When Michelangelo Buonarroti (1475–1564) received his first architectural commission in 1516, his fame had already spread beyond the frontiers of Italy. Four years before, he had completed the frescoes in the Sistine Chapel; for the past ten years he had been engaged on the tomb of Julius II, a work which was to occupy him in all for twenty years.

To the end of his life Michelangelo described himself as a sculptor, and always tried to put forward that pretext in order to refuse commissions for buildings or paintings. Wherever he accepted such commissions, the sculptor's manner of thinking and working becomes obvious. Yet it would be a mistake to regard Michelangelo's buildings as a sculptor's architecture and to take that as the sole explanation of their highly personal character. Bramante and Raphael were active as painters, Giuliano da Sangallo and Jacopo Sansovino as sculptors, Palladio as a stone carver, before they took up architecture. Thus Michelangelo's career is in no way exceptional. The universality of his work is in keeping with a tradition that can be traced at least as far back as Giotto and Giovanni Pisano, if not farther. Besides, Michelangelo himself painted the illusionist architecture in the Sistine Chapel and he designed the architectural framework projected for the sculpture in Julius II's tomb. When seen in this connection, his insistence on his training as a sculptor seems rather to be an early sign of modern specialization than a relic of earlier customs.¹

**Florence**

**The façade of S. Lorenzo**

During the pontificates of the Medici popes Leo X (1513–21) and Clement VII (1523–34), Michelangelo was at work on three important projects connected with S. Lorenzo, the family church of the Medici in Florence. The interior had been finished about 1470. For the façade, which has remained in the rough, Brunelleschi had planned a marble facing after the model of S. Miniato or S. Maria Novella. After the state re-entry of the Medici into Florence in 1515, Leo X decided to complete the façade, so that it should stand as a monumental witness to the renewed glory of his house. Vasari writes that the Pope ordered Raphael, Baccio d'Agnolo, and Andrea Sansovino to submit designs. They have vanished; on the other hand, several designs for the marble facing of the façade by Giuliano da Sangallo, whom Vasari does not mention in this connection (cf. above, p. 44), have been preserved. Giuliano died in October 1516. In December 1516 Michelangelo, who had probably taken part in the discussions during Giuliano's lifetime, received a commission from the Pope for a wooden model of the façade. In January 1518 the agreement for it was concluded in Rome.² Some of the vicissitudes of the model, the product of a year of labour, can be traced in Michelangelo's drawings.

Even before the agreement was signed, new quarries were opened in the Carrara Hills for the supply of marble. Michelangelo spent more than two years in building a road to the quarries, organizing the work in them and supervising transport to Florence.

In his first designs he adopted Sangallo's scheme: the contour of the façade corresponds to the basilican cross-section of the church, the two-storey naves rise above the single-storey aisles. The classical vocabulary of form characteristic of Roman buildings of the second decade of the sixteenth century also recalls Giuliano's - paired freestanding columns, round-headed niches, aedicules, the central pediment - and the sumptuous decoration with reliefs and the life-size statuary to which, as we know from the sources, the Pope attached great value.

The model described in the contract of 1518 is probably identical with the one preserved in the Casa Buonarroti [128]. It differs in two respects from the first designs. Instead of the flat marble facing planned at first, a two-storey vestibule was to cover the whole width of the church façade; from outside it would have looked like a second transept. It was also to have been far richer in statuary than was originally planned. The contract mentions eighteen life-size statues - twelve in marble and six in bronze - and nineteen reliefs, thirteen of them with life-size figures. The whole of this huge programme was to be completed in eight years.

The closest analogy to this wealth of sculpture is to be found in the Gothic cathedrals of Tuscany. But while Giovanni Pisano had at hand a large workshop of many - in the medieval sense - 'anonymous' workers, the statuary and reliefs of the S. Lorenzo façade, as the contract implies, were all to be the work of Michelangelo. Considering the

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¹ Michelangelo: Model for the façade of S. Lorenzo, Florence, 1517. Florence, Casa Buonarroti

² Michelangelo's Model for the façade of S. Lorenzo, Florence, 1517. Florence, Casa Buonarroti
new conception of the style and personality of the artist and the demands which Michelangelo made on the quality of his own work, the practicability of the scheme must have seemed doubtful from the start. True, Michelangelo regarded the scheme as no more visionary than his first studies for the tomb of Julius II. The design of the façade had a great deal in common with them; in both cases the architectural members between the huge statues and reliefs would merely have acted as their frame and foil. Only once had Michelangelo been able to represent in its entirety this conception of the relationship between the human body and the architectural framework, and that was in the Sistine frescoes. That he was prevented from translating them into the reality of stone and bronze was not entirely due to the changing moods of his patron or to financial and political difficulties.

The actual problems involved in the design can no longer be recognized in the Casa Buonarroti model. In 1518, when the contract was signed between the Pope and the artist, there were wax models of the statues and reliefs in the niches. They have vanished, and in the 'empty' façade the classical rhetoric of the columns and round panels looks like an academic study in style. It is therefore no matter for surprise if historians were very long reluctant to identify this model with Michelangelo’s design.

THE NEW SACRISTY OF S. LORENZO

In spite of all the laborious and costly work, the design of the façade was abandoned in 1520 on grounds which have not yet been clarified. To make up for this, the Pope granted Michelangelo a commission for the tombs of the princely members of the house of Medici in S. Lorenzo. Brunelleschi’s Old Sacristy was the family mausoleum of the older generations of the family; it therefore seemed reasonable to turn the New Sacristy on the opposite wing of the transept, which had been planned long before, into a mausoleum too.

Though identical in plan, there is a great difference between the elevations of the two chapels. In the New Sacristy, an attic storey has been added between the pilaster order and the pendentive zone. The dome is hemispherical, and not, like Brunelleschi’s, a shallow umbrella vault. It is the first Renaissance dome to reproduce the coffer motif of the Pantheon. The great height of the space makes it look sparer and narrower, the more so as the order of pilasters, which was restricted to the wall of the choir in the Old Sacristy, is carried round all four walls in the New. Finally, Michelangelo filled the bays between the grey pietra serena pilasters with powerfully profiled architectural ornament, which, with its paired pilasters, niches, pediments, and volutes, contrasts with the main order both in style and scale.

Even Vasari felt that Michelangelo’s complicated scheme was at odds with the tradition of the Quattrocento and the rules of classical architecture. This can be illustrated by a comparison between Brunelleschi’s and Michelangelo’s doorways. The doors of the Old Sacristy are framed in columns and pediments; the columns stand on the same level as the observer, and their height is calculated in such a way that it is possible for him to feel a relationship between it and his own, or even to imagine himself framed in the aedicules. The round-arched terracotta reliefs over the doors differ from the aedicules in material, colour, outline, and depth – they are typical wall-ornament. On the other hand, the door frames of the New Sacristy are meagre and almost abstract, their marble frames supporting tall, oblong tabernacles, also of marble, framed in pilasters and crowned by segmental pediments. Thus the low door becomes a subsidiary member dominated by the taller tabernacle above it. The tabernacles and their frames are so heavy that the lintels on which they rest have to be supported by brackets, thus forfeiting their true function and becoming the bases of the tabernacles.

By suppressing the aedicules of the doors, Michelangelo has made it impossible for the observer to discover a measurable relationship between architecture and the human body. The architecture bears its own scale within itself, namely in the over-life-size figures on the sarcophagi, which tower over the observer in exactly the same way as the weighty tabernacles under which he enters the sacristy. It is a feature of this architecture that it dwarfs the beholder.

Raphael’s Chigi Chapel in S. Maria del Popolo, Rome, was still under construction when Michelangelo

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129. (A) Michelangelo: Florence, S. Lorenzo, New Sacristy, begun 1519, plan; (B) Filippo Brunelleschi: Florence, S. Lorenzo, Old Sacristy, after 1421, plan

130. (A) Michelangelo: Florence, S. Lorenzo, New Sacristy, begun 1519, elevation; (B) Filippo Brunelleschi: Florence, S. Lorenzo, Old Sacristy, after 1421, elevation
began work on the New Sacristy. The visitor enters the Chigi Chapel under one of the four arches which support the dome, so that the relationship between architecture and the human body is made clear and comprehensible. The image of God the Father in the summit of the dome in the Chigi Chapel is also related to the spectator in gesture and scale. But the architecture of the New Sacristy is as remote from the observer as the statues, which inhabit a different sphere from him as he stands looking up at them. No image in human likeness looks down on him from the dome; the ribs between the coffers guide the eye irresistibly into the lantern, whose windows are so large that the light devours the solid forms. Thus the lantern looks immeasurably high.

The Medici Chapel is the only architectural interior to have been designed by Michelangelo himself and executed under his personal supervision. When he moved to Rome in 1534, the decoration and statuary were not yet finished. The seated and reclining figures on the tombs were not put in place till 1545, and in 1559 the idea of completing the decoration of the chapel in accordance with Michelangelo’s ideas was finally abandoned. The double tomb planned for the entrance wall and its marble architecture were not executed.

THE LAURENTIAN LIBRARY

Immediately after his elevation in 1523, the second Medici Pope, Clement VII, commissioned Michelangelo to prepare designs for a library to be installed in the west cloister wing of S. Lorenzo. The Biblioteca Laurenziana [133], as it stands today, contains the manuscripts and books belonging to the famous private library of the Medici, founded in the fifteenth century, which Clement removed from the family palazzo to the cloisters and opened to the public.

Work began in 1525. When Michelangelo left Florence in 1534 it was not yet finished. It was continued by Tribolo, Vasari, and Ammannati on verbal instructions from Michelangelo, and had progressed so far by 1571 that the library could be opened. Thus the present building combines parts executed by Michelangelo himself with others built much later in a more or less correct interpretation of his instructions.

According to the Pope’s instructions, the two-storey Quattrocento cloister was to remain unaltered by the addition of the library. That explains certain features of Michelangelo’s project. The reading room was to constitute a new third floor added upon the older parts of the cloisters, since there was no other way to provide it with adequate lighting;
its walls were to stand on those of the pre-existing upper storey. Thus the length and width of the hall were fixed in advance. In the upper storey, between the cloister and the Old Sacristy, a vestibule, called the ricetto, was separated off to house the staircase leading to the reading room. The position of this anteroom, which is contiguous with the high wall of the transept, involved difficulties of lighting. In Michelangelo’s first project, the reading room and the ricetto were equal in height; the windows of the ricetto were to be placed either in the vaulting or in skylights. But the ricetto as we see it today is lighted by windows in the clerestory.

The reading room [134] is 46.20 m. long, 10.50 wide, and 8.40 high (152 by 35 by 28 feet). The furnishings and decoration are original. There are two blocks of seats separated by a central passage; their backs serve as reading desks for the benches behind them. The books lie chained on the desks. The desks are lighted from both sides by the comparatively close-set windows in the long sides. The windows are framed in pilasters, and the system of bays they form governs the articulation of the ceiling and the floor. The pilasters bear the cornice, which is carried without projections round the room and supports the cross-beams of the heavy wooden ceiling.

These pilasters, which articulate the walls and correspond to the beams, are a heritage of the Quattrocento. But no Quattrocento interior has any such treatment of the wall-bays between the pilasters to show. It consists of a triple recession of layers, the farthest back containing the window frames, a middle one with the quadrangular blind frame of the upper storey and the tall oblong panels in which the windows are set, and a front one with the pilasters and their running base. The mouldings of the frames are of pietra serena, the wall surfaces of white stucco. This back and forward movement imparts to the wall a quite unprecedented depth of relief. The difference of function between supporting members and walls between them becomes perfectly clear in the juxtaposition of three- and two-dimensional forms. At the same time Michelangelo solved a structural problem. In view of the older walls of the storey beneath, he had to reduce the weight of the reading-room walls as much as he possibly could. By the system of the frames and layers in the articulation of the walls, the volume and weight of the intervening bays between the pilasters was reduced to a minimum. Thus the pilasters act as the fronts of the pier-
like sections of the wall between the windows, which actually support the ceiling and take on a genuine structural function.

When Michelangelo left Florence in 1534, only the walls of the reading room were standing; the floors, the seats, and the ceiling were not added until c. 1550. But the designs for them were so precise that both the structure and the ornament of the reading room may be regarded as Michelangelo's own work. The ricetto, on the other hand, remained a torso till the twentieth century. The top range we see today was completed in 1904, and it was only then that the three windows looking on to the cloisters were finished, while in the interior, the articulation, which on this range till that time had only been completed on the south wall, was carried round the other three walls. The staircase was built in 1559 by Ammannati; Michelangelo had sent him a clay model of it in 1558.

**THE RICETTO**

The first designs, made in 1524, show two flights of stairs placed against the side walls of the ricetto and forming a bridge in front of the reading-room door. In 1525 Michelangelo decided to remove the stairway to the middle of the vestibule; it was to start in three flights and unite in a single flight in its upper part. An attempt was made by Tribolo about 1550 to carry out this plan, using the steps lying in the ricetto, which had been made according to Michelangelo's instructions. It came to nothing. Although Ammannati used some of the steps in his construction, the staircase of today cannot be identified with the scheme of 1533-4, since the older steps had to be fitted with pieces of different stone. Besides, in answer to Vasari's inquiry in 1555 about the design for the staircase, Michelangelo replied that he had forgotten all about it. Thus the clay model sent to Ammannati in 1558, after which the staircase was built, is a new design made by Michelangelo between 1555 and 1558.

Ammannati certainly endeavoured to translate Michelangelo's ideas into reality as far as he possibly could.

But the scanty material he had at hand, the comparatively small clay model and Michelangelo's instructions, could give no more than a general idea of the form; the details were left to his judgement.

The staircase takes up half of the floor of the ricetto, which measures 9.50 by 10.30 m. (31 by 34 feet). The lower section of nine steps is in three parallel flights [135]. The treads of the central flight are convex, while those of the side flights, separated off by balustrades, are straight. The three lowest steps of the central flight are wider and higher than those above them; they lie like concentric oval slabs on the floor of the ricetto, the lowest step surging outwards. At the ninth step the three flights unite in a landing for the top section of the staircase. The convex tenth step lies on the landing in the same way as the lowest step does on the floor of the ricetto.

The room in which the staircase is housed, almost perfectly square in plan, is just as unusual as the staircase itself. Its extraordinary height (about 14.6 m. or 44 feet) is a result of the alteration in the plan mentioned above, after Michelangelo's proposal to use skylights for the lighting of the ricetto was rejected. For the middle storey of the three, Michelangelo had projected paired columns from the start. The columns stand in narrow recesses in the wall; in the bays between the paired columns there are deep oblong niches with projecting pediments, while the panels above are ornamented with flat, blind frames [136]. The strangeness of this articulation consists in the fact that the wall is not treated as a plane. The sections of the wall that frame the paired columns project so far that they appear as three-dimensional blocks. On the narrow sides of the recesses there are pilasters corresponding to the columns.

Each of the four walls is crowded with six free-standing columns and three massive wall-bays. The space seems to be bounded by three-dimensional elements, and not by a continuous wall. The shell of wall behind these members is so thin that it can just be made out on the plan; in actual fact the timber roof intended for the ceiling was not to have rested on the outer walls, but on the paired columns. In the third storey, which was added after the revision of the scheme, the system of the main storey is reduced to two dimensions; paired pilasters stand over the columns, and square frames over the recesses. While the play of forces in the main storey stands out clearly, it can only be read off in the third storey in its projection on the wall-plane.

The richly modelled main storey stands on the much plainer walls of the lowest, which contains the staircase and the entrance door. The low doorway is flanked by huge volutes which stand out from the wall under the columns and belong to the middle rather than to the lowest storey. In the same way as in the New Sacristy, the rising walls seem inconceivably high to the visitor standing in the lowest storey; he cannot conceive a rational relationship between them and his own height. The bases of the paired columns stand above the level of the staircase, and their capitals far above the lintel of the reading-room door. Thus still greater prominence is given to the columns of the middle storey, whose unbroken verticals control the whole effect of the room, while the horizontal cornices, with their many projections, hardly affect the general impression at all.
The verticals of the walls are in contrast with the horizontal strata of the steps. But even in the staircase the beholder seems to be faced by superhuman forces. The width of the steps increases from the top downwards, so that to anyone descending the staircase it seems to be flowing out into the room, while to anyone mounting it, the lowest steps seem to be flowing towards him. The dramatically agitated, rounded and weighty forms which characterize the staircase bear the imprint of Michelangelo's latest style, while the articulation of the walls goes back to an earlier phase. The walls were approaching completion when Michelangelo left Florence in 1534.

The contrast between the high anteroom and the long reading room was not intended at the start. In the first designs there is an order of paired columns on the walls of the reading room too. It was only after the change of plan which involved the heightening of the ricetto that Michelangelo decided on the quieter system of pilasters and the cornice without projections for the reading room. The motif of the paired columns was confined to the ricetto, and so gave it a far greater expressive force.

Even contemporaries realized that the composition and details of the Laurenziana were a revolutionary breach with tradition. That is true not only of its formal vocabulary. If the spatial organization of the ricetto seems oppressive, steep, and overpowering, if the columns look as if they were wedged into the wall, it is because the architecture is meant to awaken definite emotions in the observer. In his sonnets, Michelangelo has expressed his vision of the figure imprisoned in the block, which the sculptor liberates. Similar ideas find visual expression in the relationship between wall and column in the structure of the Laurenziana. The dramatic force of the stairway, which has been described so often, is one of these innovations. Bramante's open-air stairway in front of the Belvedere exedra in the Vatican led to no destination outside its own concentric steps [10, 11]. In the ricetto stairway the lower treads swell outwards while the upper ones seem to draw the observer irresistibly upwards into the room by the force of their own diminuendo. Another characteristic feature is the transformation of the traditional aedicule motif in the middle storey of the ricetto; the framing pilasters broaden upwards, so that the wider upper part of the frame looks heavier than the narrower lower part. The divergence between this slant of the frames and the vertical edges of the wall again awakens a feeling of a huge weight cramped in space.

We have already seen a similar emotional appeal in the architectural forms of Giulio Romano's Palazzo del Te, which was built at the same time. Giulio Romano leaves the observer uncertain whether the building is still under construction or already in decay. His bizarre ideas are meant to nonplus the observer in the same way as 'black humour' does. But for Michelangelo the forces working in the stones are a parable of the tragedy of human life.

Like Giulio Romano, Michelangelo adopts the formal vocabulary of Bramante and Raphael, but the new meaning he gives it can only be understood when it is compared with its prototype, the classical model. Thus the motif of paired columns had already made its appearance in the Palazzo Caprini; but unlike Bramante's beautiful balance between horizontals and verticals and between two storeys which, for all their differences of form, are equally weighty, the horizontal members in the ricetto are formally so weak that the paired columns of the main storey dominate the whole room.

In classical architecture, the column is the image of the harmonious balance of forces created by the architect. There are reasons why it often appears in illustrations to treatises in anthropomorphic form. Like man, it can be represented as a free-standing organism independent of its surroundings. The columns of the ricetto can hardly be comprehended as independent individuals if only because they are paired. Although they stand free of the wall, they give such a strong impression of a vertical scaffolding that they could be compared with Gothic piers. Finally, by their height and position in the wall, they achieve a dramatic expressiveness which is quite unclassical.

**Rome**

The Medici Pope Clement VII died not long after Michelangelo settled in Rome. His successor, Pope Paul III Farnese, entrusted to Michelangelo during his pontificate the most important building schemes Rome had to offer.
In December 1537 Michelangelo was awarded Roman citizenship on the Capitol. A month later work was begun on the rearrangement and reconstruction of the Capitoline buildings after the transferral there of the equestrian statue of Marcus Aurelius from the Lateran by papal order. Michelangelo was to continue work on the Capitol till his death. Although it was not completed till the seventeenth century, the piazza with its three palazzi must be regarded as the most important town-planning scheme in Rome during the sixteenth century, and Michelangelo's most important work in the field of secular architecture.

In 1546, after the death of Michelangelo's younger contemporary Antonio da Sangallo, who had kept his position as domestic architect to the Farnese after the elevation of Paul III, Michelangelo took over the superintendence of the Palazzo Farnese and the office of architect-in-chief of St Peter's. Work on St Peter's had been in progress since 1506, and on the Palazzo Farnese since about 1516. Michelangelo altered both buildings, and he largely defined their present shape. The dome of St Peter's, which was executed for the most part after his design, stands as a magnificent witness to the renewed strength of the Catholic Church after the troubles of the Reformation. It dominates the view of Rome and was the model for countless other domes urbis et orbis.

THE CAPITOL

Since medieval times, the seat of the city government of Rome had been in the Piazza del Campidoglio, the square which had been formed after the decay of the ancient temples in the shallow depression between the two knolls of the Mons Capitolinus. The east side of the piazza was occupied by the castellated Palazzo del Senatore, the nominal head of the city administration. On the north side was the long flank of the Gothic church of the Franciscans, S. Maria in Aracoeli. Facing it was the fifteenth-century Palazzo dei Conservatori, with the offices of the guilds in the ground floor. A steep path led down into the city from the open west side.

Michelangelo altered the façades of the Senatore and Conservatori palazzi, but left the palazzi themselves in their original place. Further, by 'duplicating' the Palazzo dei Conservatori on the north side, he reduced the size of the piazza and eliminated the church from the general view.

The development of the plans for the rebuilding of the Capitol has never been satisfactorily elucidated. In the sources, Michelangelo's name does not appear till 1539, when the statue of Marcus Aurelius was put in place and a retaining wall built below S. Maria in Aracoeli. In 1544 a three-bay loggia and a flight of steps were added to the transept of the church; in that way the church, which was also used for the official religious services of the city authorities, was provided with a new approach from the piazza. Soon afterwards, the double stairway in front of the Palazzo del Senatore was begun; in 1550–3 a three-bay loggia and stairway were added beside the Palazzo dei Conservatori. This system of three great stairways is obviously executed after a uniform scheme which may have existed when Michelangelo set the equestrian statue in its place. It is likely, though not proved, that this plan already provided for the alterations to the two palazzi.

The last stage of building, which gave the piazza the form we see today, was begun in 1561, three years, that is, before Michelangelo's death, when Pope Pius IV had earmarked considerable funds for the purpose and ordered a thoroughgoing restoration of the Palazzo del Senatore. The base and placement of the Marcus Aurelius statue were again changed, the balustrade along the west side of the piazza was built, and the new façade of the Palazzo dei Conservatori begun in 1563. A patrician friend of Michelangelo's, Tommaso dei Cavalieri, was put in charge of the work on the Palazzo del Senatore, and the working drawings for the Palazzo dei Conservatori were made by the architect Guidetto Guidetti 'in accordance with Michelangelo's instructions'. The works commissioned by Pius IV were certainly based on a comprehensive plan by Michelangelo. It is probably this scheme which has come down to us in Étienne Dupérac's engravings, which were published after Michelangelo's death. They show the Capitol 'quod s p q r impensa ad Michaelis Angeli Buonaroti e ximii architecti exemplar in antiquum decus restitui posse videtur'. The engravings, of course, can hardly be taken as an exact reproduction of a drawing by Michelangelo's own hand; so far as we know, he...
never embodied his ideas in a definitive design for any of his buildings. Dupérac certainly tried to combine the recognizable parts of the as yet unfinished buildings with what he knew or conjectured about Michelangelo’s intentions. He obviously rendered correctly the outstanding features of the project.

The simplest explanation of the discrepancies between the engravings and the actual buildings [139] is that Michelangelo’s successors had to fill in the gaps according to their own judgement. Dupérac’s engraving was probably the authority for the parts built later.

The façade of the Palazzo dei Conservatori was completed in 1584, that of the Palazzo del Senatore about 1600. The executant architect was Giacomo della Porta. The old tower of the Palazzo del Senatore was damaged by lightning in 1577 and re-erected in its present place by Martino Lunghi in 1583, in the same place as in Michelangelo’s plan but not to his design. In the same years Porta completed his work on the cordonata, the ramp leading up to the piazza, with its balustrade. The building called the Palazzo Nuovo, the ‘duplicate’ of the Palazzo dei Conservatori, was not built till the seventeenth century, between 1603 and 1654.

It is in the palazzi on the Campidoglio that the so-called giant order made its first appearance in Roman Renaissance secular building. The eight great pilasters of the two-storey Palazzo dei Conservatori rise to bear the main cornice irrespective of the horizontal division behind them. The columns and cornices of the ground-floor loggias form a subsidiary system to the primary one. Michelangelo’s giant order provides a solution both simple and radical to a problem which had preoccupied architects since the time of Alberti, namely how to combine the antique system of columns or pilasters and cornices with the division of storeys in a modern palazzo, with its windows and string courses, in such a way that the vertical members rising from the ground would be able to support the cornice, as they do in classical architecture.

As the plan shows [140], the pilasters are the fronts of piers whose intervals correspond to the sequence of the ground-floor rooms. The partition walls between the rooms combine with the piers to form a uniform system of load-bearing walls which recalls the framework of modern concrete buildings. The construction was so stable that it enabled Michelangelo to provide the ground-floor loggia with a flat stone ceiling and to dispense with arches and vaulting. The ceiling over each bay is supported by four columns, two on the façade, and two in the rear wall of the loggia. These columns with the partition walls of the adjoining rooms form
the ‘skeleton’ of the ground floor. Yet each bay of the loggia is a practically independent structural unit inserted into the giant order. The functions of the greater and lesser orders can be read off on the façade itself. The pilasters and crowning cornices lie in the foremost plane of the wall, the strips of piers appearing left and right beside the giant pilasters in an intermediate one, while the string course of the ground floor and the wall of the piano nobile are in the rear. There are no projections in the main cornice over the pilasters; on the other hand the cornice of the lesser order clasps the pier-strips at the side of the pilasters. At this point the pier absorbs the architrave of the ground floor.

In the same way as in the reading room of the Laurenziana, the material employed for the supporting members differs from that of the non-bearing walls. For pilasters, columns, cornices, and pier-strips travertine is employed, for the rest fine brickwork, so that instead of the harsh contrast of dark grey members and white surfaces so characteristic of Florence, there is the softer Roman contrast of light grey and brick red.

In the three-storey Palazzo del Senatore, Michelangelo treated the ground floor as the rusticated base for the giant order. The pilasters of the latter form a kind of screen to the older building, which is largely preserved behind the façade; they have no structural function.

The double-ramped stairway leading up to the piano nobile rises in front of the ground floor, so that it does not cut across the great pilasters. The stairway and the high placement of the giant order are an expression of the status of the Palazzo del Senatore. It towers above the façades of the side buildings, which ‘stand on the ground’. The visitor who approaches the Capitol from the cordonata faces the equestrian statue and sees behind it the high portal of the Palazzo del Senatore.

On plan, the fronts of the Palazzo dei Conservatori and its duplicate, the Palazzo Nuovo, are at acute angles with that of the Senatore and at obtuse angles with the cordonata balustrade. Thus the piazza is trapezoid in plan, a result of the preservation of the frontages of the two old buildings. But the strict symmetry of the twin palazzi, which is, together with the giant order, the real innovation in the scheme, makes the observer first perceive the piazza as a rectangle. As Dupréac’s engravings show, Michelangelo’s plan for the palazzi had provided for three concentric rings of oval steps leading down to the middle of the piazza; the pavement surrounded by the oval was to have had a stellate pattern radiating from the base of Marcus Aurelius’s statue. Owing to the combination of the oval and trapezoid, the spandrels in the corners of the latter give the illusion of being of equal size, which means that the trapezoid is seen as a rectangle. Further, since the longitudinal axis of the oval is at right angles to the Palazzo del Senatore and the balustrade of the cordonata, the observer simply assumes that the transverse axis too meets the fronts of the side palazzi at right angles; hence the latter look parallel. Thus the oval ornament of the pavement makes the observer overlook the ‘irregular’ trapezoidal form and see the piazza as a regular figure, i.e. as a rectangle.

The ornament of the pavement has another and immediately visible function. The great oval, which contains the oval base of the statue, and the lines of the ornament radiating from and sweeping back to it, make the statue look far bigger than it is. This illusory magnification is a characteristic of Michelangelo the sculptor. By ‘monumentalizing’ the scale of the statue, i.e. by adapting it to the scale of the surrounding buildings, the statue of the Roman emperor becomes the real theme of the architectural composition. Moreover, the numerous other statues associated with the project, such as the river-gods of the stairway of the Palazzo del Senatore or the figures on the balustrade, become integral parts of the scheme.

In the history of town planning, Michelangelo’s reconstruction of the Capitol occupies a place of its own. Its situation on the historic hill in the centre of ancient Rome was unique; it could find a parallel nowhere else. The piazza has no definite antecedents and has found no successors. The Piazzetta in Venice and the Campidoglio are among the most beautiful and the most splendid examples of the characteristically Italian municipal square spreading in front of the town hall. Each of these piazzes is bounded by relatively uniform façades; it is, in fact, a kind of ‘piazza-salone’. The ancient statue of the Emperor became the model for all the equestrian figures which were erected as symbols of absolutist power in the open squares of European capital cities from the late sixteenth century to the nineteenth.

THE PALAZZO FARNES

Michelangelo’s share in the Palazzo Farnese has been discussed in an earlier chapter. When he took charge of the building in 1546, the rear wing of the court was just begun; in the façade wing of the piano nobile a few rooms to the right of the central axis were ready for occupation. Michelangelo left unaltered Sangallo’s Ionic order of the loggia on the court side, but the entablature was heightened and decorated by a frieze with garlands, masks, and fleurs-de-lis. The heightening of the entablature made it possible to raise also the vault of the loggia, which thus springs from an unusually high level [141]. The result is the spacious, hall-like corridor in front of the state rooms of the palazzo.
which find their climax in the great salon. The present size of the salon was probably already defined by Sangallo, but its pavement and ceiling were only completed around 1550. The room has five windows on the main and three on the side façades, and its height corresponds to two storeys of the façade; thus the windows of the third storey are the openings of the clerestory of the salon.  

Michelangelo also designed the crowning cornice of the façade and the top storey of the court [81, 82]. His work on the Palazzo Farnese has been recorded in contemporary engravings. A view of the recently completed façade with the piazza in front of it was published by Lafreri in 1549 [83]. The engraving shows, in the pavement of the piazza, a large chequered pattern, with the width of its square fields corresponding to the bays of the façade. We know that houses standing on the site of the present piazza were acquired by the Farnese before 1549. Thus the layout and size of the piazza are closely related to the building itself. The geometrical pattern in the engraving would have given the piazza a clear and definite scale governed by the architecture; it is as much a part of the architectural composition as the oval ornament in the pavement of the Campidoglio. Thus the engraving may illustrate an unexecuted design for the pavement of the Piazza Farnese by Michelangelo. The same is true of a project for the rear wing of the court which is reproduced in an engraving dated 1560 and ascribed to Michelangelo himself [142]. This project was to open the piano nobile in the rear wing as a loggia. According to Vasari, Michelangelo had planned a bridge to unite the gardens behind the palazzo with the Farnesina gardens on the other side of the Tiber, which were rented by the Farnese at the time. Just as the piazza in front of the palazzo was to play its part in the architectural composition, the open space behind it was to enter into the architectural whole. The purpose of the three-bay loggia was on the one hand to reveal to the spectator standing on the piano nobile in the façade range a view over the river and gardens, and on the other to make the court visible from the gardens. It is characteristic of Michelangelo that only the piano nobile was to be provided with open arcades and that the top floor, which is articulated by pilasters and windows, was not. If the observer standing in the court has the feeling that he is in a room entirely enclosed by walls, that is due to a great extent to the shape of the floor of the court.  

ST PETER'S

When Michelangelo succeeded Sangallo as architect-in-chief of St Peter's in 1546, he embarked on a task which, to many of his contemporaries, seemed beyond human powers.  

The administration of the Fabbrica of St Peter's took it for granted that the building would be continued at enormous expense in accordance with the model made by Sangallo in 1539-43 [16c]. It must have been a shock to them when Michelangelo, immediately upon taking up office, had two models made which presented a totally different design. It was only by the support of the Pope that he was able to get his scheme accepted. For that matter, even the successors of Paul III always took Michelangelo's part in his clashes with the officials of the Fabbrica. Since he refused in advance any payment for his work, his position was invested with a very
high moral prestige. Eventually he received 50 ducats a month, but the payment was made by the papal treasury rather than the Fabbrica. Thus he was free from pressure by petty officials.

Michelangelo solved the structural problems which had proved insoluble to his predecessors. He promoted building operations with such unswerving resolution that at his death the completion of the building could be regarded as certain. When he died in 1564, the south arm of the cross was finished, in the north arm only a part of the vaulting was incomplete, and there was little work left to do on the drum of the dome. The north and south arms built by Michelangelo form the transept of the present church. The west arm of the cross, the present chancel, was built in the late sixteenth century after the demolition of the Rossellino-Bramante choir; in accordance with Michelangelo's project, it is identical in plan and elevation with the other two arms.

Sources for the evolution of Michelangelo's project and the progress of work during his term of office are his own sketches, documents, accounts, and many views of the unfinished building, as well as three engravings by Dupérac which appeared soon after Michelangelo's death and reproduce the plan, section, and elevation of St Peter's [143, 144]. The interpretation of these sources is still to a certain extent controversial. As in the case of the Capitol, Michelangelo left no definitive and binding model. Dupérac's engravings show the north and south arms of the cross as executed by Michelangelo; the attic is shown after its alteration under Michelangelo's immediate successors. There is no doubt that Dupérac's reproduction of the west arm corresponds to Michelangelo's intentions. Contradictions in the drawing of the eastern facade, on the other hand, make it probable that no definite plans for this part had been made when Michelangelo died.

The first thing to strike one in comparing Michelangelo's plan with the plans of his predecessors is the strengthening throughout of the outer walls [160, 74]. This is a result of the radical simplification of the structural system. The four great piers of the dome are not surrounded, as they were, by a host of rather confusing subsidiary chapels, but by the square of the outer walls, from which only the apses of the arms of the cross project. The ambulatories of the arms of the cross as well as the campanili have been eliminated, the arms shortened, and the eight 'counter-piers' which receive the sideways thrust of the dome merged with the outer walls [145].

When Michelangelo declared that he had restored Bramante's plan, that can only be taken literally in so far as the dome, like that of Bramante, was to rise above the intersection of a Greek cross with tunnel-vaulted arms terminating in apses. What Michelangelo did not adopt was Bramante's system of minor domes, which, in their structural function and spatial multiplicity, definitely recall antique thermae. The balanced grouping of minor domes and campanili, of higher and lower chapels, was incompatible with his goal of simplicity in structure and unity in the whole. The outer walls were now raised to the same height all round and were articulated by the same paired giant Corinthian pilasters which Bramante had designed for the piers of the dome in the interior [146]. The attic over the main cornice was also carried round the whole building, and it conceals the vaulting of the arms of the cross. A pedimented portico was to be added to the east arm of the cross as a facade; its columns were to be of the same height as the pilasters articulating the walls and the pediment would have risen only slightly above the attic.

The perfect concord between interior and exterior is a definite innovation in the design. The articulation of the outer walls is identical with that of the walls bounding the interior. The true 'façade' of the building is actually its whole exterior. Michelangelo restored Bramante's purely centralized plan, since his own would have presented the same view on all sides. The entrance portico would hardly have interrupted the continuity of the exterior walls.

In 1558–61 Michelangelo had a wooden model made for the main dome which has been preserved [147]. The dome itself was erected by Giacomo della Porta in 1588–91 [148]. Like the dome projected by Michelangelo, it is double-
shelled, but it is steeper than Michelangelo’s hemisphere and slightly pointed.17 Since Porta altered the outer shell of Michelangelo’s model in the same sense, Dupérac’s engravings, which show the model before this alteration and in its relation to the building as a whole, reproduce Michelangelo’s ideas better than the model itself and the finished dome.

In its hemispherical form – though not in its structure – Michelangelo’s dome is reminiscent of the Pantheon and of Bramante’s project of 1506 [20, 147]. Like Bramante’s, it rises above a colonnaded drum. But in Michelangelo’s dome, the columns of the drum are paired and flank the windows instead of screening them. To the eye the rhythmic sequence of paired columns and windows looks like a continuation of the paired pilaster motif of the outer walls. While the verticals dominate the drum, the hemispheric profile of the cupola gives the impression of a resting form in which the upward movement of the verticals comes to an end. Its ribs taper upward and lead to the point at which the foot of the lantern cuts across them. Just as the dome rests on the horizontal cornices of the drum and its attic, the lantern rests on the horizontal ring of the summit of the dome. In this way an equilibrium is achieved between verticals and horizontals; the huge pilasters of the outer walls and the profile of the dome, as well as the festoons on the attic of the drum and the little dormers of the dome, all play a role in achieving this effect.

Michelangelo’s model of 1558-61 was the product of years of thought and experiment. Soon after taking up office he wrote to Florence asking for the measurements of the Brunelleschi dome. Unlike Bramante and Sangallo, he obviously had a double-shell structure in mind from the start. In the first studies, both shells have a steep ‘Gothic’
outline, and the early drawings for the drum and lantern recall the cathedral of Florence. It can be gathered from Dupérac's engravings that the ratio of height between the dome and the lantern was not finally settled till after 1561, i.e. till after the completion of the model. It is typical that Michelangelo should have used the model as a 'visual reference' and have revised his plans again at the last moment; in this case formal and structural considerations stood in a close reciprocal relationship.

The minor domes which appear in Dupérac's engravings are quite incompatible, both in outline and detail, with Michelangelo's style. The formal vocabulary points to Vignola, who was Michelangelo's successor at St Peter's. Various attempts have been made to explain the discrepancy. It is not unlikely that Michelangelo meant to omit the minor domes; in that case what Dupérac reproduced was one of Vignola's new and personal ideas. On the other hand, the possibility that Michelangelo had planned minor domes, but left no designs for them, must be taken into account. In that case, Vignola would have 'completed' Michelangelo's design for Dupérac.

The minor domes which were executed were designed by Porta; the northern one was erected shortly before the main dome, the southern one soon after. They are not substantially different from the design shown in the engravings, but the profile is steeper, the drum and ribs have vigorously projecting outlines, and instead of the insignificant lantern Porta copied Michelangelo's lantern on the New Sacristy of S. Lorenzo.

The main dome of St Peter's is sustained by Bramante's piers, and, as Bramante intended, it dominates the exterior view of the church. Michelangelo devised the practical methods by which Bramante's ideas were realized, and it is due to him that the ring of walls enclosing the interior was merged with the dome in one artistic whole, within which the individual members have a perfectly clear structural and aesthetic function. The mutual response between the paired pilasters thrusting up from the ground and the mighty entablature is found again in the interlacing of verticals and horizontals in the attic of the drum. This polarity of upward-soaring and supporting members at rest finds its ultimate expression in the dome. The steeper, taller outline of Porta's outer shell makes the completed dome rather lighter and the verticals rising to the dome rather more pronounced than Michelangelo had intended, yet the dome we see today is so far in accord with Michelangelo's ideas that we may contemplate it as his work.

LATE ARCHITECTURAL PROJECTS

In 1559 Duke Cosimo I of Tuscany applied to Michelangelo for designs for the church of the Florentine colony in Rome - the building begun under Leo X had never risen above its foundations. A wooden model was made after the design selected by the Duke which has come down to us in two engravings and several copies of drawings. Preliminary studies by Michelangelo's own hand have also been preserved. These projects had no influence on the present church, which was built under the supervision of Giacomo della Porta.
Michelangelo’s final project [150, 151] provided for a circular domed area surrounded by eight lower vestibules and chapels, alternately rectilinear and oval. The plan looks like a conglomeration of eight huge wall sections whose inner faces, each set with paired columns, form the cylinder under the dome; from them emerge the walls surrounding the subsidiary chapels and vestibules. The oddly amorphous shape of the piers of the dome is due to

the configuration of the enclosed space. The conception of the design does not originate in the ‘positive’ form of the piers, but in the ‘negative’ form of the space, the angular shape of the vestibules and choir, and the oval of the diagonal chapels.

The eight subsidiary chambers are not connected with each other, but are only open towards the centre in eight arches, which are equal in height but not in width. Broad
The memorial chapel of the Sforza in S. Maria Maggiore, begun about 1560 and consecrated in 1573, is the only building in which Michelangelo was able to realize his late conception of space [153]. The measurements are unusually large for this type; height, width, and depth measure about 18 m. (60 feet) each. These proportions would have been ideally suitable for a square or a cross-shaped plan with a dome over the crossing. But Michelangelo brings the 'crossing' forward, close to the wall of the aisle of the church, with which it is connected by a narrow and short tunnel-vault. The transepts of the chapel have vaulted apses; in plan their walls are noticeably flattened segments of a circle which adjoin the outer side of the crossing piers [153]. The fourth arm of the cross, which houses the altar, is rectangular in plan, and the width of the tunnel-vault is greater than its depth. Free-standing columns are set in front of the diagonal faces of the crossing piers. The vault over the crossing looks like a swelling sail. Between the narrow springers of the arches and the capitals of the columns, huge impost blocks are inserted [154]. Their mouldings are continued in a flattened form round the walls.

The architecture of the time provides no analogy to the seemingly random curve of the crossing vault and the apses; they discourage geometrical definition. These curves are not determined by the geometrical form of wall-planes or arches, but by the enclosed space, by the configuration of the volume bounded by walls and arches. One element of the 'content' of this space consists in the travertine columns, 9.5 m. (30 feet) high, which stand free in the space like monuments. The monochrome of the walls, the markedly low relief of their articulations, the abundant light streaming from high windows, the peculiarly smooth transitions between the sections of the vaulting – these are all means which help to bring home to the observer the sculptural quality of the space. As the plan shows, that interior is extended as far as the available area allows; at the same time the flattened segmental curves of the apses and vaulting convey to the observer the impression that the shallow shapes of the walls and arches define the available space with the greatest possible economy.

The Porta Pia [155] is named after Pope Pius IV (1559–65); it stands at the end of the present Via XX Settembre, an ancient traffic artery which the Pope had widened and levelled [43]. Michelangelo's name appears in the agreement concluded with a building contractor for the gate; according to Vasari, the Pope had selected the least costly of the three

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153. Michelangelo: Rome, S. Maria Maggiore, Sforza Chapel, c. 1560–1573
154. Michelangelo: Rome, S. Maria Maggiore, Sforza Chapel, c. 1560–1573, capitals and entablature
The treatment of the detail is equally compressed and unusual. The vertical flutings of the pilasters rise beside the horizontal strata of the passageway jambs; the segmental pediment rolls inwards into volutes. A garland hangs on these volutes with the ponderous marble block bearing the papal inscription floating above it. The cornice and capitals are represented by plain blocks. However difficult the analysis and description of these forms may be, it would be a great mistake to regard them as mere improvisation on Michelangelo’s part. As the many drawings show, they are the fully ripened fruit of precise preliminary studies. They are, of course, quite alien to the classical orders: in detail and composition they could not be more personal.

In the distant view from the city, the accumulation of heavy, shadow-casting forms leads the eye to the pediment group over the passageway. On the other hand, the passageway itself, when one walks through it, seems oppressively

designs submitted by Michelangelo. After the deaths of Michelangelo and the Pope, work was still in progress. In their present form, the outer face and the attic of the gate date from the nineteenth century; we cannot gain from Michelangelo’s drawings any idea of the attic he had designed himself.

Michelangelo’s preliminary studies, which are only concerned with the frame of the passageway, derive from the type of the aedicule portal. In the execution, the passageway is the central bay of a three-bay front, its high relief standing out against the smooth brick planes at the sides. The straight lintel bending into obtuse angles at the corners is spanned by a flattened lunette after the fashion of a relieving arch; the cornice above it, supported by the framing pilasters of the passageway, is spanned in its turn by a broken segmental pediment, which is again crowned by a much broader triangular pediment.
cramped and low in comparison with the height and weight of the pediment. The preliminary drawings themselves show the contrast between a cramped opening and a strong and weighty frame which can be seen in the doorways of the New Sacristy.

S. MARIA DEGLI ANGELI

Pius IV also commissioned Michelangelo to convert the tepidarium of the Baths of Diocletian into a church. The interior [156], which is about 59 m. long, 24 m. wide, and 30 m. high (194 by 79 by 99 feet), is unique in one respect, namely that the ancient vaulting and the eight granite columns, 14 m. (46 feet) high, which support the vaulting, have remained unaltered.

The initiator of the enterprise was a Sicilian priest who, as early as 1541, had conceived the idea of converting the great hall in the centre of the vast remains of the baths into a church to be consecrated to the Virgin and the Angels.

In a papal bull dated 1561, Pius IV assumed the responsibility for the building. The church was to contain the Pope's tomb, and the adjacent buildings were ceded to the Carthusian Order for the erection of a monastery. The name of the new church, S. Maria degli Angeli, tallies with the Christian name of the Pope, Giovan Angelo; moreover the thermae were situated on the Strada Pia, which leads to the Porta Pia.

It was already noted with surprise in a contemporary account that Michelangelo placed the high altar on the transverse, not the longitudinal, axis of the great hall, so that the hall seems to be the transept of the church. The square rooms in front of the short sides and the rotunda opposite the new chancel were converted into vestibules and provided with porches. In this way it was possible to reduce the
Michelangelo's remodelling is far removed from any attempt at an archaeological restoration of the interior of the hall. He probably knew perfectly well that antique interiors - even those of the thermæ - were decorated with polychrome stucco or marble: the brightness and variety of the Baroque decoration of S. Maria degli Angeli approximated far more closely to the original state of the tepidarium than the austere monochrome of the sixteenth-century church.

In spite of all their differences, the designs for S. Giovanni dei Fiorentini, the Sforza Chapel, and S. Maria degli Angeli show that interest in spatial configuration which is characteristic of Michelangelo's late architectural works. These unique spaces have no true forerunners or successors in the Cinquecento. Their plans are no longer combinations of simple geometrical forms - the square, polygon, semicircle, Greek cross. The curve of the apses of the Sforza Chapel consists of a random segment of a circle; in plan, the diagonal chapels of S. Giovanni dei Fiorentini are in the new elliptical shape first used by Peruzzi; the contours of the dome piers of S. Giovanni elude any kind of geometrical definition.

The monochrome of these interiors was an essential part of their particular quality. It has been preserved in the Sforza Chapel, and there is documentary evidence of it for S. Maria degli Angeli; in St Peter's and S. Giovanni it can be deduced from the reproductions of Michelangelo's designs.

The motif of columns standing free in front of the wall appears in unprecedented monumentality in the 'column monuments' in the Sforza Chapel. In S. Maria degli Angeli extant antique columns were used by Michelangelo in a similar way. The motif recurs in the columns of the loggias of the Capitoline palazzi. Free-standing columns appear in the preliminary studies for the Porta Pia as an alternative to the pilasters which were eventually executed.

Since Vasari, what has been regarded as characteristic of Michelangelo's work lies in the unconventionally novel and quite personal forms. Whether that is praise or blame will depend on the critic's outlook. Michelangelo's 'licences' arise from his independent approach to the commission in hand; they are not arbitrary, but the expression of his disregard of traditional schemes and the traditional apparatus of form. Michelangelo's architectural projects are never visionary - on the contrary, they take full account of the client's wishes and local conditions. Works left unfinished at his death, such as the dome of St Peter's or the Capitoli, were finished practically as Michelangelo had conceived them, less from respect for the 'divino' than because Michelangelo's design was regarded as the best solution of the task in hand.