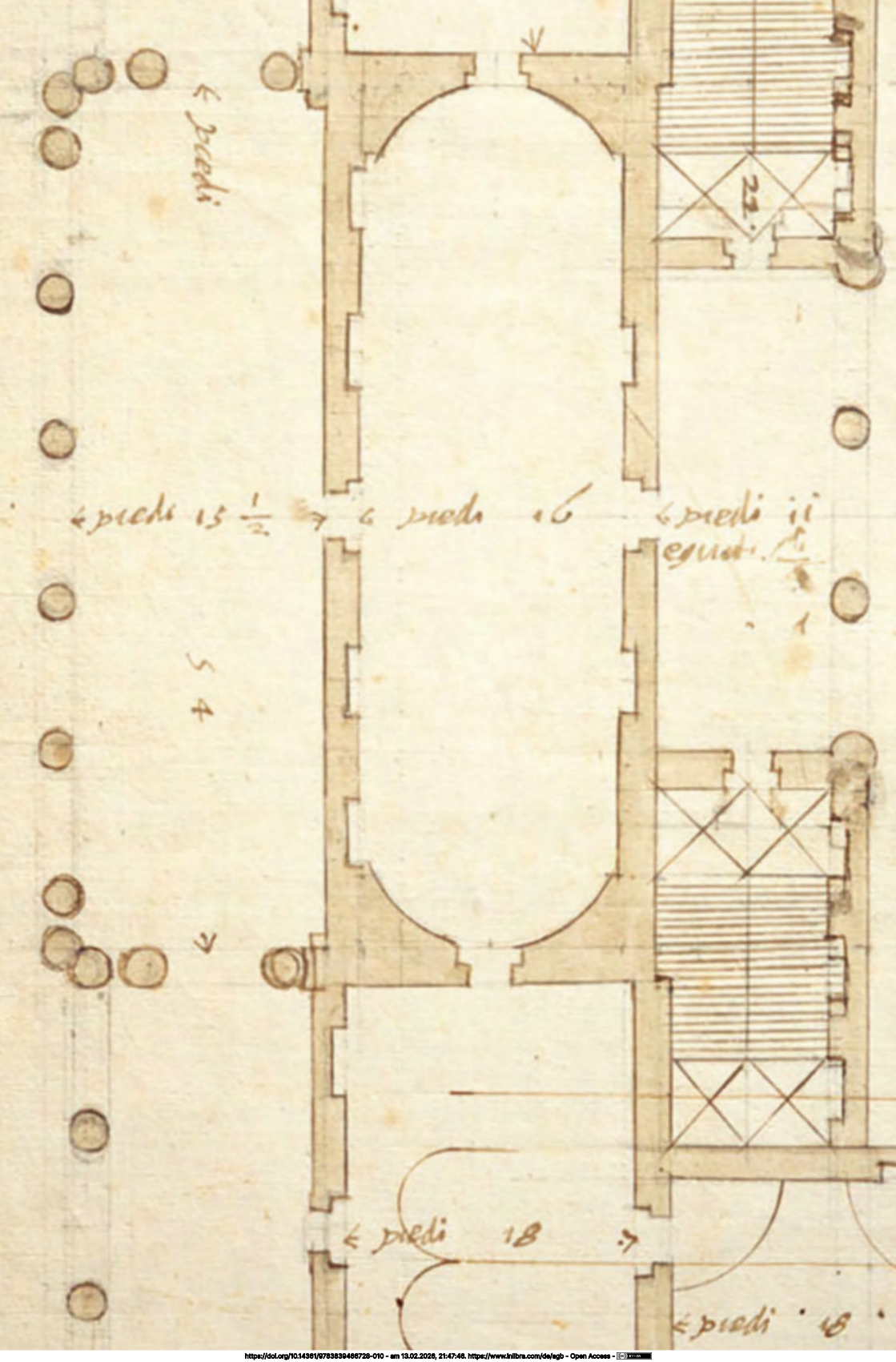


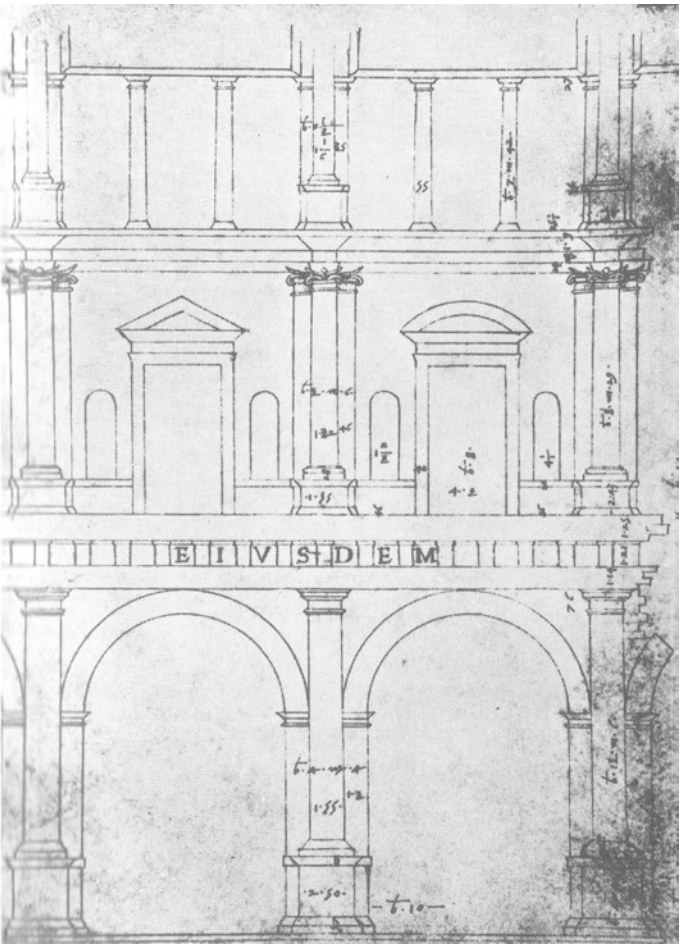
Renata Samperi

Corners and Design Process in Palladio's Architecture

Corners, in architecture, are significant parts that often represent and reveal, in a kind of synecdoche, the character of the structural, formal, and spatial components of the entire work.[1]

In Palladio's work, as with every building involving architectural orders, corner solutions are closely related to the relationship between the orders and the overall building and, in the case of orders engaged to the wall, to the intense interplay between wall and column. This latter idea was a pivotal theme in Renaissance architectural culture, which implicates the relationship between very distinct, yet inevitably connected, fields of construction: support and adornment, structure and form, actual structure and represented structure.[2]

This essay will focus on some remarkable realized buildings, such as Palazzo Chiericati and the Venetian churches of San Francesco della Vigna and Redentore, and on some non-realized projects connected to them.



1
Elevation of the Belvedere Court, according to Bramante's project, London, Soane's Museum, Codex Coner, f. 42.

The Palazzo Chiericati

Engaged orders were extensively employed by the most important architects of the early 16th century and, as we will see, their works—both realized or unrealized—were to have a great influence on Palladio's architecture. Architects like Bramante, Raffaello, and others used engaged orders to achieve a layering of the wall, which created a sense of spatial depth. In this process, half-, or counter-pilasters, placed behind and offset from

2
Rome, Castel Sant'Angelo, aedicule of the Chapel of Santi Cosma e Damiano.

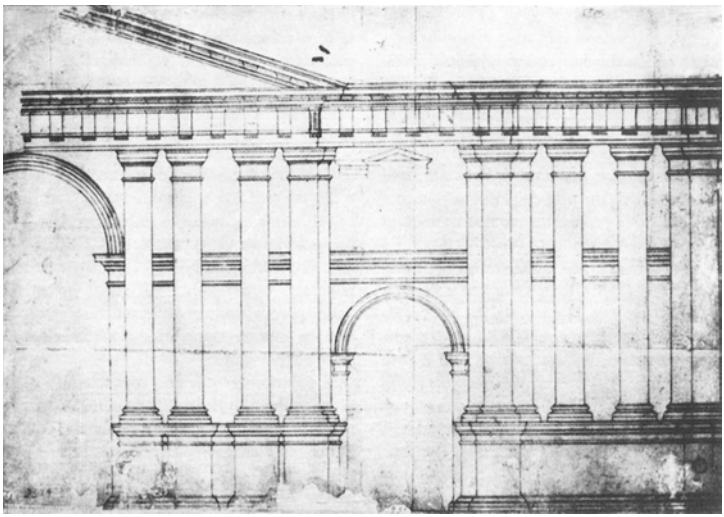
a whole pilaster or a half-column, play a fundamental role. The half-pilaster, or counter-pilaster, is a modern lexical element that did not exist in Antiquity.[3] Bramante used it in the Belvedere Court [fig. 1] and in the choir of St. Peter's, where he employed two half-pilasters set-back symmetrically next to a whole pilaster in order to form a group, as Raffaello did in the Palazzo Jacopo da Brescia. In the short side elevation of this same palazzo, Raffaello used the association of pilasters and half-pilasters to emphasize the aedicula where Leo X's coat of arms was located.[4] In this case, one single half-pilaster was placed beside each edge of the aedicula in order to allow it to slightly project forward.

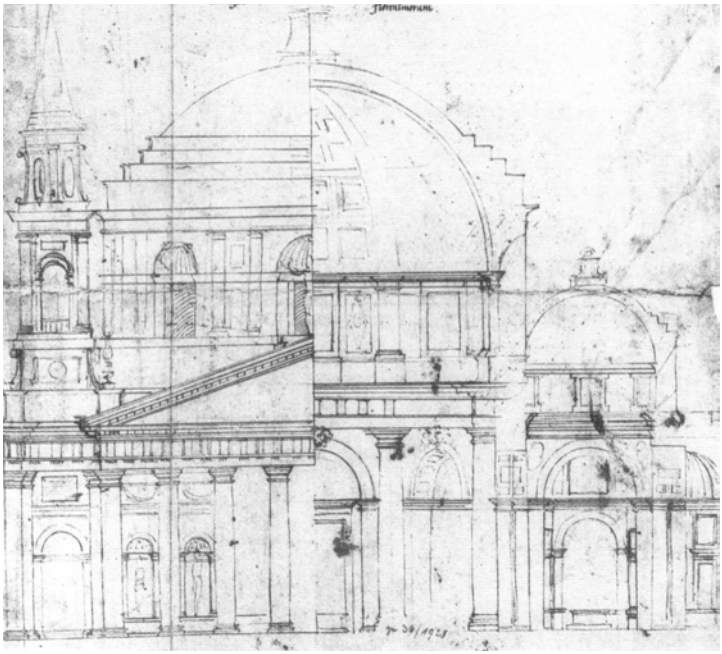
There are some other examples of this solution, such as Leo X's aedicule in Castel Sant'Angelo, by Michelangelo [fig. 2], and the study, attributed to Giulio Romano, for the elevation of the back wall of the courtyard of palazzo Branconio. There an aedicula with half-columns, framing a niche, projects forward from the

3
Vicenza, Palazzo Thiene, detail of the façade.

pilasters, which in turn frame the wall. This composition creates a layering effect which emphasizes the niche.[5] A similar solution appears again in Vicenza, with the slight projection of the corner bays of Palazzo Thiene—an idea that can be attributed to Giulio Romano [fig. 3]. We can find the same motif in projects for numerous church façades, such as a drawing for the façade of St. Peter's which is perhaps one of the first of Antonio da Sangallo's re-imagined versions of Raffaello's projects [fig. 4]. In this case, the combination of pilasters and half-pilasters strengthens the hierarchical dominance of the central pedimented section.[6]

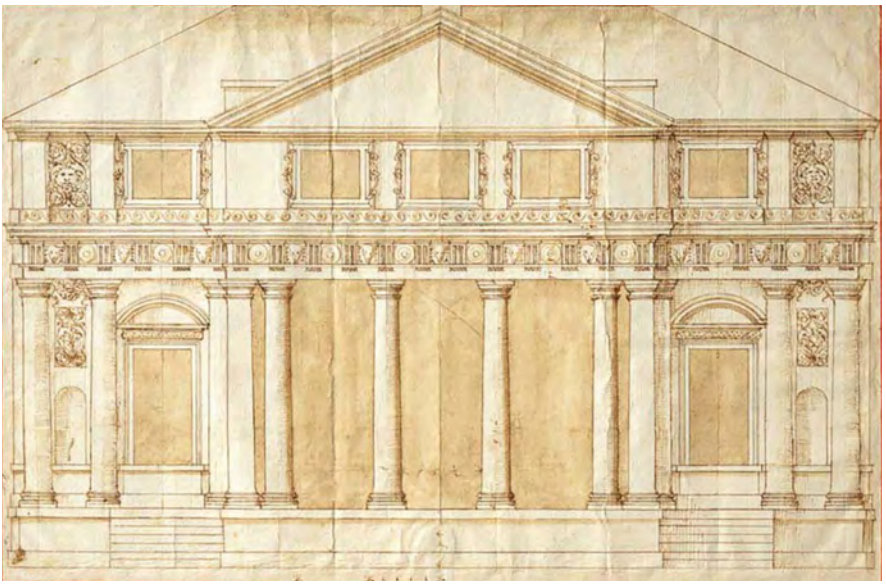
A drawing for the church of San Giovanni dei Fiorentini is even more interesting in relation to Palladio's architecture. It is from the papacy of Leo X and was attributed to Giulio Romano by Manfredo Tafuri, who saw it as a possible re-formulation of





4
Antonio da Sangallo il Giovane, design for the façade of St. Peter's, Florence, Uffizi, Gabinetto Disegni e Stampe, 275Ar.

5
Anonymous of the XVI century (G. Romano?), design for San Giovanni dei Fiorentini, Munich, Stadtmuseum, 36/1928 b.

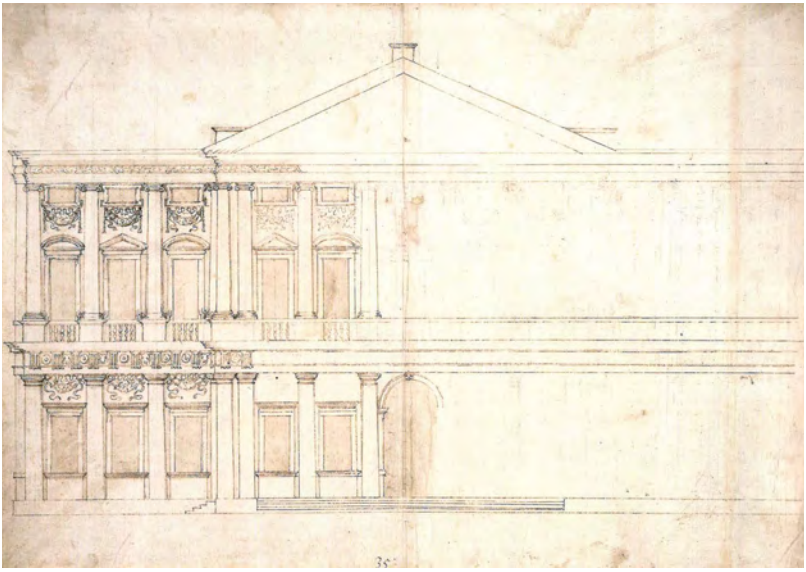


Raffaello's ideas[7] [fig. 5]. According to the plan reconstructed by Tafuri, the façade was intended to have a real pronaos, projecting from the building with a pier at the edges and a half-pilaster on the wall.[8] Following this, there would have been a switch from a multi-layered wall to a three-dimensional structure containing actual physical space. It is clear that in this case, the drawing in orthogonal projection may correspond to different solutions in the plan: the one just described but also one with an engaged pronaos, as seen in some of the preceding projects. In elevation, on paper, the column types are interchangeable: piers, round columns, square columns, half-columns, and pilasters.

The lesson learned from these examples appears to have been very appealing to Palladio, as a drawing—maybe from the end of the 1540s—demonstrates. It is about the elevation of a villa. Devoid of a corresponding plan, it has been identified by Guido Beltramini as villa Repeta at Campiglia dei Berici[9] [fig. 6]. As suggested by the two flights of stairs at the sides of the loggia, the corresponding plan, reconstructed by Beltramini, features a central loggia projecting from the flanking wings. As in the

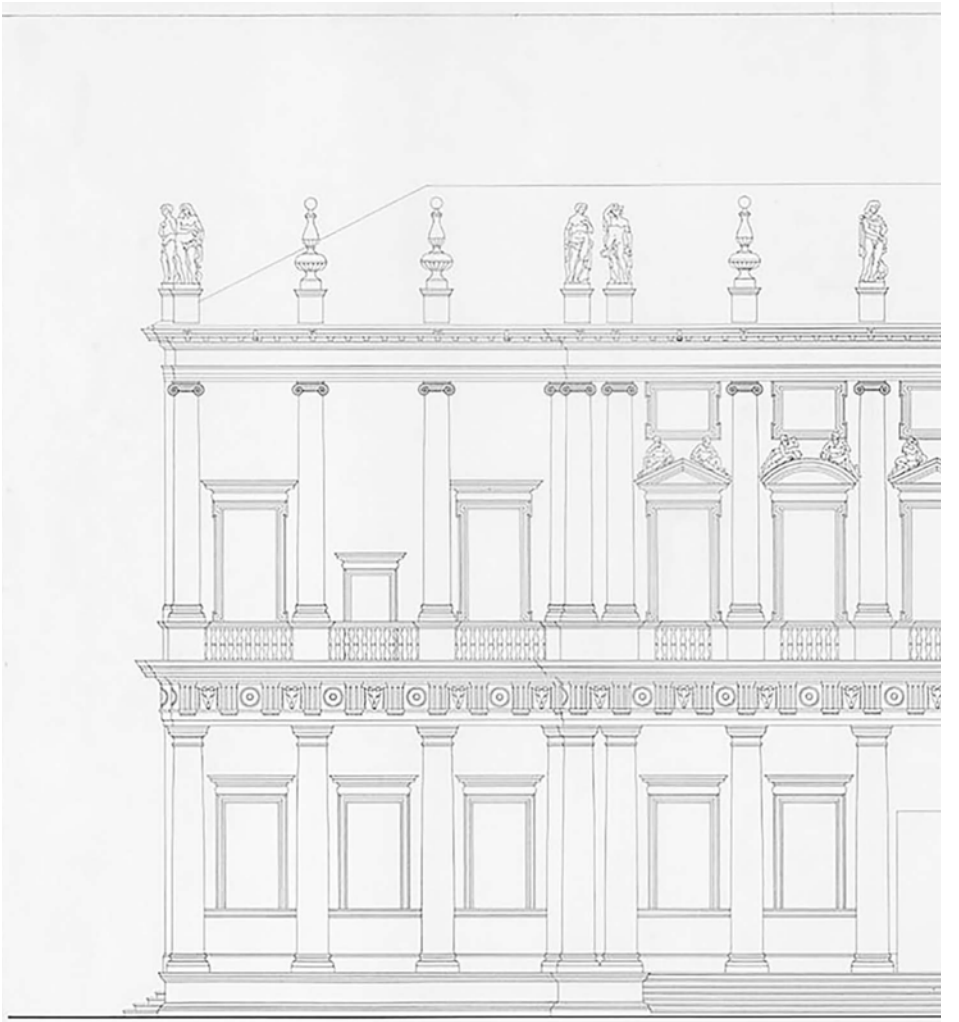
6
Andrea Palladio, design for Villa Repeta at Campiglia, elevation, 1547/48, London, RIBA, XVII, 21r.

7
Andrea Palladio, design for Palazzo Chiericati, elevation, 1550, London, RIBA, Burlington Devonshire coll., VII, 11r.



preceding drawing, in correspondence to the loggia projection, there is a pier at the outside corner at the edge of the pronaos and a half-pilaster at the inside corner on the wall. However, apart from the stairs, the general design might also represent an engaged loggia, and the column types might be different, as the alternative proposal of a quarter of a column drawn at the inside corner on the right suggests.

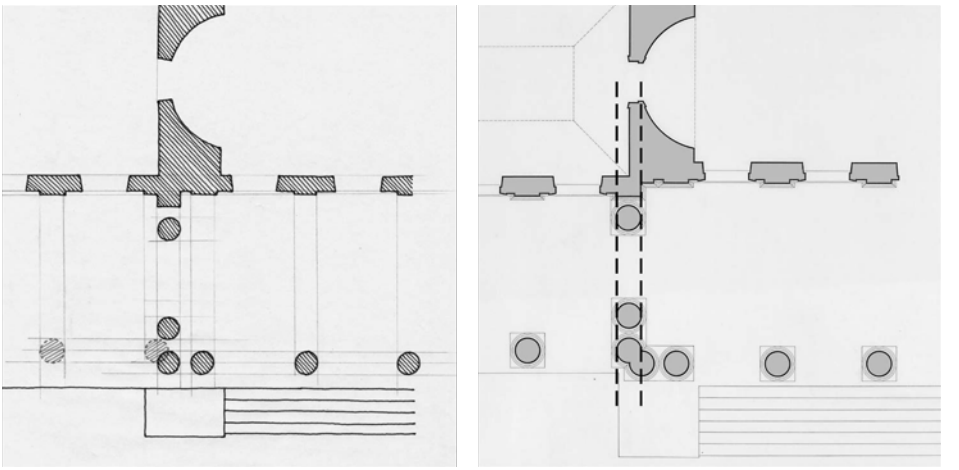
This same kind of façade recurs in the first project for Palazzo Chiericati, from 1550. It features a huge central block projecting from the wings, crowned by a pediment and provided with an open loggia on the ground floor[10] [fig. 7]. In the ambiguous representation in orthogonal projection, the steps that give access to the loggia on its short side are the clue for deducing the existence of the loggia itself in the central section. The entire façade is framed by two superimposed orders. Again, an element, interpretable as a half-pilaster, defines the passage between the wings and the central block. Based on this same elevation in orthogonal projection, different hypotheses for the plan are possible.



8
Vicenza,
Palazzo Chiericati,
Southern view of
Eastern elevation,
Detail,

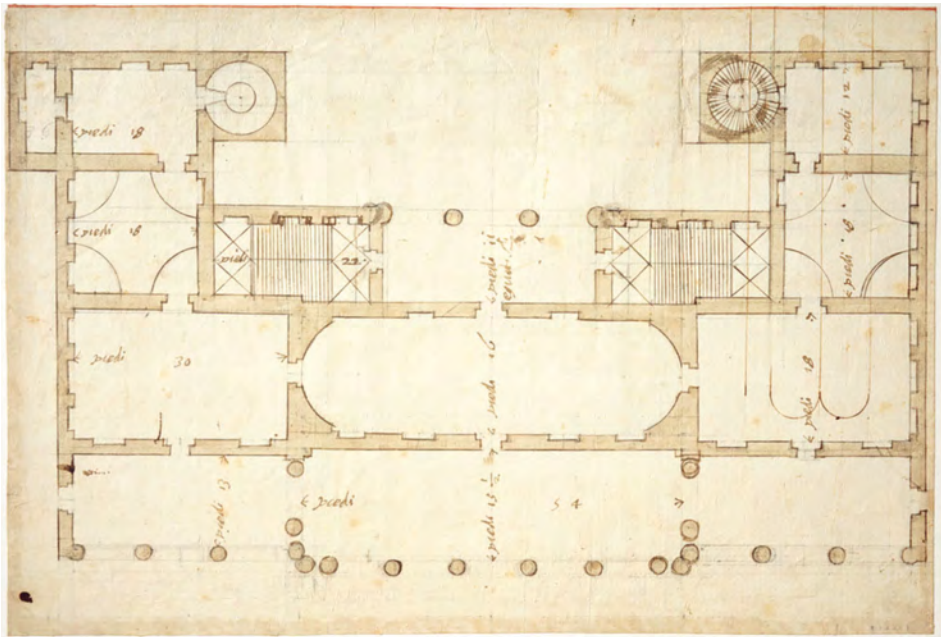
9
Vicenza,
Palazzo Chiericati,
view of the façade.

Later, when the project was changed to provide a loggia on the ground floor along the whole façade and side loggias on the upper floor, the elevation of the façade remained the same in the drawing in orthogonal projection, except for the elimination of the pediment and some dimensional and proportional changes [fig. 8–9]. However, in the new volumetric layout, the orders, earlier engaged to the wings, were conceptually moved forward from the wall to extend the colonnades of the loggias along the entire lower story and the upper side wings. On both stories, the central five bays project forward through two interlocking free columns at each end of the central section. These columns originate from the organization of the orders in the first project: namely the association of the back-set half-pilaster on the corner between the lateral wing and the central block, and the round or square column in the foreground.



10
Vicenza, Palazzo Chiericati, detail of the plan of the ground floor. Left: simulation of the change of design. Right: survey of the actual building; the dotted lines indicate the misalignment between columns and interior wall. Illustration by the author.

The change of design was not without consequences for the layout of the building and the relationship between the loggia and the interior.[11] It is possible to simulate this change by assuming that—as in the executed building—in the first design, two free columns were placed at the outside edges of the central loggia. These two columns were to be planned in line with the interior wall. However, the forward displacement of the pilasters of the wings results in the interlocking of the columns as executed, but also causes an unsatisfactory and disorderly grouping of the shafts at the junction point between the central section and the sides of the loggia. To solve this problem, it would have been sufficient to move the two free columns laterally and recalibrate the distances between the different elements—columns and walls—



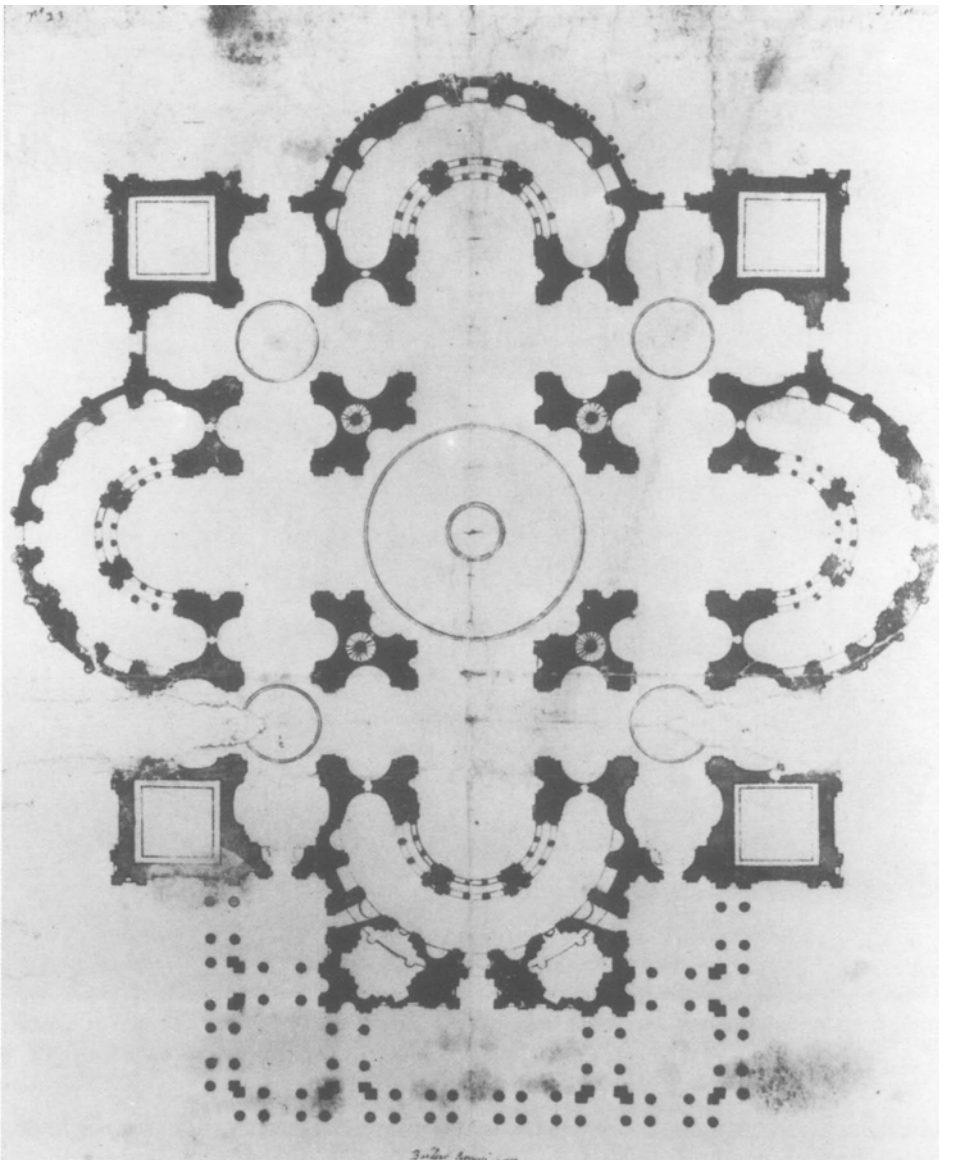
11
Marcantonio Palladio, plan of palazzo Chiericati, London, RIBA, XVII, 8r.

that define the space. [fig. 10]. These adjustments, moving the axis of the columns outward, would have resulted in their misalignment with the interior wall, which is what we can see in the actual building but not in the plan later drawn by Marcantonio, Palladio's nephew and collaborator[12] [fig. 11], nor in the plan in the *Quattro Libri*.[13] Palladio preferred to amend these last plans from the imperfect correspondence between the vestibule and the central section of the loggia. This example confirms, on the one hand, the initial will of aligning the two structures and, on the other, that the design change occurred during construction, namely when the interior wall—or at least its foundations—was supposed to have already been laid.

The result of the design and execution process, thus reconstructed, is extremely innovative compared to the contemporary domestic façades. Its originality is based on restoring the load-bearing function of columns and is epitomized in the doubling of columns at the end of the projected section, creating a strongly expressive corner knot which, from a tectonic perspective, defines the architectural volumes and spaces [fig. 12–13]. Palladio motivated this choice for the corner solution in the *Quattro Libri* from a structural position by explaining that, as the *sala* on the upper floor protruded above the colonnade, it required double columns under the corners. [14]

12
Vicenza, Palazzo Chiericati, view of the façade.

13
Vicenza, Palazzo Chiericati, view of the façade, detail.



14
Baldassarre Peruzzi, design for St. Peter's, plan, New York, American Academy in Rome.

Reconstructing the transition from the first to the final project clarifies that the interlocking columns, by acquiring a structural role, nevertheless preserve the memory of the wall which generated them. The slight projection that underscores the central section of the colonnade is obtained through a solution that derives from a conceptually completely different wall architecture and would have been inconceivable without it. Therefore, Palladio recalls the approach of the Roman Renaissance and then suddenly abandons it through an extension of meaning, which again upsets the tectonic sense of architectural orders in a reversal of roles between represented and actual structure.

For this kind of operation, Palladio may have been thinking of a further Roman example, which remained at project stage: a plan for St. Peter's by Baldassarre Peruzzi, stored in the New York office of the American Academy in Rome, which appears to be a very close precedent for the idea of a great façade with trabeated columns[15] [fig. 14]. In the body of the façade, completely opened by colonnades, Peruzzi seems to have proceeded in a similar manner to Palladio's work in the Palazzo Chiericati, by translating the engaged wall order explored in the recent Roman architecture into free-standing vertical supports. The portico imagined by Peruzzi comprises five sections, delimited on the outside by double rows of columns. On the front and sides, in the outermost row, each section emerges from the columns behind it through a joint formed by two interlocking piers. This junction can be attributed the same function as the combination of half-pilasters with pilasters or half-columns in the wall order, transformed here by the use of free-standing piers. The affinity of the interlocking columns of Palazzo Chiericati with Peruzzi's piers—already noted by Arnaldo Bruschi[16]—encourages the hypothesis that Palladio reflected on the project for St. Peter's and then realized, in a simplified and reduced form, something conceptually similar in the portico of the Vicentine palace. The substitution of round columns for Peruzzi's square elements constitutes a further original development on Palladio's part.

The design process of the Chiericati façade, which can be reconstructed through archive documents and drawings, includes not only the aforementioned initial project but also different variants of the same overall design, which emphasize its inventive and experimental nature. With great interest is how Palladio responded to the patron's requests, elaborating and transfiguring input from different sources. In addition to the models cited, two other references must be kept in mind, as James Ackerman has pointed out: on the one hand, with regard to the prominence of the middle part of the façade, the Roman house described by Vitruvius and Alberti, which was preceded—according to Palladio's reconstruction—by a central section with a pediment on columns, similar to the forepart of the initial project of Palazzo Chiericati; and on the other hand with regard to the portico along the entire front, the ancient basilica as illustrated in the edition of Cosimo Bartoli's *De re aedificatoria*, published in 1550, the same year that construction of the palace began.[17] These are two types of apparently alternative layouts, capable of being integrated. However, the fusion of columns allows the central part of the façade to emerge while maintaining the continuity of the portico.

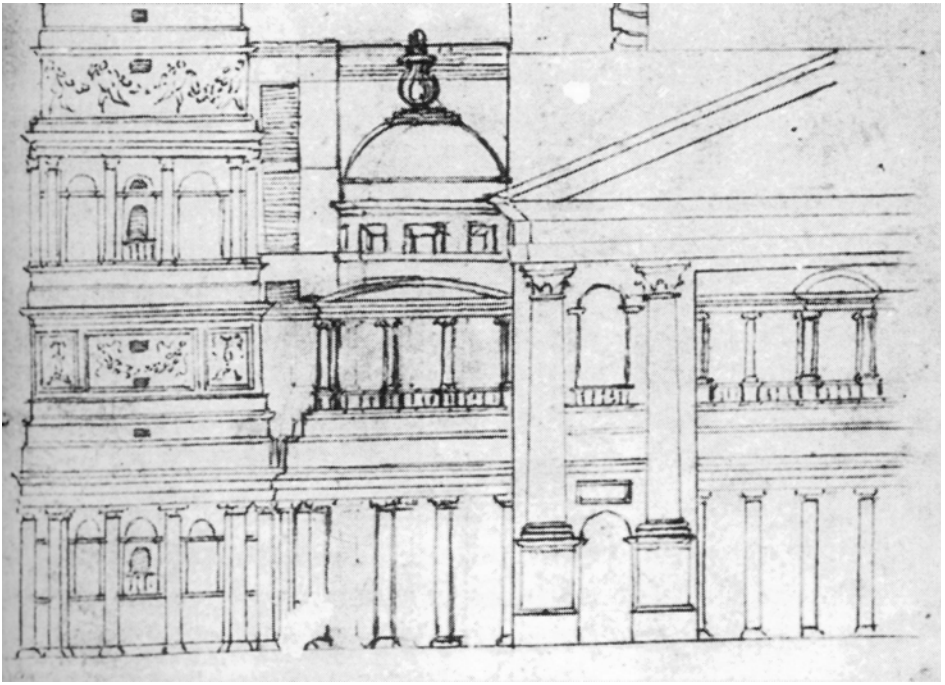
San Francesco della Vigna and Il Redentore

At this point, the essay will move on to a reflection on Venetian church façades, in which the theme of the intersection of orders of different sizes—already explored by Palladio in buildings like the Palazzo Valmarana and the Loggia del Capitaniato—appears to be central and is extended to the utilization of two complete temple fronts with pediments; a brilliant solution, anticipated in the early 16th century by proposals from Bramante, Peruzzi and Antonio da Sangallo il Giovane. This solution makes it possible to apply a façade based on the ancient model of the temple, which has a constant height, to the system of variable heights of the Christian church. Engaged to the façade wall, the intersection of two temple fronts aims to project the image of the spatial and volumetric organization of the interior to the exterior.[18]

After some unrealized projects, Palladio's invention was translated into real architecture for the first time in the façade of San Francesco della Vigna [fig. 15]. The new façade, constructed around 1566, is placed on the church, built from 1534 onwards, based on a design by Jacopo Sansovino. Above a single basement, Palladio intersected two temple fronts through a complex definition of the relationship between orders and masonry. The major order of half-columns extends with the pediment up to the roof of the nave. It is applied to a wall that emerges in the upper part on corners, separated from the half-columns and marked only by the entablature. This arrangement was already present in various façades of the 1540s and taken up again between the 1560s and 70s [fig. 16].

15
Venice, San Francesco della Vigna, view of the façade.

16
Venice, San Francesco della Vigna, view of the façade, detail.



17
Copy of a project by Raffaello for St. Peter's, *Codex Mellon*, f. 71v, detail.

In this specific case, the choice may have been directly suggested by observing a similar corner solution in the central section of the façade of St. Peter's drawn in Raffaello's project, represented in the *Codex Mellon*[19] [fig. 17]. In the Venetian church, Palladio proposed an ingenious replica of this solution. He introduced the downward continuation of the neutral band of wall of the upper corners. In this way he distanced the half-pediments of the minor order from the colossal half-columns. The minor order, with half-columns and piers on the corners, runs along the entire front but is only fully formed in the side bays and the center, where it frames the portal. In the smaller bays of the middle section only the entablature continues, placed in a recessed position and flattened like the one at Palazzo Valmarana, with the cornice reduced to a single band that is less prominent than the underlying pulvinated frieze. This same profile is extended to the short stretch of free wall at the ends of the central body, to soften the contact between the two orders, leaving the complete cornice to touch the colossal half-columns only with the protrusion of the cyma and the corona. The simplified and recessed entablature continues on the edges of the central bay where the complete minor order re-emerges to frame the portal. In the façade just described, the two intersecting temple fronts are clearly legible, but the gradual intensity of the forms of the entablature of the smaller front prevents the larger one from being cleanly cut horizontally, thus losing its correspondence with the full-height space of the nave. This horizontal cut, for example, can be seen on the façade of San Giorgio Maggiore, which was influenced but not designed by Palladio. There the lines of the entablature of the minor order run undifferentiated along the entire width of the front.

18
Venice, Il Redentore
view of the façade.

Palladio's experience with the theme of the façade with intersecting fronts culminates in the church of the Redentore, whose construction began in 1577 [fig. 18]. In this case, the façade and the body of the building belong to the same design and executive phase, and a more stringent coordination between the parts was therefore possible.

19
Venice, Il Redentore
view of the façade,
detail.

The basic scheme is applied according to a new composition strategy, based on a definition through layers with rather limited depth, intended as a projection of the fundamental components of the complex structure of the building. While the precedent of San Francesco della Vigna is taken up in some aspects, different criteria govern the relationship between the parts, the interplay between orders and walls, and the treatment of the corners. The major temple front has a pediment placed lower than the roof of the nave and engaged to an attic, reminiscent of the Pantheon. This front sits on top of a flight of steps and has two half-columns in the center and piers at the corners. In the minor front, the half-pediments are replicated at the top in a simplified form using parts corresponding to the profile of the buttresses.
The order, as in San Francesco della Vigna, develops along the entire façade and is formed completely in the outside bays and the center, while applying only the simplified and recessed entablature in the side bays of the major front. As in the previous example, the order frames the portal in the center [fig. 19].

Compared to San Francesco della Vigna, the definition of the outside bays is very different. It features a system of pilasters and half-pilasters placed on different layers, running around the corners and continuing along the sides of the building [fig. 20]. The treatment of the area in contact with the main front also changes, as it is closed off at the corners by protruding piers. Therefore, the wall band, that separates the two orders in San Francesco, is missing here. The minor order is joined to the corner piers of the major order by means of half-pilasters, while the half-pediments are juxtaposed without mediation at the level of the capitals.

20
Venice, Il Redentore
view of the façade,
detail.

The insertion of the half-pilasters in the transition between the wings and the central body recalls, as we have seen, Roman models already proposed as sources for the projects of Villa Repeta and Palazzo Chiericati. Palladio thus recovered particular solutions from Roman examples of the early sixteenth century. This included solutions that had already been exploited, reworked, and apparently superseded during the course of his career, but also solutions that had not been used in his work before, such as the association of pilaster and half-pilaster on the corner, or solutions which were only used in project drawings, such as the combination of half-pilasters with supports of different forms, aimed at coordinating protruding and recessed parts of the wall. For Palladio, the use of flattened pilasters and half pilasters, therefore, seemed to constitute a sort of return to the origins of his training. This took place within a completely innovative architecture, the most mature outcome of a long reflection on the theme of the façade with intersecting orders, but also the fulfilment of the task indicated by Bramante, aimed at representing three-dimensionality, thus evoking spatiality within the limits of an almost flat front. Palladio was able to realize this task based on his long experimentation with the ever-changing play of walls and columns in the envelope of his buildings.

The method of orthogonal projection, used almost constantly, also determines a particular way of using the models 'reduced' through this type of representation. As we have seen, an identical elevation can suggest different layouts in plan, multiplying the possible solutions offered by the same model and, as Howard Burns has pointed out, favoring its creative use[20]—a design process made up of small deviations and slight changes, but with unexpected and often innovative formal outcomes.

Endnotes

If not indicated otherwise, all translations are by the author of this paper.

1 This idea is expressed in the book series entitled *Angoli e Demoni*, edited by Renata Samperi and Paola Zampa, Campisano editore, Roma. On the theme of corners in Palladio's architecture, see, in particular, Samperi 2019.

2 This theme is well established by Alberti, who attributes to the column the dual role of structural element and ornament (Wittkower 1952, 29–32). Among the many contributions on this subject, see especially: Thoenes 1998, 67–75, for the interpretation of the "gioco fittizio" of support and ornament; Bruschi 1969, 209–241, for the relation between design and structure; Bruschi 2006 and Gargiani 2003, for the contradictions and ambiguities inherent—starting with Brunelleschi's experience—in a conception of the wall order as the representation of a structure.

3 This motif is open to different interpretations. On the one hand, the half-pilasters flanking the pilasters seem to make the transition between orders and wall gradual, avoiding a sharp contrast between these two systems and emphasizing the corporeal quality of the masonry, its structural concreteness (Bruschi 1969, 353–354). On the other hand, in the light of Serlio, the half-pilasters may be attributed the function of supporting, whether visually or structurally, the part of the entablature placed on a plane behind the projecting section above the central pilaster. According to the latter reading, the order is configured as a load-bearing framework and is distinguished from the wall mass (Pagliara 1992).

4 The original state of the short side façade of the Palazzo Jacopo da Brescia can be seen in a drawing by Maarten van Heemskerck (Berlin, Kupferstichkabinett, Skizzenbuch I, f. 68*r*).

5 Firenze, Gabinetto dei Disegni e delle Stampe degli Uffizi, 1884A*r*; Pagliara 1984, 206–207.

6 Firenze, Gabinetto dei Disegni e delle Stampe degli Uffizi, 257A*r*; Frommel 1984, 266.

7 Monaco, Stadtmuseum, n. 36/1928b; Tafuri 1984, 224; Tafuri 1992, 172–176.

8 See Tafuri 1992, 172–176.

9 Until a few years ago, research agreed to date the design to the late 1540s, without reliably referring it to any actual building (Lewis 2000, 152–154, with references to the preceding bibliography). More recently, Guido Beltramini was able to recognize in the Villa Repeta—radically transformed in the seventeenth century after a fire—traces of a building referable to Palladio's project and datable, because of a convincing reconstruction, between 1563 and 1566. Consequently, Beltramini also proposes to place the realization of the design in the 1560s (Beltramini 2010a; Beltramini 2010b, 78–81). In his treatise, however, Palladio, after naming Mario Repeta as the patron of the villa, adds that in this construction, he fulfilled the spirit of his father, Francesco (Palladio 1570, 163; Beltramini 2010a, 404). Francesco Repeta died around 1556 and may therefore have commissioned the work a few years earlier. As argued in Samperi 2017, this hypothesis allows justifying the fact that the characteristics of the project are entirely consistent with Palladio's research in the late 1540s, only to be surpassed, for the most part, in his mature work.

10 London, Royal Institutes of British Architects, Burlington Devonshire Coll. VII/11*r*; Beltramini 2008b, 94–95, with references to the preceding bibliography. For this project, see also Ackerman 1984. For the history of the building and its completion delayed until the end of the 17th century, see Puppi/Battilotti 1999, 281–286, 462–463.

11 On the modalities of project change, see Samperi 2008.

12 London, Royal Institutes of British Architects, XVII/8*r*; Beltramini/Burns (eds.) 2008a, 97.

13 Palladio 1570, 100.

14 Palladio 1570, 102: "[…] perché [la sala] esce alquanto in fuori, ha sotto gli angoli le colonne doppie".

15 See Bruschi 1992, 472–475.

16 See Bruschi 1992, 482, endnote 107.

17 Ackerman 1984.

18 Among the many contributions on the subject of church façades with intersecting orders and its genealogy in relation to Palladio's projects, see in particular: Wittkower 1952, 80–87; Ackerman 1966, 138–148; Bruschi 1969, 237–241; Foscari/Tafuri 1983, 150–152; Battilotti 2001, 436–441; Fiore 2012; Guerra 2010; Guerra 2012.

19 *Codice Mellon*, f. 71*v*; Frommel 2002, 121–123.

20 On the relationship between Palladio's design method and the use of orthogonal projection drawing, see in particular: Gioseffi 1972; Burns 1973b, 183–185; Burns 2002, 401; Burns 2008c, 303.