicates to the ancient temples of Rome.

[3] “le plus entier & le mieux exécuté de ceux qui sont restez jusqu’à notre temps”, according to Desgodets, and the “più celebre [...] che ne sia rimasto più intero, essendo ch’egli si veda quasi nell’esser di prima quanto alla fabbrica”, according to Palladio.

[4] Although the data does not appear on the cover, it has been possible to deduced that it was published in 1562 [Thoenes 2002, p. 333].

[5] “Et in tutti questi libri io fuggirò la lunghezza delle parole”; en Palladio 1570, I, p. 6.

[6] For some reason, the projections are not placed at the same height on all pages.

[7] Barbaro 1556, p. 22 and 23. Palladio is supposed to have drawn the plates.

[8] It must be taken into account that “seeing” the buildings from images as abstract as the plan, the section or the elevation was not easy initially

and combinations of this type were only assimilated from the beginning of the 17th century.

[9] Barbaro, 1567, p. 32. The reissue of 1567 led to a reduction in the format of the pages, from *in-folio* to *in-quarto*, and a reduction of the images. This image replaced two separate ones that, in the 1556 edition, were bound on facing pages.

[10] To the point that one of these plates, the penultimate, is a copy of plate XXVI from Vignola’s *Regola*.

[11] The influence is very evident in the *Primo libro*.

[12] Colonna 1499, a Vitruvian commentary in the form of a novel and the first book related to architecture to be printed with illustrations. Originally written in Latin, around 1467 (Dinsmoor 1942, p. 59).

[13] They correspond to the temples of Marte Vendicatore, Nerva Traiano (or Minerva), Antonino e Faustina, and Giove nel Monte Quirinale.

[14] This is the temple that we now know as Minerva, which was in the Foro Transitorio.

[15] Palladio could see part of the temple of Nerva standing, as it appears in the drawings by Étienne Dupérac or Maerten van Heemskerck,

but currently, from the Forum Transitorium only two columns remain of the perimeter; since Pope Pius V demolished it in the decade from 1560.

[16] The exact date of the commission is not known, but in 1515, the pope appointed him prefect of Rome's antiquity. Before that date he had commissioned Marco Fabio Calvo to translate the book of Vitruvius and the letter to Leon X appears to be from 1519-1520. Between these margins the commission must have been produced.

[17] "Quam multa vident Pictores in umbris et in eminentia quae nos non videmus;" [How many things painters see in the shadows and with clarity that we do not see!], Cicero, *Academica*. Lib. II, VII.

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[18] "dovessero essere quando erano intieri": in Palladio 1570, IV, p. 3.

[19] "dimostrar in questo libro la forma, e gli ornamenti di molti Tempi antichi, [...] accioche si possa da ciascuno conoscere con qual forma si debbiano e con quali ornamenti fabricar le chiese": Palladio 1570, IV, p. 3.

[20] "per potere interamente da quelle, quale fosse il tutto, comprendere, et in disegno ridurlo": Palladio 1570, I, p. 5.

[21] Desgodets's comment contains a certain irony, the result of the "pedantry" with which he exposes his achievements.

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