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BETWEEN TYPOLOGY AND GEOMETRY

DESIGNS BY BALDASSARRE PERUZZI FOR CARPI CATHEDRAL

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SUMMARY

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Drawings by Baldassarre Peruzzi in the Uffizi

One of the more puzzling architectural drawings of the Italian Renaissance is a sheet with design studies drawn in ink by Baldassarre Peruzzi that can be partially reconstructed from three fragments in the Gabinetto Disegni e Stampe of the Uffizi (Uff. 156 A, Uff. 161 A and Uff. 529 A – hereafter referred to as sheet 1) (figs. 1 and 2). On the recto two large plans, one centralized and the other basilican, are placed as if being grafted to one another to form a new and larger composite one.¹ They are surrounded by a series of smaller plans and sketches that appear to be modified versions of ancient Roman precedents. At the top of the sheet there is a plan of the so-called “Temple of Minerva Medica” in the Licinian Gardens, to which a portico has been added and which has been transformed into a centralized, yet elongated form by exposing the apses, the walls that once separated them from the central space having been removed. To its right is a plan of the Basilica of Constantine, an interior sketch of which is drawn to the left as indicated by a line/arrow (it more closely resembles the Baths of Diocletian), which has been transformed into a Greek cross form with the addition of a third apse and eight small columns that define four corner chapels. The existing arcaded passageway has been transformed into a portico with mural and columnar elements. The large basilican plan is clearly based upon it, although the small columns that define the corner chapels are labeled “ionico” instead of Corinthian as they appear in the sketch. To the right in the margin are a plan of the Piazza d’Oro at Hadrian’s Villa, the lateral apses and entrance having been transformed, and a sketch based upon that plan but which incorporates vaulting like that of the Oratorio of Santa Croce that once stood near the Lateran. The large centralized plan seems to derive from these. In the

lower right margin there is a perspective section of a barrel vaulted basilican nave flanked by two side aisles. Altogether these plans reveal a method through which antique precedents are transformed and recombined into composite designs – a process that is somewhat analogous to Francesco di Giorgio’s development of composite temple types from central and rectangular ones.²

On the verso there is a series of geometric studies, some of which are centralized building plans that reflect designs by Filarete and Leonardo da Vinci (Compare the top two, that on the left to Filarete’s “first Temple of Plusiapolis” and that on the right to Leonardo’s “Codex Atlanticus” fol. 348 v–c.). Others appear to be patterns for coffered vaults or cosmatesque paving. Altogether there is no clearly discernible design sequence on the two faces of this sheet. Both centralized and longitudinal possibilities are being studied, and both typologically tectonic schemes and more idealized geometric conceptions are employed as distinct modes of inquiry that correspond to the small drawings on the two alternate faces.

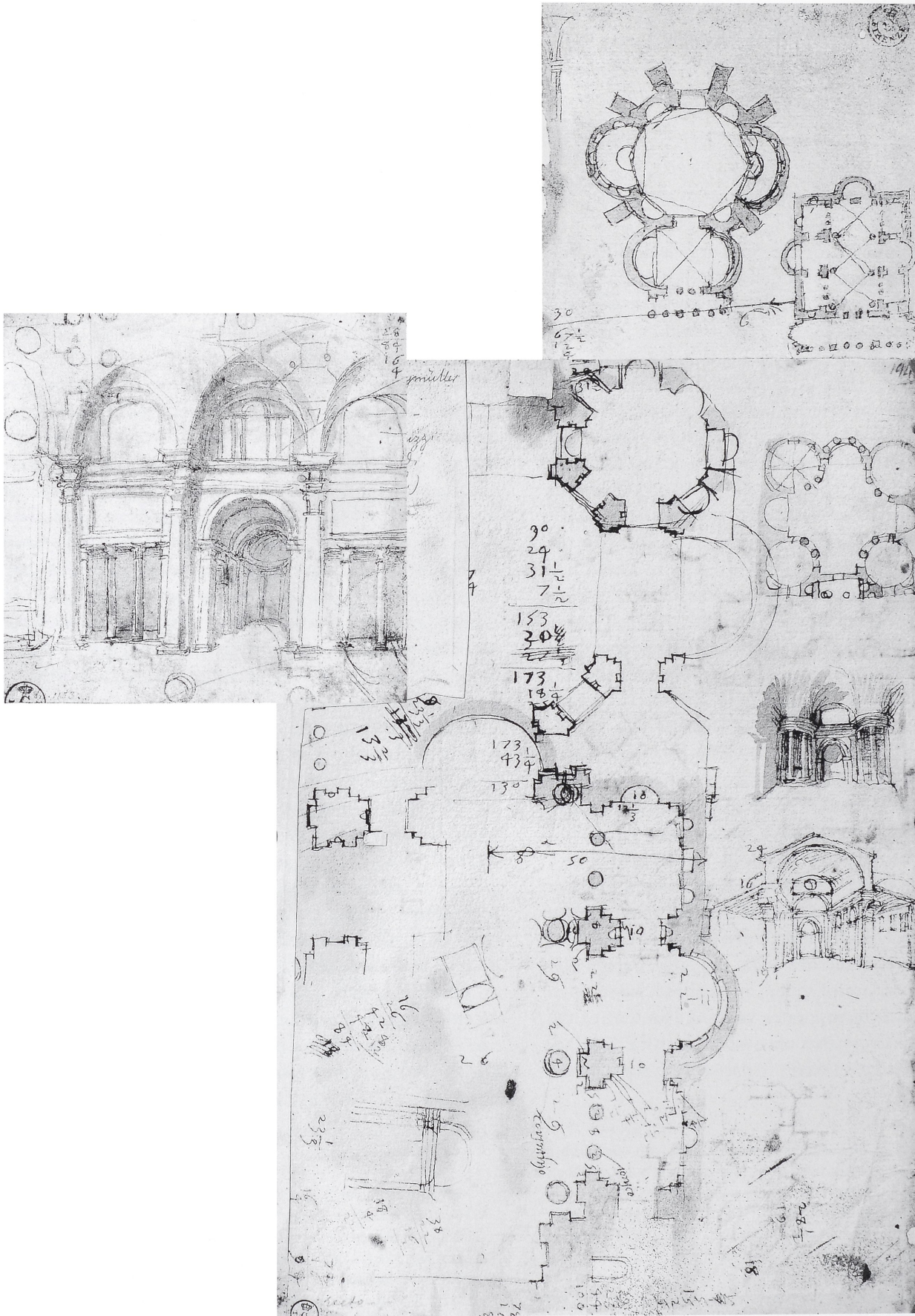
Also on the verso there are two detailed plans of piers. The top middle one is an elaboration of a pier in the bottom right plan and is very similar to the octagonal sacristy at the top of the large plan on the recto, but the top right one which is accompanied by a perspective sketch does not correspond to any of the others on either side of the sheet. Instead it relates more closely to a plan on another sheet with design studies on matching paper in the same ink, Uff. 451 A r (hereafter referred to as sheet 2) (fig. 3), which has two pinhole scales that are almost identical to the one on Uff. 529 A.³ The plan combines two alternate schemes on either side of the central axis, one with side chapels and one without them. It is a basilican nave (preceded by both a portico and a narthex/vestibule) with a “causidica et porticus duplices”, as Alberti would have described it,⁴ joined to

¹ These three fragments have seldom been associated with one another and never before been considered to be part of a single, larger sheet. The chain lines at 40 mm on center correspond precisely. On the verso at the top there is a pier element on Uff. 156 A, which aligns with the pier below it on Uff. 529 A. It was covered by a patch when the sheet was photographed. The assertion that this is a composite plan is confirmed by the dimensions being summed together: 90 (3 bays of the basilican nave) + 24 (the width of two broad arches, i. e. one side of the octagonal sacristy) + 31 1/2 (crossing) + 7 1/2 (the remaining level of the octagonal sacristy) = 153. The adjustments to these figures concern alternatives for joining various tribunes to the nave.

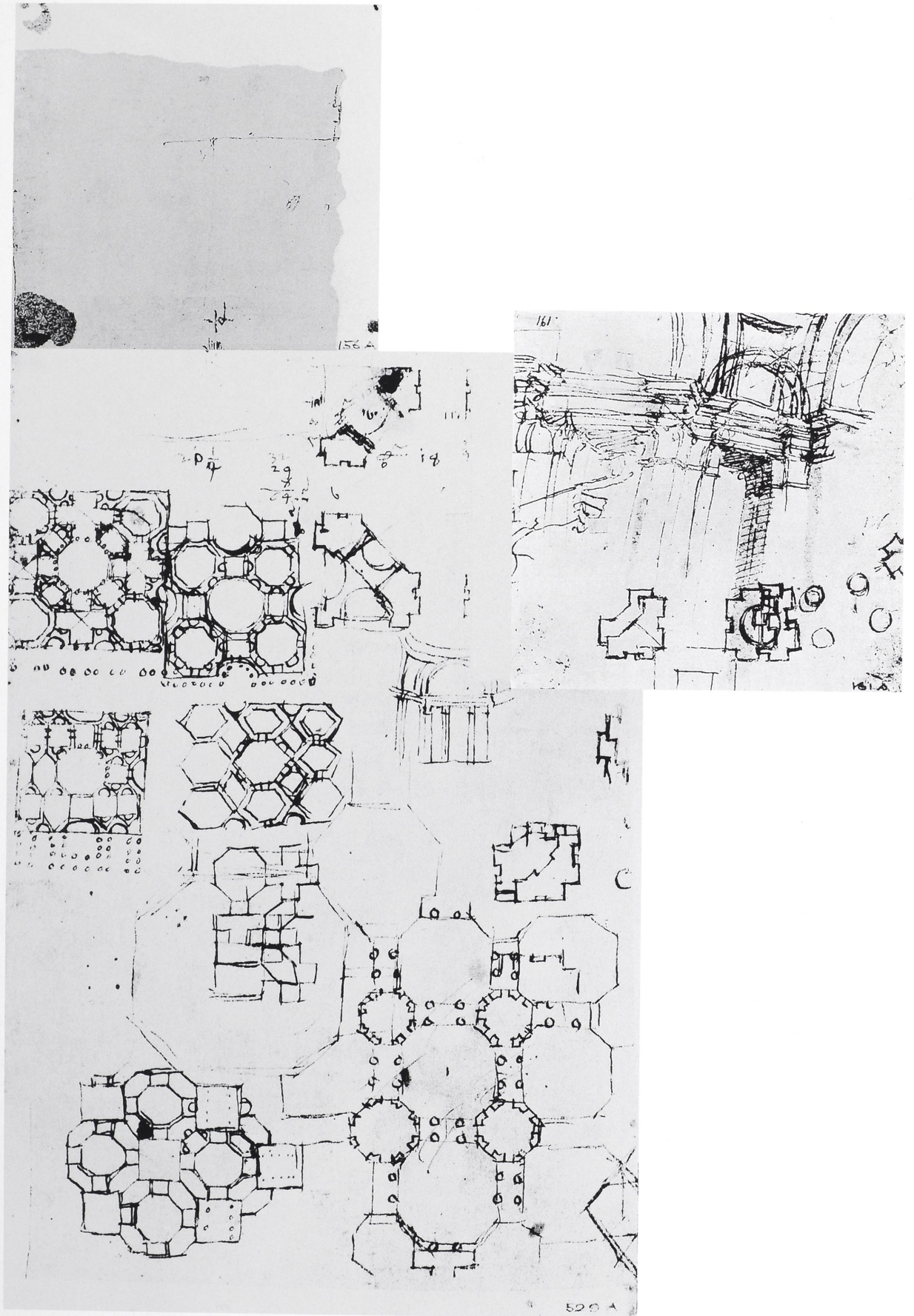
² MARTINI 1967, vol. 2, p. 372.

³ There is a pinhole scale on sheet Uff. 529 A just to the left of the upper interior sketch on the recto with 13 intervals @ 5.346 mm = 69.5 mm. Sheet Uff. 451 A has two pinhole scales. One is in ink running in a line with the right-hand row of columns and another is running perpendicular to it on the right-hand part of the sheet at the top of the octagonal pier and below the number 143. The most legible of these has 11 intervals @ 5.2727 mm = 58 mm.

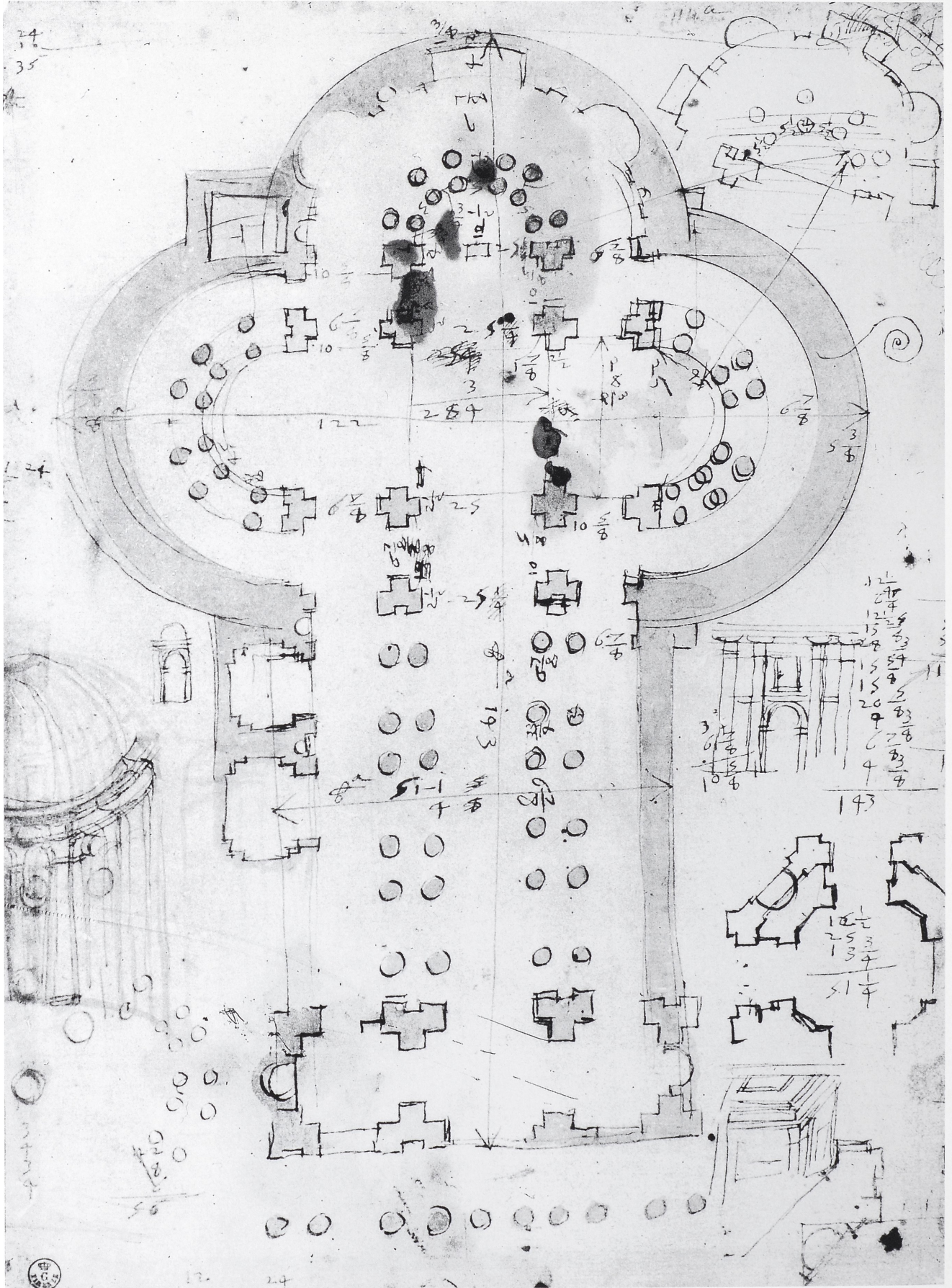
⁴ ALBERTI 1966, vol. 2, p. 639.



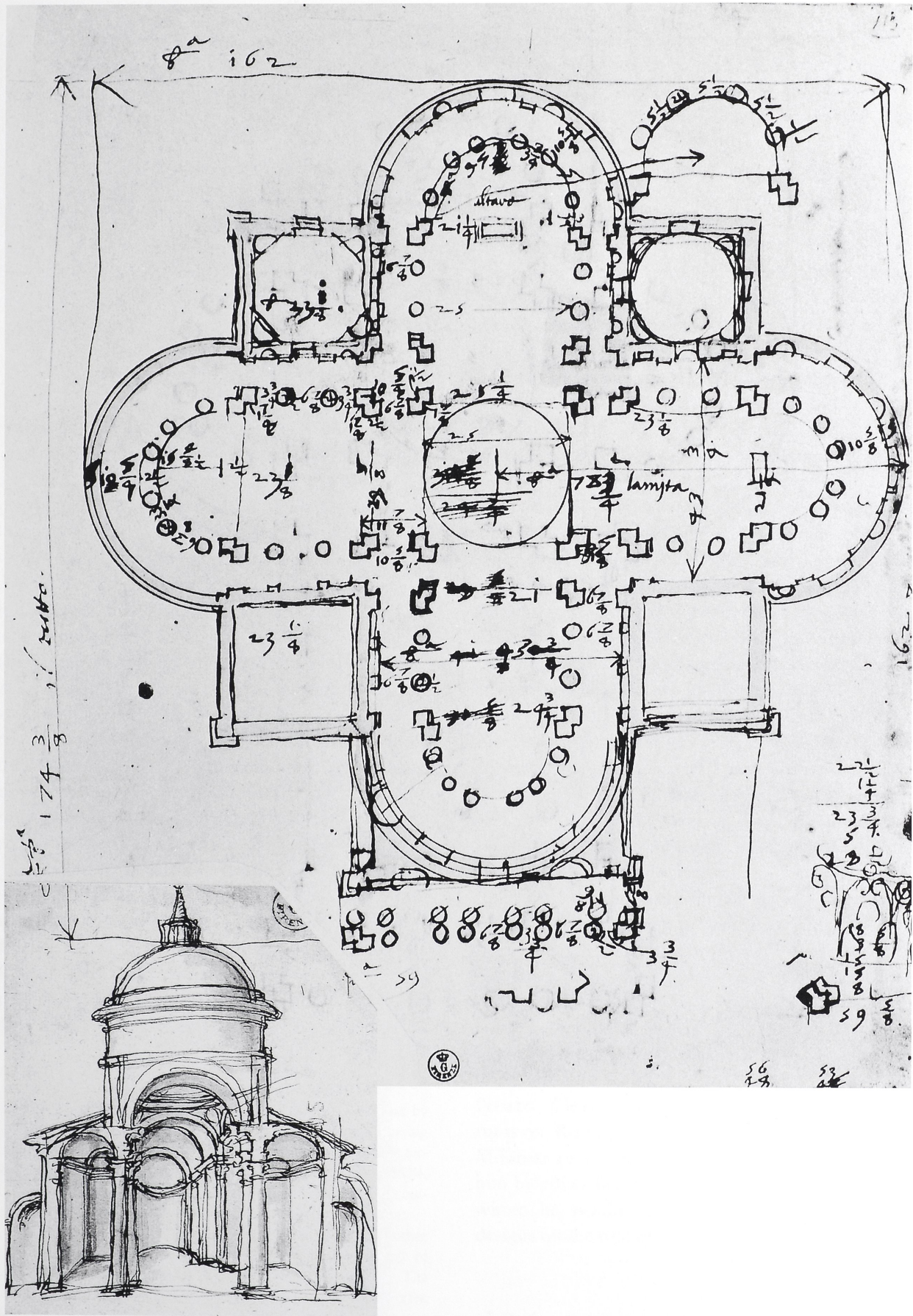
1. Baldassarre Peruzzi, Sheet 1 recto (Uffizi, Florence, Gabinetto dei Disegni, 156 Ar, 161 Ar, and 529 Ar), plans, interior sketches, and details



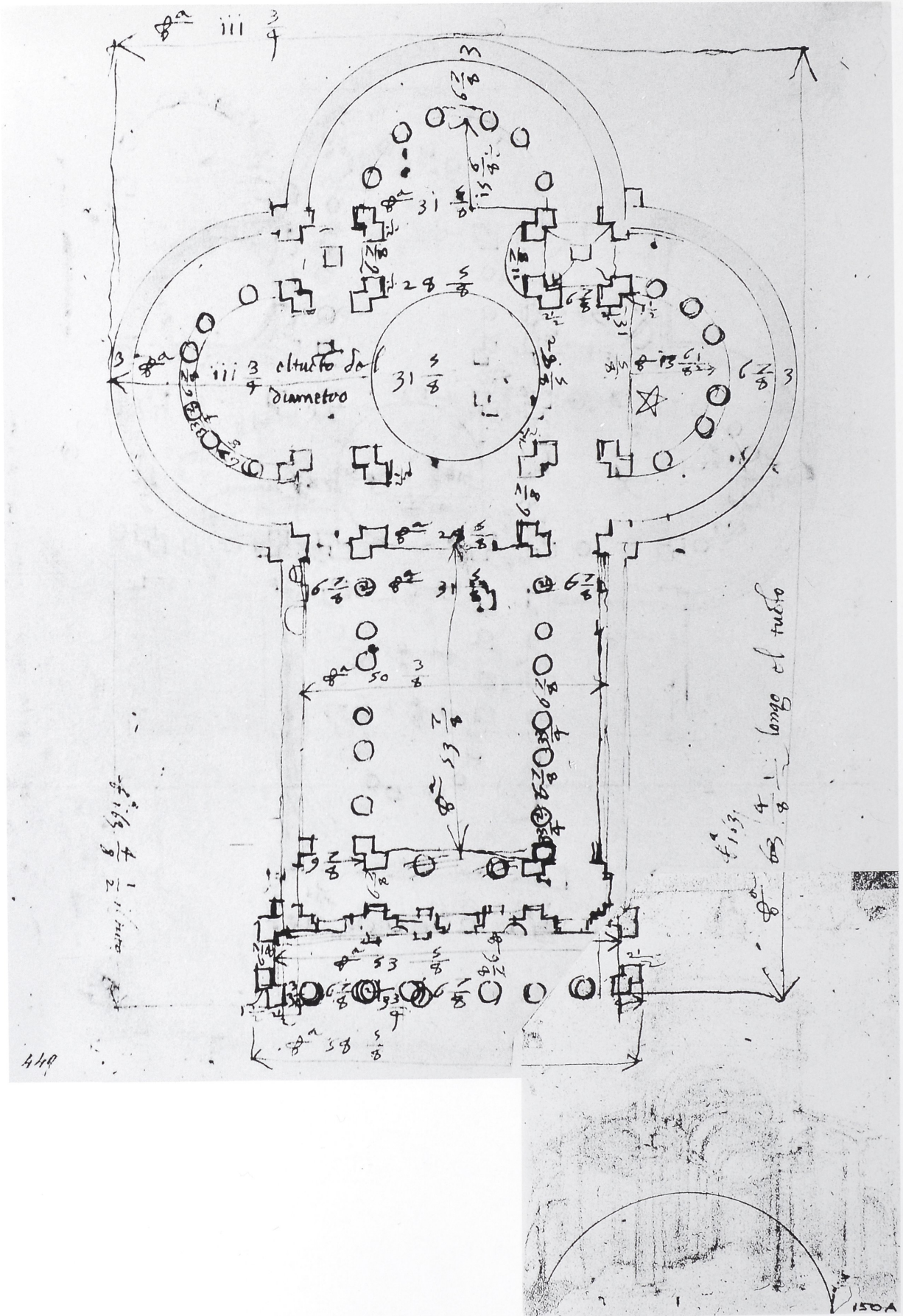
2. Baldassarre Peruzzi, Sheet 1 verso (U156Av, U161Av, and U529Av), plans and details



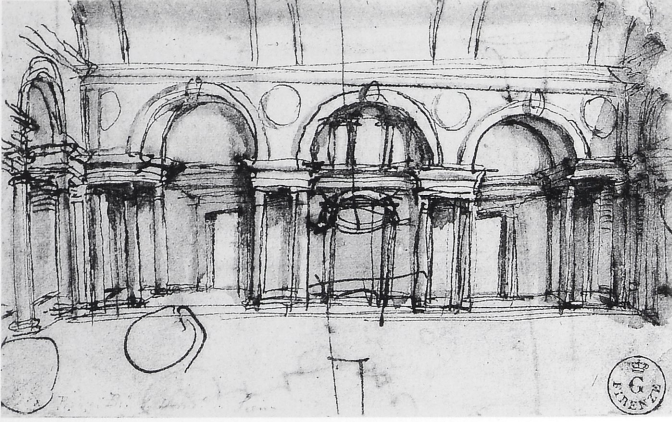
3. Baldassarre Peruzzi, Sheet 2 recto (U 451 A7), plan and details



4. Baldassarre Peruzzi, Sheet 3 recto (U150Ar and U449Ar), plan, section and details



5. Baldassarre Peruzzi, Sheet 3 verso (U150Av and U449Av), plan



6. Baldassarre Peruzzi, U 149 A r, interior sketch

a trefoil tribune that consists of a quincunx arrangement of dome, supporting piers, side aisles, and ambulatories where the domes are supported by broad arches⁵ that rest upon square piers like those in San Marco in Venice with passageways running through them that lead into side aisles or ambulatories of the same width. Double rows of columns in an A/B/A rhythm separate the side aisles from the nave and the ambulatories from the transepts and choir. The exterior walls are extremely thick and allow for recessed niches as occurs around the choir ambulatory. The top right pier plan on the verso of sheet 1 with its double row of ambulatory columns would appear to be a variation of a similar condition on this second sheet, and the two detailed plans of piers at the bottom right of this second sheet would appear to be variations of the octagonal piers on the first.

A third sheet that can be partially reconstructed from two fragments (Uff. 449 A and Uff. 150 A – hereafter referred to as sheet 3) (figs. 4 and 5)⁶ also relates to the other two even though the paper is different. The plans share the same quincunx arrangement as that on sheet 2, are drawn in the same ink with the same hand and to the same scale, and share the same pattern of mural and columnar elements. The one on the recto is a Greek cross; that on the verso a Latin cross, which appears to derive from a conception of

an antique atrium (preceded by a portico) that leads to a trefoil centralized temple. An interior sketch of a nave on another sheet of different paper, Uff. 149 Ar (fig. 6), probably relates to its left side, which has a few niches and a pilaster overdrawn on the exterior wall as if they would continue along it.⁷

Both of the designs on this third sheet have very thin walls and appear quite schematic and geometric in comparison to the more robust and tectonically developed ones on the first two sheets. For example, the niches in the choir ambulatory of the plan on the recto are very timid in comparison to those on sheet 2 (fig. 3). The sketches of the choir/transepts and pilasters/columns also differ in a similar way. In the perspective section on the recto of sheet 3 (fig. 4) the curved surfaces are smooth; while in the sketch in the left margin of sheet 2, a study of the interior of the outer ambulatory wall, they are heavily pilastered.

And so in the plans on these two sheets, like the alternate faces of sheet 1, both centralized and longitudinal possibilities are being studied, and both typologically tectonic schemes (sheet 2) and more idealized geometric conceptions (sheet 3) are employed as distinct modes of inquiry. Thus the plans on sheet 2 are more concerned with the actuality of experience, such as viewing the play of light and shade on the surface of a wall or providing sufficient structural support, the thick walls allowing for recessed niches similar to a number of composite plans in Francesco di Giorgio's "trattati" and to Santa Maria del Calcinaio at Cortona; whereas the plans on sheet 3 closely resemble those sketched by Leonardo da Vinci in the "Codex Atlanticus", the Greek cross one on the recto being similar to plans on fol. 37r–a and the Latin cross one on the verso being similar to fol. 271v–d (figs. 30 and 31), which seems to be San Lorenzo in Milan with its atrium.

It is difficult to comprehend the intentions of this conglomeration of numerous plans and sketches beyond how they reveal Peruzzi's rich imagination. Although they first appear to be a series of theoretical speculations, they share several similar characteristics that suggest that they might relate to a common project. There are at least twelve alternative designs, some of which include a number of variations, but none appears to correspond to known projects by Peruzzi. Clearly they reflect his intimate familiarity with ruins in Rome and some familiarity with Venetian and Milanese precedents, which could have been passed on to him by either Bramante, Leonardo or Fra Giocondo, all of whom he would have met in Rome. Furthermore, the designs on the first of these three sheets differ so much from

⁵ The term "tribuna" was used in sixteenth century documents and by Vasari to refer to the main crossing and dome in addition to referring to hemicycles. See MILLON/SMYTH 1976, p. 139. Peruzzi used this terminology himself in calculations on Uff. 18 Ar. See FROMMEL 1994, p. 624. The terminology "broad arches" used in this discussion is actually two arches with a barrel vault, usually coffered, between them.

⁶ These two fragments have never been associated with each other before, although they are placed close together in the catalog of Peruzzi's architectural drawings. See WURM 1984, pp. 351–56. The chain lines on Uff. 449 A and Uff. 150 A are spaced at 32 mm on center. The dimension lines on both the recto and verso continue from one sheet onto the next.

⁷ The length of the nave, the pattern of the columns, and the ends of the nave correspond to those same aspects of the plan on sheet 3 verso.

those on the other two that they have never been previously related to one another. The first (figs. 1 and 2) has generally been associated with Rome, because of the presence of the ancient Roman precedents, and more specifically with the design of Saint Peter's. The other two (figs. 3–5) have seldom been studied and generally have been regarded as theoretical studies that could relate either to Saint Peter's or to Peruzzi's project for the redesign of Siena Cathedral. They have been associated with Carpi only once.⁸ Nevertheless, the pinhole scales on the sheets rule out the possibility of

them being for a project in either Rome or Siena, because they do not match the dimensional conventions used in those cities. Instead they come closest to those of Bologna and possibly Carpi.⁹

There are no known ecclesiastical designs in Bologna by Peruzzi other than those for San Petronio, which would have been much larger, and the Cappella Ghisilardi at San Domenico, which would have been much smaller. Rather the size of the church in these drawings comes closest to that of the Cathedral in Carpi, which he began designing in

⁸ Uff. 156 A was listed in VASARI/MILANESI 1906, p. 616, under "Roma", "Studi e Disegni di monumenti antichi di Roma e d'altri luoghi." FERRI 1885 listed it under the Basilica di Costantino on p. 129, and under the Tempio di Minerva (Pavilion in the Licinian Gardens) on p. 196 along with Uff. 428. BARTOLI 1914–22, vol. 2, tav. CXXXIII, fig. 244, identified the two structures similarly. KENT 1925, pl. 64, related it to Peruzzi's design for the Orsini Palace. WURM 1984, pp. 401–402, placed it late chronologically under "Antiquity" and identified the two structures as Ferri and Bartoli had. LICHT 1984, p. 35 f., identified the structures similarly and related the "Minerva Medica" plan as Ferri had done to Uff. 428 A v, possibly by Francesco di Giorgio, which she claimed was modified by Peruzzi. – Uff. 161 A and Uff. 529 A have been published many times in whole or in part., GEYMÜLLER 1875–80, p. 148, although he does not publish an illustration of the sheet, mentions that he found Uff. 529 A at the same time that he found a companion folder labeled "Al Cav. de Rossi sembra di Bramante" with drawings by Peruzzi for Saint Peter's that contained Uff. 17 A, Uff. 19 A, and Uff. 107 A. The sheet's identity can be determined by Geymüller's reference to REDTENBACHER 1875, folio IV, figs. 5 and 6. FERRI 1885 listed Uff. 529 A r and Uff. 161 A v under San Pietro in Vaticano on p. 149, Uff. 529 A r with Uff. 156 A under the Basilica di Costantino on p. 129, Uff. 529 A under "molti studi in pianta e in alzato per chiese di varie forme," Uff. 161 A r under "studio in alzato per la restaurazione della sala principale" of the Terme di Diocleziano on p. 203, and Uff. 529 A v under "Piante e alzati di templi diversi ricordi dall'antico e studi di restaurazioni." VASARI/MILANESI 1906, p. 630, listed Uff. 529 A under 'Roma', "Disegni e studi di edifizii moderni, la più parte di propria invenzione." – BARTOLI 1914–22, vol. 2, tav. CXXXIII, fig. 242, identified Uff. 161 A r as a restoration for part of the Baths of Diocletian and Uff. 161 A v as a study for Saint Peter's. KENT 1925, pl. 40, included Uff. 161 A r with studies for Saint Peter's along with Uff. 151 A r. WURM 1965, pp. 88–89, associates the top two small sketches on Uff. 529 A r with the Piazza d'Oro at Hadrian's Villa, relating them to a drawing by Giuliano da Sangallo, and, pp. 234–235, includes the three small church plans at the top of Uff. 529 A v along with Uff. 451 A in a discussion of colonnaded porticoes. PORTOGHESI 1971, p. 38, used Uff. 529 A v (pl. xxxvii) to illustrate his argument about the significance of Peruzzi's early contact with Francesco di Giorgio. "The Aristotelian foundation for his thought and the generalization of deductive processes... enabled him to continue his archaeological research side by side with a study of a type of composition to be based on a geometrical system, and in this he came close to Leonardo." Portoghesi interpreted the geometries on Uff. 529 A v to be decorative applications for a "cassette" motif and plans for a large monastery. He described Uff. 161 A r (pl. xxi) as one of three examples of Peruzzi's "... representation of space by means of successive graduated roofs which both hold back and impel a broad-eyed view..." – WURM 1984, pp. 357–358, placed Uff. 161 A under "Churches," immediately following Uff. 449 A,

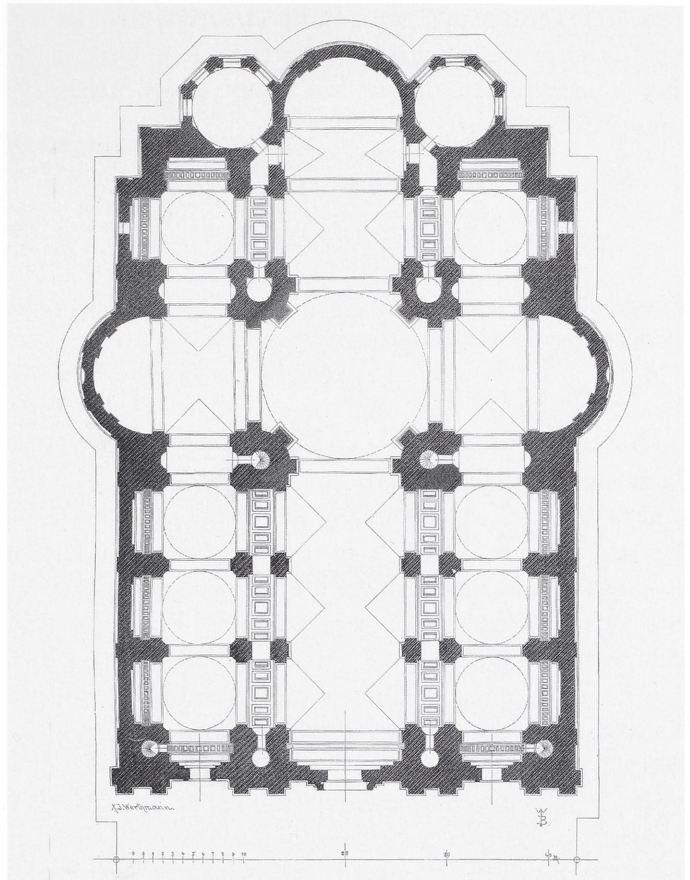
Uff. 451 A, and Uff. 150 A as if it related directly to them. He identified the sketch on the recto as Santa Maria degli Angeli (?), Rome. He placed Uff. 529 A next to Uff. 490 A with drawings simply identified as studies. He identified the recto as "centralized and basilical structures" and the verso as "centralized buildings and other basilical structures." – LICHT 1984, pp. 104–106, and in LICHT 1985, pp. 115–19, considered the drawings on Uff. 529 A to relate to the early designs for Saint Peter's before construction of the crossing piers began in 1506. She argued that the various plans on the verso originated with geometric patterns of Cosmatesque pavements, and she compared the top left plan with Filarete's First Temple of Plusiapolis in his "Trattato di Architettura", Book xiv, fol. 108. She compared the large plans of crossing pier elements in the top right to the Cathedral of Pavia, where there are eight equally spaced pier elements around the crossing. In her analysis of the recto she noted the similarity of the small top right plan to the Piazza d'Oro at Hadrian's Villa, of the small interior perspective immediately below it to that same pavilion as well as to the Oratorio di Santa Croce, of the small interior perspective section below that to an Early Christian barrel vaulted basilica, and of the large plan in the center of the sheet to the Basilica of Maxentius. She argued that the portion of a large centralized plan at the top of the sheet was an elaboration of one of the plans on the verso being joined to the large basilica plan with which it is aligned. – LOTZ 1981 a, p. 18, considered the sketch on Uff. 161 A r to be an attempt by Peruzzi to adapt the system of the Constantine Basilica to the nave of Saint Peter's and noted in particular Peruzzi's mingling of different perspectives in it. The most conspicuous appearance of Uff. 161 A r, however, was on the front jacket of BIAGI 1981, even though it was not discussed in that volume of essays. It should be noted, however, that Sandro Benedetti in his essay "La sperimentazione di Baldassarre Peruzzi: il Duomo di Carpi" in BENEDETTI 1987, pp. 65–69, did make a comparison between Carpi Cathedral and both the Piazza d'Oro at Hadrian's Villa and the Oratorio di Santa Croce as drawn on Uff. 438 A, not Uff. 529 A. – Uff. 449 A, Uff. 150 A, Uff. 451 A and Uff. 149 A have seldom been studied. REDTENBACHER 1875 published carefully drawn copies of them (Tafel XI) with one written paragraph, in which he states that they are undoubtedly for Siena and that the form of the pillars in the inside recall the third project for San Domenico (Uff. 340 A r), the entire conception of Santa Maria im Kapitol in Cologne, as well as Peruzzi's studies for Saint Peter's and then Santa Maria della Consolazione in Todi. VASARI/MILANESI 1906, p. 628, listed them under 'Roma'. FERRI 1885, p. 25, listed them as some of the "molti studi in pianta e in alzato per chiese di varie forme" in his index of drawings in the collections of the Uffizi. – FREY 1915, p. 41, labeled them as "theoretical byproducts," related them to Taccuino S IV 7, fol. 33 r, and considered them to be part of the circle of ideas that related to Saint Peter's and Siena Cathedral. WURM 1965, referred to them as theoretical studies and noted various aspects of Peruzzi's use of pillars – the rhythmic intercolumniation as a leitmotif of the 1520's (p. 163), the

1514. Furthermore, like the Cathedral, the drawings are for a freestanding building where the entrances are all through the front facade, which is the only articulated one. But most importantly at the center of the large Basilica of Constantine plan on sheet 1 recto (fig. 1) is a tiny rectangle with an oval that closely resembles the Cathedral's plan (fig. 7), and so it would appear as if these drawings are indeed early studies for the only church of such a size in that region that is known to have been designed by Peruzzi, the Cathedral of Carpi. This insight should help make them more under-

double pillars (pp. 199–201), and how the pillars tie the various parts of the church together in Uff. 451 Av (p. 235). WURM 1984, pp. 351–53, placed them late chronologically under “Churches”. LICHT 1984, p. 149f., compared the Greek cross plan on Uff. 449 Ar to San Marco in Venice, San Lorenzo in Milan, Fra Giocondo's plan for Saint Peter's, and the Madonna della Steccata in Parma.

Only BENEDETTI 1987 has made any serious attempt to associate these plans with a particular project. Through a very perceptive analysis he compared them to the Cathedral of Carpi (p. 66 f.). He argued that they could not be for Saint Peter's, because of their much smaller dimensions which are close to those of the Cathedral of Carpi; that the columnar elements in the drawings (especially Uff. 451 Ar) that tie together the crossing, the nave, and the side aisle spaces were transformed for static-structural reasons into the broad piers with double pilasters of the Cathedral; that the sketches in the bottom right of Uff. 451 Ar constitute a transformation of the crossing piers in the plans to those in the Cathedral for the same reason; and that the plan on that same sheet can be associated with the Cathedral because of the theme of the side chapels, the system of holding up the nave vault with supports perpendicular to it, and the placement of the sacristies. BRUSCHI 1989, refers to Benedetti's essay as “forse problematico” (p. 190, footnotes).

⁹ The dimensional convention employed in the scales can be determined by comparing the measured intervals and the corresponding dimensions in the plan to ascertain which employ whole numbers for both the interval as drawn and the full scale dimension that it represents. The most accurate measure on Uff. 451 A can be determined by the drafted arcs. The distance between the pinholes that mark the centers of the two transept arcs is 95mm, which is equivalent to 3 “once bolognese” and 18 intervals on the scale. The distance noted in “braccia” between these two points is $60 (2\frac{1}{2} + 10\frac{5}{8} + 2\frac{1}{2} + 28\frac{3}{4} + 2\frac{1}{2} + 10\frac{5}{8} + 2\frac{1}{2})$, so each interval must indicate $3\frac{1}{3}$ “braccia” or, more easily stated, three intervals must indicate 10 “braccia”, which would give a Bolognese scale of 6 “punti”: 10 “braccia” or 1 “oncia”: 20 “braccia”. – If the scale were Siennese, 1 “denaro” would indicate .46 intervals (i.e. 1 “denaro” = 2.4316 mm), which is a scale of approximately 2 “denari”: 3 “braccia” or 1 “soldo”: 18 “braccia”, but it would not have matched the intervals on the pinhole scale. If the scale were Roman, 1 “minuto” would indicate .7 intervals (i.e. 1 “minuto” = 3.72 mm), which is impossible to translate into a meaningful architectural scale. If the scale were Bolognese, 1 “punto” would indicate .5 intervals (i.e. 1 “punto” = 2.639 mm), which is a scale of 6 “punti”: 10 “braccia” or 1 “once”: 20 “braccia”. See ZUPKO 1981, for the metric values of these dimensions, pp. 65–66 for Siena, p. 174 for Rome, and p. 206 for Bologna. Zupko, p. 41, lists the “braccio bolognese” amongst mercantile “braccia” divided into 12 “once”, but his metric values indicate that it must consist of 20 “once”. The values in MARTINI 1976, p. 92, agree with this conclusion, and the scales on drawings by Peruzzi for projects in Bologna such as San Petronio and



7. Baldassarre Peruzzi, Cathedral, Carpi, 1514, plan, Semper 1882, Tafel 17

the Lambertini house are drawn to scales using “once” of similar length. – The scale may possibly be that used in the city of Carpi, which had two different “braccia”. According to Zupko, pp. 41–42, (confirmed in a letter to the author dated 15 July 1992), the common mercantile “braccio” = .644 m, but the “braccio agrimensorio” = .525 m and consists of 12 “once”. Although he lists the common “braccio” amongst mercantile “braccia” divided into 12 “once” as he did the “braccio bolognese”, there is a possibility that it could also be divided into 20 “once” as the Bolognese one was. A drawing in the “Archivio Guaitoli” in Carpi on 16th century paper of the small Carpi church, Santa Maria della Rosa in San Francesco, has a scale on it where 18 intervals measure 201.5 mm. Based on the system of the “braccio agrimensorio” consisting of 12 “once”, four intervals would equal 1 “oncia”. Based upon the system of the common “braccio” consisting of 20 “once”, three intervals would equal 1 “oncia”. The latter is more probable, because every sixth interval mark is accentuated, i.e. the scale is divided into multiples of 3, not 4. – The scale of the plans on Uff. 449 A can be determined by using a similar method. On the recto in the Greek cross plan the distance between the pinholes that mark the centers of the two transept arcs is 52 mm, which is approximately equal to 5 “once bolognese”. The distance noted between them is $100 \text{ “braccia” } (2\frac{1}{2} + 23\frac{1}{8} + 11\frac{7}{8} + 25 + 11\frac{7}{8} + 23\frac{1}{8} + 2\frac{1}{2})$, which would give a scale of 1 “oncia bolognese”: 20 “braccia”. This assumes that the original diameter of the dome was 25 “braccia” instead of the other dimensions that have been crossed out. On the verso in the Latin cross plan the distance between the pinholes that mark the centers of the two transept arcs is 97mm, which is approximately equal to 3 “once bolognese”. The distance noted between them is $58\frac{3}{8} \text{ “braccia” } (1\frac{1}{2} + 11\frac{7}{8} + 31\frac{5}{8} + 11\frac{7}{8} + 1\frac{1}{2})$ or approximately 60 “braccia”, which would give a scale of 1 “oncia bolognese”: 20 “braccia”.

standable because they can now be situated within the specific context of their making, especially in respect to Peruzzi's patron and to the physical context to which they pertain.

The Patron and Context

Giorgio Vasari is the original known source for associating Peruzzi's name with the design of two churches in Carpi, the Cathedral and the nave of San Nicolò, for Prince Alberto III Pio (1472–1530). All other sources derive from Vasari's authority.¹⁰ At the time, the Cathedral would have been the largest ecclesiastical commission in Italy, excluding Saint Peter's, given to an architect of Peruzzi's generation. How Peruzzi, who was 33 at the time, received the commissions is not clear, although Alberto would have known the Farnesina well, because he purchased a piece of property adjacent to it in 1514/15.¹¹

Alberto was one of the most intellectually renowned humanist princes of the Renaissance and an intimate of the Medici popes. Born in 1475, only two years before the death of his father,¹² he had been raised under the guardianship of his paternal uncle Marco and his maternal uncle Giovanni Pico della Mirandola, the humanist. They supervised his education and engaged as tutor, Aldo Manuzio, who was later to found the famed Aldine press in Venice, which Alberto funded. Alberto was educated first at Ferrara, where he attended lectures by Pomponazzi and became friends with Pietro Bembo and Ludovico Ariosto, and then at Padua. For most of his career he had served as a diplomat, first as the agent of the Gonzaga to the French court and subsequently in the pay of Louis XII. In 1508 he was one of the negotiators of the League of Cambrai, and in January 1510 he became the ambassador of Emperor Maximilian to the Papacy, but in 1520 with the ascendancy of

Charles V Alberto committed a fatal error by switching his allegiance to Francis I.

Alberto was a close friend of Leo X and is known to have favored the election of Giulio de' Medici to the Papacy as Clement VII.¹³ He helped to bring about the alliance between Clement and Francis I that was published on 5 January 1525 and proposed the marriage between Catherine de' Medici, Clement's niece, and Francis' second son. Such diplomatic success had its consequences. Mendoza, Charles V's representative in Rome, described Alberto as follows, "Carpi is a devil; he knows everything and is mixed up in everything; the Emperor must either win him over or destroy him."¹⁴ The latter was Alberto's fate, for after the papal alliance with Francis was made public, Charles was reported to have become enraged. Shortly thereafter on 24 February 1525 Charles' troops defeated and captured Francis at the Battle of Pavia, and eight days later his troops under Prospero Colonna occupied Carpi and deprived Alberto of his rule. Alberto fled to Rome and attempted to reclaim his lands but without success. Eventually Charles turned them over to Duke Alfonso I of Ferrara in 1530. When Charles' troops sacked Rome in May 1527, Alberto sought refuge with Clement VII in the Castel Sant'Angelo. He then fled to France where he was warmly welcomed and where he remained until his death in January 1531.

Alberto had been a defender of the Church since the earliest discussions about its reformation arose at the eighth Lateran Council in December 1513, well before the publication of Luther's 95 theses in 1517. By 1525 he had become embroiled in an extended dispute with Erasmus that continued for the remainder of his life and that was not concluded until two months after his death with the publication of his *XXIII Libri* which reveal many of his thoughts about the design of churches.¹⁵ In response to the attack by Erasmus on ceremonies and art, Alberto argued that the senses were necessary to aspire to divine things and that ceremonies were acts of intuitive participation with the divine. They had the capacity to express a mystery that could not be translated into words. He claimed that ceremonies had been instituted by Christ himself when singing at the Last Supper and were perpetuated by Christians singing in the

¹⁰ VASARI/MILANESI 1906, p. 598. Vasari states that the design and model of Carpi Cathedral were prepared by Peruzzi and he also claims that Peruzzi commenced the church of San Nicolò, but he must have meant that Peruzzi began its nave, because construction of the tribune started in 1493 when Peruzzi would have been only 12 years old. The earliest local reference to Peruzzi's authorship is by the chronicler Gasparo Pozzuoli, POZZUOLI 1624, p. 166, who cites Vasari as follows, "... un disegno per mano di Baldisare Peruzzi con tutto lo regole et ordini di vitruvio conformato a quello che dire il Vasari nelle vita de' Pittori..." MAGGI 1707, p. 87, also mentions Vasari when he writes about Peruzzi and the Cathedral. SEMPER 1882, p. 54, footnote 212, cites both Maggi and Vasari; SAMMARINI 1894, pp. 28–30, cites Vasari; and FROMMEL 1961, p. 148, footnote 97, cites Semper and Sammarini.

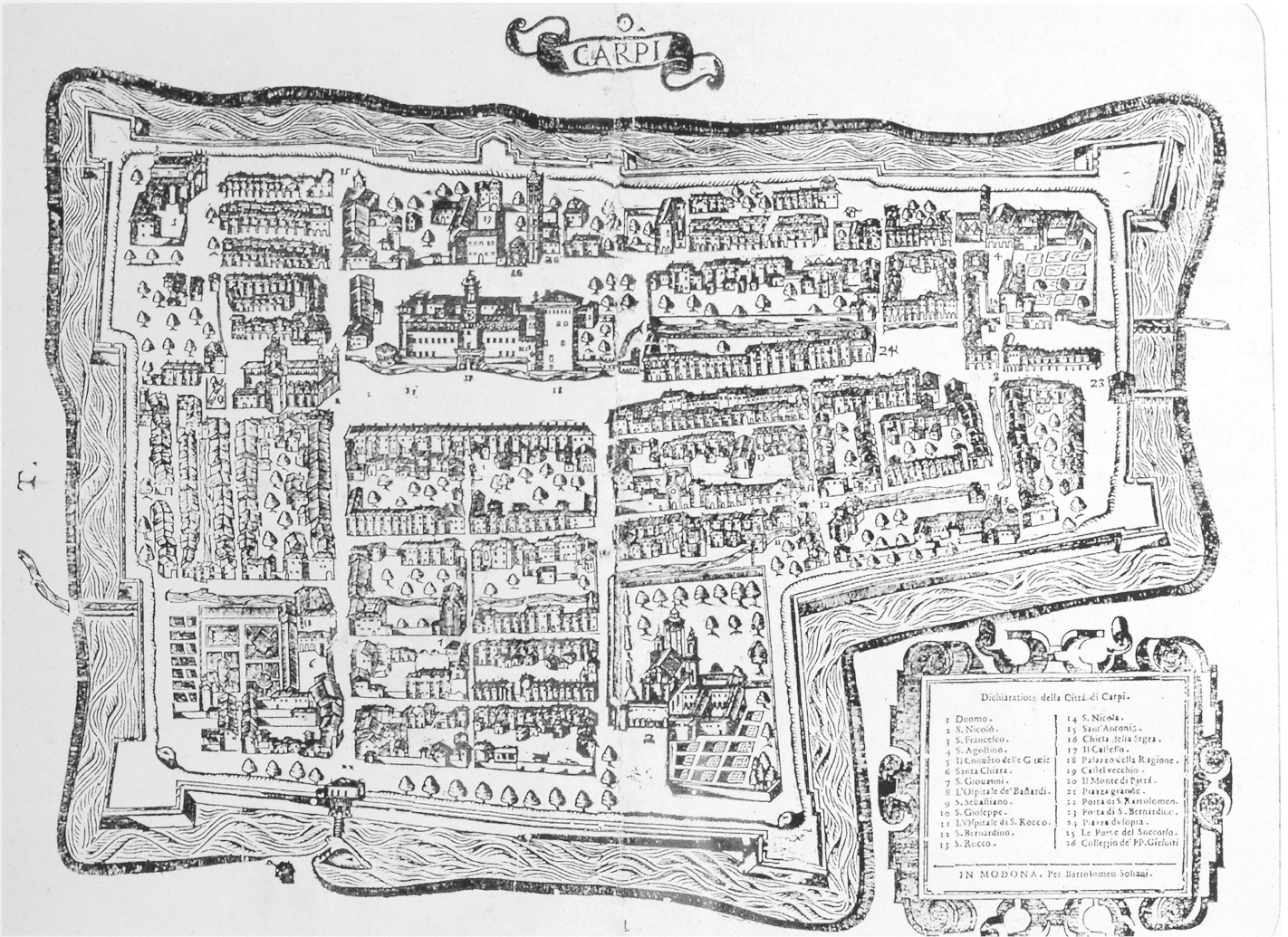
¹¹ FROMMEL 1961, p. 167.

¹² This chronology of Alberto III Pio's life is based upon SEMPER 1882, pp. 2–18; GILMORE 1969, pp. 299–310; and GILMORE 1975, pp. 70–72.

¹³ PASTOR 1923, vol. IX, p. 241.

¹⁴ PASTOR 1923, vol. IX, p. 269.

¹⁵ The full title of the *XXIII Libri* is *Alberti Pii Carporium illustrissimi et viri longe doctissimi praeter prefationem et operis conclusionem tres et viginti libri in locos lucubrationum variarum D. Erasmi Roterdami quos censet ab eo recognoscendos et retractandos*. His thoughts on the designs of churches can be found in Books VI, Ceremonies, and VII, Adornment of Churches. For the account that follows of Alberto's dispute with Erasmus see GILMORE 1969, pp. 299–318; and GILMORE 1975, pp. 61–84; and especially SCAVIZZI 1981, pp. 154–78, 206–12.



8. Luca Nasi, *Urban view of Carpi*, second half of 17th century, Modena, Archivio di Stato, serie generale, n. 336

catacombs, which proved that the veneration of God in Christianity came with ceremony. He concluded that it was not possible to serve religion without ceremony and the necessary images that accompany it.

In response to Erasmus' critique that the expenditures for elaborate structures could have been better spent on the poor, Alberto justified the construction of luxuriant temples on three grounds. First, he argued for the value of "latria" (formal religious veneration or worship), which one expresses through sacrifice or donations, principally to the Church. Temples were sacrifice, donations made by man to God, and He enjoyed seeing such respects being paid. Alberto cited the Temple of Solomon with all its gold and precious metals as an example, the construction of which had been ordered by God Himself. Second, he maintained that temples had a symbolic role as images of heaven and the heavenly Jerusalem and should be decorated as such. Third, he affirmed that the Holy Spirit came to reside in a church and for this reason the interior was more important

than the exterior, a relationship that is the same as that between the spirit and the body. The temple offered itself as an instrument of ascent, an inkling of the joy and honesty that would be enjoyed in paradise, and attracted with its divine beauty. His emphasis upon ceremony and the actual experience of worship on the one hand and upon the symbolism of a temple and its idealized beauty on the other is particularly interesting because the two alternatives seem to resemble so closely the juxtaposed alternative explorations in Peruzzi's drawings – the typologically tectonic schemes on sheets 1 recto and 2, which are related to the reality of experience, versus the more idealized geometric conceptions on sheets 1 verso and 3 as previously discussed.

The Cathedral was only part of a greater plan in which Alberto extended these thoughts well beyond the design of churches to the design of the city of Carpi itself. During his reign, first as a joint ruler from 1490 to 1509 and then as the sole ruler until 1525, he transformed the city into a princely one by undertaking a series of projects to establish



9. Baldassarre Peruzzi, Cathedral, Carpi, 1514, and the piazza



10. Baldassarre Peruzzi, Cathedral, Carpi, 1514, oblique view

a new urban order and thereby to assert the dedication of the city and its prince to the service of God (fig. 8).¹⁶ At the beginning of his reign the “castello” consisted of a number of disparate buildings protected by a moat and walls. Facing it and dominated by it was a long three storey building with a portico below and several identical “palazzetti” above that had been constructed in 1472 in subtle Emilian gothic detail.¹⁷ Alberto had the “castello” transformed into a “palazzo” by bringing uniformity to it through the construction of a new western facade with large regularized windows and through the formation of a beautifully proportioned courtyard that concealed the disparate buildings.¹⁸ He also had the space in front of it transformed into a long open piazza, similar to that designed by Bramante for Vigevano, by constricting its south end with a Renaissance portico that was erected for the grain market and by lengthening the north end of the “palazzetti” building so that it came close to the palace garden, which he made available for the construction of the new cathedral. On the west side of the city he had an east/west street cut through the fabric and through the “palazzetti” by means of a large arch on axis with the entrance of the “palazzo/castello”. Thus the piazza became the heart of the city around which the prince and his citizens were joined and it was to be crowned by the cathedral at its north end. Furthermore, he invited new religious orders to construct convents and churches in the city, and he established new “borghi”, each with its own church, while he also renovated others. For protection he expanded the walls of the city, constructed new pentagonal bastions along them, and built a new gate with a triumphal arch across the road that led to Mantua. Overall it was both an antique conception and a religious one that reflected the values of the patron.

Carpi Cathedral

As it stands today the Cathedral is the principal ornament of the piazza (fig. 9). The bold relief of its broad, two storey, tripartite south facade is dominated by the strong horizontal line of the entablature/attic that stretches across it, counterbalanced by the verticality of projecting paired columns on pedestals. These are crowned by the central pediment that reasserts the strong horizontal and by short towers at the ends. The octagonal crossing tower with a pitched roof looms awkwardly above. The facade appears to be a rela-

tively tame 16th century design because of its overall proportions and the three Serlian windows, but the elaborate adornment around the doors, windows, and niches suggests that later modifications were made.

A side view (fig. 10) reveals that the forms of the nave, choir, and transepts project above the lower side aisles and chapels. Pilasters in shallow relief capped by delicately ornamented cornices modulate the walls, and high Serlian windows are centered between them. Yet the cornices of the outside chapel walls appear awkward, because they do not align with those that wrap the transept apses. They have been marred, having had the “sima” removed, and are penetrated by the arches of the Serlian windows (fig. 11). For many years there were low, barely visible domes over the side aisles instead of the roofs that one sees today,¹⁹ and the buttresses that support the nave, choir, and transepts would have been more evident. The huge crossing tower with its large windows surrounded by elaborate frames dominates all the rest.

Upon entering, one discovers a highly decorated interior with a barrel vaulted three bay nave brightly lit by Serlian lunettes (fig. 12). The side aisles by contrast, which are separated from the nave by piers with passageways through them, are covered by pendentive domes²⁰ and are extremely dark. They may not always have been so, since there is evidence that they once had oculi. The side chapels, which now all have elaborate altars, are brighter, lit by high Serlian windows. The bays of the nave are articulated by Corinthian pilasters on socles, which support an insistently straight and uninterrupted entablature until it is broken at the crossing by ressauts above salient pilasters and below an arch. The horizontal line is so powerful that it leads the eye beyond the crossing to the similarly formed and articulated choir where it continues. This visual movement would once have been even stronger. The two arched windows that flank the altar were once complemented by an axially centered ocular window below the entablature, the form of which still exists on the exterior, and by giant pilasters on huge pedestals (fig. 13) that flanked the entrance to the choir. Altogether there were four of these, one at each pier.²¹ Because the cupola is not the one designed by Peruzzi, it is impossible to know precisely how bright the crossing as originally designed would

¹⁶ See GARUTI 1977, pp. 55–64, for information about the urban history of Carpi under Alberto III Pio.

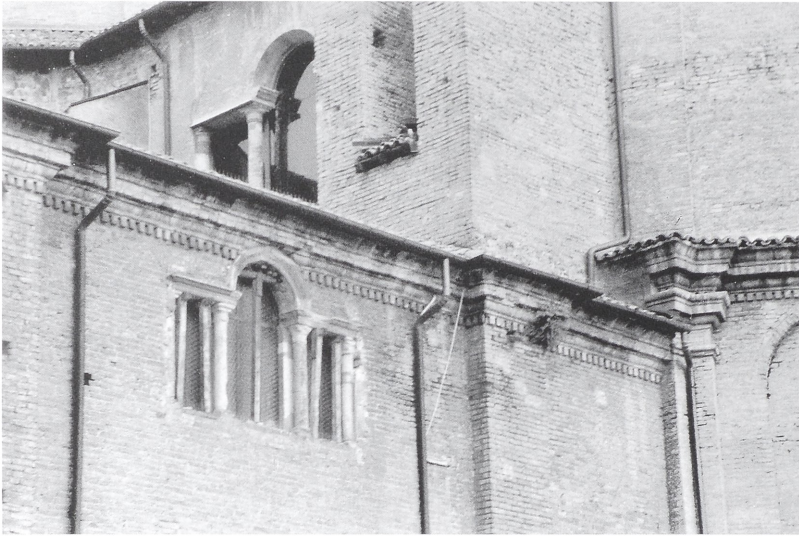
¹⁷ See SVALDUZ 2001, pp. 87–95.

¹⁸ See SEMPER 1882, pp. 40–50, and GARUTI 1983 regarding the history of the Palazzo Pio.

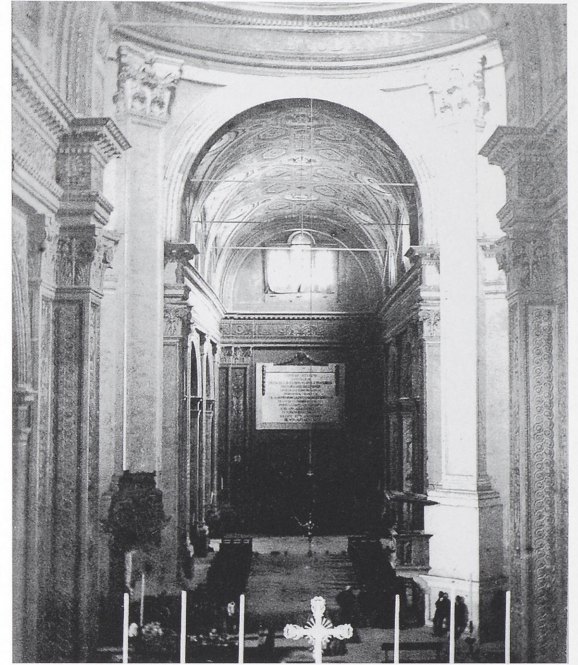
¹⁹ These domes would probably have derived from those over the side aisles in Bramante’s design for Saint Peter’s. See FROMMEL 1984, p. 243.

²⁰ Throughout this paper the nomenclature used to describe the different kinds of vaults is derived from CONANT 1942, plates XV–XIX.

²¹ Such pilasters on huge pedestals articulating the crossing would derive from columns similarly placed in Francesco di Giorgio’s design for San Bernardino in Urbino, in Bramante’s design for Saint Peter’s on Uff. 20 A r, and in Raphael’s ‘Expulsion of Heliodorus’.



11. Baldassarre Peruzzi, Cathedral, Carpi 1514, exterior detail of Serlian window



13. Baldassarre Peruzzi, Cathedral, Carpi, 1514, original pilasters in the crossing, view toward the nave



12. Baldassarre Peruzzi, Cathedral, Carpi, 1514, interior looking toward the choir

have been, most likely darker than it is today and less diffuse. The transepts, each of which had a central ocular window, would have been very similar to the choir, only shorter and slightly darker since there were no arched windows like those that flank the altar. The floor at the altar and in the choir is elevated. On either side of the choir are small passages that lead into octagonal sacristies.

Construction History and Peruzzi's Model

The fate of Peruzzi's design for the Cathedral was integrally tied to the fate of his patron. Although its quality had originally been unquestioned because of the renowned sensibilities and reputations of its patron and architect, it remained in awkward stages of incompleteness and was gradually transformed by architects and patrons who held different aesthetic sensibilities. Most of Peruzzi's design is still reflected by the current Cathedral, but the building took almost three centuries to construct so there were some major modifications to his design and some major alterations after its completion. Its construction/alteration history falls into five distinct phases. The first was between 1514 and 1525, years of Alberto III Pio's rule, when the choir, flanking sacristies, the transepts, and the crossing, including the two southern piers and the giant pedestals but not the cupola, were constructed; the second between 1605 and 1701, years of Este rule under the Dukes of Modena, when the nave and facade were completed but with deviations from Peruzzi's design, two side chapels that had been in the model having been omitted and the facade having been revised; the third between 1764 and 1774 when large altars replaced the more modest 16th century ones and when the cupola was constructed but not according to a design by Peruzzi; the fourth in the 19th century when the Cathedral was restored, the facade remodeled, the pendentive zone altered and the giant pilasters of the crossing piers removed; and the fifth during restorations which began after the Cathedral was damaged by two earthquakes in 1986 and 1987.²²

Peruzzi's model is now lost, but it can be partially visualized by comparing the appearance of the cathedral as it stands today with the modifications documented in this construction history. Although the delivery of the model from Rome was first anticipated in November 1514, it did not arrive until June 1515,²³ and it definitely survived until 1624,²⁴ by which time the choir, the crossing without the

cupola, the transepts, and two bays of the nave with the side aisles and chapels were all standing.²⁵ Therefore, those parts of the building plus the third bay of the nave, which matches the previous two except for the exterior appearance of the Serlian lunettes, should be in accordance with Peruzzi's design unless documents record a decision to deviate from the model or to remodel what was built. Consequently, its plan would have been very similar to the one published by H. Semper in 1882 (fig. 7) excluding the facade end. Documents indicate that there would have been two additional chapels. Whether these would have been part of a fourth bay of the nave or part of a narthex or vestibule is not clear.²⁶ For the most part, the interior details would have been the same as what one sees today excluding the decorative painting and Baroque altars – the choir, transepts, and nave covered by barrel vaults penetrated by Serlian lunettes; the side aisles with pendentive domes and possibly oculi; and ocular windows below the entablature at the end of each transept and on the central axis of the choir flanked by the two arched windows. The major differences would have been the crossing piers, which would have been like the giant crossing pilasters as they appear in the late 19th century photograph (fig. 13), and the cupola and drum, the precise design of which remains a mystery but which can be approximately determined by studying some urban views of the city.

Two views of Carpi made by Luca Nasi in the second half of the 17th century give clues about the exterior appearance of the Cathedral model (figs. 14 and 15).²⁷ The close correspondence between the appearance of some buildings that still exist today and their representations in these views serves as testimony to their accuracy in general composition, although the correspondence in details is more sche-

²⁵ See the urban plan in GARUTI 1987 a, pl. 6.

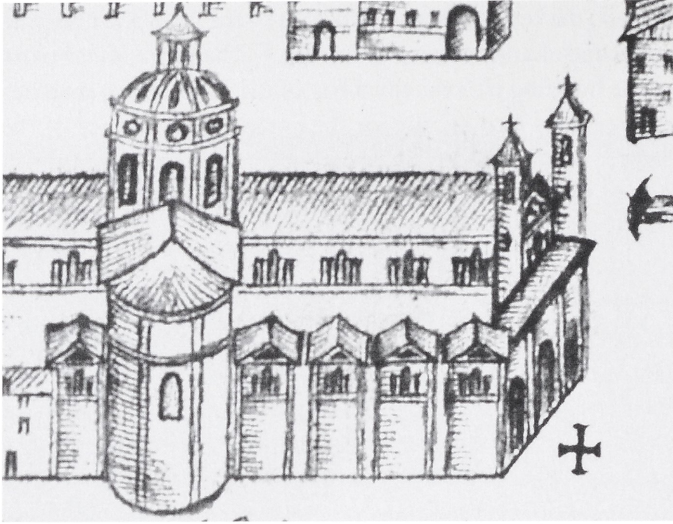
²⁶ After an extensive period of discussion between 1627 and 1633 a decision was made to omit two of the chapels, but the issue continued to be debated as late as 1647. See CABASSI 1986, pp. 81–83, 147; SAMMARINI 1894, p. 59. It is not clear as to whether they were adjacent to the nave or part of the narthex. In the four oldest accounts that mention the side chapels in the model, those dating from 1607, 1627, 1628, and 1707, the references are primarily to the number of chapels that remained to be built. Although the 1607 account refers to the chapels as “cioè due d'ogni parte,” it specifically refers to “la metà delle otto Capelle comprese nel modello antico,” and not to “quattro delle parte.” Only MAGGI 1707, pp. 87–88, writing many years after the others, adds, “...cioè una per parte,” when referring to the two chapels that were omitted. He may never have seen the model since he never mentions having seen it, nor is its existence confirmed in any accounts after 1624 except in the urban views by L. Nasi, which might have misled Maggi. Also Maggi was not an architect as were the authors of the 1627 and 1628 letters, Falcetta, who opposed the omission of the two chapels, and Pacchioni, so Maggi's account is less reliable than theirs.

²⁷ See GARUTI 1987 a, pl. 7, and GARUTI 1977, p. 49.

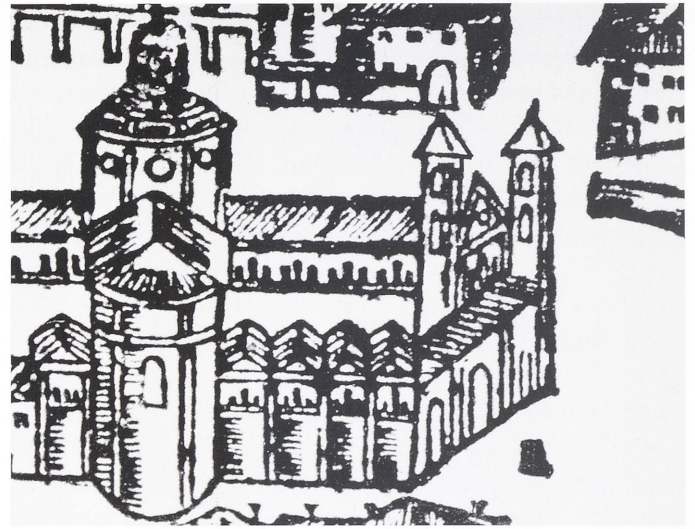
²² See SEMPER 1882, pp. 53–57; SAMMARINI 1894; FROMMEL 1961, pp. 148–55; and GARUTI 1987 b, pp. 8–34.

²³ ROCCA 1863, pp. 27–41.

²⁴ POZZUOLI 1624, pp. 166–167, states that the model was located in the left transept in the chapel of Saint Francis.



14. Luca Nasi, *Cathedral, Carpi*, detail as it appears in an urban view of Carpi, 1677, Museo Civico, Carpi, *disegni a stampe*, inv. C/43



15. Luca Nasi, *Cathedral, Carpi*, detail as it appears in the urban view in fig. 8

matic.²⁸ At the time when the views were made the Cathedral was standing without any cupola and with a facade finished only in its general lines. One of the views was executed in 1677,²⁹ which was after the decision had been made to omit two chapels that had been in Peruzzi's model and when designs for the details of the facade were being prepared by Peruzzi's successor architects. Yet the Cathedral in the urban views is represented as if it had the full number of chapels that were in the model as the Serlian windows indicate. Therefore, one of the illustrator's primary sources must have been the model in addition to what was standing at the time. Both views clearly indicate the Serlian windows of the nave, choir, and side chapels. They also indicate the deep arched opening that exists in the transept apse protecting the ocular window and one of the arched windows in the

choir, but most significantly they reveal a way of roofing over the side chapels and aisles with a kind of sawtooth roof, similar to San Giustina in Padua, that is entirely different from what was constructed. It is a somewhat believable design that would have been compatible with the pendentive domes of the side aisles and would have permitted free drainage of water around them, but there is no suggestion of either lanterns or oculi. If such a design had been built (there is no evidence that it ever was), two of the awkward exterior details would have been avoided, namely the previously mentioned penetration of the Serlian windows into the cornices of the outside chapel walls and the misalignment of those cornices with those that wrap the transept apses (fig. 11).

The views are in basic agreement in their representation of the entrance end of the Cathedral. Both show facades with paired towers flanking a portico and pedimented nave. One (fig. 14) is quite precise about the design of the upper facade. Below the pediment, which has a circle in its center, and above the portico roof there is a Serlian window in a position that corresponds to the central Serlian window that exists today (fig. 9), but the presence of the tall towers and portico are confusing. There are some curious ambiguities about their placement that are critical for understanding Peruzzi's design for this end of the Cathedral. The right-hand tower definitely stands at the end of the portico and in front of the pedimented facade; whereas the left-hand tower definitely stands behind the portico and in the same plane as the facade. Perhaps Nasi held it back so that the pedimented facade would not be concealed and so that the towers would appear to stand more freely, or perhaps he pulled the right one forward so it would appear to stand freely. The manner in which the roof of the portico runs past the left tower and

²⁸ The basic compositions of the Palazzo Pio, the "Sagra", and the church of San Nicolò compare precisely and the details compare quite closely, although somewhat schematically. For example, in the views of the Palazzo Pio the windows in the wings that flank the entrance portal/tower agree precisely in number and composition with what exists, but the upper band of alternating windows and niches does not. They are modified to give the general sense of their appearance, undoubtedly because representing them more precisely would have produced a crowded result. The same can be said about the elevation of the projecting right wing, labeled as the "Palazzo della Ragione". The views of the "Sagra" are very accurate representations of the tower and of the composition of the tower, facade, and adjacent buildings, but the details of the church facade do not correspond well with Peruzzi's design in that the central arch and flanking pilasters do not extend to the upper part of the facade. The views of San Nicolò capture well the precise relationship, particularly in height, between the nave, tribune, and towers, but differ in the details of the drum for the cupola. Although the ocular windows are indicated in alternating faces of the octagonal drum, their precise placement differs in the two views.

²⁹ See GARUTI 1977, p. 48.

intersects the side chapels raises further questions regarding what the design in the model might have been. The portico itself is tripartite, but its placement and that of its three arched openings are asymmetrical relative to the axial symmetry of the nave. Furthermore, the towers align with the side aisles and would have had entrances with vestibules at their bases. If the nave had four bays with four side chapels on each side, both towers would need to be in front of the facade with the portico between them. If the nave had three bays and there were four side chapels on each side, both towers would align with the facade, three chapels on each side would flank the nave, and one on each side would open off a vestibule under the towers. The portico could extend the full width of the facade. Either possibility could easily have been drawn but was not. Instead there is the ambiguity, which seems to have emerged because Nasi decided to show two conflicting aspects of the Cathedral design, which he was unable to reconcile – namely the side elevation with four side chapels and four upper Serlian windows on the one hand and the principal facade with its pediment, Serlian window, and portico flanked by towers on the other. The ambiguity remains even though the intersection of the portico and side chapel roofs is drawn differently in the two views. Perhaps the conflict arose because there were two different designs – Peruzzi’s model and an alternative facade designed by one of Peruzzi’s successor architects.³⁰ Peruzzi’s drawings in the Uffizi clarify some aspects of this ambiguity.

Although almost all the details of the Cathedral are very similar in the two views, the representations in them of the cupola differ significantly. There is a possibility that Peruzzi’s model did not even include a cupola, but that is unlikely. One view shows a low octagonal drum with an ocular window in each face covered by a low roof with a lantern on top. The other shows a higher and more elaborate octagonal drum with ocular windows placed above tall arched windows, all covered by a low cupola with a lantern on top. Conceptually the first is a modest proposal that is not expected to be seen from afar. The facade would be the primary aesthetic element. On the other hand, the second is intended to be seen and become a landmark within the city, but it looks more like a 17th century design than a 16th century one.³¹ Peruzzi’s drawings in the Uffizi help to clarify which of these two alternatives was his intention.

³⁰ In this regard it is interesting to note that the only church associated with the architect Giovanni Battista Falcetta (one of the successor architects to Peruzzi who prepared a facade design), San Bartolomeo dei Teatini in Bologna, which is a Latin cross church with lanterns and domical vaults over the side aisles, has a portico across its entire facade. Attributed in “Thieme-Becker”, 1915, vol. XI, p. 211. RICCI/ZUCCHINI 1968, pp. 83–84, does not mention Falcetta’s name in conjunction with the church.

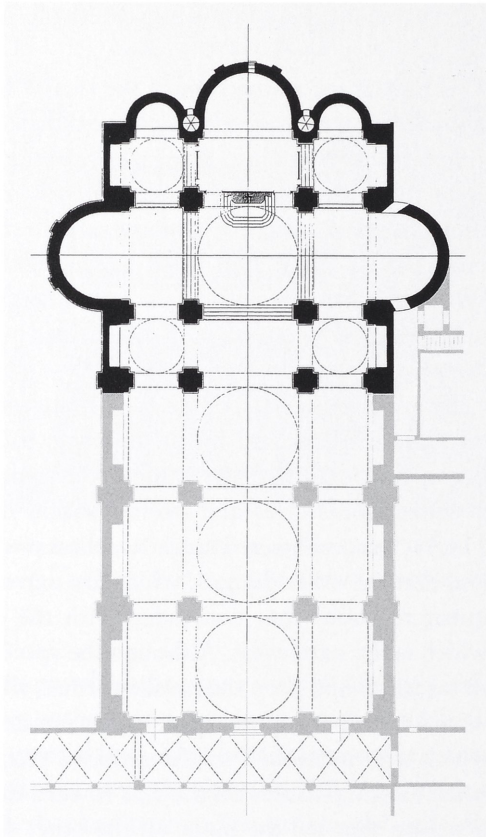
³¹ Again San Bartolomeo in Bologna comes to mind.

Peruzzi’s Design Thinking, Method, and Intentions

This partial reconstruction of the model and the historical knowledge of the cathedral’s physical form and context provide further insight into Peruzzi’s drawings in the Uffizi, and since these serve as the primary intermediary between his thoughts as a designer and the architecture, they reveal much about his design thinking, method and intentions. What initially appeared as a conglomeration of difficult to understand drawings can now be understood as a more rational yet imaginative endeavor.

By envisioning each of the main plans on the Uffizi sheets set into the Cathedral site at the north end of the piazza it becomes evident that the quincunx designs on sheets 2 and 3 with ambulatories and overall widths of 162, 122, and $111\frac{3}{4}$ “braccia” were Peruzzi’s earliest proposals (figs. 3–5) and that the other designs, which are narrower, were subsequent revisions that concluded with the constructed one, which is the narrowest. Although the specific site according to tradition had been the palace garden, which one assumes would have been quite open, it was constrained by stables, which are mentioned in the archival records, possibly by some existing houses on the side toward the arcade, and by a stream that fed the moat on the other side. These might have limited the potential width of the cathedral, but more probably Peruzzi was trying to relate the width of the cathedral to the width of the piazza, which measures 107 “braccia agrimensorie” (56.2m) between the “castello/palazzo” of Alberto Pio, which was surrounded by a moat, and the 15th century arcade.

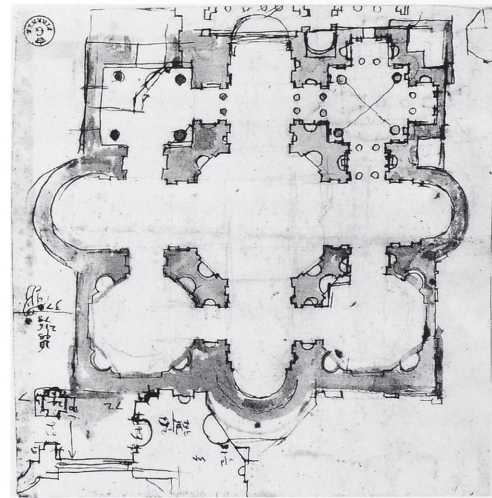
Peruzzi’s conceptual interest in a quincunx design with ambulatories is now understandable. He would have known the quincunx projects with ambulatories designed by Bramante for Saint Peter’s and the first revision of them by Raphael (August 1514). He would also have been familiar with two similar quincunx projects without ambulatories by Bramante, the parish church in Roccaverano (pre-1509) and Santi Celso e Giuliano in Banchi, Rome (c. 1509), the latter of which had “columnae quadrangolae” that are similar in configuration to those on sheet 3. Furthermore, such a church existed in Carpi, although it lacked ambulatories – namely the tribune of San Nicolò (fig. 16), the first church commissioned by Alberto III Pio (begun 1493). More specifically, the centralized plan on sheet 3 recto appears to be an enlarged version of the San Nicolò tribune plan but with crossing piers that have passageways running through them and with ambulatories that take on a form proposed by Bramante in a sketched plan for Saint Peter’s on Uff. 8A v (fig. 17). Peruzzi knew that plan extremely well, because he had drawn an intermediary plan between it and the one drawn on its recto by Giuliano da Sangallo, as can be seen on Uff. 19A r, the elevation for which is that on Uff. 113A



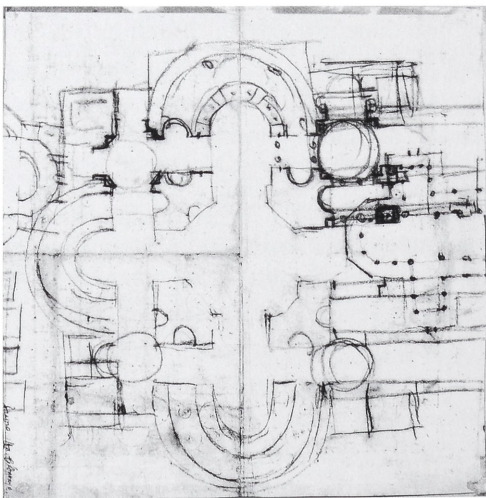
16. Anonymous and Baldassarre Peruzzi, San Nicolò, Carpi, 1493, plan (Tribune in black), Semper 1882, Tafel 18



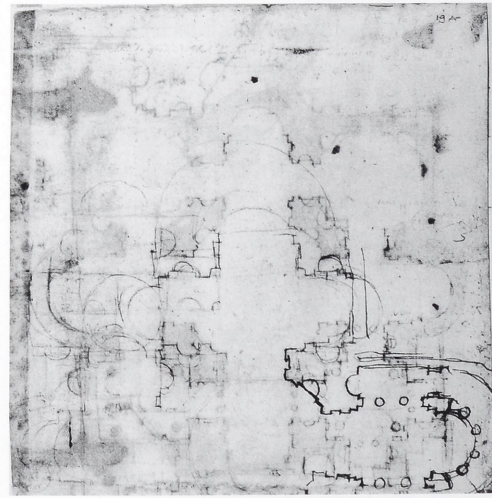
18. Baldassarre Peruzzi, U 113 Ar, Saint Peter's, facade



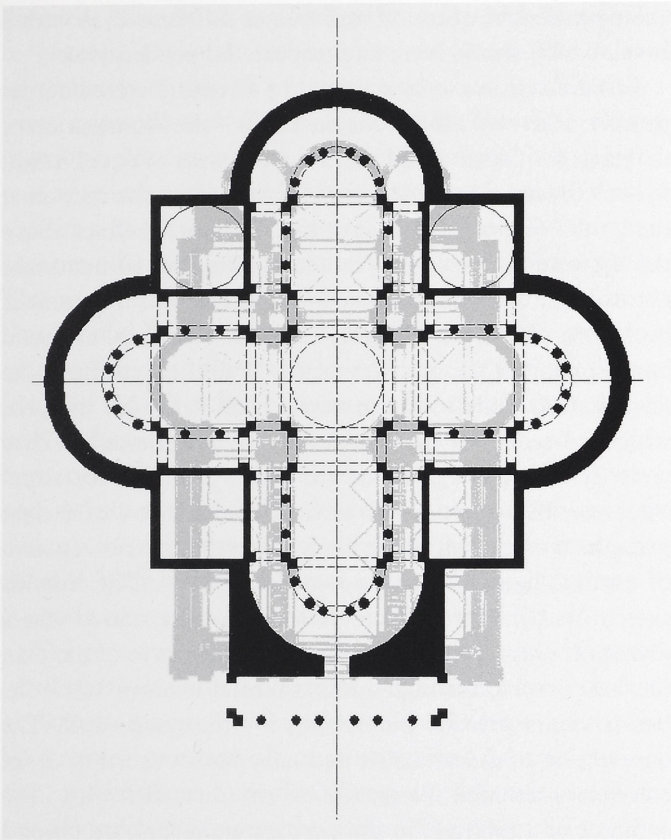
19. Baldassarre Peruzzi, U 19 Ar, Saint Peter's, plan



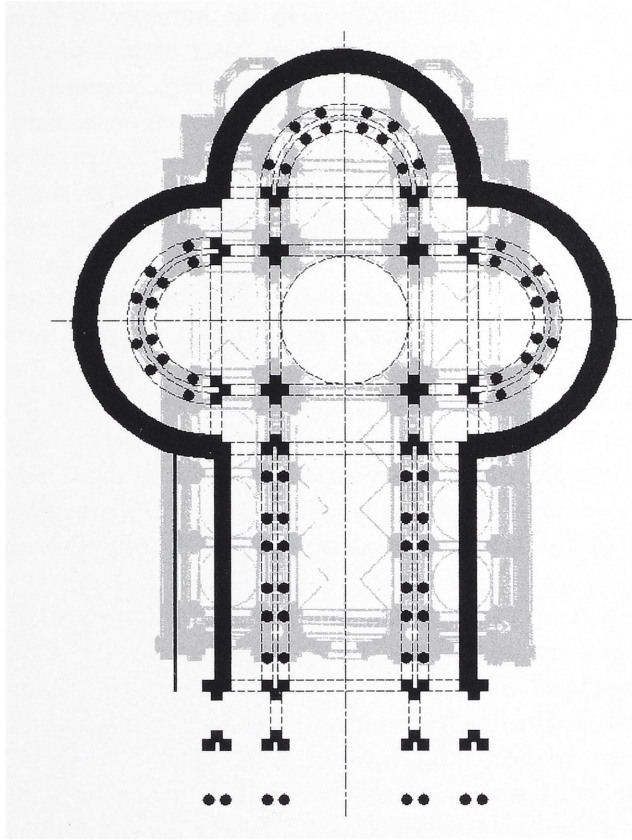
17. Donato Bramante, U 8 Av, Saint Peter's, plan



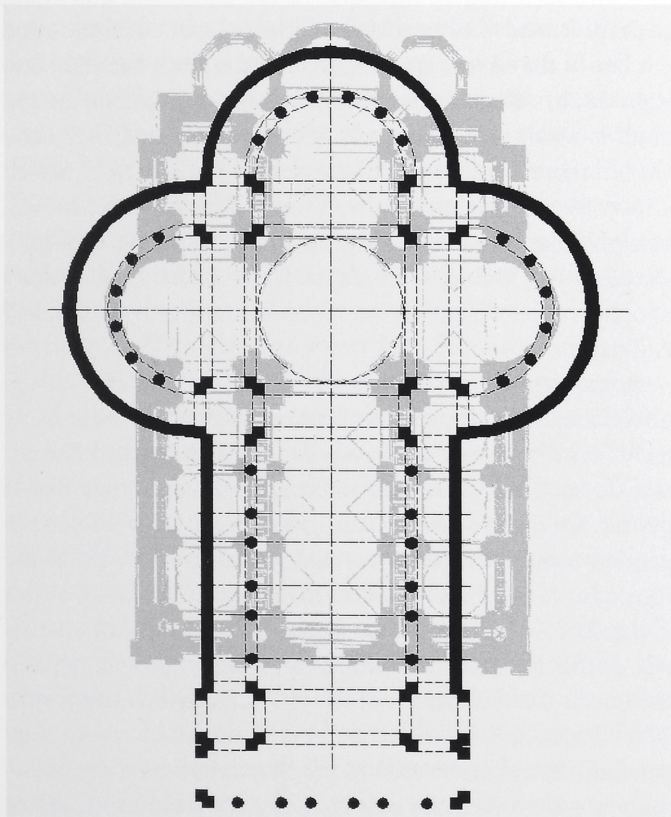
20. Baldassarre Peruzzi, U 19 v, Saint Peter's, plan



21. Baldassarre Peruzzi, Plan on sheet 3 recto as dimensioned superimposed upon plan of Carpi Cathedral



23. Baldassarre Peruzzi, Plan on sheet 2 as dimensioned superimposed upon plan of Carpi Cathedral



22. Baldassarre Peruzzi, Plan on sheet 3 verso as dimensioned superimposed upon plan of Carpi Cathedral

(figs. 18 and 19). And on the verso of Uff. 19 A Peruzzi drew the precedent for the ambulatory on sheet 3 recto (figs. 4 and 20).³²

A comparison of Peruzzi's Uffizi drawings to those parts of the final building that would have been constructed in

³² Peruzzi's plan on Uff. 19 A directly relates to Giuliano da Sangallo's plan on Uff. 8Ar and to Bramante's on the verso. It also includes details about the crossing piers and corner chapels of Saint Peter's that relate to Uff. 20A and Uff. 7945A. Although Uff. 19A and Uff. 113A have generally been considered as drawings by Peruzzi for Saint Peter's, they have never before been directly associated with one another or with these plans by Giuliano and Bramante. The elevation on Uff. 113A is drawn at the same scale and with the same basic dimensions as the plan on Uff. 19A. The portico is slightly revised as appears in the plan below it (Note that the pilasters adjacent to the building face have the same spacing as the columns/pilasters on Uff. 19Ar and agree dimensionally with the elevation; whereas the outer row of columns/pilasters disagrees dimensionally with the elevation but has the same elements.) The pilastered elements have been replaced by giant columns on pedestals and are flanked by smaller columns, and the section between the main portico and the tower is now recessed. The chapel and transept that would have appeared in the background are not shown. The upper, octagonal part of the tower is drawn in plan in the top right corner of Uff. 19Ar.

accordance with the model reveals the influence of these early design studies on the final plan. None of the four proposals on sheets 2 and 3 (figs. 3–5) is drawn completely to scale or in complete agreement with the given dimensions. Some were changed after the plans had been drawn, as is evident from various crossed out numbers, and in many places the plans are drawn freehand. When redrawn according to their dimensions, their influence on the final design becomes evident. The dimensions of the Cathedral's choir and the width of the nave and transepts seem to derive from the Greek cross plan on the recto of sheet 3 (fig. 21). The dimensions of the Cathedral's crossing and the length of the transepts excluding the ambulatories seem to derive from the Latin cross plan on its verso (fig. 22). And the Cathedral's side chapels and the paired pilasters between the nave and side aisles seem to derive from the Latin cross plans on sheet 2 (fig. 23).

This comparison and the details on these sheets also reveal that Peruzzi was attempting to enlarge the size of the crossing and to strengthen the structure while simultaneously narrowing the building. The Greek cross plan on the recto of sheet 3 (fig. 4), which is the widest overall (162 "braccia"), has the smallest crossing (25 "braccia") and the most delicately drawn piers and walls. By contrast the Latin cross plan on its verso (fig. 5), which is the narrowest overall (111³/₄ "braccia"), has the largest crossing (31³/₈ "braccia"). And the Latin cross plan on sheet 2 (fig. 3), although slightly wider overall with a slightly smaller crossing has more robust piers, thicker walls, and paired columns and incorporates Y and + shaped pier elements for enlarging the crossing in comparison to the narrower nave, choir and transepts. At the bottom right of the Greek cross plan some pier elements have sprouted 45° pilasters (fig. 4) that would have allowed for a larger dome with a diameter equal to the diagonal of the crossing but that would have encroached upon the broad arches above and required an atypical design for the pendentives. They are embryonic precursors to the giant crossing pilasters of the Cathedral as originally constructed. The one at the right next to a sketch of a Corinthian capital is quite small and inconsequential, both structurally and visually, but those to the left directly below the portico would have transformed the overall shape of the pier into a more substantial mass with a triangular or trapezoidal configuration in plan. In the detail plan and perspective sketch at the top right of sheet 1 verso (fig. 2) the crossing would have been enlarged in a different but more modest way by converting a + shaped pier element into a more solid one with a slight bevel. The pier element drawn farther down near the right edge of the sheet is a further exploration and has within it three alternatives for the size and design of the crossing – one with no bevel (the most massive pier element of all), which would have had a trian-

gular pendentive above it, and two of different sizes with a bevel, which would have had trapezoidal pendentives.

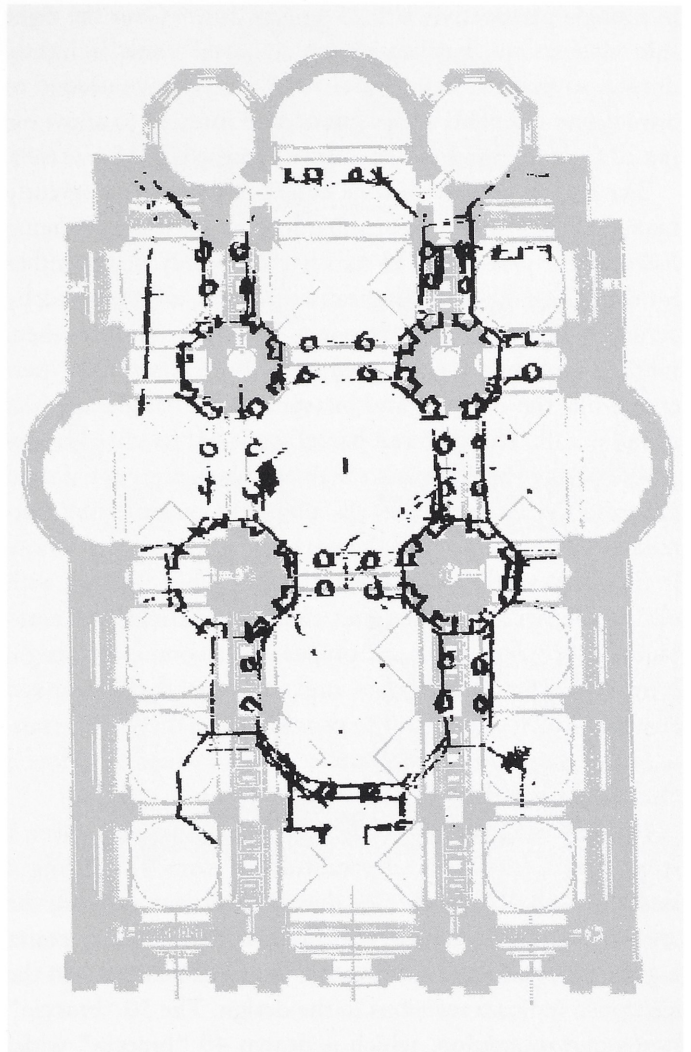
Peruzzi's efforts to strengthen the structure were interdependent with two other considerations – the illumination of the nave with natural light and the columns of equal height in both the nave and side aisles. In the perspective section at the bottom left of sheet 3 recto (fig. 4) three thin lines above the right row of columns indicate his desire to introduce natural light into the nave, a condition that was the result of his having placed the side aisle vaults at a height that would have facilitated the transfer of the lateral thrust from the nave barrel vault to the exterior wall and side chapels, which he seems to have added as an afterthought. They were first drawn high as on the right, probably for structural reasons, but were then lowered as redrawn on the right and added on the left, most likely to permit the introduction of natural light into the side aisles as well. The interior sketch on Uff. 149 A (fig. 6) is a bolder alternative where abundant natural light is admitted into the nave of the plan on sheet 3 verso through a high thermal window while the barrel vaults provide buttressing for the nave vault. The intersection of the side aisle and nave barrel vaults over the columns presented Peruzzi with another difficulty. The columns and pilasters in the perspective section on sheet 3 recto are all the same height, but he had difficulty reconciling the entablature in the nave with that in the side aisles. It is drawn as a thin stringcourse in the side aisles and choir, perhaps intended to be just the architrave, but at the section cut line in the nave it is a full entablature. Over the right column there is also an entablature facing the side aisle but the vault is awkwardly drawn to accommodate it; whereas on the left there is only the string course in the side aisle, which allows for a complete and well formed barrel vault over it, being similar to a detail designed some years later by Giulio Romano for Mantua Cathedral. This condition is entirely avoided in the design on the verso as the sketch on Uff. 149 A illustrates.

At some point a quincunx design with ambulatories was abandoned. The site was too restrictive and there were many technical difficulties as already mentioned. Instead Peruzzi transformed the piers into structural elements that would permit alternative spatial configurations that were not dependent upon ambulatories. Consequently the pier at the top right of sheet 1 verso with the perspective sketch above it (fig. 2) evolved into those at the bottom right of sheet 2 (fig. 3) that have become octagonal, which then evolved into the one at the top middle of sheet 1 verso which supports a 37¹/₄ "braccia" diameter dome by means of trapezoidal pendentives as can be seen in the sketch immediately below it. It is a very versatile pier that can have either niches or multiple openings, that can be modified to accommodate orthogonal conditions, and most importantly that sparked

Peruzzi's geometric imagination through which he was able to generate the other schemes on the sheet. The scheme immediately to the left of the pier, which would have measured approximately 80 "braccia" \times 80 "braccia" according to the pier dimensions, is reconfigured with a lateral pattern of spaces in the lower left scheme, and is enlarged in the top left scheme to a 97 "braccia" \times 97 "braccia" design to accommodate an additional ring of intermediate spaces. This in turn is modified in two different ways. First at the bottom middle of the sheet a cosmatesque/coffer pattern is extracted and modified to become the scheme at the bottom left, and second at the bottom right of the sheet in a much larger scheme the intermediate spaces are removed, the pattern is extended, niches in the piers become passageways, and columns are added. Diagonal lines drawn over the columns that surround the central space indicating their deletion turned it into a Greek cross design, which may be the geometric predecessor to the final design (fig. 24).

The geometric studies appear to have stimulated Peruzzi's typological imagination further, so that he turned to those ancient prototypes that he admired and knew would resolve his technical concerns about structure and natural illumination, and he began to explore composite schemes as a means for continuing to enlarge the design. The Piazza d'Oro/Ora-torio of Santa Croce study in the right margin of the recto (fig. 1) is the typological counterpart to the centralized geometric studies on the verso with the octagonal piers having become corner sacristies. The Basilica of Constantine/Baths of Diocletian design, which appears to be a Greek cross, derives from the tripartite Greek cross geometric plan at the bottom right of the verso, but the perspective sketch reveals that it is actually a barrel vaulted nave with side chapels. The barrel vault of the middle chapel runs perpendicular to the nave and buttresses it; whereas the barrel vaults of the corner chapels that are behind the large flat panels above the columns run parallel to the nave like Alberti's design for the Rucellai Chapel in San Pancrazio, Florence.

When Peruzzi combined the plans into the large composite one, he adjusted them to fit with one another by making the nave approximately half the size of the Basilica of Constantine and by enlarging the tribune dome from the $37\frac{1}{4}$ "braccia" diameter on the verso, a size and design with which he was familiar both structurally and spatially since it matched that of the Minerva Medica pavilion, the plan of which he sketched above, to a diameter of $43\frac{1}{4}$ "braccia". Overall the composite plan was the longest of all his designs, measuring 173 "braccia" in length from the inside face of the end nave wall to the outside of the octagonal corner sacristy, and was comprised of two very disparate spaces joined by a broad arch. The modification of the top octagonal pier on the verso, which was made to accommodate an orthogonal condition, illustrates Peruzzi's attempt to facili-



24. Baldassarre Peruzzi, *Sketched plan on sheet 1 verso superimposed upon plan of Carpi Cathedral*

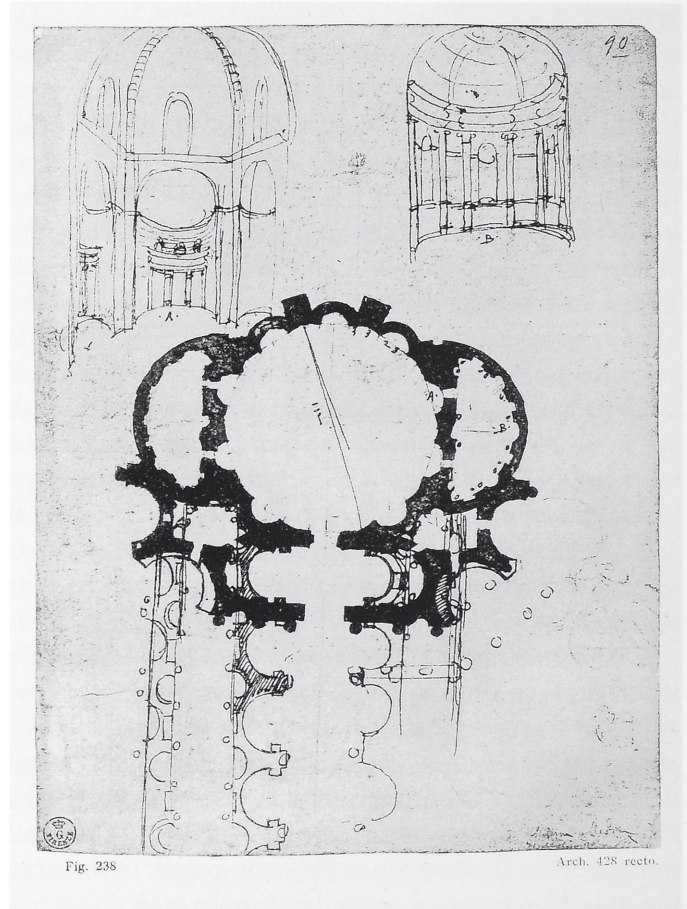
tate the connection between the two parts, especially in the area of the side chapels, so that the awkward residual space could be replaced by an octagonal chapel. He also considered modifying the nave piers as is drawn in plan along the left margin of the sheet. But he rejected that possibility as the diagonal lines indicate. Instead he explored shorter composite alternatives. He had once attempted to join an unusual three bay nave to the Minerva Medica pavilion, as appears on a sheet in a sketchbook attributed to him but not necessarily in his hand, Uff. 428 A r (fig. 25), the recollection of which may have prompted him to explore the possibility of developing a subordinate nave. A fragment of a perspective sketch at the very top of sheet 1 recto (fig. 1) that illustrates a corner pier of the crossing with a triangular pendentive and the perspective sketch of a basilican nave in the lower right margin pertain to another design that only exists

in a single perspective, Uff. 25 Ar (fig. 26).³³ Over the right side aisle in the basilica sketch a barrel vault is lightly drawn, so that the nave barrel vault would have needed to have been raised and a segment of wall inserted to allow for the addition of windows as is drawn in the Uff. 25 A sketch.

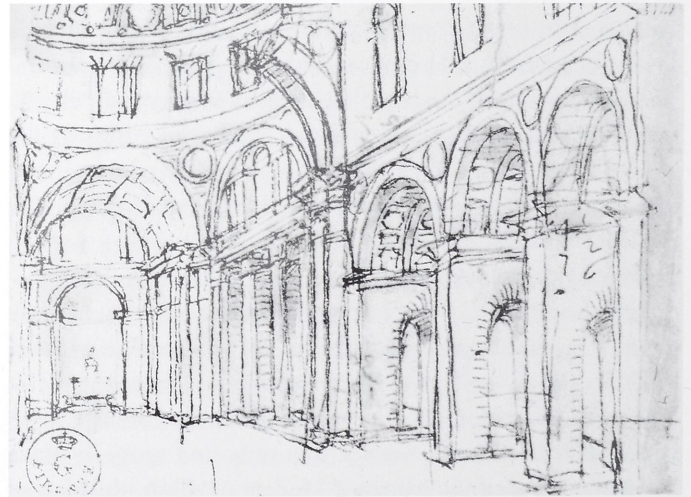
The tribune and nave in the Uff. 25 A sketch differ greatly from one another and are separated by an arch springing from salient pilasters. The two parts are only tied together by the strong horizontal entablature that is supported by columns as it crosses the transept. Nothing else links them visually. The piers of the nave have short pilasters at their ends while the columns and pilasters of the tribune are half again as tall. The coffered barrel vault of the choir is low while that of the nave is so high that it is not even drawn (There must be one since the piers are massive like buttresses.). The windows of the nave are arcuated while those in the drum of the dome are trabeated. This drawing with all its awkwardness illustrates the great difficulty of combining two independent prototypes into a composite design. It must be the penultimate one, the one that provoked Peruzzi to turn once again to geometry and thereby to transcend the limitations of additive parts in order to define a synthesized whole.

At the bottom of the long sum of numbers on sheet 1 recto (fig. 1) $43\frac{1}{4}$ is being subtracted from 173 giving a result of 130. This indicates that Peruzzi was deleting the crossing from the length of the composite scheme but retaining the octagonal corner sacristy. Other dimensions on the sheet also indicate revisions to the design. The 50 "braccia" horizontal dimension, which is drawn 40 "braccia" wide, indicates that he was considering the possibility of increasing the total width excluding the transept apses, but the numbers being summed underneath the tiny "Carpi" plan indicate a reconsideration in favor of a 42 "braccia" dimension for a total width of 84 "braccia". The 22 "braccia"

³³ Uff. 25 Ar has been published many times and has usually been associated with the design of Saint Peter's. GEYMÜLLER 1875–80, p. 140 and pl. 18, fig. 6, placed it in his Group V of Saint Peter's drawings – projects of the first phase of the second epoch (March 1505 to March 1514). VASARI/MILANESI 1906, p. 634, identified it as a sketch for Saint Peter's. FERRI 1885, p. 149, listed it with Uff. 529 Ar and Uff. 161 Av under San Pietro in Vaticano. PORTOGHESI 1971, p. 68, included it in his analysis of the design of Saint Peter's between 1505 and 1527, claiming that it "...recreates the structural quality of the ancient Roman monuments as no other image in this period." In BIAGI 1981, p. 17, it was identified as a sketch for Saint Peter's and was used as an illustration of Peruzzi's "metodo progettuale". WURM 1984, pp. 393–394, placed it and its verso under "Studies" immediately following Uff. 151 A and Uff. 118. PELLONI 1987, p. 41, identified it as a sketch for Saint Peter's and compared it to the interior of Carpi Cathedral. It has a sketch elevation on its verso that is similar to the Basilica of Constantine/Baths of Diocletian interior sketch at the top left of sheet 1 recto.

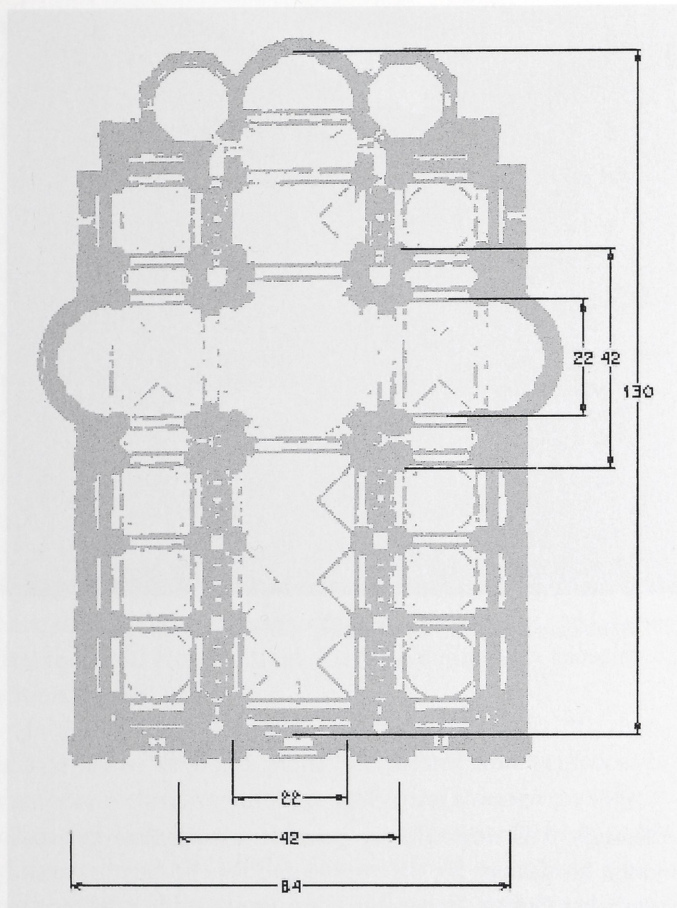


25. Baldassarre Peruzzi (?), U 428 Ar, "Temple of Minerva Medica" with attached nave



26. Baldassarre Peruzzi, U 25 Ar, interior sketch

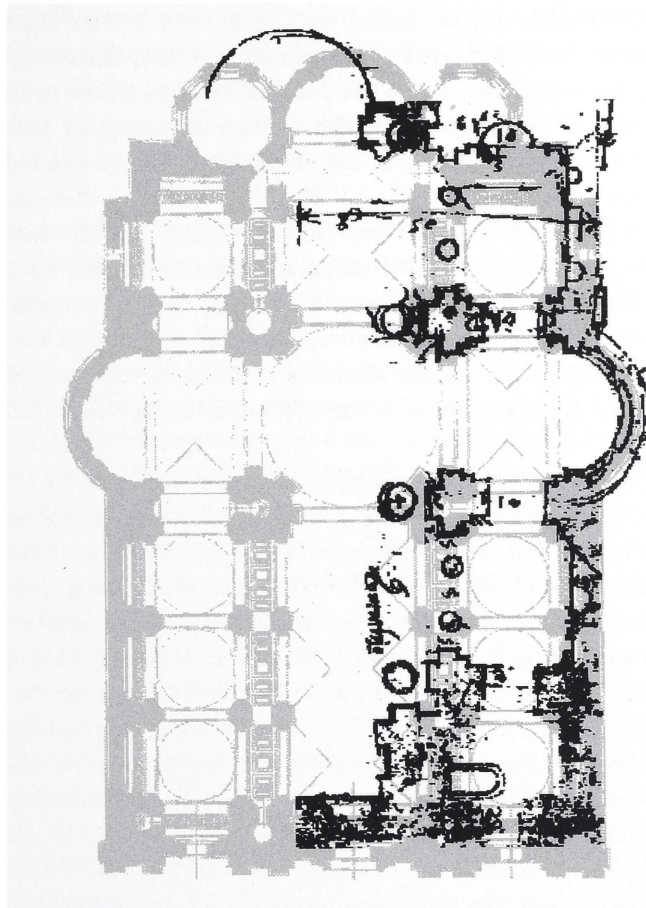
width of the middle side chapel in the large nave plan indicates a widening of it as well. The numbers being summed at the bottom of the sheet ($78 + 16 = 94$, $28 + 28 + 44 = 100$, $78 + 16 + 8$) are alternative calculations for determining the total width of the transepts. These numbers defined the



27. Baldassarre Peruzzi, *Plan of Carpi Cathedral with dimensions from sheet 1 recto*

geometry of the final design, which is 130 “braccia” long, has a nave, transepts and choir that are 22 “braccia” wide, and is slightly more than 84 “braccia” wide excluding the two transept apses (fig. 27).

The Basilica of Constantine plan was adopted to form the tribune and transepts of the final design (fig. 28) and the nave and choir in modified form, but the freestanding Corinthian columns were omitted, which allowed the building to become more strongly unified by the barrel vaults and insistent entablature. At the crossing, the freestanding columns were reinterpreted and became the giant pilasters attached to convex piers that derive from the antique Piazza d’Oro circular type and from the geometric studies on Sheet 1 verso. This also eliminated the necessity for broad arches, which were replaced by the arches around the crossing that are supported by the salient pilasters. The result was a design (fig. 7) that is analogous to Bramante’s for Saint Peter’s as it appears on Uff. 20 A and 7945 A and to Raphael’s ‘Expulsion of Heliodorus’, both of which employ columns in a somewhat similar manner. The two octagonal sacristies also derive from the Piazza d’Oro as it was reinterpreted in its enlarged octagonal form on sheet 1 recto, and the en-



28. Baldassarre Peruzzi, “Basilica of Constantine” plan on sheet 1 recto superimposed upon plan of Carpi Cathedral

trances to them directly relate to the modified pier element at the top middle of sheet 1 verso.

The Serlian lunettes of the nave barrel vault and the buttressing system of the Basilica of Constantine/Baths of Diocletian design, in lieu of the double rows of columns of the design on sheet 2 (fig. 3), were retained. The pilasters of the nave, choir, and transepts were placed on socles, a rare instance in Peruzzi’s interiors, which increased the height of the nave and elevated the bottom of the lunette windows above the original adjacent roofs. The pier spacing was modified to be like that in the Uff. 25 A sketch (fig. 26), because the structure and geometry of the side aisles and chapels were totally reinvented. In the plan on sheet 2 they are distinct from one another and very open to the nave; whereas in the Basilica of Constantine/Baths of Diocletian plan and sketch the corner chapels are more obscured and ambiguous as to whether they are chapels or aisles. With the transformation of the side aisles into a series of square bays with linked pendentive domes, the final design (fig. 7) allows for two distinct experiences. When one moves along the aisle, one passes freely through the bays and arches past the side chapels that line the adjacent wall. When one prays at

a side chapel, one is situated in a space that is somewhat removed from the nave but open to it and that is defined by the nave piers, the arches, the pendentive dome above, and the chapel walls. Additionally, it is an arrangement that enables the lateral loads of the buttresses to be transferred by the intervening arches to the walls between the side chapels, that has domes over the side aisles that are low enough to permit unobstructed illumination of the nave through the high Serlian lunettes and that allows for unobstructed views from the nave across the side aisles to the side chapels and their Serlian windows in a manner that would have been impossible with the previously conceived barrel vaults.

In this final design, by simplifying his precedents, by reconfiguring the proportional geometry, and by reconceiving important interrelationships between the various parts, Peruzzi was able to attain a level of synthesis that had previously eluded him when considering composite designs. In fact he had come very close to fusing the Greek and Latin cross forms and thereby to have created a church that synthesized both the processional qualities of a longitudinal church with an extended choir that was appropriate for religious ceremony and worship, and the idealized symbolism of a temple dedicated to God as professed by Alberto III Pio in his *XXIII Libri*.

These drawings indicate that Peruzzi was consistently considering tripartite compositions, and there is no indication, as some have asserted, that the decision that is mentioned in the archives to omit two of the eight side chapels meant that he originally conceived of a four bay nave. That would have been unprecedented for him. Throughout his life his ecclesiastical designs typically had tripartite naves, which sometimes had vestibules and solid towers arranged in a manner similar to a narthex.³⁴ Furthermore, this is confirmed by the 130 “braccia” length. Therefore, the nave of his model must have corresponded to that which was constructed with six side chapels, and the additional two side chapels would have been in the narthex as is suggested by the plan with side chapels on sheet 2 (fig. 3) and by the apses at the two ends of the vestibule in the small “Basilica of Constantine” plan at the top right of sheet 1 (fig. 1). If so, then the Cathedral as it appears in the late 17th century urban views (figs. 14 and 15) can be better understood. The towers that flank the facade would have been set back flush with it, covering one set of the Serlian lunettes, and the narthex chapels would have aligned with the nave side chapels.

³⁴ See, for example, his designs for San Francesco a Ripa (Uff. 1643 Ar), Saint Peter's (Uff. 14 Ar, 15 Ar, 16 Ar, 17 Ar, 18 Ar, 38 Ar), San Domenico (Uff. 338 Ar, 339 Ar, 340 Ar, 341 Ar, 545 Ar), and the “Taccuino S IV 7”, (f. 31 v and 37 v).



29. Baldassarre Peruzzi, *The “Sagra,” Carpi, 1514, facade*

Peruzzi and Leonardo da Vinci

Although it is now almost possible to visualize Peruzzi's model, his designs for the cupola and for the facade are still somewhat elusive. In particular a question still remains as to how the facade in the urban views might correspond to the one designed by him, for which there are no drawings. The location of the Cathedral as the principal visual focus of the piazza suggests that its appearance should have been something other than what is represented in those views. If the facade were intended to be dignified, as would befit such an important building, the portico conceals it. At the very least one would expect a facade comparable to that designed by Peruzzi for the former Cathedral of Carpi, the “Sagra” (fig. 29). A resolution to this dilemma can be reached by studying drawings by Leonardo da Vinci that pertain to the design of the Cathedral.

According to a notation on the first page of his “Manuscript E”, Leonardo, then 61 years old, left Milan for Rome on 24 September 1513. He stopped at Florence on the way and probably did not arrive in Rome until the very end of the year. In October rooms were being prepared for him at the Villa Belvedere and were inspected on 1 December. He was to undertake a secret project under the patronage of Giuliano de' Medici to construct a great parabolic mirror for supplying solar energy to heat cauldrons in a dye works based upon a mechanism that he had invented. He remained in Rome until September 1514 when he left for a trip to Parma, was in Florence thereafter until December 1515, and then returned to Rome and remained there until mid-1516, the year in which his patron Giuliano died. While in Rome,

he was also engaged in a study of the ancient harbor of Civitavecchia.³⁵

In 1514 and early 1515 Peruzzi was in Rome preparing the design and model for Carpi Cathedral. He was, therefore, in a position to have had contact with Leonardo between Leonardo's arrival and September when Leonardo was in Parma. Leonardo was definitely in Rome on 7 July 1514 as he himself wrote at the bottom of a sheet of geometrical studies in the "Codex Atlanticus" folio 90v-a.³⁶ Peruzzi is mentioned twice on sheets with geometrical studies in the "Codex Atlanticus" dating from those years.³⁷ It is not surprising, therefore, that four sheets of drawings by Leonardo in the "Codex Atlanticus" (folios 37r-a, 271v-d, 382r-a, and 235v-a), all of which have been dated between the years 1508 and 1515 (figs. 30–33),³⁸ and one in the Gallerie dell'Accademia in Venice (inv. 238v), which has been variously dated between 1490 and 1515 (fig. 34),³⁹ have sketches that pertain to Peruzzi's designs for the Cathedral in Carpi. None of these has been definitively associated with a specific project.

In the "Codex Atlanticus" on folio 37r-a (fig. 30) there is a series of sketched plans, elevations, and perspectives that bear a close resemblance to Peruzzi's design on sheet 3 recto (fig. 4) and that recall studies by Leonardo from many years earlier. The sheet is dominated by some text and a number of studies about light and shade (columnar shadows) centrally located on the page. The seventeen architectural sketches are placed along the perimeter and most likely were drawn after the light studies, which suggests that they may have been thoughts that entered Leonardo's mind inci-

dentally, possibly even as part of a conversation. The largest and most complete interior perspective, which is an elaboration of the one immediately to its upper left, seems to be based upon a circular drum over an octagonal crossing, perhaps the large octagonal plan to its left, but it is not. The arches and columns are arranged in accordance with the square grid drawn on the floor, so it is a drum with pendentives over a square. Its Greek cross quatrefoil plan is the very small one to its left in the margin. Note that the location of the altar is not in the center as one might expect; rather it is in the choir apse. The other interior perspectives that hover around it or are in the margins are partial views that relate to it and primarily focus upon the intersection of the vaults and the crossing pier. This large sketch, the one to its immediate left, and the one in the middle right margin reveal the visual weakness of the corners. The interior perspective at the bottom center of the sheet and the plan immediately to its right are a first attempt to strengthen the corner with a giant pilastered pier. The two remaining interior perspectives, that just above and to the right of the large one and that at the top of the sheet, involve another strategy. They eliminate the awkward arch that terminates the broad arches spanning the arms of the church, replacing it with a lintel instead. The plan near the center of the page incorporates what is in the sketches. The directionality implied by the placement of the altar is acknowledged by its trefoil configuration and the giant pilastered pier is adopted. The two triumphal arches in elevation and the perspective section/elevation at the top of the page relate to the design of the facade. One is elevated on a base; the other two are not. At

³⁵ PEDRETTI 1962, pp. 109–11, and PEDRETTI 1981, pp. 238, 241, and 246.

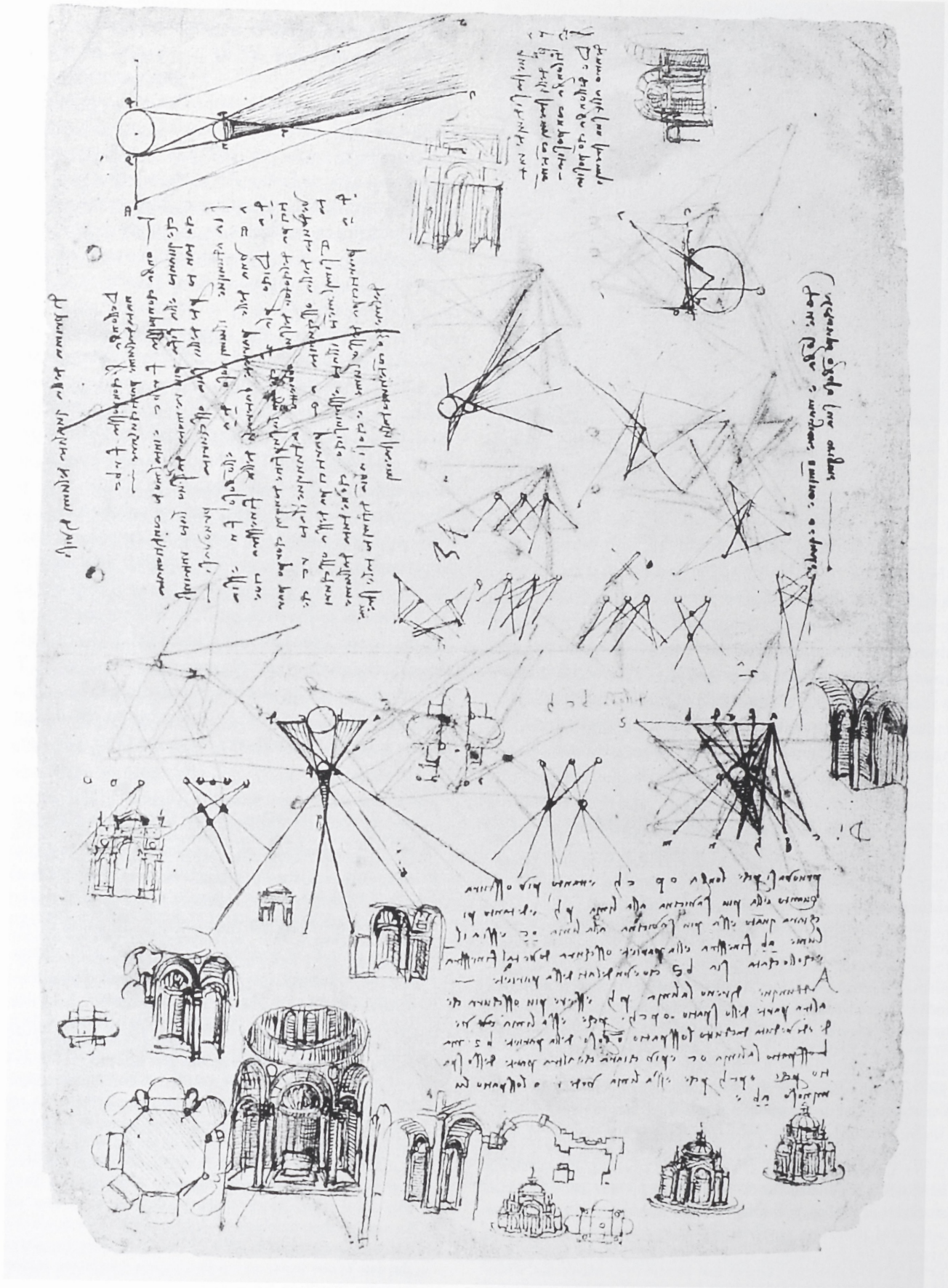
³⁶ See the "Codex Atlanticus", fol. 90v-a, at the bottom of the right column where he wrote, "Finita addi 7 di Luglio, a ore 23 a Belvedere, nello studio fattomi dal Magnifico, 1514."

³⁷ "...del peruzo ghonfiatoio" ("Peruzzi's squirt") appears on "Codex Atlanticus", fol. 83r-a at the bottom right and "nudo del peruzo" ("nude by Peruzzi") appears on fol. 97r-a in the top right corner. Their precise meaning is not clear. Although these are on sheets with geometric studies similar to the one that gives the July date, they are not necessarily related. The "Codex Atlanticus" is full of such sheets. See PEDRETTI 1978/1979, vol. 1, pp. 116 and 132, for the interpretation and dating of these sheets.

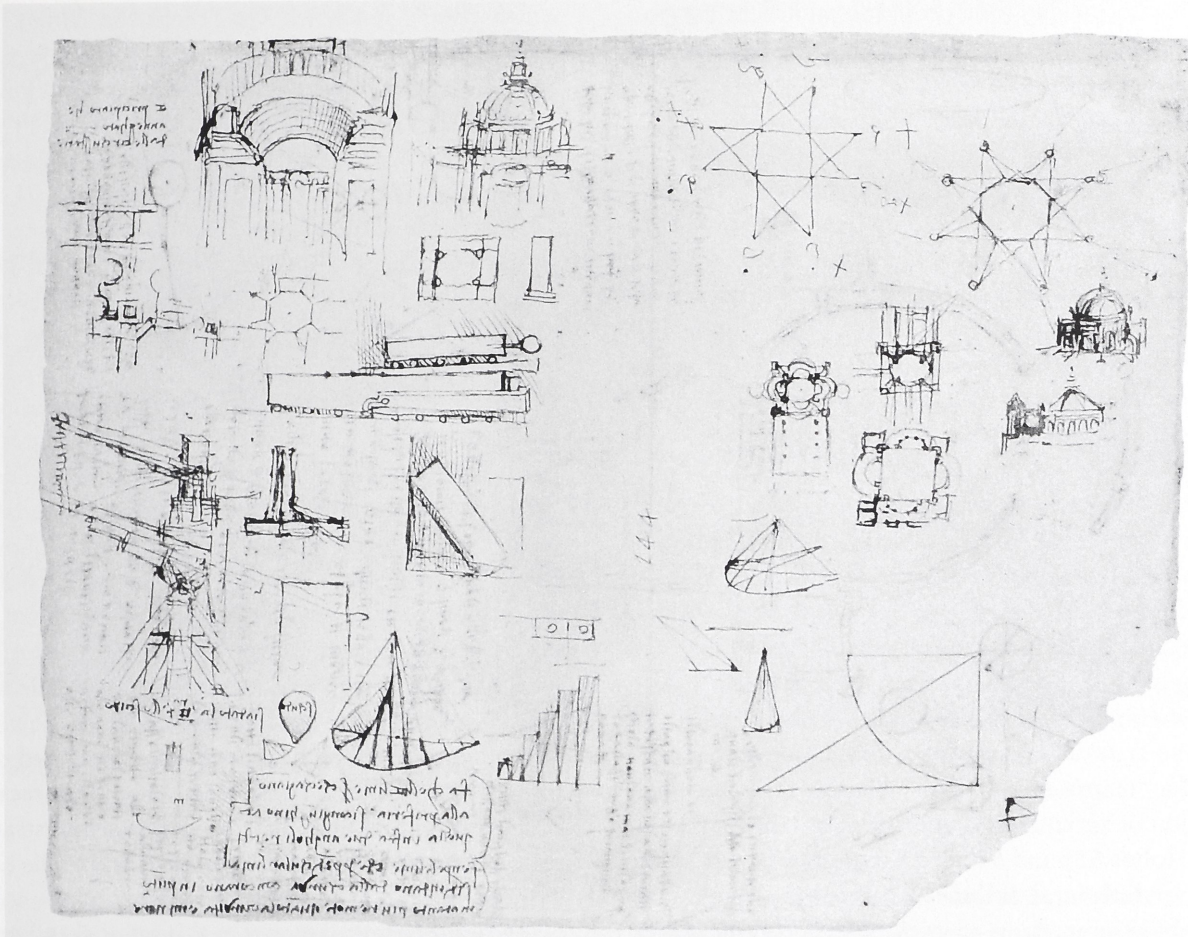
³⁸ References to folios in the "Codex Atlanticus" are to the old numbering system. The dating of these four folios is based upon PEDRETTI 1978/1979, vol. 1, p. 70 and vol. 2, pp. 54, 92, and 262. The first three are discussed in PEDRETTI 1962, and the fourth in PEDRETTI 1981, p. 255. On the verso of fol. 37 the word "exhortato" appears in the handwriting of Francesco Melzi, a pupil of Leonardo's who entered his studio about 1508 and who traveled to Rome with him. Studies of light and shade (columnar shadows) similar to those on this sheet also appear on fol. 241r-c, which Pedretti dates to 1513–14. On the recto of fol. 271v-d there are sketches that pertain to Civitavecchia, where Leonardo is documented as having gone in 1513 and 1514. In addition to the stylistic similarities of the ecclesiastical plans and sketches on

fol. 271v-d and fol. 382r-a, the two sheets can be associated through another sheet, fol. 217v-a, which may once have been attached to fol. 382r-a and is on similar paper. Sketches for a flintlock that are comparable to one another exist on the verso of fol. 382 and the recto of fol. 217, and the details of an arch on the left of fol. 382r-a closely resemble some drawn on fol. 217v-a. See PEDRETTI 1962, pp. 93–95.

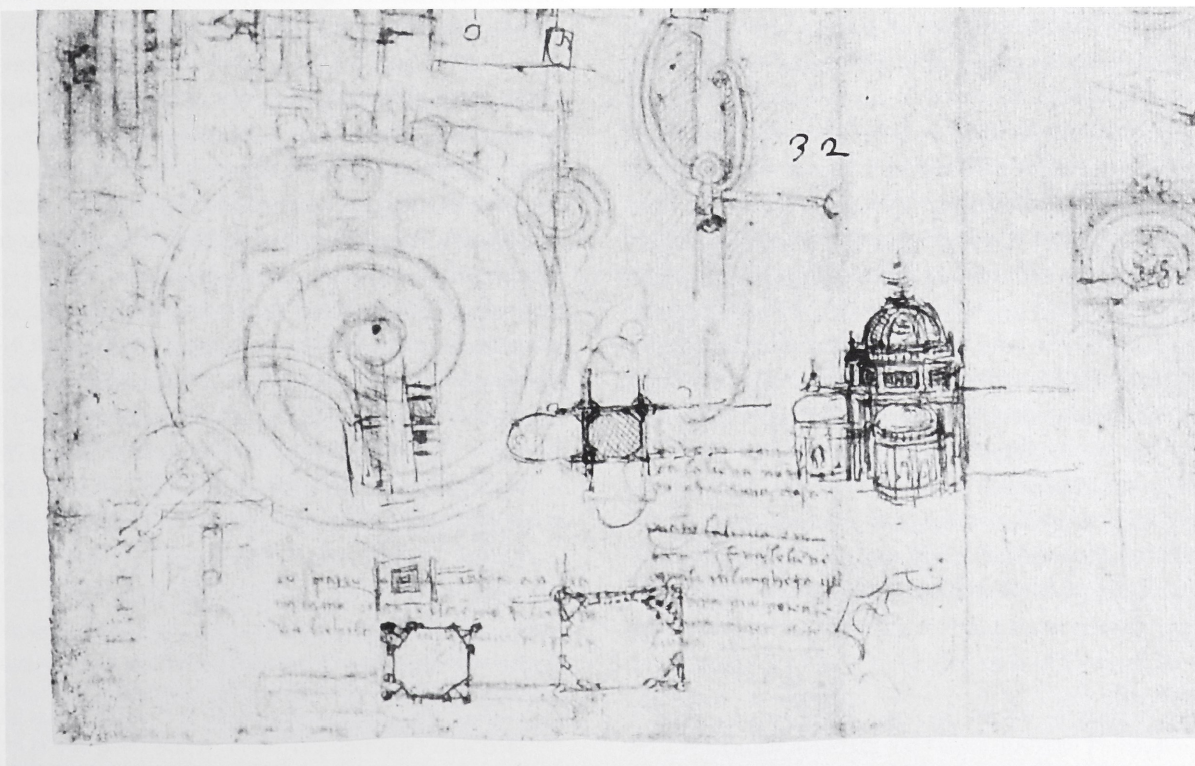
³⁹ See SCIRÉ 1994, p. 465 f., for the most recent discussion of this sheet. The most cogent arguments for dating it have been made by MARANI 1992, pp. 236–41, who related the notes on the recto to "Codex 8937" of the Madrid Biblioteca Nacional, which is datable prior to 1497, and by PEDRETTI 1962, pp. 130–36, who related the notes and the handwriting to "Manuscript E" of the Bibliothèque de l'Institut de France, Paris, dating 1513–14. The studies of mechanics on the verso of this sheet could possibly be part of a group that also includes fol. 217v-a and fol. 382r-v-a, which would then also relate it to fol. 271v-d, and to fol. 241r-c, which includes similar studies on mechanics and studies on columnar shadows, which would then relate it to fol. 37r-a as mentioned in the previous note. Another possible correlation to this group of drawings is the number 143C on the recto, top right, which might possibly be a number referencing Leonardo's sheet number 143 written on fol. 113v-b, which was once part of the same sheet as fol. 271. Despite all these speculations about the date of the sheet, no one has made a convincing argument as to how the sketch on the verso corresponds chronologically with the recto.



30. Leonardo da Vinci, "Codex Atlanticus", fol. 37r-a, 1514, Copyright Biblioteca Ambrosiana, Milan



31. Leonardo da Vinci, "Codex Atlanticus", fol. 271 v-d, Copyright Biblioteca Ambrosiana, Milan



32. Leonardo da Vinci, "Codex Atlanticus", fol. 382 r-a, Copyright Biblioteca Ambrosiana, Milan

the bottom right of the sheet Leonardo studies in perspective three variations of the exterior form that can be derived from the small plan with five oculi as indicated by the small circles. The left one is quite low and horizontal, and the arms of the cross are clearly evident because the corner lanterns are low. The middle one is more cubic overall, because the corner lanterns are higher, and the arms of the cross are still evident. The right one is more vertical overall, because the corner lanterns are almost like towers, and the arms of the cross are no longer evident.

Sketches on two other sheets, “Codex Atlanticus”, folios 271 v–d and 382 r–a (figs. 31 and 32)⁴⁰ relate closely to the plans on folio 37 r–a (fig. 30) and include exterior views of domes that are very similar in design to those on the bottom right of that sheet except for the apses, which are lower. They should, therefore, be considered as a continuation of the sequence of sketches on folio 37 r–a after that sheet became filled. Folio 271 v–d, which has a plan of the harbor of Civitavecchia on its recto, was once folded and the right half was probably concealed when Leonardo began to draw; otherwise there is little explanation for the left-hand side being so crowded. It appears as if he first started with the idea of a “teatro da predicare” (theater for preaching), a recollection of his studies of quincunx churches in “Manuscript B”, folios 52 r and 55 r of 25 years earlier, but all the remaining architectural sketches on the left relate to his thoughts about supporting an octagonal dome and drum, not a circular one as on folio 37 v–a. The centralized plan immediately below the dome sketch retains the basic geometry of the quatrefoil/trefoil plans of folio 37 r–a, the apses being omitted, but the piers have been changed to produce an octagonal crossing. Leonardo’s intentions for this are best seen in the plans on folio 382 r–a (fig. 32). The upper one, a trefoil, does not include the four square corner spaces of the plan on the previous sheet. Their presence had been giving Leonardo difficulty with the design of the broad arches as previously mentioned. Instead he substituted an enlarged crossing pier, but at the same time he lost the exterior form of the cubic block that he had developed. He therefore reclaimed that exterior appearance by substituting an enlarged triangular crossing pier for those corner spaces as is demonstrated by the plan below the trefoil one. The lanterns that had previously been above the corner spaces are replaced by towers that emerge as continuations of the crossing piers as appears in the bottom left plan, which is cut through the drum. In the left dome sketch on folio 271 v–d,

which closely resembles San Lorenzo in Milan, they have become flying buttresses instead of towers. As part of this process the square plan of the crossing and the circular plan of the drum become octagonal, a result that is very similar to the tribune of Pavia Cathedral. The sketches on the right side of folio 271 v–d, the side that was originally concealed, are related to these explorations and appear to be precedents. The church plans are definitely of San Lorenzo in Milan with its ambulatories and are probably there as exemplars of what is being explained in the nearby sketches.⁴¹ The diagrams at the top of the page explain Leonardo’s technique for supporting the thrust of a dome with flying buttresses, which one can see in the upper sketch of an elegant octagonal dome on the right, which may depict one of his proposals for the “tiburio” of Milan Cathedral. His studies for it in the “Codex Trivulzianus”, folios 12 r and 21 r, employed similar diagrams. The other sketch of an octagonal dome is a simpler alternative without the flying buttresses that resembles the dome of the Florentine Baptistery. The small plan of San Lorenzo that includes its atrium anticipates the trefoil plan on folio 382 r–a, in which Leonardo began to move away from the centralized designs on folio 37 r–a toward a Latin cross design that recalls a plan of 25 years earlier on folio 42 v–c, as is demonstrated by the lines extending to the right of the plan and to the right of the exterior sketch.

The issues being explored in this set of sketches reflect to a remarkable degree the same issues being explored by Peruzzi on sheet 3 (figs. 4 and 5). In both men’s drawings the plans vary from quatrefoil, to trefoil, to trefoil with nave. In the Greek cross plan by Peruzzi the end of the nave and side aisles toward the entrance were changed in two ways from what was originally put down on the paper. There are lightly drawn walls and columns in the lower right part of the nave that extend toward the facade. First, the apsidal arc was drawn over them. Its radius differs slightly from those of the other three arcs, indicating that Peruzzi’s compass was reset and therefore that it was added later. Second, the plan of the facade was redrawn over them in a dark ink. Temporarily overlooking the fact that Leonardo’s sketches do not include side aisles and ambulatories, the similarity between Peruzzi’s design before these changes were made and Leonardo’s trefoil one on folio 37 r–a becomes very evident. With the addition of the apsidal arc, the similarity to

⁴⁰ See PEDRETTI 1962, pp. 84–99, regarding the relationship between these two sheets. “Codex Atlanticus” fol. 382 r–a includes on its recto “lunulae” patterns and a curve that could possibly be for a mirror and on its verso an itinerary going from Parma to Bologna.

⁴¹ A plan on fol. 159 r–c also dating to these years, may be a redrawing of one of these, the small one with the atrium. Note the presence of the three small circles that indicate the three small chapels attached to San Lorenzo. This plan contains studies of “lunulae” as on fol. 83 r–a, the sheet with “el peruzo ghófiatojo” written on it and as on fol. 90 v–a, the folio that documents Leonardo being in Rome on 7 July. See PEDRETTI 1962, pp. 83–84.



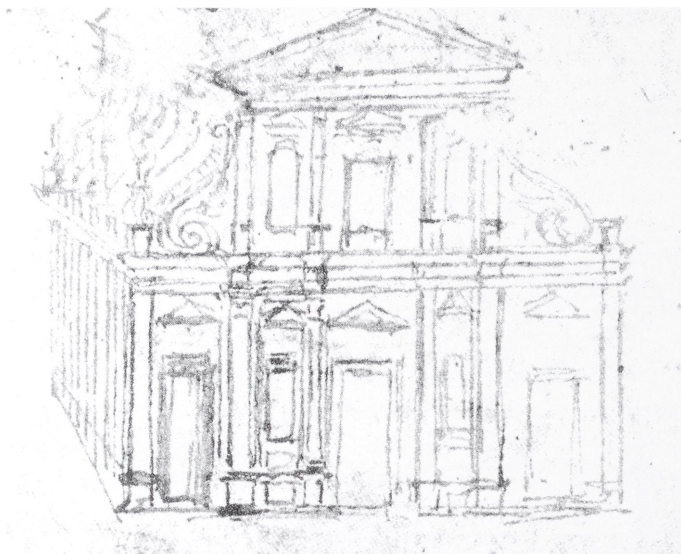
33. Leonardo da Vinci, "Codex Atlanticus", fol. 235v-a, Copyright Biblioteca Ambrosiana, Milan

Leonardo's two quatrefoil plans becomes evident. Furthermore, both men's designs had the altar placed in the choir, giving orientation to otherwise centralized schemes, and much of Peruzzi's longitudinal design on sheet 3 verso appears to be based upon Leonardo's in "Manuscript B", folio 35v.

In both men's drawings there are studies that focus upon the configuration of crossing piers with passageways through them. They vary from supporting a circular drum with broad arches and pendentives over a square crossing to adapting to crossings without broad arches that are octagonal or square with beveled corners, although Leonardo employs freestanding columns while Peruzzi uses "columnae quadrangolae". In both men's drawings there are studies for giant pilasters in the crossing and for terminating the broad arches with either lintels or arches. Leonardo explores these in the interior sketches on folio 37r-a, and Peruzzi explores the former in the 45° pier elements in the plan details at the bottom right of sheet 3 recto (fig. 4) and the latter in the perspective at the top right of sheet 1 verso (fig. 2). Even Leonardo's triumphal arch elevation on folio 37r-a and the perspective section/elevation at the top, which it fits, correspond closely to Peruzzi's perspective section on sheet 3 recto. These resemblances outweigh the fact that most of Leonardo's drawings do not include side aisles and ambulatories, which may have seemed to have been an unnecessary encumbrance to him but which would have been important

to Peruzzi based upon his familiarity with the construction of Saint Peter's then underway. It is impossible to determine precisely why there is the close correspondence between these drawings by the two men, but it does appear that they constitute an exchange of ideas where Leonardo was explaining the thoughts that he had developed many years earlier.

There are other more subtle similarities. One is that Peruzzi and Leonardo both seem to share Francesco di Giorgio's method of exploring multiple typological or geometric variations, as if the development of a breadth of possibilities were necessary in order to be able to make appropriate design decisions. This is the earliest documented example of Peruzzi employing this method, which he continued to follow in many subsequent projects as his designs for Saint Peter's, for the church of San Domenico in Siena and for the dams on the Bruna River demonstrate. A second similarity is that Peruzzi's illustration of precedents along the perimeter of sheet 1, which is unusual for him, seems to reflect Leonardo's influence. And a third similarity is the way in which they employed perspective sketches. Leonardo's use of interior perspective sketches in conjunction with plans instead of exterior ones is unusual for him. Although he made such sketches of interiors as early as c.1488 (See Windsor, RL 12609v), this kind of sketch is more commonly associated with Peruzzi. On the other hand the large perspective on sheet 1 recto is the earliest surviving example in which



34. Leonardo da Vinci, part of sheet 238 v, *Accademia, Venice*

Peruzzi employed vanishing points at two different levels. It may document the moment when Peruzzi under the influence of Leonardo's perspective views that are above eye level began to combine them with eye level views, which he was unwilling to abandon.⁴²

Throughout both sets of drawings there is little to suggest what Peruzzi's design for the Cathedral's facade might have been besides the two triumphal arch elevations drawn by Leonardo on folio 37r-a (fig. 30). Nevertheless, two isolated facade designs by Leonardo on other sheets are helpful. Two sketches without plans, "Codex Atlanticus", fol. 235v-a and sheet no. 238 in the Gallerie dell'Accademia, Venice, are extremely important. The one in the "Codex Atlanticus" (fig. 33), dated to c. 1508-9, has been justly compared to the facade designed by Peruzzi for the old cathedral in Carpi, the "Sagra" (fig. 29), the design of which is contemporary with the early work on the new cathedral.⁴³ The sketch, which is nestled amongst drawings of forms that could be parabolic mirrors, is a church or part of a church with a nave flanked by two lower sections, each of which is covered by three barrel vaulted buttresses like the



35. *Facade on Accademia, Venice, sheet 238 v, superimposed upon perspective section on sheet 3 recto*

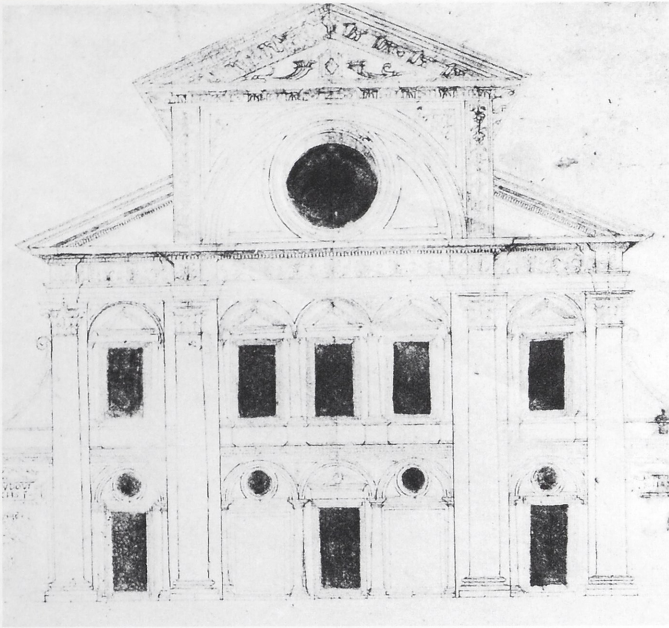
"ombrellone" on Alberti's San Andrea in Mantua. There is a large pedimented portal with a circular window above it at the center of the facade and two flanking doors, which imply that the vaulted buttresses are over side aisles consisting of three bays. As such, it is a conception with virtually no precedents, and because of this uniqueness and because of its similarity to the "Sagra" facade, it must instead relate to the early design for the nave of the new Cathedral itself, as we have seen it in plan on sheet 3 verso (fig. 5) and in sketch form on Uff. 149 Ar (fig. 6) that has precisely the same vaults.

The sketch of a church or part of a church on the Venice Accademia sheet (fig. 34) has been a mystery for many years. It has generally been regarded as a precursor to a facade type with paired columns that developed during the first quarter of the 16th century leading up to the facade

⁴² This discussion obviously derives from LOTZ 1981a, pp. 1-65. Interestingly, on p. 18 he specifically uses Uff. 161 Ar (fig. 1), the "Basilica of Constantine/Baths of Diocletian" interior perspective, as his example of Peruzzi's use of more than one vanishing point in perspectives. This also confirms the suggestion made by BURNS 1975 that Peruzzi's skill in perspective probably derives from Leonardo.

⁴³ PEDRETTI 1981, pp. 208 and 255. PEDRETTI 1978/1979, vol. 2, p. 54, dates fol. 235v-a to c. 1508-9, because he believes that the geometric studies (falcate) are part of a series of such studies dating from those years, but he has dated other similar studies later, such as

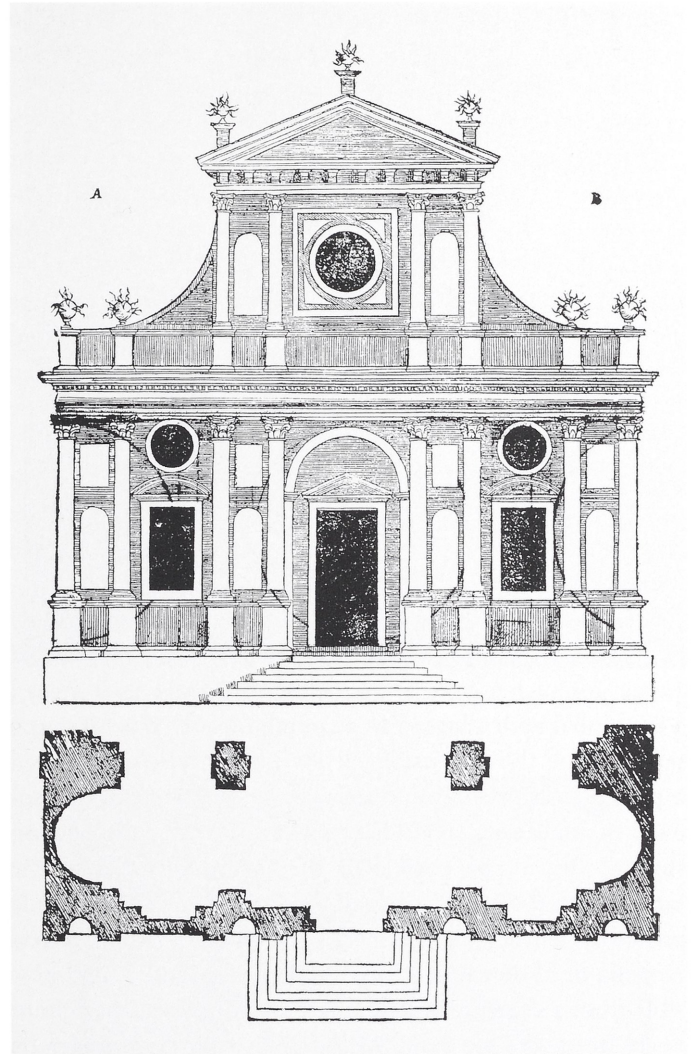
fol. 159r-c, dated c. 1515, which is circular, uses similar words to describe the geometry, and was used to help visualize such forms in three dimensions. The eight slices around its circumference correspond to the eight diagonal lines of the wedges of the circle at the bottom of fol. 235v-a, which confirms that the two sheets are directly related to one another. They both may concern the form of a concave mirror and relate to Leonardo's research while at the Vatican. On fol. 159r-c there is a Greek cross plan that is very similar to Peruzzi's plan for Saint Peter's and to the tribune of Raphael's plan, both published by Serlio.



36. Donato Bramante (?), *Church facade*, Louvre, Paris, *Cabinet des Dessins*, 72 cat. N.7

designs for San Lorenzo in Florence, 1516–20, by Giuliano da Sangallo and Michelangelo and repeated many times thereafter in works such as Santa Caterina dei Funari by Guido Guidetti, Santo Spirito in Sassia by Antonio da Sangallo il Giovane and the Gesù designs by Vignola and Giacomo della Porta, all in Rome. It is a mystery because its precise date is unknown and because it has not been possible to relate it convincingly to any specific project. Notes on its verso may pertain to “Manuscript E”, the book on weight that Leonardo began when he left Milan in 1513 and in which he continued to make entries while in Rome.⁴⁴ Like Leonardo’s facade design on fol. 235 v–a (fig. 33), this one is an inverted ‘T’, but unlike it, it is an adaptation of a triumphal arch elevation to a church facade. One of its most distinctive features is the use of paired salient pilasters on pedestals with niches between them on both the upper and lower portions of the facade that are tied together by ressauts breaking the entablature. There is some ambiguity as to whether the pilasters on the right are salient and the left one is not, but the left paired ones definitely are. In the overall composition the strongly vertical center is balanced against a strongly horizontal base. A series of rather transparently drawn volutes serve as buttresses over what must be aisles because of the presence of the side doors. The nave, therefore, must have a barrel vault, but there is no room for side chapels to help carry the lateral thrust to the ground, so it differs from the earlier triumphal arch elevation on folio

⁴⁴ PEDRETTI 1962, pp. 131–132.



37. Sebastiano Serlio, *Sacred Temple*, 1537, *elevation and plan*

37r–a (figs. 30) in that the paired pilasters do not correspond to side aisles.

A comparison with the nave in Peruzzi’s design on sheet 3 verso (fig. 5) reveals a number of similarities. Not only is the spacing of the volutes comparable,⁴⁵ a wide one (or possibly a pair) close to the facade and six others, which would correspond precisely to the narthex and the number of columns in Peruzzi’s plan, but Leonardo’s facade precisely fits Peruzzi’s perspective section on sheet 3 recto (fig. 35) if

⁴⁵ PEDRETTI 1962, p. 135, attempts a reconstruction of the plan for the Accademia facade and assumes that the volutes define six square side chapels of equal size. If that were correct, then the perspective sketch is considerably foreshortened, but Leonardo’s perspective sketches are exceptionally accurate. He would have drawn a plan that is more like that on the Geigy-Hagenbach fragment, which recedes at the same angle as the Accademia sketch. The volutes are, therefore, spaced more closely together.

one makes allowance for the modest socles that Leonardo placed under his pilasters, which anticipate Peruzzi's later addition of them to his design. Details within the facade also correspond to similar details at the facade end of Peruzzi's plan on sheet 3 verso, excluding the portico. On the interior face there are paired pilasters and just to the left of the center door on the exterior face there are paired pilasters with a niche between them, an arrangement identical to that in Leonardo's facade. A peculiarity of Leonardo's facade is its asymmetry, which combines two different proportional schemes in one drawing. On the right the side aisle is wide; on the left it is narrow. In Peruzzi's plan the width of the side aisles ($6\frac{7}{8}$ "braccia") and of the vestibule ($9\frac{7}{8}$ "braccia") also suggest two different possible alternatives for the distance between the pilasters that flank the side aisle doors and potentially two different proportional schemes for the overall facade.

The facade in Peruzzi's plans on sheet 3 and the one by Leonardo are the kind of majestic facade that one would expect for such a context according to Renaissance theory, a triumphal arch adapted to a church facade. When Peruzzi settled upon the dimensions given in the portico, he placed a paired pilaster/column order at each end instead of Leonardo's single ones, and when he drew the left-hand plan on sheet 2 (fig. 3), he correlated the paired pilasters of the facade with the paired rows of columns. Leonardo's facade primarily derives from Alberti's facades for Santa Maria Novella in Florence and Sant' Andrea in Mantua, and possibly from a drawing in the Louvre that once was thought to be by Bramante for Santa Maria presso San Satiro with its little pediments above the windows stretching across it immediately below the entablature (fig. 36). Peruzzi on the other hand had developed a principle that he derived from Bramante's facade for Roccaverano and applied to the "Sagra" where he combined a giant order for the nave and a small order for the side aisles – the facade as a direct reflection of the section behind it. He attempted to follow this principle in the plan of the facade on sheet 3 verso (fig. 5) where he placed two freestanding columns at the facade end of the nave, although he deleted them later, but his plan of the facade on sheet 2 was much more successful in this regard. The use of a giant order as in the "Sagra" would not have been appropriate. The nave of the "Sagra" goes all the way up to its wooden roof, but the Cathedral has a barrel vault that springs from the entablature.⁴⁶ In effect the interior has two tiers separated by the strong horizontal line that is so insistent. That is the quality that Peruzzi appears

to have wanted the exterior to reflect. When Peruzzi adjusted his design to fit the even broader facade that resulted with the addition of the side chapels, he may well have retained the a/A/a/B/a/A/a rhythm of the sheet 2 plan. The result would have been a more broadly proportioned design with an insistent horizontal line and, therefore, similar to the present facade of Carpi Cathedral (figs. 9 and 10) but definitely not one as vertical as Leonardo's. The church facade in plan and elevation in Serlio's Treatise, book IV, 175 r–v (fig. 37), which was the first book to be published by him (1537), the one most influenced by Peruzzi, and the one in which he credits Peruzzi as his teacher, most likely derives directly from it.⁴⁷ It is now clear that the front facades in the urban views, which appear to be based upon a Lombard Romanesque model, not a Renaissance one, must not correspond to a design by Peruzzi. Rather his design is revealed by the similarity between the underlying arrangement of the present facade and the Peruzzi/Leonardo plans and elevation. The paired columns on pedestals with niches between them on both the upper and lower portions of the present facade projecting out from the wall plane and tied together by ressauts undoubtedly correspond to those very same characteristics in the Peruzzi/Leonardo design but in bolder relief. It is very likely that Peruzzi would have added the Serlian windows and retained Leonardo's curious little floating pediments;⁴⁸ whereas the more decorative elements of the present facade and probably the two end towers were added by others. The porticoes that were so integrally bound to the naves of the designs on sheet 3 gradually faded away as begins to happen in the plan on sheet 2 where the columns float in an unattached way as if they would disappear in the next iteration.

Throughout these drawings by both men there is no evidence to support the idea that Peruzzi might have designed a cupola as vertical as the taller one in the urban views (fig. 15). Neither Peruzzi's perspective section on sheet 3 recto (fig. 4) nor his interior sketch on Uff. 25 Ar (fig. 26) gives reason to believe that his design would have included a drum and dome that would have been much higher than the roof of the nave, and it is difficult to imagine that he would have desired much height at the crossing on the inte-

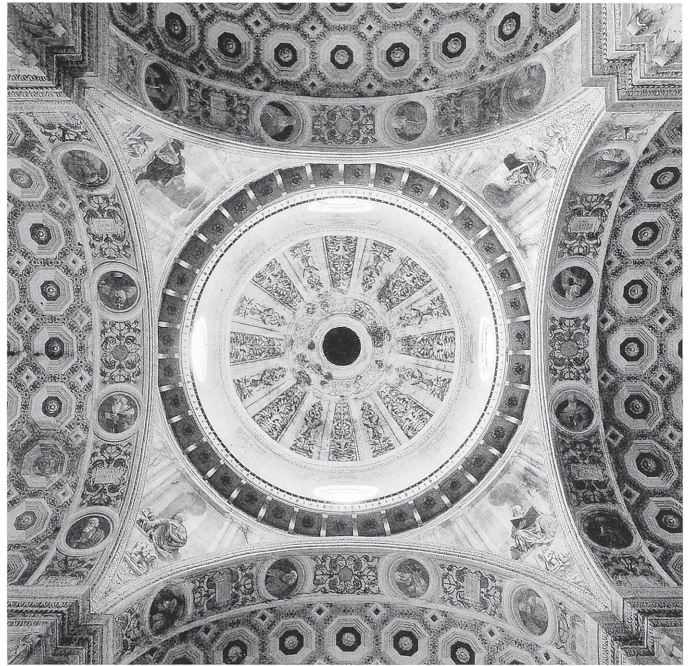
⁴⁷ SERLIO 1996, vol. 1, pp. xxv, 253, 350, and 351.

⁴⁸ Peruzzi probably would have also seen the facade design on Uff. 278 Ar by Giuliano da Sangallo, who returned to Rome in 1514 to work on Saint Peter's, FREY 1910, pp. 51–52. It is a design for the facade of San Lorenzo in Florence, as indicated by the writing over the doors, "istorie disa lorenzo," which LOTZ 1981b, pp. 141–43, argues was originally designed for the Marian Church of the Santa Casa in Loreto, because the iconography is Marian and because there is a Della Rovere coat of arms over one of the statues of the main order and, therefore, must date from the pontificate of Julius II. Borsi 1985, pp. 472–76, accepts Lotz's argument.

⁴⁶ Peruzzi may have attempted to replace the wooden roof of the Sagra with a barrel vault as can be seen in an interior sketch on Uff. 152 Ar, which is on paper that matches that of Uff. 25 A.



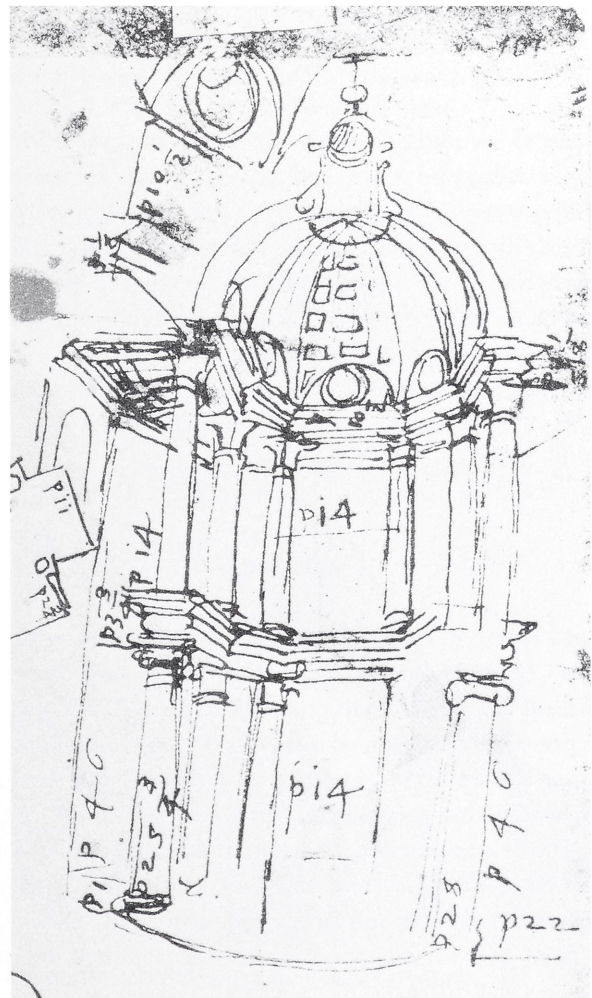
38. Anonymous, *San Nicolò, Carpi, 1493, exterior*



39. Anonymous, *San Nicolò, Carpi, 1493, interior of cupola*

rior, because the power of the strong horizontality of the entablature punctuated by the massive and powerful crossing pilasters on huge pedestals would have been diminished. On the other hand the lower, more solid cupola in the other urban view, which is octagonal on the exterior with an ocular window on each face is quite believable and revealing. It is like a shortened version of the cupola on San Nicolò, which is octagonal on the exterior and circular on the interior with a gallery at the base of the drum (figs. 38 and 39). As previously mentioned, the Cathedral crossing was completed during the first phase of construction up to the base of the drum, which is circular, so the interior of the drum of Peruzzi's model would have been circular as well. Consequently, its interior quality of natural light would have been very similar to that of San Nicolò, where the dome is brilliant like a halo surrounded by the darkness of the underside of the gallery and where the natural light softly illuminates the pendentives, but in the cathedral it would also have illuminated the capitals of the giant pilasters. The dome of the Lateran Baptistery, which Peruzzi sketched on Uff. 437Ar (fig. 40) and which has a similar quality of natural light but without a drum, may have been his specific model.⁴⁹

The silhouette of the Cathedral as designed by Peruzzi can now be visualized at the end of the long piazza. Without the elevated cupola and the two towers, the horizontal alignment of the entablature with the roof line of the



40. Anonymous and Baldassarre Peruzzi, detail of U 437Ar, Lateran Baptistery, Rome

⁴⁹ This kind of illumination of a dome is similar to that in the "Prevedari Engraving" by Bramante.



41. Baldassarre Peruzzi, Carpi Cathedral without cupola and towers, 1514

“palazzetti” would be more evident and the temple front of the nave would be more distinctive (fig. 41). Experiencing the interior would also be affected, because the grandeur of the four pilasters and the quality of the light in the crossing as described above would be more unexpected since there would be no grand cupola evident on the exterior to foretell its presence. In this way it would also be closer to Alberto Pio’s assertion that the interior of a church is more important than its exterior, just as the spirit is more important than the body.

Epilogue

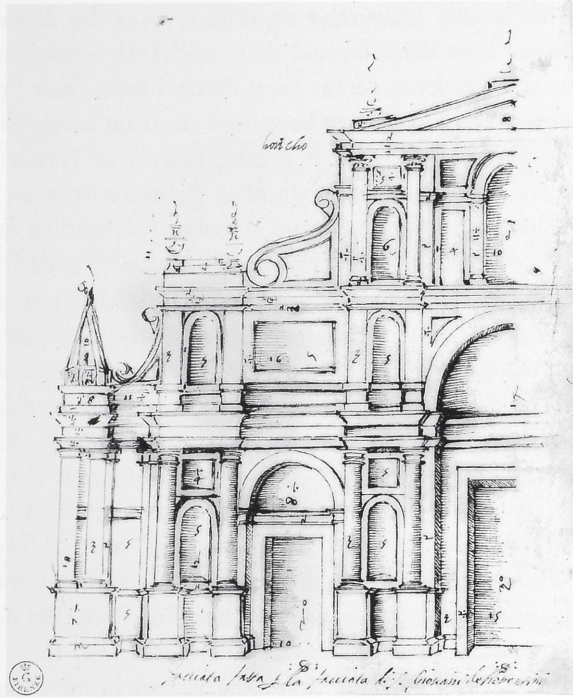
Alberto III Pio has been described as one of the first figures of the Counter-Reformation,⁵⁰ and, as we have seen, the Cathedral became a synthesis of his ideas. What has not been previously recognized is that its design is a precursor to Counter-Reformation churches, not through the building itself, which was incomplete, but through Peruzzi’s drawings. The first appearance of a similar design is one by Antonio da Sangallo il Giovane for San Giovanni dei Fiorentini in Rome, a rather uninspiring basilican plan with a five bay nave and an elevation with salient paired pilasters

(Uff.175A drawn by Antonio Labacco and Uff.176A drawn by Aristotile da Sangallo) (figs. 42 and 43), which replaced a centralized scheme by Jacopo Sansovino in 1521. In 1519 Sansovino had triumphed in a competition over Raphael, Sangallo, and Peruzzi, all of whom appear to have also submitted centralized schemes,⁵¹ but by 1521 the voices of the reformation in northern Europe were in ascendance and reform had been actively discussed for several years in Rome. Clearly the liturgical requirements of churches were taking precedence over idealized forms. Raphael had been preparing a longitudinal design for Saint Peter’s, and after his death in April 1520 Sangallo prepared even larger ones. Most likely he became familiar with Peruzzi’s design for Carpi some time after Peruzzi became coadjutor with him at Saint Peter’s in that year, but Sangallo does not seem to have appreciated the careful synthesis between a centralized and longitudinal design that Peruzzi had created.

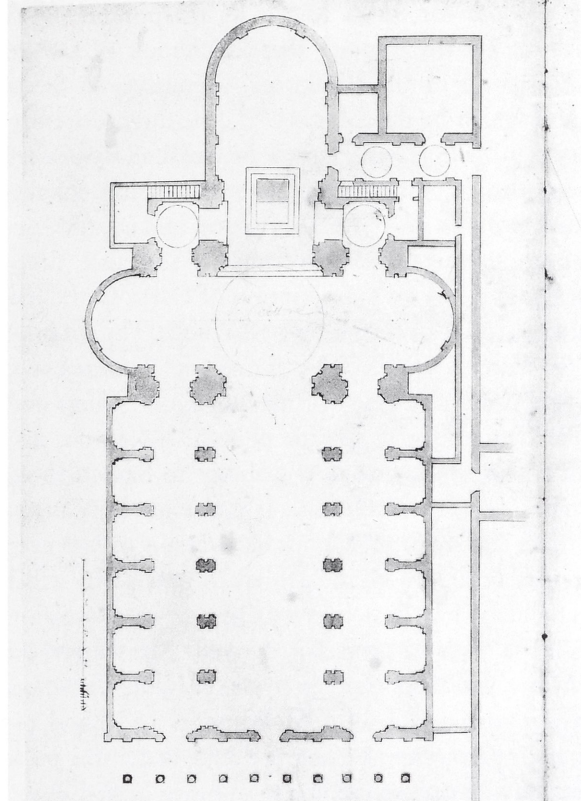
No similar plan appears again until the 1560s when Galeazzo Alessi prepared his design for San Vittore al Corpo in Milan, a copy of which appears in *Raccolta Bianconi*, V, folio 7r. A (fig. 44). James Ackerman compares it to Palladio’s monastic church in Venice of 1568 by stating, “This is the San Giorgio plan in embryo, but a peculiarly mature embryo...” Ackerman then turns to a plan and partial ele-

⁵⁰ GILMORE 1975, p. 83.

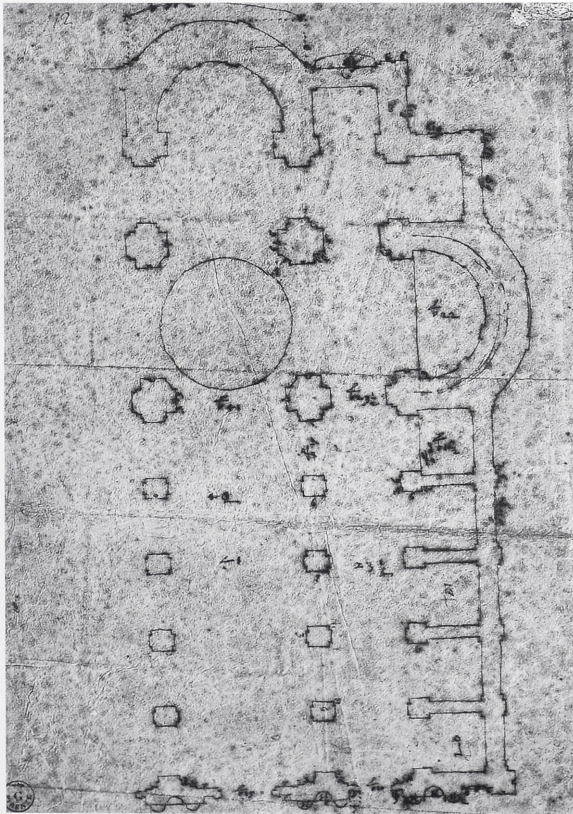
⁵¹ See GÜNTHER 1994, pp. 550–60.



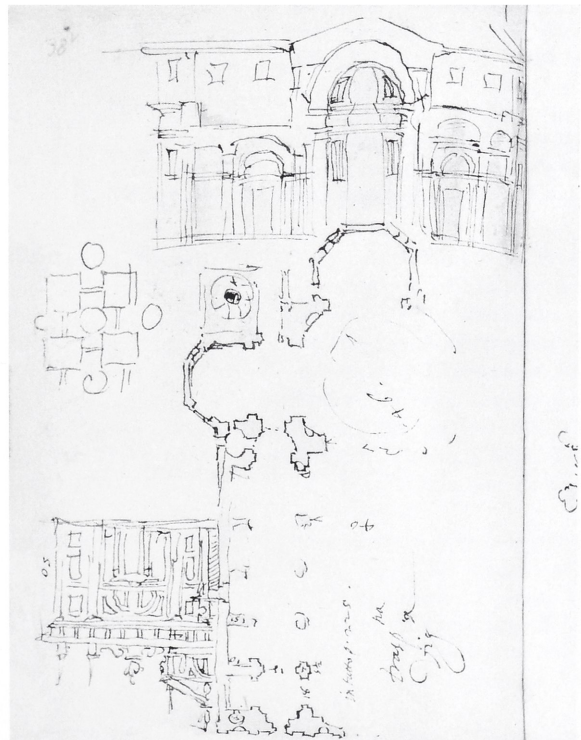
42. Aristotile da Sangallo for Antonio da Sangallo il Giovane, U 176 A, San Giovanni dei Fiorentini, Rome, 1521, elevation



44. Galeazzo Alessi, San Vittore al Corpo, Milan, 1560s, Castello Sforzesco, Milan, Raccolta Bianconi, Tomo V, p.7



43. Antonio Labacco for A. da Sangallo il Giovane, U 175 A, San Giovanni dei Fiorentini, Rome, 1521, plan



45. Oreste Vanocci Biringucci, Biblioteca Comunale, Siena, "Codex Biringucci", S IV, 1, fol. 38v, Santa Maria in Traspontina, Rome, 1565, noted by Biringucci as being by Vignola

vation by Vignola for Santa Maria in Traspontina from 1565 which is known through the sketchbook of Oreste Vanocci Biringucci in the Biblioteca Comunale in Siena (fig. 45), and which he describes as "... the direct forerunner of the Gesù."⁵² In another article he particularly praises the plan for the "... sequence of interconnecting chapels each divided into two areas: an altar space, and a larger circulation-space that retained a vestige of the aisle function."⁵³ It could easily be a description of Carpi Cathedral and is unlikely to be an invention by Vignola. The original architect for Santa Maria in Traspontina was Peruzzi's son, Sallustio, who inherited many of his father's drawings and prepared the initial design for the church. Ackerman dismisses the possibility of Sallustio's ability to have created such a project, so he concludes that it was Vignola's design, although there is no record beyond this drawing of him ever having been associated with the project. It now seems most likely that Sallustio had drawings for Carpi in his possession from which the Vignola project is derived. Alessi's project for San Vittore probably derives from the same drawings but five years earlier. He went to Rome in 1536 and remained there for six years. Peruzzi had just died at the peak of his fame, having earned the honor of being buried in the Pantheon next to Raphael, and his drawings fell into the hands of his followers.⁵⁴ In such a period of adulation and of fascination with Peruzzi's drawings Alessi must have sought and found an opportunity to see them.

It is very instructive to reflect upon the difference between how Sangallo and these mid-16th century architects used precedents versus how Peruzzi did. Their "new" designs, which appear to have been cut from whole cloth, were mostly straightforward augmentations of Peruzzi's design for Carpi Cathedral; whereas Peruzzi's was an inspired mutation, transformation, or even reinvention of ancient prototypes, which in their very selection added potential qualities to his architectural pallet and thereby ennobled his design. For them the precedent already predicted the outcome; whereas for him the precedents provoked an explorative journey.⁵⁵ Peruzzi needed to invent in order to address the concerns and attitude of his patron, Alberto III Pio, a deeply religious man who recognized the complex challenges that were facing the Roman Catholic Church and who was committed to resurrecting ancient knowledge. While Alessi and Vignola had sensibilities that allowed them to appreciate the appropriateness of Peruzzi's design for the demands of the Counter Reformation, they were not afforded the latitude that Peruzzi had in his more experimental era. Although he has been criticized for his "elaboration of innumerable alternatives" and "exasperated experimentalism" and although he began with a period of doubt and questioning, Peruzzi was able to be both experimental and disciplined, proceeding with clarity of thought and with decisiveness, as his drawings for Carpi Cathedral demonstrate.⁵⁶

⁵² See ACKERMAN 1991, pp. 417–51.

⁵³ ACKERMAN/LOTZ 1964.

⁵⁴ For the fate of Peruzzi's drawings see BURNS 1988, pp. 207–26.

⁵⁵ This juxtaposition is comparable to what Edward Said describes as transitive and intransitive beginnings in SAID 1985, pp. 3–26.

⁵⁶ For the criticism of Peruzzi see BURNS 1975, p. 493, and TAFURI 2000, vol. 2, p. 45. On the other hand see ADAMS 1982, pp. 17–20, for an opinion about Peruzzi's abilities and character concurring with that in this essay.

BIBLIOGRAPHY

- ACKERMAN 1991 James Ackerman, "The Gesù in the Light of Contemporary Church Design," in *Distance Points*, Cambridge 1991, pp. 417–51, originally published in 1972.
- ACKERMAN/LOTZ 1964 James Ackerman, Wolfgang Lotz, "Vignoliana," in *Essays in Memory of Karl Lehmann*, Locust Valley 1964, pp. 1–24.
- ADAMS 1982 Nicholas Adams, "La personalità di Baldassarre Peruzzi e la sua pratica in architettura," in *Rilievi di fabbriche attribuite a Baldassarre Peruzzi*, Siena 1982, pp. 17–20.
- ALBERTI 1966 Leon Battista Alberti, *L'Architettura [De Re Aedificatoria]*, Milan 1966.
- BARTOLI 1914–22 Alfonso Bartoli, *I monumenti antichi di Roma nei disegni degli Uffizi di Firenze*, Rome 1914–22.
- BENEDETTI 1987 Sandro Benedetti, "La sperimentazione di Baldassarre Peruzzi: il Duomo di Carpi," in *Baldassarre Peruzzi, pittura, scena e architettura nel Cinquecento*, ed. by Marcello Fagiolo, Maria Luisa Madonna, Rome 1987, pp. 65–77.
- BIAGI 1981 *Baldassarre Peruzzi, Architetto*, coordinated by Alessandro Biagi, Ancaiano-Sovicille 1981.
- BORSI 1985 Stefano Borsi, *Giuliano da Sangallo: i disegni di architettura e dell'antico*, Rome 1985.
- BRUSCHI 1989 Arnaldo Bruschi, "Baldassarre Peruzzi in San Pietro attraverso i suoi disegni," in *Il disegno di architettura* (Atti del Convegno Milano, 15–18 febbraio 1988), curated by Paolo Carpeggiani and Luciano Patetta, Milan 1989, pp. 181–90.
- BURNS 1975 Howard Burns, *Andrea Palladio 1508–1580, the Portico and the Farmyard*, London 1975.
- BURNS 1988 H. Burns, "Baldassarre Peruzzi and Sixteenth Century Architectural Theory," in *Les traités d'architecture de la Renaissance* (Actes du colloque tenu à Tours du 1er au 11 juillet 1981), Paris 1988, pp. 207–26.
- CABASSI 1986 Eustachio Cabassi, *Notizie degli Artisti Carpigiani*, Modena 1986.
- CONANT 1942 Kenneth Conant, *A Brief Commentary on Early Medieval Church Architecture*, Baltimore 1942.
- FERRI 1885 Pasquale Nerino Ferri, *Indice geografico-analitico dei disegni di architettura civile e militare esistenti nella R. Galleria degli Uffizi in Firenze*, Rome 1885.
- FREY 1915 Dagobert Frey, *Bramantes St. Peter-Entwurf und seine Apokryphen*, Vienna 1915.
- FROMMEL 1961 Christoph Luitpold Frommel, *Die Farnesina und Peruzzis architektonisches Frühwerk*, Berlin 1961.
- FROMMEL 1984 C.L. Frommel, "San Pietro, Storia della sua costruzione," in Christoph Luitpold Frommel, Stefano Ray, and M. Tafuri, *Raffaello Architetto*, Milan 1984, pp. 241–309.
- FROMMEL 1994 Ch. L. Frommel, "The Endless Construction of St. Peter's: Bramante and Raphael," in *The Renaissance from Brunelleschi to Michelangelo, The Representation of Architecture*, ed. by H. Millon, V. Magnago Lampugnani, Milan 1994, pp. 598–630.
- GARUTI 1977 *Materiali per la storia urbana di Carpi*, curated by Alfonso Garuti, Florio Magnanini, Vittorio Savi, Carpi 1977.
- GARUTI 1983 Alfonso Garuti, *Il Palazzo di Pio di Savoia nel "castello" di Carpi*, Modena 1983.
- GARUTI 1987a *Cartografia urbana di Carpi (secoli XV–XX)*, curated by A. Garuti, Carpi 1987.
- GARUTI 1987b A. Garuti, "La Cattedrale di Carpi," in A. Garuti, Dante Colli, Romano Pelloni, *Un Tempio degno di Roma*, Modena 1987, pp. 8–34.
- GEYMÜLLER 1875–80 Henry de Geymüller, *Les projets primitifs pour la basilique de Saint-Pierre de Rome*, Vienna/Paris 1875–80.
- GILMORE 1969 Myron P. Gilmore, "Erasmus and Alberto Pio, Prince of Carpi," in *Action and Conviction in Early Modern Europe*, ed. by Theodore K. Rabb and Jerrold E. Seigel, Princeton 1969, pp. 299–318.
- GILMORE 1975 M.P. Gilmore, "Italian Reactions to Erasmian Humanism," in *Itinerarium Italicum*, ed. by Heiko A. Oberman with Thomas A. Brady, Jr., Leiden 1975, pp. 70–72.
- GÜNTHER 1994 Hubertus Günther, "A History of the Construction of San Giovanni dei Fiorentini," in *The Renaissance from Brunelleschi to Michelangelo, The Representation of Architecture*, ed. by Henry Millon, Vittorio Magnago Lampugnani, Milan 1994, pp. 550–60.
- KENT 1925 William Winthrop Kent, *The Life and Works of Baldassare Peruzzi of Siena*, New York 1925.
- LICHT 1984 Meg Licht, *L'edificio a pianta centrale. Lo sviluppo del disegno architettonico nel Rinascimento*, Florence 1984.
- LICHT 1985 M. Licht, "I Ragionamenti – Visualizing St. Peter's," *Journal of the Society of Architectural Historians*, 44 (1985), pp. 115–19.
- LOTZ 1981a Wolfgang Lotz, "The Rendering of the Interior in Architectural Drawings of the Renaissance," in *Studies in Italian Renaissance Architecture*, Cambridge 1981, pp. 1–65, originally published in 1956.

- LOTZ 1981 b Wolfgang Lotz, "The Roman Legacy in Sansovino's Venetian Buildings", in *Studies in Italian Renaissance Architecture*, Cambridge 1981, pp. 140–51, originally published in 1963.
- MAGGI 1707 G. Maggi, *Memorie storiche della città di Carpi*, Carpi 1707.
- MARANI 1992 Pietro C. Marani, "Architecture and Mechanics", in *Leonardo and Venice*, Milan 1992, pp. 236–41.
- MARTINI 1967 Francesco di Giorgio Martini, *Trattati di architettura, ingegneria e arte militare*, Milan 1967.
- MARTINI 1976 Angelo Martini, *Manuale di Metrologia*, Turin 1976.
- MILLON/SMYTH 1976 Henry A. Millon, Craig Hugh Smyth, "Michelangelo and St. Peter's: Observations on the Interior of the Apses, a Model of the Apse Vault, and Related Drawings," *Römische Jahrbuch für Kunstgeschichte*, 16 (1976), pp. 137–206.
- PASTOR 1923 Ludwig Pastor, *The History of the Popes*, London 1923.
- PEDRETTI 1962 Carlo Pedretti, *A Chronology of Leonardo da Vinci's Architectural Studies After 1500*, Geneva 1962.
- PEDRETTI 1978/1979 Carlo Pedretti, *The Codex Atlanticus of Leonardo da Vinci*, Florence 1978/1979.
- PEDRETTI 1981 Carlo Pedretti, *Leonardo Architect*, Milan 1981.
- PELLONI 1987 Romano Pelloni, "La presenza di Baldassarre Peruzzi nel progetto per la cattedrale," in A. Garuti, Dante Colli, Romano Pelloni, *Un Tempio degno di Roma*, Modena 1987, pp. 36–48.
- PORTOGHESI 1971 Paolo Portoghesi, *Rome of the Renaissance*, London 1971.
- POZZUOLI 1624 Gasparo Pozzuoli, *Cronaca di Carpi stesa l'anno 1624*, unpublished manuscript in Archivio Guaitoli, filza 9, fasc. 1, Archivio Storico Comunale, Carpi.
- REDTENBACHER 1875 Rudolph Redtenbacher, *Mitteilungen aus der Sammlung architektonischer Handzeichnungen in der Gallerie der Uffizien zu Florenz*, Karlsruhe 1875.
- RICCI/ZUCCHINI 1968 Corrado Ricci and Guido Zucchini, *Guida di Bologna*, Bologna 1968.
- ROCCA 1863 Nicolò Rocca, *Lettere e documenti interessanti la storia del Duomo e della Collegiata di Carpi*, Carpi 1863.
- SAID 1985 Edward W. Said, *Beginnings, Intention and Method*, New York 1985.
- SAMMARINI 1894 Achille Sammarini, *Il Duomo di Carpi*, Modena 1894.
- SCAVIZZI 1981 Giuseppe Scavizzi, *Arte e architettura sacra*, Rome 1981.
- SCIRÉ 1994 Giovanna Nepi Sciré, catalog entry in *The Renaissance from Brunelleschi to Michelangelo, The Representation of Architecture*, ed. by Henry Millon, Vittorio Magnago Lampugnani, Milan 1994, p. 465 f.
- SEMPER 1882 Hans Semper, F. O. Schulze, and W. Barth, *Carpi. Ein Fürstensitz der Renaissance*, Dresden 1882.
- SERLIO 1996 *Sebastiano Serlio on Architecture*, translation from Italian by Vaughan Hart and Peter Hicks, New Haven 1996.
- SVALDUZ 2001 Elena Svalduz, *Da Castello a "Città": Carpi e Alberto Pio (1472–1530)*, Rome 2001.
- TAFURI 2000 Manfredo Tafuri, "The Churches of Antonio da Sangallo the Younger," in *The Architectural Drawings of Antonio da Sangallo the Younger and his Circle*, ed. by Christoph Luitpold Frommel and N. Adams, vol. 2, Cambridge 2000, pp. 45–61.
- VASARI/MILANESI 1906 Gaetano Milanesi, "Baldassarre Peruzzi, pittore ed architetto sanese," in Giorgio Vasari, *Le vite de' più eccellenti pittori, scultori ed architettori scritte da Giorgio Vasari pittore aretino, con nuove annotazioni e commenti di Gaetano Milanesi*, vol. 4, Florence 1906, pp. 589–642.
- WURM 1965 Heinrich Wurm, *Der Palazzo Massimo alle Colonne*, Berlin 1965.
- WURM 1984 H. Wurm, *Baldassarre Peruzzi, Architekturzeichnungen*, Tübingen 1984.
- ZUPKO 1981 Ronald Edward Zupko, *Italian Weights and Measures from the Middle Ages to the Nineteenth Century*, Philadelphia 1981.

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