

Interview with Dean  
Robert L. Geddes

# The Responsibilities (& Joy) of Architecture

DIANE P. HEMPEL

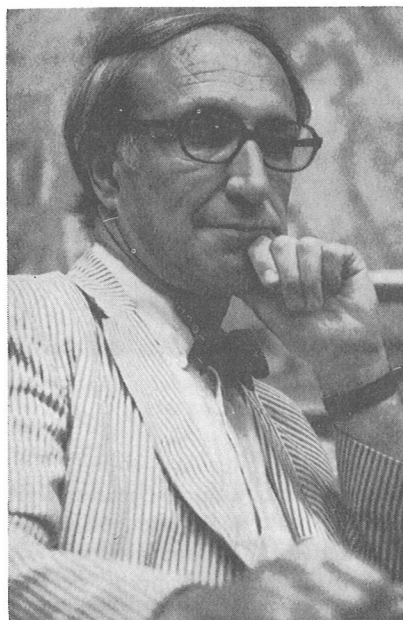
THE responsibilities of the architect, and the directions in which architecture ought to be moving, are matters of lively debate today, both inside and outside the profession. On opposite sides of the debate are those who see architecture principally as a redemptive force in the nation's service, a solver of social problems; and those who see its prime function as the pursuit of form, with only glancing reference to its other functions. With which should it be concerned, the ethical or the aesthetic?

"Both," said Robert L. Geddes, firmly, when we put the question to him in his office at Princeton University, where he is Dean of the School of Architecture and Urban Planning. "I think the ethical and aesthetic responsibilities of the architect are two parts of a unity; that to emphasize either at the expense of the other is improper. *The social responsibility of the architect is to be aesthetic.* His total responsibility is to bring the two together. When he does, there is great joy in architecture."

Geddes seemed a good man to take our question to. He has played a major role in the expansion of the Princeton School (recently rated, on the basis of a poll of deans of architecture schools, as one of the nation's top five), and as an architect-planner-teacher-philosopher he is increasingly involved in shaping architecture's responses, both at Princeton and across the country, to the continuing social,

technological, scientific, and aesthetic changes in our society.

"The basic *aesthetic responsibility* of the architect," he continued, "is form, is the 'creation of coherence in reality,' to use Erich Kahler's defini-



ROBERT L. GEDDES

tion of form. *Reality* for the architect is the built-environment—its landscapes, cities, buildings, rooms, even chairs. And *coherence* has to do with the creation of order, both in the process and in the product of creation—that is, in the object as well as in the process that creates it. To use a biological analogy, it is concerned with both growth and form.

"Now, if the architect's basic aesthetic responsibility is to create 'coherence in reality,' that is, in the reality of the built-environment, his basic *social responsibility* is to under-

stand the tasks of the built-environment and to create the form that adequately serves these tasks—to create a close correspondence between the structure of the task and its equivalent in form, the formal structure."

GEDDES is a slender man of medium height, approachable, friendly, articulate, all-observing behind large horn-rimmed glasses, with a manner of relaxed tension; a man difficult to imagine idle. Somewhat the same principles of design that he applies to his buildings seem to have been applied to his corpus: spare, sensitive construction; orderly lines; no superfluous external ornamentation; a certain terseness and containment.

His office is a fairly large rectangular room: books along one wall, windows overlooking the campus along another, a low long shelf for the display of architectural models; a large desk at one end of the room with an old map of Rome behind it; at the other, apparently more favored end of the room where we sat, a large round table and frequently-used blackboard. It is efficient, subdued, elegantly utilitarian; a grace note is the famous Rietveld chair, angular and colorful in its red, blue, and black paint—a landmark in DeStijl design. (In his home—Geddes is a staunch man; unlike so many modern architects, he lives not in recycled Victorian but in Geddes-designed contemporary—he has other chairs: by Breuer, LeCorbusier, Aalto and others—each one a symbol of its aesthetic period, and each an architectural signature.)

Geddes was born in 1923 in—propitious choice for an architect—Philadelphia, first planned city in Colonial America and one traditionally hospi-

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Diane P. Hempel was Assistant, then Associate Editor of *UNIVERSITY* for seven years, until September 1971. She has always enjoyed looking at buildings, a predilection shared with her husband, the philosopher Carl G. Hempel.

table to architects, and he has been active in its extensive urban renewal program. With his partners in Geddes Brecher Qualls Cunningham, a firm founded in 1953, he has built prize-winning college buildings, libraries, police headquarters, private houses, and public housing in his native city and others, at home and abroad; he has designed and redesigned whole towns.

**W**E asked Geddes to define architectural form: was it shape, or the arrangements of the parts of an object?

It was those and more, he said. "There are at least four aspects of architectural form. There is *surface*—like painting, two-dimensional; what you see on the surface is the façade—and many people think of architecture as façade—and it is that, but not only. Second, it is *mass*—like traditional

architecture as finding the proper relationship between form and task, correlating the form of the building with its task. "The aesthetic issues are shifting—have shifted since the 18th century—because new forms of human activity, and new social concepts, have come into being, requiring new forms of enclosure. Many of the building types we have today didn't exist before the industrial revolution: factories, refineries, special kinds of schools, new kinds of hospitals, communication and transportation facilities, space centers."

**M**INDFUL of that hypnotic aphorism of the modern movement, Form Follows Function, we asked whether "task" was synonymous with "function." No, he said, function is only one of the many aspects of task. "The first aspect is to serve as an en-

vironmental filter for sound, heat, light; to create a micro-climate to protect the body and make possible human activity. The body is really very frail; it has narrow limits of stress. If the environment is too hot or cold, we die; if it's too noisy, we can't work; if there's too much light or too much glare, or if it's too dark, we can't act effectively.

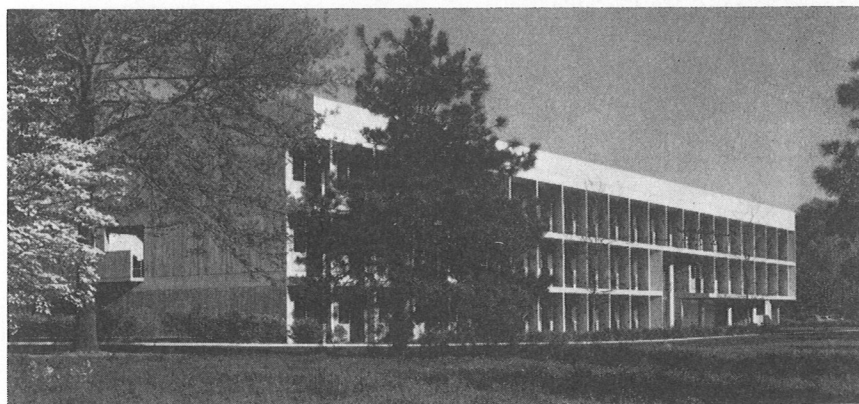
which meant that they could not create a social interaction. If you look at the way they interacted with each other, you find they had to do it by radio, by other communication devices. So you *can* do it that way; architecture doesn't have to exist, everything you need for survival *could* be managed in a variation of the second skin—a kind of minimal dwelling, 'occupancy limited to one person.' A giant step backward for mankind. But once you want to be social, you have to have spatial boundaries.

"The next aspect of task is to create a *place*—a defined area for social interaction. The social aspect of architecture is an important one; architecture is not just for individuals, it creates a place for social interaction." Even in an ideal natural climate which made no demands on the body's adaptability, we would still need defined places to serve social needs.

"In effect, then, you filter, you create a social skin, a place for human interaction, a stage" (a spring at the blackboard to sketch a rudimentary structure, a kind of raised platform, with animated stick figures which seemed to move across it) "—an action stage, as it were. A number of sociologists have worked on the idea of architecture as the creator of a stage for the presentation of self, for the acting-out of life. From the point of view of transactional psychology it's very important to realize that you act out your life in an environment—you're influenced by it, you influence it, and you transact with the environment."

**T**HEN there are *networks of communication*, he continued: windows, doors, walls, paths, and streets. All these things are operational—windows and doors can be opened or closed; gates keep intruders out; a path leads somewhere, can be the shortest distance between two points—but they all have symbolic dimensions as well.

"Architecture goes beyond the exclusively operational and enables us to communicate values. For instance, we can use a positional hierarchy, larger openings, ornamented frames to give some doors and windows greater importance than others: sometimes the main door of a building, which really doesn't do more than the other doors, is placed in the center, is given a larger frame and perhaps a medallion



One of the buildings in the prize-winning complex Geddes designed for the Institute for Advanced Study, Princeton. Other views of the complex are on pp. 3 & 4.

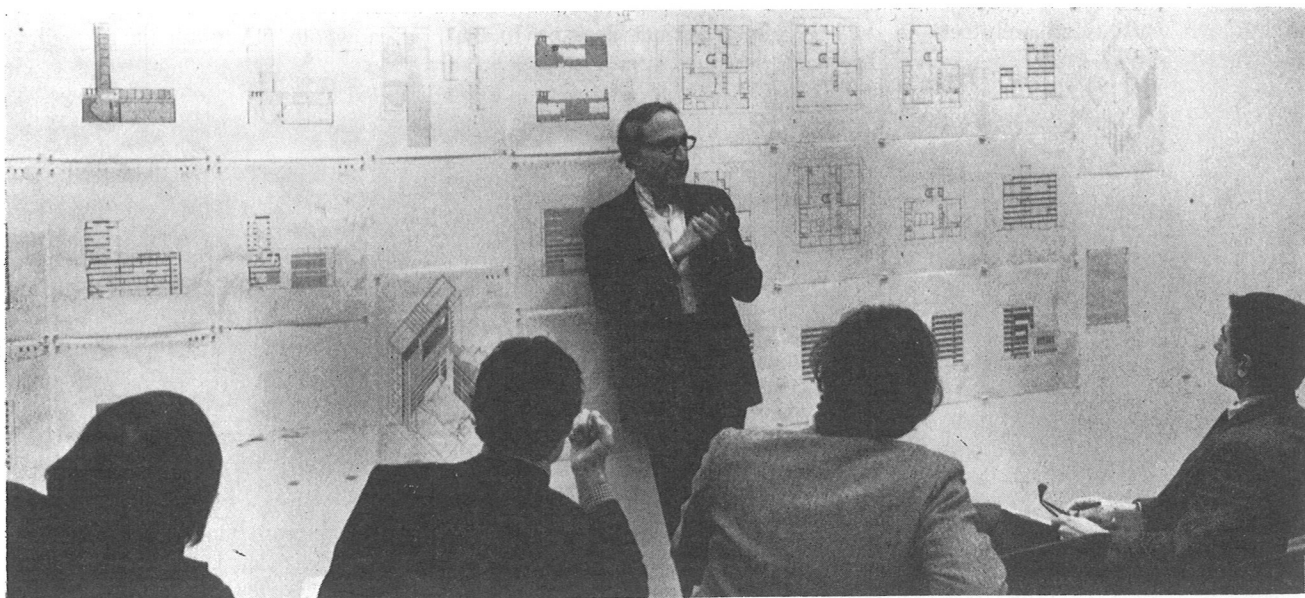
solid sculpture, architecture is mass and silhouette, is solid and void. Third, it is *space*, like some of the new sculpture, from the inside out. Many people feel that architecture's central reality is the space enclosed, rather than the façade; as if you put your head into a Greek vase and experienced the inside of it rather than the outside form. Fourth, architecture is *procession*, it is paths of movement, it is sequence in time." He elaborated: "It is the experience, for example, of being in that courtyard" (he pointed to McCosh Walk, outside the window), "going through the arch, walking into the next quadrangle. It is a series of spatial and mass and surface relationships experienced through time. In that respect, it has a time dimension, like music and dance. There is a temporal sequence of successive perceptions."

Geddes defined the central goal of

environmental filter for sound, heat, light; to create a micro-climate to protect the body and make possible human activity. The body is really very frail; it has narrow limits of stress. If the environment is too hot or cold, we die; if it's too noisy, we can't work; if there's too much light or too much glare, or if it's too dark, we can't act effectively.

"The skin itself, of course, accommodates to heat and light to some degree. And clothing constitutes a second skin, and that's adaptable, too: putting a sweater on, taking a jacket off, so on. Now, architecture is the third skin, and it is the social skin; it enables group activity to occur, whereas clothing is for the individual—except for ponchos at football games.

"When the astronauts landed on the moon they did not create the third skin. They did everything within the second skin, their space suits,



Robert L. Geddes—Master of Architecture, Harvard—architect, teacher, and Dean of Princeton's School of Architecture and Urban Planning, talks with faculty members. He is also Chairman of the University's Council on Urban Studies, holds the William R. Kenan Jr. Professorship and teaches an introductory freshman course and a graduate studio-workshop. A Fellow of

the American Institute of Architects, he has been since 1953 design partner in Geddes Brecher Qualls Cunningham of Philadelphia and Princeton. Major work of recent years includes a plan for the urban extension of Vienna-South, and buildings for Stockton State College, Southern Illinois University, and the Institute for Advanced Study, Princeton.

over it. Windows placed on the second floor will often express the major functions of the building—the King's Window at Versailles, for instance.

"We have symbolic filters, places, networks, which are not operational at all, or only incidentally so." He turned to the blackboard again: "Let us say that there's a palace." A tower appeared, crenellations, side-wings, so on. "There's a garden in front and it's on the 'axis' or center line running from the gate to the palace entrance. Now in fact the *usable path*—or practical axis—may be to one side of the garden. It may not be along the main axis at all. But the symbolic axis is still the main axis." At some English colleges, he said, the path leading to the entrance is circumscribed in the same manner, with the bounded lawn becoming a symbolic place, a magic circle which only official Fellows of the college may enter—that is, walk across.

He gave more mundane examples. "The gate in front of a house doesn't keep much out. It keeps dogs out—maybe, maybe," (reluctant to grant it even that utility) "but it wouldn't keep a burglar out. It is a symbolic gesture which says: 'This is territory, this is edge, this is boundary.' It says, 'This far and no farther' to the outsider."

The Princeton campus abounds in symbolic architectural forms. "Canon Green [the area behind Nassau

Hall where traditional victory bonfires are built after football games] is a symbolic place; it has very little operational significance but very strong symbolic significance. The Eisenhart Arch at the end of College Road is a symbolic gateway." He said we even have an example of revisionist symbolism: the massive Fitzrandolph Gates on the Nassau Street edge of the campus were once kept closed, to be ceremonially opened only on Commencement Day and other high occasions; now they stand permanently open to symbolize the University's openness to the world-wide community.

GEDDES admitted there was one deficiency in the early development of modern architecture: The



Courtyard at Institute for Advanced Study in Princeton is example of Geddes' work.

modern movement had been so preoccupied with discarding old forms and developing new technologies that it had neglected symbolic expressions. Domes and towers, for instance, were powerful and subtle traditional symbols. Of course the skyscraper was our 20th-century symbol—though as a matter of fact, some of the earliest skyscrapers, uncertain of meaning, had been elongated versions of Gothic, with spires placed on top to ensure their reaching still farther into the heavens.

"Modern architecture started out in rediscovering the joys of the operational; Mies, Gropius, LeCorbusier and others in the '20s and '30s—the 'heroic period' of modern architecture—emphasized the value of these operational considerations—the house as a 'machine for living.' But we've come to emphasize as well the meaning and value of symbols."

Geddes had recently returned from a trip to the Yucatan and spoke of the symbolic gateways the Mayans had built: "At the end of the road they built an arch, just as the Romans did, but with a different technology. There is a deeply ingrained need in the human psyche to build gateways, arches, which say, 'Now I'm inside, now I'm outside.'" But he refused to draw other parallels. "I won't go across cultures. At the moment, I can barely understand our own."

How did Geddes deal with symbols



in his own work as an architect—in the prize-winning complex he designed for the Institute for Advanced Study in Princeton, for example, of which the *New York Times* critic Ada Louise Huxtable wrote, “For once, there is a tie between standards of scholarly endeavor and the setting where it takes place.”?

“We have used technology to convey the sense that the human hand touched these buildings. There are symbolic reminders of the shaping hand: the board-formed concrete carries the impressions of the knotholes, the wood grain, the nails, and so forth.

There was a distinct decision to emphasize the human craftsmanship, to show that there was a human effort to build a building, and that that effort is also part of the meaning of the building itself.

“And it seems to me that the courtyard between the dining hall commons and the ground floor offices has more symbolic value even than it has actual. It’s true that you can sit there and eat or sun, but by and large it’s the cloister-like atmosphere of the grove of birches, the quiet space contained by the buildings, the trees and sun, the water-stair, which affect you

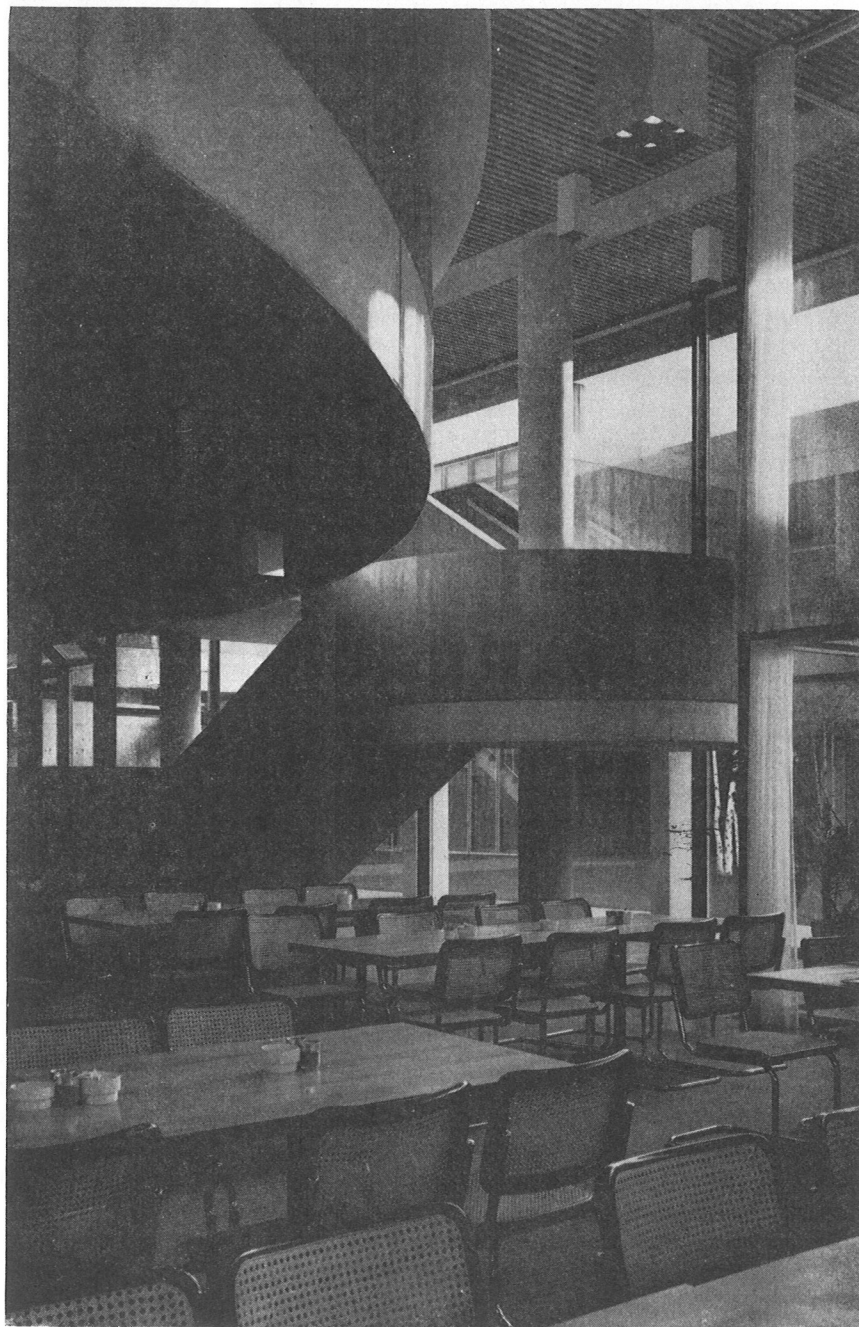
as a whole.” A symbolic as well as literal “Grove of Academe?” He smiled assent.

WE talked of how architecture differs from other arts: the social aspects of other arts are arguable; in architecture they are implicit. It is an art in which everyone shares to some extent. Exposure to it starts early: building blocks are among a child’s earliest toys; we play architect before we play doctor. Nobody can have a closetful of buildings to gloat over in secret, pulling out one at a time. A private memorial becomes a public monument; private buildings have public plazas.

“Yes,” he said, “it is the most public of all the arts; an art which is not only observed but experienced. You can observe painting and sculpture, observe dance and music—perceive them—but architecture you also participate in as user. It is the omnipresent, inescapable, most accessible art, experienced by everybody, every day, and on many different levels, from a room to a city to a region to a landscape. This imposes inescapable social and practical responsibilities on the architect.”

He had noticed our questioning look when he included landscape as a component of the man-made environment. “I would emphasize that landscapes are planned and built. The dominant landscapes of our experience are man-made landscapes. Even a landscape that is now left natural is left natural because of a deliberate planning decision. Central Park is an example: Many people think of Central Park as a leftover natural landscape. It isn’t that at all. It was completely designed. There was an architectural competition; Frederick Law Olmstead won; he built the park and it was a created landscape. ‘Every tree, every rock, every path, every pond is a matter of conscious choice,’ Olmstead said.”

Geddes thinks the architect should be as responsive to the landscape as to the building, and sees landscape as a re-creation of the basic habitat of man, the forest edge. “The major traditions of gardens, the English landscape and the continental French or Italian landscape garden, exemplify opposing attitudes towards the idealization of nature. In England, it was the idealization of a pastoral landscape, with ambiguous edges, the ground modeled



Dining hall of Institute complex shown on preceding pages, of which N.Y. Times' Ada Louise Huxtable wrote, "For once there is a tie between standards of scholarly endeavor and the setting where it takes place."





Studio-workshop area, School of Architecture and Urban Planning, Princeton. "Classroom becomes field of action in work-

shops; theory is put to the test; students are introduced to teamwork in the problem-solving process."

more than nature itself modeled it. In France, the re-creation of nature was of a Cartesian form, the idealization of geometry, one might say, the ground laid out in neat parterres, with clear edges.

"One is romantic, the other classical, but in both cases the edge is a forest. This is the habitat man has thrived in best, the habitat of the forest edge, with the clearing for production and the forest for protection. The garden re-creates that place. In fact, I think this carries over into architecture, and that we tend to recreate the aspect of clearing and forest in our cities and buildings. You could say that a classical building, for example, is a Cartesian forest; that the columns are trees, the courtyard a clearing."

HE returned to the theme of architecture as a public art: "The architect must understand the historical and cultural factors, the social and behavioral factors, the economic and political factors—these last are of increasing importance—that are involved in architecture. This means an education rooted in the humanities and the social sciences, as well as in the building sciences. Recognition of

that is central to architectural education at Princeton."

He said that architectural education used to be "an apprenticeship training, then it developed into a specialized academy education, and only very recently in the history of architecture has it become a university concern. The first person to suggest that it belonged there was Thomas Jefferson—a gentleman-architect, as were many cultivated people of his century. The original proposal for the curriculum of the University of Virginia in 1824 listed a course in 'Military and Civil Architecture.'" (Military architecture?—*barracks*, we wondered? Then we remembered the Great Wall of China and other fortifications, and bridges.)

The development of architectural education at Princeton, Geddes said, presents a microcosmic model of the evolution of architectural training at the university level in this country—just as the Princeton campus offers a mini-history of architectural growth, from its early buildings by master-carpenters, to those by the country's first architects, to the newest dormitory by I. M. Pei. (Incidentally, the current policy is that no University building may be designed by a faculty

member, though architects on the School's faculty may and do serve as advisors.)

THERE were architectural courses at Princeton as early as the 1840s, taught by the famed physicist, Joseph Henry, but they did not become part of a formalized professional curriculum until 1920, when the School was founded. In 1965 its increasing importance in the University was recognized with the appointment of Geddes as its first Dean, and in 1968, further acknowledgment of its growth came when it was renamed the School of Architecture and Urban Planning.

Of urban planning Geddes said, "It has been around for a long time, of course, but as a field of study it is a 20th-century phenomenon. Generally urban planning grew out of one of three bases—architecture or engineering or the social sciences. Most schools of urban planning now, it seems to me, are closely connected to the social sciences. Urban design has developed since 1950 or so as a way to bridge the traditional role of architecture and the need to have physical

planning for urban neighborhoods. Urban design is a kind of hybrid. I don't think it should be separate from architecture or urban planning. What we've done is make urban design an integral part of architecture and urban planning, rather than a separate field.

"The first model of an interdisciplinary program involving architecture was at Harvard: architecture, landscape architecture, city planning. To my mind, these are three aspects of a single discipline, which is the design discipline."

The Princeton curriculum is in constant evolution, with a continuing review of old courses and new needs. Some of the changes have come about as a result of a far-reaching survey of architectural education in this country which Geddes and Bernard P. Spring, then Senior Research Architect in the School, conducted under the sponsorship of the American Institute of Architects.

The report of their findings and recommendations was published by the AIA in 1968 and hailed by a professional journal as perhaps "the most remarkable document ever officially

promulgated by or for the architectural profession." That the praise came from engineers was added tribute. The title, *Study of Education for Environmental Design*, was acknowledgment that the man-made environment has become far too complex for any one discipline to claim predominance in its creation: architect, engineer, landscape architect, planner, designer—all were important to it.

The authors suggested continuity with many fundamentals of architectural education but proposed some major shifts.

"Instead of a single track of architectural education—the dominant five-year undergraduate program, separate from the rest of the university—we suggested that the curriculum be restructured as a series of modules of approximately two years each, and that architectural education be tied in with the university's humanities, social sciences, and applied sciences, as it now is here at Princeton. And that is coming to be the dominant form of architectural education in America."

THE Architecture Building at Princeton is a pleasant place to walk through, its atmosphere quite un-

like that of other academic halls with their rows of lecture-rooms. It is the workshops that give it its particular ambience: the vitality of places where activity is visible. Students hunch over drawing boards in the drafting studios; construct models in the workshops; do a fascinating huddle of jobs in the visual design laboratories; hang exhibits of their work in the open gallery space.

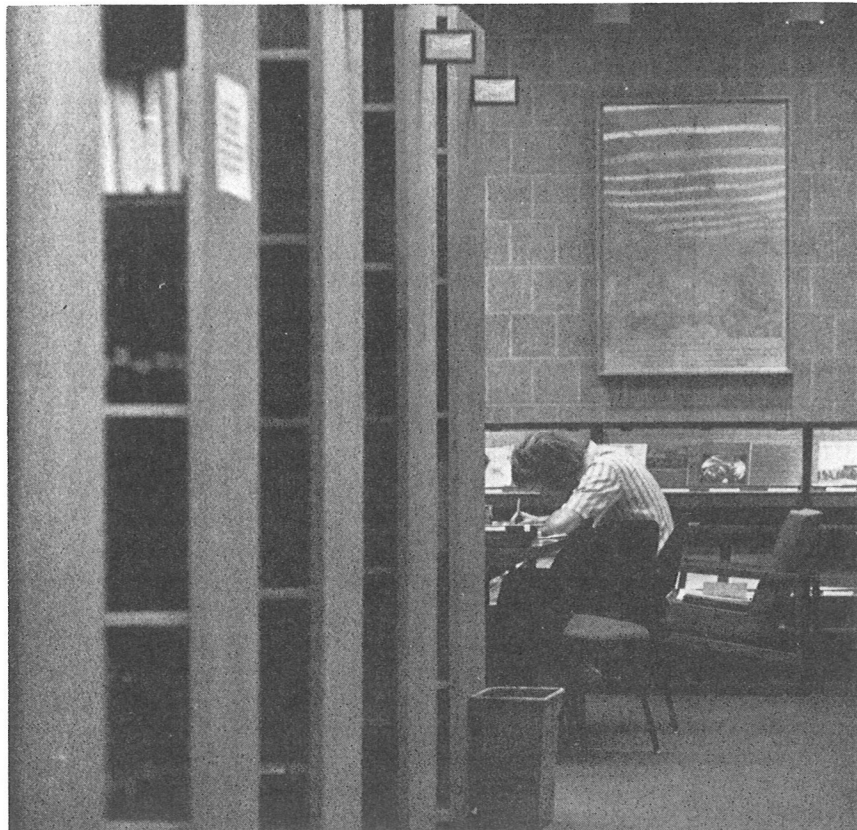
The studio-workshops, in Geddes' opinion, may be the dominant part of a student's educational experience at the School: classroom becomes field of action here; theory is put to the test; students are introduced to team-work in the problem-solving process—increasingly the way architecture is coming to be practiced in these days of complex building problems; and it is here that much student interaction takes place—an important part of education in any field.

"Students are given projects to work on, spread over six to twelve weeks, and produce plans and designs to solve programmatic problems that have been proposed. It's a way of synthesizing and learning how to design by doing.

"You see, design is different from the methods of science and of the arts. It has its own way of being done, and the only way the student can really learn how to design is—yes, to have courses in design analysis and principles of theory—but also to have the opportunity to actually do it, to get clinical experience.

"One aspect of the School which is very strong, especially at the Master of Architecture in Urban Planning level (MArchUP—an acronym with a prophetic ring) is the determination to seek ways of relating design to policy-making, that is, to relate it to social and cultural issues as they are expressed in public policy and to be able to relate, for example, a plan for an institute to that institute's policies regarding the economics, psychology, philosophy, and so on of its operation.

"Our Transportation Program is an excellent example of collaboration between Princeton's three professional schools: The School of Architecture and Urban Planning, the School of Engineering and Applied Science, and the Woodrow Wilson School of Public and International Affairs. There is more and more involvement with public affairs. One of our faculty is an architect-planner, in the Transpor-



Library in Architecture building, Princeton University. "The architect must understand the historical and cultural factors, the social and behavioral, the economic and political factors. . . . This means an education rooted in the humanities and the social sciences as well as in the building sciences."

tation Program. It's a real triumvirate of interests."

FACULTY and students from the Departments of Economics, Sociology, and Politics are also participating in the new graduate program, which is concentrating its current research on two areas. One is the Trenton Transit Study, which is investigating the development of a public transit plan for the City of Trenton. The other, the Comparative Energy Study of Urban Transportation, is developing three possibilities for future transportation.

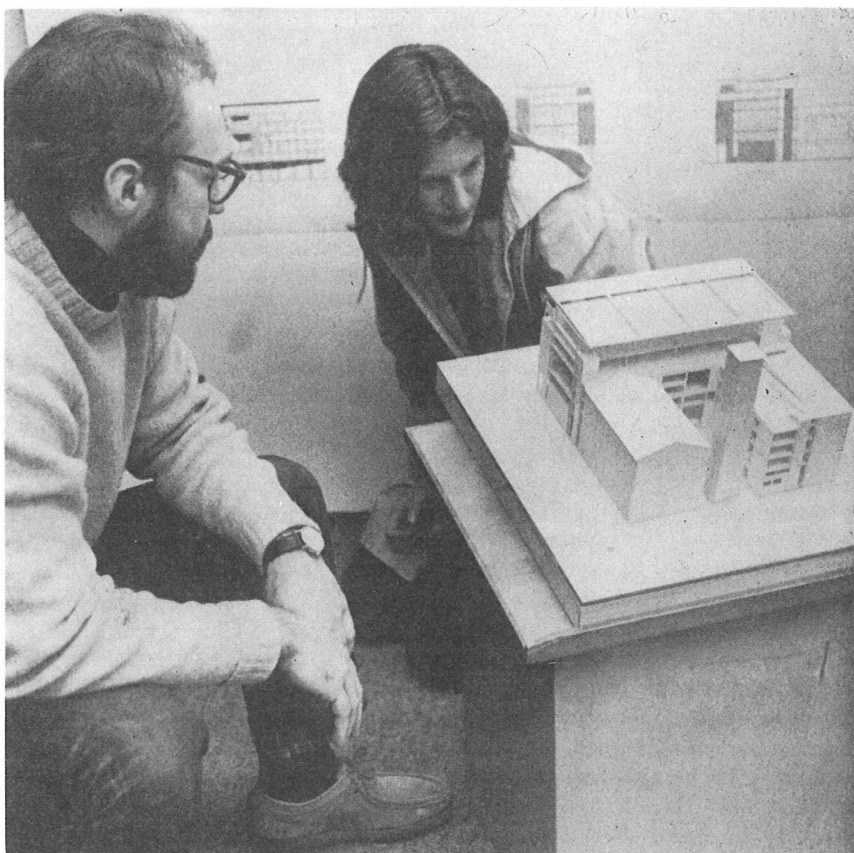
This led to the inevitable question of how the energy crisis was affecting architectural education.

"Well, it gives greater data support for technological and other aspects of architecture as an environmental filter. For example, the concern for sunshading in summer, the design of buildings with controlled air leakage, proper lighting, so on. We have a team of faculty working on a study of energy utilization and this seems to me a very important kind of scholarly work done inside the university which will affect outside practice."

In his own work, Geddes sees to it that sunshades on the west side really do keep the sun out and cut down on glare, and that his buildings have windows that open.

Does he see a shift in interest among architects from private residences to projects significantly involved in urban problems?

"The idea of designing a private house is still a perfectly valid one, but housing is a general social and aesthetic responsibility of our time. Single houses were important in the development of the modern movement because they permitted experimentation in social and physical forms. Frank Lloyd Wright built single houses predominantly—140 by 1910. Corbu built a number, Mies did a number of very influential houses. But because we have a housing problem, the real issue today is how to create housing components and sites that can produce decent housing for the greatest number of people at a reasonable cost. The traditional architect viewed the house as an isolated building in its private landscape; the modern architect sees the house as related to the whole idea of housing and as part of a shared landscape."



*Graduate students analyze model and its design. "Students produce plans to solve programmatic problems. It's a way of synthesizing and learning to design by doing."*

How do architects test their assumptions about what people like and/or need? Are there rational procedures or do planners depend to a considerable degree on hunches or precepts?

Geddes looked thoughtful. "There is a gap here. There is no way yet known to feed back, to relate, the use of a building by its inhabitants to assumptions architects and designers make about how the building is to be used. What we need are effective methods of looking at the built-environment from the viewpoint of the people who actually use it. This is a problem that Suzanne Keller, Robert Gutman, and I are working on."

THIS is another example of the School's interdisciplinary (in this case also interinstitutional) programs. Working with Keller (Princeton sociologist) and Gutman (Rutgers sociologist and Class of 1913 Lecturer at Princeton) are graduate students from both Princeton and Rutgers. The aim of the NSF-funded project is to find ways of assessing the soundness of the design of the building by seeing how it is actually used

by its occupants and how they like it.

The study is being carried out at two contrasting sites: one, a planned suburban community in central New Jersey [Twin Rivers, near Hightstown] under the supervision of Professor Keller who describes her approach as a "monitoring of the community, after life fills in the plan with real people and their real purposes"; the other, two medical research buildings in Philadelphia, with the research under Professor Gutman's direction.

One of the Philadelphia buildings is dramatic evidence of the complexity of the many factors that influence the human response to the built-environment, and the difficulty of devising a method of measuring it. "One of the greatest buildings of modern times," said one critic, with almost unanimous assent from his fellows. "An edifice which has seriously impeded the progress of medical science," said a user, and his was not a lone voice either.

It is Geddes' hope that "out of this project will come an improved understanding of how to design desirable living and working environments."

Had Geddes had any feedback on any of his own buildings?



"Yes. I've done several public housing groups, and one I'm particularly pleased with is in West Chester, Pa. It won a First Honor Award from HUD when it was built in 1968, and from all reports it continues to be very satisfying to its users. I'd like to have a team go out and evaluate it and discuss why and in what ways it is successful. People need time to settle into a new environment and the new environment needs time to act on them. The buildings are now five or six years old and getting to the point where an objective study could be undertaken."

HE turned to the subject of the architect's social responsibilities.

"School serves as a beginning. The architect must understand his own culture and its history. He must have a deep understanding of what the cultural resources are. He must grow up that way and take it upon himself—there are some things that nobody is going to tell him. When a client comes to him and says 'I want to build a college,' that's not the moment for the architect to start asking for the first time, 'What does education mean, what does a college do, what does learning mean, what is a sense of community?' He has to be prepared. I feel strongly that the prepared mind, the responsive imagination, is the key to architecture and that the role of the school is to help the student acquire that key."

What happens, we asked, when a client's wishes clash with the architect's social and aesthetic standards?

"That rarely happens, but when it does, I think the architect should resign. First of all, the relationship between client and architect is very close. It takes a lot of time." Educational for the client? "And for the architect! It is terribly important for the architect to listen, to listen hard. The best buildings I've done—such as the Institute, Southern Illinois, Stockton College, those three—involved a lot of listening and responding. I learned a great deal. But if there's a fundamental difference of values, then you resign."

"You see, architecture goes beyond what the client tells the architect. What a client states as a set of programmatic requirements is only the tip of the iceberg of what the real problem is. In fact, it's a continuing cycle: You don't even know what the problems

MORE than 2,000 years ago Marcus Vitruvius Pollio set down his precepts for the education of an architect:

An architect should be ingenious, and apt in the acquisition of knowledge. Deficient in either of these qualities, he cannot be a perfect master. He should be a good writer, a skilful draftsman, versed in geometry and optics, expert at figures, acquainted with history, informed on the principles of natural and moral philosophy, somewhat of a musician, not ignorant of the sciences both of law and physics, nor of the motions, laws, and relations to each other, of the heavenly bodies.

The sprouting branches of knowledge listed by the ancient Roman architect-writer are now vastly more intricate, as are the social, scientific, technological, and political realities and pressures of

our time—all this for a discipline relatively new to the academic scene.

The first school of architecture in the U.S. was established at M.I.T. in 1865 (where Louis Sullivan was an early student; also, early dropout). Princeton's was founded in 1920 by Professor H. C. Butler, a famous archaeologist who was its first director. Originally housed in the basement of the old Art Museum, the School now has its own handsome building of dark brick, black glass and clear, in modern perpendicular pattern, with open spaces, high ceilings, good light: inaugurated in 1963, it is already too small. It is easy to find at night; even after Firestone Library's lights are dimmed at midnight, Architecture remains illuminated, students still at work in its studios.—D.P.H.

are which are to be resolved and what the possibilities are until you begin to work on them. It's within the task itself that you find much stimulation and the final results come out.

"To go back: If an architect's sense of social responsibility is superficial, grafted on; if it isn't deeply part of his own understanding of his role in the culture of society; then to that extent, his education is not complete; he's been poorly educated. The purpose of education is to equip him imaginatively to handle that responsibility."

This is one of Princeton's strengths, he feels: "The architectural program here has always been strongly connected to the humanities—literature,

philosophy, history. Excellent. This may be *the* way to gain a sense of perspective, a kind of keel, direction."

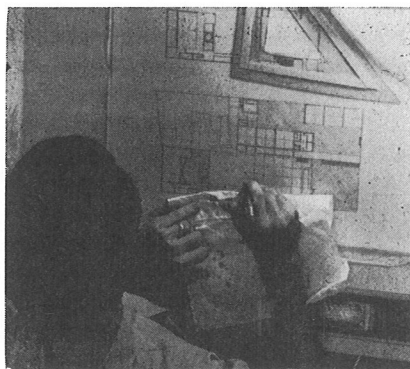
DID he view his buildings as individual exercises in design or did they demonstrate a cohesive body of architectural theory?

"Both as teacher and practitioner I've been very much concerned to look back over my work and to evaluate it. This is not a novel attempt on the part of an architect-teacher, but it is something that I think essential to the continuing evolution of architectural theory."

"I have looked on the campus buildings I've designed over the last six or seven years as a sequence of work based on a common set of theoretical principles. What I am trying to do is to put into practice some of the theories that we have been developing and teaching at the School, and to evolve a generally valid system of form."

There are six elements in this formal system: 1) the spatial grid; 2) the structural frame; 3) the paths of movement; 4) the loft space; 5) the singular space; and 6) the enclosure.

He gave us an offprint of an article on his work, with photographs of several buildings which illustrate these principles. Although all were similar in their elements, it was interesting to see how different they looked, each



A student at work on a School of Architecture and Urban Planning project. "I feel that the prepared mind, the responsive imagination, is the key to architecture."

responsive to its own set of tasks and to its own landscape.

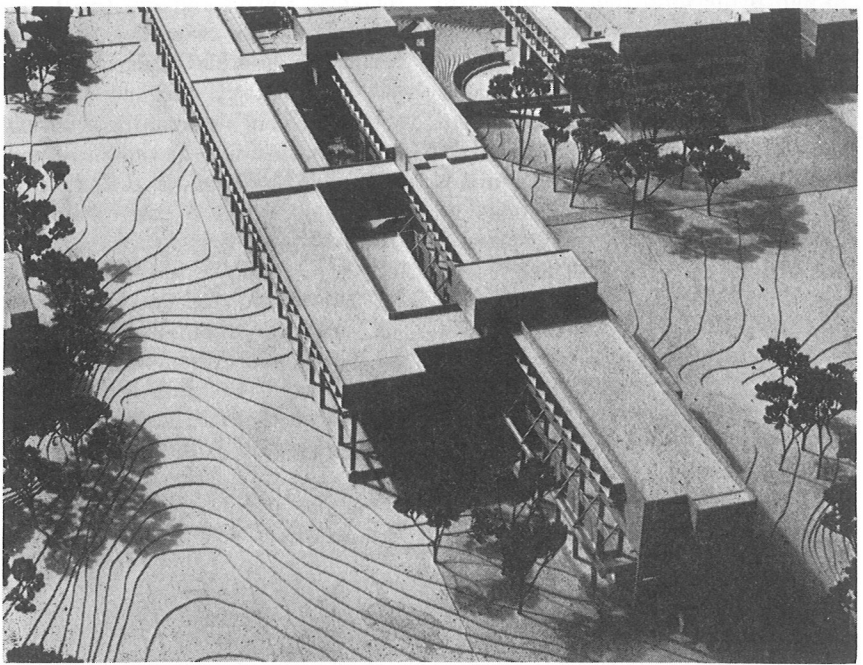
Beaver College, Goucher College, the Institute, Rutgers at Newark, Southern Illinois—all of them educational institutions: Was this the kind of building he enjoyed most?

"I've enjoyed all sorts—it's a matter of circumstance. What I'm asked to do." Besides college buildings, he's done a great deal of housing, a lot of urban design, is working with several corporations now. "It doesn't matter what the building type is. I probably enjoy most working with good clients—that's what makes the difference. My best experiences have been with clients who've added a great deal to the building.

"The best building I've done in the sense of architecture per se is now under construction. It's far away and I haven't seen it for some time and I feel sort of strange about that." (Later, he compared this feeling to that of the composer unable to hear his music performed.) "It's a building for the University of Southern Illinois (in Carbondale)—an institution with over 20,000 students—which will house all the departments of humanities and social sciences in a single complex. I think it's a building which will serve its original or 'first-life' needs very well and is also a kind of prototype for the kind of flexible and adaptable structures which we ought to be building.

"We would be better off on the Princeton campus if we didn't have so many specialized buildings, if more were generalized. The best part of this campus is the area where the buildings and courtyards make an almost continuous architectural fabric—McCosh and Dickinson, for instance. There's too much separation—Music, Architecture, Woodrow Wilson. If our present needs had been better foreseen, the campus would be more continuous, more adaptable, and as a department changed we could make the requisite shift."

That would take care of change; would it take care of growth? "Yes, but it doesn't take care of identity. It doesn't give each school or department a sense of territory." Geddes conceded that might be important "but not *that* important; the emphasis should be on the universality of knowledge rather than on the separation of its various branches. But you could still keep that, if you liked: there are



*Southern Illinois University, Carbondale, Ill. "... a building which will serve its original or 'first-life' needs very well, and which is a prototype for the kind of flexible and adaptable structures we ought to be building."*

ways of using bridges, wings, or extensions to identify separate departments, and there's the symbolic archway."

STOCKTON State College, in Pomona, N.J., is another project which illustrates this campus philosophy and is considerably closer than the Carbondale campus. This new college is set in the pine and oak forests of southern New Jersey (a classic structure in a romantic landscape, an architectural juxtaposition that Geddes admires). It was opened in September 1971, has approximately 3,000 students. There is a certain kinship with the Institute buildings, but Stockton was built on a much smaller budget and to a more pressing occupancy schedule, with "materials literally off-the-shelf from industry." Phases 1 and 2 of the building program have been completed; the final phase (theater, gymnasium, pool) is under construction.

Each student is expected "to construct an education for himself," in Stockton's educational philosophy, and this openness is reflected in the absence of separate departmental buildings and in the flowing gallery which ties the buildings together. "The gallery is not only practical but has symbolic significance," explained Geddes. "It is the symbolic focus of the campus, the spine that connects it all. The educational and social philosophy was

to create a single community, and the buildings were designed to implement this intention; to create a sense of a whole, rather than a conglomerate of separate buildings."

Stockton also honors Geddes' injunction that buildings should allow for future changes in use with minimum disruption. All the interior partitions can easily be shifted—and have been several times.

"Changes occur so fast these days, yet buildings are still going up built solely for the requirements of their immediate inhabitants; and buildings are still coming down which could have been re-used. A building usually lasts longer than its original function and will therefore have a second life—and a third and a fourth and so on ad finitum, and one of the tasks of the architect is to understand this and somehow to create an enclosure which can accommodate subsequent lives as well as the first one.

"What that brings up is that the fit between form and function, in a simple way, should not always be very close. That 'form follows function' concept which you mentioned earlier is a very shallow—and untested—view of the problem; there are always a number of possible forms. In fact, the proper relationship between form and function—between form and task—is *not* a question of finding a tight fit and close correlation; what you really want

to find is the form that has adequate slack or ambiguity or versatility so that its second life can also fit in."

Some of the elements Geddes has formulated are particularly relevant to the consideration of a building's second life. Loft spaces, for instance—"spaces that are very general and allow for an approximate fit, can accommodate change. Whereas singular spaces, spaces that recognize the need for orientation, or ritual, or hierarchy, can be more specifically defined. The ritual of the lecturer, for example, is likely to be more defined and unchanging than many other kinds of activity;

therefore you can design for it with somewhat more assurance than you can for some other kinds of teaching or office activity.

"The idea of a second life of a building also takes into account the reuse of existing buildings—that is, the adaptive restoration, the existing stock of buildings to be used again and again."

**T**HIS raised the question of permanence, of building for the ages. Sir Christopher Wren wrote, "An architect ought to think his judges as well those that are to live five centuries after him as those of his time."



Aerial view of Vienna-South planning project, designed by Geddes Brecher Qualls Cunningham, winner of first prize in 1971 Vienna International Town Planning Competition. "Urban design has developed as a way to bridge the traditional role of architecture and the need to have physical planning for urban neighborhoods."

Today one reads of paper houses, demountable classrooms, inflatable structures, plug-in environments, clip-on architecture—was the old-fashioned building becoming an obsolete notion?

"There is a cult of 'throwaway architecture,' the disposable structure. Mobile homes, many office buildings in New York. They serve a purpose, but architecture ought to reinforce more permanent values. People have a psychological need for a sense of continuity and coherence. Perhaps this can be found in the landscape, if not in the building.

"We've got to go back once again to uniting ethic and aesthetic. The stimulus to William Morris [1834-1896, English artist and reformer] was really John Ruskin and was a combination of ethic and aesthetic: the reinforcement of the good society through good design. Reform people's taste in household goods, said Morris, set them to producing well-designed objects, and they will enjoy their work and have good lives. . . .

"Now, when Morris gave up painting because it had little to do with improving social conditions and established his firm to create a new aesthetic coming out of arts and crafts, he rejected the machine. He was really saving people from being destroyed by the machine. Gropius, on the other hand, and the Werkbund and the Bauhaus, took the arts and crafts movement a step further and welcomed the machine as a partner in the collaboration of art and industry.

"The modern movement has always had a social basis. I think we can again endorse the union of ethic and aesthetic in industrial production. I hope that the industrial design of the environment—of furniture, landscape, building—will once again have the stimulus it had when William Morris was at work and when the Werkbund and Bauhaus and arts and crafts guilds were functioning."

**W**HAT a lot seemed to be expected of the architect; was it really reasonable to look on him as a social reformer?

"Hmm. That brings up a real dilemma. On the one hand, architecture reflects our social values. The kinds of houses we build, the kinds of colleges we build, the kinds of cities we build, are manifestations of the values of our time. Well, what do you do if you



want to change society, if you want to change those values? Is architecture a powerful-enough tool to do this? Can architecture reform as well as reflect society? This is a matter of some debate.

"There have been many leaders of the modern movement in architecture who believe that the way to ameliorate society is to change the environment. But there are also those who believe that it is the psychological and social environment, rather than the physical, which is dominant in human relationships.

"It seems to me that there are four possible positions. There is the position of *free will*—a position that I think people like the sociologist Herbert Gans take: it is free social choice and personal relations that shape our values, no matter what the physical environment may be. There is the opposite of this position, *determinism*, which says it is the physical environment that determines how people will think and feel and interact—good houses make good people. I think the truth lies somewhere between what I call *probabilism*, the view that certain kinds of physical environment make probable certain kinds of human attitudes and actions, and *possibilism*, according to which architecture is an enabling mechanism that makes possible the achievement of social values.

"The planning profession needs probabilism because it is trying to plan for a probable result, but as an architect I'm very satisfied just to make it possible, to think of architecture as something that enables life, enables interaction, enables privacy, enables self-realization. But in the past there were architects who chose symbolically to build Gothic Revival buildings, for example, because they thought moral lessons were implicit in Gothic architecture."

Did that explain the prevalence of Collegiate Gothic on American campuses?

"Yes, and there's also an association with scholasticism. But the reason that the Princeton Chapel is Gothic is because it's a moral precept."

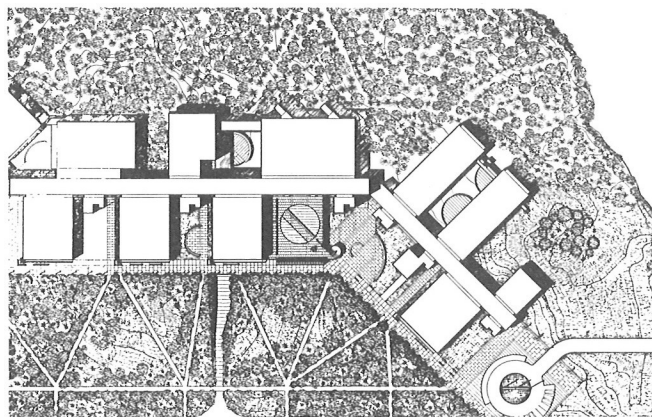
WOULD he look into his crystal ball and tell us what he sees—or would like to see?

"I think the near-future developments in architecture lie very much in the direction of classicism. And I

think they should." Why? "Because the classical attitude, which has to do with classification and with generalization, with general types rather than the expression of an individual type, fits much better some of the things I've mentioned: it fits better with the idea of a second-life, it fits better in creating groups of buildings, groups of environments, than does the excessive romanticism and expressionism of much of modern architecture.

"I think that the buildings for the Institute and for Stockton are classical buildings, in that sense. There are also romantic elements in them because classicism and romanticism can always live together—the classical building in the romantic landscape, for example."

*Site plan for Stockton College, Pomona, N.J. "The flowing gallery that connects the buildings is not only practical but has symbolic significance as the focus of the campus, the spine that connects it all. The educational and social philosophy was to create a single community, and the buildings were designed to implement this intention."*



Doesn't the idea of classicism imply a rigorous discipline of form?

"It is disciplined and it can be objective, but it's not necessarily impersonal or cold. One doesn't want to live in an environment untouched by human hand; quite the opposite. Classicism allows for a sense of individuality, for the creation of special places with warm personalities. In fact, it may, paradoxically, lead to greater individuality. Particularities can be added more easily."

ONE of the things Geddes would like to see at Princeton is a "seminar which would deal with 'form' in a synoptic way, in philosophy, in music, in literature, in several fields besides architecture, to understand the nature of form in our time.

"My own interests lie in the humanistic core, in the aesthetics of form and the ethic that comes out of our society and culture. Other members of

the Architecture School faculty are concerned with form and technology—Robert Mark, for example, in his work on Gothic cathedrals; or form and visual studies—Michael Graves is absorbed in the development of painting and sculpture growing out of the cubist vision; Tony Vidler, in his work on the history and theory of the modern movement. Others, like Chester Rapkin in Planning, are concerned with form and sociology, with politics, economics, and so on. There is interest in a science of form—one of the early stimuli to this development here was Tomas Moldanado, former Rektor of the prestigious Hochschule für Gestaltung in Ulm and visiting professor at the School a few years ago.

"I think a school will be strong if it has all of these intellectual probes going on, all coming together."

He paused. "Architecture has always been affirmative about life. One of the reasons that Lewis Mumford has been so taken with architecture is that architecture has an integrating quality. There's never been a protest architecture; there's never been an architecture of the absurd.

"This is one of the great periods in architecture. We have had great men, and have some very beautiful buildings."

He got up. An Unabridged Webster's, Second Edition, lay open on a shelf. He rifled the pages, smoothed one down, and said, "There. That is what it's all about."

"Theory," the line he pointed to read. "The result of contemplation; hence, an analysis or explanation, esp. an analysis of a set of facts in their ideal relations to one another." □