The Mathematics of the Ideal Villa

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There are two causes of beauty—natural and customary. Natural is from geometry consisting in uniformity, that is equality and proportion. Customary beauty is begotten by the use, as familiarity breeds a love for things not in themselves lovely. Here lies the great occasion of errors, but always the true test is natural or geometrical beauty. Geometrical figures are naturally more beautiful than irregular ones: the square, the circle are the most beautiful, next the parallelogram and the oval. There are only two beautiful positions of straight lines, perpendicular and horizontal; this is from Nature and consequently necessity, no other than upright being firm.

—Sir Christopher Wren, *Parentalia*

As the ideal type of centralized building Palladio's Villa Capra-Rotonda (Plate 1) has, perhaps more than any other house, imposed itself upon the imagination. Mathematical, abstract, four square, without apparent function and totally memorable, its derivatives have enjoyed universal distribution; and, when he writes of it, Palladio is lyrical.

The site is as pleasant and delightful as can be found, because it is on a small hill of very easy access, and is watered on one side by the Bacchiglione, a navigable river; and on the other it is encompassed about with most pleasant risings which look like a very great theatre and are all cultivated about with most excellent fruits and most exquisite vines; and therefore as it enjoys from every part most beautiful views, some of which are limited, some more extended, and others which terminate with the horizon, there are loggias made in all four fronts.[1]

When the mind is prepared for the one by the other, a passage from Le Corbusier's *Précisions* may be unavoidably reminiscent of this. No less lyrical but rather more explosive, Le Corbusier is describing the site of his Savoye House at Poissy (Plate 2).

Le site: une vaste pelouse bombée en dôme aplati. . . . La maison est une boîte en l'air . . . au milieu des prairies dominant le verger. . . . Le plan est pur. . . . Il à sa juste place dans l'agreste paysage de Poissy. . . . Les habitants, venus ici parce que cette campagne agreste était belle avec *sa vie de campagne*, ils la contempleront, maintenue intacte, du haut de leur jardin suspendu ou des quatre faces de leurs fenêtres en longueur. Leur vie domestique sera inserée dans un rêve virgilien.[2]

The Savoye House has been given a number of interpretations. It may indeed be a machine for living in, an arrangement of interpenetrating volumes and spaces, an emanation of space-time; but the suggestive reference to the dreams of Virgil may put one in mind of the passage in which Palladio describes the Rotonda. Palladio's landscape is more agrarian and bucolic, he evokes less of the untamed pastoral, his scale is larger; but the effect of the two passages is somehow the same.

Palladio, writing elsewhere, amplifies the ideal life of the villa. Its owner, from

within a fragment of created order, will watch the maturing of his possessions and savor the piquancy of contrast between his fields and his gardens; reflecting on mutability, he will contemplate throughout the years the antique virtues of a simpler race, and the harmonious ordering of his life and his estate will be an analogy of paradise.

The ancient sages commonly used to retire to such places, where being oftentimes visited by their virtuous friends and relations, having houses, gardens, fountains and such like pleasant places, and above all their virtue, they could easily attain to as much happiness as can be attained here below.[3]

Perhaps these were the dreams of Virgil; and, freely interpreted, they have gathered around themselves in the course of time all those ideas of Roman virtue, excellence, Imperial splendor, and decay which make up the imaginative reconstruction of the ancient world. It would have been, perhaps, in the landscapes of Poussin—with their portentous apparitions of the antique—that Palladio would have felt at home; and it is possibly the fundamentals of this landscape, the poignancy of contrast between the disengaged cube and its setting in the *paysage agreste,* between geometrical volume and the appearance of unimpaired nature, which lie behind Le Corbusier's Roman allusion. If architecture at the Rotonda forms the setting for the good life, at Poissy it is certainly the background for the lyrically efficient one; and, if the contemporary pastoral is not yet sanctioned by conventional usage, apparently the Virgilian nostalgia is still present. From the hygenically equipped boudoirs, pausing while ascending the ramps, the memory of the Georgics no doubt interposes itself; and, perhaps, the historical reference may even add a stimulus as the car pulls out for Paris.

However, a more specific comparison which presents itself is that between Palladio's Villa Foscari, the Malcontenta of *c.* 1550-60 (Plates 3, 4), and the house which in 1927 Le Corbusier built for Mr. and Mrs. Michael Stein at Garches (Plates 5, 6).

These are two buildings which, in their forms and evocations, are superficially so entirely unlike that to bring them together would seem to be facetious; but, if the obsessive psychological and physical gravity of the Malcontenta receives no parallel in a house which sometimes wishes to be a ship, sometimes a gymnasium, this difference of mood should not be allowed to inhibit scrutiny.

For, in the first case, both Garches and the Malcontenta are conceived of as single blocks (Plates 7, 8); and, allowing for variations in roof treatment, it might be noticed that both are blocks of corresponding volume, each measuring 8 units

in length, by 5½ in breadth, by 5 in height. Then, further to this, there is a comparable bay structure to be observed. Each house exhibits (and conceals) an alternating rhythm of double and single spatial intervals; and each house, read from front to back, displays a comparable tripartite distribution of lines of support (Figure 1).

But, at this stage, it might be better to introduce an *almost*. Because, if the distribution of basic horizontal coordinates is, in both cases, much the same, there are still some slight and significant differences relating to the distribution of those lines of support which parallel the facades; and thus at Garches, reading from front to back, the fundamental spatial interval proceeds in the ratio of ½ : 1½ : 1½ : 1½ : ½, while at the Malcontenta we are presented with the sequence 2 : 2 : 1½. In other words, by the use of a cantilevered half unit Le Corbusier obtains a compression for his central bay and thereby transfers interest elsewhere; while Palladio secures a dominance for his central division with a progression towards his portico which absolutely focuses attention in these two areas. The one scheme is, therefore, potentially dispersed and possibly equalitarian and the other is concentric and certainly hierarchical; but, with this difference observed, it might simply be added that, in both cases, a projecting element—extruded terrace or attached portico—occupies 1½ units in depth.

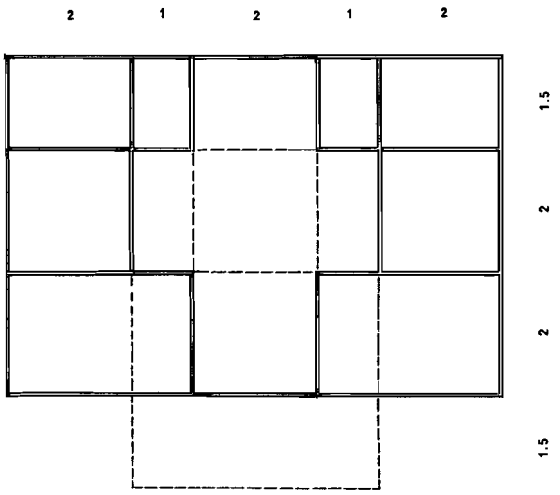
Structures, of course, are not to be compared; and, to some extent, both architects look to structure as a justification for their dispositions. Thus Palladio employs a solid bearing wall; and of this system he writes:

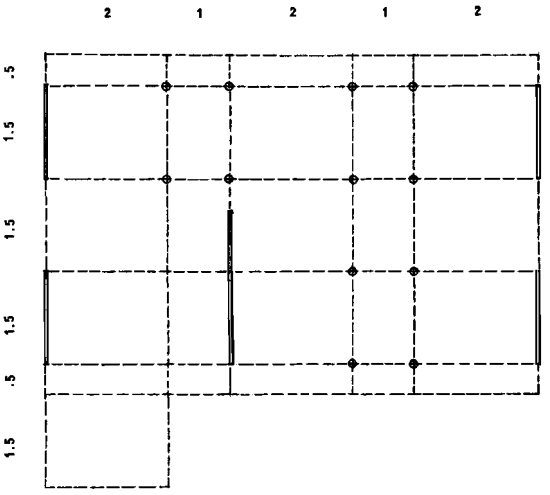
It is to be observed, that those (rooms) on the right correspond with those on the left, that so the fabric may be the same in one place as in the other, and that the walls may equally bear the burden of the roof; because if the walls are made large in one part and small in the other, the latter will be more firm to resist the weight, by reason of the nearness of the walls, and the former more weak, which will produce in time very great inconveniences and ruin the whole work.[4]

Palladio is concerned with the logical disposition of motifs dogmatically accepted, but he attempts to discover a structural reason for his planning symmetries; while Le Corbusier, who is proving a case for structure as a basis for the formal elements of design, contrasts the new system with the old and is a little more comprehensive.

Je vous rappelle ce "plan paralyse" de la maison de pierre et ceci à quoi nous sommes arrivés avec la maison de fer ou de ciment armé.
plan libre
façade libre

Figure 1 Malcontenta and Garches. Analytical diagrams.





ossature indépendante
fenêtres en longueur ou pan de verre
pilotis
toit-jardin
et l'intérieur muni de "casiers" et débarrassé de l'encombrement des meubles.[5]

Palladio's structural system makes it almost necessary to repeat the same plan on every level of the building, while point support allows Le Corbusier a flexible arrangement; but both architects make a claim which is somewhat in excess of the reasons they advance. Solid wall structures, Palladio declares, demand absolute symmetry; a frame building, Le Corbusier announces, requires a free arrangement: but these must be, at least partly, the personal exigencies of high style—for asymmetrical buildings of traditional structure remain standing and even frame buildings of conventional plan continue to give satisfaction.

In both houses there is a *piano nobile* one floor up, which is linked to the garden by a terrace or portico and a flight (or flights) of steps. At the Malcontenta this main floor shows a cruciform hall with, symmetrically disposed about it, two suites of three rooms each and two staircases; but at Garches there is nothing so readily describable. At Garches there is a central hall and there are two staircases; but while one of the staircases occupies a similar position to those of the Malcontenta, the other has been turned through an angle of ninety degrees. Further, the entrance hall has been revealed from this level by an asymmetrical cutting open of the floor; and the terrace (which corresponds to the Malcontenta's portico) has become partly a reentrant volume obliterating a line of support, placed in distinctly less perceptible relationship to the principal room. Thus, at Garches, the cruciform shape survives only vestigially (perhaps it may be thought to be registered by the apse of the dining room?); and therefore, instead of the centrality of Palladio's major space, a Z-shaped balance is achieved which is assisted by throwing the small library into the main apartment. Finally, while at the Malcontenta there is a highly evident cross axis, at Garches this transverse movement which is intimated by the central voids of the end walls is only allowed to develop implicitly and by fragments.

The wall at the Malcontenta comprises the traditional solid pierced by vertical openings with a central emphasis in the portico and subsidiary accents in the outer windows placed toward the extremities of the facade. The double bay in the center of the building which carries the upper pediments of the roof is expressed on the one front by a single door, on the other by a 'Roman baths' motif; and, horizontally, the wall also falls into three primary divisions: base; *piano nobile*, corresponding to the Ionic order of the portico; and superimposed attic. The base

plays the part of a projecting, consistently supporting solid upon which the house rests; but, while the *piano nobile* and attic are rusticated, the base is treated as a plain surface and a feeling of even greater weight carried here is achieved by this highly emotive inversion of the usual order.

Again the situation at Garches is more complex; and there the exploitation of the structural system has led to a conception of the wall as a series of horizontal strips—a strategy which places equal interest in both center and extremity of the facade and which is then maintained by Le Corbusier's tendency to suppress the wider spans of the double bays. By these means any system of central vertical accent and inflection of the wall leading up to it is profoundly modified; and the immediate result in the garden elevation of Garches shows itself in the displacing of the elements which may be considered equivalent to the Malcontenta's portico and superimposed pediment. These become separate; and, transposed as terrace and roof pavilion, the one occupies the two (or three) bays to the left of the facade, the other a central position in the solid but an asymmetrical one in the whole elevation.

On the other hand, the entrance front at Garches retains what could be regarded as the analogue of Palladio's upper pediment. This is the central element of the upper story; but then it is also noticeable, in spite of its symmetrical position, that the further development of this element within itself is not symmetrical. Nor does it promote symmetry in the facade as a whole; and, though it is responded to by the large central window of the entrance hall, since the horizontal gashes of the windows act to prohibit any explicit linking of these two manifestations, there ensues in the elevation something very like that simultaneous affirmation and denial of centrality which is displayed in the plan. Thus a central focus is stipulated; its development is inhibited; and there then occurs a displacement and a breaking up of exactly what Palladio would have presumed to be a normative emphasis.

Another chief point of difference lies in the interpretation of the roof. At the Malcontenta this forms a pyramidal superstructure which amplifies the volume of the house (Plate 9); while at Garches it is constituted by a flat surface, serving as the floor of an enclosure, cut out from—and thereby diminishing—the house's volume. Thus, in the one building the behavior of the roof might be described as additive and in the other as subtractive; but, this important distinction apart, both roofs are then furnished with a variety of incident, regular or random, pediment or pavilion, which alike enter into important—though very different—relationships with the vertical surfaces of the walls below.

That mathematics and musical concord were the basis of ideal proportion was a common belief of the circles in which Palladio moved. Here there was felt to be a correspondence between the perfect numbers, the proportions of the human figure and the elements of musical harmony;[6] and Sir Henry Wotton, as British ambassador to Venice at a slightly later date, reflects some part of this attitude when he writes:

The two principal Consonances that most ravish the Ear are, by the consent of all Nature, the *Fifth* and the *Octave*; whereof the first riseth radically, from the Proportion between two and three. The other from the double Interval, between one and two, or between two and four, etc. Now if we shall transport these Proportions, from audible to visible Objects, and apply them as shall fall fittest . . . , there will indubitably result from either, a graceful and harmonious Contentment to the Eye.[7]

It was not, in fact, suggested that architectural proportions were derived from musical harmonies, but rather that the laws of proportion were established mathematically and everywhere diffused. The universe of Platonic and Pythagorean speculation was compounded of the simpler relationships of numbers, and such a cosmos was formed within the triangle made by the square and the cube of the numbers 1, 2, 3. Also, its qualities, rhythms, and relationships were established within this framework of numbers up to 27; and if such numbers governed the works of God, it was considered fitting that the works of man should be similarly constructed, that a building should be a representative, in microcosm, of the process exhibited at a larger scale in the workings of the world. In Alberti's words: "*Nature is sure to act consistently and with a constant analogy in all her operations*";[8] and, therefore, what is patent in music must also be so in architecture. Thus, with proportion as a projection of the harmony of the universe, its basis—both scientific and religious—was quite unassailable; and a Palladio could enjoy the satisfactions of an aesthetic believed to be entirely objective.

Le Corbusier has expressed similar convictions about proportion. Mathematics bring "*des vérités réconfortantes*," and "*on ne quitte pas son ouvrage qu'avec la certitude d'être arrivé à la chose exacte*";[9] but if it is indeed exactness which Le Corbusier seeks, within his buildings it is not the unchallengeable clarity of Palladio's volumes which one finds. It is, instead, a type of planned obscurity; and, consequently, while in the Malcontenta geometry is diffused throughout the internal volumes of the entire building, at Garches it seems only to reside in the block as a whole and in the disposition of its supports.

The theoretical position upon which Palladio's position rested broke down in the eighteenth century when proportion became a matter of individual sensibility

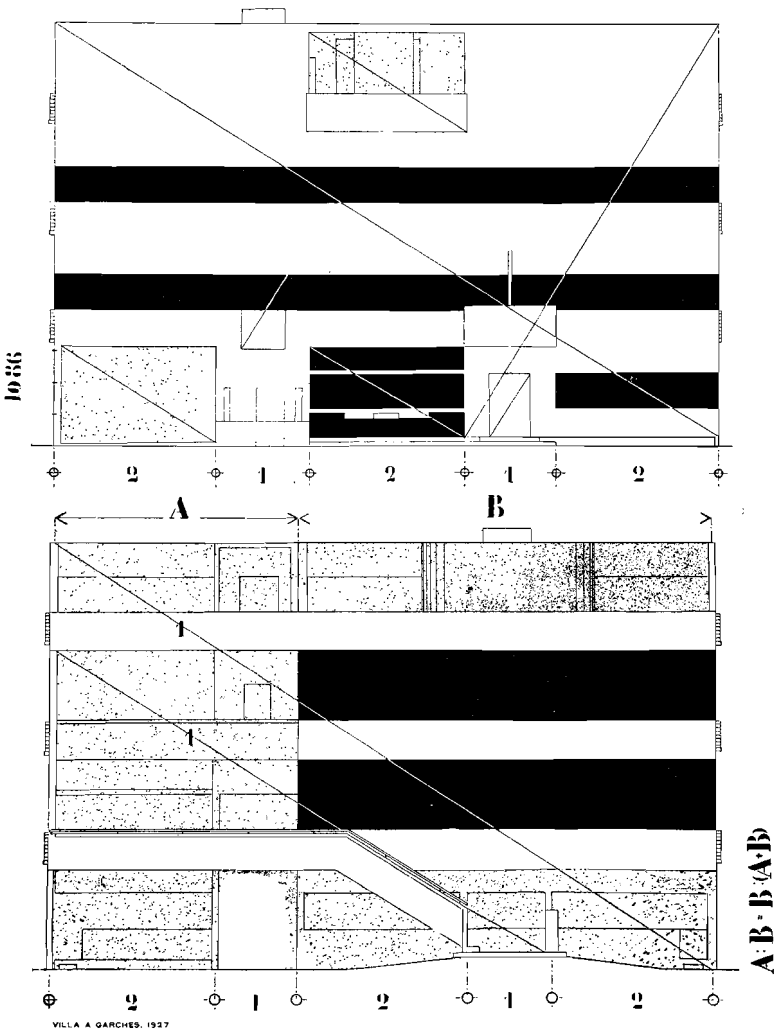
and private inspiration;[10] and Le Corbusier, in spite of the comforts which mathematics afford him, simply in terms of his location in history can occupy no such unassailable position. Functionalism was, perhaps, a highly Positivistic attempt to reassert a scientific aesthetic which might possess the objective value of the old, and the ultimately Platonic-Aristotelian critique. But its interpretation was crude. Results may be measured in terms of process, proportions are apparently accidental and gratuitous; and it is in contradiction to this theory that Le Corbusier imposes mathematical patterns upon his buildings. These are the universal "*vérités réconfortantes*."

Thus, either because of or in spite of theory both architects share a common standard, a mathematical one, defined by Wren as "natural" beauty; and, within limitations of a particular program, it should therefore not be surprising that the two blocks should be of corresponding volume or that both architects should choose to make didactic advertisement of their adherence to mathematical formulae. Of the two—and, perhaps, characteristically—Le Corbusier is the more aggressive; and at Garches he carefully indicates his relationships by an apparatus of regulating lines and figures and by placing on the drawings of his elevations the ratio of the golden section, A : B = B : (A + B) (Figure 2).

But, if Le Corbusier's facades are for him the primary demonstrations of the virtues of a mathematical discipline, with Palladio it would seem that the ultimate proof of his theory lies in his plan. Throughout his *Quattro libri*, Palladio consistently equips both his plans and elevations with their numerical apologetic (Plate 8); but the cryptic little figures which he appends to his drawings seem always to be more convincing, or at least more comprehensible, when they relate to the plan. And this is, possibly, to be understood, for in a house such as the Malcontenta the plan may be seen as an exhibition of 'natural' beauty, as the pure thing, abstract and uncomplicated; but the facades are, of necessity, adulterated (though scarcely to their detriment) by an intrusion of 'customary' material. The facades become complicated, their strict Platonic rationale may be ultimately vitiated by the traditional presence, in this case, of the Ionic order which possesses its own rationale and which inevitably introduces an alternative system of measurement (Plate 11).

The conflict between the 'customary' demands of the order and a series of 'natural' relationships might be assumed to be the source from which the facades of the Malcontenta derive. They are suggestive, evocative, but they are not easily or totally susceptible to mathematical regulation; and, therefore, it is again toward Palladio's plan that one reverts. Provided with explanatory dimensions, the two

Figure 2 Garches, elevations.



suites comprising three rooms each can be read as a progression from 3 : 4 to a 2 : 3 relationship. They are numbered 12 : 16, 16 : 16 and 16 : 24.

And here, on the part of Le Corbusier and Palladio, we have to recognize, if not duplicity, at least wishful thinking; but, if the ratio of 3 : 5 = 5 : 8 is only an approximation to that of the golden section, and if the ideal measurement of Palladio's rooms does not concur with what is their actual size,[11] this is to be expected and it should not be considered useful to enlarge upon these inconsistencies. Instead it should be considered much more opportune to examine Palladio's preference for the triple division and Le Corbusier's propensity to divide by four.

At the Malcontenta, as already noticed, the facades are divided vertically into three principal fields, those of the portico and the flanking walls, and horizontally the same situation prevails in the sequence, basement, *piano nobile*, attic; but at Garches, in spite of the comparable structural *parti*, it is always a situation if not of one, at least of two or, alternatively, of four fields of interest with which we are presented. Thus in the entrance elevation, it is a business of four and one which prevails; and, in the garden facade, this breakdown becomes a matter of four and two.

But, in both houses, there are elaborations in detail of the dominant schema which becomes complicated by its interplay with a subsidiary system. That is: it is by vertical extension into arch and vault, diagonal of roof line and pediment that Palladio modifies the geometrical asperities of his cube; and this use of the circular and pyramidal elements with the square seems both to conceal and to amplify the intrinsic severity of the volumes. However, the arch, the vault, and the pyramid are among the prerogatives of solid wall construction. They are among the freedoms of the traditional plan, the "*plan paralysé*"; and the introduction of arched forms and pitched roofs is a liberty which at Garches Le Corbusier is unable to allow himself. For in the frame building it is obviously not, as in the solid wall structure, the vertical planes which predominate. Rather it is the horizontal planes of floor and roof slabs (Plate 12); and, therefore, the quality of paralysis which Le Corbusier noticed in the plan of the solid wall structure is, to some extent, transferred in the frame building to the section. Perforation of floors, giving a certain vertical movement of space, is possible; but the sculptural quality of the building as carving has disappeared and there can be nothing of Palladio's firm sectional transmutation and modeling of volume. Instead, following the predominant planes of the slabs, in the frame building extension and elaboration must occur horizontally. In other words, free plan is exchanged for free section; but the

limitations of the new system are quite as exacting as those of the old; and, as though the solid wall structure has been turned on its side, with the former complexities of section and subtleties of elevation now transposed to plan, there may be here some reason for Palladio's choice of plan and Le Corbusier's choice of elevations as being the documents, in each case, most illustrative of elementary mathematical regulation.

The spatial audacities of the Garches plan continue to thrill; but it may sometimes seem to be an interior which is acceptable to the intellect alone—to the intellect operating from within a stage vacuum. Thus there is at Garches a permanent tension between the organized and the apparently fortuitous. Conceptually, all is clear; but, sensuously, all is deeply perplexing. There are statements of a hierarchical ideal; there are counter statements of an egalitarian one. Both houses may seem to be apprehensible from without; but, from within, in the cruciform hall of the Malcontenta, there is a clue to the whole building; while, at Garches, it is never possible to stand at any point and receive a total impression. For at Garches the necessary equidistance between floor and ceiling conveys an equal importance to all parts of the volume in between; and thus the development of absolute focus becomes an arbitrary, if not an impossible, proceeding. This is the dilemma propounded by the system; and Le Corbusier responds to it. He accepts the principle of horizontal extension; thus, at Garches central focus is consistently broken up, concentration at any one point is disintegrated, and the dismembered fragments of the center become a peripheral dispersion of incident, a serial installation of interest around the extremities of the plan.

But it is now that this system of horizontal extension which is *conceptually* logical comes up against the rigid boundary of the block which, almost certainly, is felt to be *perceptually* requisite;[12] and, consequently, with horizontal extension checked, Le Corbusier is obliged to employ an opposite resource. That is, by gouging out large volumes of the block as terrace and roof garden, he introduces a contrary impulse of energy; and by opposing an explosive moment with an implosive one, by introducing inversive gestures alongside expansive ones, he again makes simultaneous use of conflicting strategies.

By its complexities, the resultant system (or symbiosis of systems) throws into intense relief the elementary, geometrical substructure of the building; and, as a sequel, the peripheral incident which substitutes for the Palladian focus can also become compounded with the inversions (of terrace and roof garden) which represent an essentially analogous development to Palladio's strategy of vertical extension.

Finally, a comparable process to that which occurs in plan takes place also in the elevations, where there is the same regular diffusion of value and irregular development of points of concentration; and here, with the horizontal windows conveying an equality to both the center and verge of the facades, a disintegration of focus which is never complete causes a brisk oscillation of attention. Here, as in the plan, there is nothing residual, nothing passive, nothing slow moving; and the extremities of the block, by this means, acquire an energetic clarity and tautness, as though they were trying to restrain the peripheral incident from flying out of the block altogether.

A detailed comparison is less easy to sustain between the two houses which, initially, seemed to invite their linking together: the Savoye House and the Villa Rotonda; and, conceivably, this is because neither of these buildings is so entirely condensed in its structure and its emotional impact as are, respectively, the earlier Garches and the later Malcontenta. The Savoye House and the Rotonda are both more famous; but they are also, in each case, more obviously Platonic and easy to take. Possibly this is because they are both in the round; and that, therefore, what is concentrated in two fronts at Garches and the Malcontenta is here diffused through four, resulting in far greater geniality of external effect. But, if there is a noticeable easiness and lack of tension to be found in these facades, there are analogous developments to those in the other houses. Such are Palladio's concern, both in plan and elevation, with central emphasis and Le Corbusier's determined dispersal of focus. At Poissy, just possibly, the complicated volumes of the upper roof garden replace the Palladian pitched roof and cupola; and again, just possibly, Palladio's four projecting loggias are subsumed within the block as the enclosed terrace which, alternatively, as the dominant element of the *piano nobile*, could also be considered to correspond to the domed salon of the Rotonda.

But, symbolically and in the sphere of 'customary' beauty, Palladio's and Le Corbusier's buildings are in different worlds. Palladio sought complete clarity of plan and the most lucid organization of conventional elements based on symmetry as the most memorable form of order, and mathematics as the supreme sanction in the world of forms. In his own mind his work was essentially that of adaptation, the adaptation of the ancient house; and, at the back of his mind were always the great halls of the Imperial thermae and such buildings as Hadrian's villa at Tivoli. He had several schemes of archaeological reconstruction of Greek and Roman domestic buildings, based on Vitruvius and Pliny, incorporating elements which in Greek and Roman practice would have been found only in public build-

ings, but which he regarded as general. Indeed, Rome for him was still supremely alive; and, if the ancients had adapted the temple from the house, their large scale planning was, no doubt, similarly reflective.

Notoriously, Le Corbusier has an equal reverence for mathematics and he would appear also, sometimes, to be tinged with a comparable historicism. For his plans he seems to find at least one source in those ideals of *convenance* and *commodité* displayed in the ingenious planning of the Rococo hotel, the background of a social life at once more amplified and intimate. The French, until recently, possessed an unbroken tradition of this sort of planning; and, therefore, one may often discover in a Beaux Arts utilization of an irregular site, elements which if they had not preceded Le Corbusier might seem to be curiously reminiscent of his own highly suave vestibules and boudoirs. Le Corbusier admires the Byzantine and the anonymous architecture of the Mediterranean world; and there is also present with him a purely French delight in the more overt aspects of mechanics. The little pavilion on the roof at Garches is, at the same time, a temple of love and the bridge of a ship. The most complex architectural volumes are fitted with running water.

Geometrically, both architects may be said to have approached something of the Platonic archetype of the ideal villa to which the fantasy of the Virgilian dream might be supposed to relate; and the realization of an idea which is represented by the house as a cube could also be presumed to lend itself very readily to the purposes of Virgilian dreaming. For here is set up the conflict between the absolute and the contingent, the abstract and the natural; and the gap between the ideal world and the too human exigencies of realization here receives its most pathetic presentation. The bridging must be as competent and compelling as the construction of a well-executed fugue; and, if it may be charged, as at the Malcontenta with almost religious seriousness, or, as at Garches, imbued with sophisticated and witty allusion, its successful organization is an intellectual feat which reconciles the mind to what may be some fundamental discrepancies in the program.

As a constructor of architectural fugues, Palladio is the convinced classicist with a sixteenth century repertory of well-humanized forms; and he translates this received material with a passion and a high seriousness fitting to the continued validity that he finds it to possess. The reference to the Pantheon in the superimposed pediments of the Malcontenta, to the thermae in its cruciform salon, the ambiguity, profound in both idea and form, in the equivocal conjunction of temple front and domestic block; these are charged with meaning, both for what they

are and what they signify; and their impression is poignant. By such apparatus the ancient house is not recreated, but something far more significant is achieved: a creative nostalgia evokes a manifestation of mythical power in which the Roman and the ideal are equated.

By contrast Le Corbusier is, in some ways, the most catholic and ingenious of eclectics. The orders, the Roman references, were the traditional architectural clothing of authority; and, if it is hard for the modern architect to be quite so emphatic about any particular civilization as was Palladio about the Roman, with Le Corbusier there is always an element of wit suggesting that the historical (or contemporary) reference has remained a quotation between inverted commas, possessing always the double value of the quotation, the associations of both old and new context. In spite of his admiration for the Acropolis and Michelangelo, the world of high classical Mediterranean culture on which Palladio drew so expressively is largely closed for Le Corbusier. The ornamental adjuncts of humanism, the emblematic representations of the moral virtues, the loves of the Gods and the lives of the Saints have lost their former monopoly; and as a result, while allusion at the Malcontenta is concentrated and direct, at Garches it is dissipated and inferential. Within the one cube the performance attempts the Roman; but, within the other, no such exclusive cultural ideal is entertained. Instead, as the sponsors of his virtuosity, Le Corbusier largely selects a variety of hitherto undiscriminated phenomena. He selects the casual incidents of Paris, or Istanbul, or wherever it may be; aspects of the fortuitously picturesque, of the mechanical, of objects conceived to be typical, of whatever might seem to represent the present and the usable past; and all those items, while transformed by their new context, retain their original implications which signify maybe Platonic ideality, maybe Rococo intimacy, maybe mechanical precision, maybe a process of natural selection. That is, one is able to seize hold of all these references as something known; but, in spite of the new power with which they become invested, they are only transiently provocative. Unlike Palladio's forms, there is nothing final about any of their possible relationships; and their rapprochement would seem to be affected by the artificial emptying of the cube in which they find themselves located, when the senses are confounded by what is apparently arbitrary and the intellect is more than convinced by the intuitive knowledge that, despite all to the contrary, here problems have been both recognized and answered and that here there is a reasonable order.

The neo-Palladian villa, at its best, became the picturesque object in the English park and Le Corbusier has become the source of innumerable pastiches and of

tediously amusing exhibition techniques; but it is the magnificently realized quality of the originals which one rarely finds in the works of neo-Palladians and exponents of 'le style Corbu.' These distinctions scarcely require insistence; and no doubt it should only be sententiously suggested that, in the case of the derivative works, it is perhaps an adherence to 'rules' which has lapsed.

Addendum 1973

Though a parallel of Schinkel with late Corbu might not be so rewarding as the comparison of early Corbu and Palladio, much the same arguments as those surfacing in this article might quite well be found developing themselves if, for the Villa Malcontenta, one were to substitute the Berlin Altes Museum and, for Garches, the Palace of the Assembly at Chandigarh. Illustrations (Plates 13-16) might suffice to make the point: a conventional classical *parti* equipped with traditional *poché* and much the same *parti* distorted and made to present a competitive variety of local gestures—perhaps to be understood as compensations for traditional *poché*.

A criticism which begins with approximate configurations and which then proceeds to identify differences, which seeks to establish how the same general motif can be transformed according to the logic (or the compulsion) of specific analytical (or stylistic) strategies, is presumably Wölflinian in origin; and its limitations should be obvious. It cannot seriously deal with questions of iconography and content; it is perhaps over symmetrical; and, because it is so dependent on close analysis, if protracted, it can only impose enormous strain upon both its consumer *and* producer. However, if one would not like to imagine oneself confronted with the results of an intensive critical workout on the *matériel* provided by the Altes Museum and the Palace of the Assembly, this reservation should not be understood as depreciating the limited value of such an exercise. For the two buildings incite comparison and can also, both of them, stimulate further parallel with certain productions of Mies van der Rohe. But, if normal intuition might suggest so much, a Wölflinian style of critical exercise (though painfully belonging to a period *c.* 1900) might still possess the merit of appealing primarily to what is visible and of, thereby, making the minimum of pretences to erudition and the least possible number of references outside itself. It might, in other words, possess the merits of accessibility—for those who are willing to accept the fatigue.

Notes

1 Isaac Ware, *The Four Books of Palladio's Architecture*, London, 1738, p. 41.

2 Le Corbusier, *Précisions sur un état présent de l'architecture et de l'urbanisme*, Paris, 1930, pp. 136-38.

3 Ware, p. 46.

4 Ware, p. 27.

5 Le Corbusier, *Précisions*, p. 123.

6 For these particular observations I am highly indebted to Rudolf Wittkower, *Architectural Principles in the Age of Humanism*, London, 1949.

7 Sir Henry Wotton, *The Elements of Architecture*, published in John Evelyn, *Parallel of the Ancient Architecture with the Modern*, 3rd ed., London, 1723, p. xv.

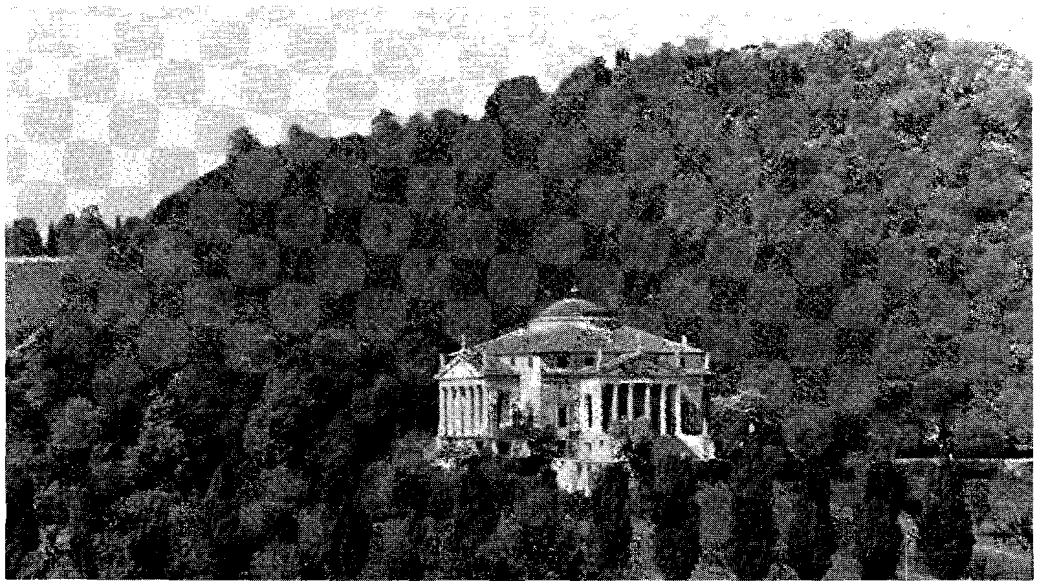
8 Giacomo Leoni, *Ten Books on Modern Architecture by Leon Battista Alberti*, 3rd ed., London, 1755, p. 196.

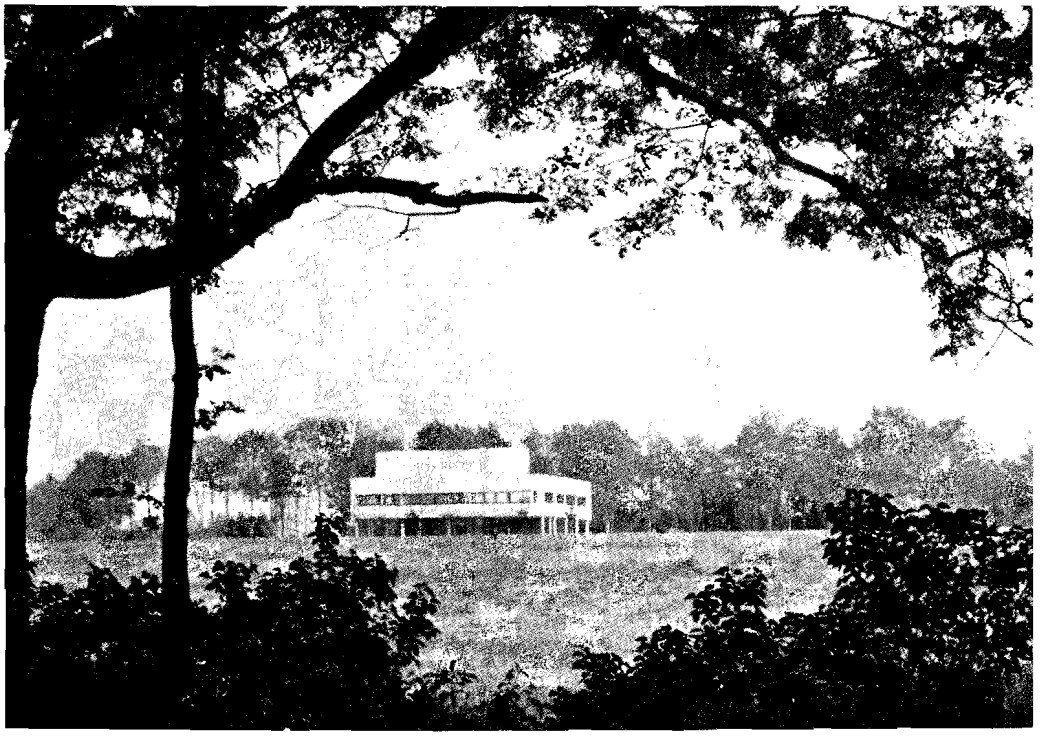
9 Le Corbusier and Pierre Jeanneret, *Oeuvre complète 1910-1929*, 3rd ed., Zurich, 1943, p. 144. These remarks refer to Garches.

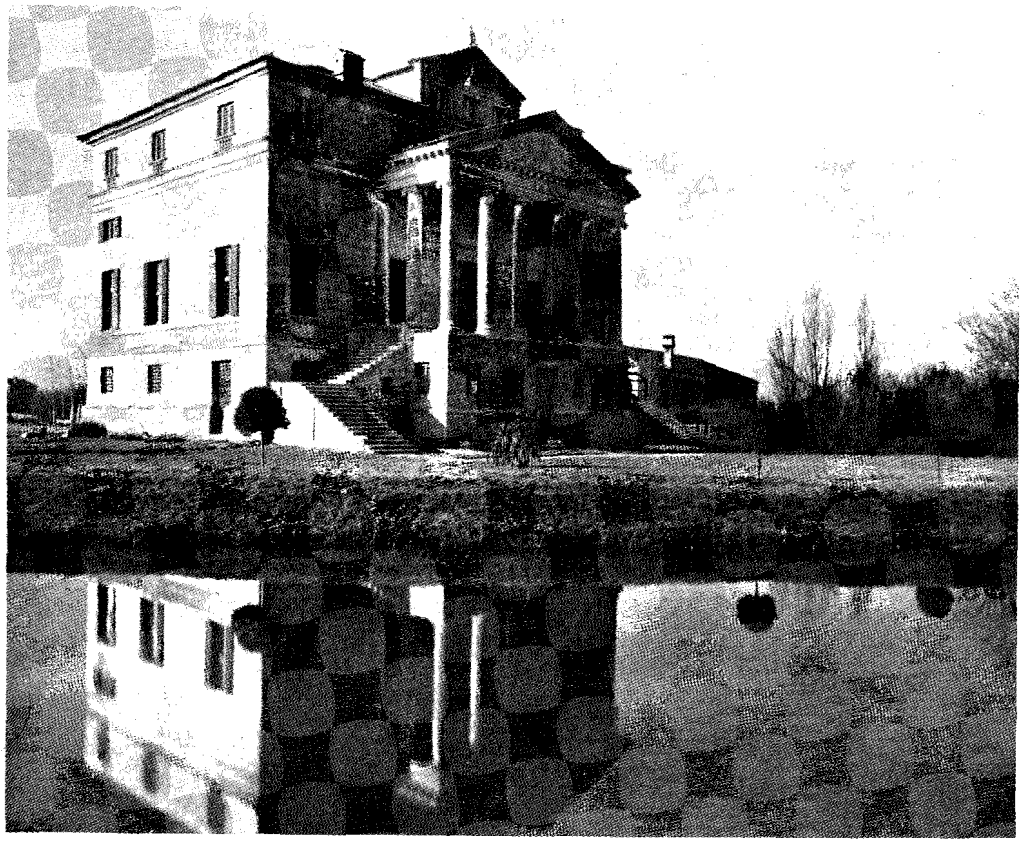
10 "The break away from the laws of harmonic proportion in architecture" is extensively discussed in Wittkower (*see* n. 6), but the parallel disintegration of the Platonic-Aristotelian critical tradition is somewhat more laconically observed by Logan Pearsall Smith: "There are great youths too whose achievements one may envy; the boy David who slew Goliath and Bishop Berkeley who annihilated, at the age of twenty five, in 1710, the external world in an octavo volume; and the young David Hume, who, in 1739, by sweeping away all the props of the human understanding, destroyed for ever and ever all possibility of knowledge." Logan Pearsall Smith, *All Trivia*, London, 1947, p. 159.

11 For the actual rather than the ideal internal measurements of the Malcontenta see Ottavio Bertotti Scamozzi, *Les batiments et les desseins de andre palladio*, Vicenza, 1776-83.

12 It is possible to suppose that the rigid boundaries of Garches were considered to be perceptually necessary. The house is presented as one of 'the four compositions' in *Oeuvre complète 1910-1929*, p. 189; and, in *Précisions*, p. 73, Le Corbusier writes of Garches: "Pour s'imposer à l'attention, pour occuper puissament l'espace, il fallait d'abord une surface première de forme parfaite, puis une exaltation de la platitude de cette surface par l'apport de quelges saillies ou de trous faisant intervenir un mouvement avant-arrière."







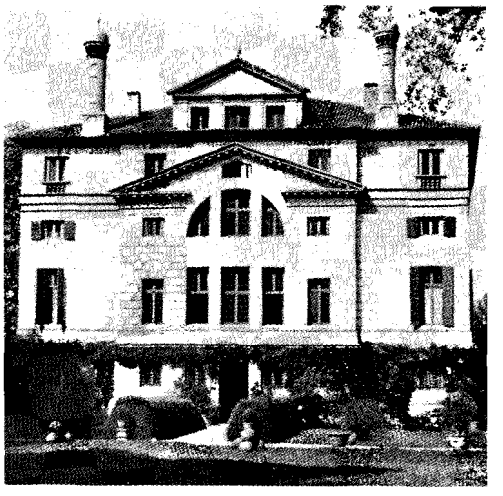


Plate 1 Villa Capra-Rotonda, Vicenza. Andrea Palladio, *c.* 1550.

Plate 2 Villa Savoye, Poissy. Le Corbusier, 1929-31.

Plate 3 Villa Malcontenta (Villa Foscari), Malcontenta di Mira. Palladio, *c.* 1550-60.

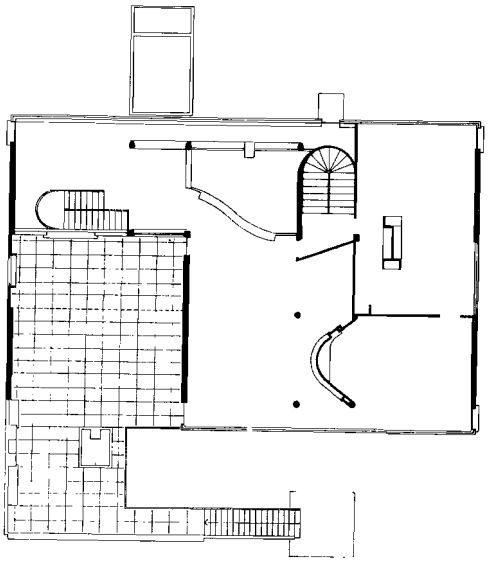
Plate 4 Villa Malcontenta.

Plate 5 Villa Stein, Garches. Le Corbusier, 1927.

Plate 6 Villa Stein.

Plate 7 Villa Stein. Plan.

Plate 8 Villa Malcontenta. Plan.



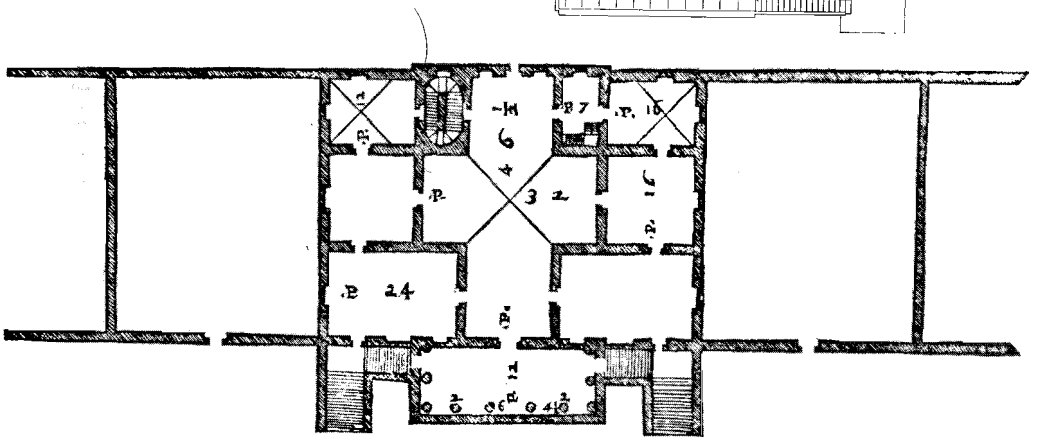
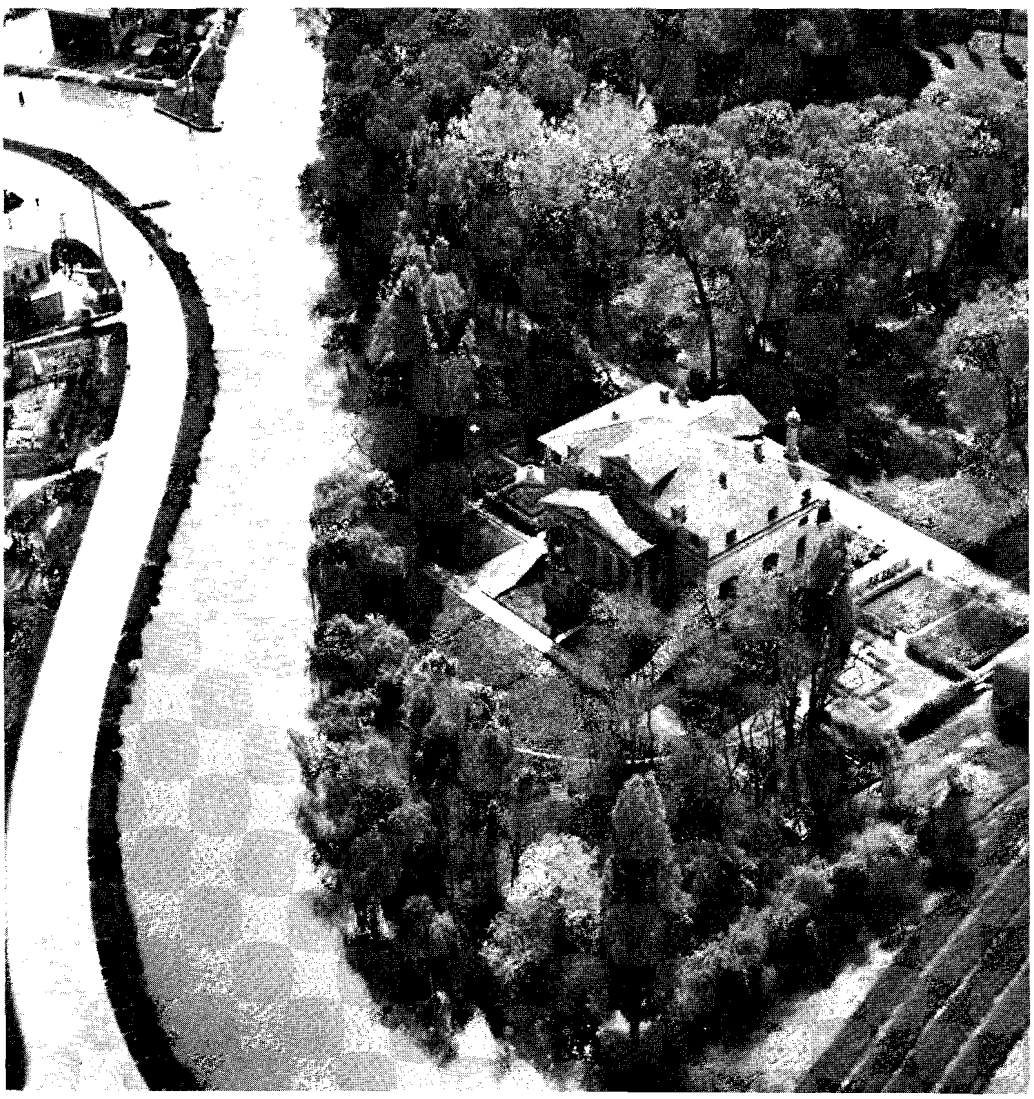


Plate 9 Villa Malcontenta. Aerial view.

Plate 10 Villa Stein. Axonometric view.

Plate 11 Villa Malcontenta. Facade.



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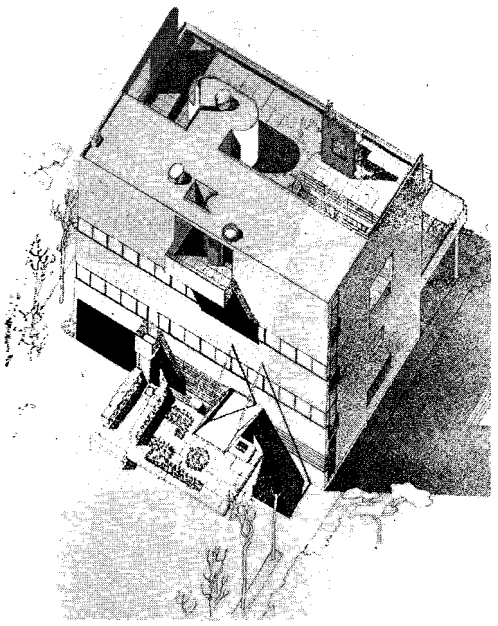
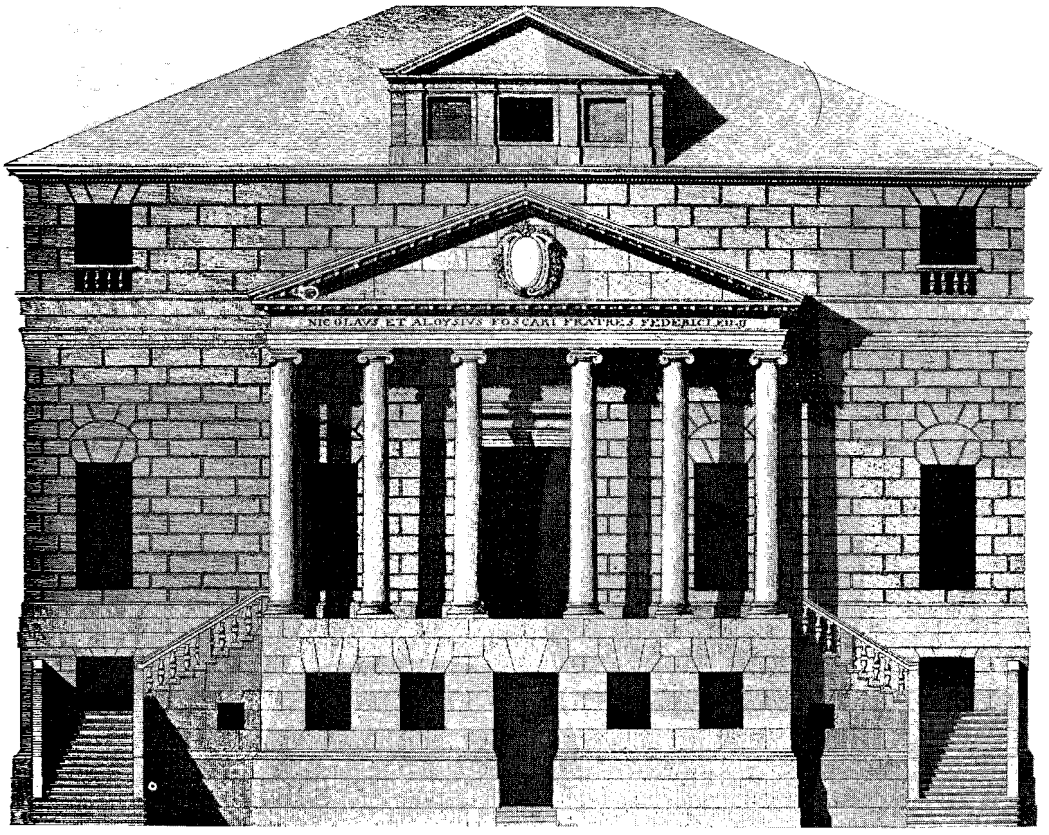




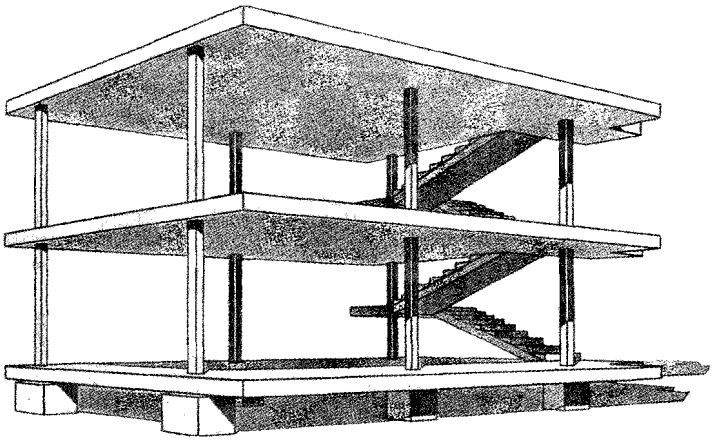


Plate 12 Project, Maison Domino. Le Corbusier, 1914.

Plate 13 Altes Museum, Berlin. Karl Friedrich Schinkel, 1823.

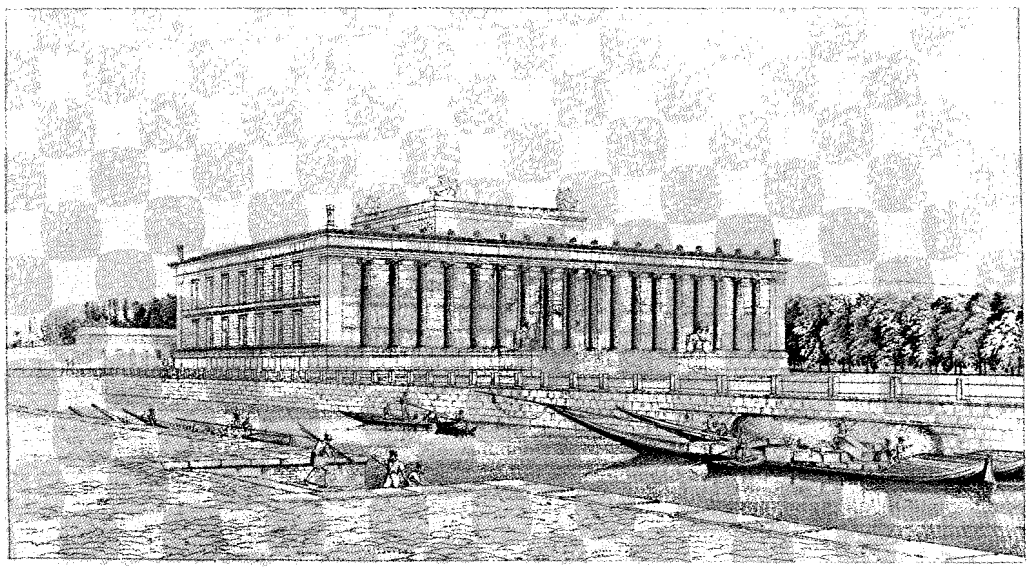
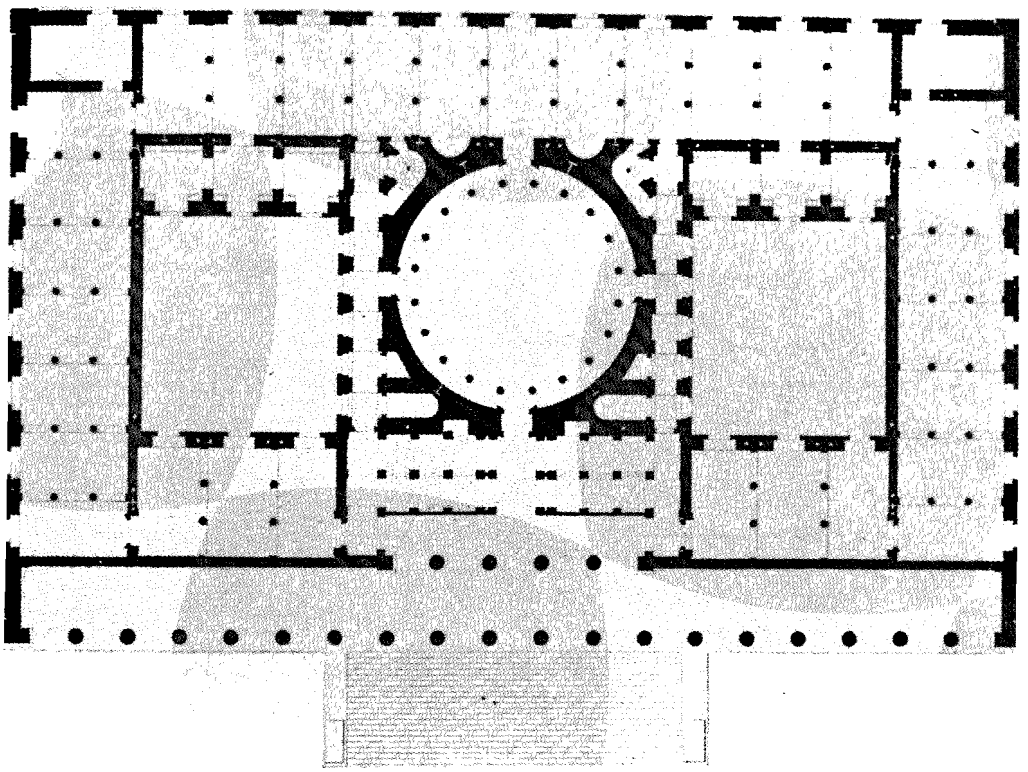


Plate 14 Altes Museum. Plan.



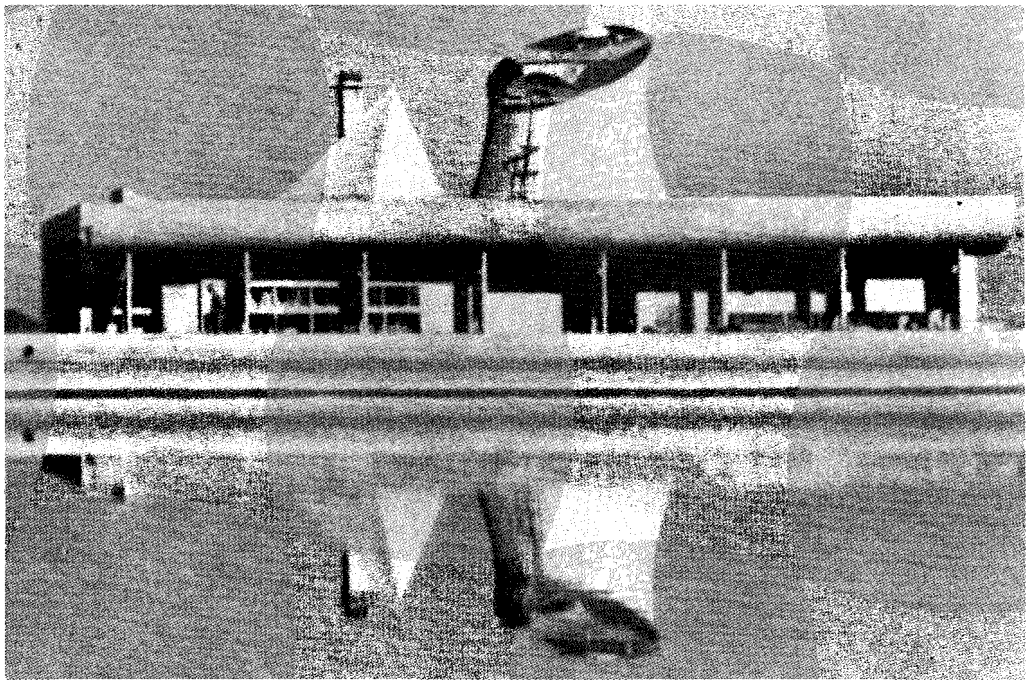


Plate 15 Palace of the Assembly, Chandigarh. Le Corbusier, 1953- .

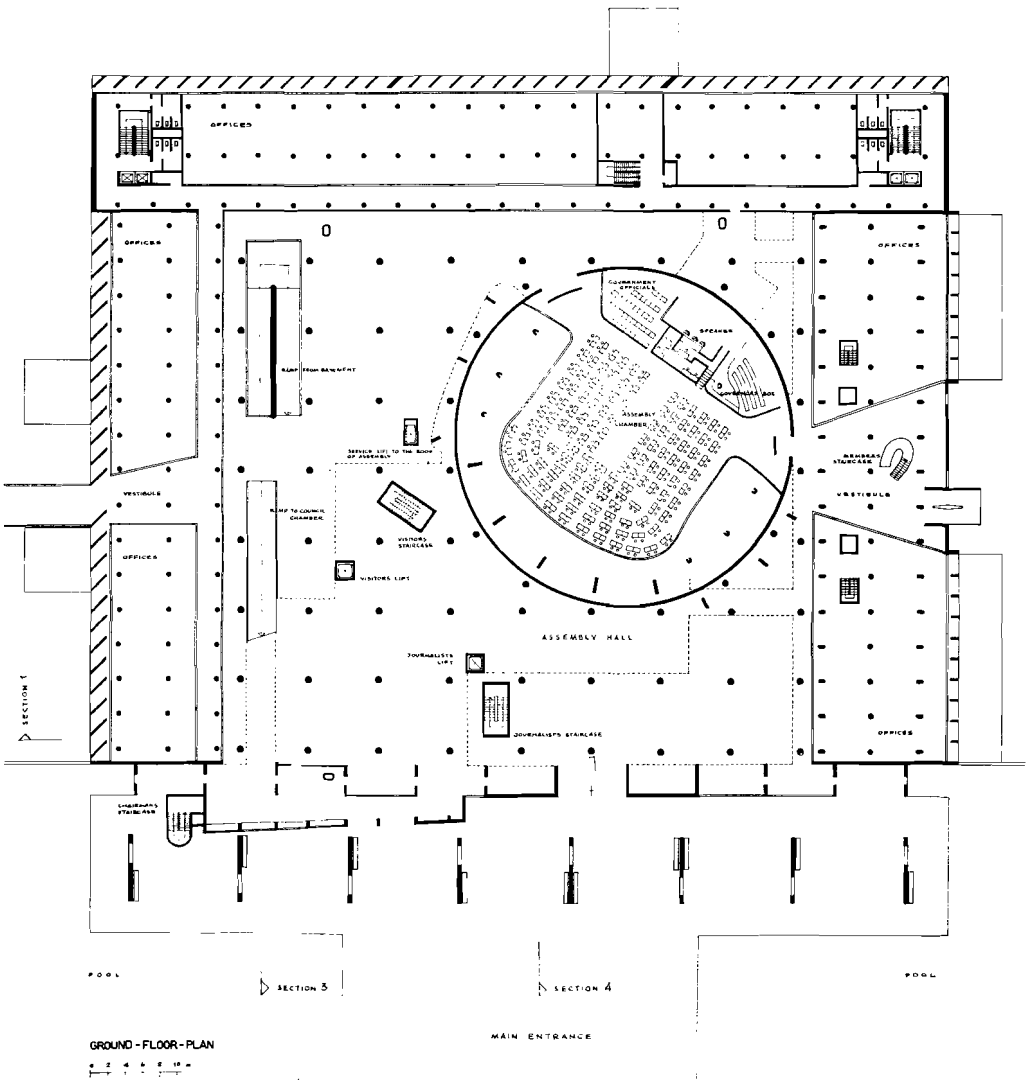


Plate 16 Palace of the Assembly. Plan.