BERNINI'S DESIGN TO COMPLETE PIAZZA DI SAN PIETRO

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Summary

Accomplishment of the square complex faced by San Pietro was interrupted by the death of Pope Alexander VI in 1667. No authentic data have subsisted on how Bernini proposed to complete it. Generally, the sketch made for Bonacina's etching is relied on in literature in assuming that the square of two parts would be confined by a triumphal arch-like construction to the east, between arms of the colonnades. But the composition system of the square hints to a third square part before Piazza Obliqua, protracted like a street, planned by Bernini. This study written two decades ago (comprising references of that time) tries to reconstruct the third square part, missing Piazza Rusticucci, analyzing the process of action made on the onlooker walking along the complete set of squares.

Mid-17th century, Rome had been an important center of architecture. Its style pervaded regions beyond Italy, almost all Europe, and set out, or at least influenced development of the local, regional variety of Baroque in several countries, such as castles by Le Vau and interiors by Lebrun in France, works by Italian masters immigrated in the 17th century to southern German areas and to Bohemia, by the Tessin family in Sweden, palaces by Fischer von Erlach and Hildebrandt in Austria. In Rome, the very center, quite a number of great creations indicate the rapid upswing; works of the generation after Maderno, Bernini, Borromini and Cortona. Such an efflorescence was but once encountered in Rome before, one and a half millennia earlier, by the imperial times. Just as the antique Rome can be characterized by a single monument: Pantheon, one of the 17th century creations: the square complex in front of San Pietro, can be designated to completely express peculiar style endeavours of that age, although it is less animated, with less impressive contrasts than the parvis of Sta. Maria della Pace, with a less vehement play of shadows and lights than that of the façade of San Carlo alle quattro Fontane, and compared to the surprisingly rich play of opposite space and mass forms of San Ivo alla Sapienza it exhibits an almost cool calm. There is no such thing as the rather free, individual shaping by masters having come to the South from North-Italy, or having studied in the north. The somewhat overheated Baroque

Fig. 1. Piazza di S. Pietro and the Vatican district

phantasy prone to extravagance is moderated here by self-restraint, making it, on the other hand, typically Roman. There is no other creation from the 17th century but the San Pietro colonnades to integrate the twoness rather typical of Rome by that time, Baroque spirit requiring infinite perspective even for details, and "gravitas" inherited from Antiquity. It is by no chance that even contemporaries felt Piazza di San Pietro to be the symbol of the entire city. As finely formulated by E. A. Brinckmann in a passage on the paragon of the Piazza di San Pietro and di Campidoglio in his "Stadtbaukunst": "jede Säule erinnert an die Piazza di S. Pietro, in jedem schattenden Gesims lastet gravitas der Piazza di Campidoglio. Wie Hirn und Herz dem Charakter in jeder Einzelhandlung zum Durchbruch verhelfen, so erfüllen beide Plätze durch ihre emporgehobene Präsenz jedes Stückchen der Stadt mit ihrer Gesinnung."

Roman squares by Michelangelo and by Bernini are affine not only by artistic values, by ennobling to their niveau their wider environment, nearly all the city, in virtue of their all encompassing effect, but also by their incompletion, often common fate of great creations. Two decades have passed after the decease of Michelangelo, until the Piazza di Campidoglio achieved its present form. The Baroque constructors, in particular, Giacomo della Porta and Girolamo Rainaldi, altered details of the original design, modified dimensions of sculptures topping the façades concluding the Cordonata, hence also their scale compared to other parts of the complex. Still, the original idea is relatively

truly reflected by the actual Piazza di Campidoglio. In the realized square compared to the designed one, only the richness of shades decreased, rather than to endure a change of the kind of effect. In spite of minor dissonances, the same process of disclosure and evolvement, the same regularity of interrelation between building and square, square and city prevail as characterized the original design by Michelangelo. The same problem arises from a different cause, and in an opposite way, in the work by Bernini. Two essential parts of Piazza di San Pietro: Piazza Retta and Piazza Obliqua, had been realized during the life of, and directed by Bernini, hence exactly respecting his designs down to details. The decease of Pope Alexander VII interrupted the final completion, construction of the third part of the square — referred to as terzio braccio in literature — or maybe a wing closing up the space between colonnades. But exactly the lack of this "third arm" causes difficulties, namely assumed completion possibilities permit different interpretations of the complex of squares as a whole. The more or less contradictory interpretations may be illustrated by quotations from recent literature.

The excellent urban history by Paul Zucker: "Town and Square" published in the late '50s points out interesting relationships in analysing the St. Peter Square, for instance the triple rhythm of spatial division along the main axis, repeated by the obelisk and the two fountains, turned to plastic. But he bypasses the problem of the "third arm" and starts the discussions by stating that Bernini designed a priori a system of three units: Piazza Retta directly adjacent to the church façade; Piazza Obliqua seeming elliptic due to the

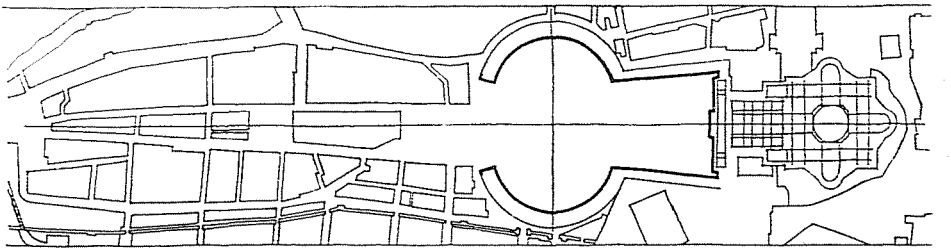


Fig. 2. Piazza di S. Pietro and surroundings before developing the Borgo district

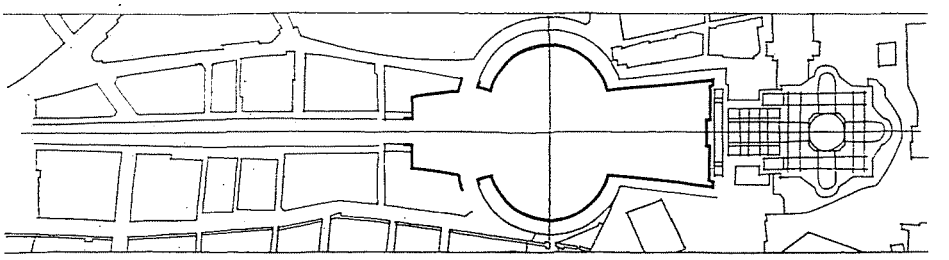


Fig. 3. Piazza di S. Pietro and surroundings after opening via della Conciliazione

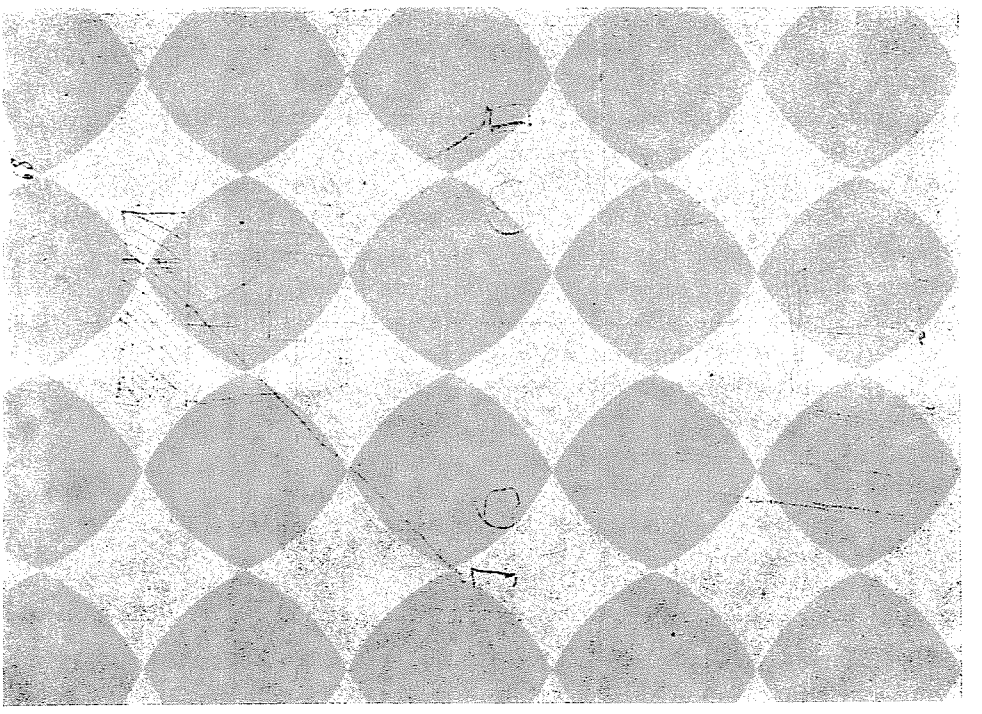


Fig. 4. Ground plan sketch by Bernini. (Roma, Bibl. Vat. cod. Chigi. Published in: Brauer—Wittkower: Die Zeichnungen des Gianlorenzo Bernini, Tafelband, 63 a)

pavement pattern; and Piazza Rusticucci collecting visitors and sending them forth that was never realized and actually it is part of the avenue from the Tiberis bank to the church. "Bernini conceived of the square as being subdivided into three units: the piazza retta, immediately before the church façade; the piazza obliqua, appearing as an ellipsoid through the pattern of the pavement, . . . ; and the third, the Piazza Rusticucci, never brought into a definite artistic shape . . . The Piazza Rusticucci collected and directed approaching visitors toward the piazza obliqua."

Thus, Zucker handles Piazza Rusticucci — without defining its shape and size — as an important element of the set of squares expected after Bernini to connect the Borgo quarter and the parvis proper of the church. Rather than to be abruptly displayed, Piazza Obliqua would be gradually unfold, by passing along the Piazza Rusticucci, directed in itself, in conformity with its function to guide, direct, thus, it would have a form oblong along its axis. This concept is closest approximated by the first design of Carlo Fontana, in spite of the criticism by Zucker.

Rudolf Wittkover, one among the best experts in Bernini's work, uses a more marked restriction. His opinion relying on a sketch by Bernini has first

been formulated in "Die Zeichnungen des Gianlorenzo Bernini" (Drawings by G. B.) with co-author Heinrich Brauer (Fig. 4). The sketch referred to, probably made in 1667, shows schematic ground plan of the square, and marks out an about trapezoidal square of rather small depth on the east side of Piazza Obliqua, next to the Borgo district. Size of the square, and at the same time, the idea of Bernini are unambiguously read off the two straight lines drawn, starting from the middle of the wing closing the square, and after having touched the colonnade corners they intersect the arched line of the colonnade so that the enhanced openings indicating the transversal axis of Obliqua just lie within the angle included between the straight lines. Obviously, Bernini marked out thereby the optimum point of folding out the Piazza Obliqua, where all the square may be perceived at a single glance; the enhanced elements bounding bilaterally the field of vision, and the somewhat recurbed arch of the colonnade create a safe, determined space sensation.

Starting out of it, Wittkower stated Bernini to have renounced in his last sketches of the idea of a large-scale atrium joining the façade, striving, instead, to detache the square system from the church by enhancing the self-containment of the forum-like developed square. But he unambiguously states that by opening the Piazza Obliqua to the east, by creating the spatial counterpart of Piazza Retta, the earlier closed, neatly delimited space conception has not been renounced of at all. Bernini always applied clearly perceptible space boundaries, also here the surveyability was for him a decisive condition of the wanted effect.

Since then, Wittkower has repeatedly returned to the problem of closure of the square, such as in the study "Il terzo braccio del Bernini in Piazza S. Pietro" published in Bollettino d'Arte, 1949, and afterwards, in the chapter on Bernini of "Art and Architecture in Italy 1600 to 1750". All these retain the first formulation almost invariably. He states Bernini ". . . was led to this last-minute change of plan certainly less by any consideration for the visibility of the dome than by the idea of creating a modest ante-piazza to the oval . . . In addition, the visitor who entered the piazza under the "third arm" would have been able to embrace the entire perimeter of the oval."

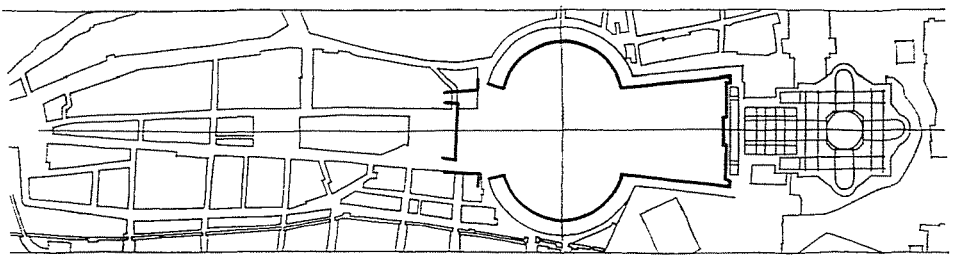


Fig. 5. The square system reconstructed according to Bernini's sketch

To name Piazza Rusticucci a modest ante piazza — even in this reduced size — is a somewhat exaggerating generalization of the quotation from Chantelou. His journal recording all important events of Bernini's voyage to Paris relates that soon after his arrival, Bernini visited the Theatine church under construction, and advised the monks to build a small vestibule before the space itself. Namely, after entering, usually seven or eight steps are made before looking around, and for a fully round church this would disturb perception of the circularity. Hence, the instant of entering has to be protracted by making it to be still outside the space itself. This observation was exatly validated by Bernini for the central church in Ariccia. Piazza Rusticucci can, however, hardly be considered as a modest parvis, since it is about 100 m wide and 45 to 50 m deep in Bernini's sketch.

Zucker was seen above to agree with the possibility of a Piazza Rusticucci as ordinator, enhancing thereby dynamics of the entire system. For Wittkower, however, the third part of the square — paradoxically spoken — exists only as a self-denial. That is, Bernini completed the previously two-membered set of squares with a new element only to define the ideal sighting point, from where looking at the Piazza Obliqua seems to be more enclosed visually than it could be if really enclosed. Therefore Wittkower disapproves of Carlo Fontana's designs, hence of course, also the modern development of Borgo. Although he recognizes that "This has solved one problem, and only one, namely that of a full view of the drum and dome from the distance; . . . To this fictitious gain has been sacrificed Bernini's idea of the enclosed piazza . . .".

Some authors consider the discussed slight extension of the elliptic square as a solution alien to Bernini's concept. They consider St. Peter Square as the Baroque successor of the atrium of the primitive Christian basilica, that is, a courtyard surrounded by a colonnade, of richer space effect, that, accordingly, is of enclosed character not only by its effect but formally neatly confined. This is the standpoint of Pierre Lavedan, author of the comprehensive, significant "Histoire de l'Urbanisme" published in a revised edition at the end of the '50s. Lavedan completely omits the last sketches by Bernini. He considers the drawing made in 1659 in Bernini's workshop for the Bonacina etching (Fig. 6) preserved in the British Museum as the final, mature variant of the design. At that time the colonnade was already in a rather advanced state of construction, so that the drawing may be considered as a working design — for the given time. It differs from the really constructed one in two details. Instead of the balustrade over the main cornice, the drawing exhibits a solid attic, and the interval between the two arms of the colonnade is enclosed by a triumphal arch-like construction of nine axes. And although it can be demonstrated that, eight years later, Bernini himself intended to further develop the design, Lavedan considers the square to be incomplete compared to this earlier drawing. He states that the lightening of the solid attic to a balustrade was a

minimum alteration, maybe even a progress, but the inenclosedness hurts gravely Bernini's concept. "L'ajourement de la balustrade est une variante minime, peut-être un progrès; la non-fermeture de la place est au contraire une altération grave de la pensée de Bernin. Son œuvre est restée inachevée." He stresses again, almost pathetically, the same, in commenting on designs by Carlo Fontana, or similar ones from the 18th and 19th centuries. He feels them

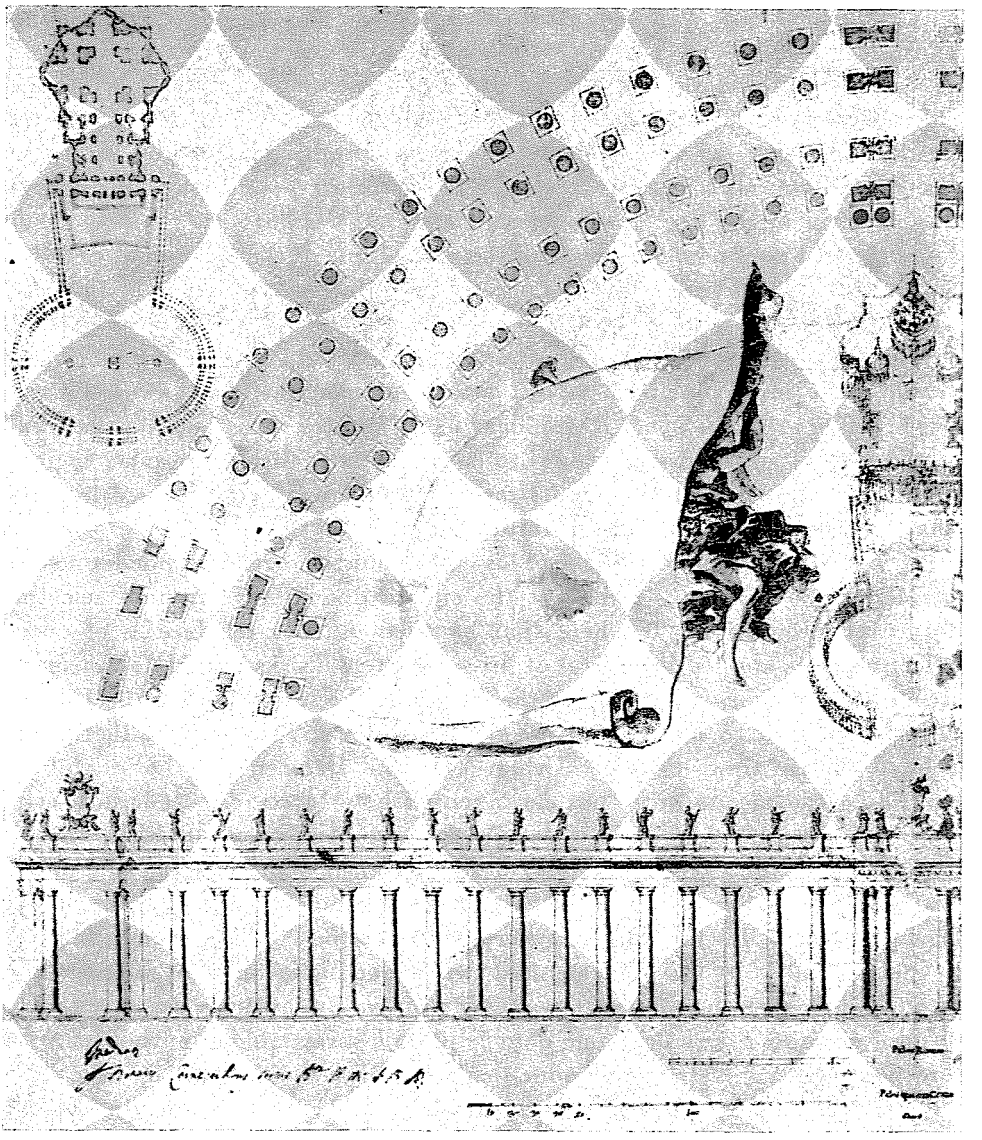


Fig. 6. Pattern drawing for G. B. Bonacina's etching. (British Museum, London. Published in: Brauer—Wittkower: op. cit. 162 a)

to be sharply contradictory to Bernini's intentions who not only did not intend to increase the square but on the contrary, he endeavoured to mark out exactly the spatial limits he considered to be favourable, by a ring of constructions, as if telling his successors: up to this point but not any farther. "Tous contredisent la pensée de Bernin qui non seulement n'a jamais désiré une place plus grande, mais qui voulait marquer par un cercle de bâtiments les limites admises par lui, comme pour dire à ses successeurs: Vous n'irez pas plus loin."

One may wonder if it is worth-while to be concerned with the unrealized third arm of Piazza S. Pietro to this depth? Namely the quoted opinions of the authors differ rather in details, while the essentials of the square system are about identically interpreted. They agree in that Bernini a priori has designed a square of enclosed effect — as told indirectly also by Zucker in criticizing Fontana's design. Compared to the primary concept of the square, the problem of the degree of enclosedness is a secondary one: does it result from the real confinement following the arched line of the colonnade, or is it a visual one after having added the ante-piazza. However, it has to be said that the examination of different alternatives of the enclosure — and maybe the arise of another possibility in addition to the discussed ones — is not motivated by the mere endeavour to historical authenticity, neither by the reverence to the creation or to the epochal grandeur of the master. Insistence on the traditional idea of enclosed space leads to contradictions within the inner logic of the square system, and change its form — relations closely defined by their share in the general impression into a play.

Bernini himself often spoke of his endeavour to correct the ponderousness of Maderno's façade by means of the square design, by carefully selecting form and proportions. It's here that he tried out the regularities of visual effect changes applied in several of his subsequent works. Chantelou recorded in his journal that, in presenting the design of the square before the Louvre, Bernini referred to his experiences gathered at the Piazza di S. Pietro. He related that in times of popes Urban VIII and Innocent X, the idea of demolishing the façade arose but he invented how to correct Maderno's error without demolition. Its means became clear from another talk with Colbert who objected the excessive height of the designed main building of Louvre, dwindling the gallery wing on the Seine bank. Bernini's decisive argument was again S. Pietro. Its façade was generally felt as too compressed. He found a remedy by advising the pope to build two projecting colonnades making seem the façade higher than it really was. "Il a dit qu'il n'avait eu ces égards qu'à l'église de Saint Pierre de Rome dont le portail paraissait bas au jugement de tout le monde; il avait trouvé pour remède et conseillé au Pape de faire deux ailes de colonnades qui faisaient paraître le portail plus haut quoique il ne le fût pas". Essentially the same has been said in a record by Bernini in the Chigi codex preserved in the Vatican Library. Accordingly, the portico not only

enhanced the beauty of the church but also concealed several of its faults by so to say superelevating the façade, else slumping in itself. "S'aggiungeva che il formare un portico, non solo apportava maggior bellezza e decoro al Tempio ma veniva a coprire molte imperfettioni di quello, essendo che la facciata che per se stessa è di forma quatta haverebbe spiccata, et in certo modo si sarebbe sollevata sopra se stessa".

A talk with Vigarani in Paris points to how much Bernini cared for the divergence between the objective image of the work, and the emotionally tainted image depending on optical perception. He often stated that "one and the same object may act quite differently optically" depending on the direction and degree of how the real connection of scale of the elements gets deformed by one of the motives. Although, like other masters of his age, also Bernini has a rather academic attitude, he does not let to prevail the impersonal order of a preestablished canon of forms in his creations. Instead of deducing from an abstract rule, his point of departure is the real impression made on the onlooker, and he often involves its random, unpredictable effects in modifying the original design during construction. This is what explains his peculiar method of design. He never strives to a detailed, final solution, but gives only sketches for the complex as a rule. This simultaneous development of the primary idea where every form is a factor of the overall impression aimed at, leads across a series of perpetual changes to the realized building. This very method induces us to consider — in addition to sketches — also precise drawings made in Bernini's workshop to settle stages of this process, as working drawings likely to be modified in construction.

A passage of the quoted record in the Chigi codex is an interesting proof of how Bernini's first sketches relied on the careful study of features, site and real dimensions. Namely Bernini, aware of the immensity of the task, considered it futile to design such a huge work on paper, enclosed in a room. Therefore he traced two life-size arcades with pilasters, cornice and balustrade on the façade of the tallest building of the square for the pope to judge proportions on the site, true to size. Michelangelo was referred to, who first made the designed cornice of the Palazzo Farnese in wood, and the life-size model seemed small enough on the building to be increased by half its size.

"Considerò subito il Bernino la grandezza dell'opera la vastità della Piazza, e la vicinanza della gran mole di S. Pietro, e per questo giudico molto fallace chiudersi in una camera e restringere in un foglio una machina così grande, ma scielse la maggior Casa che fosse in d.[a] Piazza, et in grande vi segnò due archi con i suoi pilastri, cornice, et balustrata, acciò S. Santità dalla grandezza del sito ne giudicasse la proportione ricordevole che il Buonarroti prima di principiare il Cornicione del Palazzo Farnese ne fece il modello di legno e messolo nell'altezza del suo sito riusci così piccolo, che lo accrebbe quasi la metà, . . .". Bernini first tried out the optimum solution on a 1 : 1 drawing.

In the course of construction, the building itself acted as a model, and the design was perfectioned with regard to the actual impression of building parts already erected.

No further quotations seem to be needed to accept as proven that, in building the colonnade, Bernini attempted to optically correct faults of the façade by Maderno; that is, selecting, "calculating" form and dimensions of the square, connections between parts, so that the complex image of church and square yields an optically corrected, perceptible image of the façade, which differs from its real scale. The earlier impression made by the façade, poor enough to consider its demolition, unambiguously hints to a rather important difference — at least in design — between the real and the visual image. It is rather curious that most of the authors have been little concerned with it.

What is the reason of the contradiction between facts stated by Bernini and conclusions drawn from the examination of the square itself? Maybe that an early stage of the design, perhaps with compromises, has been considered to be the final one, and even accepting the possibility of a more open, dynamic part of the square, the part realized according to Bernini's designs, and the debated ulterior complement have been considered independently. Thereby in either case, analysis refers to a delimited, enclosed space form, within that, however, — as seen above — layout becomes arbitrary. Bernini is known to have experimented with the ground-plan system and parts of the colonnade on the site. The share of the detail in the overall impression was also tested on full-size drawings or on completed parts. He had a determined idea as well on the final sensation expected to arise. Still the erected construction does not raise the feeling of organization to this aim, of an order of superimposed effects building up the overall impression, but a somewhat wanton sophistication of the ground-plan. There are two possibilities to eliminate this contradiction. One of them is to accept it as an a priori contradiction of the plan. However, although this phenomenon is current in Baroque, it would be unrightous to Bernini not to look for a solution where the constructed part of the square justifies Bernini's endeavour, integrity of conception in all details. But this can only be achieved by considering the complex of Piazza Retta and Piazza Obliqua as elements of a still larger scale, dynamic spatial system open to the access road, rather than as a delimited, static square formation. Thereby the earlier question whether it is worth-while and necessary to be absorbed in the problem of enclosure of the square has been answered. It is not only necessary but indispensable in order to understand the internal motivation — or else, Baroque logique — of Bernini's creation.

Before closer examination of the possibility of completing the square, one may ponder how the idea of a closed square is compatible with Bernini's conception, and whether it may fit at all the general Baroque space approach. An enclosed space means strict delimitation, space formation independent of

the environment, introversion, an artificial, excessively self-contained spatial order, complete by being fully separated. Therefore — at least in respect of the tendency of its effect — it is of static character, and organized from inside out, related to one standpoint: to the center. All this is, however, peculiar to Renaissance, in particular to Firenze at the age of Lorenzo dè Medici, second half of the 15th century, an age where man meant so to say the cosmos itself and built environment the space centered on man. By the mid-17th century, this anthropocentric approach has fundamentally changed. Man is not embodiment any more but only part of the cosmos, it fits like a link the chain of comprehensive, rational order of phenomena. Recognizing the new "role" of man naturally entrained changes of the built "scenery" of life to make it more complex and differentiated. Rather than to provide for a feeling of delimitation, now it is expected to create an organized relation with the environment. Of course this relation was strongly directed, just meeting demands of a restricted function. But it sufficed to repeal the static enclosedness of the space, to make it dynamic instead, an active participant of the "plot" taking place there. Organization to a single standpoint where either the exterior or the interior acted at a time was off. While walking along this space, the standpoint itself continuously shifted, so the exterior and the interior gradually interchanged, depending on the progress direction. A specific Baroque means of this interchange is, among others, the axial guidance. Why would Bernini refrain from this concept modern and current in the 17th century, the more so since he followed it in other works simultaneous to St. Peter Square. This is well exemplified by the Louvre design where he had been concerned with axial doorways, the square before the Louvre and the avenue of access almost more than with the building itself. All the non-architectural activity of Bernini shows that anything of static was alien to his mode of viewing. Domenico Bernini writes in his "Vita del Cavaliere Bernini" that his father introduced a new method in portrait sculpture, later on adopted by many artists. He never wanted the subject to pose, but he wanted to observe him during natural behaviour, conversation, motion, since — as he said — he could see and simulate him in this way alone true to reality. A subject stiffened in a pose is less similar to himself than a moving one. Motion bears peculiarities of the individual different from those of others, lending similarity to the portrait. ("Tenne un costume il Cavaliere, ben dal commune modo assai diverso . . . Non voleva, che il figurato stasse fermo, ma ch'ei colla sua solita naturalezza si movesse, e parlasse, perche in tal modo, diceva, ch'ei vedeva tutto il suo bello, e'l contrafaceva, com'egli era, asserendo, che nello starsi al naturale immobilmente fermo, egli non è mai tanto simile a sè stesso, quanto è nel moto, in cui consistono tutte quelle qualità, che sono sue, e non di altri, e che danno la somiglianza al Ritratto.")

It is interesting to quote the passage on a talk between Bernini and Vigarani from the journal of Chantelou. In expounding his concept of architec-

ture, Vigarani stated the architect has to be a geometer and an artist of perspective at the same time. "But the Cavaliere preferred to have a keen eye for contrapposto. Namely objects have not only mass values. Environment significantly determines or even alters their appearance." A glance on Bernini's sculptures can convince anybody that contrapposto did not mean for him the antique norm of the organic building of the body, a dynamic equilibrium of motion, neither some Baroquized variant of all this. In Bernini's terminology, contrapposto means the correlation between the sculpture and the surrounding atmosphere, or rather a specific kind of this, the spatial effect of the sculpture where the sculpture is less a plastic unit defining space than a negative space unit represented by the forms of the mass. This is why Bernini is almost incomprehensibly deeply concerned with elaborating insignificant details. A wig of rich curls, the sheet undulating with an improbable ease are no autotelic theatricalism but means of continuity between two opposite space forms.

Applying contrapposto in this meaning on architecture, it is easy to draw the conclusion. This almost irreal enhancement of spatiality is simply the denial of the justness of closed spaces organized to a single standpoint. Namely a closed space acts mainly with its plasticity, its mass forms concealing the space, similar to central churches of the late quattrocento, the Madonna delle Carceri in Prato, or the Tempietto in Rome. But the outlined attitude of Bernini would be matched by the opposite space form; an open space arranged for the process of motion dissolving the space-mass opposition in spatiality, connected to the environment by continuous transitions. All these justify the attempt — provided Bernini's designs lend themselves to it — to complete St. Peter Square to an open system coping with the demands above.

By the way, this is also confirmed by the passage in the Chigi codex on the "ideological" motivation of the destination of the square. Namely San Pietro is the mother church of all the others, so it has to be completed by a portico demonstrating the maternal reception of all Catholics with embracing arms. " . . . essendo la Chiesa di S. Pietro quasi matrice di tutte le altre doveva haver'un Portico che per l'appunto dimostrasse di ricevere a braccia aperte maternamente i Cattolici . . .". Why would Bernini have liked to symbolize the expanding motion of embracing by a closed square? This and other questions arisen are partly answered by the history of construction of the square.

The idea of building a new basilica and rearranging the region arose already by the mid-15th century. Pope Nicholas V — probably with the involvement of Leon Battista Alberti, great theoretician of architecture of that age — had had developed plans for the complete renovation of the Borgo district. Three wide roads were planned in lieu of the demolished district, to lead from a square to be developed in front of Castel Sant'Angelo to the enormous square before San Pietro. Contemporary reports rather precisely describe the Renaissance plan. It might have been somewhat academic with its

triumphal arches, porticoed ways, squares reminding of antique fora. Its function, independent of local features, was to "illustrate" a theoretic principle similar to that formulated by Alberti in his "De re aedificatoria". Still, with its grandiosity and organic character pointing beyond its age up to the 18th century, this is the design determining to a certain degree the trend of development of the square. The basic idea of the plan by Nicholas V, the representative interconnection of Castel Sant'Angelo and the basilica, is often encountered in subsequent design plans.

The first relevant step was made by Pope Alexander VI. He had constructed for the jubilee year 1500 the first avenue of Rome, Borgo Nuovo, leading straight from the Castel Sant'Angelo to the entrance of the complex of palaces of the Vatican, creating thereby a tie that could not be left out of consideration, not even by those preferring to keep the courtyard-like, closed effect of early Christian atriums for the new square. Asymmetry of the new road with regard to the church axis, and axiality so to say obligatory since the mid-16th century required to develop the symmetric counterpart of Borgo Nuovo. This would, however, make the block of houses separating the two roads an obstacle to the view of the basilica exactly at the most favourable spot, a fact recognized already in the late 16th century. Sixtus V, the most outstanding Roman maecenas of early Baroque reassumed the idea to develop Borgo along with the city as a whole. As a first step, he had the obelisk set up by Domenico Fontana in the axis of the ancient San Pietro, planned by several popes since Nicholas V. His further ideas may be learned from a notice published by Pastor in his "Geschichte der Päpste". According to this notice issued in 1586, year of setting up the obelisk, the Pope intended to demolish houses between the two Borghi "ch'el habbia pensiero di buttare a terra tutte le case, che fanno isola per mezzo Borgo da Ponte fino alla Piazza di S. Pietro." The resulting route and the obelisk marking out its axis would in fact have repeated the solution applied by Fontana in other town parts, e.g. in the three avenues leading to the Piazza del Popolo, or at the junction of Via Sistina and Sta Maria Maggiore.

By the mid-17th century, the opening of the road became still more urgent. The reasons of axiality and symmetry were joined by another one. In the meantime Maderno's nave became completed, with a monumental façade before it. From that time on, the complex of dome and façade could only be looked at from a standpoint far away. Seen from a nearer point, unsightly intersections impaired the overall effect. To comprise the dome in the overall picture was only possible by demolishing the houses between the Borghi, and opening the square toward the Castel Sant'Angelo. The design coping with the new conditions was developed by Virgilio Spada and submitted to the congregation directing the constructions in 1651. Basically, he realized the idea of Sixtus V, but with a new motivation. He stated to have chosen this solution to provide for a greater prospect on the church. "pro maiori ac

longiori prospectu templi Vaticani". Similar was the starting point of Carlo Fontana who published his "Il Tempio Vaticano" with two study-designs in 1694. Especially the second one is of interest (Fig. 7). By that time, Piazza Obliqua was complete for three decades. Fontana added a deep trapezoidal parvis, similar to Piazza Retta, joined by a road wide like a square, between the two Borghi. Thus, his suggestion reproduced the idea of concern for builders of the church and the square for over two centuries. As a matter of fact, Fontana's design is the conclusion of the development outlined above. Architects engaged in the development of Borgo in the 18th and 19th centuries usually varied his solution, and so may be considered the modern reconstruction started by the mid'30s leading to the actual form of Via della Conciliazione and Piazza Rusticucci.

The group of designs with a solution deviating from, and often contrary to, the described one might be recapitulated as the group of atrium designs. Their essential common feature is to have a courtyard-like square before the basilica, closed from each side, reminding of the mood of the ancient atrium of San Pietro. The first such design was due to Carlo Maderno. The ground plan system selected by him seemed to be the most reasonable one under the given conditions, a closed rectangular square, of a size and form about defined by the complex of the basilica and the Vatican buildings. But reasonable fitting to features was not his intention alone, as seen from a glance made at the design. Maderno primarily intended to create a parvis where the façade, the greatest work in his life, prevails exclusively, without any extraneous disturbance. Since the façade acts a priori like a palace rather than a church, this condition could best be met by a palace courtyard what he did design, with four-storey wings of an architecture identical all around. For him the square was but a means expected to make the church overwhelming in its effect by a nearly neutral frame, by the contrast of small-scale subdivisions.

Some years later, Maderno's suggestion of an atrium-like square had been adopted, among others, by a dilettant patron of arts, Papirio Bartoli, and a master of moderate fame, Martino Ferrabosco, earlier engaged in the San Pietro constructions. The latter in fact started the constructions in 1617. Little has been realized from his design: a single wing, demolished after some decades. These few decades were, however, enough to constrain Carlo Rainaldi — integrating the Ferrabosco wing in his design — to questionable compromises (Fig. 8).

It was after 1650 that Rainaldi got deeper concerned with the construction of the square. He primarily intended to reconcile the hitherto opposite viewpoints, characterizing all the varieties of his design. He strove to a solution integrating all essential suggestions made in the two centuries past since the death of Nicholas V, to make agree features of the environment and the site with requirements rising from the respect of traditions. The failure of this

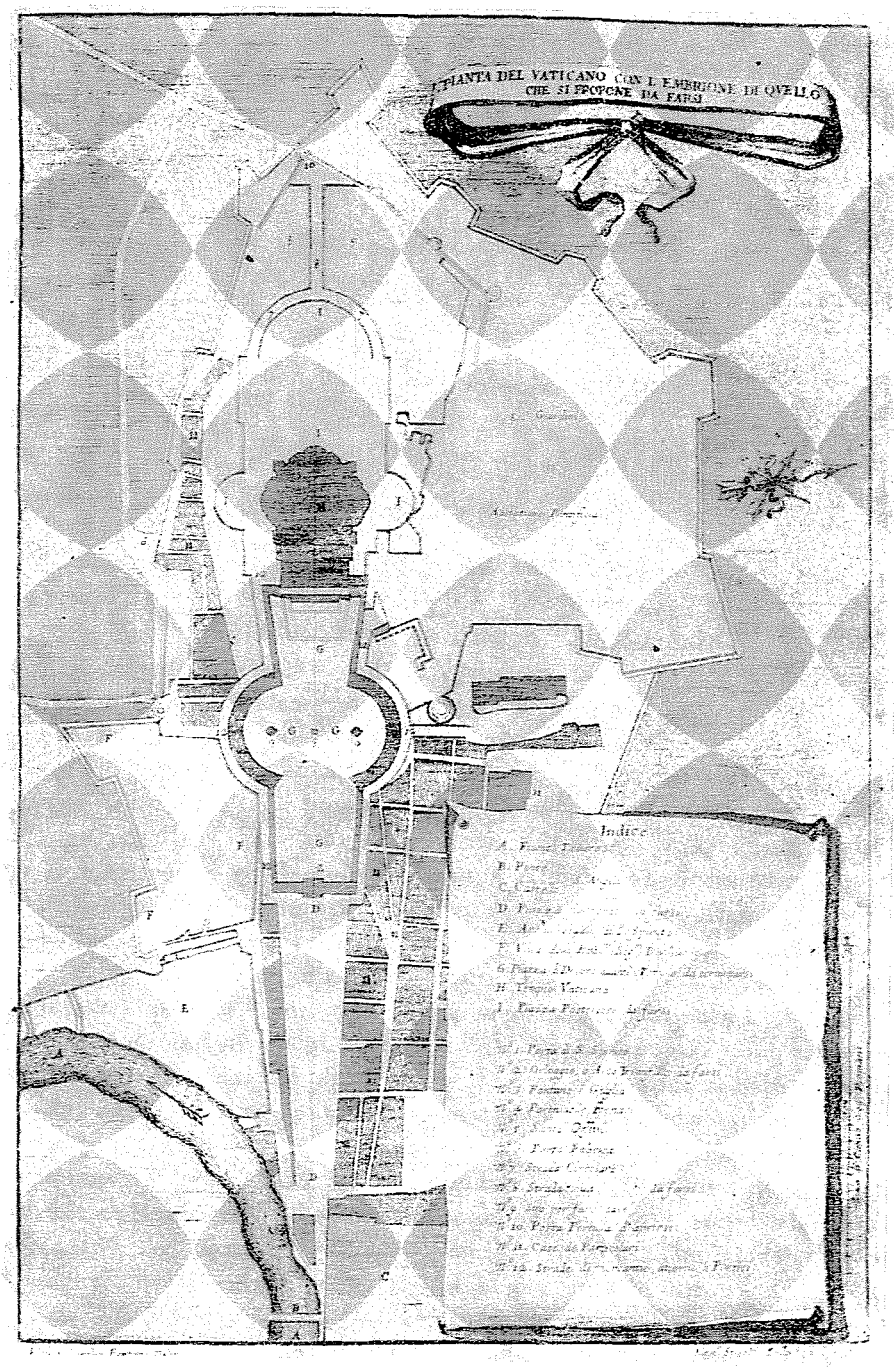


Fig. 7. Carlo Fontana's design. (Published in: E. Coudenhove—Erthal: Carlo Fontana, Table 39)

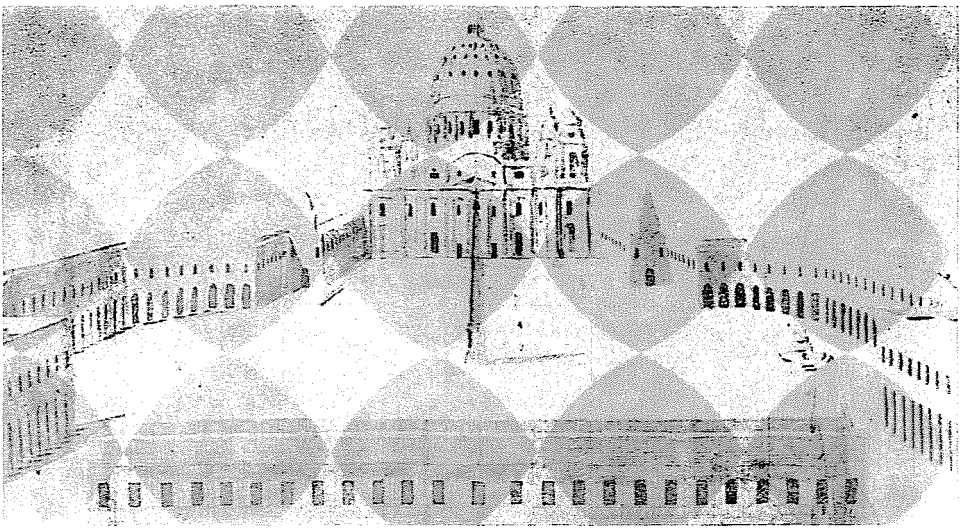


Fig. 8. Design by Carlo Rainaldi. (Roma, Bibl. Vat. cod. Chigi. Published in: Brauer—Wittkower: op. cit. 189 c)

grandiose synthesis cannot be attributed to the abilities of Rainaldi. Maderno's idea of the square could not be fitted into a large-scale system — meant up-to-date in the Baroque period. Thereby the failure of Rainaldi is at the same time criticism to the Maderno design. In his design he had to reckon with the already erected obelisk, Maderno's fountain and the Ferrabosco wing. He designed the exact replica of the latter to the south side of the actual Piazza Retta. The resulting rectangular square was joined by an octagon of alternating side lengths, with the obelisk in its center, and of a width defined by the position of the fountain. The group of squares was delimited on the Borgo side by a less elevated crosswing. (Varieties of Rainaldi's design replacing the octagon by an arched, circular or elliptic square are of the same character as the former one.) The square was too big to be a rather intimate parvis, and of a too frittered architecture to be monumental. Its inherent contradictions became manifest when Rainaldi attempted to loosen somewhat the closedness of the square and to connect it with its surrounding. He intended to plan two avenues, one continuing the Ferrabosco wing, and the other as its south counterpart. Since, however, the entire system of squares neglects the Borgo features, development of this system could not result in else but a forced solution. The north avenue would have run into the Castel Sant'Angelo, while the south one would have been much shorter, to reach the Tiber near the actual Victor Emmanuel bridge, and the space between them would have been skewly intersected by Borgo Nuovo, out of meaning. Nevertheless, Rainaldi's design has one undiscutable merit in addition to the fact that

several of his ideas got adopted in the final solution, though this is also worth to be mentioned. But what is more, he proved by virtue of a counter-example that Maderno's idea of an enclosed square, even if updated, cannot be realized without pitiful compromises. Thus, the final solution has to lie rather along the lines represented by Sixtus V, and by the mid-17th century by Virgilio Spada. This conclusion of Rainaldi's design had been recognized by Lorenzo Bernini.

The above statement seems to be contradicted by the surprisingly great number of coincidences between Bernini's and Rainaldi's designs, in particular, the elliptic alternative of the latter. Bernini seems to have only developed in more grandiose way the possibilities present already in Rainaldi's design. He dispensed with decomposing the boundary of the square to stories, eliminating thereby the dissonance of scales causing confrontation between the large-scale square and the small-scale architecture. The effect was enriched by a trapezoidal rather than quadratic square, next to the façade leading to an increased motion of the ground plan outline. But on the Borgo side also, he closed the square like Rainaldi did. Drawings or medals made prior to 1667 always showed the third wing continuing the colonnade arch. A somewhat deeper analysis shows, however, the agreement to be formal. Agreements are superseded by differences. Both the formal agreement and the essential deviations have rather accurate explications. The latter is explained by Bernini's approach to the problem requiring, also in details, organic harmony with the entity of work, and beyond that, with its surroundings. The former, on the other hand, is due to the traditionalist, conventionalist attitude of the ecclesiastic board, the Congregatione della Fabbrica di S. Pietro, top-level directing organ of the construction.

Bernini's activity in the construction of Piazza di San Pietro coincides with the rule, or even is bound to the person, of pope Alexander VII. Alexander VII was elected pope in 1655, and Bernini was engaged early in 1656, a few months later. Since then, work went on for 11 years, but in 1667, year of decease of Alexander VII, it abruptly and definitely discontinued. This fact suffices to indicate that Bernini was supported by papal will alone, namely against the resistance of the congregation. The construction would not be cut short — exactly before its being ended — if agreed by the congregation. Meeting records testify the same thing. From the first version onwards, Bernini's suggestions were much criticized, especially by cardinal Pallotta. A more solemn, smaller, and more confined square was desired than the presented one. Solemnity was not understood as impressivity of architecture, but as a restricted, strict rigidity of ceremonies. Therefore even the slight looseness of trapezoidal square form was objected to in the first, otherwise rather conventional design. Bernini is known, however, to have always pondered possibilities during work, yielding or modifying in the occurrence of obstacles.

He avoided irrational ideas. Francesco Milizia, the well-known early classicist theoretician of the 18th century quotes one of his frequent sayings, according to which an architect's skill may be recognized from his ability to change site-borne difficulties into beauties. "L'abilità dell'Architetto si conosce principalmente in convertir i difetti del luogo in bellezza". This saying is usually illustrated by the example of Scala Regia, and so did Milizia. But it

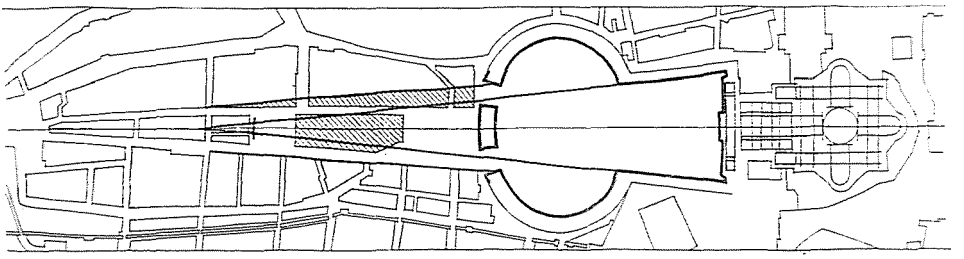


Fig. 9. The square system reconstructed after Bonacina's etching

may be interpreted in a somewhat wider sense, namely an architect may be confronted by difficulties not only because of the site but also because of the commissioner, and he must adapt himself to these latter ones as well, and Bernini knew very well, how to adapt himself as seen also from Chantelou's journal. He was at home in royal courts, acquinted with Baroque etiquette. He knew how much to yield to let his wishes agreed by his aristocratic commissioners, and if possible, to let them pronounced as their own. This is what happened now. Piazza di San Pietro is an excellent certificate of Bernini not only as an architect but also as a diplomat. He arranged to be imposed on, rather than to suggest, the best solution. He recorded that, after the Pope instantaneously realized the disadvantages of a quadratic square, decided with an almost superhuman insight to have an elliptic portico. "Havendo dunque in un'istante antiveduto S. Santità gl'incovenienti che s'incorrevano nel far d.° Portico in forma quadra con giudito più che humano risolse farlo in forma ovata."

Bernini, submissive to the papal decision, took nevertheless the will of the congregation also into consideration. He has designed a square system where two elements joining the church acted like self-contained, closed units and formally reminiscent to designs aiming at a courtyard-like effect. But this part of the square is but temporarily delimited. It unambiguously points to a third square part to become integer with it. This statement may be confirmed by examining the design itself, more precisely its enclosed variety from 1659, made for the Bonacina etching (Figs 6 and 9).

Bernini definitely strove to integrate Borgo Nuovo to the square system. This is especially apparent from its comparison with designs by Maderno or

Rainaldi. On the north side of Piazza Retta, the corridor location has been defined by Borgo Nuovo rather than the Ferrabosco wing or the Vatican complex of palaces. It is aligned nearly exactly on its axis. Extending front lines of both corridors, they intersect near the height of Sta Maria in Traspontina, and just halve the distance between outer sides of the two Borghi. It is here that axes of the Borghi and the square first meet. Thus, a new road, symmetric counterpart of Borgo Nuovo, can best be fitted into the existing town fabric, it can be realized with the least of demolitions if it starts from this point as an extension of the Borgo Vecchio section to the east. Another interesting phenomenon should be pointed out. The crowning lines of the two corridors are not horizontal, but slightly rising toward the church but at an angle different from that of the ground level. Extending the cornice lines, they intersect each other and the ground level at the mentioned point, consequently, Piazza Retta is composed optically with reference to this point. Considering also the fact that the slope of the corridor equalized the height difference between the string-course of the façade and the colonnade, it becomes clear that this system focused on a center defines exactly the height of the colonnade. Thus the point with reference to the square becomes justified, logic, is very much outside the boundaries indicated in the Bonacina etching. To make this organization from a witty optical puzzle into an acting force, the two-membered square has to be completed by a third member, i.e. one with a form defined by Borgo Nuovo and its symmetric counterpart road, and with a depth defined by the position of that point.

This explanation of the square might look like an arbitrary interpretation and an unjustified completion, were it not confirmed by a sketch by Bernini himself (Fig. 10). This rather sketchy drawing made in 1667 has been little concerned with by the experts of this problem. Those concerned with it, e.g. Wittkower, consider it as a symbolic, anthropomorphous representation of the square, differing from the well-known drawing of a giant embracing the world only by being more architectonic. Though, obviously, it is more than pure symbol. It is a concrete perspective representing the square and part of Borghi in fast but recognizable lines settling essentials of the idea. Exact recognition may be hindered by its seeming deviations from reality, e.g. by the full omission of Piazza Retta. The church façade is directly joined by the arms of the colonnade, permitting — together with the schematic, egghead-like form of dome — an anthropomorphous interpretation. Bernini himself, however, dissolves the possible misunderstanding. In the forefront of the drawing Piazza Obliqua is joined by a trapezoidal square, with the south wall symmetrically reproducing the Borgo Nuovo line. There is a shaded spot in mid-square, likely to indicate the once existing block of houses between the Borghi, interrupted by a transversal rectangle at the narrower end of the trapezium, the former Piazza Scossacavalli.

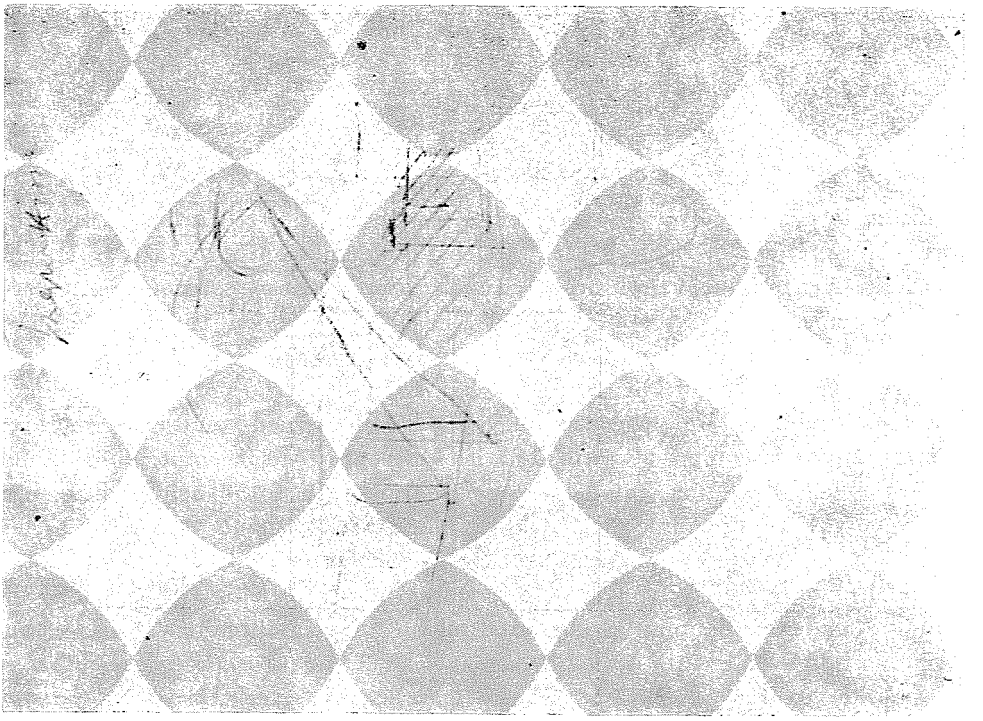


Fig. 10. Perspectivic sketch by Bernini. (Roma, Bibl. Vat. cod. Chigi. Published in: Brauer—Wittkower: op. cit. 62 b)

From its corners next to Borgo Nuovo two straights originate, one of them touches the southeast end façade of the colonnade. Distorsion of the trapezium is an indication that origin of the straight is at the same time the viewpoint of the perspective transposed into the base plane in the drawing. Thus, Bernini sketched how the square system appears to those walking along Borgo Nuovo to Piazza Scossacavalli and entering the trapezoidal square. From this viewpoint the square complex discloses just as seen in the sketch, without Piazza Retta.

The point of disclosure in the sketch is at a distance of about 50 m from the mentioned optical center. About the same distance results in horitontal projection — assuming average eye height — between the respective two points where the extended cornice line of the corridor intersects the horizon plane and the ground level. The corridor appears as a vertical edge from the latter, and as a narrow, horizontally bounded surface from the former. Hence in fact, from the standpoint in the sketch just sidewalls of Piazza Retta are seen. Because of the large distance, however, the space depth is almost negligible, further reduced by the seemingly horizontal cornice line of the corridor,

connecting the façade with the colonnades into an uninterrupted plane. Bernini's sketch is an overall confirmation of all that concluded on from the square system before. Nothing but the depth of the assumed third square part has to be reduced to let the two exactly overlap. The dislocation of the two points, the optical center and the viewpoint of the perspective, can be justified if the effect of horizon elevation to correct the dimension is taken into consideration. The outlined way of completing the square, and the rightousness of reconstruction are rather convincingly supported by the history of the project. Early in 1667, the project neared completion. Piazza Obliqua was perfectly finished, and Piazza Retta nearly, only the south corridor was being worked on. Thereafter the third wing should have followed. Its design had been made years ago, simultaneously with those of the colonnades, and in Bonacina's etching its final solution is seen, recurrent almost invariably with subsequent drawings or medals. However, the congregation meeting early in February did not deal with this known and accepted design, at least this is what might be concluded on from having decided to make bigger preparations than needed for constructing a wing of seven or nine axes. They negotiate instead the project of demolishing the complex of the palazzo del Priorato di Malta. Very probably, Bernini had already exposed here his modified proposition, the model of which was submitted in a fortnight, on February 19. The design was stiffly resisted. According to the records, everybody agreed with the Pope: the design should be studied and decided over after the termination of the constructions in progress. "Si è considerato il modello dell Orologio da farsi nella Piazza di S. Pietro, et unitamente tutti hanno riverito il pensiero di Sua Santità, il quale è che si sollecitino per hora le guide e le selciate della Piazza, e che di poi con le dovute considerationi si pigliarà risolutione . . .". Matters of these two meetings of the congregation are moderately important details of the history of the square. Nevertheless, confronting them may lead to interesting conclusions. In the former meeting the concluding square part is discussed as the following, imminent project of the construction, and Bernini is invited to elaborate the exact design. While two weeks later, with the model accomplished, it is rejected on the ground that it is untimely to be concerned with the problem of the third wing. Building conditions are unlikely to have changed in the meantime. But the design is likely to have, although no detailed description or drawing subsists of it. Still, there are some facts suggesting that is essentially agreed with the discussed sketch of Bernini, and this also accounts for the postponement of its more thorough discussion.

In the records, the new design is referred to as the Orologio. If not the model, a sketch made to it is known to exist, showing a nine-axis structure, with a somewhat reduced column spacing on both sides of the larger middle bay and at the outer bays, with a towering, triumphal arch-like superstructure over the main cornice. Its system of motifs is rather similar to those of the

colonnades, though the overall picture is rather different. It is of a much lighter formation, hinting a priori to that Bernini intended to place it farther from Piazza Obliqua. It may be located by reconstructing its dimensions. Deducing from the average column spacing of the colonnade, the drawing corresponds to 35 to 40 m of width, which is rather close to the width of the block of houses between Borghi at the east side of Piazza Scossacavalli. It is no proof in itself, though, in conformity with the above, this correspondence of dimensions cannot be considered as incidental. The Orologio was likely to confine the third part of the square reaching to the Piazza Scossacavalli.

The same results from a deeper examination of the mentioned drawing by Carlo Fontana (Fig. 7). About 1667, Carlo Fontana worked in Bernini's workshop and was acquainted with the design of the new square part, probably sharing its works. It is thus understandable that his book "Il Tempio Vaticano" published in 1694, one decade and a half after Bernini's death, reproduces the concept of his master among proposals on the completion of the square, with the single change of enhancing the convergence of the side walls of Piazza Retta, and nearly halving the depth of the third square part. But also in his design, the spot to enter the square is defined by the intersection of extended corridor lines. Thus, the way of disclosure of the square remained unaltered, only its duration time decreased.

Relevant publications generally depreciate Fontana's design. Wittkower's opinion that the pupil doctrinally banalized the idea adopted from his master and dropped the most essential in it: the possibility to survey Piazza Obliqua, may be considered as current. "... in der Fassung Fontanas geht nicht nur die entscheidende Überschaubarkeit der Piazza Obliqua vom Platzeingang aus verloren, sondern eine eingehende Analyse ergäbe auch, daß die Leistung des Schülers in allem und jedem eine doktrinäre Banalisierung des Projektes von 1667 bedeutet." This attitude would be right if it could be unambiguously demonstrated that Bernini, in fact, endeavoured to achieve an enclosed space effect. However, serious arguments — including very designs by Bernini — were seen to deny rather than to support it. Therefore, the views expressed by the authors of the history of Rome entitled "Topografia ed urbanistica di Roma", published by the Istituto di Studi Romani, seem to be closer to reality. They say that some suggestions by Fontana are indeed similar to those by Virgilio Spada. The proposal, however, to attach another square to the existing one, similar to but deeper than the would-be Piazza Rusticucci, is likely to directly reflect Bernini's last designs. "In alcune di queste proposte il Fontana giunge a soluzioni analoghe a quelle di Virgilio Spada, ... Ma la proposta, che sembra rispecchi più direttamente gli ultimi concetti del Bernini, è quella della formazione di una piazza aggiunta, analoga a quella che fu al piazza Rusticucci, ma assai più profonda ...". The view above seems to endure a somewhat concreter, less cautious formulation.

Fontana's design corresponds rather closely — though with a slight alteration — to a system of squares that can be reconstructed from the analysis of designs made before 1667 and from subsequent sketches by Bernini. A random coincidence between ideas, and to such a degree, is practically impossible. However, if Fontana was well acquainted with the last conception of Bernini, the two designs are affine due to other than random coincidence, and there are reasons to consider Fontana's design something else than a distorted version of Bernini's conception, namely, despite the modifications, the original design itself. This would increase, of course, the value of Fontana's drawing. From a mere imitation it would become a decisive evidence, directly confirming the earlier hypothesis on the square integration.

Requirements for the square are a priori manifold. About hundred thousand people were to be accommodated so as to see the Pope appearing in the loggia of the Vatican palace or in the benediction loggia of the basilica from any point of the square. Simultaneous solution of difficulties arising from this restriction seemed next to impossible. Two of them are worth to be mentioned separately. For the sake of the visual relation between the Pope and the pilgrims, the square had to unfold near the church, in a confined area. An opposite requirement was to let Michelangelo's dome prevail in full beauty from the spot of entering the square, requiring to almost double its depth compared to the ideal boundary line. This is why designs made for the Piazza San Pietro from the beginning of the 17th century belong to two groups. Maderno's or even Carlo Rainaldi's solution belong to the first group, Virgilio Spada's suggestion to the second one. Bernini's design is the only one to meet both requirements, of course not simultaneously, and not from the same standpoint. This would be impossible and it would also deny timely continuity, fundamental to Baroque composition, where spatial forms are organized to interconnect elements of different orders of magnitude with smooth transitions, so that moody images from each details of the complex gradually lead to the final impression, an overall image identical to none of the sections picked out of the process of unfolding, but comprising the entity of the process. To interpret the design by Bernini, it has to be analyzed as a system of squares of dynamic effect, relying on the continuity of motion, rather than referred to a single standpoint.

The complex was connected to the part before the Castle of Saint Angel by two, relatively short, straight roads, the remaining sections of Borgo Nuovo and Borgo Vecchio. The visitor would pass along them to enter the square near the point found above to be the optical organization point for Piazza Retta — and in a sense, for the entire square system. This fact alone would be a sufficient reason to be concerned with the view unfolding from here. But there is another, not less important one. Whatever the square's character, open or enclosed, surveyable or problematic, its effect decisively depends on

the first impression. For a static square form, because the first unfolding almost completely yields all the necessary conditions of the full sensation, so as to act as an "accomplished", aesthetically "complete", self-contained unit. For a dynamic square system, on the other hand, because the first view sets the fundamental mood underlying the overall impression. This fundamental mood may later be altered or even reversed, it is still an active reference. Referred to

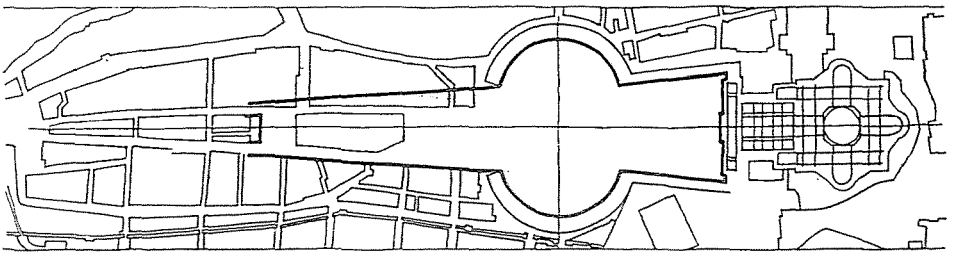


Fig. 11. The square system reconstructed after Bernini's sketch

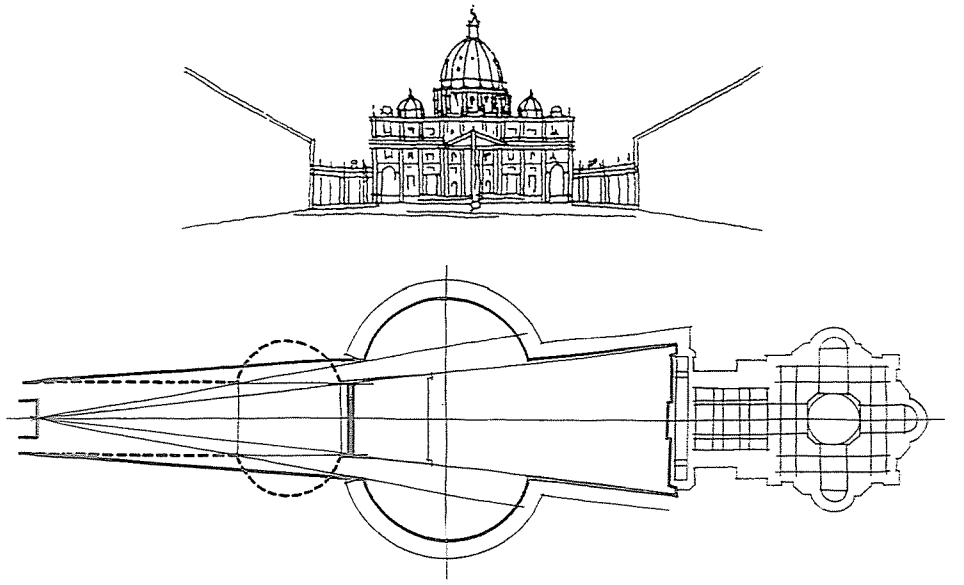
the first view, an oversize interior may become "intimate" or a moderate-scale detail may grow monumental. These all get a special importance — particularly in Baroque — if the architect wants to elicit a controlled illusive sensation, an alteration of reality, and to this aim he makes use of any means of optical illusionism. And we know very well of Bernini that he endeavoured at the optical correction of Maderno's façade in his design of the St. Peter Square.

Besides of its clumsiness and its depressed proportions, Maderno's façade had another characteristic, namely that its real, immense dimensions could hardly be perceived. Seen from close, it was overwhelming almost like a mountain, while from farther away, this monumentality got lost. This can be attributed to the way of surface division. Its height above the top level of the steps exceeds 45 m. Deducing therefrom the sizes of attic and main cornice, still a surface about 30 m high and over 100 m wide remains, divided only by the medium projection and the order of Corinthian engaged columns and three quarter columns into minor, vertical sections. Now, already since the Antiquity, a specific feature of orders has been the relatively sterile inherent proportion system, consequently the incapacity to reflect the real, absolute dimensions in themselves, without an inserted set of motifs. Thus no modular system could develop, not even by custom, which could have been spontaneously associated with certain kinds of columns, their scale had a wide range already in Greek architecture. One extreme may be the treasury of Athenians in Delphoi or the Nike Apteros or the Lysicrates monument in Athens. From their intimate realm there are innumerable transitions to the overwhelming magnitude of the temple G in Selinos, of the Dydimaion in Miletos, or of the

Olympeion in Athens. This is why also the façade of San Pietro may be arbitrarily increased or decreased in imagination, little affecting the kind or appearance of primary division. Perception of the real dimensions is not by reference to the order of columns but to motifs dividing intermediary wall planes; window and door openings, or window-like framed niches. In the case of San Pietro, however, even this reference is delusive.

Maderno has adopted the division system applied by Michelangelo for the part on the presbytery side, though, at a fundamental alteration of the impression raised by affine forms. For Michelangelo, it is the motif of an enhanced central mass, substructure of the dome. The rate of division, part form sizes are defined by the dome scale. Referred to it, details in themselves seeming excessive are correct. The idea to interpret some detail out of its emplacement, by analogies, confronting with known, customary buildings, does not occur to the onlooker. Maderno's façade detaches itself from the dome and becomes self-contained. In addition to distance in space, its self-containedness is still enhanced by its two-dimensionality, its development in plane. The same opening motif which had originally the task to divide the adorned surface in the scale proper to the dome, — thus, of purely plastic effect — changes function under changed conditions, and acts like an opening itself. The primary function of the form: the opening prevails. This fact entrains the usual, functional purport. This façade being a priori like that of a palace, the association involves the unintentional identification of San Pietro with similar, well-known palaces.

In palace architecture, a reasonable modular system providing for usefulness has developed, respected even if appearance, size of the building depended on other than functional aspects. For instance, parapets, balcony balustrades had fixed sizes, always less than breast height, hence 100 to 120 cm, irrespective of the size of the opening above it controlled by practicalness rather than by some abstract scale. Maderno did the contrary for the San Pietro façade, by reproducing with double dimensions the giant-order scheme of palaces customary in late cinquecento, while keeping invariably the original proportions. Thereby the parapets below the door-like wide storey windows, and the balustrade of the benediction balcony are higher than two meters. This makes the dimensional increase rather problematic. From somewhat farther away, the monumentality resulting from the hugeness is not perceived. To a detail, like to a window parapet, the customary dimensions automatically imprinted by experience are associated and the integer façade gets reduced to it in imagination. One may wonder if this contradictory phenomenon is due to conscious reflection or arises by chance. But it is certain that it is a decisive factor of the overall impression up to now. There is a tension between the real image of the façade and its markedly reduced so-called associative image much affecting not only its outer effect but indirectly, the mood of the interior, too.



Figs 12—13. Disclosure of the square system from the entrance to the third square part. (The perceptible square form in dash line in the ground plan)

This tension might have been accidental in Maderno's case, but Bernini consciously made full use of it. Optical correction of the façade was performed by means inherent to the façade itself.

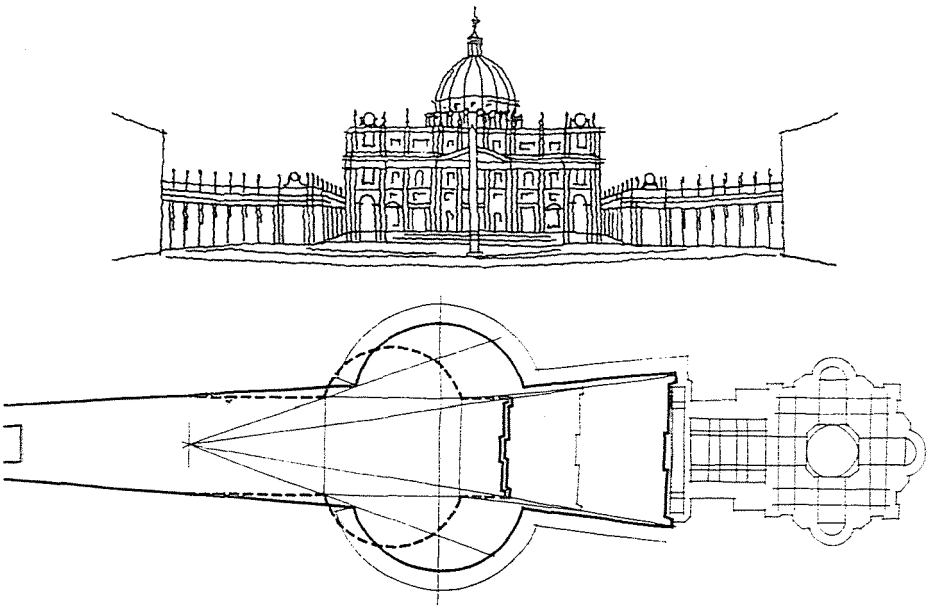
In the final design by Bernini, Piazza Rusticucci is a trapezoidal, oblong square with sides mildly divergent toward the church. Divergence essentially creates a counter-perspective because it limits the shortening which would raise a feeling of depth, and it reduces thereby the depth of the perceived space compared to reality. The reduction is maximum, of course, if contemplated from the spot where the Borghi join, origin of the integer system (Figs 12 and 13).

From here, the distance perceived between the church and the onlooker is reduced to about its half. It seems as if a building half the size of the real one would stand at the distance of the east side of Piazza Obliqua. And this exactly corresponds to the outlined size reduction. Seen from the beginning of Piazza Rusticucci, associative image of the façade and its site marked out by the counter-perspective perfectly overlap. The two factors mutually reinforce the effect of each other, causing the unfolding image to have the effect of a stable, true-to-reality condition.

Let us quote a statement by Francesco Milizia. Referring to Scala Regia he writes that Bernini seems to have adapted the site to the scale rather than the scale to the site. "Cosicchè sembra, che non la scala sia adattata al luogo, ma il

luogo alla scala". It can also be said in reference to San Pietro, that each element of the former image is integrated as if Maderno had designed the nave and the façade in knowledge of the viewpoint chosen later by Bernini. At this distance, the nave almost disappears, the lower cornice of the drum comes into view. The dome seems to get forward, as if it would be directly above the façade plane, almost perfectly restituting the unity of the mass of central effect, characteristic of Michelangelo's design. Looked at from the starting point, the integer square system adapts itself to this optimum unfolding of the church. It is not self-contained but only a systematic frame expected to present the church in its best appearance. In fact, it does not appear to be a square proper but a festive road widened to a square, creating an uninterrupted, continuous transition between the Borghi and the church parvis, though directing the view from the very instance of entry. This directedness is not broken by any unessential, distracting motif. Our standpoint is that where the extended cornice line of the corridors intersects the horizon plane, making the Piazza Retta to perfectly disappear, and even the Piazza Obliqua is just indicated by a bit of widening at the roads' end. The road-like access function of the third square part prevails.

Further on, the initial view abruptly starts to be different (Figs 14 and 15). The hitherto reigning stability changes into a novel, step-wise changing, but throughout balanced inner dynamism. But there is an uncertitude at the single sections of the unfolding process. Each new view is definite in itself,

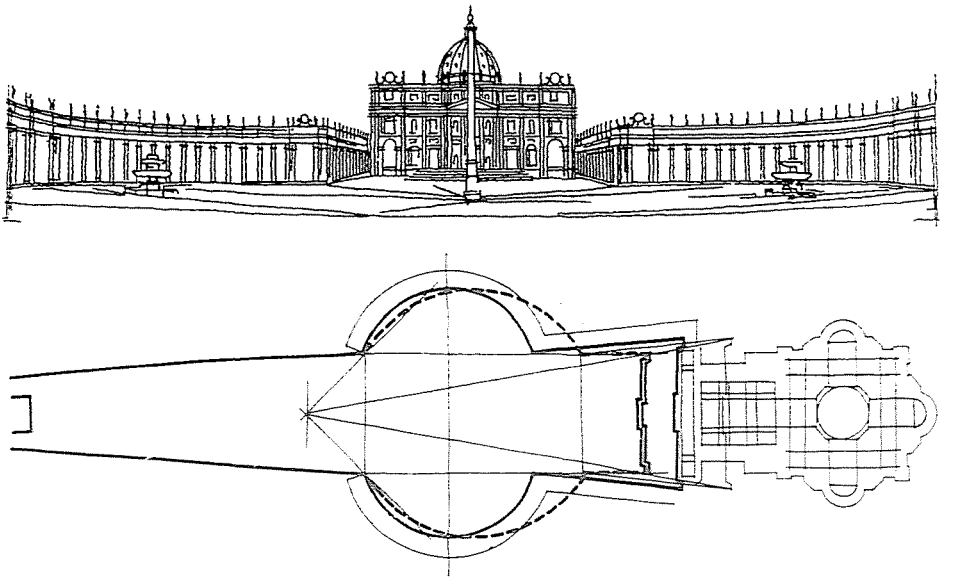


Figs 14—15. Disclosure of the square system from the middle of the third square part

instability arises only in comparison with the previous experiences, by more and more contradicting common experiences.

Knowledge of spatiality of objects and of space depth is acquired from practice. A set of motional sensations develop the ability to estimate distance. Innervated observations tell us the magnitude of path corresponding to the estimated distance, how much motion is needed to make it, and at what a rate its end is approached to. This observation seems to fail for San Pietro. One proceeds without approaching. The perceived distance to the church persists even after having made the road section considered initially to be the full length. The building seems to withdraw at the speed of walking. This phenomenon is too obvious to need an explanation. The counter-perspective of the third square part constantly weakens, at the same time Piazza Retta gradually opens, and so does the internal arch of the colonnade. Interaction of the three factors almost fix the original distance, but only that. The perspectivic illusion cannot help the fact that much of the path had been made, and accordingly, relative dimensions of the façade, referred to the field of vision, have grown realistic, illusion-free elements of optical perception, but do not help safer into vision, real recognition of the square system. The contradictory, unexperienced unity between the ever increasing size and the constant distance sets the imagination free and reinforces the illusiveness of the view. By virtue of this contradiction it can be selected almost at will at which limit the illusive image and the reality correspond to each other so that monumentality of square and church can be increased at will, independently of real features.

The function of the third square part is exactly this preparation, the intonation of the all-encompassing experience, the creation of a peculiar relation between the church and its onlooker which remains effective also when conditions of unfolding have altered. Thus, the stage of preparation is focussed on San Pietro. The square is subordinate, expected to support prevalence of the main subject. This relation is almost inverted near the colonnades (Figs 16 and 17). This is about the distance where intersection of façade and dome starts to be unpleasant. The drum gets recessed behind the cornice line, and in the background of the obelisk reaching to the lantern, the dome appears as a motif independent of the palace-like building. However, this disorganization is not felt as disturbing. The attention is directed on another subject, Piazza Obliqua unfolding with its huge dimensions, in full width. Its real grandeur and the rapid unfolding makes its vision attractive to a degree to make the other parts of the complex unobtrusive. Its self-contained dominance is still furthered by the transversal axis enhanced by two fountains and the obelisk, a contrast impeding the direction of advancement. The accent of the composition is shifted from the church to the square so that it is not shared by the church itself, only by its image developed in the preparatory stage, arisen in the consciousness of the visitor.



Figs 16—17. Disclosure of the square system near the Piazza Obliqua

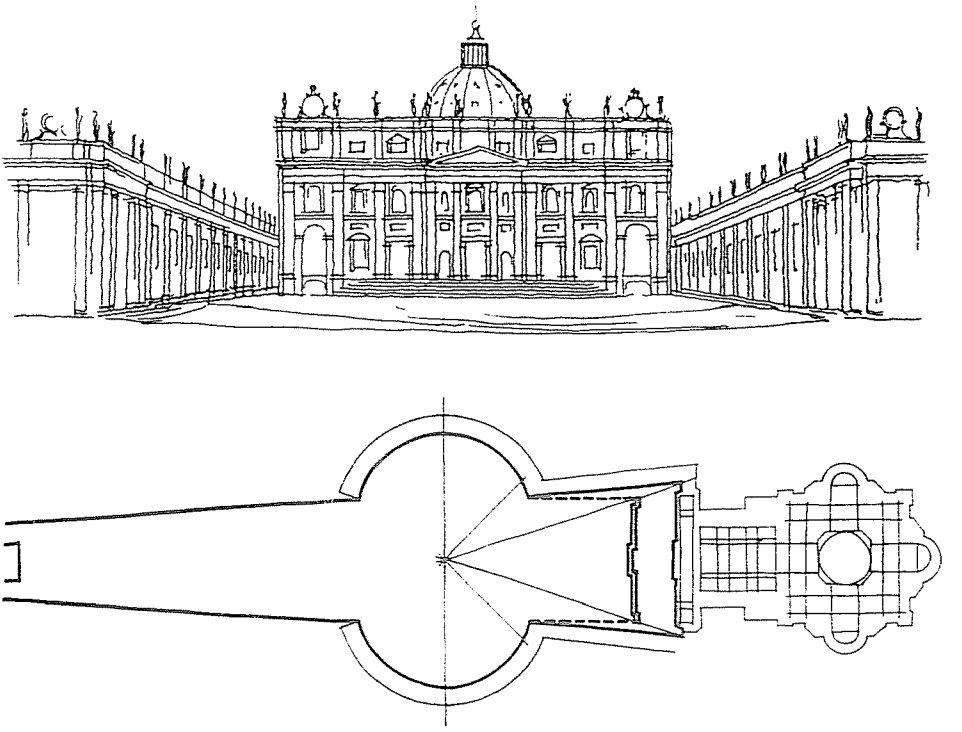
Of course, earlier conditions of the association of illusion and truth still prevail. Otherwise the endeavour to let errors due to the connection of a centric and a longitudinal mass corrected by means of a mental image were frustrated. Piazza Obliqua is a square of elliptic character. It is not truly an ellipse since it is composed of a slightly oblong rectangle and bilateral circle segments. At its first unfolding one experiences, however, neither an elliptic nor a composed system. Near the point of the intersection of the principal axis of the complex and of the imaginary circle centered on the obelisk with a diameter equal to the greater diameter of the Obliqua the square does not seem elliptic but circular. This illusion has several causes. Partly, it is of psychic origin relying on the common experience, and partly, it results from the features of ground level formation.

So far, the church has continuously withdrawn, its distance seems greater now than at the instant of entering the square. This deepening motion seems to entrain the corner points of the colonnade opposite to us. This would suffice in itself to widen the square into a circle but this illusion is still reinforced by experience. In reality, pure circular forms are but seldom encountered, only if the circle lies in a plane normal to, and concentric about, the axis of the cone of vision. It is known, on the other hand, that the ellipse is simply a special appearance of the circle, which would become circular if the standpoint was duly selected, that is to say, if transposed to the proper plane. This observation is universal enough to see circles in ellipses without any transposition, even if unjustified.

Maximum unfolding of Piazza Obliqua is at the center of the actual Piazza Rusticucci, at distances of 150, and of 200 m from the portico indicating the transversal axis, and the west edge of the colonnades, respectively. The great distance a priori hinders the exact perception of dimensions. Differences are rather blurred, causing to perceive the square as nearly circular. This illusion is further reinforced by the incomplete ground plan. Although it is bilaterally confined by two circular segments but these are interrupted before joining into half-circles. The line can be continued relatively freely. The only defined line, the length of the great axis is unconsciously taken as starting point, and the depth of the square is increased in this proportion to form a complete circle. Nevertheless, Bernini was not satisfied with expecting the desired effect from the interaction of a few factors. He did his best to lend the optical illusion the appearance of truth. The square has a ground not completely level, it is deepening toward the center. The mild inclination increases the view of the square to look like deeper than it really is.

The church is distanced by the elliptic square widened into a circle and approached by the trapezoidal Piazza Retta. The two effects oppose and practically annihilate each other, still, this solution cannot be considered as autotelic sophistication of the ground plan. It is incomprehensible from one standpoint, with a static approach, but it is integrated into the system as a whole, into the Baroque set of effects. As stated before, in the first unfolding of the Piazza Obliqua the center of gravity of the composition is shifted, the earlier role of the church is assumed by the square itself. This change of the subject is initially mainly visual, the attention being grasped by the attractive force of the grandiose sight. The initially formal exchange obtains a purport later to become functionally justified. Within the circle of the colonnades the obelisk is sooner attained than expected. The abruptly unfolding central square, the accelerated progress raises the feeling that the visitor is not alone to proceed. As if vivifying Bernini's famous sketch, the giant embracing the world, the square itself approaches us, changing the symbol of reception into a real action. The church itself sheds its reservation. At the obelisk, the effect of the ellipse to increase the distance is off, while the counter-perspective of the trapezoidal Piazza Retta increasingly prevails. The motion enhanced by the contrast unexpectedly brings the façade into human reach (Figs 18 and 19).

In the preparatory stage, the set of squares was still of a somewhat subordinate importance. It develops into an autonomous square in Piazza Obliqua. This autonomy is not, however, some Renaissance invertedness. It has only a relative independence, an indirect service to the church, by attracting the attention to itself, abridging the road section where intersection of dome and façade offer the least pleasant sight, and filling the time needed to do the critical path with a sensation of completeness and arrival.



Figs 18—19. Disclosure of the square system from the center of Piazza Obliqua

The last stage of unfolding is again dominated by the church. Piazza Retta reproduces the system of the access square part, hence its effect is to continue the process temporarily interrupted by Piazza Obliqua. But only the method is the same, the subject has changed in the meantime. At this close look, the dome has quietly withdrawn, the unfolding image is dominated by the façade, and the square adapts this mood. Rather than by a swingful colonnade, it is confined by a solid corridor divided by pilasters. The axial access comes to a standstill here, leading to a courtyard-like square tending to become self-contained like Piazza Obliqua, but with a certain inhibition it also adopts the dynamism of the starting set of images. The square is twofold. It hints to the superimposed façade beyond itself, inducing thereby to progress, and at the same time with the quietness of the view — especially at the beginning — it advises to stop.

Piazza Retta has the function to synthesize, to dissolve gradually the tension of square parts among themselves and between them and the basilica. Dissolution is a priori a two-way process, requiring simultanously the preservation and the annihilation of the features. But for San Pietro, it has a further,

special motivation. Errors due to the longitudinal extension of the centric mass, to the depressed proportions and to the contradictory divisions of the façade were corrected by Bernini already at the beginning with a twofold method. Partly, he created a view where the façade got balanced and so to say lifted by the verticalness of the dome. Beside that, he controlled the circumstances of unfolding to inhibit exact survey of the order of magnitude and of distance, forcing the onlooker to integrate the view continuously with his earlier sensations, associations, and to reconstruct independently the relations deemed to be real from the set of illusive impressions modifying each other.

Thereby, however, the active mental imagery of consciousness has become an important tool of correcting reality. Bernini gave a possibility for constructing a new, but still illusive sight comprising several typical elements of the previous set of images on unfolding, but at the same time raising the appearance of complete factualness, because it resulted exactly from the demand to eliminate delusion. These two fundamental features of square composition have been assumed by Piazza Retta.

At a close view, the dome disappears. It cannot raise the façade to itself, therefore — as Bernini said — the façade has to rise above itself. " . . . in certo modo si sarebbe sollevata sopra se stessa." Relevant publications have been deeply concerned with the means Bernini applied to achieve it. Human constitutional features involve to determine one's position always in a orthogonal coordinate system. The strive to a safe positional feeling causes that spatial forms, similar to the fundamental type, are often not only referred to these coordinates but spontaneously orthogonalized. Thus the trapezium is perceived as a rectangle within given limits — of course, only by those standing in its symmetry axis. The dimension nearer to the onlooker is spontaneously projected to the farther side. In the case of San Pietro, this means to reduce the façade width apparently to the lesser side length of Piazza Retta. At the same time, the correct perception of the height remains unaffected, so the illusion modifies here the proportions rather than the dimensions, making the façade to look like higher than it is.

At the same time the divergence of the form provides for the square to move together with the visitor rather than to surround him passively. The church façade continues to retreat slowly, more slowly than before. Depth of the counter-perspectivic square much decreases compared to the earlier ones, to be perfectly off at the center of Piazza Retta where the field of vision is completely filled out by the façade. This control of the square mobility can be explained by the change of its earlier function of acting directly with its dynamism. The building is too close to let its true perception be modified without a disillusioning, unpleasant distorsion. Softening of stiff space limits is rather expected to restore and to reevoke the mood of the first impressions.

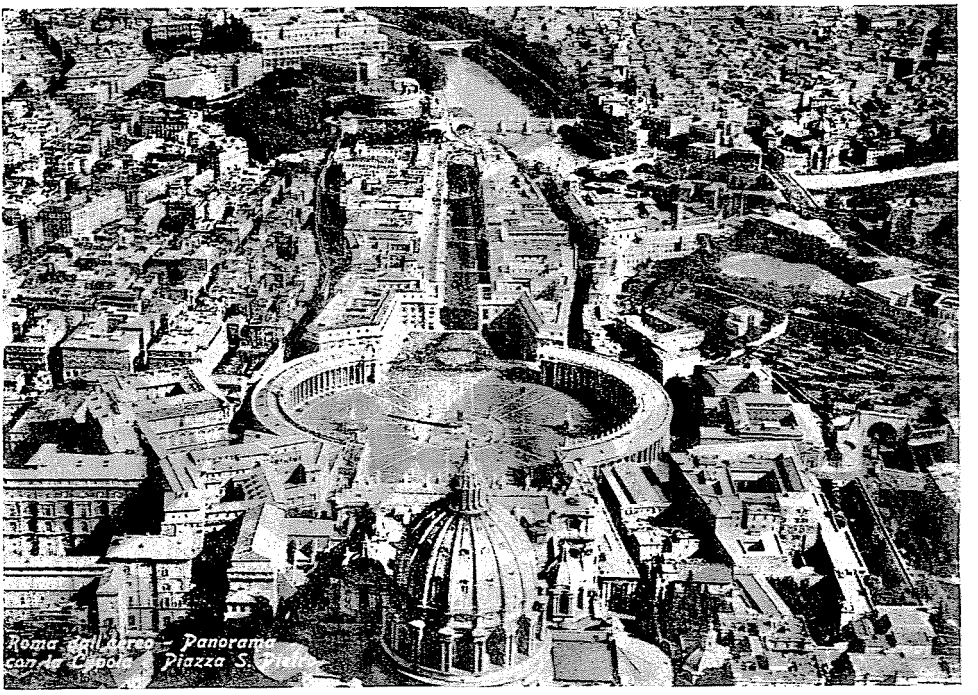


Fig. 20. Via della Conciliazione

after the temporary quietness of Piazza Obliqua, to restore the earlier visitor to church relation, to create thereby the psychical conditions of the scale change, an important means of unfolding the final sensation.

Piazza di San Pietro lacks an intermediary scale system leading from man to building with gradual transitions. This is easy to understand: exact communication of absolute dimensions, visual recording of spatial conditions would eliminate the possibility to correct reality by means of a mental image acting as real. In the first stage of unfolding, — as mentioned — the intermediary scale was delivered by dimensions associated by habits, empirical innervation with a given form. Thereby the integer square system together with the church could get reduced to nearly half the size. For the prevalence of this associative dimension, a given distance is required. It is no more valid on Piazza Retta. The building gradually assumes its proper dimensions. By that time, however — in lack of due perspective — the façade can only be surveyed in its details, which inverts the former process. Earlier the size of the building referred to the onlooker had been determined, at a scale delivered by a mental modular system. Now, consciousness keeps an overall image of the church, a dynamic, extensible image of an uncertain order of magnitude,

constantly refers to it the details the absolute dimensions of which are experienced directly without illusion. So far, the variable impressions rectifying each other were felt to approximate gradually and to reflect more and more clearly the reality. After having passed the set of squares this approximation proves to be illusory. Having arrived at the position to recapitulate the entire square system with no mistake, at least retrospectively, not only real elements but also contradictions of the set of sensations are superimposed. The scale to be referred to is unambiguously definite. But the image the real size of which is sought is indeterminate. The twofold transfer, the tension due to contradiction lends imagination a nearly unlimited freedom. In final account, the concluding sensation is shaped by ourselves, starting from the reality, to cope with demands, likings, moods.

Now, Bernini's composition method has delivered its secrets. The intended correction did not involve a late Renaissance mock perspective organized about one standpoint. Quite a number of perspectivic effects were applied and organically connected to the motion process so that the onlooker himself involuntarily adopts the logic of this system, and performs the needed modifications himself but always within the limits defined by the system. This peculiar Baroque square composition would be worth to be dwelt upon, let alone for the interesting problems of illusionism and theatricality characteristic of the period. This problem is, however, ramified enough to require a special study, outside the scope of this paper.

The outlined set of sensations is only complete if the complex in front of San Pietro is completed with a third square part, rather oblong to act as a road, providing for the preparation and making any further element of the square system, otherwise acting as autotelic solution, become justified. Thus, the aesthetic analysis further confirms the hypothesis rather justified by some data of the project, in particular, the perspectivic sketch by Bernini. It is seemingly contradicted by another sketch by Bernini (Fig. 4) where Piazza Obliqua is joined by a small-depth square. Considering, however, the simultaneity of both sketches made in early 1667, when Bernini was not only concerned with theoretical possibilities of continuing the construction but also elaborated a concrete plan for its accomplishment, both alternatives may be considered as parts of a uniform concept, detail studies of the design to be submitted to the congregation. There is nothing to let the latter to be considered as an independent proposal. The drawing definitely represents Piazza Retta and the colonnades. But it does not mark a square in the place of Rusticucci but an about unidentifiable ground plan, with Borgo Nuovo recognizable in its north side, and an arcuated road starting from the colonnade corner in the south side. The positions of the two roads compared to the square, and in general, representation of the area to the east of Piazza Obliqua, differ from the actual condition at that time but essentially agree with the respective part

of the perspectivic sketch. Thus, Bernini probably examined, rather than the concrete form of how to develop the square, a characteristic point of the unfolding of the complex of squares, analyzed in Figs 16 and 17, already considered for its importance and role in the overall effect. In this case, however, the ground plan sketch is integer with Bernini's design and confirms, rather than denies, the correctness of the reconstruction.

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