Complexity and Contradiction in Architecture

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with an introduction by Vincent Scully

The Museum of Modern Art Papers on Architecture

The Museum of Modern Art, New York
in association with
the Graham Foundation for Advanced Studies in
the Fine Arts, Chicago
Distributed by New York Graphic Society, Boston

1. Nonstraightforward Architecture: A Gentle Manifesto

I like complexity and contradiction in architecture. I do not like the incoherence or arbitrariness of incompetent architecture nor the precious intricacies of picturesqueness or expressionism. Instead, I speak of a complex and contradictory architecture based on the richness and ambiguity of modern experience, including that experience which is inherent in art. Everywhere, except in architecture, complexity and contradiction have been acknowledged, from Gödel's proof of ultimate inconsistency in mathematics to T. S. Eliot's analysis of "difficult" poetry and Joseph Albers' definition of the paradoxical quality of painting.

But architecture is necessarily complex and contradictory in its very inclusion of the traditional Vitruvian elements of commodity, firmness, and delight. And today the wants of program, structure, mechanical equipment, and expression, even in single buildings in simple contexts, are diverse and conflicting in ways previously unimaginable. The increasing dimension and scale of architecture in urban and regional planning add to the difficulties. I welcome the problems and exploit the uncertainties. By embracing contradiction as well as complexity, I aim for vitality as well as validity.

Architects can no longer afford to be intimidated by the puritanically moral language of orthodox Modern architecture. I like elements which are hybrid rather than "pure," compromising rather than "clean," distorted rather than "straightforward," ambiguous rather than "articulated," perverse as well as impersonal, boring as well as "interesting," conventional rather than "designed," accommodating rather than excluding, redundant rather than simple, vestigial as well as innovating, inconsistent and equivocal rather than direct and clear. I am for messy vitality over obvious unity. I include the non sequitur and proclaim the duality.

I am for richness of meaning rather than clarity of meaning; for the implicit function as well as the explicit function. I prefer "both-and" to "either-or," black and white, and sometimes gray, to black or white. A valid architecture evokes many levels of meaning and combinations of focus: its space and its elements become readable and workable in several ways at once.

But an architecture of complexity and contradiction has a special obligation toward the whole: its truth must be in its totality or its implications of totality. It must embody the difficult unity of inclusion rather than the easy unity of exclusion. More is not less.

2. Complexity and Contradiction vs. Simplification or Picturesqueness

Orthodox Modern architects have tended to recognize complexity insufficiently or inconsistently. In their attempt to break with tradition and start all over again, they idealized the primitive and elementary at the expense of the diverse and the sophisticated. As participants in a revolutionary movement, they acclaimed the newness of modern functions, ignoring their complications. In their role as reformers, they puritanically advocated the separation and exclusion of elements, rather than the inclusion of various requirements and their juxtapositions. As a forerunner of the Modern movement, Frank Lloyd Wright, who grew up with the motto "Truth against the World," wrote: "Visions of simplicity so broad and far-reaching would open to me and such building harmonies appear that . . . would change and deepen the thinking and culture of the modern world. So I believed." [11] And Le Corbusier, co-founder of Purism, spoke of the "great primary forms" which, he proclaimed, were "distinct . . . and without ambiguity." [12] Modern architects with few exceptions eschewed ambiguity.

But now our position is different: "At the same time that the problems increase in quantity, complexity, and difficulty they also change faster than before," [13] and requite an attitude more like that described by August Heckscher: "The movement from a view of life as essentially simple and orderly to a view of life as complex and ironic is what every individual passes through in becoming mature. But certain epochs encourage this development; in them the paradoxical or dramatic outlook colors the whole intellectual scene. . . . Amid simplicity and order rationalism is born, but rationalism proves inadequate in any period of upheaval. Then equilibrium must be created out of opposites. Such inner peace as men gain must represent a tension among contradictions and uncertainties. . . . A feeling for paradox allows seemingly dissimilar things to exist side by side, their very incongruity suggesting a kind of truth." [14]

Rationalizations for simplification are still current, however, though subtler than the early arguments. They are expansions of Mies van der Rohe's magnificent paradox, "less is more." Paul Rudolph has clearly stated the implications of Mies' point of view: "All problems can never be solved. . . . Indeed it is a characteristic of the twentieth century that architects are highly selective in determining which problems they want to solve. Mies, for instance, makes wonderful buildings only because he ignores many aspects of a building. If he solved more problems, his

buildings would be far less potent." [15]

The doctrine "less is more" bemoans complexity and justifies exclusion for expressive purposes. It does, indeed, permit the architect to be "highly selective in determining which problems [he wants] to solve." But if the architect must be "committed to his particular way of seeing the universe," [16] such a commitment surely means that the architect determines how problems should be solved, not that he can determine which of the problems he will solve. He can exclude important considerations only at the risk of separating architecture from the experience of life and the needs of society. If some problems prove insoluble, he can express this: in an inclusive rather than an exclusive kind of architecture there is room for the fragment, for contradiction, for improvisation, and for the tensions these produce. Mies' exquisite pavilions have had valuable implications for architecture, but their selectiveness of content and language is their limitation as well as their strength.

I question the relevance of analogies between pavilions and houses, especially analogies between Japanese pavilions and recent domestic architecture. They ignore the real complexity and contradiction inherent in the domestic program—the spatial and technological possibilities as well as the need for variety in visual experience. Forced simplicity results in oversimplification. In the Wiley House, for instance (1), in contrast to his glass house (2), Philip Johnson attempted to go beyond the simplicities of the elegant pavilion. He explicitly separated and articulated the enclosed "private functions" of living on a ground floor pedestal, thus separating them from the open social functions in the modular pavilion above. But even here the building becomes a diagram of an oversimplified program for living—an abstract theory of either-or. Where simplicity cannot work, simpleness results. Blatant simplification means bland architecture. Less is a bore.

The recognition of complexity in architecture does not negate what Louis Kahn has called "the desire for simplicity." But aesthetic simplicity which is a satisfaction to the mind derives, when valid and profound, from inner complexity. The Doric temple's simplicity to the eye is achieved through the famous subtleties and precision of its distorted geometry and the contradictions and tensions inherent in its order. The Doric temple could achieve apparent simplicity through real complexity. When complexity disappeared, as in the late temples, blandness replaced simplicity.

1. Johnson. Wiley House, New Canaan

2. Johnson. Glass House, New Canaan

Nor does complexity deny the valid simplification which is part of the process of analysis, and even a method of achieving complex architecture itself. "We oversimplify a given event when we characterize it from the standpoint of a given interest." [16] But this kind of simplification is a method in the analytical process of achieving a complex art. It should not be mistaken for a goal.

An architecture of complexity and contradiction, however, does not mean picturesqueness or subjective expressionism. A false complexity has recently countered the false simplicity of an earlier Modern architecture. It promotes an architecture of symmetrical picturesqueness—which Minoru Yamasaki calls "serene"—but it represents a new formalism as unconnected with experience as the former cult of simplicity. Its intricate forms do not reflect genuinely complex programs, and its intricate ornament, though dependent on industrial techniques for execution, is dryly reminiscent of forms originally created by handicraft techniques. Gothic tracery and Rococo rocaille were not only expressively valid in relation to the whole, but came from a valid showing-off of hand skills and expressed a vitality derived from the immediacy and individuality of the method. This kind of complexity through exuberance, perhaps impossible today, is the antithesis of "serene" architecture, despite the superficial resemblance between them. But if exuberance is not characteristic of our art, it is tension, rather than "serenity" that would appear to be so.

The best twentieth-century architects have usually rejected simplification—that is, simplicity through reduction—in order to promote complexity within the whole. The works of Alvar Aalto and Le Corbusier (who often disregards his polemical writings) are examples. But the characteristics of complexity and contradiction in their work are often ignored or misunderstood. Critics of Aalto, for instance, have liked him mostly for his sensitivity to natural materials and his fine detailing, and have considered his whole composition willful picturesqueness. I do not consider Aalto's Imatra church picturesque. By repeating in the massing the genuine complexity of the triple-divided plan and the acoustical ceiling pattern (3), this church represents a justifiable expressionism different from the willful picturesqueness of the haphazard structure and spaces of Giovanni Michelucci's recent church for the Autostrada (4).* Aalto's complexity is part of the program and structure of the whole rather than a device justified only by the

3. Aalto. Church, Vuoksanniska, near Imatra

desire for expression. Though we no longer argue over the primacy of form or function (which follows which?), we cannot ignore their interdependence.

The desire for a complex architecture, with its attendant contradictions, is not only a reaction to the banality or prettiness of current architecture. It is an attitude common in the Mannerist periods: the sixteenth century in Italy or the Hellenistic period in Classical art, and is also a continuous strain seen in such diverse architects as Michelangelo, Palladio, Borromini, Vanbrugh, Hawksmoor, Soane, Ledoux, Butterfield, some architects of the Shingle Style, Furness, Sullivan, Lutyens, and recently, Le Corbusier, Aalto, Kahn, and others.

Today this attitude is again relevant to both the medium of architecture and the program in architecture.

First, the medium of architecture must be re-examined if the increased scope of our architecture as well as the complexity of its goals is to be expressed. Simplified or superficially complex forms will not work. Instead, the variety inherent in the ambiguity of visual perception must once more be acknowledged and exploited.

Second, the growing complexities of our functional problems must be acknowledged. I refer, of course, to those programs, unique in our time, which are complex because of their scope, such as research laboratories, hospitals, and particularly the enormous projects at the scale of city and regional planning. But even the house, simple in scope, is complex in purpose if the ambiguities of contemporary experience are expressed. This contrast between the means and the goals of a program is significant. Although the means involved in the program of a rocket to get to the moon, for instance, are almost infinitely complex, the goal is simple and contains few contradictions; although the means involved in the program and structure of buildings are far simpler and less sophisticated technologically than almost any engineering project, the purpose is more complex and often inherently ambiguous.

4. Michelucci. Church of the Autostrada, near Florenca

*I have visited Giovanni Michelucci's Church of the Autostrada since writing these words, and I now realize it is an extremely beautiful and effective building. I am therefore sorry I made this unsympathetic comparison.

While the second classification of complexity and contradiction in architecture relates to form and content as manifestations of program and structure, the first concerns the medium and refers to a paradox inherent in perception and the very process of meaning in art: the complexity and contradiction that results from the juxtaposition of what an image is and what it seems. Joseph Albers calls "the discrepancy between physical fact and psychic effect" a contradiction which is "the origin of art." And, indeed, complexity of meaning, with its resultant ambiguity and tension, has been characteristic of painting and amply recognized in art criticism. Abstract Expressionism acknowledges perceptual ambiguity, and the basis of Optical Art is shifting juxtapositions and ambiguous dualities relating to form and expression. Pop painters, too, have employed ambiguity to create paradoxical content as well as to exploit perceptual possibilities.

In literature, too, critics have been willing to accept complexity and contradiction in their medium. As in architectural criticism, they refer to a Mannerist era, but unlike most architectural critics, they also acknowledge a "mannerist" strain continuing through particular poets, and some, indeed, for a long time have emphasized the qualities of contradiction, paradox, and ambiguity as basic to the medium of poetry, just as Albers does with painting.

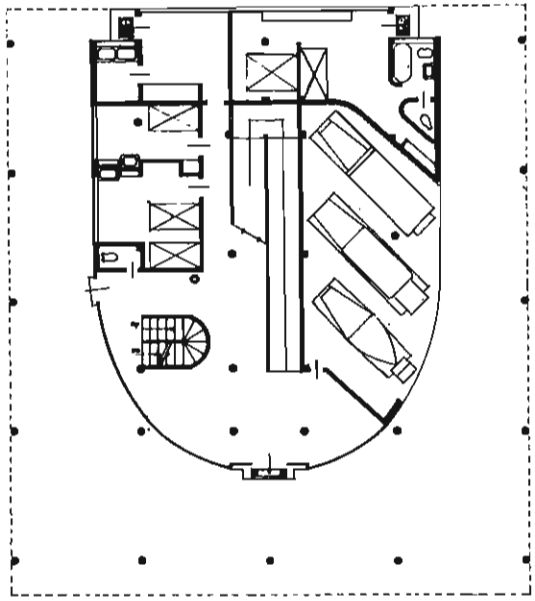
Eliot called the art of the Elizabethans "an impure art," [17] in which complexity and ambiguity are exploited: "in a play of Shakespeare," he said, "you get several levels of significance" [18] where, quoting Samuel Johnson, "the most heterogeneous ideas are yoked together by violence." [19] And elsewhere he wrote: "The case of John Webster . . . will provide an interesting example of a very great literary and dramatic genius directed towards chaos." [20] Other critics, for example, Kenneth Burke, who refers to "plural interpretation" and "planned incongruity," have analyzed elements of paradox and ambiguity in the structure and meaning of other poetry besides that of the seventeenth century metaphysical poets and those modern poets who have been influenced by them.

Cleanth Brooks justifies the expression of complexity and contradiction by their necessity as the very essence of art: "Yet there are better reasons than that of rhetorical vainglory that have induced poet after poet to choose ambiguity and paradox rather than plain discursive simplicity. It is not enough for the poet to analyze his experience as the scientist does, breaking it up into parts, distinguishing part from part, classifying the various parts. His task is finally to unify experience. He must return to us the unity of the experience itself as man knows it in his own experience. . . . If the poet . . . must perforce dramatize the oneness of the experience, even though paying tribute to its diversity, then his use of paradox and ambiguity is seen as necessary. He is not simply trying to spice up, with a superficially exciting or mystifying rhetoric the old stale stockpot. . . . He is rather giving us an insight which preserves the unity of experience and which, at its higher and more serious levels, triumphs over the apparently contradictory and conflicting elements of experience by unifying them into a new pattern." [21]

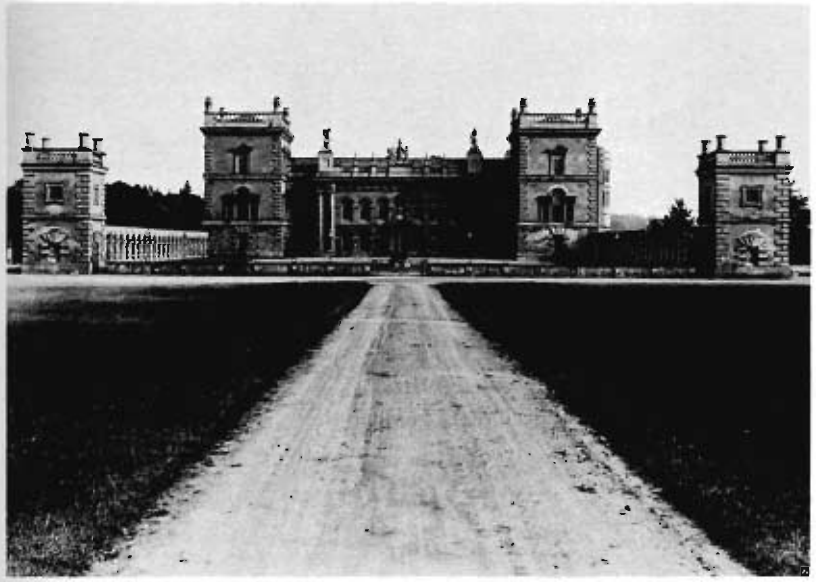
And in *Seven Types of Ambiguity* William Empson "dared to treat what [had] . . . been regarded as a deficiency in poetry, imprecision of meaning, as poetry's chief virtue . . ." [22] Empson documents his theory by readings from Shakespeare, "the supreme ambiguist, not so much from the confusion of his ideas and the muddle of his text, as some scholars believe, as simply from the power and complexity of his mind and art." [23]

Ambiguity and tension are everywhere in an atchitecture of complexity and contradiction. Architecture is form *and* substance—abstract *and* concrete—and its meaning derives from its interior characteristics and its particular context. An architectural element is perceived as form *and* structure, texture *and* material. These oscillating relationships, complex and contradictory, are the source of the ambiguity and tension characteristic to the medium of architecture. The conjunction "or" with a question mark can usually describe ambiguous relationships. The Villa Savoye (5): is it a square plan or not? The size of Vanbrugh's fore-pavilions at Grimsthorpe (6) in relation to the back pavilions is ambiguous from a distance: are they near or far, big or small? Bernini's pilasters on the Palazzo di Propaganda Fide (7): are they positive pilasters or negative panel divisions? The ornamental cove in the Casino di Pio IV in the Vatican (8) is perverse: is it more wall or more vault? The central dip in Lutyens' façade at Nashdom (9) facilitates skylighting: is the resultant duality resolved or not? Luigi Moretti's apartments on the Via Parioli in Rome (10): are they one building with a split or two buildings joined?

The calculated ambiguity of expression is based on the

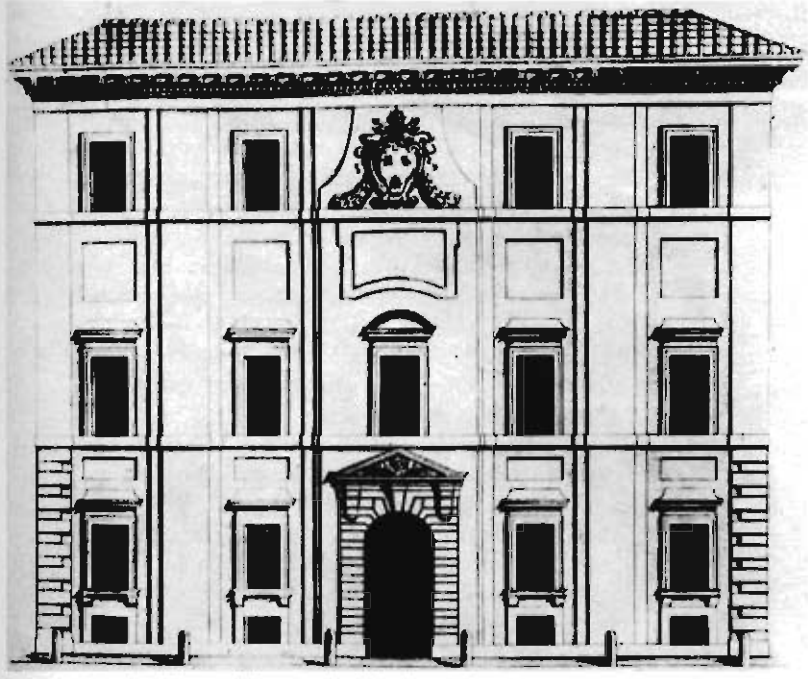


5. Le Corbusier. Villa Savoye, Poissy. Plan



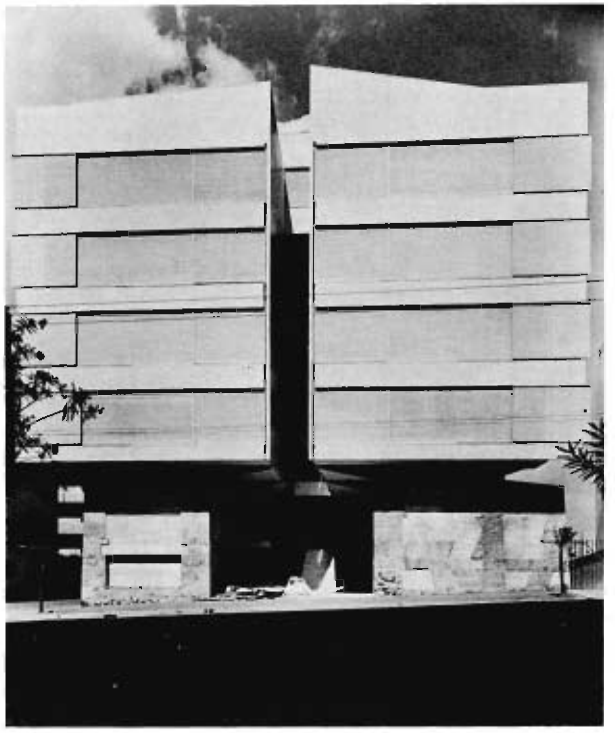
6. Vanbrugh. Grimsthorpe, Lincolnshire

8. Ligorio. Casino di Pio IV, Vatican, Rome



7. Bernini. Façade, Palazzo di Propaganda Fide, Rome. Elevation

9. Lutyens. Nashdom, Taplow



10. Moretti. Apartment Building, Via Parioli, Rome

confusion of experience as reflected in the architectural program. This promotes richness of meaning over clarity of meaning. As Empson admits, there is good and bad ambiguity: ". . . [ambiguity] may be used to convict a poet of holding muddled opinions rather than to praise the complexity of the order of his mind." [24] Nevertheless, according to Stanley Edgar Hyman, Empson sees ambiguity as "collecting precisely at the points of greatest poetic effectiveness, and finds it breeding a quality he calls 'tension' which we might phrase as the poetic impact itself." [25] These ideas apply equally well to architecture.

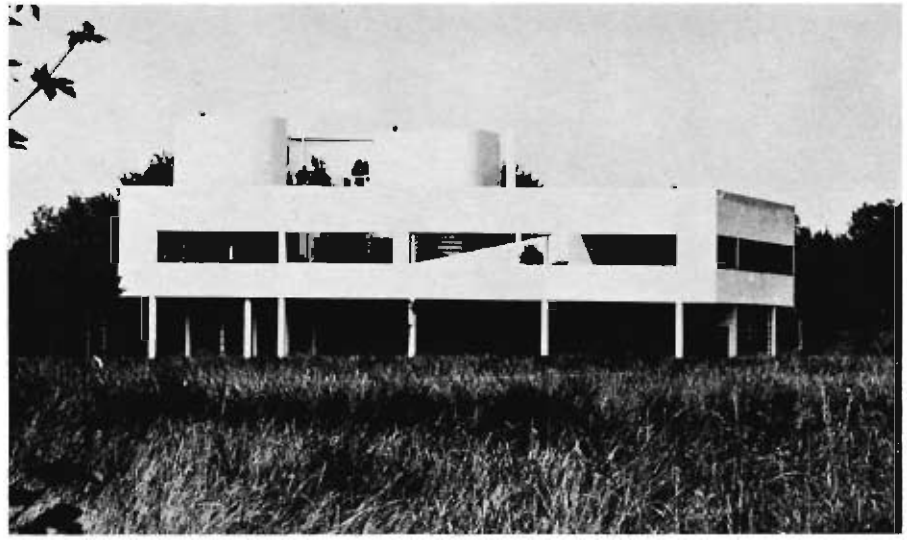
4. Contradictory Levels: The Phenomenon of "Both-And" in Architecture

Contradictory levels of meaning and use in architecture involve the paradoxical contrast implied by the conjunctive "yet." They may be more or less ambiguous. Le Corbusier's Shodhan House (11) is closed yet open—a cube, precisely closed by its corners, yet randomly opened on its surfaces; his Villa Savoye (12) is simple outside yet complex inside. The Tudor plan of Barrington Court (13) is symmetrical yet asymmetrical; Guarini's Church of the Immaculate Conception in Turin (14) is a duality in plan and yet a unity; Sir Edwin Lutyens' entrance gallery at Middleton Park (15, 16) is directional space, yet it terminates at a blank wall; Vignola's façade for the pavilion at Bomarzo (17) contains a portal, yet it is a blank portico; Kahn's buildings contain crude concrete yet polished grantite; an urban street is directional as a route yet static as a place. This series of conjunctive "yets" describes an architecture of contradiction at varying levels of program and structure. None of these ordered contradictions represents a search for beauty, but neither as paradoxes, are they caprice.

Cleanth Brooks refers to Donne's art as "having it both ways" but, he says, "most of us in this latter day, cannot. We are disciplined in the tradition either-or, and lack the mental agility—to say nothing of the maturity of attitude—which would allow us to indulge in the finer distinctions and the more subtle reservations permitted by the tradition of both-and." [26] The tradition "either-or" has characterized orthodox modern architecture: a sun screen is probably nothing else; a support is seldom an enclosure; a wall is not violated by window penetrations but is totally interrupted by glass; program functions are exaggeratedly articulated into wings or segregated separate pavilions. Even "flowing space" has implied being outside when inside, and inside when outside, rather than both at the same time. Such manifestations of articulation and clarity are foreign to an architecture of complexity and contradiction, which tends to include "both-and" rather than exclude "either-or."

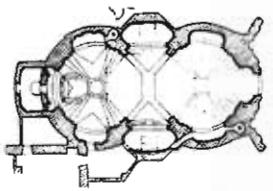
If the source of the both-and phenomenon is contradiction, its basis is hierarchy, which yields several levels of meanings among elements with varying values. It can include elements that ate both good and awkward, big and little, closed and open, continuous and articulated, round and square, structural and spatial. An architecture which includes varying levels of meaning breeds ambiguity and tension.

11. Le Corbusier. Shodhan House, Ahmedabad

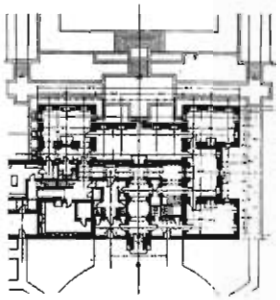


12. Le Corbusier. Villa Savoye. Poissy

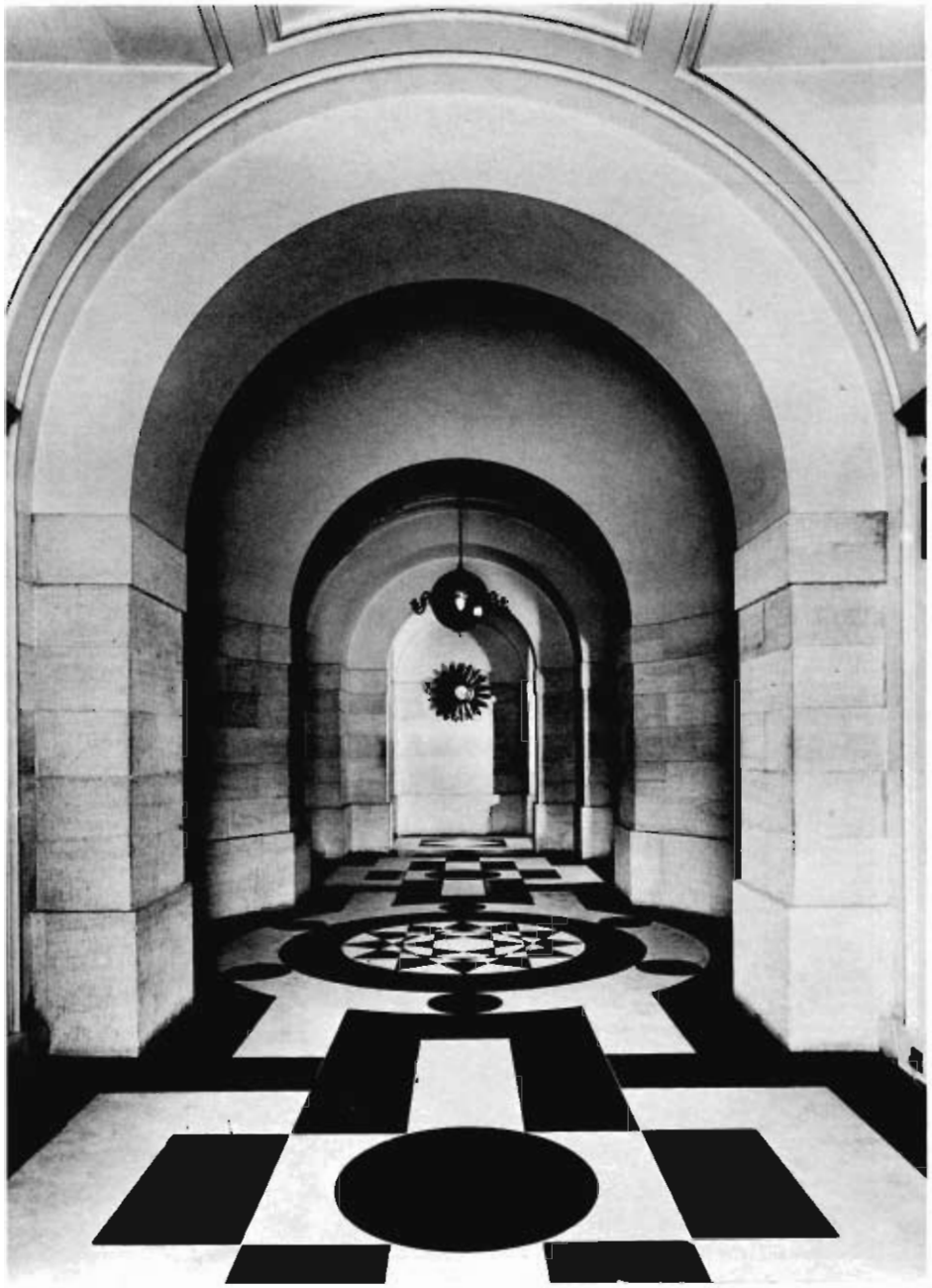
13. Barrington Court, Somerset. Plan



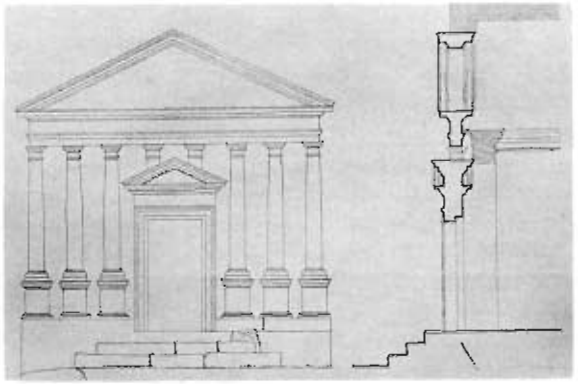
14. Guarini. Church of the Immaculate Conception, Turin. Plan



15. Lutyens. Middleton Park, Oxfordshire. Plan



16. Lutyens. Middleton Park, Oxfordshire



17. Vignola. Pavilion, Bomarzo. Elevation

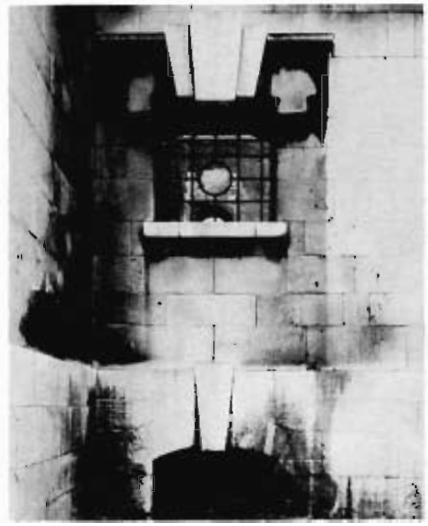
Most of the examples will be difficult to "read," but abstruse architecture is valid when it reflects the complexities and contradictions of content and meaning. Simultaneous perception of a multiplicity of levels involves struggles and hesitations for the observer, and makes his perception more vivid.

Examples which are both good and bad at the same time will perhaps in one way explain Kahn's enigmatic remark: "architecture must have bad spaces as well as good spaces." Apparent irrationality of a part will be justified by the resultant rationality of the whole, or characteristics of a part will be compromised for the sake of the whole. The decisions fot such valid compromises are one of the chief tasks of the architect.

In Hawksmoor's St. George-in-the-East (18) the exaggerated keystones over the aisle windows are wrong in relation to the part: when seen close-up they are too big in relation to the opening they span. When seen farther back, however, in the context of the whole composition, they are expressively right in size and scale. Michelangelo's enormous rectangular openings in the attic story of the rear façade of St. Peter's (19) are wider than they are high, so that they must be spanned the long way. This is perverse in relation to the spanning limitations of masonry, which dictate in Classical architecture that big openings, such as these, be vertically proportioned. But because one usually expects vertical proportions, the longitudinal spanning expresses validly and vividly their *relative* smallness.

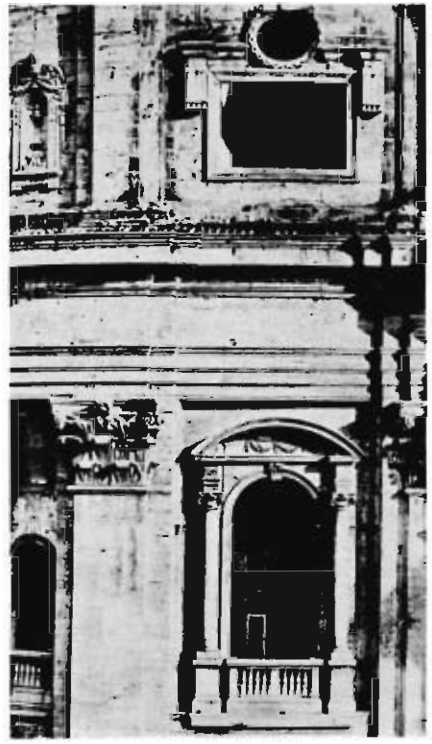
The main stair in Frank Furness' Pennsylvania Academy of the Fine Arts in Philadelphia (20) is too big in relation to its immediate surroundings. It lands on a space narrower than its width, and faces an opening narrower than its width. Furthermore, the opening is bisected by a post. But this stair is ceremonial and symbolic as well as functional, and it relates to the hall immediately beyond the opening, to the whole building, and to the great scale of Broad Street outside. The outer thirds of Michelangelo's stair in the Laurentian Library vestibule (21) are abruptly chopped off and lead virtually nowhere: it is similarly wrong in the relation of its size to its space, and yet right in relation to the whole context of the spaces beyond.

Vanbrugh's end bays in the centtal pavilion of the entrance façade of Blenheim Palace (22) are incorrect because they are bisected by a pilaster: this fragmentation produces a duality which decreases their unity. Their very

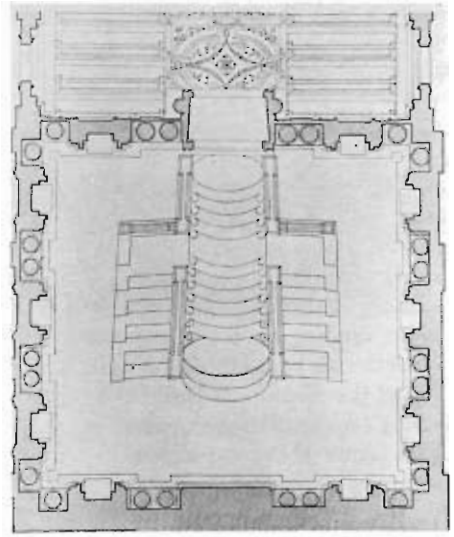


18. Hawksmoor. St. George-in-the-East, London

20. Furness. Pennsylvania Academy of the Fine Arts, Philadelphia



19. Michelangelo. Rear Façade, St. Peter's, Rome



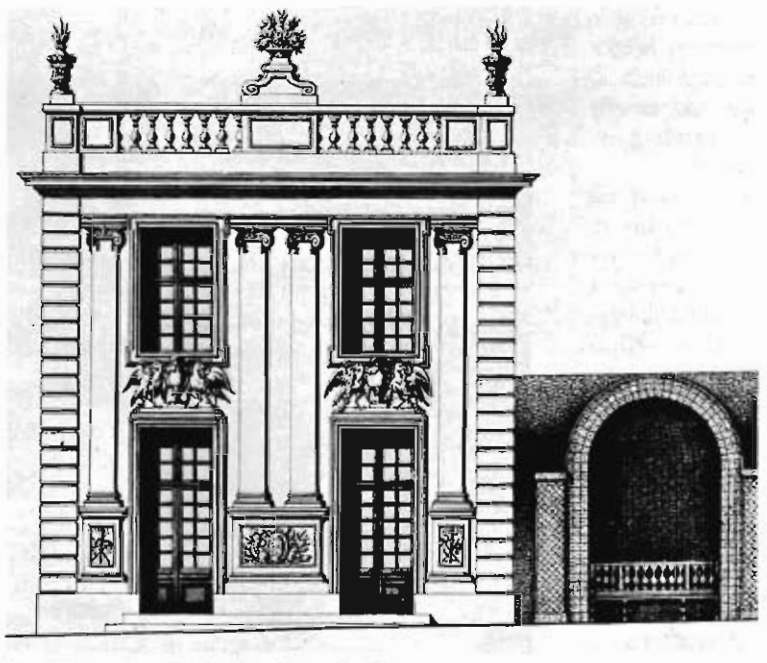
21. Michelangelo. Laurentian Library, Florence. Plan

incompleteness, however, reinforces by contrast the center bay and increases the overall unity of this complex composition. The pavilions which flanked the château at Marly (23) contained a similar paradox. The compositional duality of their two-bay façades lacks unity, but reinforces the unity of the whole complex. Their own incompleteness implied the dominance of the château itself and the completeness of the whole.

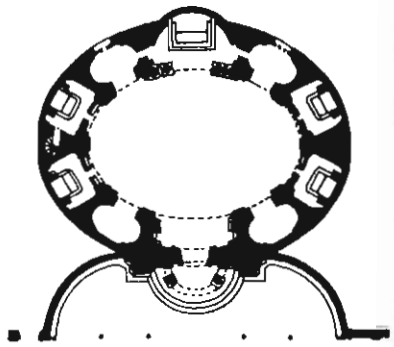
The basilica, which has mono-directional space, and the central-type church, which has omnidirectional space, represent alternating traditions in Western church plans. But another tradition has accommodated churches which are both-and, in answer to spatial, structural, programmatic, and symbolic needs. The Mannerist elliptical plan of the sixteenth century is both central and directional. Its culmination is Bernini's Sant' Andrea al Quirinale (24), whose main directional axis contradictorily spans the short axis. Nikolaus Pevsner has shown how pilasters rather than open chapels bisect both ends of the transverse axis of the side walls, thereby reinforcing the short axis toward the altar. Borromini's chapel in the Propaganda Fide (25) is a directional hall in plan, but its alternating bays counteract this effect: a large bay dominates the small end; a small bay bisects the center of the long wall. The rounded corners, as well, begin to imply a continuity of enclosure and a central-type plan. (These characteristics occur in the courtyard of San Carlo alle Quattro Fontane too.) And the diagonal gridlike ribs in the ceiling indicate a multidirectional structure as much like a dome as a vault. Hagia Sophia in Istanbul is equivocal in a similar way. Its central dome on the squate bay with pendentives implies a central type church, but its two apses with half-domes begin to set up a longitudinal axis in the tradition of the directional basilica. The horseshoe plan of the Baroque and neo-Baroque opera house focuses on the stage and the center of the auditorium. The central focus of the elliptical plan is usually reflected in the ornamental ceiling pattern and the enormous central chandelier; the focus toward the stage in the directional distortion of the ellipse and partitions between the surrounding boxes as well as in the interruption of the stage itself, of course, and the seating in the pit. This reflects the dual focus in the program of the gala theatre: the perfotmance and the audience.

Borromini's San Carlo alle Quattro Fontane (26) abounds in ambiguous manifestations of both-and. The

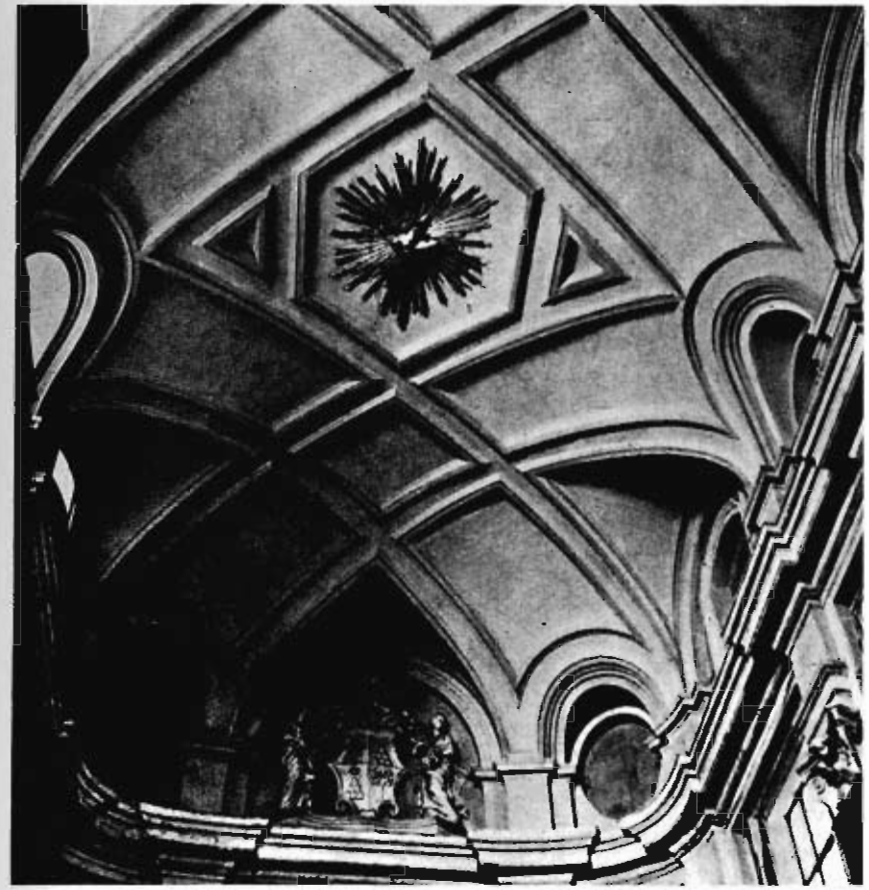
22. Vanbrugh. Blenheim Palace, Oxfordshire



23. Hardouin-Mansart. Pavilion, Marly. Elevation

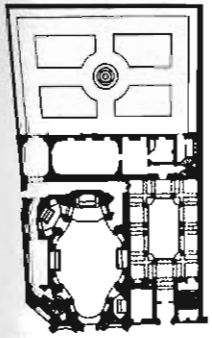


24. Bernini. Sant' Andrea al Quirinale, Rome. Plan



25. Borromini. Church of the Re Magi, Palazzo di Propaganda Fide, Rome

27. Borromini. San Carlo alle Quattro Fontane, Rome

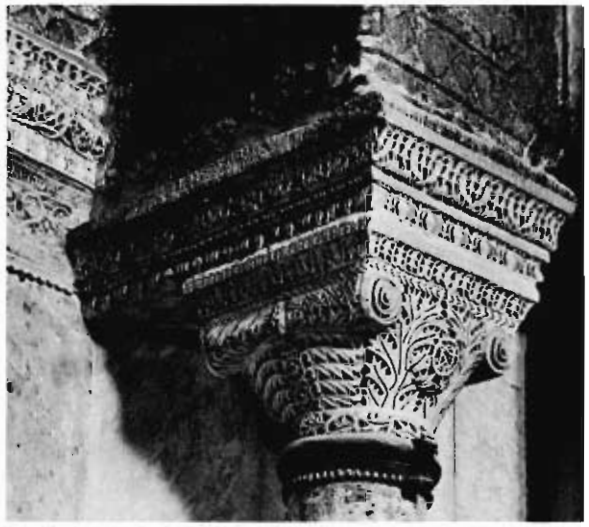


26. Borromini. San Carlo alle Quattro Fontane, Rome. Plan

almost equal treatment of the four wings implied in the plan suggests a Greek cross, but the wings are distorted toward a dominant east-west axis, thus suggesting a Latin cross, while the fluid continuity of the walls indicates a distorted circular plan. Rudolf Wittkower has analyzed similar contradictions in section. The pattern of the ceiling in the articulations of its complex mouldings suggests a dome on pendentives over the crossing of a Greek cross (27). The shape of the ceiling in its overall continuity distorts these elements into parodies of themselves, and suggests rather a dome generated from an undulating wall. These distorted elements are both continuous and articulated. At another scale, shape and pattern play similarly contradictory roles. For example, the profile of the Byzantine capital (28) makes it seem continuous, but the texture and vestigial patterns of volutes and acanthus leaves articulate the parts.

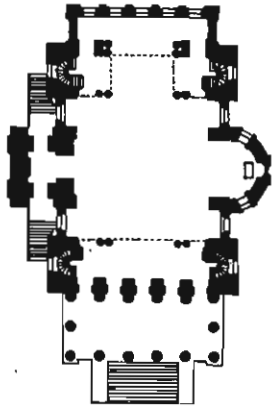
The pedimented porch of Nicholas Hawksmoor's St. George, Bloomsbury (29), and the overall shape of its plan (30) imply a dominant axis north and south. The west entrance and tower, the interior configuration of balconies, and the east apse (which contained the altar) all suggest an equally dominant counter axis. By means of contrary elements and distorted positions this church expresses both the contrasts between the back, front, and sides of the Latin cross plan and the duo-directional axes of a Greek cross plan. These contradictions, which resulted from particular site and orientation conditions, support a richness and tension lacking in many purer compositions.

The domed basilica of Vierzehnheiligen (31) has a central altar under a major dome in the nave. Nikolaus Pevsner has vividly contrasted its series of domes, which are distorted and superimposed on the Latin cross plan, with the conventional placing of a single dome at the crossing. This is a Latin cross church, which is also a central-type church because of the unusual position of the altar and the central dome. Other late Baroque churches juxtapose the square and the circle. Bernardo Vittone's elements—ambiguously pendentives or squinches—in the nave of S. Maria di Piazza in Turin (32) support what is both a dome and a square lantern. Hawksmoor juxtaposes mouldings in rectangular and elliptical patterns on the ceilings of some of his churches. They create contradictory expressions of both central and directional-type churches. In some rooms of the Palazzo di Propaganda Fide (33) a straddling

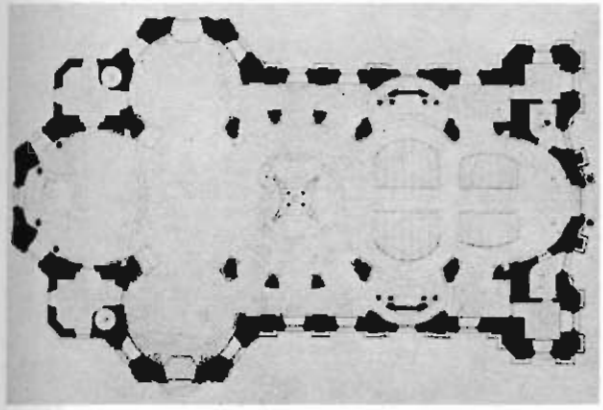


28. Capital, Hagia Sophia, Istanbul

29. Hawksmoor, St. George, Bloomsbury

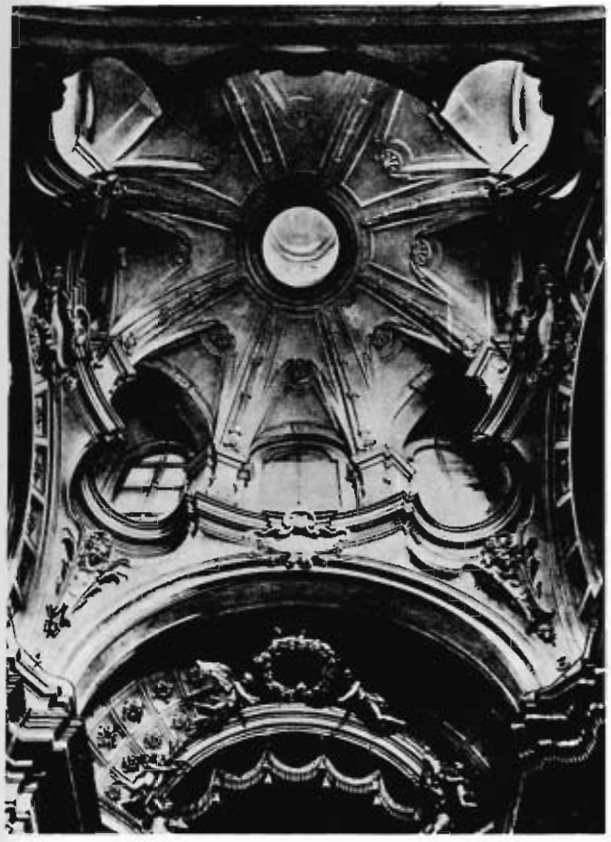


30. Hawksmoor, St. George, Bloomsbury. Plan



31. Neumann. Pilgrimage Church, Vierzehnheiligen, near Banz. Plan

33. Borromini. Palazzo di Propaganda Fide, Rome



32. Vittone. S. Maria di Piazza, Turin

34. Wren. St. Stephen Walbrook, London. Interior perspective

arch in the corners allows the space to be rectangular below and continuous above. This is similar to Wren's ceiling configuration in St. Stephen Walbrook (34).

In the ceilings of his secular chambers (35) Sir John Soane glories in spaces and structures both rectangular and curvilinear, and domed and vaulted. His methods include complex combinations of vestigial structural shapes resembling squinches and pendentives, oculi, and groins. Soane's Museum (36) employs a vestigial element in another dimension: the partition in the form of suspended arches, meaningless structurally yet meaningful sparially, defines rooms at once open and closed.

The façade of the cathedral at Murcia (37) employs what has been called inflection to promote largeness yet smallness. The broken pediments above the shafts are inflected toward each other to help suggest an enormous portal, appropriate spatially to the plaza below and symbolically to the region beyond. Storied orders within the shafts, however, accommodate the scale of the immediate conditions of the building itself and its setting. Bigness and smallness are expressed at once in a characteristic Shingle Style stair through distortion in width and direction. The risers and treads remain constant, of course, but the widening of the run at the bottom accommodates the spacious living-room hall below, while the narrower run at the top relates to the narrower hall above.

Precast concrete construction can be continuous yet fragmentary, flowing in profile yet surfaced with joints. The contours of its profiles between columns and beams can designate the continuity of the structural system, but the pattern of its grouted joints can designate the fragmented method of its erection.

The tower of Christ Church, Spitalfields (38), is a manifestation of both-and at the scale of the city. Hawksmoor's tower is both a wall and a tower. Toward the bottom the vista is terminated by the extension of its walls into kinds of buttresses (39) perpendicular to the approaching street. They are seen from only one direction. The top evolves into a spire, which is seen from all sides, spatially and symbolically dominating the skyline of the parish. In the Bruges Cloth Hall (40) the scale of the building relates to the immediate square, while the violently disproportionate scale of the tower above relates to the whole town. For similar reasons the big sign sits on top of the Philadelphia Savings Fund Society Building, and yet

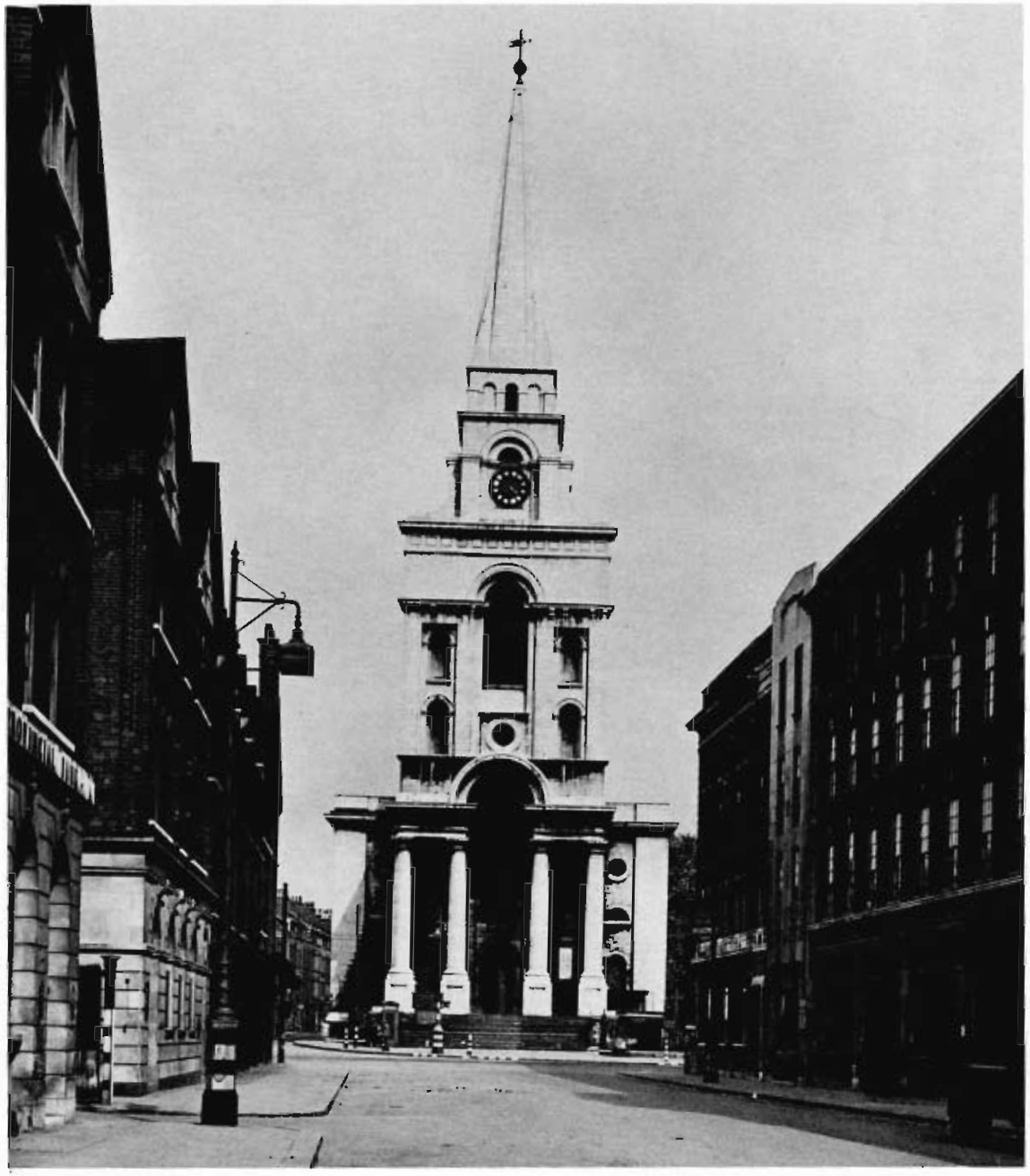
35. Soane. Court of Exchequer, Palace of Westminster, London. Interior perspective

36. Soane. Soane House and Museum, Lincoln's Inn Fields, London. Interior perspective

37. Murcia Cathedral

it is invisible from below (41). The Arc de Triomphe also has contrasting functions. Seen diagonally from the radial approaches other than the Champs Elysées, it is a sculptural termination. Seen perpendicularly from the axis of the Champs Elysées, it is spatially and symbolically both a termination and a portal. Later I shall analyze some organized contradictions between front and back. But here I shall mention the Karlskirche in Vienna (42), whose exterior contains elements both of the basilica in its façade and of the central-type church in its body. A convex form in the back was required by the interior program; the urban space required a larger scale and a straight façade in front. The disunity that exists from the point of view of the building itself is contradicted when the building is seen in relation to the scale and the space of the neighborhood.

The double meanings inherent in the phenomenon both-and can involve metamorphosis as well as contradiction. I have described how the omni-directional spire of the tower of Christ Church, Spitalfields, evolves into a directional pavilion at its base, but a perceptual rather than a formal kind of change in meaning is possible. In equivocal relationships one contradictory meaning usually dominates another, but in complex compositions the relationship is not always constant. This is especially true as the observer moves through or around a building, and by extension through a city: at one moment one meaning can be perceived as dominant; at another moment a different meaning seems paramount. In St. George, Bloomsbury (30), for instance, the contradictory axes inside become alternatingly dominant or recessive as the observer moves within them, so that the same space changes meaning. Here is another dimension of "space, time and architecture" which involves the multiple focus.

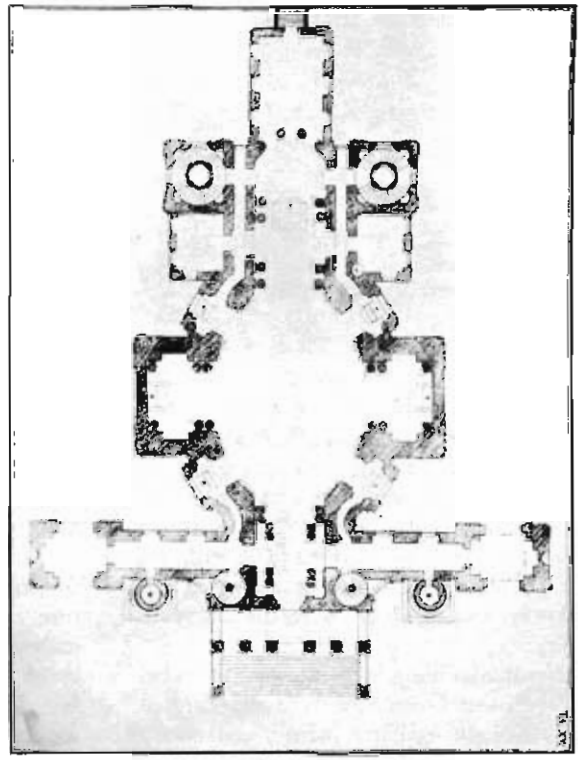


38. Hawksmoor. Christ Church, Spitalfields

39. Hawksmoor. Christ Church, Spitalfields

41. Howe and Lescaze. Philadelphia Savings Fund Society Building

40. Cloth Hall and Belfry, Bruges



42. Fischer von Erlach. Karlskirche, Vienna. Plan

5. Contradictory Levels Continued: The Double-Functioning Element

The "double-functioning" [27] element and "both-and" are related, but there is a distinction: the double-functioning element pertains more to the particulars of use and structure, while both-and refers more to the relation of the part to the whole. Both-and emphasizes double meanings over double-functions. But before I talk about the double-functioning element, I want to mention the multifunctioning building. By this term I mean the building which is complex in program and form, yet strong as a whole—the complex unity of Le Corbusier's La Tourette or the Palace of Justice at Chandigarh in contrast to the multiplicities and articulations of his Palace of the Soviets project or the Armée du Salut in Paris. The latter approach separates functions into interlocking wings or connected pavilions. It has been typical of orthodox Modern architecture. The incisive separations of the pavilions in Mies' design for the urban Illinois Institute of Technology can be understood as an extreme development of it.

Mies' and Johnson's Seagram Building excludes functions other than offices (except on the ground floor in back), and by using a similar wall pattern camouflages the fact that at the top there is a different kind of space for mechanical equipment. Yamasaki's project for The World Trade Center in New York even more exaggeratedly simplifies the form of an enormous complex. The typical office skyscrapers of the '20's differentiate, rather than camouflage, their mechanical equipment space at the top through architecturally ornamental forms. While Lever House includes differently-functioning spaces at the bottom, it exaggeratedly separates them by a spatial shadow joint. In contrast, one exceptional Modern building, the P.S.F.S. (41), gives positive expression to the variety and complexity of its program. It integrates a shop on the first floor and a big bank on the second with offices above and special rooms at the top. These varieties of functions and scales (including the enormous advertising sign at the top) work within a compact whole. Its curving façade, which contrasts with the rectangularity of the rest of the building, is not just a cliché of the '30's, because it has an urban function. At the lower pedestrian level it directs space around the corner.

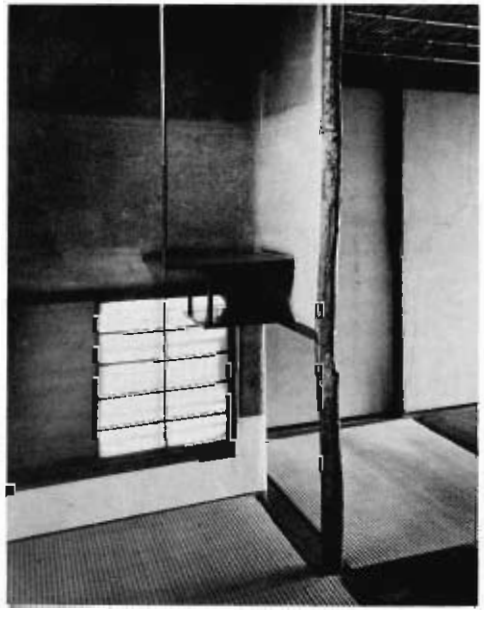
The multifunctioning building in its extreme form becomes the Ponte Vecchio or Chenonceaux or the Futurist projects of Sant' Elia. Each contains within the whole contrasting scales of movement besides complex functions. Le Corbusier's Algerian project, which is an apartment house and a highway, and Wright's late projects for Pittsburgh Point and Baghdad, correspond to Kahn's viaduct architecture and Fumihiko Maki's "collective form." All of these have complex and contradictory hierarchies of scale and movement, structure, and space within a whole. These buildings are buildings and bridges at once. At a larger scale: a dam is also a bridge, the loop in Chicago is a boundary as well as a circulation system, and Kahn's street "wants to be a building."

There are justifications for the multifunctioning room as well as the multifunctioning building. A room can have many functions at the same time or at different times. Kahn prefers the gallery because it is directional and nondirectional, a corridor and room at once. And he recognizes the changing complexities of specific functions by differentiating rooms in a general way through a hierarchy of size and quality, calling them servant and major spaces, directional and nondirectional spaces, and other designations more genetic than specific. As in his project for the Trenton Community Center, these spaces end by paralleling in a more complex way the pre-eighteenth century configurations of rooms en suite. The idea of corridors and rooms each with a single function for convenience originated in the eighteenth century. Is not Modern architecture's characteristic separation and specialization of program functions within the building through built-in furniture an extreme manifestation of this idea? Kahn by implication questions such rigid specialization and limited functionalism. In this context, "form evokes function."

The multifunctioning room is a possibly truer answer to the Modern architect's concern with flexibility. The room with a generic rather than a specific purpose, and with movable furniture rather than movable partitions, promotes a perceptual flexibility rather than a physical flexibility, and permits the toughness and permanence still necessary in our building. Valid ambiguity promotes useful flexibility.

The double-functioning element has been used infrequently in Modern architecture. Instead, Modern architecture has encouraged separation and specialization at all scales—in materials and structure as well as program and space. "The nature of materials" has precluded the multifunctioning material, or, inversely, the same form or surface for different materials. Wright's divergence from his master began, according to his autobiography, with Louis Sulli-

43. Rauschenberg. *Pilgrim*. 1960



44. Katsura Villa. Kyoto

van's indiscriminate application of his characteristic ornament to terra cotta, iron, wood, or brick. To Wright, "appropriate designs for one material would not be appropriate for another material." [28] But the façade of Eero Saarinen's dormitory at the University of Pennsylvania includes among its materials and structure vine-covered grade, brick wall, and steel grille—yet the curving profile of its form is continuous. Saarinen overcame the current obsession against using different materials in the same plane or the same material for two different things. In Robert Rauschenberg's painting, *Pilgrim* (43), the surface pattern continues from the stretcher canvas to the actual chair in front of it, making ambiguous the distinction between the painting and the furniture, and on another level, the work of art in a room. A contradiction between levels of function and meaning is recognized in these works, and the medium is strained.

But to the structural purist, as well as the organicist, the double-functioning structural form would be abhorrent because of the nonexact, ambiguous correspondence between form and function, and form and structure. In contrast, in the Katsura Villa (44) the bamboo rod in tension and the wood post in compression are similar in form. To the Modern architect, I think, the two would seem sinisterly similar in section and size despite the current inclination toward traditional Japanese design. The Renaissance pilaster (as well as other structural elements used in a nonstructural way) can involve the phenomenon both-and at several levels. It can be at the same time physically structural or not, symbolically structural through association, and compositionally ornamental by promoting rhythm and also complexity of scale in the giant order.

Besides specializing forms in relation to materials and structure, Modern architecture separates and articulates elements. Modern architecture is never implicit. In promoting the frame and the curtain wall, it has separated structure from shelter. Even the walls of the Johnson Wax Building are enclosing but not supporting. And in detailing, Modern architecture has tended to glory in separation. Even the flush joint is articulated, and the shadow joint predominates. The versatile element which does several things at once is equally rare in Modern architecture. Significantly the column is favored over the pier. In S. Maria in Cosmedin's nave (45) the column form results from its dominant, precise function as a point support. It can direct space

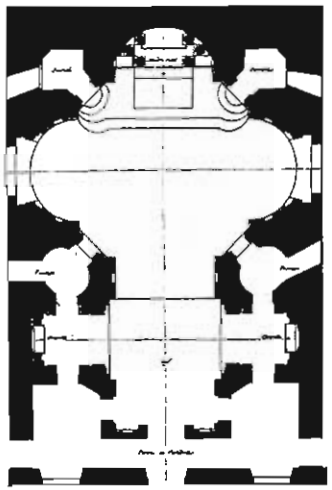
45. S. Maria in Cosmedin, Rome

only incidentally in relation to other columns or elements. But the alternating piers in the same nave are intrinsically double-functioning. They enclose and direct space as much as they support structure. The Baroque piers in the chapel at Frèsnes (46), residual as form and redundant as structure, are extreme examples of double-functioning elements which are structural and spatial at once.

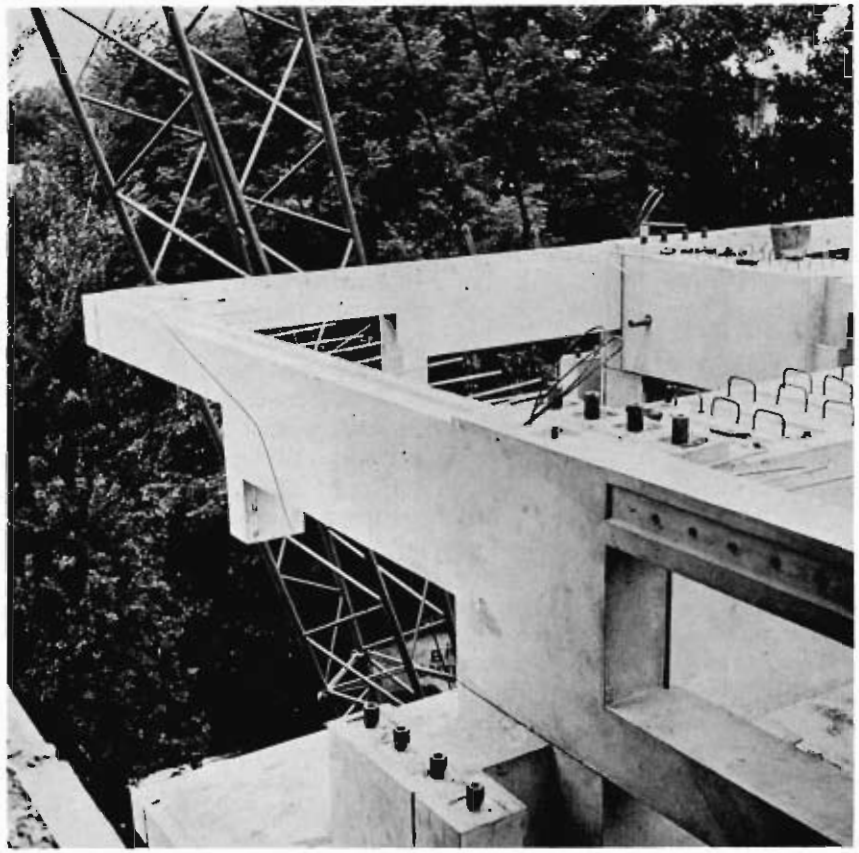
Le Corbusier's and Kahn's double-functioning elements may be rare in our architecture. The brise-soleils in the Unité d'Habitation in Marseilles are structure and porches as well as sunscreens. (Are they wall segments, piers, or columns?) Kahn's clusters of columns and his open piers "harbor" space for equipment, and can manipulate natural light as well, like the rhythmically complex columns and pilasters of Baroque architecture. Like the open beams in the Richards Medical Center (47), these elements are neither structurally pure nor elegantly minimum in section. Instead, they are structural fragments inseparable from a greater spatial whole. It is valid to sense stresses in forms which are not purely structural, and a structural member can be more than incidentally spatial. (However, the columns and the stair towers in this building are separated and articulated in an orthodox manner.)

Flat plate construction consists of concrete slabs of constant depth and varied reinforcement, with irregularly placed columns without beams or caps. To maintain a constant depth, the number of reinforcing bars changes to accommodate the more concentrated structural loads in the constant, beamless section. This permits, in apartment houses especially, a constant ceiling profile for the spaces below in order to accommodate partitions. Flat plates are structurally impure: their section is not minimum. The demands of structural forces are compromised because of the demands of architectural space. Form follows function here in a contradictory way; substance follows structural function; profile follows spatial function.

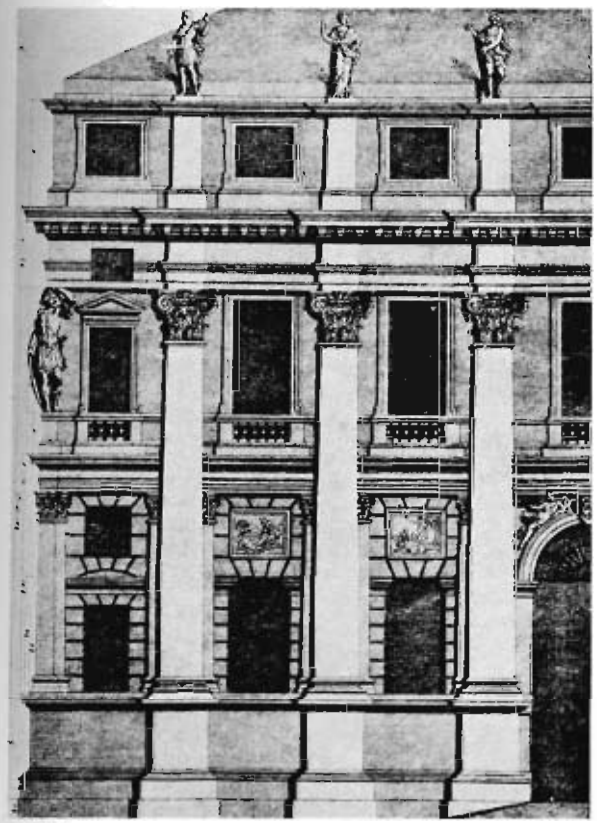
In some Mannerist and Baroque masonry construction the pier, pilaster, and relieving arch about evenly make up a façade, and the resultant structure, like that of the Palazzo Valmarana (48), is bearing wall and frame at once. The relieving arches in the Pantheon (49), in this case not originally part of the visual expression, similarly generate a wall structurally double-functioning. In this context the Roman basilica, Gaudí's Sagrada Familia (50), and Palladio's Il Redentore (51) are totally different from the



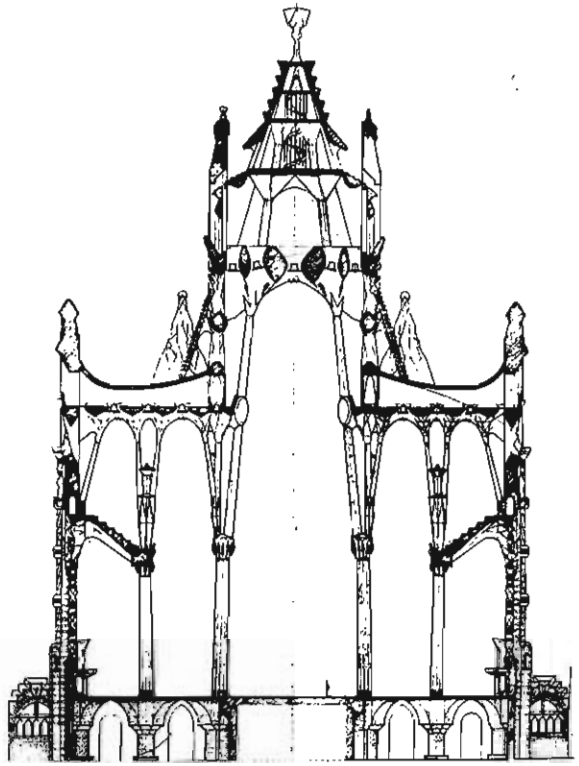
46. Mansart. Chapel, Frèsnes. Plan



47. Kahn. Richards Medical Research Building, University of Pennsylvania, Philadelphia

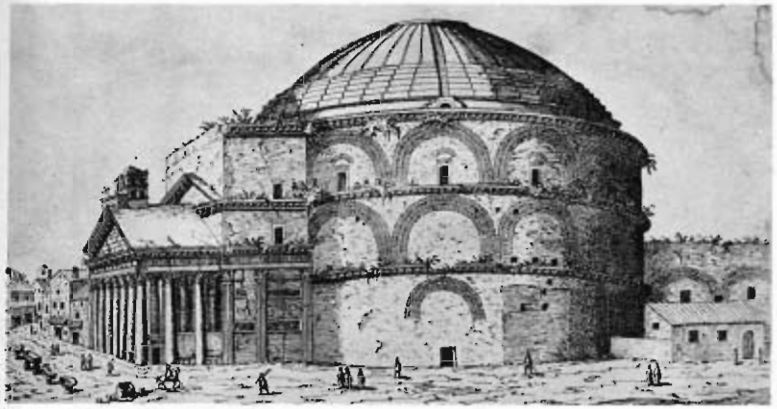


48. Palladio. Palazzo Valmarana, Vicenza. Elevation

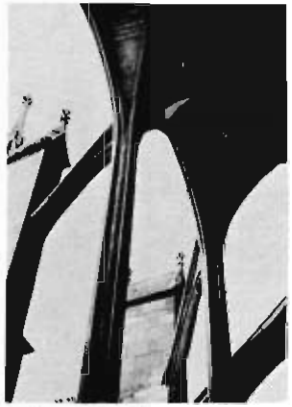


50. Gaudí. Church of the Sagrada Familia, Barcelona. Section

51. Palladio. Il Redentore, Venice



49. Pantheon, Rome. Perspective



52. St. Urban, Troyes

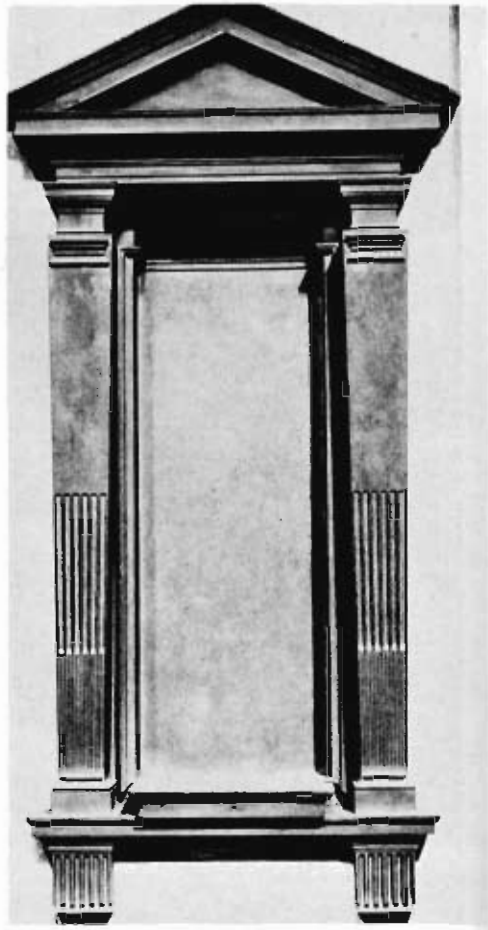
Gothic basilica (52). In contrast to the segregated flying buttress, the Roman countervault spans as well as buttresses, and Gaudí's subtle invention of the tilted pier-buttress supports the weight of the vault as well as buttresses the thrust in one continuous form. Palladio's buttresses are also broken pediments on the façade. A flying buttress at S. Chiara in Assisi forms a portal for the piazza as well as a support for the building.

The double-functioning element can be a detail. Mannerist and Baroque buildings abound in drip mouldings which become sills, windows which become niches, cornice ornaments which accommodate windows, quoin strips which are also pilasters, and architraves which make arches (53). The pilasters of Michelangelo's niches in the entrance of the Laurentian Library (54) also look like brackets. Borromini's mouldings in the rear façades of the Propaganda Fide (55) are both window frames and pediments. Lutyens' chimneys at Grey Walls (56) are literally sculptural entrance markers as well, a dado at Gledstone Hall (57) is an extension of a stair riser in the same room, and the stair landing at Nashdom is also a room.

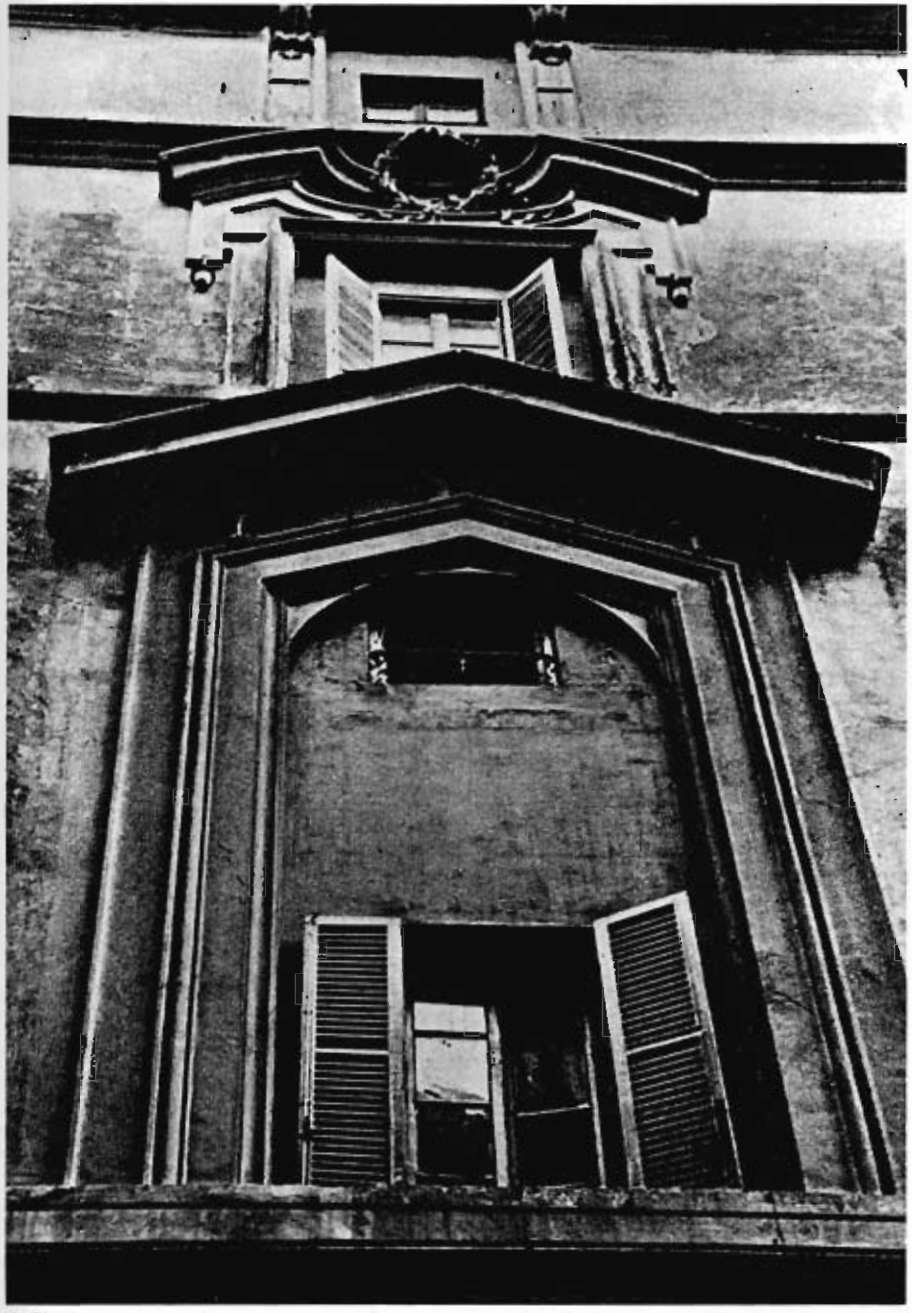
The balloon frame, which has been traced by Siegfried Giedion, *becomes* on all levels. Structurally and visually it evolves from a separate frame to a skin which is both structural and sheltering: to the extent that it is made up of 2 x 4's, it is frame; to the extent that the 2 x 4's are small, close together, and braced and meshed by diagonal siding, it becomes skin. These intricate characteristics are evident in the way penetrations are made in it and in the way it is terminated. The balloon frame is another element in architecture which is several things at once. It represents a method between two pure extremes, which has evolved from each of them until it has characteristics of both.

Conventional elements in architecture represent one stage in an evolutionary development, and they contain in their changed use and expression some of their past meaning as well as their new meaning. What can be called the vestigial element parallels the double-functioning element. It is distinct from a superfluous element because it contains a double meaning. This is the result of a more or less ambiguous combination of the old meaning, called up by associations, with a new meaning created by the modified or new function, structural or programmatic, and the new context. The vestigial element discourages clarity of meaning; it promotes richness of meaning instead. It is a

53. Borromini. S. Maria dei Sette Dolori, Rome



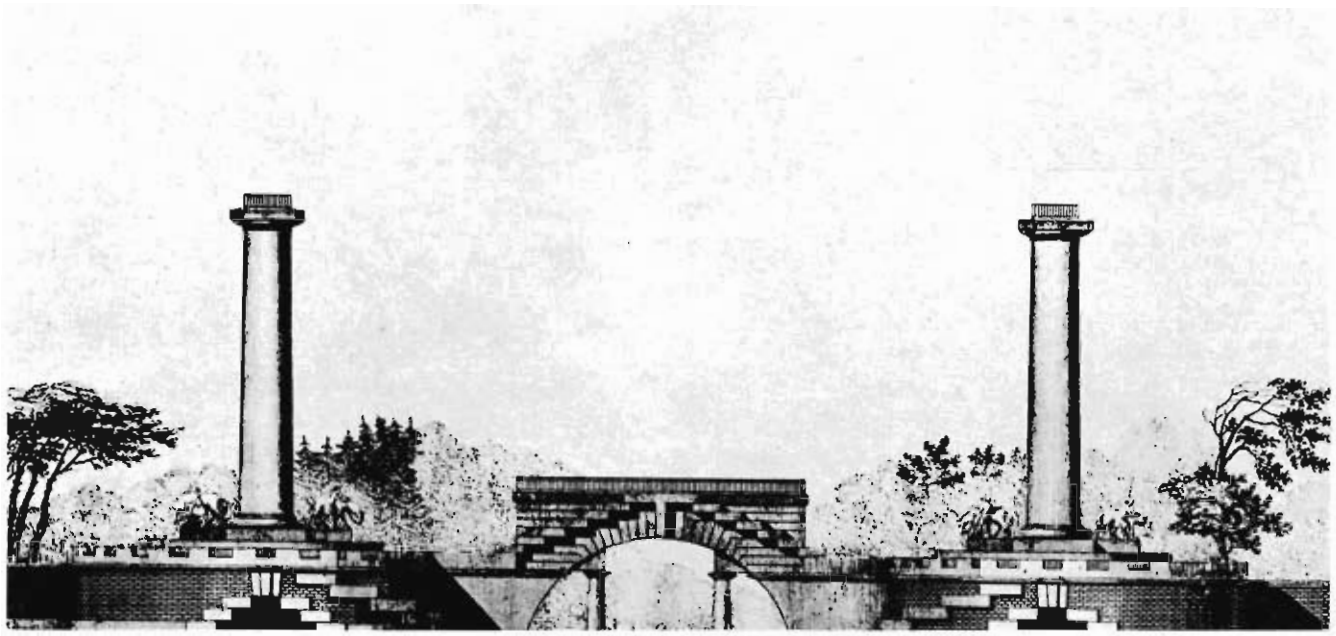
54. Michelangelo. Laurentian Library, Florence



55. Borromini. Palazzo di Propaganda Fide, Rome

56. Lutyens. Grey Walls, Scotland

57. Lutyens. Gledstone Hall, Yorkshire



58. Ledoux. Project for a Gateway, Bourneville

59. Vanbrugh. Blenheim Palace, Oxfordshire

basis for change and growth in the city as manifest in remodeling which involves old buildings with new uses both programmatic and symbolic (like palazzi which become museums or embassies), and old street patterns with new uses and scales of movement. The paths of medieval fortification walls in European cities became boulevards in the nineteenth century; a section of Broadway is a piazza and a symbol rather than an artery to upper New York state. The ghost of Dock Street in Philadelphia's Society Hill, however, is a meaningless vestige rather than a working element resulting from a valid transition between the old and the new. I shall later refer to the vestigial element as it appears in Michelangelo's architecture and in what might be called Pop architecture.

The rhetorical element, like the double-functioning element, is infrequent in recent architecture. If the latter offends through its inherent ambiguity, rhetoric offends orthodox Modern architecture's cult of the minimum. But the rhetorical element is justified as a valid if outmoded means of expression. An element can seem rhetorical from one point of view, but if it is valid, at another level it enriches meaning by underscoring. In the project for a gateway at Bourneville by Ledoux (58), the columns in the arch are structurally rhetorical if not redundant. Expressively, however, they underscore the abstractness of the opening as a semicircle more than an arch, and they further define the opening as a gateway. As I have said, the stairway at the Pennsylvania Academy of the Fine Arts by Furness is too big in its immediate context, but appropriate as a gesture towards the outside scale and a sense of entry. The Classical portico is a rhetorical entrance. The stairs, columns, and pediment are juxtaposed upon the other-scale, real entrance behind. Paul Rudolph's entrance in the Art and Architecture Building at Yale is at the scale of the city; most people use the little door at the side in the stair tower.

Much of the function of ornament is rhetorical—like the use of Baroque pilasters for rhythm, and Vanbrugh's disengaged pilasters at the entrance to the kitchen court at Blenheim (59) which are an architectural fanfare. The rhetorical element which is also structural is rare in Modern architecture, although Mies has used the rhetorical I-beam with an assurance that would make Bernini envious.

In short, that contradictions must be accepted.*

A valid order accommodates the circumstantial contradictions of a complex reality. It accommodates as well as imposes. It thereby admits "control *and* spontaneity," "correctness *and* ease"—improvisation within the whole. It tolerates qualifications and compromise. There are no fixed laws in architecture, but not everything will work in a building or a city. The architect must decide, and these subtle evaluations are among his principal functions. He must determine what must be made to work and what it is possible to compromise with, what will give in, and where and how. He does not ignore or exclude inconsistencies of program and structure within the order.

I have emphasized that aspect of complexity and contradiction which grows out of the medium more than the program of the building. Now I shall emphasize the complexity and contradiction that develops from the program and reflects the inherent complexities and contradictions of living. It is obvious that in actual practice the two must be interrelated. Contradictions can represent the exceptional inconsistency that modifies the otherwise consistent order, or they can represent inconsistencies throughout the order as a whole. In the first case, the relationship between inconsistency and order accommodates circumstantial exceptions to the order, or it juxtaposes particular with general elements of order. Here you build an order up and then break it down, but break it from strength rather than from weakness. I have described this relationship as "contradiction accommodated." The relationship of inconsistency within the whole I consider a manifestation of "the difficult whole," which is discussed in the last chapter.

Mies refers to a need to "create order out of the desperate confusion of our time." But Kahn has said "by order I do not mean orderliness." Should we not resist bemoaning confusion? Should we not look for meaning in the complexities and contradictions of our times and acknowledge the limitations of systems? These, I think, are the two justifications for breaking order: the recognition of variety and confusion inside and outside, in program and environment, indeed, at all levels of experience; and the ultimate limitation of all orders composed by man. When circumstances defy order, order should bend or break: anomalies and uncertainties give validity to architecture.

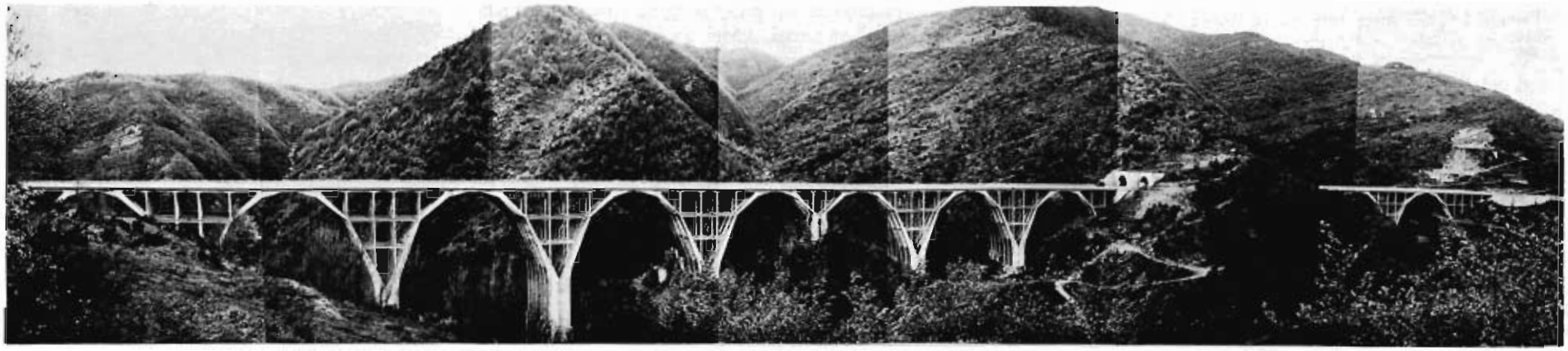
Meaning can be enhanced by breaking the order; the exception points up the rule. A building with no "imperfect" part can have no perfect part, because contrast supports meaning. An artful discord gives vitality to architecture. You can allow for contingencies all over, but they cannot prevail all over. If order without expediency breeds formalism, expediency without order, of course, means chaos. Order must exist before it can be broken. No artist can belittle the role of order as a way of seeing a whole relevant to its own characteristics and context. "There is no work of art without a system" is Le Corbusier's dictum.

Indeed a propensity to break the order can justify exaggerating it. A valid formalism, or a kind of paper architecture in this context, compensates for distortions, expediencies, and exceptions in the circumstantial parts of the composition, or for violent superimpositions in juxtaposed contradictions. In recent architecture Le Corbusier in the Villa Savoye, for example, accommodates the exceptional circumstantial inconsistencies in an otherwise rigid, dominant order. But Aalto, in contrast to Le Corbusier, seems almost to create the order out of the inconsistencies, as can be seen in the Cultural Center at Wolfsburg. An historical example will perhaps help to illustrate this relation of order and exception. The appliqué of arches and pilasters on the Palazzo Tarugi (60) maintains itself against the sudden impositions of "whimsical" windows and asymmetrical voids. The exaggerated order, and therefore exaggerated unity, along with certain characteristics of scale, are what make the monumentality in the Italian palazzo and some of the work of Le Corbusier. The circumstantial oppositions in their compositions, however, are the secret of their kind of monumentality—that which is neither dry nor pompous. Although Aalto's order is not quite so easily grasped at first glance, it involves similar relationships of order and the circumstantial.

In engineering it is the bridge (61) that vividly expresses the play of exaggeratedly pure order against circumstantial inconsistencies. The direct, geometric order of the upper structure, derived from the sole, simple function of conveying vehicles on an even span, strongly contrasts with the exceptional accommodation of the structural order below, which through distortion—the expedient device of

60. Sangallo. Palazzo Tarugi, Montepulciano

* David Jones, *Epoch and Artist*, Chilmark Press, New York, 1959.



61. Carè and Giannelli. Poggettone and Pecora Vecchia Viaducts, Autostrada del Sole, Bologna-Florence Section

elongated or shortened piers—accommodates rhe bridge to the uneven terrain of the ravine.

A play of order and compromise also supports the idea of renovation in building, and of evolution in city planning. Indeed, change in the program of existing buildings is a valid phenomenon and a major source of the contradiction I am endorsing. Many compositions that acknowledge circumstantial exceptions, like the Palazzo Tarugi, result from renovations that maintain an expresssion of the whole. Much of the richness of the Italian utban scene at eye level results from the tradition of modifying or modernizing every several generations the commercial ground floor interiors, for example, the frankly stylish contemporary bats, located in the frames of old palazzi. But the building's original order must be strong. A good deal of clutter has not managed to destroy the space of Grand Central Station but the intrroduction of one foreign element casts into doubt the entire effect of some modern buildings. Our buildings must survive the cigarette machine.

I have been referring to one level of order in architecture—that individual order that is related to the specific building it is part of. But there is convention in architecture, and convention can be another manifestation of an exaggeratedly strong order more general in scope. An architect should use convention and make it vivid. I mean he should use convention unconventionally. By convention I mean both the elements and methods of building. Conventional elements are those which are common in their manufacture, form, and use. I do not refer to the sophisticated products of industrial design, which are usually beautiful, but ro the vast accumulation of standard, anonymously designed products connected with architecture and construction, and also to commercial display elements which are positively banal or vulgar in themselves and are seldom associated with architecture.

The main justification for honky-tonk elements in architectural order is their vety existence. They are what we have. Architects can bemoan or try to ignore them or even try to abolish them, but they will not go away. Or they will not go away for a long time, because architects do not have the power to replace them (nor do they know what to replace them with), and because these commonplace elements accommodate existing needs for variety and communication. The old clichés involving both banality and mess will still be the context of our new architecture, and our new architecture significantly will be the context for them. I am taking the limited view, I admit, but the limited view, which architects have tended to belittle, is as important as the visionary view, which they have tended to glorify but have not brought about. The short-term plan, which expediently combines the old and the new, must accompany the long-term plan. Architecture is evolutionary as well as revolutionary. As an art it will acknowledge what is and what ought to be, the immediate and the speculative.

Historians have shown how architects in the mid-nineteenth century tended to ignore or reject developments in technology when related to structure and methods as unconnected with architecture and unworthy of it; they substi-

tuted in turn Gothic Revivalism, Academic revivalism or the Handicraft Movement. Are we today proclaiming advanced technology, while excluding the immediate, vital if vulgar elements which are common to our architecture and landscape? The architect should accept the methods and the elements he already has. He often fails when he attempts per se the search for form hopefully new, and the research for techniques hopefully advanced. Technical innovations require investments in time and skills and money beyond the architect's reach, at least in our kind of society. The trouble with nineteenth century architects was not so much that they left innovation to the engineers as that they ignored the technical revolution developed by others. Present-day architects, in their visionary compulsion to invent new techniques, have neglected their obligation to be experts in existing convenrions. The architect, of course, is responsible for the how as well as the what in his building, but his innovating role is primarily in the what; his experimentation is limited more to his organization of the whole than to technique in the parts. The architect selects as much as creates.

These are pragmatic reasons for using convention in architecture, but there are expressive justifications as well. The architect's main work is the organization of a unique whole through conventional parts and the judicious introduction of new parts when the old won't do. Gestalt psychology maintains that context contributes meaning to a part and change in context causes change in meaning. The architect thereby, through the organization of parts, creates meaningful contexts for them within the whole. Through unconventional organization of conventional parts he is able to create new meanings within the whole. If he uses convention unconvenrionally, if he organizes familiar things in an unfamiliar way, he is changing their contexts, and he can use even the cliché to gain a fresh effect. Familiar things seen in an unfamiliar context become perceptually new as well as old.

Modern architects have exploited the conventional element only in limited ways. If they have not totally rejected it as obsolete or banal, they have embraced it as symbolic of progressive industrial order. But they have seldom used the common element with a unique context in an uncommon way. Wright, for instance, almost always employed unique elements and unique forms, which represented his personal and innovating approach to architecture. Minor elements, like hardware by Schlage or plumbing fixtures by Kohler of Kohler, which even Wright was unable to avoid using, read as unfortunate compromises within the particular order of his buildings, which is otherwise consistent.

Gropius in his early work, however, employed forms and elements based on a consistent industrial vocabulary. He thus recognized standardization and promoted his machine aesthetic. The inspiration for windows and stairways, for instance, came from current factory architecture, and these buildings look like factories. Latter-day Mies employs the structural elements of vernacular American industrial architecture and also those of Albert Kahn with unconscious irony: the elegant frame members are derived from standard steel manufacturers' catalogues; they are expressed as exposed structure but they are ornament on a fire-resistant frame; and they make up complex, closed spaces rather than the simple industrial spaces they were originally designed for.

It was Le Corbusier who juxtaposed objets trouvés and commonplace elements, such as the Thonet chair, the officer's chair, cast iron radiators, and other industrial objects, and the sophisticated forms of his architecture with any sense of irony. The nineteenth century statue of the Virgin within the window of the east wall of the Chapel at Ronchamp is a vestige from the former church which stood on the spot. Besides its symbolic value, it represents a banal object of sculpture vividly enhanced by its new setting. Bernard Maybeck is the unique architect in recent times to employ contradictory combinations of vernacular industrial elements and eclectic stylistic elements (for example, industrial sash and Gothic tracery) in the same building. Using convention unconventionally is otherwise almost unknown in our recent architecture.

Poets, according to Eliot, employ "that perpetual slight alteration of language, words perpetually juxtaposed in new and sudden combinations." [29] Wordsworth writes in his preface to the *Lyrical Ballads* of choosing "incidents and situations from common life [so that] ordinary things should be presented to the mind in an unusual aspect." [30] And Kenneth Burke has referred to "perspective by incongruity." [31] This technique, which seems basic to the medium of poetry, has been used today in another medium. The Pop painter gives uncommon meaning to common elements by changing their context or increasing their scale. Through "involvement in the relativity of perception and the relativ-

ity of meaning," [32] old clichés in new settings achieve rich meanings which are ambiguously both old and new, banal and vivid.

The value of such contradictory meanings has been acknowledged in both evolutionary and revolutionary architecture—from the collages of fragments of post-Roman architecture, the so-called Spolium architecture in which column capitals are used as bases, for instance, to the Renaissance style itself, where the old Classical Roman vocabulary was employed in new combinations. And James Ackerman has described Michelangelo as "rarely adopting a motif [in his architecture] without giving it a new form or a new meaning. Yet he invariably retained essential features from ancient models in order to force the observer to recollect the source while enjoying the innovations." [33]

Ironic convention is relevant both for the individual building and the townscape. It recognizes the real condition of our architecture and its status in our culture. Industry promotes expensive industrial and electronic research but not architectural experiments, and the Federal government diverts subsidies toward air transportation, communication, and the vast enterprises of war or, as they call it, national security, rather than toward the forces for the direct enhancement of life. The practicing architect must admit this. In simple terms, the budgets, techniques, and programs for his buildings must relate more to 1866 than 1966. Architects should accept their modest role rather than disguise it and risk what might be called an electronic expressionism, which might parallel the industrial expressionism of early Modern architecture. The architect who would accept his role as combiner of significant old clichés—valid banalities—in new contexts as his condition within a society that directs its best efforts, its big money, and its elegant technologies elsewhere, can ironically express in this indirect way a true concern for society's inverted scale of values.

I have alluded to the reasons why honky-tonk elements in our architecture and townscape are here to stay, especially in the important short-term view, and why such a fate should be acceptable. Pop Art has demonstrated that these commonplace elements are often the main source of the occasional variety and vitality of our cities, and that it is not their banality or vulgarity as elements which make for the banality or vulgarity of the whole scene, but rather their contextual relationships of space and scale.

Another significant implication from Pop Art involves method in city planning. Architects and planners who peevishly denounce the conventional townscape for its vulgarity or banality promote elaborate methods for abolishing or disguising honky-tonk elements in the existing landscape, or, for excluding them from the vocabulary of their new townscapes. But they largely fail either to enhance or to provide a substitute for the existing scene because they attempt the impossible. By attempting too much they flaunt their impotence and risk their continuing influence as supposed experts. Cannot the architect and planner, by slight adjustments to the conventional elements of the townscape, existing or proposed, promote significant effects? By modifying or adding conventional elements to still other conventional elements they can, by a twist of context, gain a maximum of effect through a minimum of means. They can make us see the same things in a different way.

Finally, standardization, like convention, can be another manifestation of the strong order. But unlike convention it has been accepted in Modern architecture as an enriching product of our technology, yet dreaded for its potential domination and brutality. But is it not standardization that is without circumstantial accommodation and without a creative use of context that is to be feared more than standardization itself? The ideas of order and circumstance, convention and context—of employing standardization in an unstandard way—apply to our continuing problem of standardization versus variety. Giedion has written of Aalto's unique "combination of standardization with irrationality so that standardization is no longer master but servant." [34] I prefer to think of Aalto's art as contradictory rather than irrational—an artful recognition of the circumstantial and the contextual and of the inevitable limits of the order of standardization.

252. Jefferson. University of Virginia, Charlottesville

In *God's Own Junkyard* Peter Blake has compared the chaos of commercial Main Street with the orderliness of the University of Virginia (252, 253). Besides the irrelevancy of the comparison, is not Main Street almost all right? Indeed, is not the commercial strip of a Route 66 almost all right? As I have said, our question is: what slight twist of context will make them all right? Perhaps more signs more contained. Illustrations in *God's Own Junkyard* of Times Square and roadtown are compared with illustrations of New England villages and arcadian countrysides. But the pictures in this book that are supposed to be bad are often good. The seemingly chaotic juxtapositions of honky-tonk elements express an intriguing kind of vitality and validity, and they produce an unexpected approach to unity as well.

It is true that an ironic interpretation such as this results partly from the change in scale of the subject matter in photographic form and the change in context within the frames of the photographs. But in some of these compositions there is an inherent sense of unity not far from the surface. It is not the obvious or easy unity derived from the dominant binder or the motival order of simpler, less contradictory compositions, but that derived from a complex and illusive order of the difficult whole. It is the taut composition which contains contrapuntal relationships, equal combinations, inflected fragments, and acknowledged dualities. It is the unity which "maintains, but only just maintains, a control over the clashing elements which compose it. Chaos is very near; its nearness, but its avoidance, gives . . . force." [50] In the validly complex building or cityscape, the eye does not want to be too easily or too quickly satisfied in its search for unity within a whole.

Some of the vivid lessons of Pop Art, involving contradictions of scale and context, should have awakened architects from prim dreams of pure order, which, unfortunately, are imposed in the easy Gestalt unities of the urban renewal projects of establishment Modern architecture and yet, fortunately are really impossible to achieve at any great scope. And it is perhaps from the everyday landscape, vulgar and disdained, that we can draw the complex and contradictory order that is valid and vital for our architecture as an urbanistic whole.

253. Typical Main Street, U.S.A.

8. Guild House, Friends Housing for the Elderly, Philadelphia, Venturi and Rauch, Cope and Lippincott, Associated Architects, 1960–1963. (296–304)

The program required 91 apartments of varying types with a common recreation room, to house elderly people who want to remain in their old neighborhood. Local zoning limited the building height to six stories.

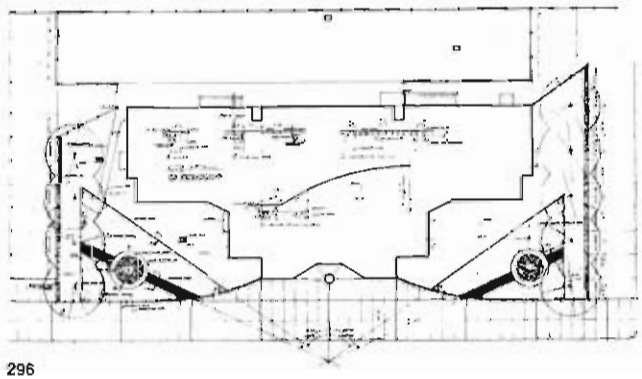
The small urban site faces south on Spring Garden Street. The interior program suggested a maximum of apartments facing south, southeast, and southwest for light and for the interesting activity of the street—yet the urban character of the street suggested a building that would not be an independent pavilion, but instead would recognize the spatial demands of the street in front. This results in a building inflected in shape, whose front is different from its back. The front façade is separated from the back at its top ends where the common room terraces occur in order to emphasize the vestigial role of the street façade. The contrastingly intricate side façades, more sensitive to interior than exterior spatial demands in their exact configurations, accommodate the need for maximum southeast and southwest light, views, and garden space below.

The interior spaces are defined by intricate mazes of walls, which accommodate the very complex and varied program of an apartment house (as opposed to an office building, for example), and the irregular framing allowed by flat plate construction. There is a maximum of interior volume and a minimum of corridor space. The corridor is an irregular and varied residual space rather than a tunnel.

Economy dictated not "advanced" architectural elements, but "conventional" ones. We did not resist this. The dark brown brick walls with double-hung windows recall traditional Philadelphia row houses or even the tenement-like backs of Edwardian apartment houses. Their effect is uncommon, however, because they are subtly proportioned and unusually big. The change in scale of these almost banal elements contributes an expression of tension and a quality to these façades, which now read as both conventional and unconventional forms at the same time.

The big round exposed column at the center of the street façade is polished black granite. It accommodates and emphasizes the exceptional entrance opening on the ground floor, and it contrasts with the white, glazed brick area, which extends to the middle of the second floor on this small section of the street façade. The balcony railings on this floor, like those on the other floors, are perforated steel plate, but here they are painted white rather than black to create a continuity of surface in this area despite the change in material. The central window on the top floor reflects the special spatial configuration of the common room inside and relates to the entrance below, increasing the scale of the building on the street and at the entrance. Its arched shape also permits a very big opening to penetrate the wall and yet remain a hole in a wall rather than a void in a frame. The television antenna atop this axis and beyond the otherwise constant height line of the building strengthens this axis of scale-change in the zone of the central façade, and expresses a kind of monumentality similar to that at the entrance at Anet. The antenna, with its anodized gold surface, can be interpreted two ways: abstractly, as sculpture in the manner of Lippold, and as a symbol of the aged, who spend so much time looking at T.V.

The ornamental line created by a row of white bricks contradictorily intersects the row of upper windows, but it terminates the otherwise plain façade. With the area of white glazed bricks on the front below, it also sets up a new and larger scale of three stories, juxtaposed on the other smaller scale of six stories demarked by the layers of windows.



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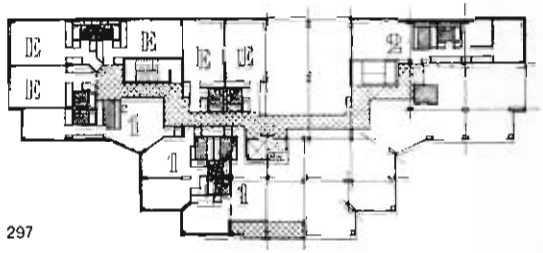

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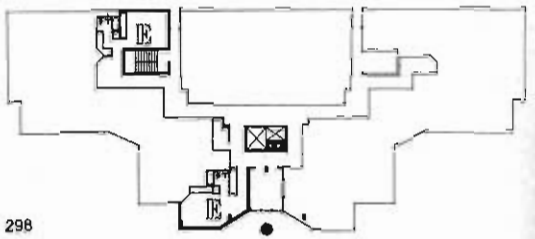

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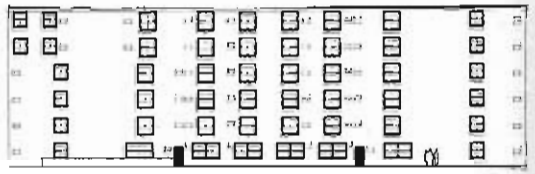

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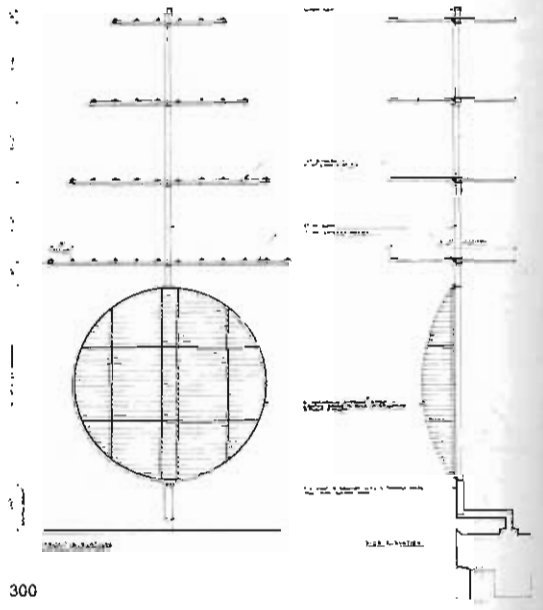

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9. Residence in Chestnut Hill, Pa., Venturi and Rauch, 1962. (305–316)

This building recognizes complexities and contradictions: it is both complex and simple, open and closed, big and little; some of its elements are good on one level and bad on another; its order accommodates the generic elements of the house in general, and the circumstantial elements of a house in particular. It achieves the difficult unity of a medium number of diverse parts rather than the easy unity of few or many motival parts.

The inside spaces, as represented in plan and section, are complex and distorted in their shapes and interrelationships. They correspond to the complexities inherent in the domestic program as well as to some whimsies nor inappropriate to an individual house. On the other hand, the outside form—as represented by the parapeted wall and the gable roof which enclose these complexities and distortions —is simple and consistent: it represents this house's public scale. The front, in its conventional combinations of door, windows, chimney and gable, creates an almost symbolic image of a house.

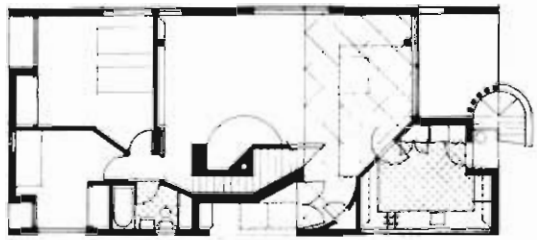
The contradiction between inside and outside, however, is not total: inside, the plan as a whole reflects the symmetrical consistency of the outside; outside, the perforations in the elevations reflect the circumstantial distortions within. Concerning the inside, the plan is originally symmetrical with a central vertical core from which radiate two almost symmetrical diagonal walls that separate two end spaces in front from a major central space in back. This almost Palladian rigidity and symmetry is distorted, however, to accommodate to the particular needs of the spaces: the kitchen on the right, for instance, varies from the bedroom on the left.

A more violent kind of accommodation occurs within the central core itself. Two vertical elements—the fireplace-chimney and the stair—compete, as it were, for central position. And each of these elemenrs, one essentially solid, the other essentially void, compromises in its shape and position—that is, inflects toward the other to make a unity of the duality of the central core they constitute. On one side the fireplace distorts in shape and moves over a little, as does its chimney; on the other side the stair suddenly constricts its width and distorts its path because of the chimney.

This core dominates as the center of the composition at this level; but at the level of its base, it is a residual element dominated itself by the spaces around it. On the living room side its shape is rectangular, and parallel to the important rectangular order of the important space there. Toward the front it is shaped by a diagonal wall accommodating to the also important and unique directional needs of the entrance space in its transition from big outer opening to inner entrance doors. The entrance space also competes for center position here. The stair, considered as an element alone in its awkward residual space, is bad; in relation to its position in a hierarchy of uses and spaces, however, it is a fragment appropriately accommodating to a complex and contradictory whole and as such it is good. From still another point of view its shape is not awkward: at the bottom the stair is a place to sit, as well as ascend, and put objects later to be taken upstairs. And this stair, like those in Shingle Style houses, also wants to be bigger at its base to accommodate to the bigger scale of the first floor. The little "nowhere stair" from the second floor similarly accommodates awkwardly to its residual core space: on one level, it goes nowhere and is whimsical; at another level, it is like a ladder against a wall from which to wash the high window and paint the clerestory. The change in scale of the stair on this floor further contrasts with that change of scale in the other direction at the bottom.

The architectural complexities and distortions inside are reflected on the outside. The varying locations and sizes and shapes of the windows and perforations on the ourside walls, as well as the off-center location of the chimney, contradict the overall symmetry of the outside form: the windows are balanced on each side of the dominating entrance opening and chimney-clerestory element in the front, and the lunette window in the back, but they are asymmetrical. The protrusions above and beyond the rigid outside walls also reflect the complexity inside. The walls in front and back are parapeted to emphasize their role as screens behind which these inner intricacies can protrude. Indentations of the windows and porch on the sides at all but one of the corners, increase the screenlike quality of the front and back walls in the same way as the parapets do at their tops.

When I called this house both open and closed as well as simple and complex, I was referring to these contradictory characteristics of the outside walls. First, their parapets



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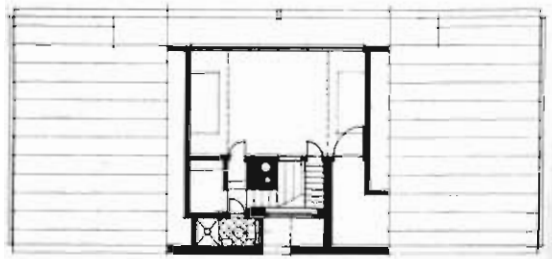

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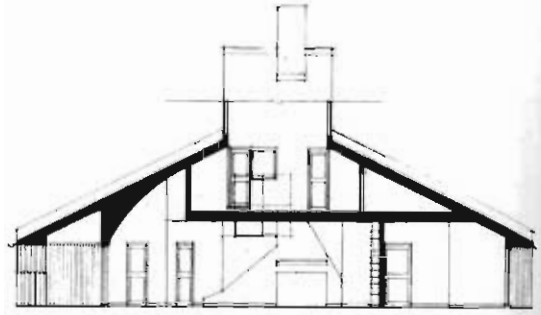

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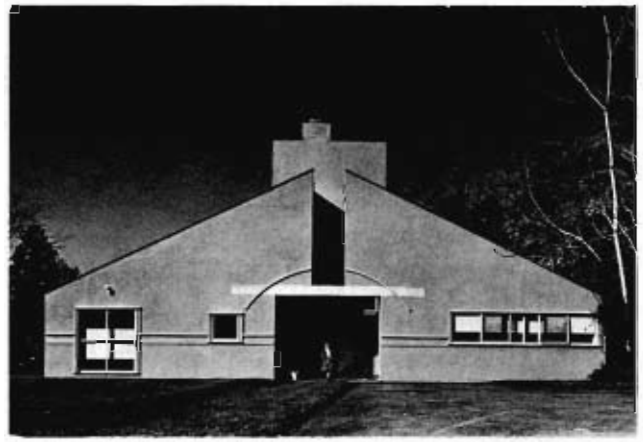
along with the wall of the upper terrace in the back, emphasize horizontal enclosute yet permit an expression of openness behind them at the upper terrace, and above them at the chimney-clerestory protrusion. Second, the consistent shape of the walls in plan emphasizes rigid enclosure, yet the big openings, often precatiously close ro the corners contradict the exptession of enclosure. This method of walls—layered for enclosure, yet punctured for openness—occurs vividly at the front center, where the outside wall is superimposed upon the two other walls housing the stair. Each of these three layers juxtaposes openings of differing size and position. Here is layered space rather than interpenetrated space.

The house is big as well as little, by which I mean that it is a little house with big scale. Inside the elements are big: the fireplace is "too big" and the mantel "too high" for the size of the room; doors are wide, the chair rail high. Another manifestation of big scale inside is a minimum of subdivisions of space—also for the sake of economy, the plan minimizes purely circulation space. Outside the manifestations of big scale are the main elements, which are big and few in number and central or symmetrical in position, as well as the simplicity and consistency of the form and silhouette of the whole, which I have already described. In back the lunette window is big and dominating in its shape and position. In front the entrance loggia is wide, high, and central. Its big scale is emphasized by its contrast with the other doors, smaller in size yet similar in shape; by its shallowness for its size; and by the expedient position of the inner entrance behind it. The applied wood moulding over the door increases its scale, too. The dado increases the scale of the building all around because it is higher than you expect it to be. These mouldings affect the scale in another way also: they make the stucco walls even more abstract, and the scale, usually implied by the nature of materials, more ambiguous or noncommital.

The main reason for the large scale is to counterbalance the complexity. Complexity in combination with small scale in small buildings means busyness. Like the other organized complexities here, the big scale in the small building achieves tension rather than nervousness—a tension appropriate for this kind of architecture.

The setting of the house is a flat, open, interior site, enclosed at its boundaries by trees and fences. The house sits near the middle, like a pavilion, with no planting at all



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near it. The driveway axis perpendicular to the middle of the house is distorted in its position by the circumstantial location of a sewer main at the curb of the street.

The abstract composition of this building almost equally combines rectangular, diagonal, and curving elements. The rectangles relate to the just dominant order of the spaces in plan and section. The diagonals relate to directional space at the entrance, to particular relationships of the directional and nondirectional spaces within the rigid enclosure on the first floor, and to the enclosing and water-shedding function of the roof. The curves relate to the directional-spatial needs at the entry and outside stair; to spatial-expressive needs in section in the dining room ceiling, which is contradictory to the outside slope of the roof; and to the symbolism of the entrance and its big scale, which is produced by the moulding on the front elevation. The exceptional point in the plan refers to the expedient column support, which contrasts with the otherwise wall-bearing structure of the whole. These complex combinations do not achieve the easy harmony of a few motival parts based on exclusion—based, that is, on "less is more." Instead they achieve the difficult unity of a medium number of diverse parts based on inclusion and on acknowledgement of the diversity of experience.

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