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# THEORY IN PRACTICE

This architecture reflects the dual values of practitioner and teacher

BY ROBERT L. GEDDES  
with introduction and  
conclusion by  
WILLIAM LaRICHE

Just as there are no young philosophers, there are no young architects. This familiar observation was recently reiterated by philosopher Paul Weiss, who realized that architecture must be developed from the architect's experience of the world. There is no young architecture that is fully achieved.

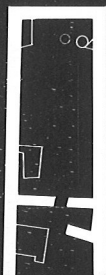
The development of a major type—the Greek temple, for instance, requires a period of reflection often longer than an individual life. Hence it is impossible to have a new architecture “every Monday morning.” The development of an architectural philosophy is even more complex. There must also

be a framework of principles that can be applied to a broad range of formal problems.

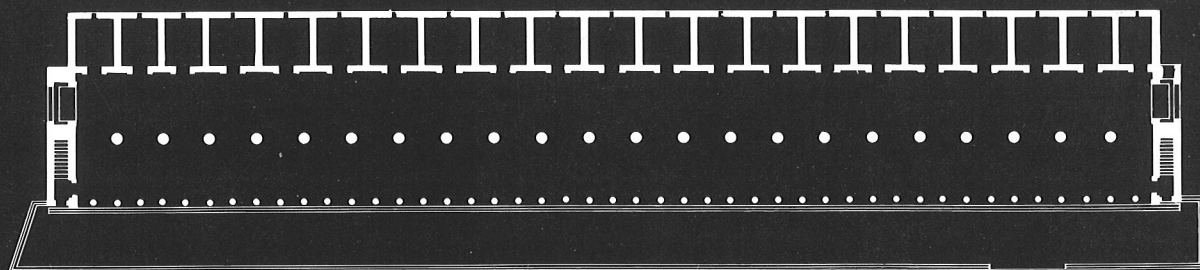
There are certain archetypal forms in architecture, forms that have recurred throughout the millennia in various cultural contexts. They seem to respond to fundamental human needs, for they have been elaborated into the accepted physical forms of our basic institutions. Through the combination of serial, centroidal and field organizations, we have established, in the words of Mircea Eliade, the continuous space of our cities as a whole and the discontinuous space of our sanctuaries within them.

The fundamental cell, the megaron (Figure 1), has been replicated into the serial continuity of the stoa (Figure 2), an ancient Greek colonnade. The same basic form has also been

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1. House of Ib, Troy



2. Stoa of Attalos, Athens

It is now almost six years since we began to develop a coherent body of architectural work, purposely based on a common set of theoretical principles. Some of the work is under construction, and some of it is now completed. We feel it useful to set forth the architectural intentions of the work as a whole, not only as a basis for understanding the individual buildings, but also as a contribution to the theory of practice of architecture.

The five buildings whose plans and sections are presented for the first time on these pages were designed in sequence: 1)

Mr. Geddes is Dean of the Princeton School of Architecture and Urban Planning. He is design partner in charge of the Princeton office of Geddes Brecher Qualls Cunningham.

Beaver College, Science and Academic Classroom Building, 1968; 2) Rutgers University, Newark Campus, Classroom and Office Building, 1967; 3) Southern Illinois University, Humanities and Social Sciences Building, 1968; 4) Goucher College, Fine Arts Building, 1968; and 5) Institute for Advanced Study, Princeton, Dining Commons and Academic Building, 1969. As a body of work, these buildings were studied in relation to each other, specifically, and to the theses of the modern movement in architecture, generally. In this way, the buildings consciously set out to inform each other, and thereby to gain authority by continuing a line of thought about architecture.

In our previous work in Philadelphia, two designs foreshadowed our future studies. Both have previously appeared in

exalted into the temple (Figure 3) and into the basilica (Figure 4), that unique and privileged focus of urban life in the West. The stoa, of course, was one terminus of an agora, that civic and commercial loft space of the ancient Mediterranean.

Through the combination of such elemental forms, one can accommodate the relationships between essential human activities and values. Degrees of privacy and community, for example, need not be limited in practice to the two components of Le Corbusier's "indissoluble binomial": the individual and the collective, which become the ends of a continuum that includes innumerable conditions.

The phenomenon of center is also important. Moreover, it can occur in other than purely symmetrical compositions. It is possible to establish a center with

equal authority in buildings demonstrating dynamic balance.

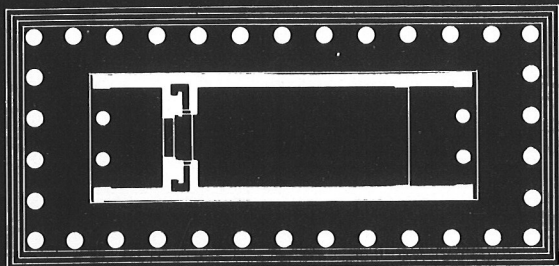
Mies said, "You could learn everything in architecture" from Schinkel's Altes Museum, where archetypal forms are brilliantly combined (Figure 5). The temple form is suggested on either side of that circular hall, which affirms the universal need for a center in space. Less obviously, the basilica is evoked in the peripheral galleries by inverting the cella and peristyle of the temple form. The almost equal treatment of opposing ends of these galleries, however, and the overall proportion and columnar modulation of the space again recalls the commercial stoa.

Schinkel's conception of the museum as an institution is ambiguous and complex. Ironically, the hierarchic ordering of space that produces these qualities is

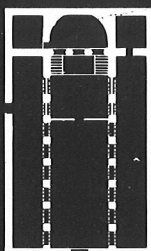
minimized by Mies in deference to the concept of "universal space."

Le Corbusier's "free plan" goes beyond Schinkel's concept of modulation to engage all space man chooses to order. Specific forms are composed hierarchically within this universal framework. Their relation to it forms part of the meaning of the whole.

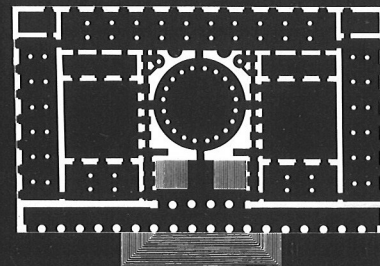
In each building presented in this article, the universal spatial ordering system, the hierarchic disposition of activities, and the archetypal formal themes are brought into play—at varying levels of consciousness and degrees of success. There is a definite progression from one building to the next, as experience informs intuition and the past work leads one to set more demanding goals for each successive project. □



3. Temple of Concord, Agrigento



4. Basilica at Benian, Algeria



5. Schinkel, Altes Museum, Berlin

FORUM: the Laboratory/Classroom Building for the Moore School of Electrical Engineering at the University of Pennsylvania (March, 1959, issue) and the urban design for the University City Science Center (August and September '64 issues). Admittedly these early designs are partial forecasts, but the later buildings and urban designs have borne their mark. They provided some of the empirical experience from which we drew our observations, leading toward generalization, understanding and theory.

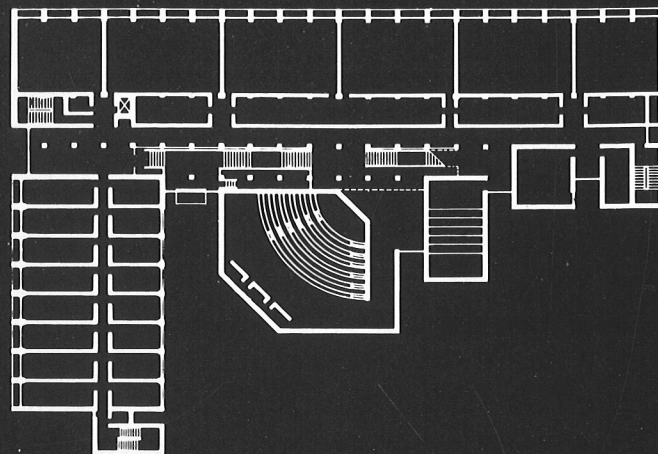
The understanding of architecture is dependent on the ability to identify and classify its elements, and to understand the relations among its elements. The understanding of architecture requires theory. We have found that architectural theory helps us as a guide in our prac-

tice. The role of theory in the everyday practice of architecture is undervalued in our times, because of the often mistaken notion that the solution to an empirical architectural problem will arise almost self-generated out of the problem itself, in a sort of automatic pragmatism. In actuality, the resolution of an architectural problem is not so simple a process, involving as it does, not only an operation, but a cultural dimension.

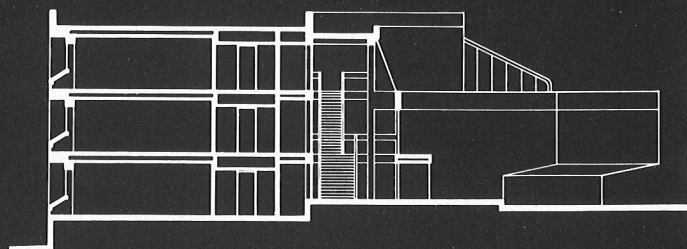
In architecture, to solve a problem is to develop the correct form that is, to create a close correspondence between the structure of the task and its equivalent in form, the formal structure. The central goal of architecture is the coordination of the building task and the building form, by means of building technics.

The theoretical core of our

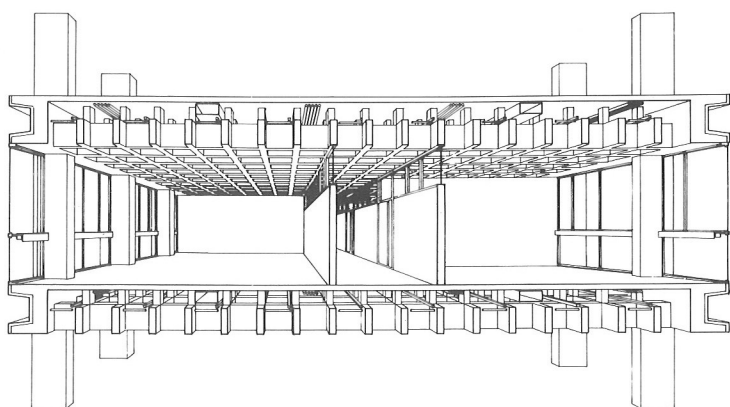
work is, therefore, the interaction between the building task, form and technics. This statement may not seem to differ markedly from the other three-part formulations, such as the Vitruvian model. But the emphasis is different, because the three elements are not related to each other as equals, they are related in a hierarchic order. For example, although we recognize that the building technics are an integral part of both the building task and form, we do not seek to make technics the prime generator of the task and form. Technics in this sense are instrumental, enabling means to achieve the integration of task and form. The generators of a proper architectural solution arise out of a deep understanding of the building task, and the prepared imagination that seeks correspondence, correlation and



In the Marian Angell Boyer Hall of Science, at Beaver College, a central stair provides access to two different kinds of facilities. On one side, there are linear loft spaces containing laboratories, support facilities and offices; on the other side, special spaces such as auditoria, lounges and greenhouse. Location: Glenside, Pa., on rolling garden landscape. Building area: 72,000 sq. ft. Cost: \$2.7 million.



6. Beaver College



Laboratory/Classroom building, Moore School of Electrical Engineering.

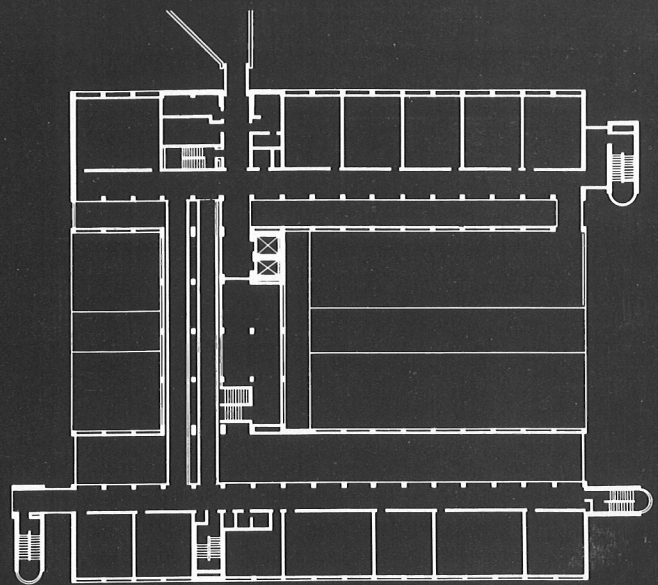
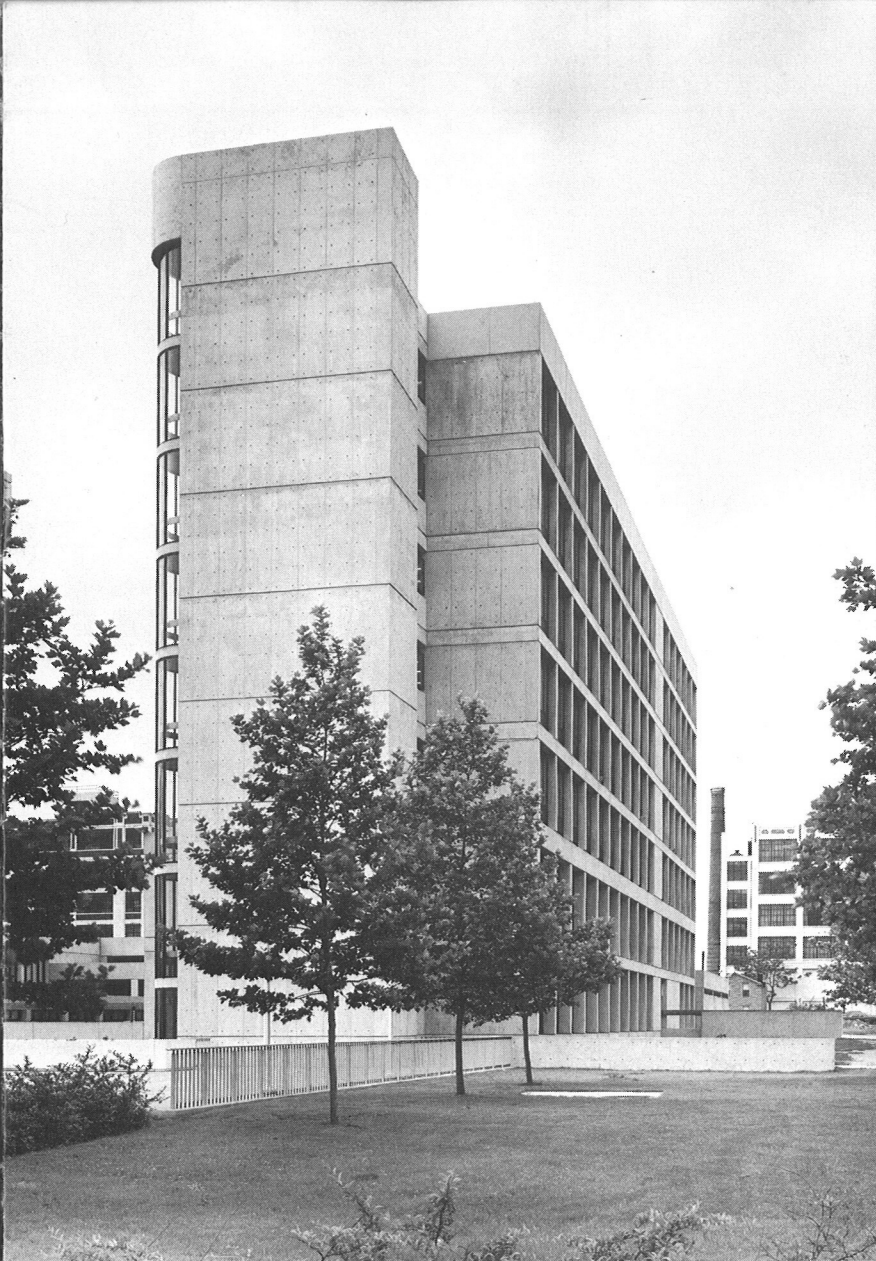
coordination in form.

In this series of buildings, a formal system is being developed. Not only are we working on architectural solutions to specific building tasks and their unique sites, but at the same time we are seeking to develop a generally valid system of form. If successful, the formal system can respond with enthusiasm to the specific context of its landscape, and to the specific needs of its inhabitants. There are six elements in the formal system:

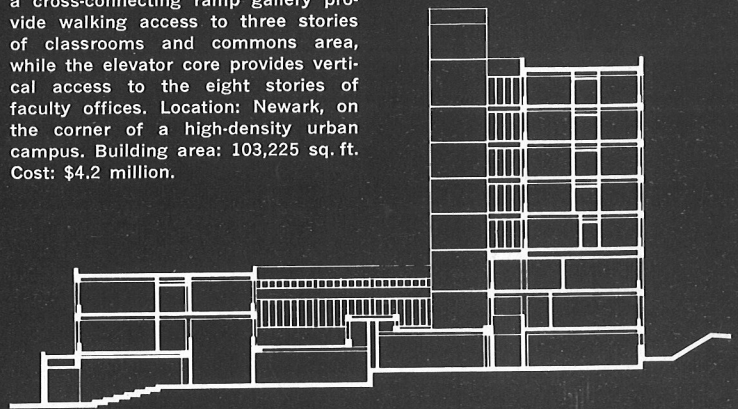
1. The spatial grid. The primary means of visual order and spatial organization is the rectilinear grid, which has been reinforced in twentieth century sensibilities by the explorations in grid construction of cubism. Grid structure in our buildings is more than a contextual field. In these buildings, the grid is directional;

that is, we have modulated or differentiated only one of the two coordinates of the planning grid, keeping one coordinate constant as a measure and module in series. The primary grid is often modified, overlaid or supercharged with other grids, larger and smaller than the primary grid. For example, in Figure 9 (Goucher), we are exploring the implications of a grid that is rotated in relation to the primary grid; and in Figure 10 (IAS) we are exploring the multiple-layering of larger and smaller grid configurations.

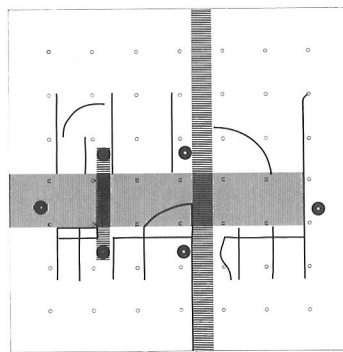
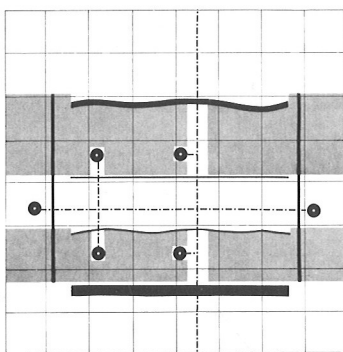
2. The structural frame. The rectilinear frame is the instrument of visual organization and building technics that most readily achieves the spatial grid. Framing is equivalent to drawing, in that it produces sets of space, divisions, reference



At Rutgers, the State University of New Jersey, Newark, two galleries and a cross-connecting ramp gallery provide walking access to three stories of classrooms and commons area, while the elevator core provides vertical access to the eight stories of faculty offices. Location: Newark, on the corner of a high-density urban campus. Building area: 103,225 sq. ft. Cost: \$4.2 million.



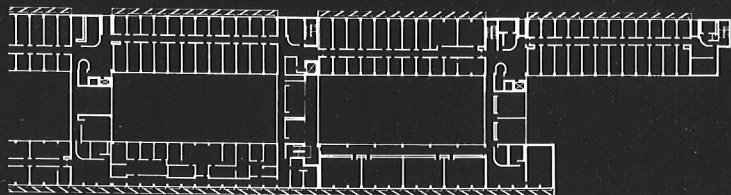
7. Rutgers at Newark



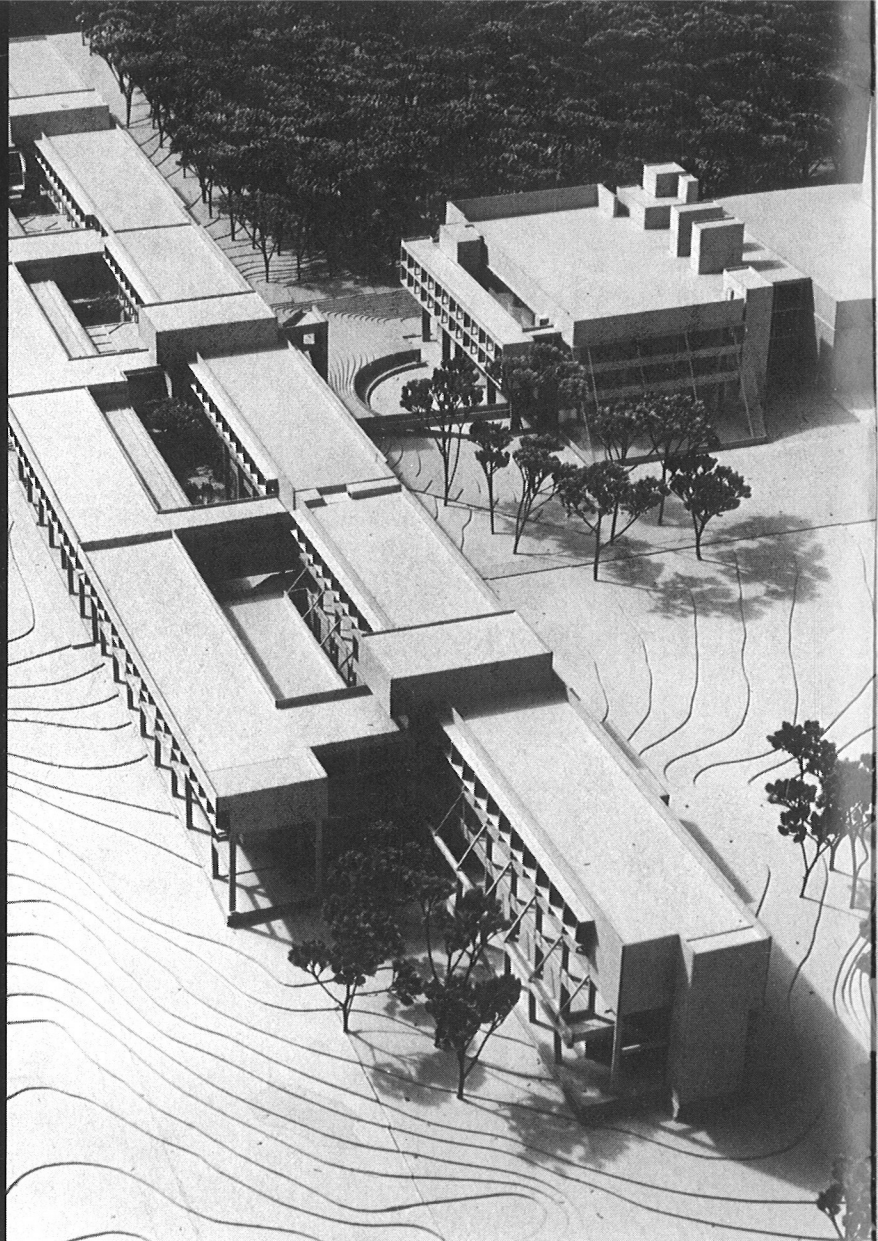
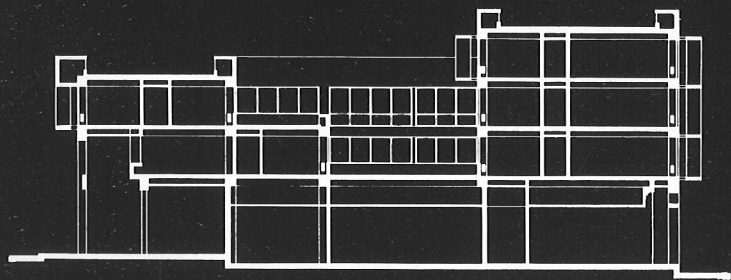
lines for separation and identification. The structural frame serves more than one type of structure: it is at one time the primary means of creating visual structure, and also the primary means of organizing building technologies. In these buildings, the structural frame is varied in one of its two coordinates, but not in both coordinates at the same time; for example in Figure 7 (Rutgers-Newark) the framing is held constant in the north-south direction, and varies in the east-west direction according to the circumstances; in Figure 8 (SIU, Carbondale) the same principle is applied; and in Figure 10 (IAS) the 20-ft. column bay and the 10-ft. wall grid are held constant, while other grids are built in harmonics, that is, built on multiples and subdivisions of the basic module, which is closely related

to human scale.

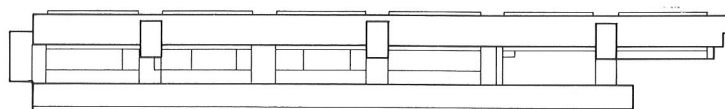
3. The loft space. The loft is the type of building form that most readily allows for an approximate fit, rather than a tight fit between the building task and form. Therefore, the loft space has enough generality about its form to serve a wide range of building tasks, and to accommodate itself to future change. In these buildings, the linear loft space has been developed as a less than universal, but satisfactory, approximation of user needs. The linear loft maintains one of its coordinate dimensions constant, allowing for change and extension in its linear longitudinal form. In most cases, we have found that the typical space of a building lofts; for example, in Figure 6 (Beaver) and Figure 10 (IAS), one of the two major building



Southern Illinois State University's Faner Hall (the humanities and social sciences building) has two parallel lines of linear lofts, three and four stories high. These create a series of linked quadrangles for a large number of academic departments. The ground level arcades serve classrooms, student activities and a museum; the upper floors serve faculty offices, departmental and student common areas. Location: Carbondale, Ill., in the central campus area, between the original late 19th century and the recent postwar campus. Building area: 250,000 sq. ft. Cost: \$11.7 million.



8. Southern Illinois University



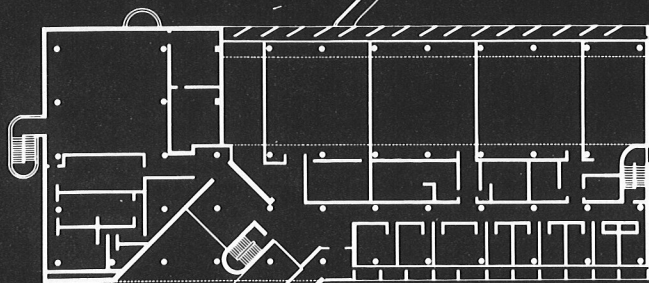
elements is the linear loft; whereas in Figure 7 and Figure 8 almost all of the building consists of the layered grouping of linear lofts.

4. The singular space. Within the spatial continuity of life, some spaces have characteristics that mark them as special places. Eliade has pointed out that for religious man, the creation of a singular space was a paradigmatic reconstruction of the cosmos; for secular man, we seek means to break the homogeneity of all space in order to serve the human needs for orientation, identification, hierarchy, ritual and meaning of use. In these buildings, special spaces are often based on the permanence of use (for example, the lecture halls in Figures 6 and 10), or of the public nature of the use (for example, the ramps in Figures 7 and 9 and the stairs in

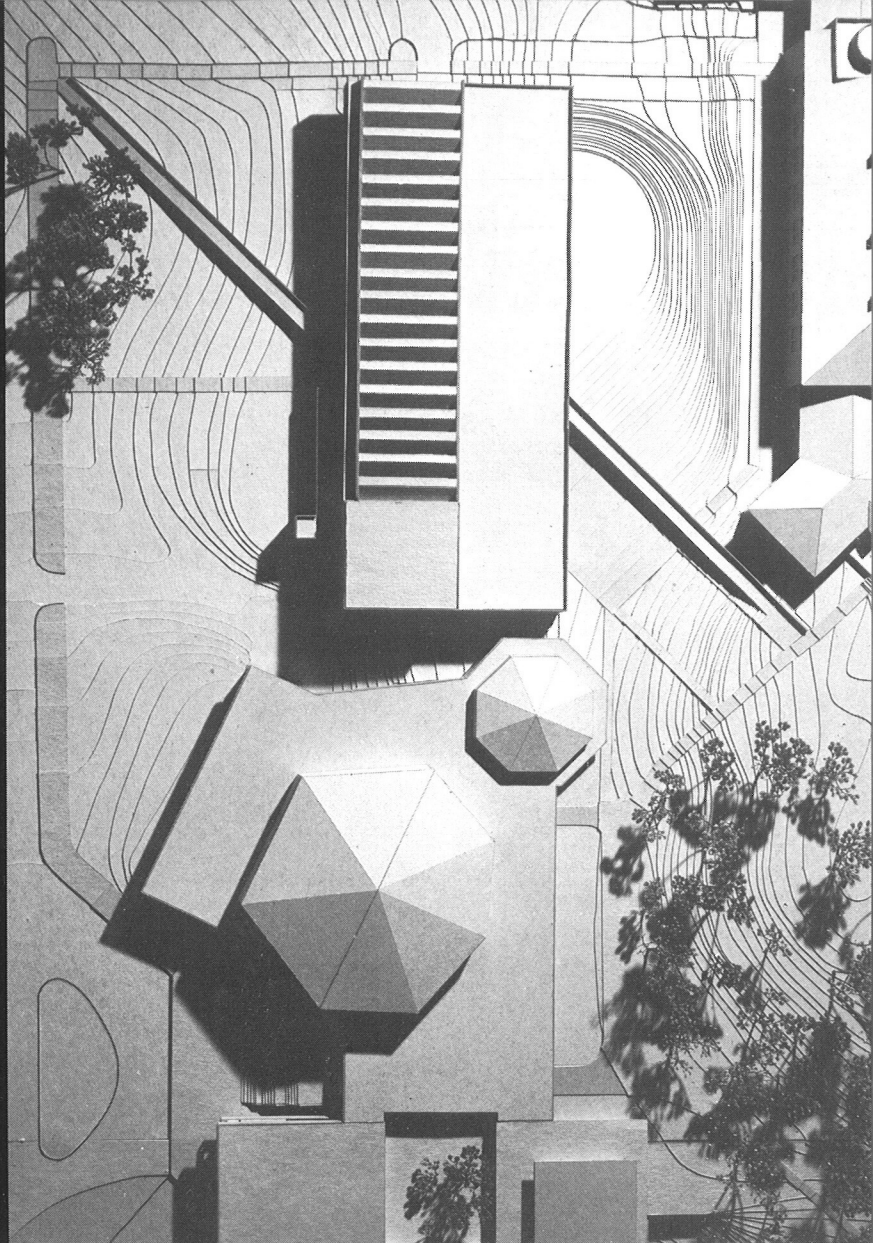
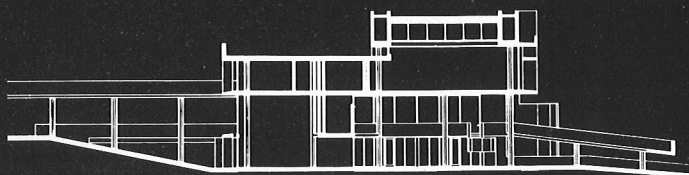
Figures 6 and 10), or the humanistic hierarchy of use (for example, the student commons in Figure 7, and the coffee commons in Figure 10).

5. The path of movement. The form of the movement network is the armature of the individual building form and the group form. The elements of the movement network are simply three: a) open and enclosed linear galleries, sometimes developed in pairs of major and minor hierarchy, b) in connecting bridges, levels and ramps, and c) points of vertical movement, stairs and elevators. The spatial relations between these three elements of movement are rigorously organized to serve the internal needs of the individual building, and to weave into its context. For example, in Figure 9, the central ramp serves as the entrance to the building

Professional credits for the five buildings discussed in this article are as follows. The Marian Angell Boyer Hall of Science, Beaver College, Glenside, Pennsylvania: Architect, Geddes Brecher Qualls Cunningham (GBQC); Project Architect, Elizabeth Lawson. Classroom and Office Building, Rutgers, The State University, Newark, New Jersey: Architect, GBQC; Project Architect, Hamilton Ross. Faner Hall, Humanities and Social Science Building, Southern Illinois University, Carbondale, Illinois: Architect, GBQC; Project Architect, John DeBello. Fine Arts Building, Goucher College, Towson, Maryland: Architect, GBQC; Project Architect, Rhett Jones. Dining Commons and Flexner Hall (Academic Office Building), Institute for Advanced Study, Princeton, New Jersey: Architect, GBQC; Project Architect, Roland Gallimore; Landscape consultant, Zion and Breen Associates. The GBQC design team on all five projects: James Dill, William Dix, M. Neville Epstein, Harrison Fraker, Roland Gallimore, and Robert L. Geddes.



The Fine Arts Building of Goucher College has an upper level that serves studios and workshops in linear loft spaces, while the lower levels serve galleries, exhibitions and an auditorium. A pedestrian ramp provides access from the center of the campus on one side, and from the auto access and parking on the other. Location: Towson, Md., on a rolling, wooded campus. Building area: 42,500 sq. ft.

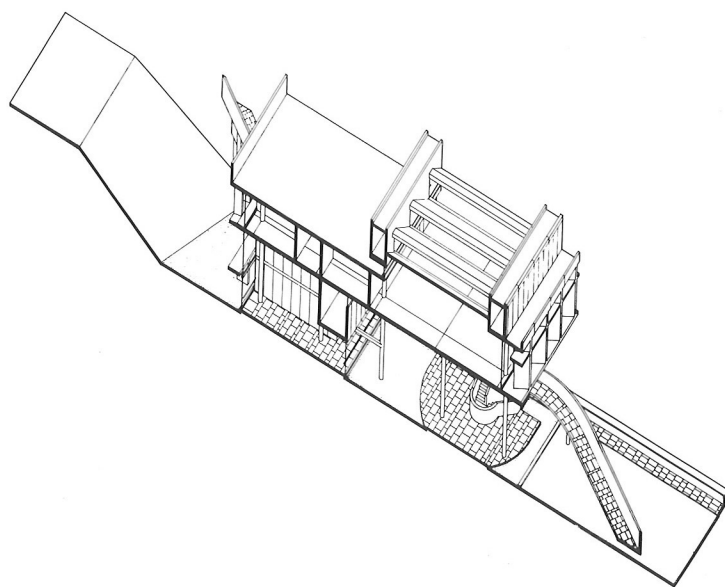


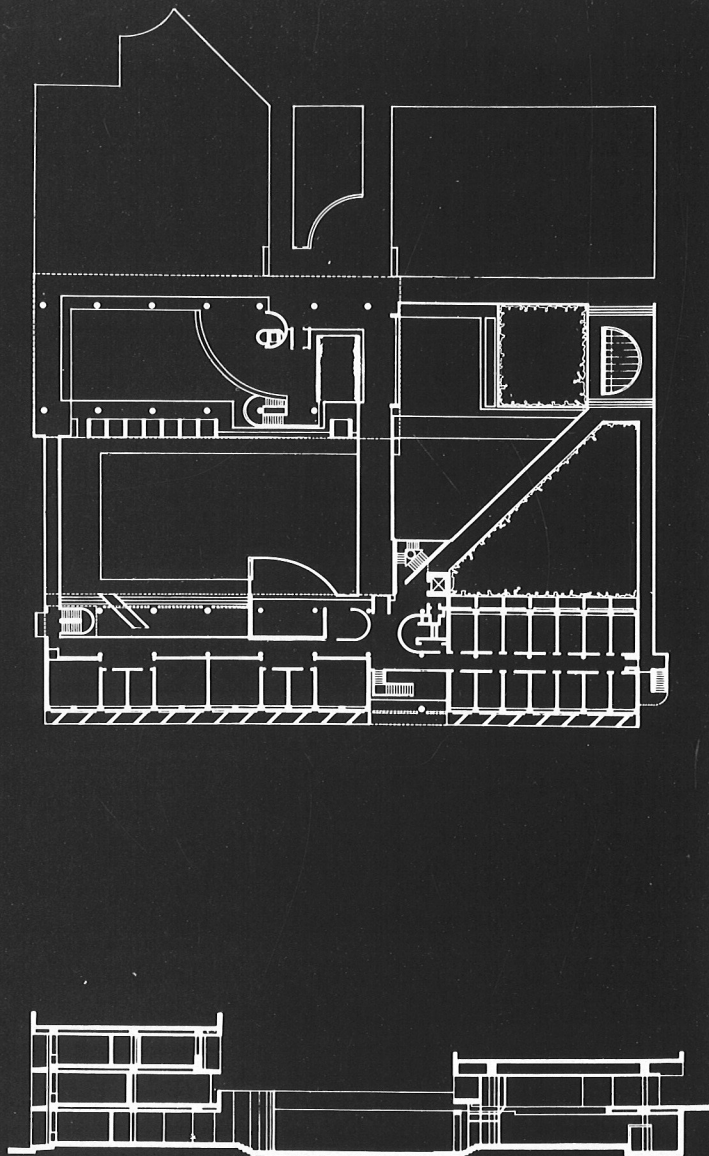
9. Goucher College

and also as the entrance to the central campus; in Figures 8 and 10 the paths of campus-wide circulation are the basis of the built form of the building; and in Figures 6, 7, and 9, the paths of movement take on some of the characteristics of being singular places in their own right. **6. The enclosure.** These buildings recognize that there are many elements of enclosure, responding to the diverse needs of cultural symbol and operational filter, of privacy and community, of entrance and threshold, of air, sound and light. The exterior fabric has increasingly become a deep structure in order to reduce energy uses, reduce glare, and maintain clear glass. The interior enclosure has been polemically of two types; engaged column and wall relations (Figure 7), and the free column and wall relations (for

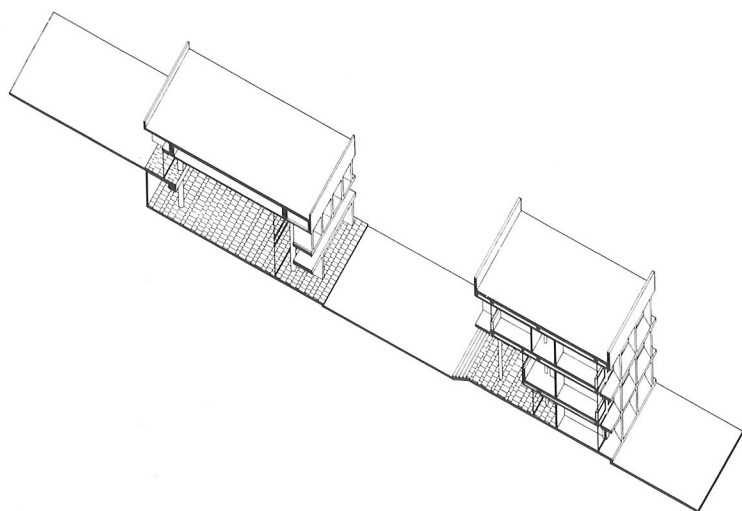
example Figure 9); in later work, both types of relations have been used in a single building (Figure 10). We have become increasingly aware of the nature of the "middle scale" enclosure; that is, the stair and balcony railings, the furniture, the soffits and skylights, the landscape garden in the "medioscosmos" of everyday life.

Composition is the creation of a community of parts. As in a social community, in architecture there are many apparent polarities. It is not sufficient merely to recognize the existence of contradictions and conflicts; it is necessary to learn to compose effectively. Therefore we seek responsive compositions that include not one but both, that mediate freedom and order, specificity and generality, uniqueness and universality, both inside and outside





10. Institute for Advanced Study, Princeton, N.J.



a structure or a building.

These five compositions are similar in their elements, but different in their totalities, because they are responsive to their own inhabitants and their own landscapes. They share their vocabulary of enclosures, their galleries and promenades, their layered lofts and singular places, their frames and their grids. And, as a series, these buildings represent a stage of evolution.

The purpose of these notes is to describe a recent body of work in two different ways; first, to identify the principles, the elements and relations, in a useful way for a practitioner of architecture; and second, to indicate the extent to which it is helpful to think of architectural practice as a series, rather than as individual works. In this way, one can make a learning

experience of architecture, and perhaps respond to Piet Mondrian's request that "It is not enough to explain the value of a work in itself; it is above all necessary to show the place which the work occupies on the scale of the evolution of plastic art."

We are faced today with a critical situation of mind and culture. The sciences seem unable to place human values in a generating and motivation position, and the arts seem headed inward the disintegration of form. We witness all around us a veritable cult of incoherence; the next stage may be the outspoken attempt to produce incoherence, incoherence as such. But now more than ever before, we must reaffirm that architecture, as an art, is concerned with form, the creation of coherence in reality. □

In conclusion, the problem of a building's relation to its site is that of the intersection of the man-made with the natural order. The Greek practice of placing sanctuaries in opposition to the landscape heightens the distinction between the two orders.

The skeletal simplicity of Mies' Farnsworth House affirms both the Greek imperative and the irony of the minimalist goal—that the meaning of a composition is inversely proportional to the amount of information it imparts (Figure 11). Hence the aspiration toward abstraction and the excision of all but the "essential" elements.

Unlike Mies, Le Corbusier explored this intersection through what he included in his compositions. In the residential areas of the Ville Radieuse, the apartment buildings are disposed in a geometric pattern (Figure 12). The ground plane is organized on the model of the English garden. Pathways that appear to meander across the site are, in fact, ordered on a diagonal grid. An ideal concrete formal garden is superimposed on an organic English garden; both the man-made and natural orders are in the architect's control.

The three most recent buildings presented here display different advances over their predecessors at Newark and Beaver in acknowledgement of their site. The SIU building distinguishes itself first by its 900-ft. length.

Vertically, the trees contain it, while, in the horizontal dimension, it introduces new scale to the campus. It is a permeable edge accommodating a variety of activities. The building's change of height in transverse section conforms to the difference in scale between the old precinct and the new. This double-sided stoa, transposed from the cores of ancient cities to the English garden of an American campus, is not the first increment of the concrete formal garden of the Ville Radieuse. And yet, its identity consists in part of its affinities with the classical and the Corbusian examples.

In many of Le Corbusier's buildings, the upper floors display a regularity of organization not found on the lower floors, which respond to site conditions. The Goucher Fine Arts Building reflects this practice. Numerous site pressures are resolved into a single gesture: a ramp rises from the ground, intersecting the building on its own terms. As in Le Corbusier's Carpenter Center, the diagonal system of major movement is a major formal element. The Farnsworth House opposed the ideal, Cartesian forest of columns to the actual forest before which it is placed; at Goucher, the landscape is idealized, and two conflicting aspects of one system intersect.

Kenneth Frampton has contrasted the hierarchic spatial

organization of Le Corbusier's project for the League of Nations Competition with the anti-hierarchic project of Hannes Meyer. For Meyer, operational and economic efficiency were an exclusive passion: composition, ideally, was the unmediated translation of program into spatial fact, and all spaces were assigned equal importance. Le Corbusier, on the other hand, felt that architecture should respond to cultural values of varying importance.

At Rutgers-Newark, singular spaces of exceptional importance occur within a continuous gridded frame-work such as Meyer would have employed. In the area of the ramps, for instance, the connections of the columns and beams, the height of the space, the angle of the ramps, and the general spaciousness of the lounge combine to form a center to the building.

At Beaver College, the loft spaces of the continuous frame are subdivided as teaching laboratories. Here flexibility of partition locations and responsiveness to program changes are essential. The stair gallery is the collective area for those people whose only shared purpose is movement from one place to another (and lingering to converse along the way). The large space, the generous admission of natural light, and visual access between corridors and gallery define this space as

a privileged intermediary realm. As at Newark, the space between all spaces becomes a place.

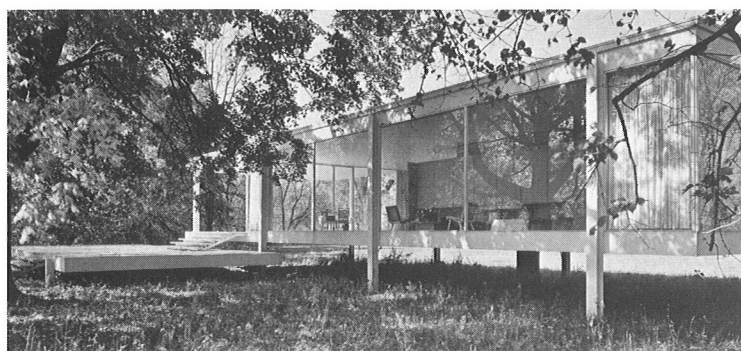
In opposition to Newark, however, spaces at Beaver where people congregate with single intent are formed in acknowledgement of their use: the auditorium and lecture rooms are recognized as singular and discontinuous.

At Goucher, the Beaver and Newark experiences merge. Requirements of the auditorium and exhibition area are addressed within the framework of the building; both the free plan and the intrusion of movement from the site are acknowledged (Figures 13 & 14).

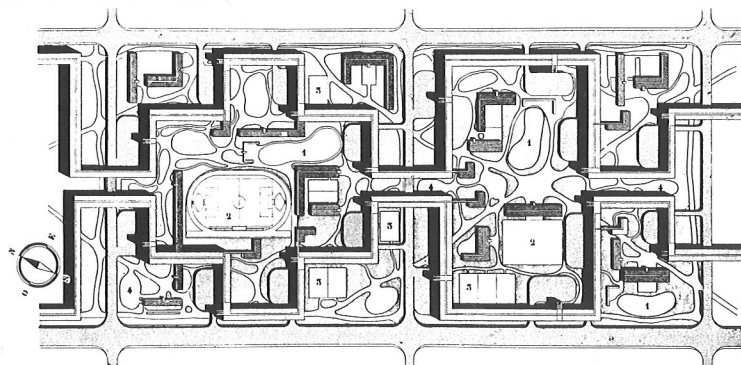
In all three buildings, spaces for individuals are constant in form: the cellular repetition in these office stoas imparts a linearity and sense of measure to the free plan loft space.

An institution is a matrix of transcendent concerns. To manifest an institution in space, one requires the kind of continuity of intention and formal method toward which these projects aspire, and within which distinctions of scale, context, and function are included..

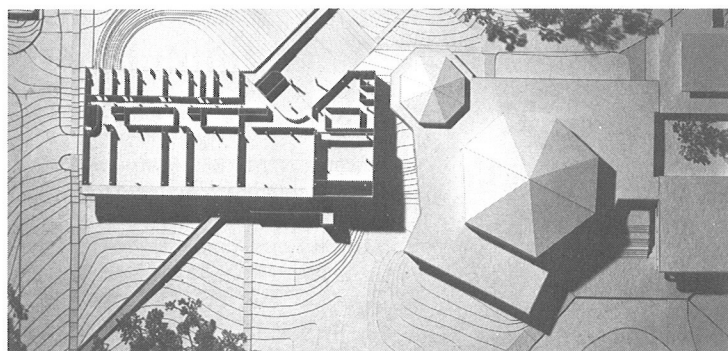
PHOTOGRAPHS: Rutgers at Newark, Beaver College and Institute For Advanced Study. George Cserna; Goucher College: Marc Cohen, Skomark Associates; Southern Illinois University: Lawrence Williams. GRAPHICS: Bruce Abbey and Jay Laughlin, of Geddes Brecher Qualls Cunningham.



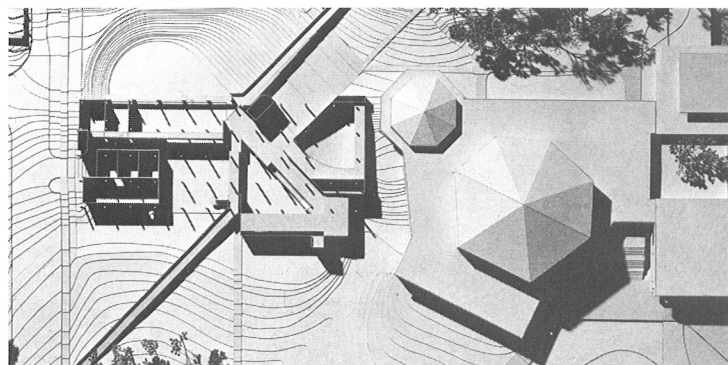
11. Farnsworth House



12. Ville Radieuse



13. Goucher College



14. Goucher College

# THEORY IN PRACTICE

## PART TWO

BY ROBERT GEDDES  
WITH AN INTRODUCTION BY CARL KAYSEN

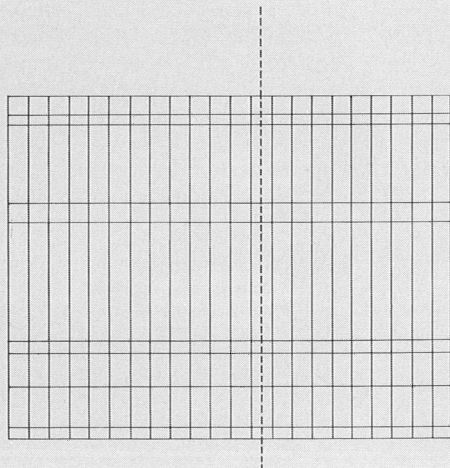
Last month, Robert Geddes introduced the philosophy of his work and presented a series of five buildings. This month, one work is analyzed in depth, the new Dining Hall Commons and Academic Building of the Institute for Advanced Study in Princeton

Academic institutions are often called "ivory towers." The Institute, which is more "academic" than most—in the sense of focusing on problems of the greatest intellectual appeal and difficulty without reference to their practical importance—has been described as the "penthouse on the ivory tower." In this connection the phrase "ivory tower" denotes isolation from the hurlyburly of the market place, but it also, and appropriately, carries the suggestion of rarity and beauty. This, too, is appropriate to the nature of our enter-

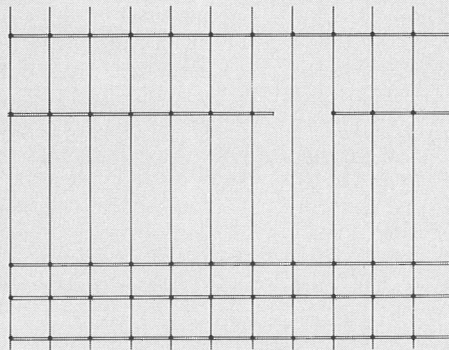
prise. Ultimate standards in the intellectual world are aesthetic; terms such as originality, depth, and rigor are now used in an approving way to characterize intellectual work, conveying judgements that are essentially aesthetic. Thus, it is appropriate to the Institute's purpose that it seek beauty as well as utility in the structures that house its activities, and embody it in visible form.

The original buildings of the Institute do not now appear to have reflected a strong concern with the importance of beauty. Fuld Hall, the Institute's first building, has a solid and imposing character and the grounds

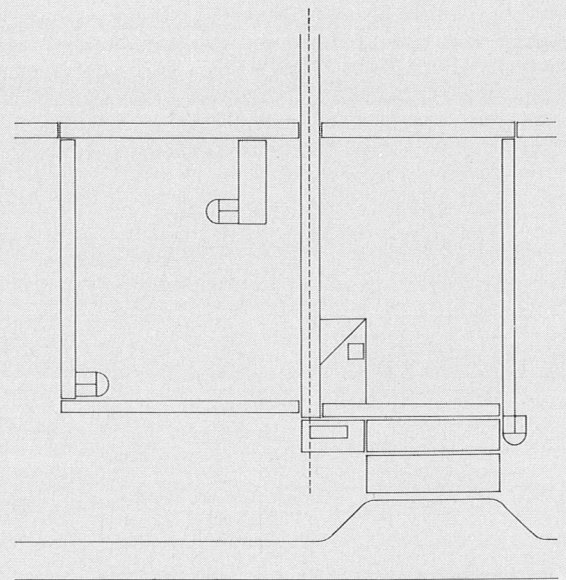
Dr. Kaysen is the Director of the Institute for Advanced Study.



1. The spatial grid



2. The structural frame



3. The path of movement

To understand a building is always a complex task of cultural analysis, the more so when the building serves an unusual institution. The Institute for Advanced Study is dedicated to "the encouragement, support and patronage of learning—of science, in the old, broad, undifferentiated sense of the word." The Institute has some of the character of a university, and some of a research institute. But it is different from both. Unlike a university, it has no separate, identifiable student body because its members are both teachers and students. It offers no sched-

uled courses of instruction and no degrees. It is small—its academic membership is about one hundred fifty, including both permanent faculty and temporary members. A major function is the provision of opportunities for members who come for short periods, one or two years each. It differs from a research institute in its primary devotion to learning, "in the double sense of the continued education of the individual, and of the intellectual enterprise on which he is embarked."

The Institute's academic work has been carried forward in its three schools—Mathematics, Natural Sciences, and Historical Studies. In recent years, a new program has been added in the Social Sciences, aimed at "pro-

Mr. Geddes is Dean of the Princeton School of Architecture and Urban Planning. He is design partner in charge of the Princeton office of Geddes Brecher Qualls Cunningham.

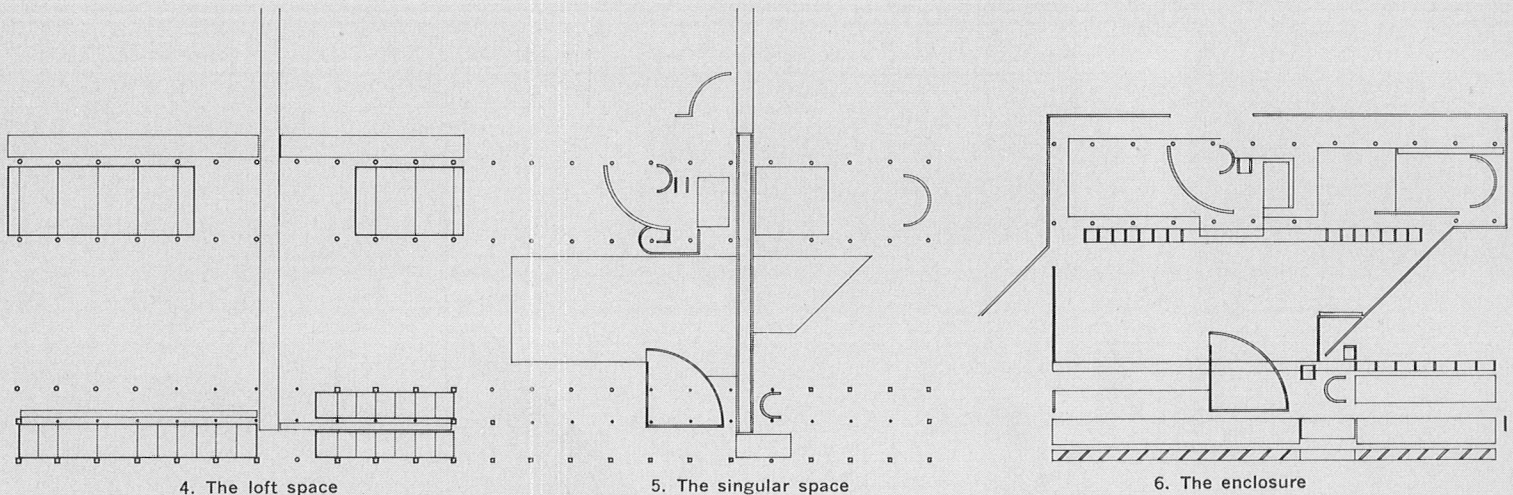
in which it is set are spacious and handsome. But the building itself has little architectural distinction. Yet, as we know, age can sanctify indifferent architecture, and over nearly 35 years Fuld Hall has acquired certain symbolic and representational qualities that, for those who know it, more than make up for its aesthetic shortcomings. The same cannot be said of the several small buildings which were added to accommodate the Institute's growth in the post World War II period.

The first explicit recognition of the need for beauty was shown in Marcel Breuer's Members' Housing (1954-57), and in

Wallace Harrison's Library of Historical Studies (1964). Robert Geddes' new office building and dining hall carry this recognition further. Together with the space they enclose, they create an area of quiet harmony. In the short time they have been in use, the several hundred scholars who have talked and eaten in the dining hall, met, talked and listened in the seminar and lecture rooms, and worked in the offices, have all benefited from the sense of order and form which they provide. Not all have been explicitly aware of the source of their gratification, but nearly all have experienced it. Further, the site, the roof lines

and the landscaping of the new buildings connect them harmoniously with the old. Thus we can enjoy what is new without feeling a sense of conflict between it and what has already existed.

The Institute has, in another figure, been likened to an academic monastery. At their peak the European monasteries were the chief and often the only guardians and repositories of learning and culture. They remain monuments of the greatest achievements of their times. It is most fitting that an institution which has succeeded to their intellectual tasks should also seek to emulate their aesthetic achievements.



viding the stimulation of discussion of common perspectives by scholars working on a variety of related problems, who will benefit from the stimulus of interchange and collaboration." The social and academic program for the Institute's new building responded to two different sets of needs: on the one hand, to provide a milieu for the new faculty and program in offices and seminar rooms; and on the other hand, to provide a milieu for the institution as a whole, in a new dining hall and commons. This structure of the social task sought its equivalent structure in spatial form.

The new buildings were also charged with the responsibility of responding properly to the Institute's existing group of build-

ings (six neo-Georgian and one modern), and to its landscape. In the best tradition of the English landscape garden, the Institute is situated in a clearing, that is, a gently rolling meadow surrounded by the forest edge. The existing buildings look outward to the open meadow; by clear intention, the new buildings also look inward to a courtyard garden, a cloister-like landscape place.

The Institute's landscape is punctuated by the vertical axis of a Georgian tower, and all of the existing buildings are organized along its two horizontal axes. The GBQC master plan recommended that the north-south axis retain its symbolic function and that the east-west axis be developed as the main

pedestrian path of movement. The new academic building and the dining hall commons are the first of the new buildings to be built along this cross axis, serving as entrance and terminus at the western edge of the campus.

From the outset, it was recognized that a major part of the building task was in influencing or enabling the inhabitants' social interaction. Buildings can divide and bring people together; milieus are created that enable public or private activities. A milieu in this sense is characterized by its "possibilities for social life." A planned milieu should recognize that it serves a purpose in human communications, that it creates expectations, guides behavior, disappoints or satisfies. In the Insti-



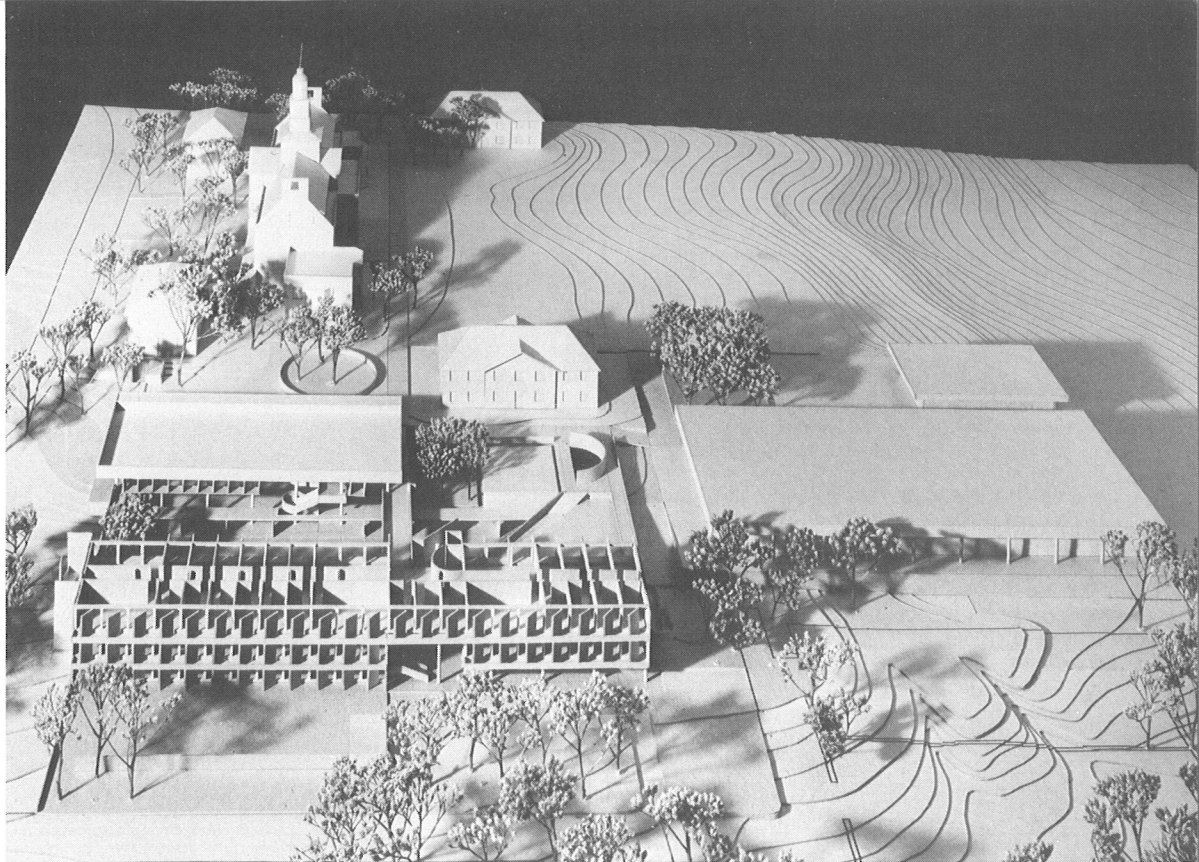
tute's site and building composition, the behavioral consequences were fundamental factors in the relationship between the academic offices (their need for privacy) and the commons (needing a sense of community); in the relationship between the paths of movement (bridges, stairs and ramps) and the types of spatial enclosures (especially the multiple-layered transparencies) that create the social milieus.

The formal intentions of the design are graphically analyzed on page 52. The diagrams closely follow the idea of a general system of architectural form (that is, of elements and their relations) that was presented in last month's FORUM. The six elements of the formal system (1. the spatial grid, 2. the structural frame, 3. the path of movement, 4. the loft space, 5. the singular space, and 6. the enclosure) are separately identified in the diagrams. As a totality, the architectural composition consists of a layered group of linear elements. The two parallel buildings create a third element in between, the cloister garden. This double-line composition of edge buildings can be read, at a larger scale, as one figure in a coherent field.

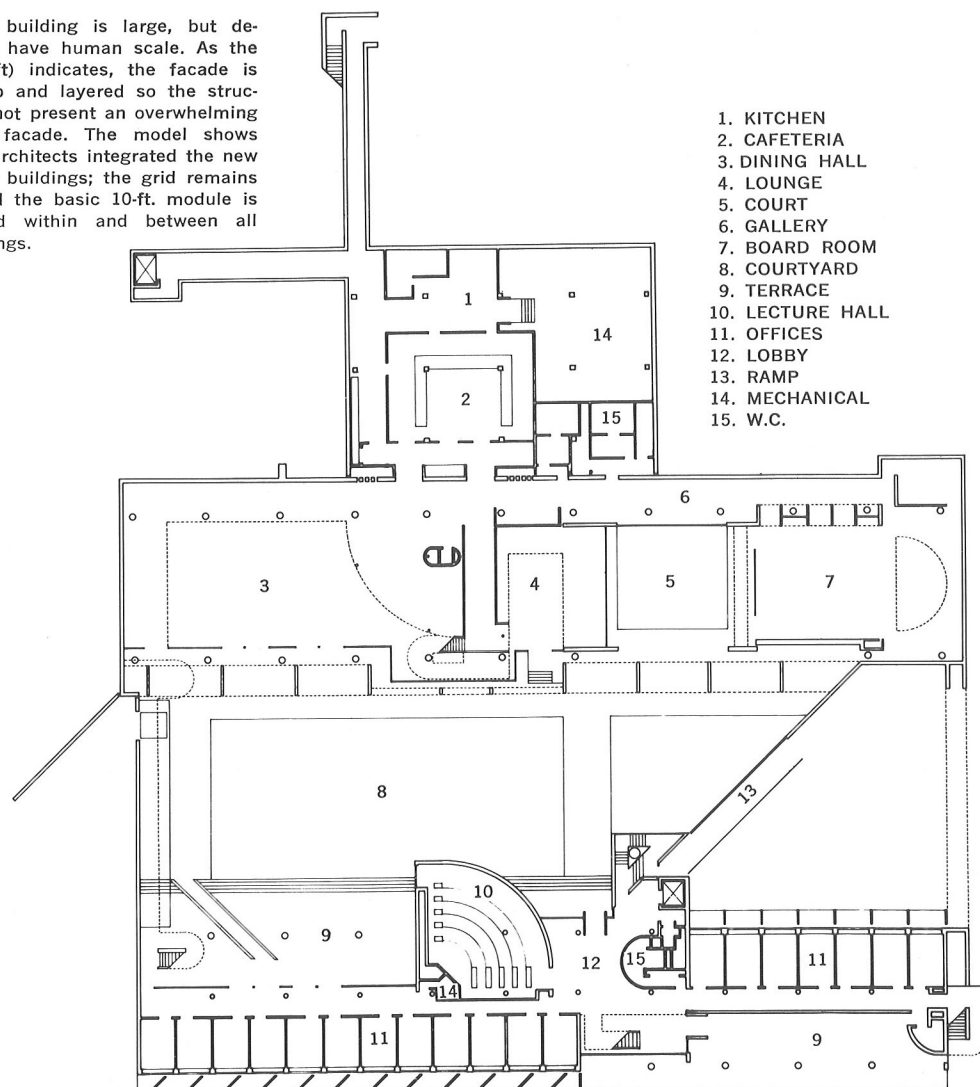
The continuous grid of the Institute's existing buildings has a module of ten feet, which is the basis for subdivisions in the lofts. This module is remarkably effective in maintaining human scale throughout.

The structural frame has five major beam lines, supported regularly by columns that are two modules on center. Having eliminated the load-bearing function of the wall, the structural frame has either free-standing round or engaged square columns, depending on their location in the enclosure. The linear frame is closely related to the building services required by the linear loft spaces, which, in the academic building, are carefully planned to allow changes in use.

The new campus cross-axis is the spine of the circulation, a positive spatial element that serves as the magnet for singular places such as the lecture hall and the cloister garden. The armature of this composition is the walkway network that weaves itself through the buildings and into the campus.



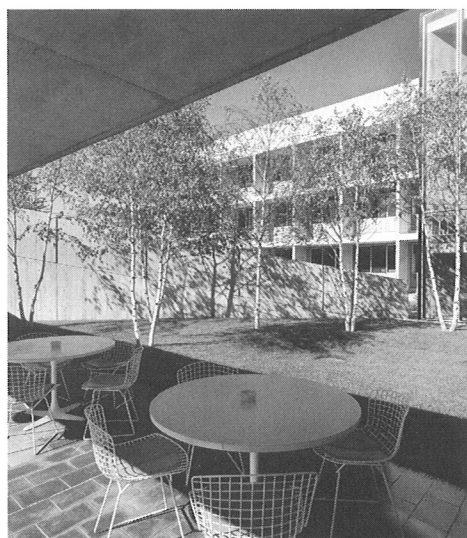
The new building is large, but designed to have human scale. As the photo (left) indicates, the facade is broken up and layered so the structure will not present an overwhelming scale of facade. The model shows how the architects integrated the new and older buildings; the grid remains intact and the basic 10-ft. module is maintained within and between all the buildings.

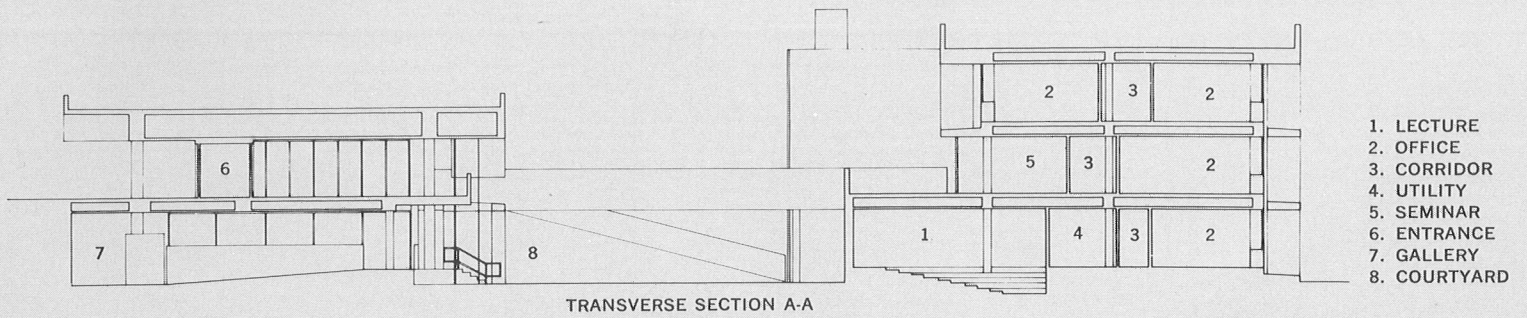


GROUND FLOOR PLAN

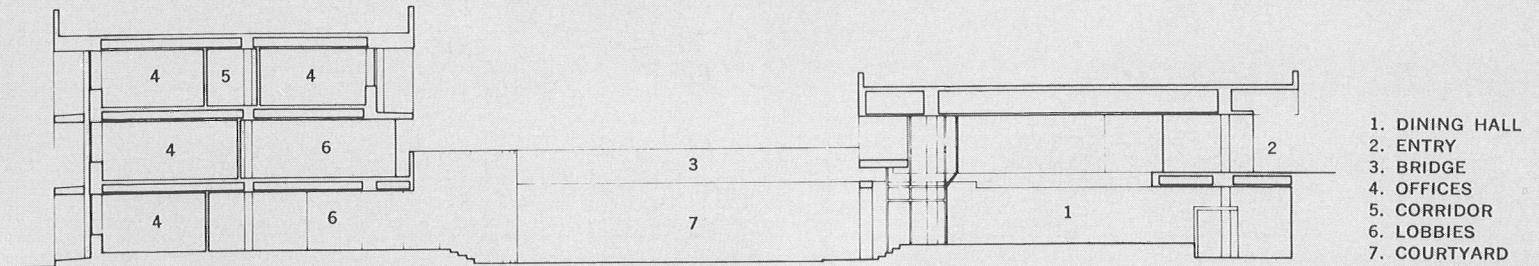
The liberal use of clear glass throughout the building meant that the architects had to manipulate the facade of the building to provide shape and cut down air-conditioning loads. Thus the face of the building (photo bottom) extends beyond the glazed areas in a variety of forms. The glass had the esthetic benefit of integrating the building and the campus. The dining hall is physically extended outside with tables and chairs (middle).

Bottom photo by Harvey Krasnegor. All other photos of Institute buildings by George Cserna. Model photograph by Skomark Associates.

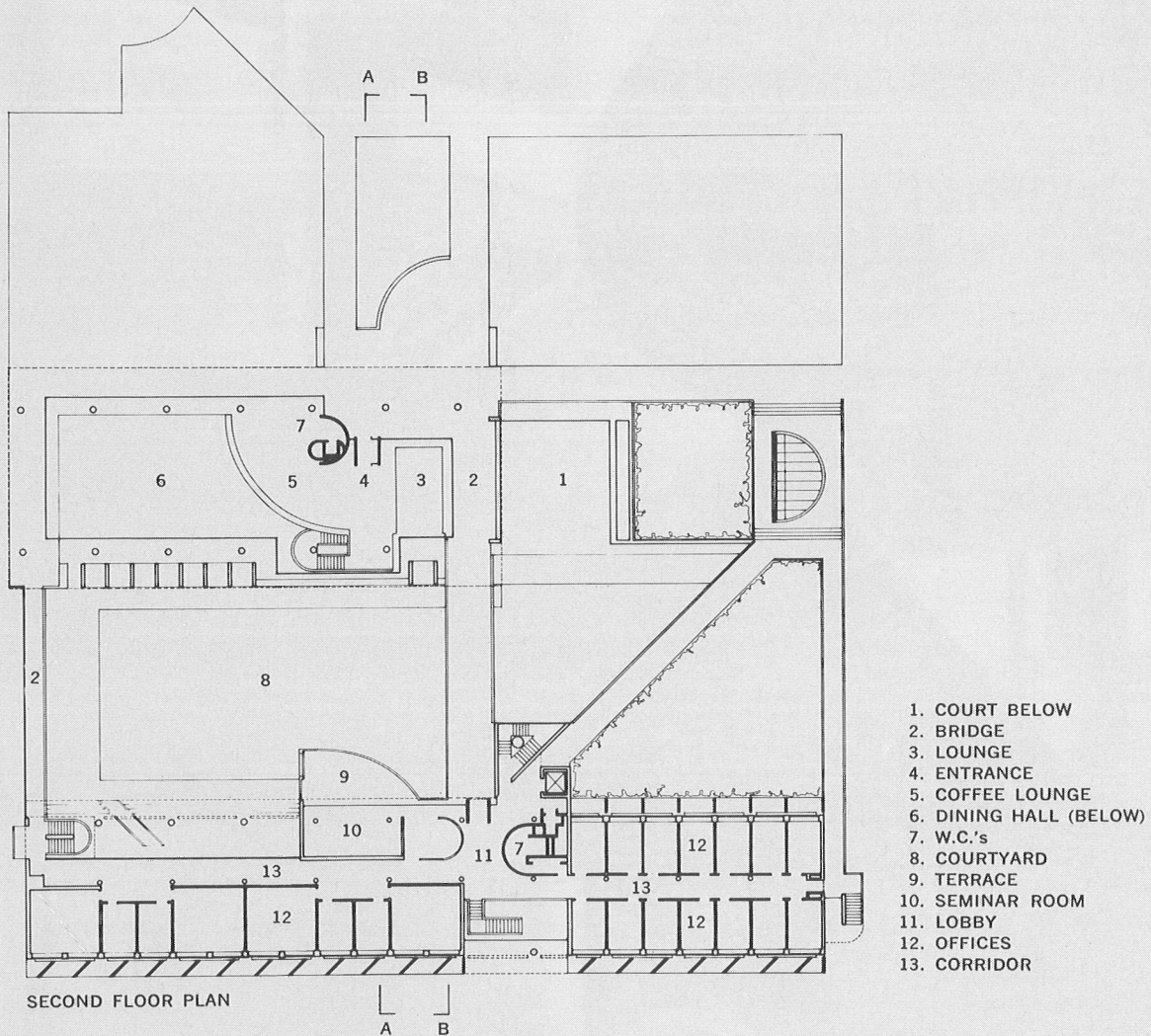




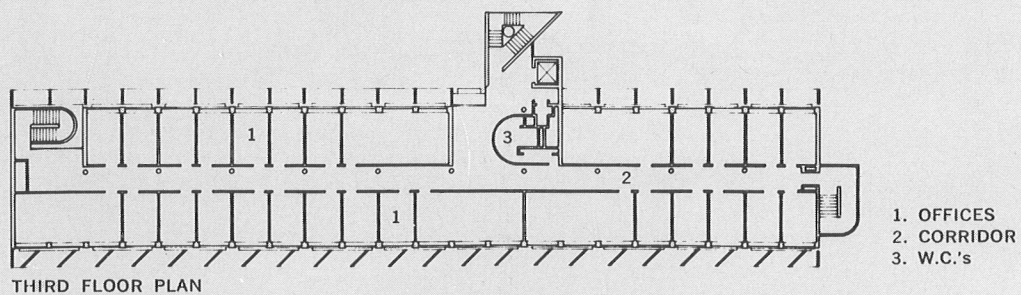
TRANSVERSE SECTION A-A



TRANSVERSE SECTION B-B



SECOND FLOOR PLAN



THIRD FLOOR PLAN

