Michelangelo's Laurentian Library: Drawings and Design Process

by JAMES G. COOPER

Re-examination of a key group of Michelangelo's sketches for the Laurentian Library, located in the monastic complex of Florence's S. Lorenzo, offers a new understanding of his design process and the project as it was built. While drawings by Michelangelo survive for all three of the library's intended spaces, this study concentrates on a number of drawings on four sheets for the entrance vestibule, or *ricetto*, and the two drawings for what would have constituted the third space, the unbuilt rare books room. It offers a major revision of Rudolf Wittkower's pioneering study of the library's design stages, and will also allow for the identification and discussion of key precedents and their role in the development of Michelangelo's design.[1] These included ancient Roman and Renaissance sources, as well as his own designs both for the unbuilt façade of S. Lorenzo, and for the Medici Chapel attached to the same church (Fig. 1). Consideration of the drawings for the Laurentian Library *ricetto* in conjunction with letters written to Michelangelo from his Roman agent, Giovanni Francesco Fattucci, and the papal secretary Pier Paolo Marzi, recording Pope Clement VII's responses to a number of important design ideas, allows for a reliable reconstruction of Michelangelo's penultimate scheme for the *ricetto*, which enables the recognition of a key ancient precedent that inspired Michelangelo, and throws new light on the genesis of the final design. It becomes clear, too, that Michelangelo would later rework certain design ideas that he developed in these Laurentian Library sketches for subsequent projects in Rome, including an early design for the Palazzo dei Conservatori, and also the final form of both this palace and the Palazzo Senatorio.

Rudolf Wittkower wrote in the introduction to his seminal article on the Laurentian Library that it 'must surely be the most important, and influential Italian secular building of the whole sixteenth century and it is therefore very remarkable that no exhaustive account of its architectural history exists'.[2] The importance of Wittkower's work for understanding the library itself — and 'Mannerist' architecture in general — cannot be overstated, and it has provided the foundation for all subsequent scholarship, including the present study. However, despite his insightful analysis of the individual drawings, he set a pattern by tending to examine them, and the ideas they represent, in relative isolation. Thus there is little mention of the role of drawing in Michelangelo's design process or much discussion of possible external influences.[3] Discussing the drawings in

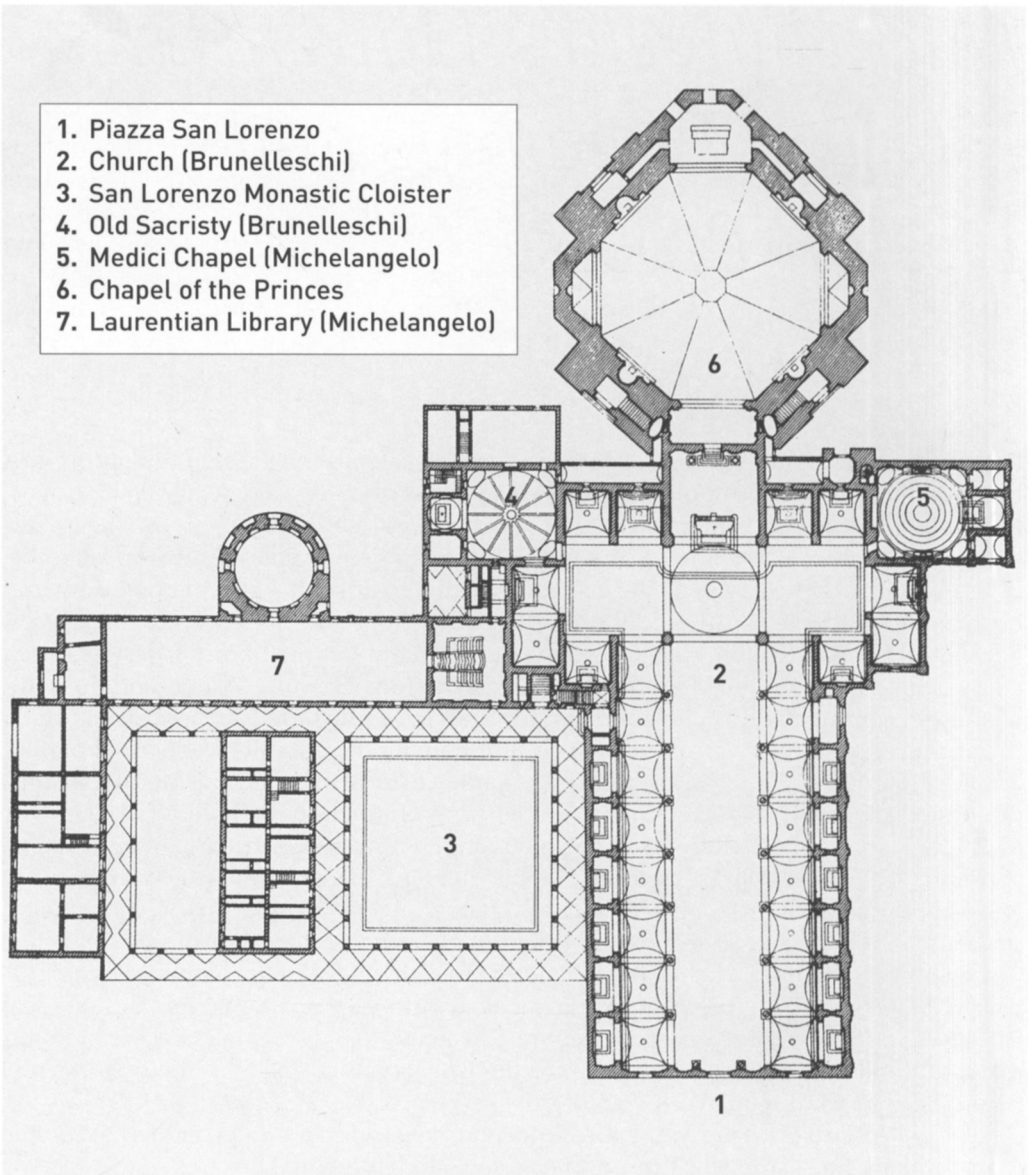

Fig. 1. *Plan of The S. Lorenzo complex, Florence (Author)*

this way has unwittingly reinforced the stereotype of Michelangelo as a solitary genius with almost miraculous powers of creation dependent almost entirely on internal processes.[4] Indeed, how Michelangelo developed many of his architectural designs is somewhat of a mystery partly because it seems he wanted it this way, intentionally destroying many of his design sketches.[5] In the case of the Laurentian Library, however,

a relatively large number of drawings fortunately survive, and these allow at least some insight into his design process.

Since Wittkower's time, the building and the drawings for it have been the subject of numerous studies by eminent scholars including Charles de Tolnay, James Ackerman, Giulio Carlo Argan and Bruno Contardi.[6] More recently, younger scholars such as William Wallace, Ralph Lieberman, Frank Salmon, David Hemsoll and Cammy Brothers have provided important contributions and revisions to the scholarship.[7] Brothers's book on Michelangelo's architectural drawings is especially attentive to the freedom and fluidity of his drawings and related design process, and she investigates them from the perspective of his background as a sculptor and painter. She analyses and compares his figural drawings with his architectural sketches for projects that include sculpted figures, such as the Medici Chapel, and for his first major project that did not include sculpted figures, the Laurentian Library. She argues that, in this last of his Florentine commissions, the architectural elements effectively became the figures. However, while her interpretations of Michelangelo's drawings for the library are often insightful and penetrating, her primary focus was neither to establish a design chronology, nor to examine the evolution of design ideas or identify design precedents, but to justify her overriding view of Michelangelo as an artist-turned-architect.[8] Thus, Wittkower's interpretations of the Laurentian Library sketches, and his views of their chronology, remain unchallenged.

However, a careful reading of Wittkower's classic article, in conjunction with a close examination of the drawings themselves, suggests that important conclusions were based on relatively insubstantial details. Moreover, he sometimes overlooked conceptual connections between drawings and the evolution of ideas from one drawing to another, which led him to regard some sketches as representing fully developed schemes rather than brief moments in a more fluid process.[9] He ignored some of Michelangelo's likely sources and the organic evolution of ideas from one sketch to the next, and he occasionally placed too much weight on the extrapolation of dimensions and proportions to sheets that provide no evidence of a scale, module or ruled guidelines, and, as a result, came to mistaken conclusions about their chronology.[10]

What Wittkower did not emphasize sufficiently was that Michelangelo intended his rapid, freehand sketches to be for his eyes only. In some cases, he appears to have drawn them so quickly that one can imagine the ideas appearing on the sheet almost as rapidly as they were evolving in his mind. In all the surviving sheets, the drawings are incomplete, and this is because the act of sketching was itself Michelangelo's primary vehicle for exploring and developing an idea. Each sketch inevitably led to a new idea and this led to a new sketch with there being no point in completing the previous one.[11] An important component of my research is to produce my own drawings as a tool for analysing and investigating Michelangelo's drawn and built schemes. For the present study, I carefully copied Michelangelo's sketches from the original sheets, a process that compelled me to consider the significance of every line and mark on Michelangelo's sheets, and allowed me to glean a clearer understanding of Michelangelo's thought and development process, and of the chronological sequence of the various sketches and the ideas they represent (Fig. 2).[12]

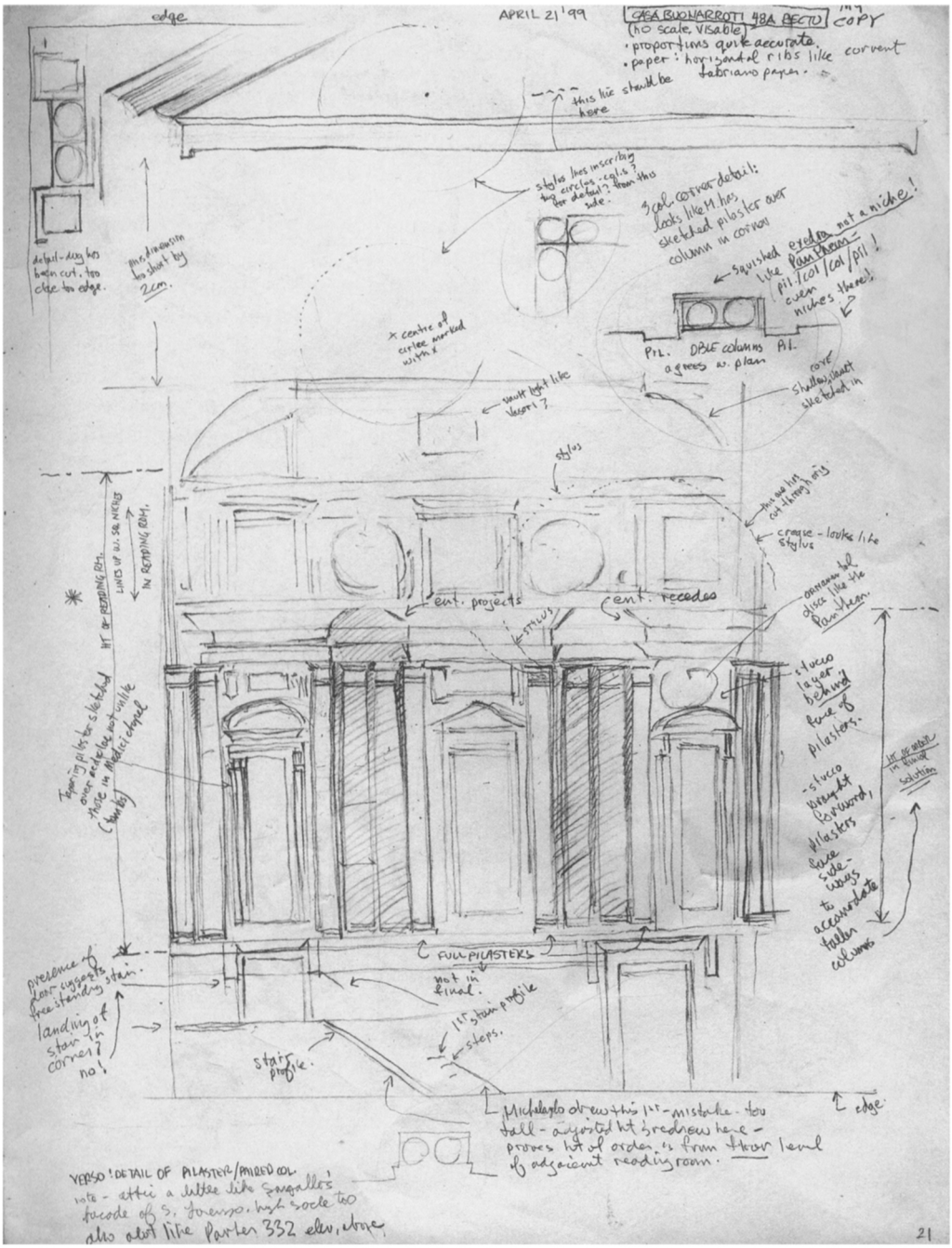

Fig. 2. *Excerpt from author's sketchbook, annotated sketch and interpretation of the elevational study by Michelangelo on the sheet Casa Buonarroti 48A recto, drawn from the original at the Casa Buonarroti, Florence, October 1999*

THE BASIC ELEMENTS OF MICHELANGELO'S DESIGN

Michelangelo was involved in the design and construction of the Laurentian Library from 1524 to 1533. Budgetary and space restrictions forced him to work within the existing fifteenth-century fabric of the cloister of S. Lorenzo, which had probably been built under Antonio Manetti (Figs 1, 3 and 4).[13] As designed, the library was to consist of three spaces: the *ricetto*, the reading room and the rare books room (Figs 1, 4 and 5). The reading room and rare books room were situated above the pre-existing upper level of the cloister's west wing. The size, layout and structure of the long reading room were largely determined by the dimensions and the load-bearing capacity of the existing

Fig. 3. *Aerial view of the S. Lorenzo complex (photo: author)*

Fig. 4. *S. Lorenzo: large cloister and Laurentian Library (photo: author)*

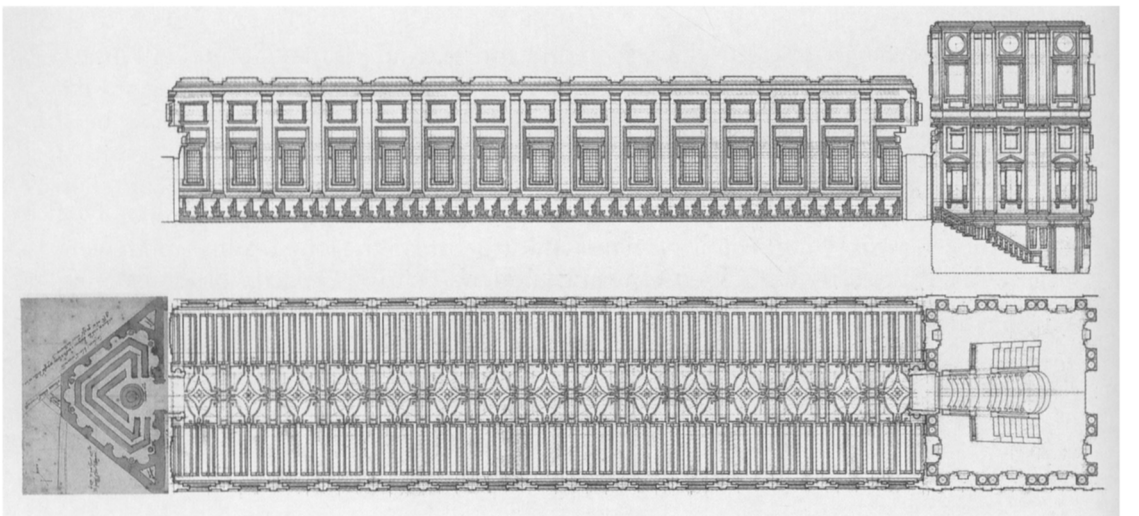

Fig. 5. *Section and plan of the Laurentian Library as built (drawing: author), with Michelangelo, Casa Buonarroti 80A, sketch plan of rare books room (Casa Buonarroti)*

monks' quarters on the first floor directly below.[14] The reading room's elevated location, at the roof level of the old monastery, required Michelangelo to provide a means of access from the existing upper floor of the cloister by way of the staircase contained in the unusually tall *ricetto*, which is as wide as the reading room and approximately square in plan (9.51 × 10.31 m). The unbuilt rare books room, which is known from two surviving drawings, would have been the final space in the tripartite sequence, and would have had a very unusual triangular plan.[15]

DRAWINGS FOR THE *RICETTO*: STAGE ONE

Michelangelo began designing the Laurentian Library *ricetto* in a similar manner to that followed in his earlier projects at S. Lorenzo. In these earlier projects, he had developed initial schemes by recycling ideas from others, which he then transformed through the process of drawing, in response to site restrictions, new functional and symbolic requirements, and his own creative wishes. In the case, for example, of his S. Lorenzo façade project (1516–19), he derived early designs from a scheme by Giuliano da Sangallo (Figs 6, 7, 8 and 9).[16] For the Medici Chapel (1519–34), the basic design for the plan and wall articulation was derived from its counterpart on the other side of the S. Lorenzo transept, the Old Sacristy, designed and built a century earlier by Brunelleschi (Fig. 10).[17] However, at the library, rather than adapting ideas from the buildings or designs of others, the initial source of inspiration appears to have been his own Medici Chapel. Soon after the final site and general concept for the library had been decided upon by the architect and his original patron, Pope Leo X, Michelangelo produced surviving sketches for the *ricetto* that were closely dependent on the chapel, then under construction and just a few metres away.[18] These can be seen on one of the sheets of surviving drawings, Casa Buonarroti 89A verso and recto (Figs 11 and 12).[19] While the

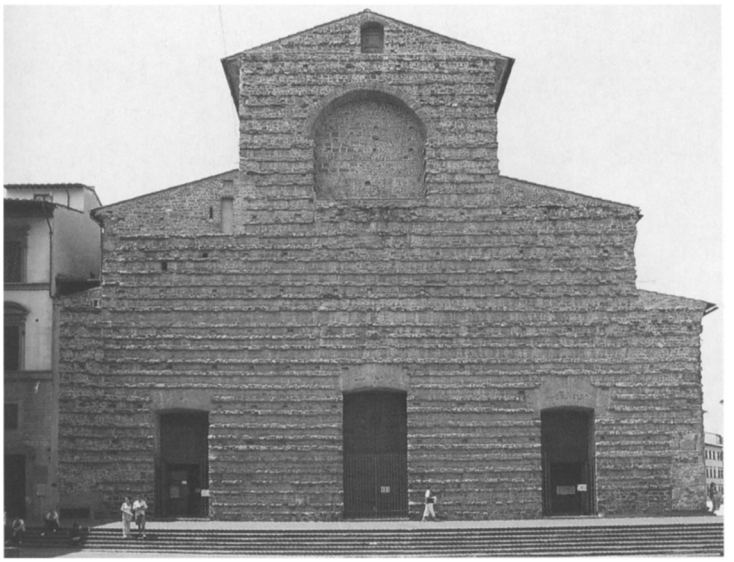

Fig. 6. *Façade of S. Lorenzo (photo: author)*

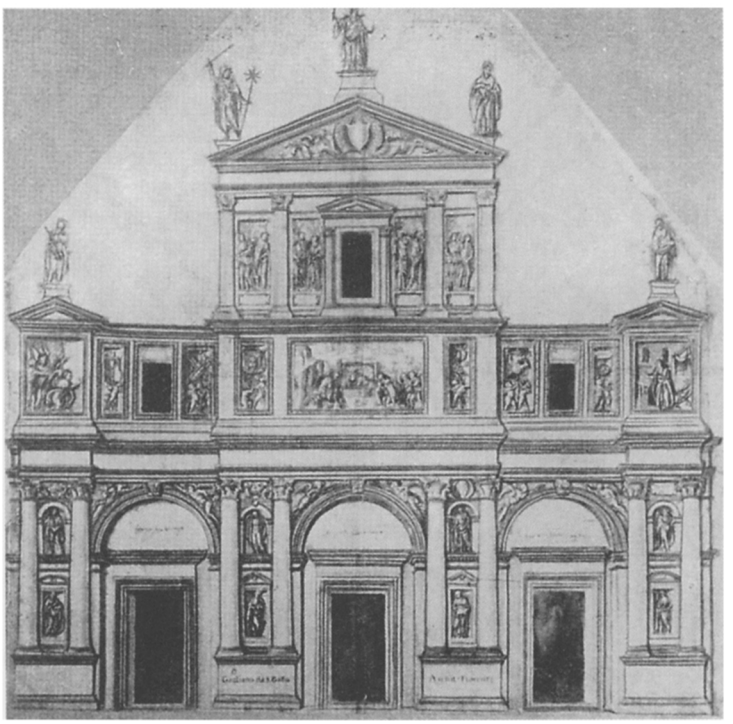

Fig. 7. *Giuliano da Sangallo, Uffizi A280, elevational study for the S. Lorenzo façade (Gabinetto Disegni e Stampe degli Uffizi)*

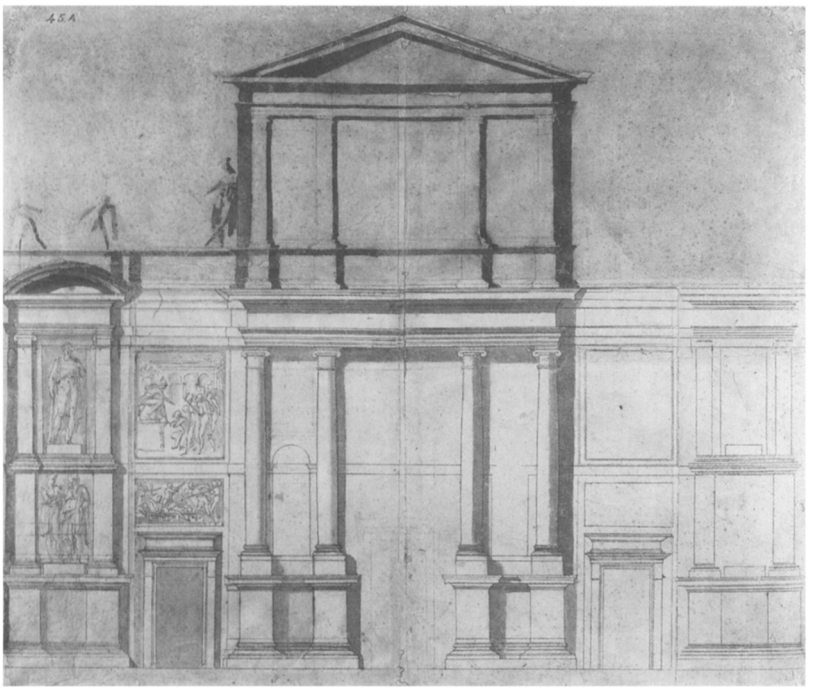

Fig. 8. *Michelangelo Casa Buonarroti 45A recto, elevational study for the S. Lorenzo façade (Casa Buonarroti)*

Fig. 9. *Michelangelo, façade model of S. Lorenzo, Casa Buonarroti, Florence (photo: author)*

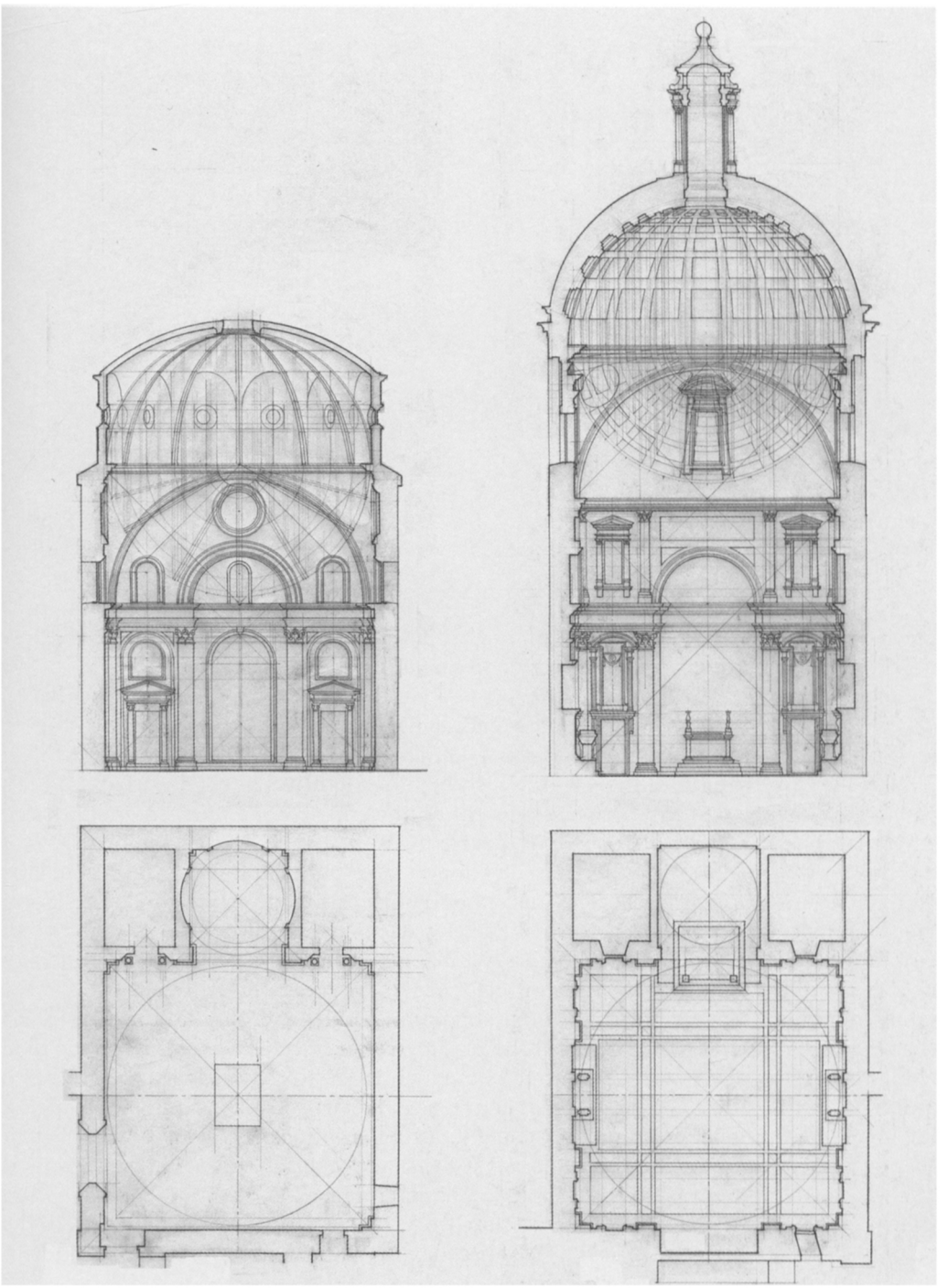

Fig. 10. *Left: Brunelleschi, section and plan of Old Sacristy, S. Lorenzo. Right: Michelangelo, plan and section of Medici Chapel, S. Lorenzo (drawings: author)*

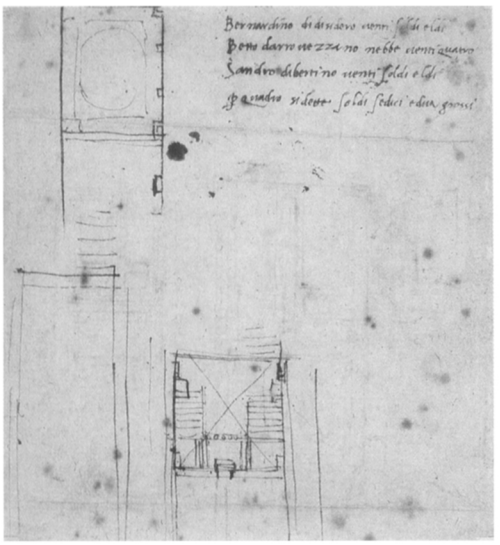

Fig. 11. *Michelangelo, Casa Buonarroti 89A, three plans for the Laurentian Library* ricetto *(Casa Buonarroti)*

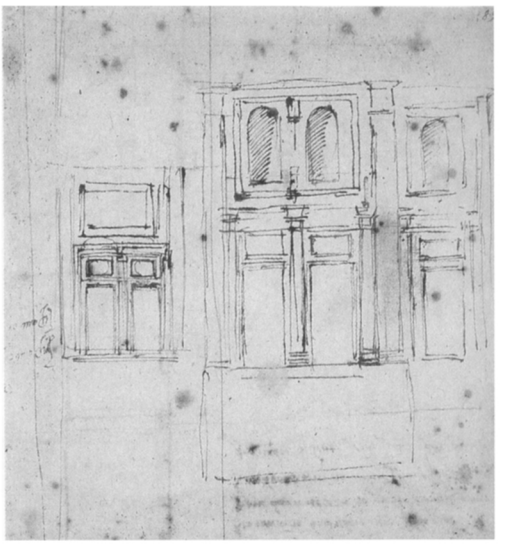

Fig. 12. *Michelangelo, Casa Buonarroti 89A recto, two elevation studies for the south wall of the Laurentian Library* ricetto *(Casa Buonarroti)*

ideas represented on this sheet did not find their way to the final project, they nevertheless constituted an essential step in his design process.

On the verso of Casa Buonarroti 89A, there are three related freehand plans for the *ricetto* together with partial plans for the reading room (Fig. 11).[20] All the sketches appear to be oriented with north at the top of the sheet. This is most clear in the more developed plan at the lower centre of the sheet, which includes lightly sketched horizontal lines above the *ricetto*'s top-right corner, representing the *Quattrocento* monastery stairs that still today provide access, just north of the *ricetto*, from ground level to the first floor of the cloister (Fig. 1). There is also a parallel line to the plan's right, which represents the outer side of the upper loggia. The inaccurately proportioned plan to the lower left of the sheet, which was abandoned by Michelangelo almost as quickly as it was started, also represents the north end of the library, since it too shows the stairs and the cloister loggia. The third plan in the sheet's top-left corner would again show the *ricetto* in the same orientation, although it was thought by both Wittkower and Ackerman to show a chapel attached to the *southern* end of the reading room.[21] If this were so, then the plan would be upside down in relation to the others on the sheet. This identification is also unlikely, on the grounds that Michelangelo would hardly have considered a chapel of this shape for this location given that a neighbouring building, the Casa de' Martelli, cut across the site's south-west corner, and it was the shape of this location that later inspired Michelangelo to give the rare book library a triangular plan. The possibility that it instead shows, albeit schematically and imprecisely, the *ricetto* in the same orientation as in the other two plans, is supported by the facts that the three sketches are all drawn in reddish-brown ink, all have the same line weights, and are all the same approximate size. All this suggests that Michelangelo drew them in rapid succession. There is a difference,

however, between this third sketch and the two others. It does not appear to be a conventional ground plan, in respect to the forms it depicts within its walls. Instead, it is almost certainly a plan showing Michelangelo's initial ideas for the *ricetto*'s ceiling.[22] The inset rectangle probably represents the inner edge of a cove vault, while the oval — which Michelangelo presumably intended as a circle — is likely to be the only surviving visual record of Michelangelo's unprecedented idea, which is mentioned in letters from Fattucci and Marzi to Michelangelo, for a large ocular skylight in the roof.[23]

The plan in the lower centre of this sheet shows that, at a very early stage of development, Michelangelo was considering matching, symmetrical staircases placed against the *ricetto*'s east and west walls, rising to landings in the room's south-east and south-west corners. Three more steps then ascend from each side to a central landing in front of the portal gaining access to the reading room, followed by two or three steps leading up to the portal itself. It is possible that this split-level configuration was suggested by the staircases in certain churches, such as S. Miniato al Monte in Florence. There, symmetrical staircases positioned against the outer walls of the side aisles rise from the crypt to the nave and then continue up to the elevated choir.[24] In his design, Michelangelo also left sufficient room for the primary entrance into the *ricetto* from the cloister on the east side, and for a corresponding doorway opposite on the library's west side. He indicated the locations for these doors at the base of the stairs on the east and west walls with small rectangles, which probably represent projecting pediments or cornices over the portals. The large 'X' over the whole plan probably represents an idea at this stage for roofing the space with a cloister, or pavilion, vault. This last detail could well have prompted him to consider another possibility for roofing the space, and have led him to draw the cove vault in the presumed ceiling plan in the upper-left corner of the sheet.[25]

Drawing quickly, Michelangelo tentatively indicated a system of pilasters for the *ricetto* walls in these plans. Their configuration, most clearly seen in the upper-left corner plan, indicates that he was considering, at this early stage, a division similar to that of the Medici Chapel, with corner-pilasters and two intermediate pilasters dividing each wall into an 'a-B-a' rhythm, with narrow outer bays and a wide central bay (Figs 10 and 11).[26] This similarity to the Medici Chapel is perhaps not so surprising, given that the *ricetto* is about the same size and shape as the chapel, and given that the chapel was then under construction just a few metres away.[27]

On the sheet Casa Buonarroti 89A recto there are elevational sketches that further develop the ideas explored in plan on the verso and confirm the Medici Chapel as Michelangelo's principal source (Figs 10, 11 and 12). Wittkower argued that the elevations on the recto side and the plans on the verso are not related. He was correct in pointing out the significant difference of the double doors of the central bay in the elevation on the recto, and the single door in the plan on the verso, but it is still very clear that the quick sketches on both sides of the sheet are all conceptually related. None of them represents a finalized scheme, and their purpose was simply to facilitate the development of the design. As such, one would indeed expect to see a number of formal variations.[28]

The sketches include clues that suggest the order in which Michelangelo drew them, the problems he was trying to resolve, and the development of important design ideas. On the recto there are two related elevational sketches, most likely for the *ricetto*'s south

wall, from which entry is gained into the reading room beyond (Fig. 12). These elevations are related to the three-bay (a-B-a) plans on the verso.[29] They comprise, on the left side of the sheet, a small study of just the central bay of a three-bay elevation and, to the right, a larger sketch of the same central bay, plus the narrower bay to its left. Wittkower argued that Michelangelo drew the larger sketch first, but it is more likely that he began with the smaller study. The larger sketch excludes the narrow bay's symmetrical counterpart to the left precisely because Michelangelo had already drawn the small study of just the central bay in that location on the same sheet (Fig. 12). Its purpose, therefore, was that of developing certain ideas that had appeared in only rudimentary form in the small study. These new ideas most likely occurred to Michelangelo while actually drawing the small study, which immediately motivated him to abandon it and develop them further in the larger sketch. In the small study of the central bay, he drew double doors flanked by large pilasters, in a configuration reminiscent of his design for the façade of the tiny chapel in Rome's Castel S. Angelo (1515) (Fig. 13).[30] Over these double doors, he first sketched arches, but subsequently superimposed trabeated portals over them, with a continuous frame extending around each opening, similar to those in the corner bays of the Medici chapel. However, close to the top of the central door frame, he tentatively added what is clearly a Doric capital. The possibility suggested by this rapidly sketched idea of including a small columnar order between the portals then prompted Michelangelo to develop it further at a larger scale.

In the larger sketch to the right of this small initial study, Michelangelo redrew the principal elements at a larger scale with greater time, care and attention to detail. The large pilasters, which now included simplified Corinthian capitals, again divided the wall, as in the Medici Chapel, into narrow outer bays and a wide centre bay (Figs 10 and 12). While in the Medici Chapel the paired pilasters used for the ducal tombs further subdivided the wide central bay into three parts, in this sketch he placed a Doric column at the centre, subdividing the bay into two parts, and resulting in an 'a-BB-a' configuration for the entire wall. The upper storey of the centre bay features two apsidal niches with an oversized bracket or console between them, similar in form and placement to the central bracket used for the chapel at Castel S. Angelo, and these are flanked, in the side bays, by two further niches (Fig. 13).

In the large sketch, significantly, the middle bay of the main storey includes not just the central Doric column, but also two more columns abutting the edges of the taller, flanking Corinthian pilasters. The narrow bay to the right also includes Doric columns coupled with the taller pilasters, which frame niches. There is thus a fully developed system of subordinate Doric columns, which flank the pilasters and which support a seemingly continuous entablature that appears to weave behind the large pilasters, and this configuration also divides the elevation into two roughly equal storeys. In addition, the configuration very closely presages Michelangelo's later design for the Campidoglio in Rome, with its giant orders of pilasters and coupled order of smaller columns. The main storey in the *ricetto* sketch sits on a high plinth or socle, which is at the same level as the reading room floor at the top of the stairs. Although Michelangelo has not drawn the stairs themselves in the sketch, the rectangle indicated below the central bay undoubtedly provides an indication of the front elevation of the staircase's central landing.

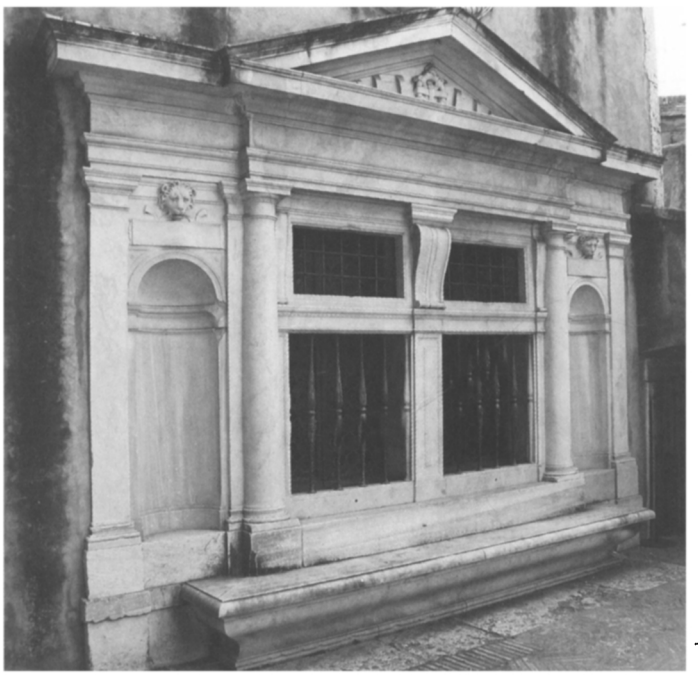

Fig. 13. *Michelangelo, chapel façade at Castel S'Angelo, Rome, 1515 (photo: author)*

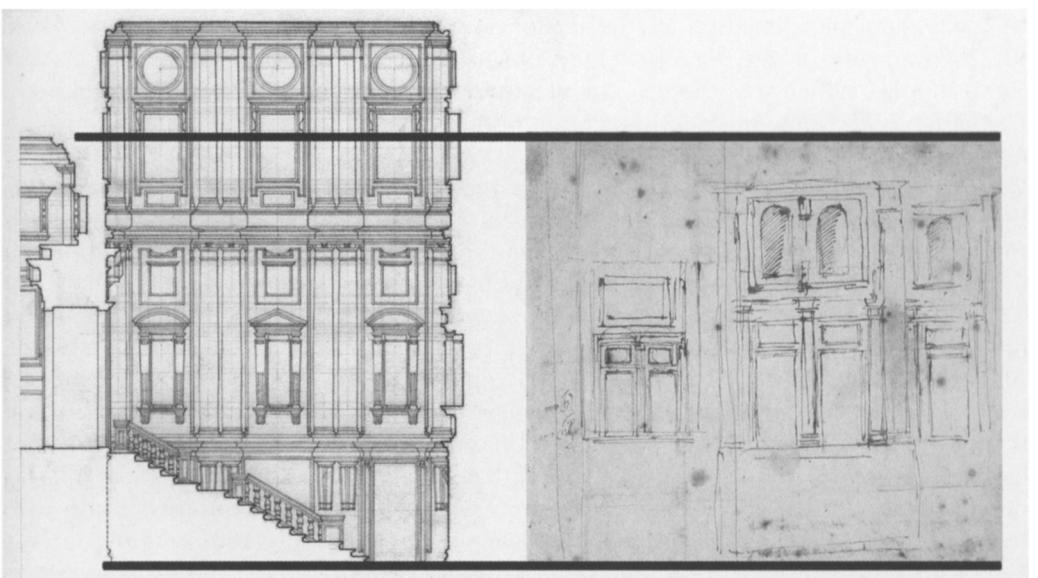

Fig. 14. *Left: South to north section of the Laurentian Library* ricetto *(drawing: author). Right: Michelangelo, Casa Buonarroti 89A (Casa Buonarroti). The horizontal line extending from left to right from the ceiling level of the reading room indicates that it was Michelangelo's intention, at this stage of development, for the* ricetto *to share a common ceiling level with the reading room*

There are many probable reasons why Michelangelo abandoned the ideas explored on the sheets Casa Buonarroti 89A verso and recto. At this point in the development of the design, he intended the *ricetto* and the reading room to share a common roof. Yet there was a problem with this, which becomes clear when the elevation shown on the sheet Casa Buonarroti 89A recto is juxtaposed with a section of the *ricetto* as built. On Figure 14, the upper horizontal line, extending from the reading room ceiling on the left edge of the section across to the *ricetto* sketch, indicates that Michelangelo had intended the height of the *ricetto* ceiling to be in line with that of the reading room. The position of this line in relation to the Casa Buonarroti 89A elevation indicates that there would have been insufficient height for an attic or vault above the *ricetto*'s entablature (which Michelangelo did not draw), resulting in what he must have thought were rather unsatisfactory overall proportions.[31] In addition, there would have been difficulty in placing the staircase's balustrades against the walls on the corner-landings, as they would have collided awkwardly with the bases of the main storey's pilasters. Michelangelo might have also been concerned with the structure of the *ricetto*. In the sketch, the central bay projects slightly from the side bays and the pilasters clearly stand in front of the plane of the wall, just as they do in the Medici Chapel. Thus he might have had doubts as to whether the existing walls of the ground floor of the cloister, below the level of the *ricetto*, were sufficient to support the load of *ricetto* walls, given the depth and weight of his proposed articulation.[32] However, the most compelling reason for Michelangelo's abandonment of his initial scheme for the *ricetto* is likely to have been that it was just too similar to the Medici Chapel.

Yet, although abandoning this initial scheme, it was by working it through that Michelangelo later came up with the idea of combining a giant order with a small order for the façades of the Palazzo dei Conservatori and the other palaces on the Campidoglio, which was the first architectural commission he received after moving permanently to Rome in 1534. In fact, the *ricetto* scheme represented by the plans and elevations on the sheet Casa Buonarroti 89A is remarkably similar to the façade of the Palazzo Senatorio, as depicted in the engravings of Étienne Dupérac. Figure 15 shows the elevational sketch on this sheet, but with the fully developed right-side bay mirrored to the left side of the central bay, and the plan from the verso side of the sheet enlarged and projected below. Figure 16 is an image based on the Dupérac engravings of the Campidoglio. The similarities between the sketched scheme and the Palazzo Senatorio are numerous.[33] Like the Palazzo Senatorio, the *ricetto*'s main storey sits on a high plinth, or socle, with symmetrical staircases rising to intermediate landings and then continuing up to a central entrance. Both elevations incorporate tall pilasters running through two storeys of equal height, and have portals framed by a minor order of coupled columns supporting an entablature that appears to continue behind the pilaster order. For the Palazzo Senatorio, Michelangelo pulled the minor order forward from the wall plane to create a porch, or *baldacchino*, over the central landing (although his successor on this project, Giacomo della Porta, eventually abandoned this idea of a minor order and *baldacchino*). However, for his designs of the Palazzo dei Conservatori and of the Palazzo Nuovo on the Campidoglio, Michelangelo closely followed the formula of the tall and minor orders that he had experimented with for the Laurentian Library previously.[34]

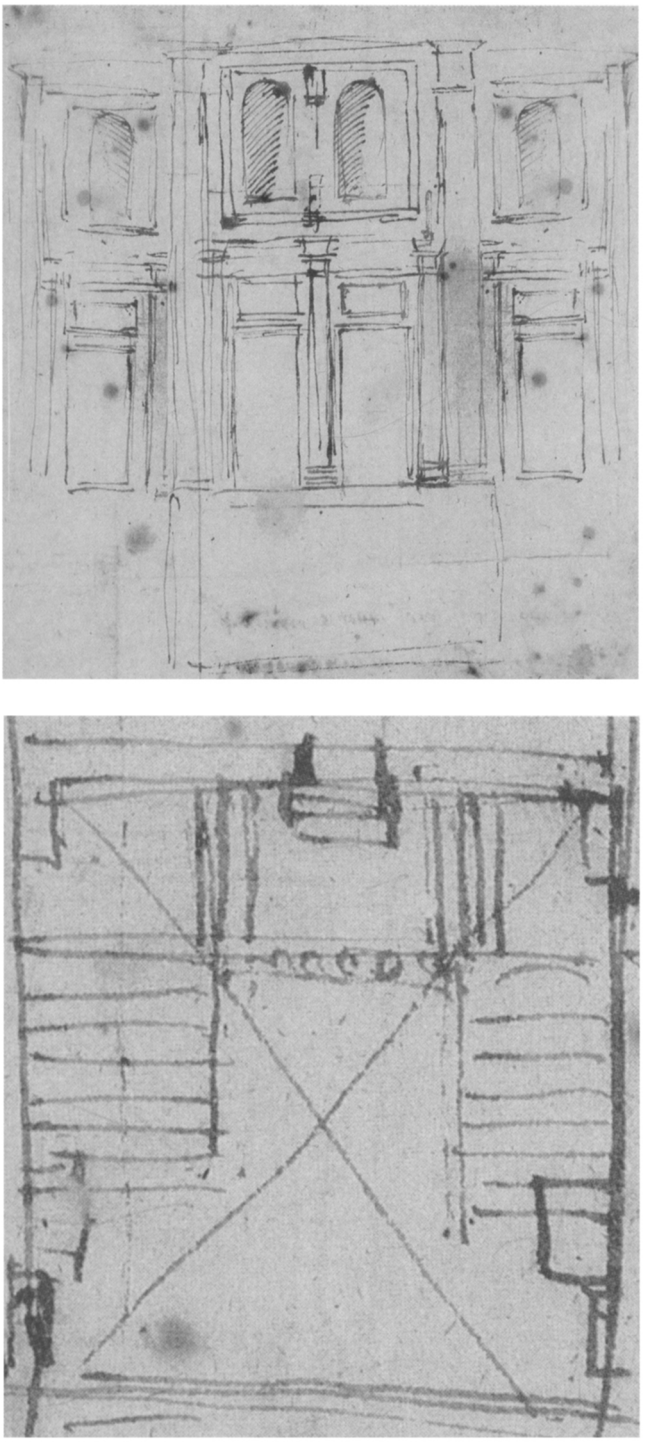

Fig. 15. *Michelangelo, Casa Buonarroti 89A recto, elevational study for the south wall of the Laurentian Library* ricetto, *with right bay mirrored to the left side of the central double bay, to suggest a completed elevation, and with the sketch plan from Casa Buonarotti 89A verso rotated and projected below the elevation (Photoshop manipulations: author)*

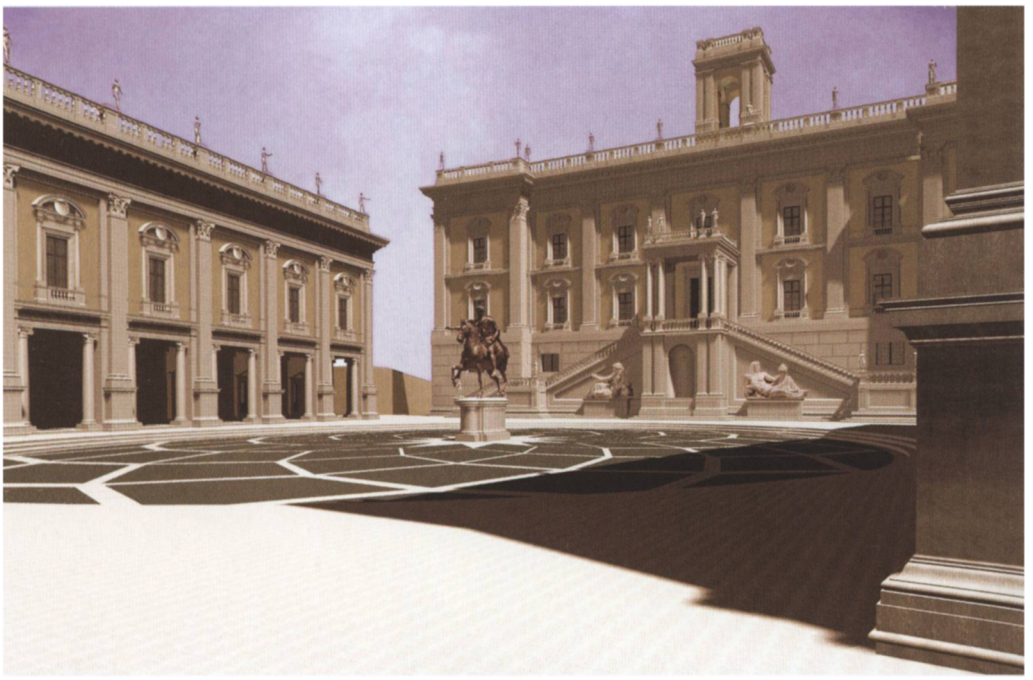

Fig. 16. *Computer model reconstruction of the Palazzo Senatorio, based on the engravings of Étienne Dupérac (computer model: author)*

To return to the Laurentian Library, Michelangelo was also developing the design of the staircase while considering the interior space of the *ricetto* as a whole. In some elevation sketches, he included variations on the stairs, while in other sketches he drew the stairs in isolation. Two elevation studies, two plans and a plan detail, all preserved on the sheet A-33b-v in the Teylers Museum in Haarlem, and a series of stair sketches on the sheets Casa Buonarroti 92A recto and verso, show successive phases of development. They illustrate the evolution of various specific ideas that would lead to the final scheme for the *ricetto* elevations and the staircase (Figs 17, 18 and 19). Those that show the stair in isolation (that is, without indication of the adjacent walls of the *ricetto*) led Wittkower to suggest that Michelangelo's idea for a three-flight staircase disengaged from the adjacent walls of the *ricetto* may have occurred to him while producing these sketches.[35]

DRAWINGS FOR THE *RICETTO*: STAGE TWO

The elevational sketch in the lower right foreground of the Teylers A-33b-v sheet represents a three-bay elevation, and the lower run and corner-landing of a wall-engaged double stair, an idea that the pope had approved on 29 April 1524 (Fig. 17). Michelangelo started the drawing as an orthogonal elevation, but then sketched the stair in perspective. In contrast, the small adjacent plan, to the centre right, depicts an interesting variation on the stairs and wall subdivision of the same scheme. There, one can see that

Michelangelo has loosely drawn guidelines blocking out a series of square modules around the edges of the square space. These guidelines, which subdivide the west wall into five rather than three bays, appear to indicate Michelangelo hesitating about the elevation bay subdivision, as well as making an attempt to reconcile the configuration of the stairs with the bay subdivisions of the *ricetto*'s elevations. However, over these modular guidelines, Michelangelo then sketched a central stair composed of convex ovoid forms descending from the reading room to a large central circular landing surrounded by two or three steps.[36] Although functionally impractical, because the stairs almost extend to the edge of the walls, leaving no floor space, the circular form and size of the landing and steps could well reflect Michelangelo's desire to establish a visual alignment between the stair below and the proposed cove vault and ocular skylight, which he may well have been considering by this time (compare Fig. 17 and the upper-left ceiling plan on Fig. 11). It therefore seems likely that this sketch initiated Michelangelo's subsequent ideas for a stair with concave and convex forms. It is also significant that Michelangelo subdivided the floor perimeter and walls in this sketch plan into five bays, while the lower elevation on the same sheet illustrates three bays and the upper elevation shows four bays. In his next phase of design development, Michelangelo would develop elevations that incorporate five bays, with new stair variations that extend the full width of the *ricetto*.

In a letter dated 12 April 1525, Michelangelo's agent Fattucci wrote to him with the pope's approval for a stair occupying the full width of the vestibule.[37] Sketches of various alternatives by Michelangelo appear on the sheets Casa Buonarroti 92A recto and verso (Figs 18 and 19). The sketches depicting a double staircase must be roughly contemporaneous with the Teylers A-33b-v sheet discussed above, while the variations with stairs extending across the full width of the vestibule probably date from just before, or just after, he received Fattucci's letter. The upper sketch on Casa Buonarroti 92A recto includes a variation on the wall-engaged double stair seen on the Casa Buonarroti 89A verso sheet. The middle sketch on this sheet probably depicts a similar double stair that does not include the walls of the *ricetto*, and is drawn in an exaggerated one-point perspective. Wittkower argued that this sketch was an early idea for a freestanding stair with double flights converging slightly in plan towards the central landing, but he may have been interpreting the exaggerated perspective too literally. One must examine it in conjunction with the upper sketch, which Michelangelo probably drew first. Close examination of the upper stair sketch reveals that he drew portions of the design in elevation, while giving other parts a slight degree of perspectival diminution. Significantly, one can see vertical guidelines representing the corners of the room behind the staircases, which confirms that the stairs are engaged with the *ricetto*'s side walls. Michelangelo then redrew the design in the sketch immediately below, but now overcompensated for the lack of consistency in the upper sketch by representing it entirely in an (exaggerated) perspective. There is actually little difference between the two in terms of the forms under consideration.[38] At the bottom of the sheet is a sketch of a stair as wide as the room that is a variation on the double engaged stair, and for this Michelangelo filled in what had been open space between the flights with a centre flight with concave steps descending to a convex oval landing (Fig. 18).[39] This idea seems to be a more functional development of the plan with both convex and concave stairs seen

to the centre right in the Teylers A-33b-v sheet. The recto side of Casa Buonarroti 92A includes another full-width, three-flight stair with concave steps in the middle. The sketch at the bottom of the sheet shows yet another three-flight stair, this time with straight steps in the middle, set two steps below the flanking flights to either side (Fig. 19). Wittkower argued that the sketches on this sheet that do not indicate the context of the vestibule represent Michelangelo's initial ideas for a staircase disengaged from the side walls of the vestibule.[40] However, as Ackerman has argued, it is likely that Michelangelo abandoned this idea because of the difficulty of developing unified elevations for the *ricetto* with double wall-engaged stair flights.[41]

The Teylers A-33b-v sheet also includes sketches of a number of elements that represent a critical stage in the design development of the *ricetto* elevations (Fig. 17). Michelangelo probably drew the less-developed lower elevation sketch first. Brothers argues that the stair drawn in perspective in the left corner of this sketch suggests that Michelangelo was considering a side entrance into the reading room. However, there is no suggestion in the sketch of a door at the landing level, and the guideline that extends to the left from the top riser most likely represents the base of a second run of steps continuing towards a central landing in front of the door to the reading room.[42] From the form of this staircase, both Wittkower and Ackerman claimed that, at this stage, the walls of the *ricetto* were to have two plinth, or socle, levels. They argued that the lower socle was to rise to the floor level of the adjacent reading room (in line with the corner-landing in the sketch), while the shorter socle above would be in line with the socle inside the reading room.[43] However, the clear relationship between the elevations on the Teylers A-33b-v sheet and that on Casa Buonarroti 89A sheet makes this interpretation unlikely (Figs 11, 12 and 17).[44] Wittkower established a height for the lower socle of 2.5 m by counting the number of steps in the Teylers A-33b-v sketch, and he estimated the height of the upper socle to be between 1.8 m and 2.0 m. Thus he concluded that the base of the main storey was between 4.3 m and 4.5 m above the floor, noting that 5.5 m was the minimum height at which the reading room windows could be positioned.[45] However, he placed too much emphasis on the number of steps shown in this sketch. It is unlikely that Michelangelo had calculated the number of required risers by this point in the design process, but, even if he had, he would surely not have bothered counting the number of steps while producing such a rapidly drawn freehand sketch.

In any case, there is a different way of understanding the drawing. Rather than representing the top of a lower socle, the horizontal line that extends to the right of the landing is probably just a guideline that Michelangelo drew first in order to locate the stair. The upper horizontal line, which Wittkower and Ackerman believe to be the top of an upper socle, more likely represents the level of the reading-room floor. The plan on the Casa Buonarroti 89A verso sheet confirms and bolsters this interpretation (Fig. 11). There, it is clear Michelangelo was still considering a double staircase engaged to the *ricetto* side walls, with two flights of steps rising to landings in the space's south-east and south-west corners. Flights of four or five more steps follow these corner-landings and lead up to a central landing, and then two or three more steps lead up from the central landing to the level of the reading room floor. Therefore, the landing indicated in the corner above the flight of steps of Teylers A-33b-v is probably an intermediate landing. Michelangelo did not include the stairs above the landing simply because of

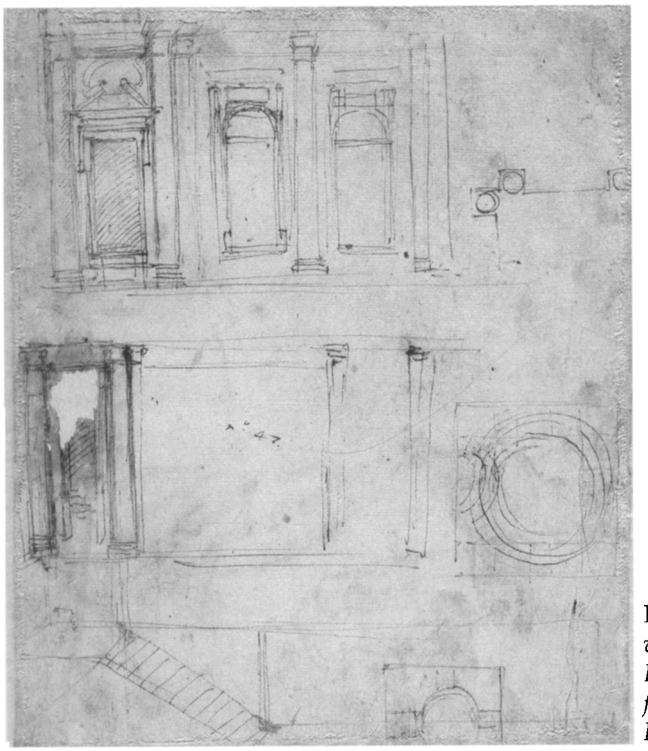

Fig. 17. *Michelangelo, Teylers a-33b-v, elevation sketches for west wall of Laurentian Library* ricetto, *and plans for the* ricetto *(Teylers Museum, Haarlem)*

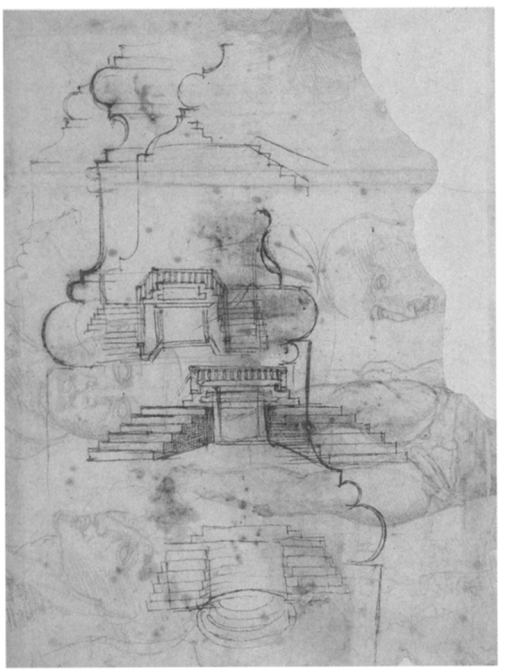

Fig. 18. *Michelangelo, Casa Buonarroti 92A, studies for the staircase of the Laurentian Library* ricetto *(Casa Buonarroti)*

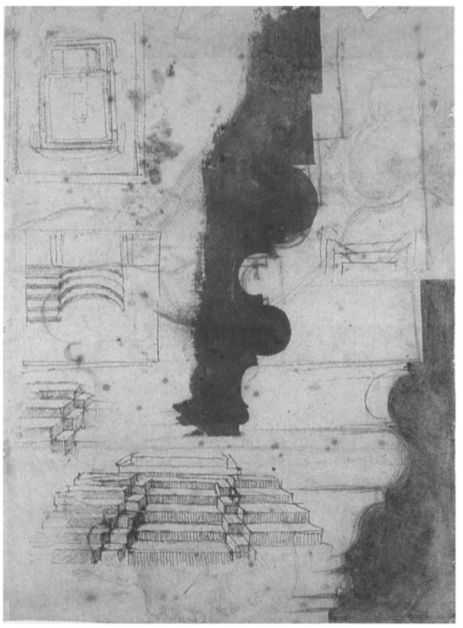

Fig.19. *Michelangelo, Casa Buonarroti 92A recto, studies for the staircase of the Laurentian Library* ricetto *(Casa Buonarroti)*

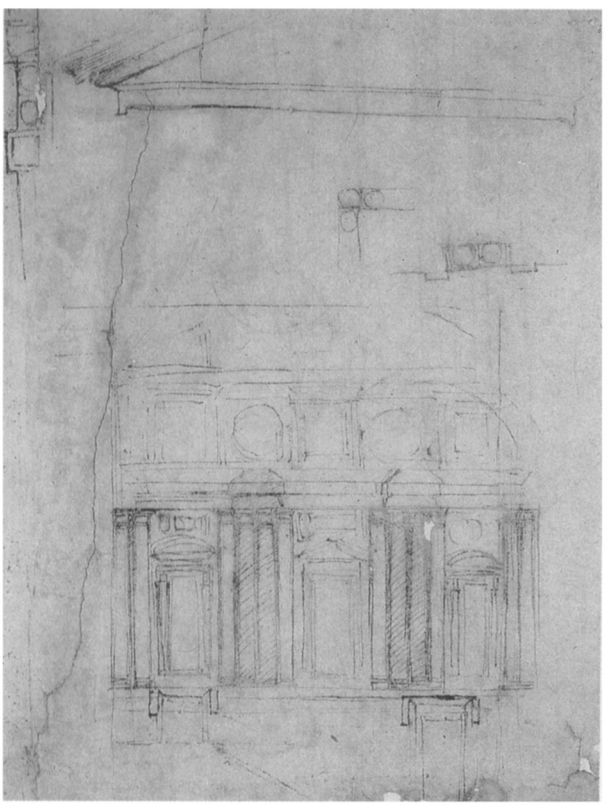

Fig. 20. *Michelangelo, Casa Buonarroti 48A recto, elevation and detail studies for the west wall of the Laurentian Library* ricetto *(Casa Buonarroti)*

the angle of his perspective, which would have had us seeing the back of the stairs. Furthermore, the general proportions of the main storey of Teylers A-33b-v are similar to those of the interior elevation drawing on the sheet Casa Buonarroti 48A recto, which rests on a socle that is, without a doubt, level with the reading room floor (Fig. 20).[46] By the time Michelangelo produced the drawing on Casa Buonarroti 48A recto, which probably represents the subsequent stage of design development, he had decided on a central flight of steps disengaged from the wall. In this connection, therefore, it is perhaps significant that he lightly sketched, in the foreground of that drawing, a staircase and landing in section, which are clearly in *front* of the socle level of the west wall beyond. Wittkower placed the Teylers A-33b-v sketches before the Casa Buonarroti 89A recto sheet in the design chronology, to suit his own observations and arguments. However, it makes more sense that the Casa Buonarroti 89A recto elevation, with its Medici-Chapel-derived 'a-BB-a' configuration came first, and that it was then followed by the Teylers A-33b-v sketches, in which Michelangelo abandoned the problematic tall order but still retained the basic subdivision of the earlier sketch.

Like the earlier 'Medici Chapel' scheme on Casa Buonarroti 89A recto, the main storey of the lower elevation sketch on the Teylers A-33b-v sheet rises from a socle equal in height to the level of the adjacent reading room, and is divided into three primary bays with an 'a-B-a' configuration, and with the outer bays flanked by pairs of columns or pilasters. In this sketch, Michelangelo then developed the design of the left bay further, by adding a pair of columns or pilasters to either side of the bay, and squeezing in a tabernacle between them. He probably abandoned the sketch when he realized that his outer bays were too narrow to accommodate the tabernacles he had decided to add.

The upper sketch on the sheet Teylers A-33b-v shows developments of the ideas seen in the lower sketch and leads us directly to Michelangelo's penultimate scheme. The most obvious difference between the upper and lower sketches is the centre bay, which, in the upper elevation, Michelangelo subdivided into two parts to create an 'a-BB-a' rhythm.[47] Had he continued the lower sketch, he might have added a centrally placed column, dividing the wide middle bay into two parts, since this is what he did in the subsequent upper sketch. Conceptually, the configuration of this upper sketch, with its subdivided centre bay, is thus a development of the earlier 'Medici Chapel' scheme seen on the Casa Buonarroti 89A recto sheet (Fig. 12). In order then to lower the height of the main storey, so as to accommodate a more autonomous attic that balances the socle below, Michelangelo simply eliminated the four tall pilasters on Casa Buonarroti 89A recto, but he left intact, in number, size and approximate position, the minor order of columns considered for the earlier scheme. Projections in the entablature suggest the columns are either engaged or that they stand immediately in front of a recessed wall plane, while in the outer bays they frame tabernacles.

By this stage of design development, Michelangelo probably understood the load-bearing limitations of the existing building below. Thus he was probably reluctant to design *ricetto* walls that would project too far into the space and much beyond the inside faces of the existing walls below. In this scheme, he also seems to have realized that the recessed wall behind the columns would have been so thin as to be unstable, and this may have led to his unconventional solution of pulling the wall surface forward, and setting the columns back into recesses, and thus having walls that would only be thin

behind the columns themselves. In fact, it appears that Michelangelo may have been thinking of this solution even before he completed the right-hand bay of the sheet's upper elevational sketch. Instead of completing the right side of the elevation, we see a plan detail of the *left* (south-west) corner in that location, in which he simplified the situation and solved the stability issue by pulling the wall surface forward and aligning it with the front edges of the columns. In the corner, he inserted a solid pier flanked by a responding column on each wall, which is nearly identical to the corner arrangement of the final scheme. Considering this corner detail, as well as the elevation to its left and the developments that would follow, it seems safe to assume that, had there been more space on the sheet to the right, Michelangelo would have drawn another column next to the one we see. Indeed, if one imagines a complete elevation of this scheme, it would likely consist of four solid wall segments fronted by tabernacles, flanking pairs of freestanding columns contained with rectangular recesses, and so would be very like the arrangement that was finally built.

In the *ricetto* as built, one of the most extraordinary features of the interior articulation is that of the paired *pietra serena* columns, which many scholars have likened to sculptures placed within 'niches' set in the walls.[48] However, these recesses are not niches. A traditional niche is a recess in an otherwise continuous wall surface, sometimes capped by a semi-dome, and sometimes framed by a tabernacle, as is the case in the Pantheon. In the *ricetto*, the recesses rise from the upper *pietra serena* moulding of the socle all the way up to the underside of the *pietra serena* architrave forming part of the main entablature above, and they separate the stucco surfaces of the intervening walls from one another. In these respects, they are more akin to *exedrae*, and, in fact, the whole wall configuration is remarkably similar to the interior elevation of the Pantheon, which consists of eight solid piers which are fronted by tabernacle-framed niches and are flanked by *exedrae*.

On the sheet Casa Buonarroti 48A recto Michelangelo developed further the ideas he had previously explored on the sheet Teylers A-33b-v (Fig. 20). It is immediately apparent that the interior elevation seen on this sheet is, despite certain significant differences, very similar to the one eventually built. Unlike the final design, however, the elevation shown in the Casa Buonarroti 48A recto sheet points unmistakably to the interior of the Pantheon as the source of inspiration. Michelangelo was very familiar with the Pantheon and, indeed, it is clear that he had recently been thinking about it very recently, since it obviously served as the prototype for the coffered dome of his Medici Chapel (Fig. 10).

DRAWINGS FOR THE *RICETTO*: STAGE THREE

In designing the *ricetto*, Michelangelo was faced with the task of articulating the interior walls of what was more or less a square space similar in size to the Medici Chapel, then under construction a few metres away. After abandoning his earlier Medici Chapel-inspired scheme for the interior walls, he turned afresh to the Pantheon as a source of inspiration. On this occasion, he was interested not in the building's dome but in its internal wall articulation, with its enormous piers wrapped by Corinthian pilasters and, in between them, its pairs of freestanding columns screening deep *exedrae*.[49] The first

indication of this dependency is in the Casa Buonarroti 48A drawing. Like the Pantheon, this has wall surfaces with tabernacle-framed niches, and which are bordered by full pilasters wrapping their corners and framing pairs of columns. However, Michelangelo took great liberty in the interpretation of his precedent, by compressing the width and depth of the Pantheon's *exedrae* to form spaces that are only wide and deep enough to contain the paired columns (Figs 21 and 22). In the low attic above this main storey, he experimented with the shape and placement of rectangular and round panels, which recall the various marble veneers surrounding the Pantheon tabernacles. Directly above this elevational sketch, he drew small plan details that clarify the arrangement of the recessed columns and flanking pilasters, and the related format for the corners (Fig. 20).[50]

At the same moment in time, Michelangelo was also considering how he could light the *ricetto*. As was the case with the Medici Chapel, adjacent existing buildings abutted the *ricetto* and provided considerable problems. The transept of S. Lorenzo stood to the north, the Old Sacristy to the west, and the library reading room to the south. This left only the *ricetto*'s east wall available for conventional windows (Figs 1 and 3), the only other potential source of light being from above. If we consider this conundrum, and remember Michelangelo's source of inspiration for both the dome of the Medici Chapel and the *ricetto*'s wall articulation, it is perhaps not surprising that he turned yet again to the Pantheon and proposed to light the space with a large oculus. However, unlike the Pantheon's, Michelangelo's oculus would have to be glazed.

Although no specific drawings of an ocular skylight have been identified to date, well-known letters from Michelangelo's agent in Rome, Giovanni Francesco Fattucci, and from Pope Clement VII's secretary Pier Paolo Marzi, dated 29 November and 23 December respectively, record the pope's response to Michelangelo's proposal and give us an indication of its proposed form. The earlier letter is from Fattucci and translates as follows:

> His Holiness was very pleased to learn from your letter that you are preparing to make the vestibule, as you were requested. Now as to the window over the roof with the glass lights in the ceiling, his Holiness says that it seems to him very fine and novel; there is nothing preventing you from doing it, but he says that you will have to pay two Gesuati friars who will do nothing but clean up the dust.[51]

The letter from Marzi, written almost a month later, indicates that Michelangelo was unwilling to abandon his idea, but refers to a compromise that he was reluctant to accept:

> The present is to let you know that His Holiness received your letter of the 7th, enclosing the drawing of the library some days ago, he says that the roundels shown therein as lights can be looked upon as very beautiful, but does not know whether the dust that will fall on them will not be stronger than the light they will be able to transmit? And whether the walls will bear the weight or whether the structure will be damaged, if the walls are heightened two braccia to make windows as you propose, since part of the roof is already in position and must now be taken down and the beams moved?[52]

Fattucci refers to 'the window over the roof with the glass lights in the ceiling', whilst Marzi refers to 'roundels'. It is likely that Marzi used the plural of the word 'roundel' because Michelangelo had also proposed to light the rare books room at the south end

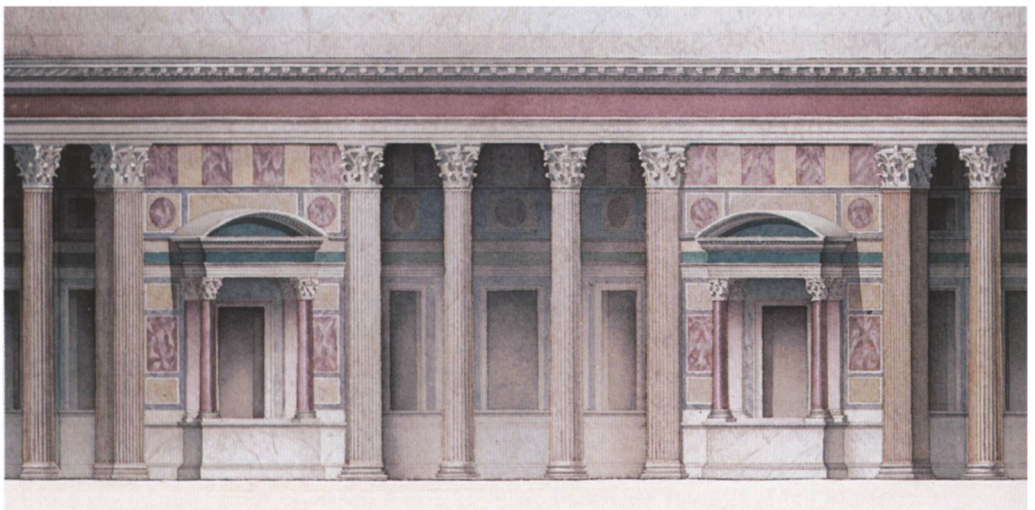

Fig. 21. *Partial interior elevation and plan of the Pantheon, Rome (Watercolour: author)*

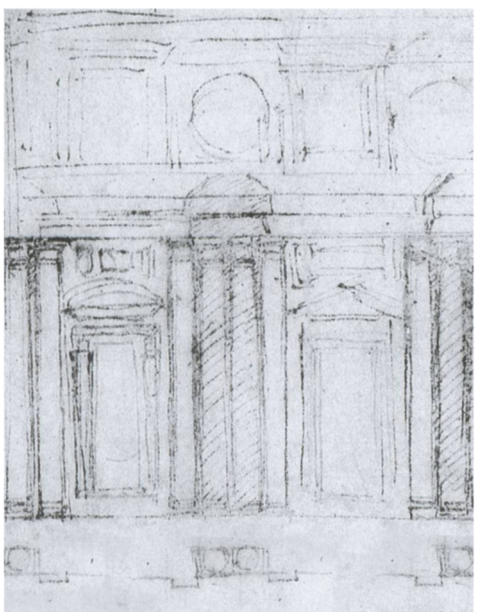

Fig. 22. *Michelangelo, detail of Casa Buonarroti 48A recto, elevation, with the plan detail (located above the elevation in the original drawing) shifted to below the paired columns and flanking pilasters of the elevation (Photoshop manipulations: author)*

of the reading room with a similar ocular skylight. Together, therefore, the two letters would seem to refer to a skylight, which would most likely have been in the form of an oculus (*ochi*) in the flat central section of a cove vault. This appears to be confirmed by the Casa Buonarroti 48A verso elevation, where, above and to either side of the attic storey, one can see lightly drawn curved lines that arc up and towards the centre of the sheet, and appear to represent the cove vault in section. The flat section between these

curved lines marks the location of the glazed oculus in section (the curved line that one can see passing over the right side of the attic is not actually a drawn line but rather a crease or indent in the paper surface made with a compass-stylus).[53] This cove-vault configuration, moreover, is consistent with that seen in the ceiling plan Michelangelo sketched on the Casa Buonarroti 48A verso sheet, and that seen too in a similar diagrammatic plan of the proposed triangular rare books room in the upper right corner of the Casa Buonarroti 79A recto sheet (Figs 11 and 23). The underlying structure for the proposed oculus would have probably consisted of a wooden frame suspended from the lower members of the roof trusses above, while the oculus itself would have had small individual trapezoid-shaped panes of glass held in place with lead, not unlike the glazing of the more traditional windows of the adjacent reading room. It would thus be one of the 'glass lights in the ceiling' to which Fattucci refers. Since, at this stage of the design's development, the *ricetto* was to share a common timber-trussed hipped roof with the library, Michelangelo must have proposed to position a skylight directly above the glazed oculus and the supporting trusses, which would be the 'the window over the roof' that Fattucci mentions. Michelangelo probably planned to position the skylight in the centre and at the peak of the roof, with the glass following the slope of the roof at either side. The reconstruction of the *ricetto* scheme illustrated here is of the south-west quarter of the space as seen from below (Fig. 24).

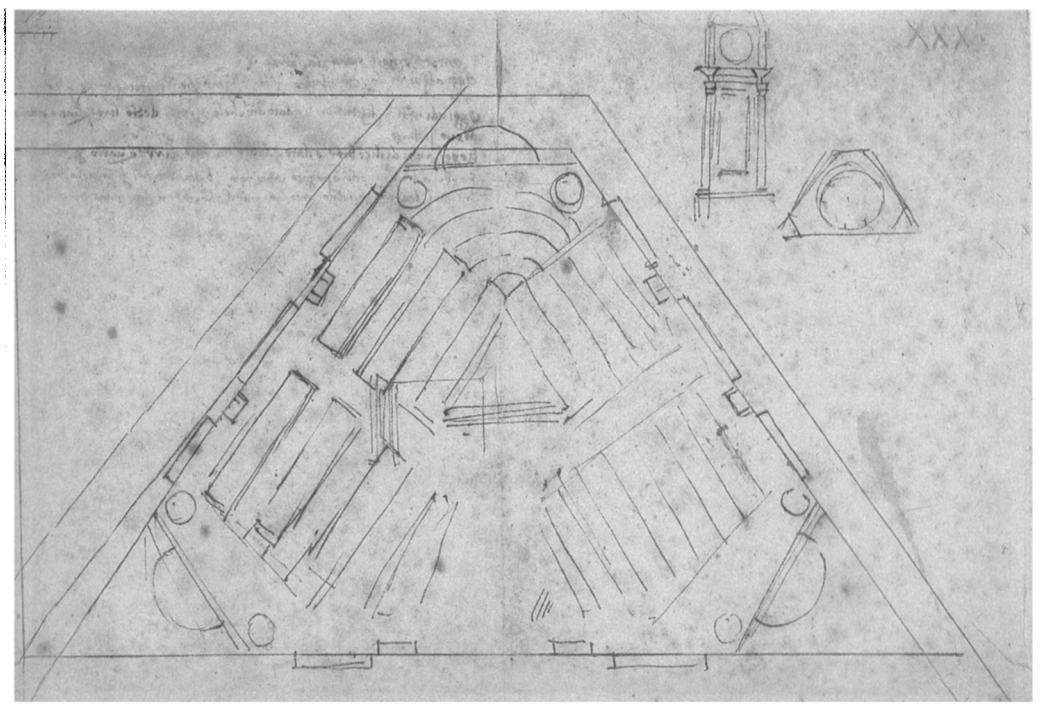

Fig. 23. *Michelangelo, Casa Buonarroti 79A recto, sketches for the Laurentian Library rare books room (Casa Buonarroti)*

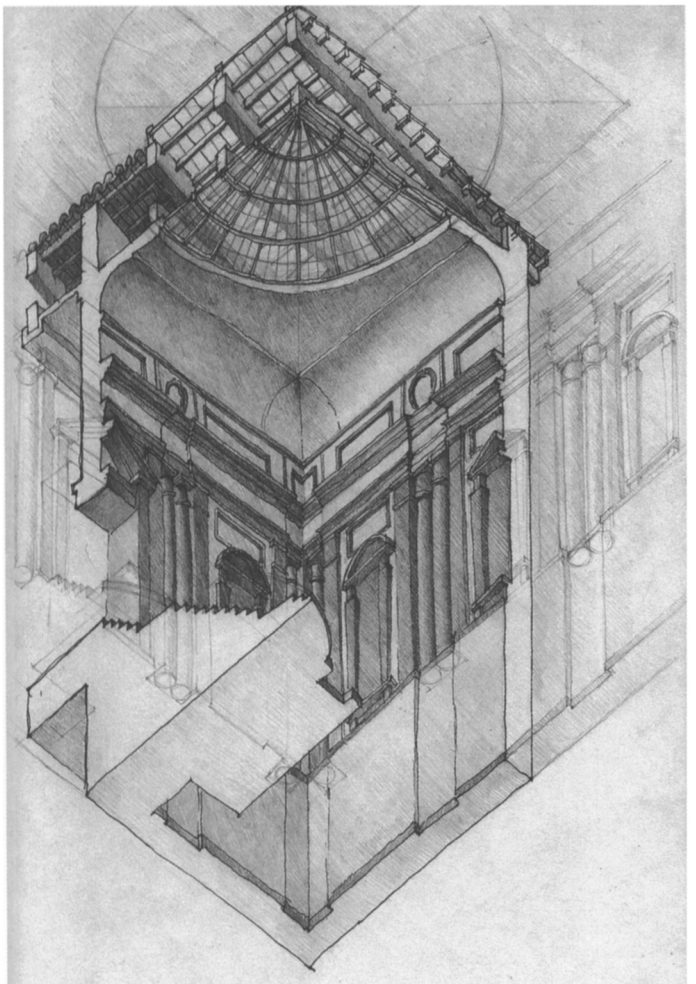

Fig. 24. *'Worm's-eye' sectional axonometric reconstruction of Michelangelo's penultimate scheme for the Laurentian Library* ricetto, *interpreted from Michelangelo, Casa Buonarroti 48A recto, and the letters of Michelangelo's agent in Rome, Fattucci, and the papal secretary Marzo (drawing: author)*

Despite Michelangelo's concerns about the strength of the walls, which he undoubtedly exaggerated in an effort to salvage the skylight idea, he eventually acquiesced to the pope's demands, and he raised the *ricetto* walls in order to insert traditional clerestory windows, on the north, east and west sides, above the roofs of the adjacent buildings.[54] He had faced similar problems of natural lighting at the Medici Chapel, and his solution there was similar. The chapel's plan and interior elevations were derived from Brunelleschi's Old Sacristy, which has elevational proportions, below the level of the dome, of approximately 1:1, giving the interior the proportions of a cube.[55] For the Medici Chapel, however, Michelangelo inserted an attic level with clerestory windows between the main storey and the lunette zone such that light could be gathered from attic windows on all sides of the building in a way that was not possible below, since the south and east sides of the chapel below this level were blocked by the transept of the church and neighbouring buildings. The height of the attic level is exactly one half

the height of the main storey, so that the proportions of the interior walls below the level of the dome are now 2:3, but with a perfectly cubic space below the level of the main cornice (Fig. 10).[56]

In the case of the *ricetto*, Michelangelo had already painstakingly developed a design from one that began with the scheme based on the Medici Chapel elevations into one that achieved balance and harmony between the heights of the socle, the main storey, and the low attic and cove vault above. Unlike the chapel, the Casa Buonarroti 48A recto scheme did not lend itself to the simple insertion of an attic with clerestory windows. But Michelangelo was clearly unwilling to discard the extraordinary interior elevation he had developed. So rather than starting a new scheme, he simply stretched the main storey vertically, with the result that the proportions of the walls, from the floor to the cornice of the main storey, were now fixed at 1:1, making the space below the cornice a cube. He then set the height of the upper storey at half of that below (i.e. the attic plus the main storey), giving the interior elevations the overall proportions of 2:3 (Figs 5, 25 and 26).[57]

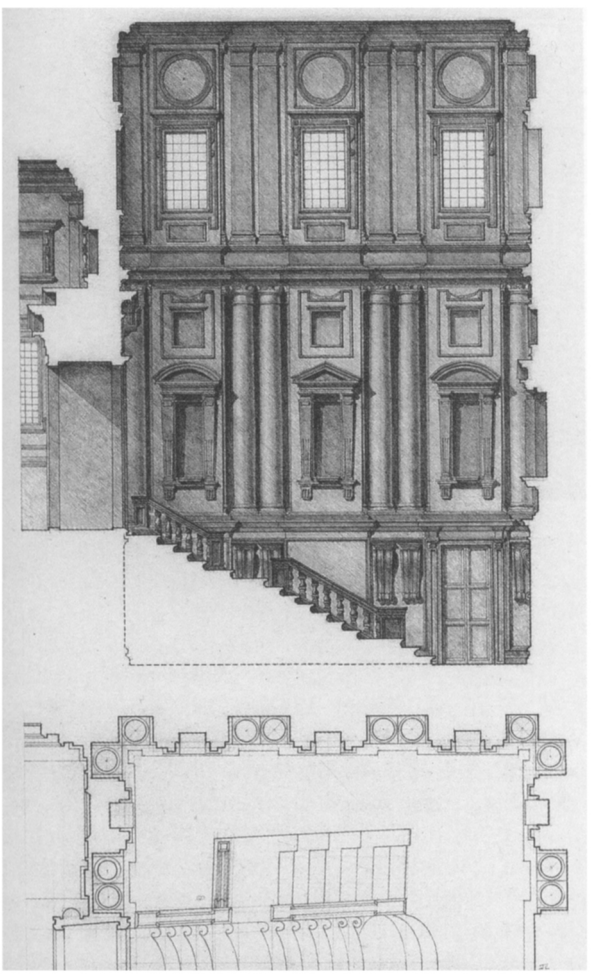

Fig. 25. *Laurentian Library* ricetto, *partial plan and north–south section (drawing: author)*

Fig. 26. *Laurentian Library* ricetto *(Biblioteca Medicea Laurenziana)*

However, adapting the Casa Buonarroti 48A recto scheme to these new proportional parameters was not to be a simple matter, and Michelangelo was compelled to adjust and modify important details of the main storey in the process.

DRAWINGS FOR THE *RICETTO*: STAGE FOUR

Despite the degree of architectural invention apparent in the final design of the *ricetto*, the dark greenish-grey *pietra serena* columns of the main storey closely follow the canonical proportions of the Corinthian order (1:10), even if their capitals are a unique hybrid that combines a Doric echinus with a Corinthian abacus.[58] For this final scheme, Michelangelo had increased the height of the main storey shown on the Casa Buonarroti 48A recto sheet, which meant increasing the heights of its paired columns and flanking pilasters, and this in turn necessitated increasing their diameters and widths in order to maintain their proportions. However, he could not expand the vestibule horizontally to

accommodate the larger columns and pilasters as well as the other elements he had decided upon in Casa Buonarroti 48A recto. Something had to go, and what Michelangelo did was to remove the full pilasters at the corners of each of the piers, reducing them to just a few centimetres in width (Fig. 27; cf. Fig. 28). To achieve this, he brought the stucco wall surfaces forward from the *pietra serena* pilasters and, instead of having the pilasters wrap around the edges of the wall surfaces, he made them face the neighbouring columns sideways-on. By pulling the wall surfaces forward, Michelangelo profoundly transformed what had been, since Brunelleschi, a normative principle in Florentine Renaissance architecture, namely that the *pietra serena* members were used to frame stucco surfaces that were recessed.[59] In Michelangelo's *ricetto*, the extruded stucco wall surface results in the impression that the tightly compressed *pietra serena* columns and inward-facing pilasters have forced the stucco material forward, like bread dough rising beyond the edges of a pan in the baking process.[60] The tabernacled niches, made entirely of *pietra serena* and detailed with sharp, precise linear mouldings, float free on this extruded field of stucco, which makes them appear to have been pre-sculpted from single pieces of stone, and then pressed back into the seemingly plastic stucco (Figs 25, 26 and 29). Michelangelo then articulated the upper storey of the new elevation with flat, paired pilasters standing over the paired columns below (see Figs 25 and 26). With paired pilasters over paired columns, the *ricetto*'s elevations are similar to many other projects by Michelangelo, including his earlier scheme of the S. Lorenzo façade.[61] The format likewise presages that of the *baldacchino* of the later Palazzo Senatorio in Rome (see Figs 9 and 16).[62]

Realizing how unusually tall the *ricetto* had now become in relation to the long adjacent reading room, Michelangelo abandoned any attempt to link the two spaces with a common roof level, and instead decided to differentiate their architectural characters. The reading room contrasts with the *ricetto* not only in its shape, but also in the rational system of articulation of its walls, which stand in sharp contrast to the deeply articulated walls of the *ricetto*. The reading room is a long and narrow single-storey space, with walls articulated by evenly spaced, shallow Doric pilasters. Unlike the *ricetto*, whose walls bear down onto the ground-floor walls and the vaults of the chapter house, the reading room sits directly over the walls of what were formerly monks' cells on the first floor.[63] Thus, the design of the reading room walls was constrained by the load-bearing capacity of the existing walls below, which were not particularly thick and were difficult to buttress. As a result, the reading room walls had to be relatively thin, which explains why the piers and pilasters framing the recessed panels containing the windows are not merely decorative but are indeed load bearing; they support the beams of the ceiling and roof, while the recessed wall panels between them are effectively infill panels that serve to lighten the wall assemblage. The design is completed by a highly ornate, beamed and coffered walnut ceiling, incorporating longitudinal and transverse beams spanning from pilaster to pilaster, and by specially designed desks and a patterned terracotta floor that reflects the arrangement of the ceiling above (Figs 5 and 30).[64]

Michelangelo, ever aware of the effects of architecture on a person's movement and the visual effects from the viewer's perspective, then achieved unity between these contrasting spaces with his final design for the *ricetto*'s staircase, which was famously described by Charles de Tolnay as resembling 'molten lava' flowing out of the reading room and piling up in the middle of the space in front (Figs 5, 25 and 26).[65] The staircase

Fig. 27. *Laurentian Library* ricetto, *west wall details (Biblioteca Medicea Laurenziana)*

Fig. 28. *Detail of Fig. 24, reconstruction from Casa Buonarroti 48A recto (drawing: author)*

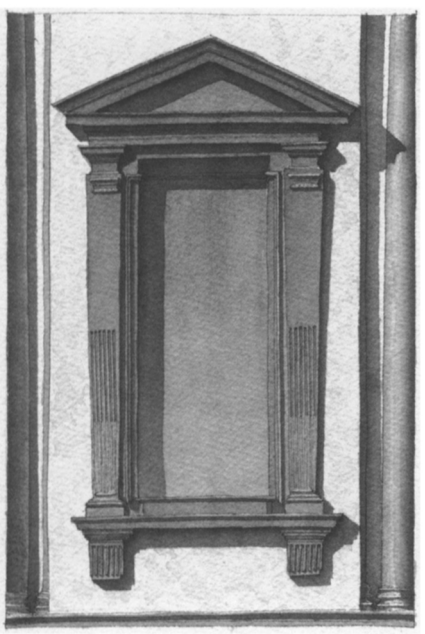

Fig. 29. *Laurentian Library tabernacle (watercolour: author)*

Fig. 30. *Laurentian Library reading room (Laurentian Library)*

acts as a tenon, serving to bind the two otherwise disparate spaces together, not just functionally, but also experientially. Michelangelo achieved this by repeating specific geometric forms, and by carefully controlling the visitor's perspectival view of the spaces as they are experienced. From the floor of the *ricetto* at the base of the staircase, the only visible component of the reading room is its walnut ceiling, diminishing to the south in deep perspective. The ceiling's rectangular centre bays contain ovoid forms, and these are approximately the same size as the lower ovoid steps of the centre run of the *ricetto* staircase. The staircase itself diminishes slightly in width from bottom to top, which results in an enhanced perspective that has its vanishing point approximately in the middle of the reading room ceiling. Thus, as one ascends the stair, one becomes immediately aware that the oval treads, seen in an enhanced perspective immediately in front of one's feet, are repeated overhead in the centre panels of the reading room ceiling, which continue their southward progression towards the vanishing point of the reading room (Fig. 31). This apparent intention to create a visual connection between the *ricetto* and the reading room is similarly reflected in Michelangelo's final suggestion to Bartolommeo Ammannati regarding the staircase design, which was that 'it would be best if they [i.e. the steps] were made of wood that is of a beautiful walnut, which would be better than of stone and more in keeping with the desks and the ceiling'.[66] Having passed through the portal, the observer's view then shifts from the inclined perspective of the stair to the horizontal, one-point perspective of the reading room with its vanishing point located at the centre of the door at the southern end.[67]

Fig. 31. *View from Laurentian Library* ricetto *into the reading room (watercolour: author)*

DRAWINGS FOR THE RARE BOOKS ROOM

The deep one-point perspectival space of the reading room suggests it was Michelangelo's intention to draw the visitor along its southward driving axis. At the room's northern and southern ends, the unusually deep and complex *pietra serena* portals, consisting of superposed tabernacles with segmental and triangular pediments, appear to telescope into the space, further accentuating its thrusting axis. These portals are so deep that the spaces they enclose effectively act as semi-independent transitional zones between the primary spaces. They almost literally squeeze and accelerate the visitor through the space, to create an experience that is not unlike the Venturi effect in fluid dynamics (Figs 5 and 25).[68] However, what is lacking in this sequence of contrasting spaces and movements is a destination beyond the portal at the south end of the reading room that would be worthy of being the pendent to the *ricetto*. It was there, beyond the southern portal, that Michelangelo intended to build a rare books room, a room with the

unprecedented shape of an isosceles triangle, which is documented in two plans on the sheets Casa Buonarroti 79A and Casa Buonarroti 80A (Figs 23 and 32).

This unusual space would have terminated the long horizontal axis of the reading room and completed the tripartite spatial composition.[69] Described by Frederick Hartt as 'the strangest spatial idea of the entire Renaissance', the room had its shape suggested to Michelangelo by the position of a neighbouring building, the Casa de' Martelli, which is indicated on the Casa Buonarroti 80A sheet, and which cut obliquely across the site from north-west to south-east (Figs 3 and 32).[70] Wittkower described the outer wall of this building, which is still standing today, as 'eloquent testimony of conditions that could not be avoided, of arbitrary necessity transformed by phenomenal mental agility into architectural logic'.[71] It is difficult to determine exactly how Michelangelo would have articulated the interior of the rare books library, as no complete elevational studies survive for it. There is, however, a small, rapid sketch of the elevation of a corner-bay on the Casa Buonarroti 79A sheet, which has several things in common with the Casa Buonarroti 48A recto elevation for the *ricetto* (Figs 20 and 23). This shows a low socle, a main storey with a niche framed by columns and pilasters, and a receding and projecting entablature topped by an attic with a roundel in it. Just visible at the top of the sketch are two lines that curve inwards and upwards, suggesting that Michelangelo was

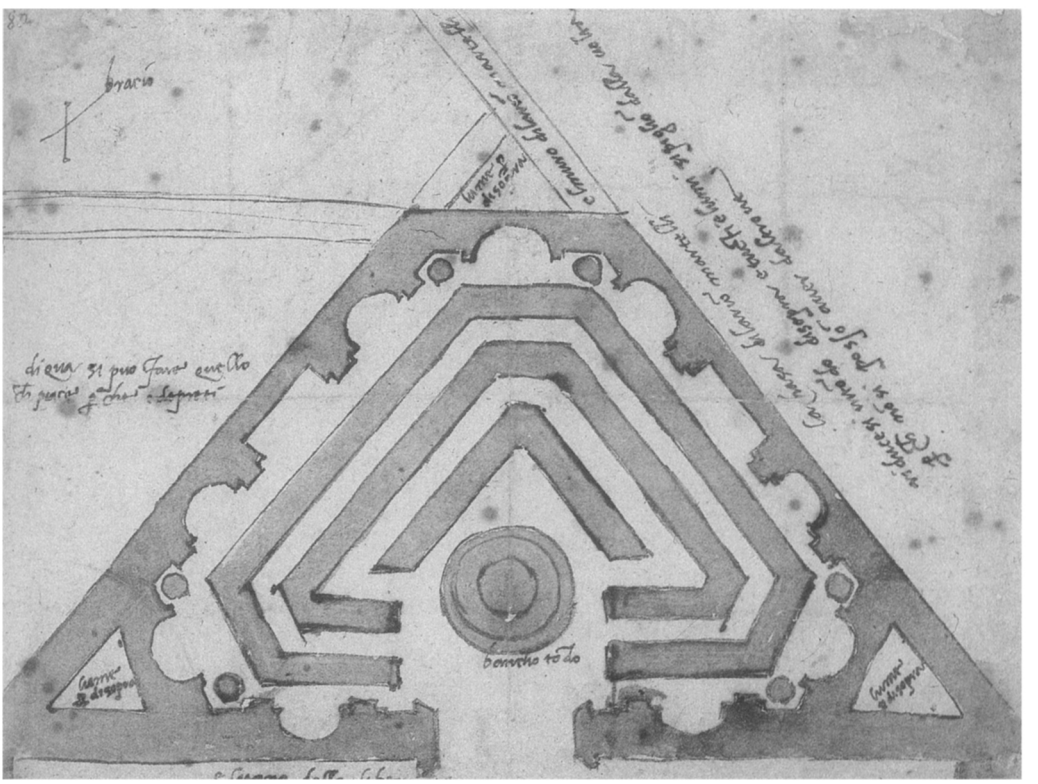

Fig. 32. *Michelangelo, Casa Buonarroti 80A, sketches for the Laurentian Library rare books room (Casa Buonarroti)*

considering covering the space with a cove vault, similar to the ones he was proposing for the *ricetto*, as shown on the Casa Buonarroti 48A recto and Casa Buonarroti 89A verso sheets (Figs 11 and 20). Because of the existing buildings surrounding the rare books room, the lighting of the space posed a similar problem to that faced for the *ricetto*.[72]

There have been past attempts to reconstruct the vaulting of the space shown in Casa Buonarroti 79A and Casa Buonarroti 80A, but none is very satisfactory. According to Guglielmo de Angelis d'Ossat, Michelangelo intended to place semicircular lunettes over the room's three long and three short walls, with pendentives between and rising to a large roundel at the vault's centre. The problem with this proposal is that the lunettes over the long walls are absurdly huge in proportion to both the height of the walls below and the much smaller lunettes over the short walls. This results in extremely distorted pendentives, and in a height for the flat portion of the vault that greatly exceeds the ceiling levels of the reading room and *ricetto*, and even surpasses that of the hipped roofs over these spaces. More recently, Pietro Ruschi reinvestigated the matter and solved the problem of the disproportionately high vault in De Angelis d'Ossat's reconstruction by making the lunettes over the long walls segmental in shape and much lower. He also suggested that the lunettes would have carried a dome, arguing that the arrangement was comparable to that shown on the ceiling plan for the *ricetto* included on Casa Buonarroti 79A recto (Fig. 11), which he likewise believed to be indicative of a dome. His reconstruction, however, appears less probable when one considers the structure in section. The size and height of his dome completely overwhelm the triangular space of the room below, while its weight would surely have exceeded the load-bearing capacity of the supporting walls.[73]

It is, therefore, much more probable that Michelangelo's proposed solution for roofing and lighting the rare books room was relatively simple, and was similar to the one he had in mind for the Casa Buonarroti 48A recto *ricetto* scheme. It would have likely consisted of a cove vault rising above the six walls, reducing to a flat triangular vault with a large, glazed ocular skylight at its centre, which would again have been suspended from the trusses of a hipped roof above. This arrangement would be comparable to that shown for the *ricetto* in the ceiling plan diagram on Casa Buonarroti 79A recto, and consistent with a note in Michelangelo's own hand on Casa Buonarroti 80A, which refers to a large glazed 'ochio' (eye), as opposed to a dome, in the middle of the ceiling (Figs 23 and 32). The arrangement is further confirmed by another note at the upper right of this plan, which states that the vault 'reduces to a roundel above, and all the light is received from the vault, because it cannot be drawn from anywhere else'.[74] Further notes in each corner of the drawing, which read 'light from above' (*lume di sopra*), suggest that Michelangelo then intended to augment the light from the oculus with unprecedented skylights located over triangular shafts at the room's corners, thereby anticipating the hidden light sources found in the Baroque designs of subsequent generations of architects.[75] Had the ceiling been built, its cove vault and flat central section would have been constructed out of lath and plaster on a wooden frame suspended from the roof trusses above, since the walls could not have possibly sustained the outward thrust of a masonry vault. Why the rare books room remained unbuilt is unknown. However, one can assume that the pope did not approve Michelangelo's idea for the ocular skylight, just as he had probably rejected it also for the *ricetto*, and it was this which then contributed to the scheme's abandonment.

CONCLUSION

In each of Michelangelo's architectural projects for the complex at S. Lorenzo, pre-existing conditions severely limited his creative freedom. Brunelleschi's church dictated to a large degree the proportions and dimensions of Michelangelo's proposed façade, whilst the basic form of Michelangelo's Medici Chapel was derived from Brunelleschi's Old Sacristy. In the case of the Laurentian Library, the pre-existing cloister beneath it helped determine the layout and dimensions of Michelangelo's scheme. In each project, Michelangelo initiated the design process by using ideas borrowed from other buildings, which he then developed and transformed by rapidly working from one drawing to the next as a means of initiating his own creative impulses. Through the course of design development, he then explored, reworked and manipulated a relatively limited repertoire of elements and motifs. Ideas evolved from earlier projects into new forms with new currency for different building types and functions. While his initial ideas were often relatively traditional and not even particularly inventive, they rarely have much in common with the final designs. This suggests that Michelangelo clearly understood that his early ideas, and his initial sketches, were essential steps in an inevitable evolution that would produce more ideas and sketches, and would eventually lead to the final design. Sometimes, such as in the penultimate design for the *ricetto*, Michelangelo stubbornly refused to abandon certain ideas, even despite structural limitations and the changing demands of his patron. On other occasions, such as the transformation from the Casa Buonarroti 48A sheet to the final design for the *ricetto*, he freely manipulated earlier ideas to solve problems, and in the process forms and spaces became more dramatic and expressive in ways that he did not initially intend or anticipate.

In the cases of both the *ricetto* and the rare books room, it seems the 'emotive' effect Michelangelo was searching for was partly inspired by external factors that he had no option but to accept. There is no suggestion of a conscious decision on his part to create architecture that, at the outset, so radically broke with tradition. Rather, the heavily modelled walls and attenuated vertical space of the *ricetto*, which contrasts with the long, low space of the reading room with its regular, clear and simple articulation, and the intended rare books room, with its remarkable triangular shape and extraordinary vaulting and lighting scheme, were developed partly in response to functional necessity as well as to restrictive site conditions and the patron's demands. Yet, at the same time, the Laurentian Library was also a product of Michelangelo's freethinking attitude towards architectural design, and of a working method that involved the fluid evolution of new and recycled ideas through the process of rapid sketching. In this instance, the product was to be one of the most remarkable works of architecture produced in the Renaissance.

ACKNOWLEDGMENTS

I wish to thank my former professors and dissertation advisors, Carroll William Westfall and Paul Barolsky, for their ongoing, enthusiastic encouragement, guidance, and advice. Thanks are also due to my friends and colleagues Gudrun Wagner and Jennifer Haag for their help and support. Thanks also to David Hemsoll, respected scholar of Michelangelo, for his input.

NOTES

1 Rudolf Wittkower, 'Michelangelo's Biblioteca Laurenziana', *The Art Bulletin*, 16 (1934), pp. 123–218; republished in *Idea and Image* (London, 1978), pp. 11–71. References here are made to the 1978 publication.
2 Wittkower, 'Biblioteca Laurenziana', p. 11.
3 This trend was due to the wide acceptance of Wittkower's analysis of the drawings. A notable exception is David Hemsoll, who suggests many precedents that may have influenced Michelangelo's designs for the façade project, the Medici Chapel, and the Laurentian Library at S. Lorenzo. See David Hemsoll, 'The Laurentian Library and Michelangelo's Architectural Method', *Journal of the Warburg and Courtauld Institute*, LXVI (2003), pp. 29–62.
4 This is true for most of Michelangelo's architectural projects: while scholars generally consider various graphic and literary sources, it is difficult to glean an understanding of the design evolution of a particular design. Therefore, it is not surprising that the primary focus of most scholarship has been on the works as built. However, complete understanding of the extent buildings also continues to elude us because every work is incomplete and consequently does not fully reflect Michelangelo's design intentions. Each project was either abandoned by Michelangelo and left incomplete, or was partially continued or completed by others. In each case, in order to understand his designs, it is necessary to examine the buildings as built in conjunction with surviving documentation of unrealized intentions. It is impossible to say how Michelangelo would have definitively finished any of his architectural projects because no complete design drawings survive.
5 Giorgio Vasari, *Lives of the Painters, Sculptors and Architects* (New York, 1996), p. 736. The circumstances of the destruction of Michelangelo's drawings are discussed at length in Michael Hirst, *Michelangelo and His Drawings* (New Haven, 1989), pp. 17–19.
6 Many scholars have made significant contributions to the study and interpretation of Michelangelo's drawings, including Henry Thode, Johannes Wilde, Paola Barocchi, Frederick Hartt, James Ackerman and Rudolf Wittkower. Perhaps Charles de Tolnay made the greatest and most comprehensive contribution; see Charles de Tolnay, *Corpus dei disegni di Michelangelo*, 4 vols (Novara, 1975). The best account of all of Michelangelo's architecture continues to be James Ackerman, *The Architecture of Michelangelo*, 2nd edn (London, 1986), published originally as two volumes (London, 1961) with an extensive catalogue (vol. II). A more recent comprehensive study is Giulio Carlo Argan and Bruno Contardi, *Michelangelo Architect*, trans. Marion L. Grayson (New York, 1993; Italian version: Milan, 1990). Contardi's historical account adds to Ackerman's with the inclusion, and discussion, of recent scholarship by others. A recent book by the German scholar Golo Mauer provides a thorough analysis and discussion of Michelangelo's practice of architecture in general, and emphasizes the role of sketching and drawing in his design process; see Golo Maurer, *Michelangelo: Die Architekturzeichnungen, Entwurfsprozes und Planungspraxis* (Regensburg, 2004).
7 William Wallace provides a thorough account of the administrative and construction components of Michelangelo's projects at the S. Lorenzo complex; see William Wallace, *Michelangelo at San Lorenzo, the Genius as Entrepreneur* (New York, 1994). Ralph Lieberman compares the contrasting spaces and architectural forms of the *ricetto* and the library reading room and analyses how they are experienced, noting that the design for the often neglected reading room is as sophisticated and as worthy of attention as the celebrated *ricetto*; see Ralph Lieberman, 'Michelangelo's Design for the Biblioteca Laurenziana', in *Renaissance Studies in Honor of Craig Smyth*, II (Florence, 1985), pp. 571–95. Frank Salmon provides a thorough analysis of the early history of the project and the three different sites at S. Lorenzo that Michelangelo and his patron Pope Clement VII initially considered; see Frank Salmon, 'The Site of Michelangelo's Laurentian Library', *Journal of the Society of Architectural Historians*, 49 (1990), pp. 407–29. Silvia Catitti examines the role and influence of Michelangelo's patron, Pope Clemente VII, in the design of the *ricetto*, and the development of the *ricetto*'s stair; see Silvia Catitti, 'Michelangelo e la monumentalità nel ricetto: progetto esecuzione e interpretazione', in *Michelangelo architetto a San Lorenzo: quattro problemi aperti*, ed. Pietro Ruschi (Florence, 2007), pp. 91–103. In the same volume, Thomas Gronneger examines and reconstructs the ill-fated stair assembled by Niccolò Tribolo with the fragments left behind by Michelangelo after his final departure for Rome in 1534, and analyses the stair built by Bartolommeo Ammannati and Giorgio Vasari in the 1550s; see Thomas Gronegger, 'Il progetto per la scala del ricetto, da Michelangelo al Tribolo a Vasari ad Ammannati: nuove interpretazioni', in *Michelangelo architetto a San Lorenzo*, ed. Ruschi, pp. 105–22. Pietro Ruschi analyses and attempts a reconstruction of Michelangelo's design for the rare books room from the two sketched Casa Buonarroti plans; see Pietro Ruschi, 'Il sugello mancate: la libreria secreta', in *Michelangelo architetto a San Lorenzo*, ed. Ruschi, pp. 143–55.
8 Cammy Brothers, *Michelangelo, Drawing, and the Invention of Architecture* (New Haven, 2008). Brothers also authored a chapter in the catalogue to the exhibition 'Michelangelo e il disegno di architetttura' (Vicenza, Centro Internazionale di Studi di Architettura Andrea Palladio, Palazzo Barbaran da Porto, 2006; Florence,

Casa Buonarroti, 2007), introducing many of the same themes as in her book; see Cammy Brothers, 'Figura e architettura nei disegni di Michelangelo', *Michelangelo e il disegno di architettura*, ed. Caroline Elam (Venice, 2006), pp. 81–93.

9 For example, Wittkower argues that there is no connection between the plan sketches on the Casa Buonarroti 89A recto sheet and the interior elevation study on the verso because the proportionate widths of the staircases in the plan sketch do not agree with the width of the bays in the elevation sketch. He also notes the difference between the double door in the elevation and the single door in the plan. However, one would expect to see such discrepancies as these sketches themselves were the vehicle by which Michelangelo introduced and evolved new ideas. Wittkower also interprets the plan in the top left corner of the recto side to be for a chapel located at the opposite (south) end of the reading room, without any further discussion (for further discussion see below).

10 In his consideration of Haarlem Teyler Museum A-33b-v, which includes interior elevation studies of the west wall of the *ricetto* and miscellaneous plans, Wittkower argues that Michelangelo was trying to unify the *ricetto* and reading-room elevations by placing the *ricetto* pilasters on a very high socle inline with the socle of the adjacent reading room. He derives the height of the *ricetto* socle by counting the number of steps leading up to the landing in the corner of the room, which he believes is level with the reading-room floor. Wittkower bases his interpretation on precise dimensions that he assigns to the rapidly drawn, freehand scale-less sketch through comparison with the dimensions and proportions of the final design. He then argues that Michelangelo abandoned the scheme because of the disproportionately tall socle that he himself mistakenly calculated; see Wittkower, 'Biblioteca Laurenziana', p. 24.

11 For a thorough discussion of the various types of drawings Michelangelo produced, see Hirst, *Michelangelo and His Drawings*. See also Brothers' discussion of drawing types, the various media used by Michelangelo and other Renaissance artists, and the means by which sketching facilitated the development of ideas: Brothers, *Michelangelo*, pp. 9–43. Other scholars have studied Michelangelo's architectural sketches in order to understand his design process and chronology for other architectural projects. Gregory Hedberg examines a design sketch of a window that he argues Michelangelo developed initially for the Palazzo dei Conservatori and subsequently reworked for the top-floor courtyard windows of the Palazzo Farnese, and he also traces the development of the Porta Pia through an analysis of key design sketches by Michelangelo; see Gregory Hedberg, 'The Farnese Courtyard Windows and the Porta Pia', *Marsyas*, 15 (1970–71), pp. 63–72. Paul Joannides examines Michelangelo's pattern of ideas in design sketches for the Magnifici Tomb at the New Sacristy; see Paul Joannides, 'A Newly Unveiled Drawing by Michelangelo and the Early Iconography of the Magnifici Tomb', *Master Drawings*, 29 (1991), pp. 255–62. Andrew Morrogh carefully and painstakingly analyses many drawings and traces the development of Michelangelo's design for the 'Magnifici' tomb for the Medici Chapel at S. Lorenzo; see Andrew Morrogh, 'The Magnifici Tomb: A Key Project in Michelangelo's Architectural Career', *Art Bulletin*, 74 (1992), pp. 578–98.

12 I examined the original drawings in March 1999 and June 2005 at the Casa Buonarroti in Florence, and had the opportunity to re-examine the sheets Casa Buonarroti 42A, 48A, 89A and 92A when they were on public display in the exhibition at the Casa Buonarroti, 'Michelangelo architetto a San Lorenzo', curated by Pietro Ruschi (May–June 2007).

13 Howard Saalman, 'Tommaso Spinelli, Michelozzo, Manetti and Rossellino', *Journal of the Society of Architectural Historians*, 25 (1966), pp. 151–64 (p. 154).

14 See Ackerman, *Michelangelo* (1986), pp. 102–03; Argan and Contardi, *Michelangelo*, p. 186.

15 The nineteenth-century rare books rotunda that exists today to the west of the reading room has nothing to do with Michelangelo's project.

16 For a thorough analysis and discussion of the influence of Giuliano da Sangallo's project for the S. Lorenzo façade (Uffizi 277A) and another church façade project (Uffizi 281A), probably for S. Lorenzo, on Michelangelo's early schemes for the façade, see Hemsoll, 'Laurentian Library', pp. 31–33.

17 Michelangelo initiated his design for the S. Lorenzo façade project (1516–19) and the Medici Chapel or New Sacristy (1519–34), with sketches that borrowed heavily from the work of others. Consideration of specific surviving design sketches for these projects helps establish a deliberate pattern of working and introduces a formal repertoire that he used in subsequent projects, including the Laurentian Library. His initial inspiration for the façade came from a scheme for the same project by Giuliano da Sangallo, while he based the chapel on Brunelleschi's Old Sacristy at S. Lorenzo. One of Michelangelo's early sketches for the façade of S. Lorenzo, found on the sheet Casa Buonarroti, A45 recto, was undoubtedly derived from a proposal for the façade by Giuliano da Sangallo, which survives on the sheet, Uffizi A280; see Ackerman, *Michelangelo* (1986), p. 55; and also Hemsoll, 'Laurentian Library', pp. 1–33. For a thorough examination of the influence of Sangallo's

drawings on Michelangelo's design for the S. Lorenzo façade, see also Brothers, *Michelangelo*, pp. 107–21. Michelangelo transformed the various elements and motifs through the course of his development into a composition that reflected his own design intentions. In the final design, the features that survived from Sangallo's proposal and his own early sketch include the alternating wide and narrow bays, the pairs of freestanding columns on the lower level, a low attic with projecting pedestals for pairs of corresponding pilasters above, and a pediment over the centre three bays. Hemsoll also cites Bramante and Sansovino's Santa Casa in Loretto as a possible source for Michelangelo; see Hemsoll, 'Laurentian Library', p. 31. However, as it has more in common with Sangallo's proposals, it was probably not a direct source of influence on Michelangelo.

18 For Michelangelo's early proposals for alternate sites within the S. Lorenzo complex, see Salmon, 'Laurentian Library', pp. 407–29.

19 The date of this scheme is probably spring 1524. On 22 March 1524, Fattucci wrote to Michelangelo that the pope had given permission to build the library over the rooms near the Old Sacristy. On 3 April 1524, Michelangelo's third scheme was accepted in letter from Fattucci. In April/May 1524, Michelangelo carried out studies of support system for the new construction; see Ackerman, *Michelangelo* (1986), p. 303.

20 Ackerman believed the plan on the Casa Buonarroti 89A verso sheet is related to, and postdates, the interior elevational study on the 89A recto sheet; see Ackerman, *Michelangelo* (1986), p. 303. Wittkower disagreed, mainly because the plan depicts a single rather than double entrance to the reading room. However, in making his argument, he placed too much importance on dimensions and proportions; he interpreted extremely rapid and rough freehand sketches intended only for the development of ideas as if they are scaled, drafted plans; see Wittkower, 'Biblioteca Laurenziana', p. 28, n. 56.

21 Wittkower based his conclusion on the shape of the space, stating that it looks 'very much like what we should call a chapel', without further discussion or clarification; see Wittkower, 'Biblioteca Laurenziana', p. 44. See also Ackerman, *Michelangelo* (1986), p. 115.

22 One can see a similar diagrammatic reflected plan for the triangular reading room, which also appears to feature a large ocular skylight, on Casa Buonarroti sheet 79A, discussed in detail below.

23 A cove vault consists of coves or vaults rising from, and parallel to, all four walls of the space, intersecting at groins on the diagonals extending from corner to corner. In this and many other cases, the four coves sweep upwards from the walls to meet a flat, central ceiling (Fig. 24). This interpretation of the inset rectangle in the upper plan on Casa Buonarroti 89 verso as a cove vault around the perimeter of the space is reinforced by Michelangelo's subsequent interior elevation of the *ricetto* on the sheet Casa Buonarroti 48A recto. This drawing and Michelangelo's proposed skylight are analysed and discussed below. For the letters from Fattucci and Marzi, see also below.

24 Wittkower also noted the similarity between the stair configuration on Casa Buonarroti 89A recto and the east end of a church, but did not cite any example; see Wittkower, 'Biblioteca Laurenziana', p. 27. Ackerman also noted a similarity to Giuliano da Sangallo's exterior stair at Poggio a Caiano; see Ackerman, *Michelangelo*, I (1961), p. 42. Cattiti and Brothers also suggest that the source of inspiration for this early stair scheme was the Poggio a Caiano stair. Brothers suggests that Sangallo's stair might have been inspired by the stair at S. Miniato in Florence, and also proposes Bramante's Cortile del Belvedere as a potential source; see Cattiti, 'Michelangelo e la monumentalita nel ricetto', p. 95, and Brothers, *Michelangelo*, pp. 163 and 229.

25 The ceiling would probably have been constructed out of lath and plaster, like the ceiling, discussed below, that was probably intended for the rare books room.

26 Ackerman suggested that the rectangles in the corners of the middle lower plan are piers intended to support a vault; see Ackerman, *Michelangelo* (1966), p. 40, n. 6. However, considering how rapidly Michelangelo drew the sketch, it seems more likely that they are simplified corner pilasters, which, if drawn in a more careful sketch, would probably more closely resemble the folded pilasters in the corners of the Medici Chapel (Fig. 10).

27 Michelangelo derived his Medici Chapel interior elevations from Brunelleschi's Old Sacristy. However, while all four interior walls of Michelangelo's chapel consist of four *pietra serena* pilasters dividing the walls into three bays, Brunelleschi's interior elevations are designed in a decidedly hierarchical manner, with four *pietra serena* pilasters articulating only the (south) altar elevation. These pilasters divide this elevation into three bays, with the central bay opening onto a chapel, and narrow bays with doors framed by tabernacles designed by Donatello that lead to small subsidiary spaces beyond. Michelangelo's composition is more spatially unified; by continuing the 'a-B-a' elevation and system of pilasters around the four sides of the chapel, each element corresponds to a counterpart across the space. Above the pediments of the doors in the Old Sacristy are shallow arched niches containing terracotta relief sculptures by Donatello. Within each of the

Medici Chapel's eight cramped corner bays, Michelangelo inserted unified marble door portals with sculpture niches above, which can suggest two equal storeys framed by the *pietra serena* Corinthian pilasters. Although in an embryonic stage of development, this is significant, as it could represent the origins of Michelangelo's idea of a tall order unifying two storeys, which he would subsequently evolve for an early scheme for the interior elevations of the *ricetto*, and later for the Campidoglio façades and St Peter's in Rome. The idea of a tall order also appears in embryonic form in many of Michelangelo's design sketches and drawings for the Magnifici tombs, specifically a drawing often attributed to, or copied from Michelangelo, Musée du Louvre, inv. 837r (Corpus 194r). See Morrogh, 'The Magnifici Tomb', pp. 578–98.

28 Wittkower, 'Biblioteca Laurenziana', p. 28, n. 56.

29 Michael Hirst argues that the elevation must be the west wall rather than the south wall of the *ricetto* because of the double doors, which do not appear on any of the plans and cannot be related to the single aisle between the desks of the reading room. However, the sketch is exploratory, so it is not surprising to see variations on ideas among the few plan and elevation studies that survive. Moreover, the width of the double doors is approximately the width of the central aisle of the reading room as built. In addition, the fact that no plans with double doors survive does not preclude the possibility that Michelangelo drew them but that they simply have not survived; see Hirst, *Michelangelo and His Drawings*, p. 99.

30 The similarity between the double portal in Casa Buonarroti 89A verso and the chapel at Castel S. Angelo was raised in a discussion between the author and Patricia Waddy in Rome, August 2004.

31 Through a careful reading of the *ricetto*'s fabric as it exists today, that is after the 'restoration' of 1904, Wittkower was able to deduce that Michelangelo changed the design part way through the construction process and raised the height of the *ricetto* considerably. He proves beyond a doubt that it was Michelangelo's initial intention for the reading room and *ricetto* to share a common hipped roof; see Wittkower, 'Biblioteca Laurenziana', pp. 11–12. See also Ackerman, *Michelangelo* (1986), p. 104; Cattiti, 'Michelangelo e la monumentalita nel ricetto', p. 95.

32 The strength of the walls of the pre-existing structure was a concern throughout the design development of the *ricetto* and especially of the reading room. This is clear from letters to Michelangelo from papal secretaries Fatucci and Marzi, dated 29 November and 23 December 1525 respectively. The letters are quoted and discussed below.

33 James G. Cooper, 'The Genesis of Michelangelo's Campidoglio' (doctoral thesis, University of Virgina, 2002), p. 314. For an analysis and discussion of the project as built, the Dupérac engravings, and the author's reconstruction, see below.

34 The design development of the Campidoglio façade will be the subject of a future article by this author. Michelangelo's designs for the tombs of Popes Leo X and Clement VII at S. Lorenzo in the mid-1520s also incorporate variations on a giant order/minor order configuration. Michael Hirst mentions the similarity of the tall and minor order in the Casa Buonarroti 89A recto sheet to the giant and minor order of the Conservatori façade, but does not discuss it in detail; see Hirst, *Michelangelo and His Drawings*, p. 100.

35 Wittkower, 'Biblioteca Laurenziana', p. 28.

36 Wittkower virtually ignored this plan, suggesting that it must have been drawn long after the elevation studies; see Wittkower, 'Biblioteca Laurenziana', p. 28. Ackerman interpreted the sketch as I do, but does not relate it to subsequent developments. Ackerman, *Michelangelo*, II (1961), p. 40.

37 Wittkower, 'Biblioteca Laurenziana', p. 27.

38 See Wittkower, 'Biblioteca Laurenziana', p. 28. This interpretation is similar to that of Golo Mauer (*Michelangelo: Die Architekturzeichnungen*', pp. 111–17).

39 This landing is similar to Bramamte's convex/concave stair that was located on the top terrace of the Vatican Belvedere; see Frederick Hartt, *The Drawings of Michelangelo* (London, 1971), p. 199, n. 283.

40 Wittkower, 'Biblioteca Laurenziana', pp. 30–31.

41 Ackerman, *Michelangelo*, II (1961), p. 40.

42 Brothers, *Michelangelo*, p. 163.

43 Wittkower, 'Biblioteca Laurenziana', p. 24; Ackerman, *Michelangelo* (1986), p. 104.

44 As discussed above, the Casa Buonarroti sheet 89A verso includes three or four steps leading from the corner-landings to the central landing. These steps do not appear in the Teylers sketch simply because the angle of the perspective Michelangelo has rapidly drawn would mean that we would see those steps from the back. The horizontal guideline extending from the top of the step to the left, and the guideline drawn in perspective from the top step down and left, indicate the position in plan of the missing stairs and central landing. These features, and the exact number of steps, were not pertinent to the main purpose of the sketch, which was to study the west wall of the *ricetto*.

45 Wittkower, 'Biblioteca Laurenziana', p. 24.
46 Casa Buonarroti 48A recto is discussed below.
47 Ackerman also suggests that the upper elevation, with its four bays, may be a correction of the lower one; see Ackerman, *Michelangelo* (1966), p. 40.
48 For example, see Johannes Wilde, *Michelangelo: Six Lectures* (Oxford, 1978), p. 145. Brothers follows Wilde's interpretation, arguing that columns have replaced the traditional sculptural figure typically found in a niche; see Brothers, *Michelangelo*, p. 165.
49 Scholars have proposed other ancient buildings as sources of inspiration for the interior elevations of the *ricetto*, including the Tomb of Annia Regilla on the Via Appia, and the so-called House of Cola di Rienzo at the Forum Holitorium. For example, see Staale Sinding-Larsen, 'The Laurenziana Vestibule as a Functional Solution', *Acta ed Archaeologiam et Artium Historiam Pertinentia*, VIII (1978), pp. 213–22; see also Hemsoll, 'Laurentian Library', p. 46. However, the lower storey of the Pantheon interior is closer to the Casa Buonarroti 48A sketch and the final design than is any other ancient source. The relationship between the columns and semi-oval recesses of the Tomb of Annia Regilla are much closer in form to Michelangelo's minor order of columns within the loggias of the Palazzo dei Conservatori, and may have served as a model for that project.
50 Cooper, 'The Genesis of Michelangelo's Campidoglio', p. 103. Hemsoll also identifies the lower elevations of the interior of the Pantheon as a likely source of inspiration for Michelangelo's *ricetto* design in Casa Buonarroti 48A recto; see Hemsoll, 'Laurentian Library', p. 50.
51 Quoted from Wittkower, 'Biblioteca Laurenziana', pp. 18–19. The original Italian reads: 'N. S. A preso grande piacere, quando lesse, che voi vi eri risoluto a fare il ricetto, siche sollecitatelo. Ora circa alle finestre sopra tetto con quelli ochi di vetro nel palco dice N. S., che gli pare cosa bella et nuova; niente di manco non ci risolve a fare, ma disse, che e' bisognierebe saldare dua frati delli Jesuati, che non attendessino ad altro che a nettare la polvere.'
52 Wittkower, 'Biblioteca Laurenziana', pp. 18–19. The original Italian reads 'La presente è per farvi intendere come N. S. Re alli giorni passati hebbe la vostra de 7 col disegno a piedi della libreria, gli mandasti. [...] Et dice, che li ochi disegnati per dare li lumi si pensa habbino ad essere una cosa bella; ma che non sa, se la polvere, [che] riceveranno, sara maggiore che 'l lume rendere poteranno? Et che alzando el muro duo braccia per fare le finestre, come advisate, et essendo parte del tecto posta su, et haverlo hora ad diffarlo et tramutare legami, se 'l reggera el peso et fara danno alla fabrica?'
53 This arc, made by a stylus, continues to the left and down, suggesting Michelangelo had begun to draw guidelines for a detail of a round element such as a column on the sheet before starting the elevation drawing.
54 Wittkower, 'Laurentian Library', p. 27.
55 For a complete history of the design and construction phases of the chapel, see Ackerman, *Michelangelo* (1986), pp. 69–94, 296–99. For Brunelleschi's Old Sacristy and other early projects, see, e.g., Heinrich Klotz, *Filippo Brunelleschi* (New York, 1990), pp. 129–44. Vasari tells us that it was Michelangelo's intention 'to make it in imitation of the old sacristy'. However, while he derived both its plan and general configuration from the older chapel, he profoundly transformed what he borrowed for important functional, symbolic and compositional reasons. For the question of whether the Medici Chapel was begun by a previous architect or whether Michelangelo built the chapel from the ground up, see Johannes Wilde, 'Michelangelo's Designs for the Medici Tombs', *Journal of the Warburg and Courtauld Institutes*, 18 (1955), pp. 54–56; Caroline Elam, 'The Site and Early Building History of Michelangelo's New Sacristy', *Mitteilungen des Kunsthistorichen Institutes in Florenz*, 23 (1979), pp. 155–79; Ackerman, *Michelangelo* (1986), p. 96; Howard Saalman, 'The New Sacristy of San Lorenzo Before Michelangelo', *Art Bulletin*, 67 (1985), pp. 199–228. The pre-existing site conditions of the Medici Chapel and its neighbouring buildings are the subject of a comprehensive, well illustrated article by Pietro Ruschi; see Pietro Ruschi, 'La Sagrista Nuova, metamorfosi di uno spazio', *Michelangelo architetto a San Lorenzo*, ed. Ruschi, pp. 15–49.
56 Michelangelo's attic storey consists of lunettes over the four wide centre bays and a small order of Corinthian pilasters set in line with the large pilasters below. The interior attic storey of the Pantheon may have inspired the chapel's attic, and one could interpret the alignment of Michelangelo's attic-level pilasters above with the main storey's pilasters below as a comment on the lack of correspondence between the pilasters of the attic and main storey of the ancient temple. A more direct source for the attic may have also been Giuliano da Sangallo's octagonal sacristy at S. Spirito. As Hemsoll notes, the form of the attic storey might have been inspired by the attic of the interior of the Pantheon in Rome, just as Michelangelo based the design of the chapel's coffered dome on the ancient temple; see Hemsoll, 'Laurentian Library', p. 35. However, the Pantheon is nonetheless the ultimate source as it undoubtedly served as the model for the Florentine Baptistery, which in turn inspired Giuliano da Sangallo's design for the S. Spirito Sacristy. Frederick Hartt also suggested that

the insertion of the attic level was in response to the problem of natural lighting; see Frederick Hartt, *History of Italian Renaissance Art* (New York, 1987), p. 542.

57 Judith Wolin graphically demonstrates the existence of an underlying arithmetic construct that forms the basis of the Laurentian Library design, which to her suggests neo-Platonic iconographic meaning. While her analysis proves without doubt the existence of a basic geometric construct, the notion that this represents a neo-Platonic construct, carefully 'veiled' by irrational architectural forms in order to invite scholarly contemplation, is difficult to accept; see Judith Wolin, 'The Inner Eye: Speculations on Michelangelo's Architecture and Florentine Neo-Platonism', *Modulus* (1980), pp. 68–72.

58 For a thorough discussion of the reception of Michelangelo's Florentine architectural forms, and its relationship to subsequent literary discussions concerning the Tuscan language, see Caroline Elam, 'Tuscan Dispositions: Michelangelo's Florentine Architectural Vocabulary and its Reception', *Renaissance Studies*, 19/1 (2005), pp. 46–82. Elam notes Michelangelo's unusual columns in the *ricetto* appear at first glance to be Tuscan Doric, but have proportions more associated with the Corinthian order (1:10), and the abacus of their capitals with their concave sides more closely resembles a Corinthian abacus. She also points out that the capitals closely resemble those illustrated in Francesco di Giorgio's treatise on architecture; see ibid., p. 52.

59 For example, see Brunelleschi's Pazzi Chapel at S. Croce and Old Sacristy at S. Lorenzo. For a detailed analysis of Michelangelo's architectural details and a discussion of their sources, see Stefan W. Krieg, 'Das Architekturdetail bei Michelangelo', *Römisches Jahrbuch für Kunstgeschichte*, 33 (1999–2000), pp. 103–256.

60 Lieberman, in his discussion of the *ricetto*'s *pietra serena* and stucco, characterizes the stucco walls as 'vital architectural plasma'; see Lieberman, 'Biblioteca Laurenziana', p. 573.

61 Michelangelo's deeply articulated, rhythmic façade of S. Lorenzo was not unlike the *frons scenae* of a Roman theatre. It is tempting to speculate that an actual ancient Roman *frons scenae* might have inspired Michelangelo's design, or perhaps the ancient Septizodium, a *frons scenae*-like structure at the base of the Palatine Hill. This comparison is also made by William Wallace; see Wallace, *San Lorenzo*, pp. 13 and 48. For a brief account of the Septizodium and a reproduction of a sketch by Dupérac, see Amanda Claridge, *Oxford Archaeological Guides: Rome* (Oxford, 1998) pp. 144–45.

62 When commissioned to rebuild the Palazzo dei Conservatori on the Campidoglio just a few years later, Michelangelo clearly based an early scheme for the main façade on the sheet Casa Buonarroti 48A recto and the two-storey final design. There is a well-known partial elevation sketch by Michelangelo on the sheet Casa Buonarroti 42A that scholars commonly identify as an early elevation study for the reading room of the Laurentian Library, and alternately as an exterior façade study for the Laurentian Library on an alternative site facing Piazza S. Lorenzo. However, more recently I have argued it to be an early façade study for the Palazzo dei Conservatori on the Campidoglio, hence its exclusion from this analysis; see James Cooper, 'Two Drawings by Michelangelo for an Early Design of the Palazzo dei Conservatori', *Journal of the Society of Architectural Historians*, 67 (2008), pp. 178–203. The forms and wall articulation on this sketch are nearly identical to the Casa Buonarroti 48A recto elevation, as well as the partial plan on the sheet Parker 332 verso at the Ashmolean Museum, Oxford, identified by De Tolnay as an early partial plan of the Palazzo dei Conservatori. It is very unlikely that the partial façade study on Casa Buonarroti 42A is an interior elevation for the reading room as it clearly depicts the exterior profile of a building along its left side. Furthermore, close inspection of the original drawing reveals that Michelangelo first sketched, with black chalk, four bays and a partial fifth bay of what is clearly a three-storey palazzo-type building with a ground floor and *piano nobile* of approximately equal height and a low attic: proportions remarkably similar to the *Quattrocento* Palazzo dei Conservatori. Without completing the black chalk drawing, he then proceeded to draw variations and new ideas directly in red ink over the chalk under-drawing. The ink overlay is also exploratory and incomplete; Michelangelo did not include the attic or the fourth bay to the right. The fact that the red ink overlay does not include the attic does not allow it to be ignored, as many supporters of the Laurentian Library reading room identification conveniently do. Both the chalk and ink version depict a palazzo façade with alternating bays of equal width, with forms clearly derived from the *ricetto* of the Laurentian Library. The first and third bays of the ground level incorporate paired columns recessed from the outer plane of the façade. The intermediate walled bays are flanked by pilasters and feature tabernacle windows capped by segmental pediments. A plan detail, located at the centre of the sheet, confirms the relationship between the recessed paired columns and the walled bays with their flanking pilasters. The configuration of these elements is remarkably similar to the plan on Parker 332 verso. The partial plan on the sheet depicts a building that incorporates paired columns set back into a recess, flanked by pier-like walled bays with doors or windows. It would be an interesting exercise to project an elevation directly up from this plan on this sheet using the existing floor-to-floor heights of the

Palazzo dei Conservatori. If one considers the frequency with which Michelangelo placed either paired pilasters over paired columns or vice versa (S. Lorenzo façade, Laurentian Library, centre stair bay and *baldacchino* of the Dupérac version of the Palazzo Senatorio), one would complete the *piano nobile* level of this drawing with paired pilasters over the paired columns below. If tabernacled windows and a low attic are added, the resulting drawing would look almost exactly like the pencil under-drawing on Casa Buonarroti 42A and the partially obscured elevation sketch that Michelangelo himself drew on Parker 332 verso (Michelangelo's ruled guidelines match the floor-to-floor heights of the palazzo as well as the bay width). Parker 332 also includes obscure circular markings to either side of the paired columns that are undoubtedly the columns of his tabernacle windows on the *piano nobile*, superimposed over the ground-floor plan. For supporters of the reading room identification, see Cecchi and Natali, *Michelangelo: i disegni di Casa Buonarroti* (Florence, 1985), p. 134; for further discussion, see Ackerman, *Michelangelo* (1966), p. 102, and Wittkower, 'Michelangelo's Biblioteca Laurenziana', p. 22. Paul Joannides suggested the study is an exterior elevation for an early Laurentian Library scheme on an alternate site, which would have necessitated a façade on the south flank of Piazza S. Lorenzo; see Paul Joannides, review of Johannes Wilde, *Six Lectures*, *Burlington Magazine*, 124 (1981), p. 620. Salmon and Brothers both agreed with this identification; see Salmon, 'Laurentian Library', pp. 407–49; and Brothers, *Michelangelo*, p. 163.

63 Gronegger provides a north–south section of the *ricetto* and the existing spaces below. He notes that the relieving arches were added to buttress vaults below the *ricetto* in 1533, to help support additional loads of the stair and *ricetto* walls; see Gronegger, 'Il progetto', p. 121.

64 Walnut reading desks, arranged against the walls at right angles to the long axis of space, delineate the space of the central aisle. Every fourth desk corresponds to a pilaster, and the uppermost surface of the desks corresponds to the height of the socle. Tall, leaded glass windows between the pilasters on the long east and west walls of the room light the space evenly. Simple but unconventional *pietra serena* frames set within larger, slightly recessed panels surround the windows. The terracotta floor pattern reflects the configuration of the beams and ceiling panels that feature intricately carved motifs, consisting of ovals and in the bays above the central aisle and unusual forms resembling tabernacle window frames in the bays above the desks to either side. This unified system of beams, pilasters, desks and floor patterns creates a clear structural/spatial matrix. It is unusual in the context of medieval/Renaissance Florence where stereotomic wall mass more commonly characterizes buildings.

65 Ackerman, *Michelangelo* (1986), p. 117.

66 Quoted from Argan and Contardi, *Michelangelo Architect*, p. 197.

67 Ralph Lieberman offers many insightful observations about the experiential effects of the *ricetto* and reading room. See Lieberman, 'Biblioteca Laurenziana', pp. 571–83. The vanishing point on the horizon of a person of average height is just above the level of the desktops. Because of this acute viewing angle and the close spacing of the desks, their top surfaces appear to be connected, creating a virtual horizontal plane to either side of the central aisle, such that the transverse section of the reading room appears to be in the shape of the letter 'T'.

68 Brothers describes the portals as 'strangely thick'; see Brothers, *Michelangelo*, p. 175.

69 Wittkower characterizes the proposed space as the practical and physical culmination of the whole library complex: 'The sequence of shapes — square, oblong, and triangle — would have formed a geometric progression.' See Wittkower, 'Bibliotecca Laurenziana', p. 45.

70 Hartt, *Renaissance Art*, p. 548.

71 Wittkower, 'Bibliotecca Laurenziana', p. 45.

72 See Guglielmo De Angelis d'Ossat, *The Complete Work of Michelangelo* (New York, 1966), p. 304.

73 See Ruschi, 'Il sugello mancate', pp. 143–55.

74 'riducesi in tondo di sopra e tucti e' lumi si piglion dalla volta per ché non si possono aver d'altrove'.

75 Wittkower, 'Bibliotecca Laurenziana', p. 45.