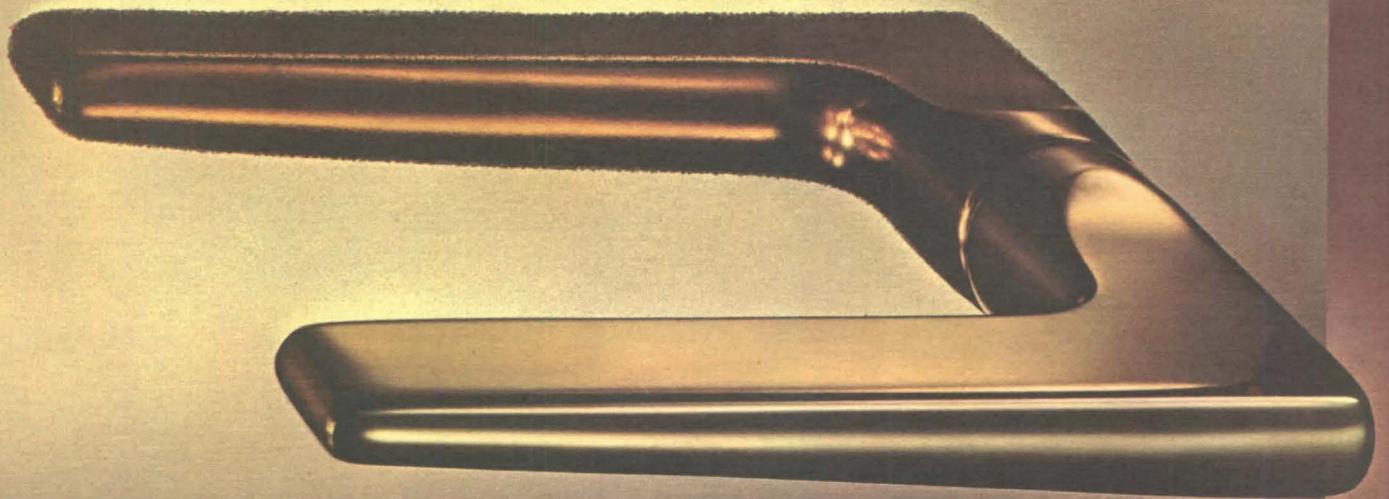


THE ARCHITECTURAL FORUM / DECEMBER 1969

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*Cover: From a model photograph of George Gund Hall at the Harvard Graduate School of Design (p. 62).*

### THE ARCHITECTURAL FORUM Vol. 131 No. 5 December issue.

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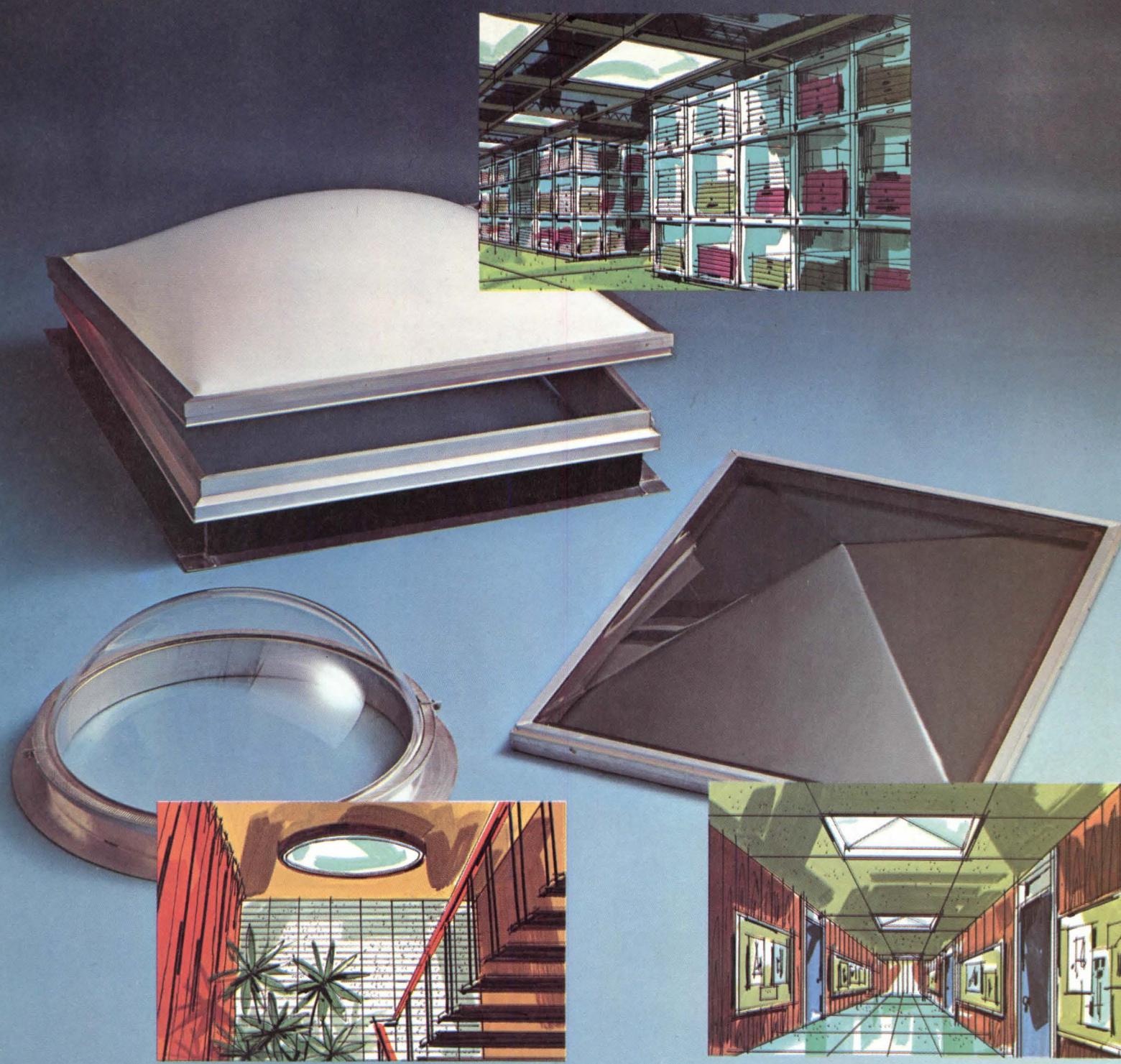
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# LETTERS

## IN MIES' FOOTSTEPS

Forum: How can we thank you—or Mies—for page 37 in your October issue?

When I was an architecture student, I worked at Mies' for awhile. My most memorable task was to do the "Ausgang" signs for the Berlin Museum. It took us about a month to get it right.

Too many words and too little action are always suspect. Mies preferred to act, but that is not the whole story. After all, architects must do more than build what they have to say. Putting two words together very carefully is as important as putting two bricks together very carefully. Both can be the beginning of architecture.

How could anyone who understands Mies want to build a Mies building? Only Mies could do that—as Walter McQuade, peering out the frosted windows of his taxi [Oct.] at the "blacklined magnificence of 880" might agree. After a revelation like that, one might ask how anyone could seek to follow in Mies' footsteps. Or, how anyone could fail to seek what he sought.

WILLIAM MARLIN  
The Perkins & Will  
Partnership  
Chicago

## DIES IRAE?

Forum: If the sacristy of St. Mary's Roman Catholic Cathedral in San Francisco holds 2,600 worshipers, as stated in "Focus" of October, how many, pray, does the nave hold?

ROBERT MUTRUX  
Architect  
Bridgeport, Conn.

*Sorry, we only counted the flower children.—ED.*

## NOT THE PLAIN OLD STUFF

Forum: I just read the Venturis' piece on the U.S. Bicentennial [Oct.], which they seem to take rather lightly as an idea.

"Why not place TV along the waiting lines to show you what you would see inside?" they ask.

Ridiculous. An exposition is its own art form, its own excuse.

And, I think everyone would be very disappointed if a revitalized black ghetto, a restored historical mansion, and an aged shopkeeper's renovated store

were taken and labeled: THIS IS IT! THIS IS EXPO!

A world's fair should not try to be a solution in itself. Keep it out of the mundane day-to-day living, changing diapers and hanging out the wash. Keep it out of big-time social renewal. If a fair is a real end, its real purpose is violated—and its real purpose is to be a sparkling something to last for six months and be something to go for, some future that is not here yet, something bright and blessedly detached from the neon signs, the black revolt, the plain old stuff of America.

MICHAEL KRESKI  
Rhode Island School  
of Design  
Providence, R. I.

## THE BIG LITTLE MAGAZINE

Forum: In his review, "The Big Little Magazine" [Oct.], Peter Eisenman refers to an article by Denise Scott Brown, but neglects to give its source. For Forum readers who may wish to dig further into the topic, "Little Magazines in Architecture and Urbanism" appeared in the *Journal of the American Institute of Planners*, Vol. 34 (July, 1968). We expect to carry another article on U.S. little magazines (including *Perspecta*) by Denise Scott Brown in a forthcoming issue.

DAVID R. GODSCHALK  
Editor  
*Journal of  
the American  
Institute of Planners*  
Chapel Hill, N. C.

*P.S. At this point we must acknowledge an error on our part in that same book review: Bernard Hoesli, mentioned in the review, was named Hoosh.—ED.*

## AN ACTIVE INTEREST

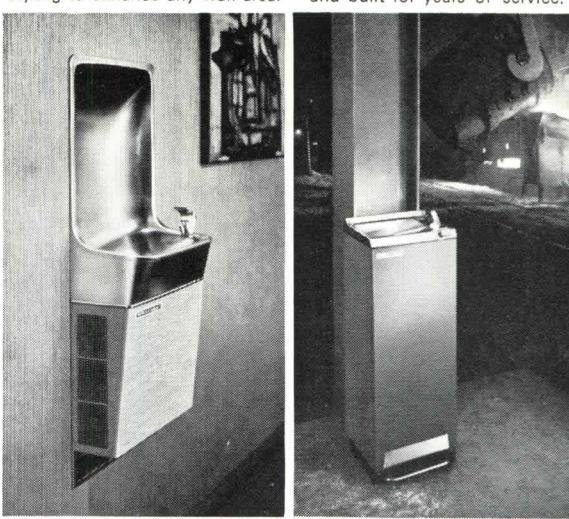
Forum: For some time you have kindly sent to me issues of what I have always considered to be the finest architectural publication.

At 95 years of age, I have, this month, terminated my daily attendance at the office. So, as I am no longer a consultant, I presume I am not entitled to receive further issues. But I shall miss the sequence of architectural events.

ARTHUR PRICE  
Salt Lake City  
Architect

*It seems to us that Mr. Price is as active a registered architect as we can find anywhere, and he will, therefore, continue to receive the Forum—with our appreciation for his interest in our publication.—ED.*

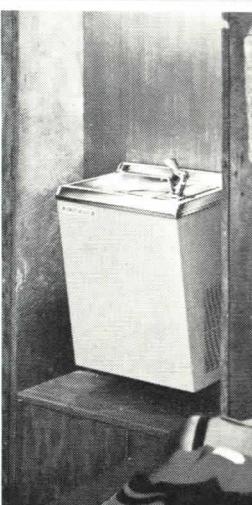
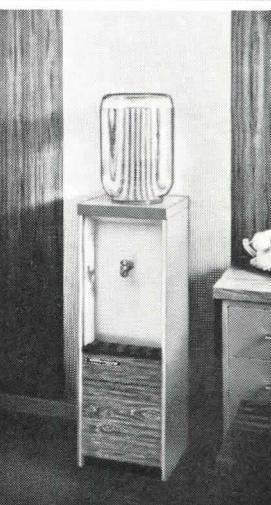
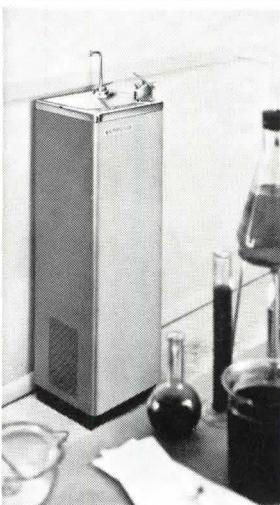
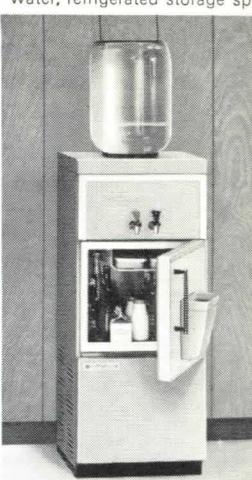
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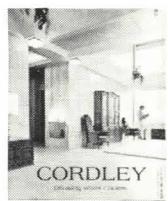
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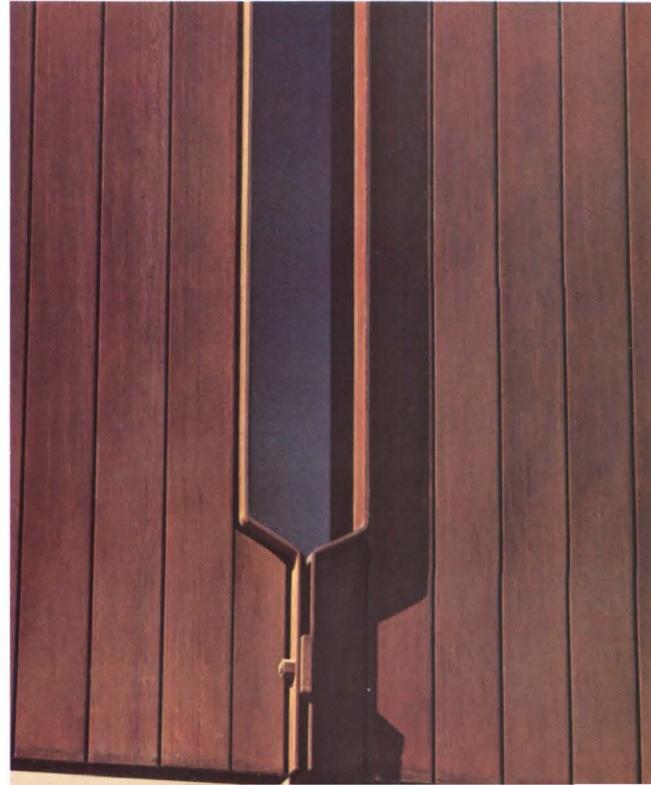


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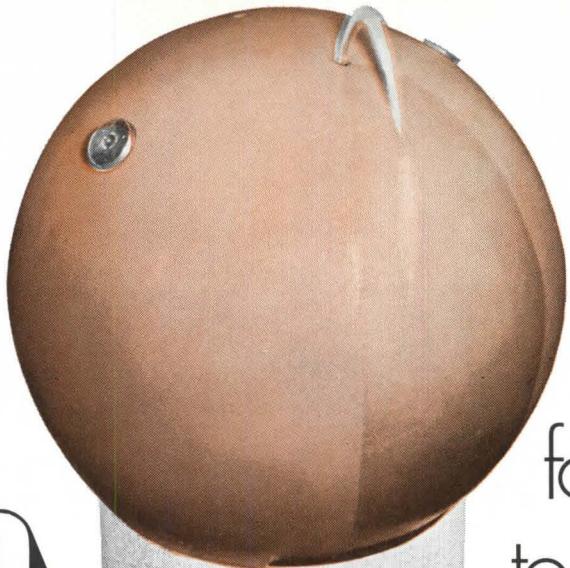
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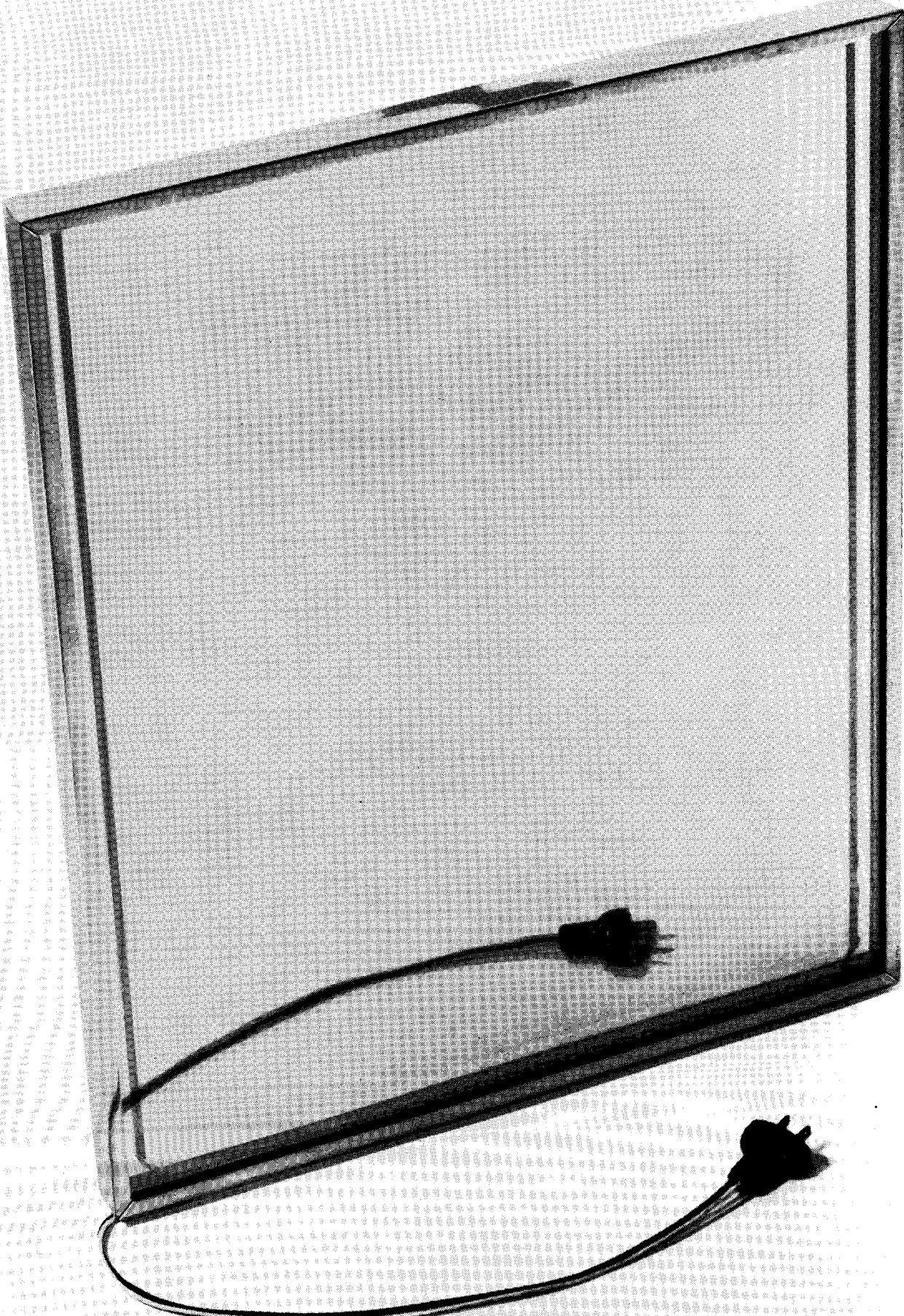
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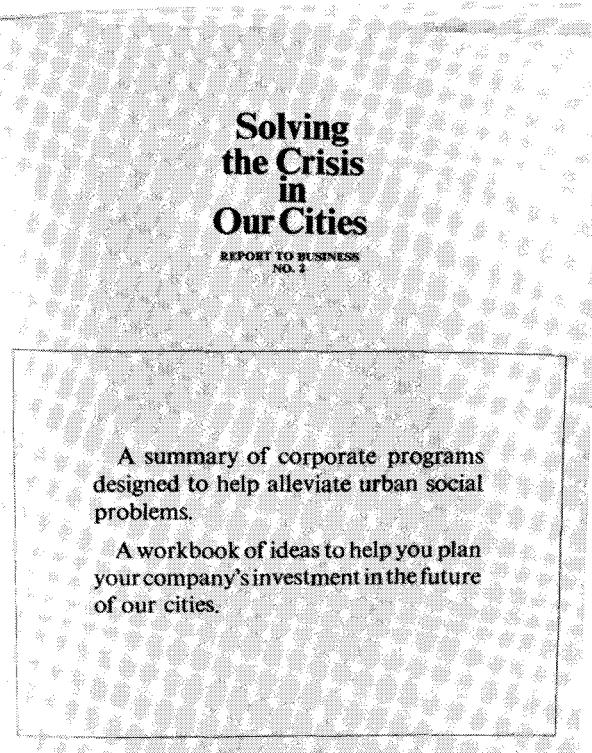
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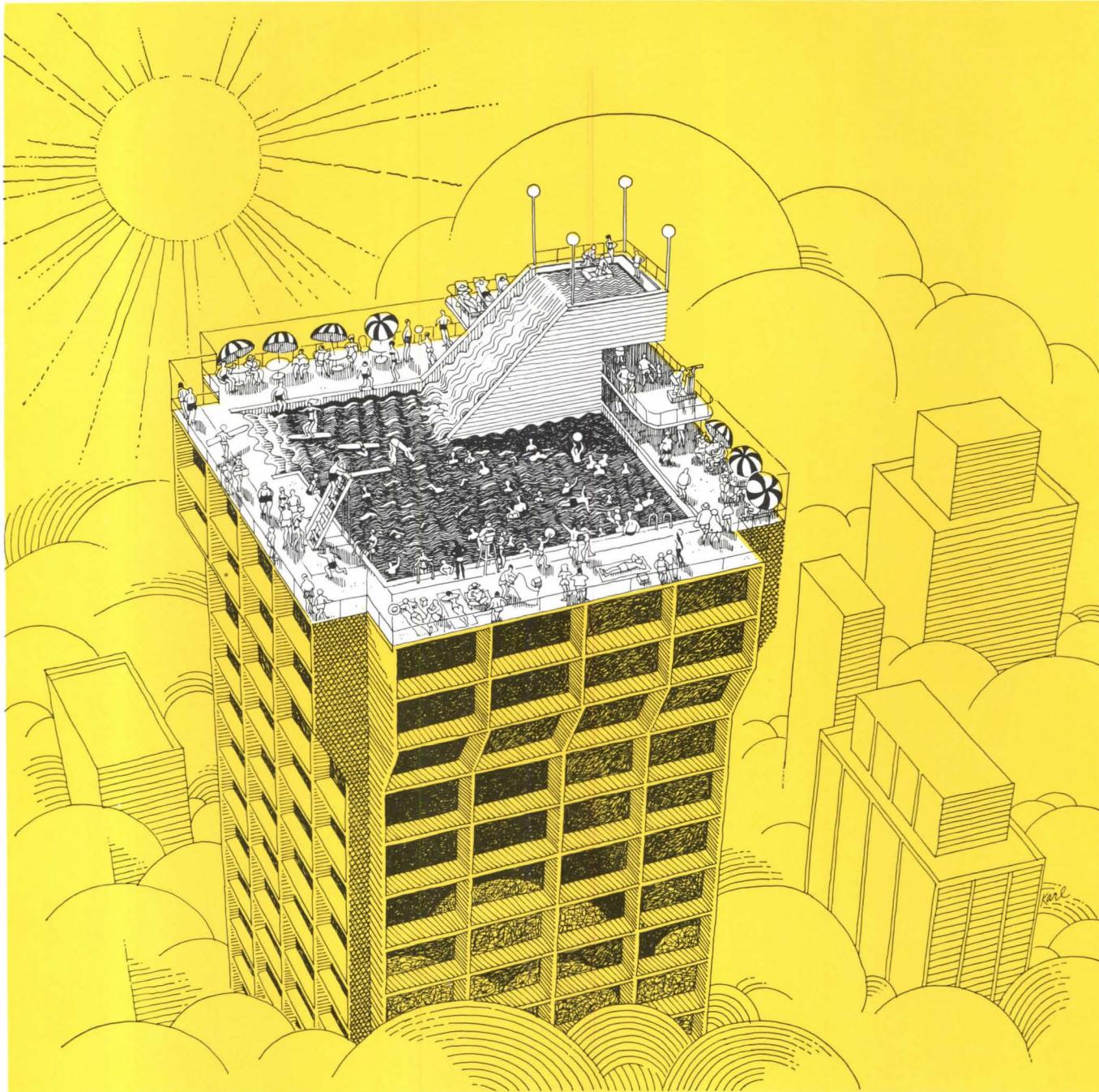
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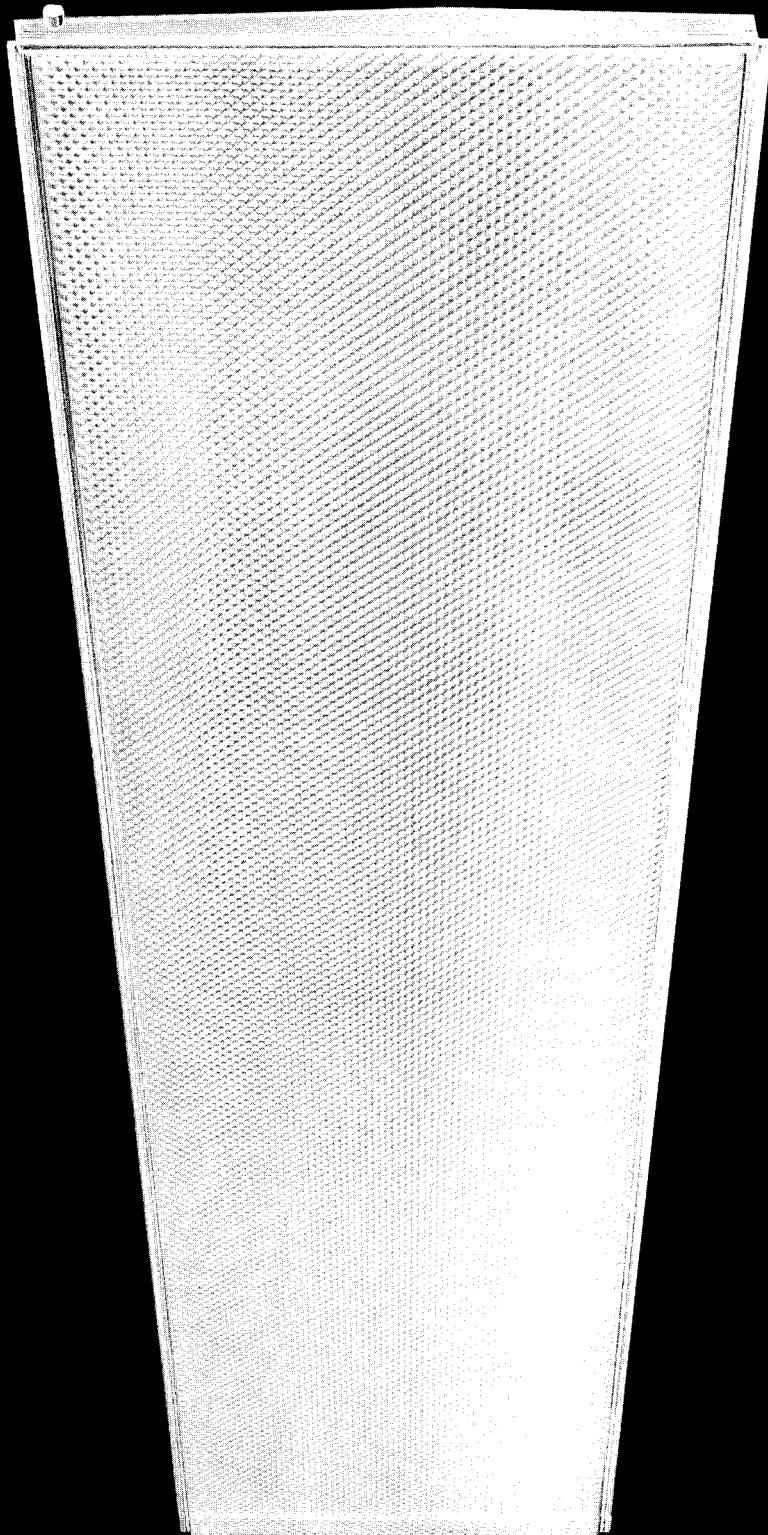


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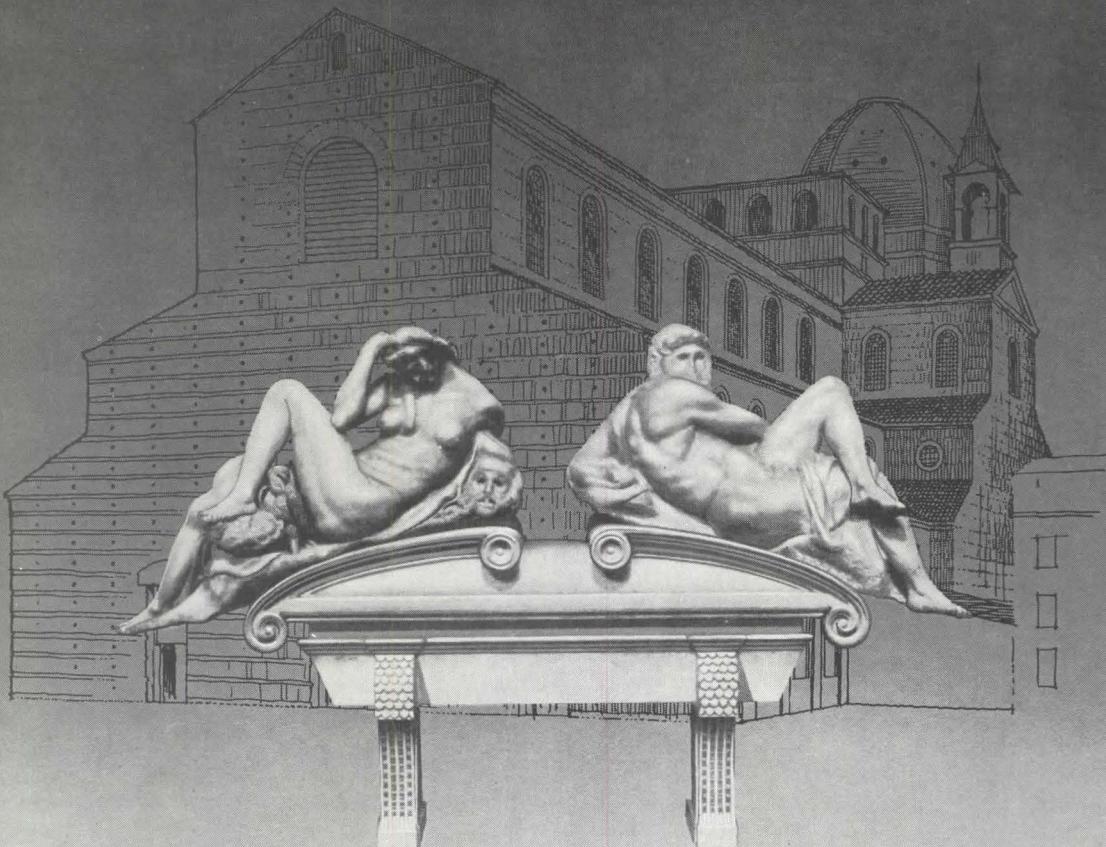
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## How San Lorenzo lost its marble

The Basilica San Lorenzo in Florence houses some of Michelangelo's finest sculpture, but the exterior is plain. Many of the medieval Christian churches still standing in Italy are drab masonry structures that seem to demonstrate the builder's unconcern for earthly splendor. Yet the early Christian architects were as sensitive to architectural beauty as any before or since. Their buildings were originally clad in sparkling marble, but as the power of the city-state grew to rival that of the Church, this marble was stripped away by various princes who wanted its dignity and luster for their own dwellings.

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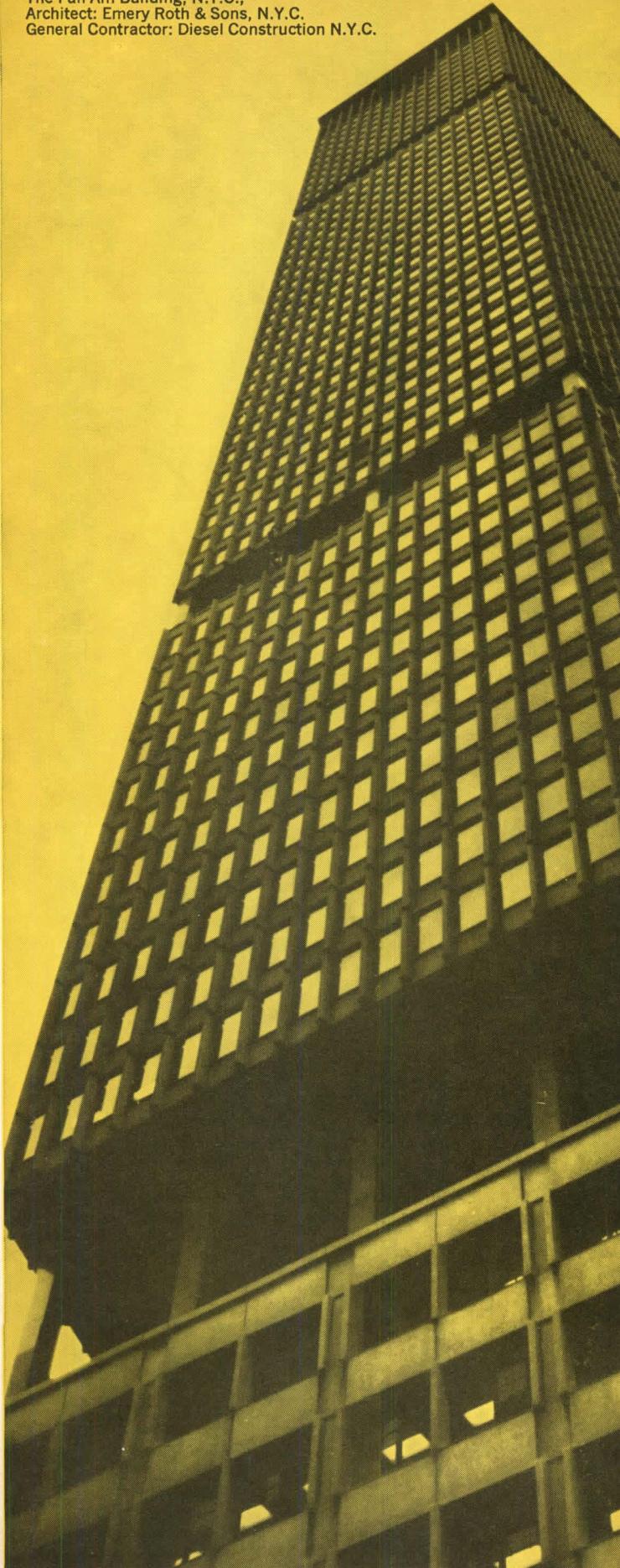
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# FORUM

Senator Eugene McCarthy said recently that the Administration's embarrassments in the Mississippi school desegregation case and the Haynsworth appointment—when viewed as the so-called "Southern Strategy"—could be likened to the "forward fumble," a consciously executed play at a college he knew, in which someone was always positioned to retrieve the football. If it continues, he said, it might soon add up to a "first down."

The Administration, by Executive Order, has introduced a new football into play: the so-called "Philadelphia Plan," which sets "guidelines," as opposed to outlawed "quotas," for the stepped-up hiring of minority building-trades workers. Many, of course, cheer this development.

Sceptics, however, convinced that the "Southern Strategy" is the name of the game, view it as a diversion, or worse, a more Machiavellian version of the same, in which the Supreme Court is expected to receive the ball, and to throw it out of the park.

Lined up in opposition to the plan are the A.F.L.C.I.O.; the General Building Contractors Association; the Administration's own Comptroller General Elmer B. Staats, who once said he was prepared to withhold payments from contractors who complied; Bayard Rustin, president of the A. Philip Randolph Institute; Senator Sam Ervin (Dem., N.C.), chairman of the Senate Subcommittee on Separation of Powers.

Meanwhile, one wide open hole appears in those "guidelines" for the fumble retrievers: a contractor can be excused from complying with the hiring goals if he can show a "good faith effort" to meet his goal. "Good faith" could be to building what "all deliberate speed" was to education for 15 years.

### VOLPE AT TUFTS

Early last month a cordon of 125 policemen sealed off the construction site of a \$2-million dormitory under construction at Tufts University in Medford, Mass., as some 400 students peacefully protested the alleged discriminatory hiring practices of the Volpe Construction Co. of

Malden, Mass., headed by DOT Secretary Volpe's brother.

The company was employing five blacks and two Puerto Ricans out of 104 workers and, even before the student protests, the university had gone to court to obtain a declaratory judgment as to whether the company was complying with existing civil rights legislation.

The Volpe company promptly promised to hire five and possibly eight more minority-group workers. The Federal Civil Rights Commission's advisory committee for Massachusetts asked the company to publish a list of jobs available until Christmas, and called for federal and state mediators in the dispute.

### CHICAGO STIGMATA

Architect William E. Hartmann, who persuaded Picasso to create Chicago's landmark sculpture in the Civic Center Plaza, is upset over the "utter disrespect for culture" displayed recently by construction workers protesting a federal inquiry into alleged racial discrimination in their unions. They climbed over the lady's face (below) and left deep scars in the self-oxidizing steel.

In the two years of her life, the lady has distilled a rusty patina from the elements and watched inscrutably as the plaza became a soapbox for everyone from Yippies to space heroes.

Now, two deep yellowish trails run from her eyes to her nose, and who it is she appears to be weeping for may depend on where you stand politically.



# NOISE

## SABIN WOMEN

Theater acousticians please take note:

University of California Physicist Vern O. Knudsen recently gathered ten miniskirted secretaries into his acoustics reverberation chamber (it's not what you think) and fired off a pistol. He did this in order to test their Sabin count (a unit of acoustic absorption named after sound pioneer Wallace C. W. Sabine). A low sabin count means low absorption, high reflection.

When compared with a similar test made, under the same conditions, but in pre-miniskirt 1964, it was revealed that high-skirted ladies absorb less but give off a lot more vibrations than they used to.

Which may explain the fact that no one we know has ever complained about not being able to hear at *Oh! Calcutta!*

## PAIN'S NEW THRESHOLDS

The Thailand elephants at London's Safari Park Zoo (below) are earmuffed because they panic, when unprotected, from the roar of a nearby jetport. Elsewhere, the U.S. Air Force is studying claims by mink ranchers that minks, in a similar panic, devour their young.

One noise expert, John M. Hundley, writes: "Symptoms of hypertension, vertigo, hallucination, paranoia and, on occasion, suicidal and homicidal impulses, have been blamed on excessive noise. . ." But he is talking about man, not minks.

The Federal Aviation Administration last month announced new noise-abatement standards for commercial jetliners, authorized by law last year. The new rules apply immediately to the jumbo jets—Lockheed 1011, Douglas DC10, and Boeing 747—scheduled to begin service early next year, but do not apply to jets now in service.

But since the law was passed,

the industry, prodded by the FAA, has been gearing its jumbo engines to actually produce less noise than the present turbofan types, to achieve a permissible noise level, now set at 108 EPNLDB (Effective Perceived Noise Level Decibels).

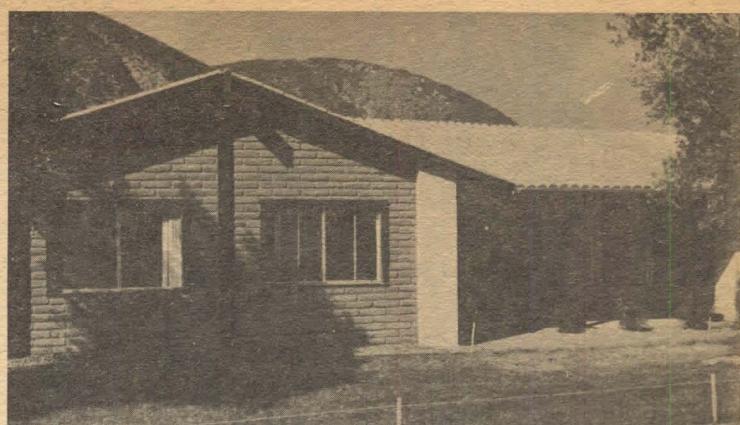
But not only elephants wear earmuffs. The Labor Dept. this year has established 90 decibels as the maximum, continuous, eight-hour din permissible in industry. Companies may comply by muffling their noise at the source, or by earmuffing their employees. The Ford Motor Company reports that less than 50 per cent of workers who should wear earmuffs do, apparently in the belief that gradually deteriorating hearing is nature's way of protecting them.

# HOUSING

## ONE-FOR-ONE IN THE CORE

According to one report, 100,000 dwelling units in New York City were abandoned in the period 1965-1968. In the same time period, building permits issued for private, city- and state-aided Mitchell-Lama, and public housing averaged 15,000 units per year. (The actual number built may be closer to 15,000 for the whole period.) The vacancy rate is an astonishing 1 per cent, though Manhattan's population, since 1960 is down 190,000, while the surrounding boroughs and suburbs have mushroomed (Rockland and Suffolk counties by over 50 per cent). And it has been estimated that for every black who moves into the city, three whites move out.

The \$4.9-billion housing bill passed in the last week of October by the House contains a provision that could help to correct one imbalance, while helping to perpetuate another. It provides that for every low- and middle-income dwelling unit torn down in slum areas for urban renewal, a new one must be built in the same area. (It does not require that the old residents be provided



ed the new housing, only that the number not be reduced.)

This deals with the problem of displaced residents, but it may, opponents say, tend to make official policy of the emerging reality that cities are for the poor and suburbs for the affluent. Opponents also say that it runs counter to the psychological need for lower density and increased urban amenities, such as parks and playgrounds.

The Senate had previously passed a \$6.3-billion package, and the two versions must now be compromised in a joint conference committee. The Senate's innovations are: rent supplements to low-income families living in public housing units, the maintenance costs of which have made them too expensive for those they were built to benefit; and a sliding-scale for subsidizing housing construction geared to *actual* building costs. Present cost limitations are so unrealistic that cities like New York have found it impossible to utilize the programs.

# LAW

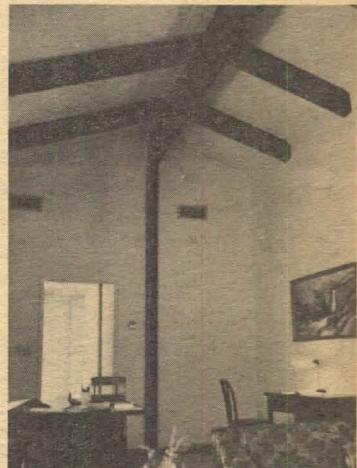
## GETTING TOUGH

Two laws go into effect in California on January 1 dealing forcefully with (1) restrictive building codes and (2) heretofore unrestricted water pollution.

• Assembly Bill 1971, in effect, circumvents local building codes by permitting industrialized housing to be inspected at the

factory by state inspectors according to a uniform, detailed state code. Local codes would apply only to on-site utilities hook-ups.

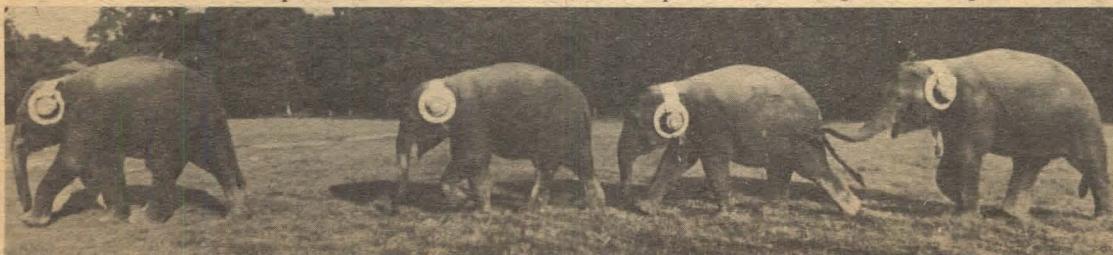
Above is a prototype of one such building system that state officials are hoping will help solve their housing problems. It consists entirely of 12-ft. panels



of reinforced plexiglass (except for the windows), joined structurally by adhesive bonding and "very few" fasteners; and it is said to be fire- and earthquake-proof.

The builders consider their initial market to be among Indians living in San Diego County. The prototype and the manufacturing facility are on the Rincon Reservation, where adequate housing is in short supply and the labor pool abundant.

The three-bedroom house, selling for \$10,000, contains 1,700 sq. ft. of space, including a two-car garage, and is allegedly styled to Indian tastes: the walls are "simulated adobe," the roof, "simulated Spanish tiles." Inside is a "simulated open-beam" ceiling (above). The door is made to look like carved Spanish oak. ("The Indians want just what you and I want," said a company spokesman.) Actually, we prefer simulated plexiglass.



• The Porter-Cologne Water Quality Control Act empowers regional water quality boards to refer polluters directly to the state attorney general's office for prosecution, and permits fines of up to \$6,000 a day for violators. The Courts may also order communities who continue to pollute their waters to stop issuing building permits that would add new toilets or industrial facilities to existing sewage lines.

A first test of what is called the toughest water pollution law in the country may come in San Francisco, where city officials have been ordered by the Bay Area water quality board to produce, by December 31, a schedule of plans for eliminating pollution from two of its sewage treatment plants.

## ARTS

### THE INVISIBILITY MEN

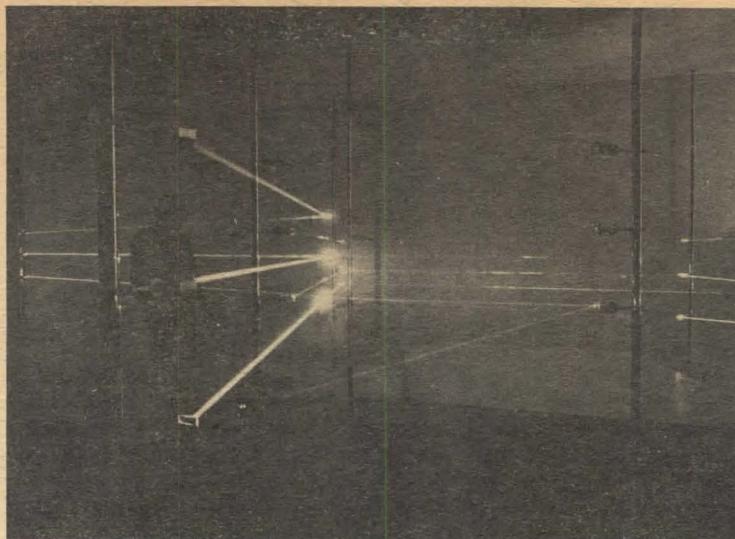
A growing "discipline" in the field of architecture is the structuring of imaginary space. Pioneers of this movement include Friedrich St. Florian and Raimund Abraham, both professors of architecture at the Rhode Island School of Design, and black Artist Rockne Krebs, who was recently represented at an exhibit at Washington, D.C.'s Corcoran Gallery.

St. Florian, whose ideas about imaginary space stemmed from his visualizations of airplane holding patterns, created a "room" (for the Museum of Modern Art in Stockholm last summer) with a series of laser beams which became activated as the visitor passed between two electric eyes. The structure (at top) consisted of 25 mirrors attached to nine strategically placed poles; the beams ricocheted between.

Krebs' lasers, called Ra, penetrated the entire length of the Corcoran (through holes punctured in the walls) and as the visitor passed under he realized the illusion of different spaces.

Abraham, however, employs aural rather than visual means to build his space: the "user" of his space activates different sounds ("walls") by his presence within that space.

What is the outlook for the future? St. Florian believes that each person will own a little computer, which will create and control his own individual envi-



ronment—space on a micro-scale, with boundaries of imaginary space moving wherever he does. Well, maybe Ayn Rand would like it.

### GAAG-IN AT THE MOMA

"Here we go again," said the plainclothes guard at the Museum of Modern Art in New York City as a group of radical artists taped a list of demands to a clean white gallery wall, having removed Kasimir Malevich's "Suprematist Composition: White on White."

Two representatives of the MOMA appeared to receive the demands. And everybody shook hands all around.

"Why did you choose a Malevich?" said Wilder Green, director of exhibitions.

"It was a revolutionary work," said the Guerilla Art Action Group representative.

"You made a good choice," said Green.

"That painting can be shown here," said Elizabeth Shaw, MOMA's director of public relations, "but not in Russia."

"That is not the point," said the GAAG.

"Thank you for not damaging the painting," said Green, who then promised to relay the "Manifesto" to the museum's board of trustees.

"We demand," said the Manifesto, "that the MOMA (1) sell the equivalent of \$1 million worth of art works . . . and that

the money be given to the poor . . . without any interference or attached conditions . . . (2) decentralize its power structure to a point of communilization . . . (3) be closed until the end of the war in Vietnam."

Numbers (1) and (2), said Green, were unlikely to be met. As for number (3), he couldn't say, the board would have to decide. And everybody shook hands all around.

Revolution just ain't what it used to be.

## GHETTOS

### BITS OF BOBBY'S DREAM

The babel of kids clambering over a steel play structure nearly drowned out the speakers as community, city, and state leaders unveiled the first tangible products of a program to rejuvenate Brooklyn's Bedford-Stuyvesant neighborhood (Apr. '68 issue)—a program initiated almost three years ago by the late Senator Robert F. Kennedy. The noise of happy kids was a fitting accompaniment for the ceremony, which took place in a prototype "street park" (below)—a quarter-acre plaza set smack across the middle of one of the area's two-broad, too-straight avenues.

The street park—a gift of the Astor Foundation—is on one of two city blocks where the street itself has been redesigned by



Architects I. M. Pei & Partners and Landscape Architects M. Paul Friedberg & Associates. Automobile traffic, which has more space than it needs in Bedford-Stuyvesant, stops completely at the street park. At either end of the park, traffic loops around an island of parking in the center of the 70-ft.-wide right-of-way. Inside the car-free area, besides the steel play environment, are trees, seating, and an "urban stream," which runs 100 ft. through a series of concrete troughs and basins.

On the next block, also redesigned by the same team, a modest amount of planting and play space has been added, without closing off the flow of traffic; cars are merely slowed down by a slight variation in street level and paving material. Pei estimates that two out of three of Bedford-Stuyvesant's 653 city blocks could be redeveloped in this way without seriously impeding traffic flow.

The ceremony at the street park topped off a tour of refurbished housing and new black enterprises in the area by organizers and backers of the program. Among them were Senator Kennedy's widow, Ethel, who has taken his place as a director of the Bedford-Stuyvesant Development and Services Corporation, which lines up support from outside the community for projects carried out by the Bedford-Stuyvesant Restoration Corporation, a neighborhood group.

After the tour, Mrs. Kennedy seemed gratified: "It was Bobby's dream, and it's coming true."

But it is coming true in pitifully small installments, at a painfully slow pace. For most of Bedford-Stuyvesant's 500,000 residents, Bobby's dream is still just a dream.

## SEQUELS

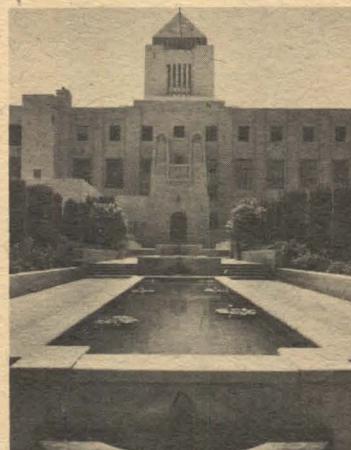
### WHAT'S HAPPENING . . .

Here, briefly noted, are developments on a variety of projects reported in these columns in the recent past:

- The Senate voted down a House-passed appropriation that would have set in motion plans to extend the West Front of the nation's Capitol (November issue), but approved \$250,000 for a feasibility study to restore the last remaining portions of the original structure. It must now

be resolved in joint conference.

- San Francisco's Board of Supervisors, while not rescinding their former resolution approving "in principle" Lamar Hunt's scheme for Alcatraz Island (Nov. issue), agreed to extend the deadline for proposals to January 31, and to cooperate with the Department of Interior, which is considering the island as a possible park or wildlife preserve.
- People's Park, once Berkeley, Calif.'s most coveted piece of real estate (July/Aug. issue), is now a no-man's land. Following the violent eviction of street people last spring and the Board of Regents' decision to build student housing on the site, the university has offered the land for interim use to a nonprofit black corporation sponsored by the OEO—"We wouldn't take it for a billion dollars"—and the university's Inter-Fraternity Council, which voted 30 to 1 not to use it for intramural activities. As for the architects approached to design the student housing, "none of them will touch it," said one administrator.



- Conservationists, led by Architect Robert Alexander, lost their fight last month to keep the city of Los Angeles from bulldozing a part of the Central Library park that includes three terraced reflecting pools and 20 cypress trees (October issue). These (above) will be black-topped for parking space.

- The Philip Johnson and John Burgee scheme for Welfare Island in New York City's East River (Oct. issue) came one step closer to reality on October 30, when the city's board of Estimate approved leasing the island to the New York State Urban Development Corporation for 99 years. The vote came only 20 days after the plan was made public—a record, even in an

(continued on page 77)

# STUDENT LIVING IN A SUNKEN GARDEN

By setting the Brown University Graduate Center in a landscaped moat, Architects Shepley, Bulfinch, Richardson & Abbott have preserved the scale of a 19th-century neighborhood.



College Hill in Providence, R.I., has perhaps the handsomest collection of 18th- and 19th-century houses in the country, running up the west slope from the waterfront to the Brown University campus at the summit (Jan. '60 issue). The university has done remarkably little violence to the area; most of its expansion has been to the east, down the back slope of the hill.

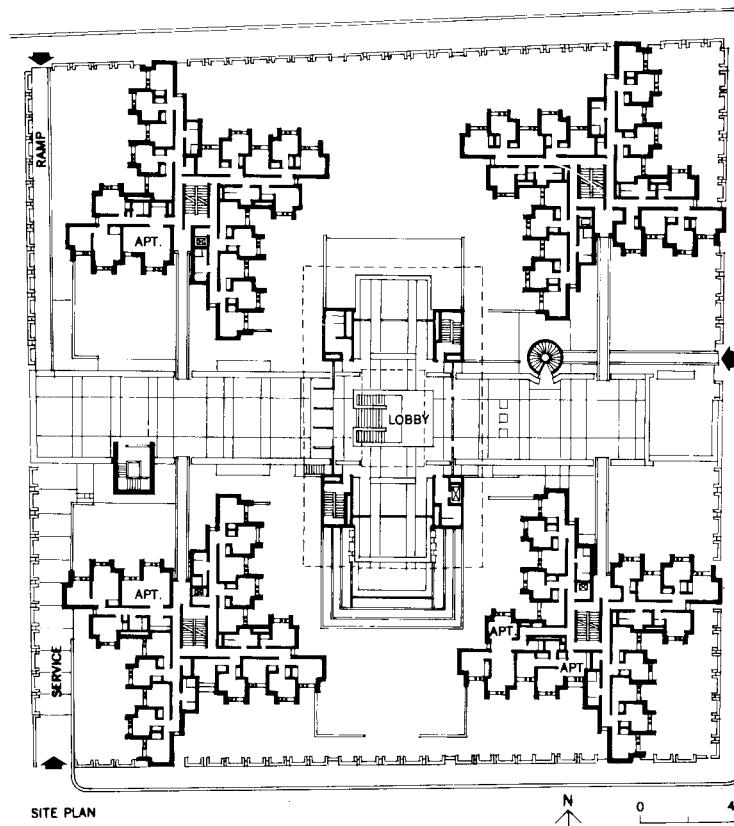
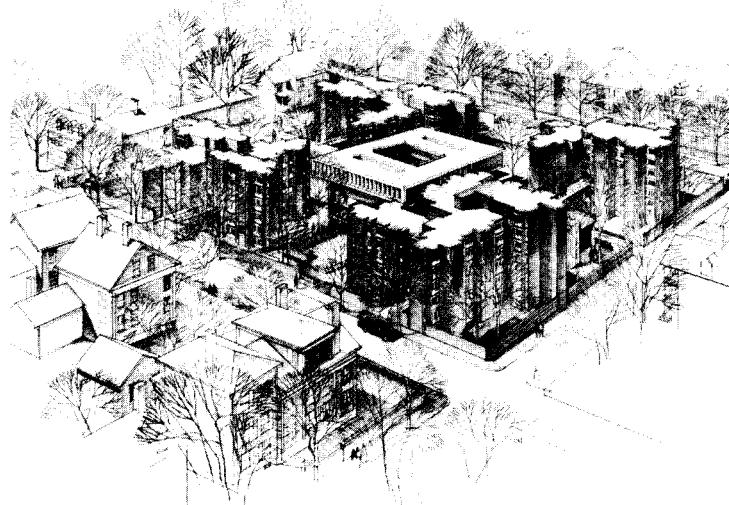
The Graduate Center by Shepley, Bulfinch, Richardson & Abbott is one of the latest additions in this direction. It stands at a campus-community boundary, with fine old houses to the west and south, unpretentious later houses to the east, and modest-scaled Neo-Georgian dormitories to the north.

The program for the center packed a lot onto its two-acre site: quarters for 445 students (men and women), four faculty apartments, dining and recreation facilities, a conference center, and offices for the graduate school administration, which had never had a home of its own.

To keep the complex from overwhelming neighboring houses, the architects divided it into five buildings, each subdivided visually by closely spaced projections and recesses. But the most radical step they took was to carve out a sunken garden—roughly level with the downhill corner of the site—in which the buildings stand.

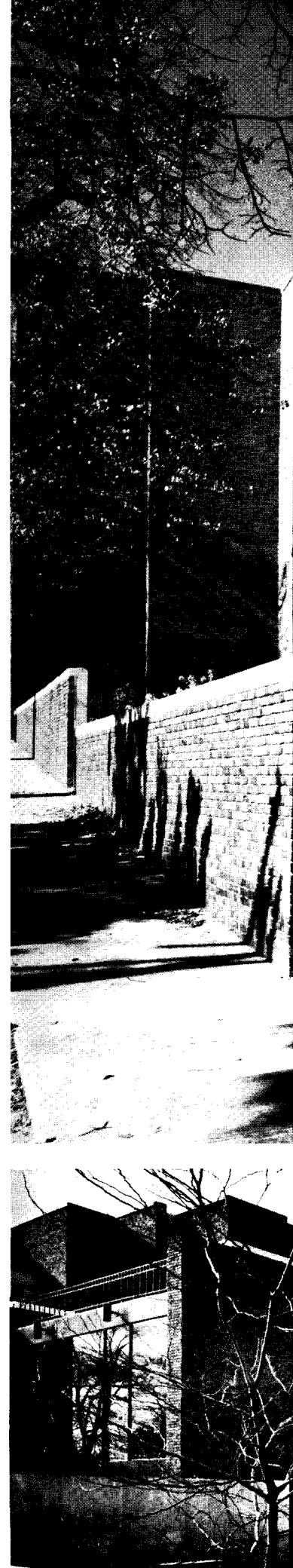
Setting the center below street level was a deft way to make medium-rise buildings workable without elevators. A walkway system taking off from the high northwest corner of the site—at the approach from the main campus—meets the six-story dormitories at third-floor level. The walkways follow a master plan proposal by Sasaki, Dawson & DeMay for a continuous elevated circulation system along this slope of the hill—a plan that is not being followed consistently in other current projects.

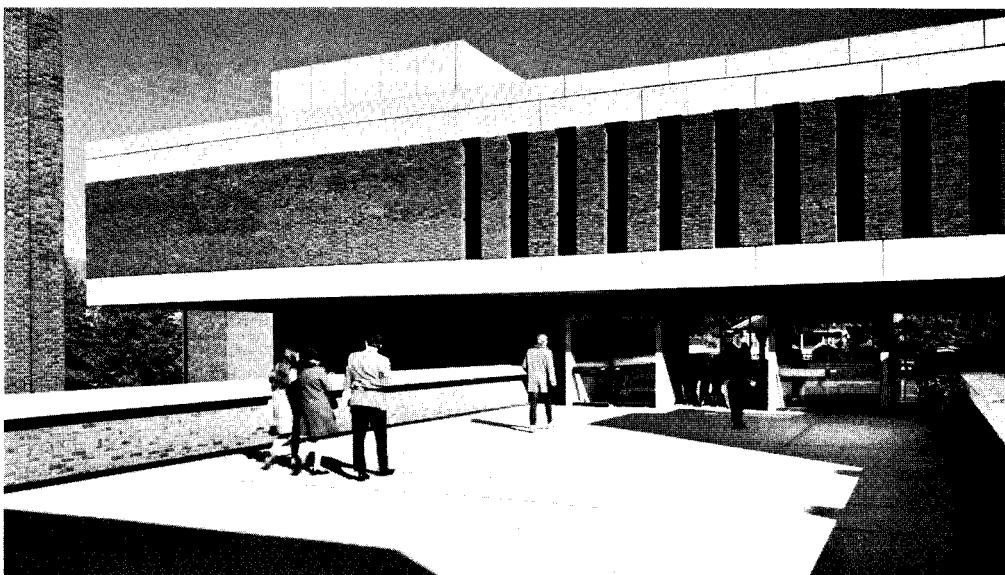
Even here the scheme of raising circulation above the ground plane has suffered setbacks. In an effort to cut excavating costs after construction bids came in, the entire complex was raised six feet. That put the garden at the east entrance to the center just at the level of the street. Instead of being channeled over a low bridge, the unexpected flow of traffic from this side now disperses, tramping out muddy paths across the garden.



Four six-story dormitories surround the commons building at the core of the two-acre complex. Staggered stacks of dormitory rooms contrast strongly with the broad, projecting layers of the commons (top right). Facing the 19th-century houses across the street are small-scaled precast window panels and brick walls remarkably close in texture and color to local Georgian brickwork. The life-

line of the center is the main, tree-top-level walkway (far right) which meets ground level at the west edge of the site (where a temporary ramp will link it to the street until adjoining property is acquired). At the east end of this walkway (near right) a spiral stair descends two stories to street level. Bridges in the form of U-shaped beams join the walkway to the third floor of the dormitories.





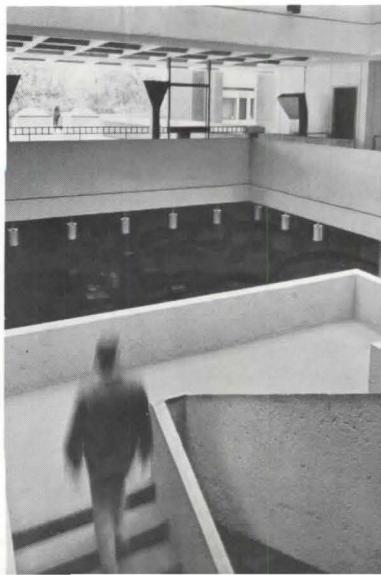
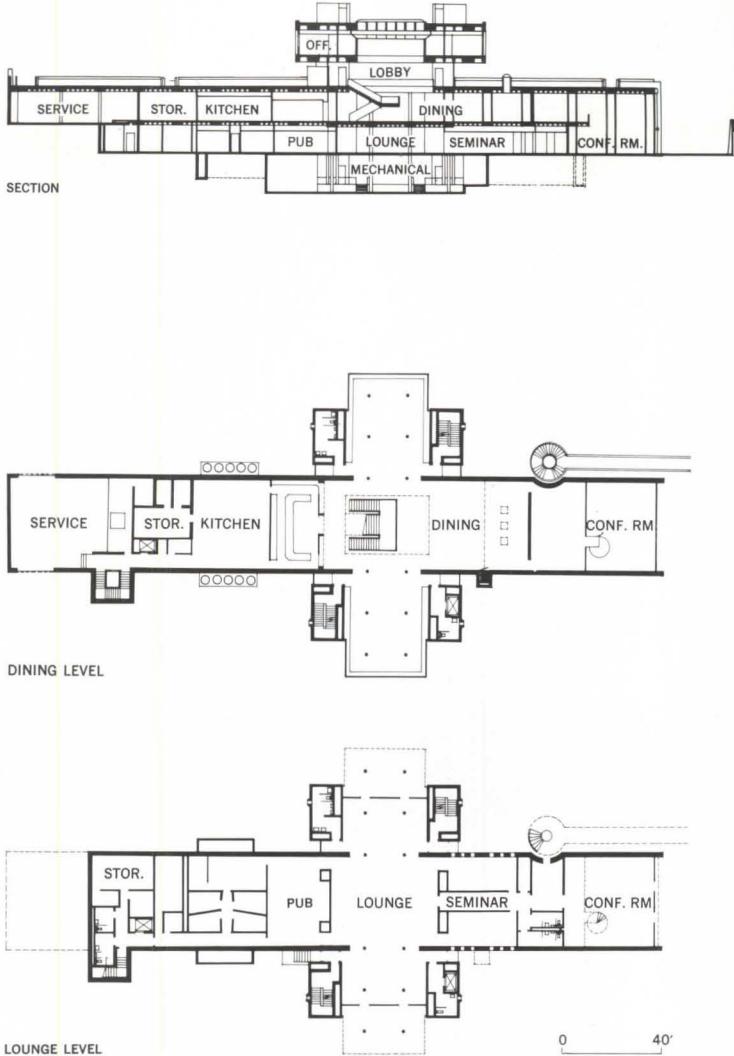
The commons building at the core of the Brown Graduate Center is literally built around the main elevated walkway. At walkway level it is merely a glassed-in lobby, with an information desk, mail boxes, and a small seating area. Above that is a projecting band of offices surrounding the central light well. Below the light well is a grand stair (bottom photos, left and middle) leading down to the cafeteria, which projects out over the gardens (top photo) and extends east under the walkway. A skylighted portion here can be closed off as a private dining room.

On the bottom level of the building is a low, secluded lounge, with a cave-like "pub" adjoining it. Under the east end of the walkway is a two-story space for conferences, receptions, and recitals. Designed to accommodate all-day meetings, the room has a dining mezzanine at cafeteria level and adjoining seminar rooms at the lower level.

The cast-in-place concrete structure of the commons building has been left exposed wherever possible. Lighting and mechanical equipment—with no ceilings to hide them—have been pointedly articulated.

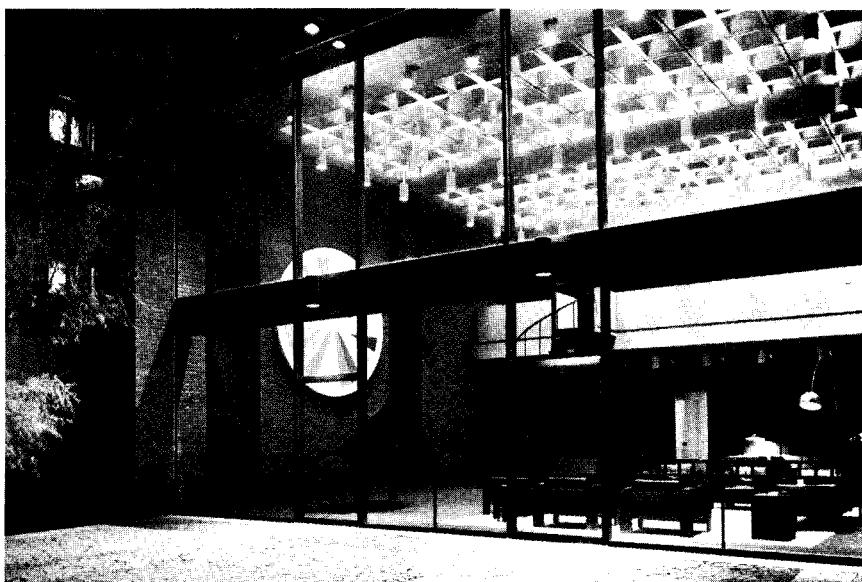
The brashest pieces of exposed mechanical equipment are the snorkel-like air diffusers that rise from slots in the lobby floor (photos, bottom left and middle). These black-painted steel ducts expand at the top to accommodate air grilles and lighting aimed at the low ceilings above the entrances.

A more complex integration of mechanical equipment with other components occurs in the black-painted steel "boxes" attached to the cantilevered slabs of the cafeteria bay (top photo). These square, insulated tubes house ducts and grilles for supply and return air, and also support the glass walls. Because they extend from slightly below floor level to above the ceiling, the vast sheets of glass appear almost to float free of the structure. A steel railing at the edge of the floor slab stops chairs and people almost two feet inside the glass, reducing wear and tear on the curtains and finger smudges on the glass itself. Considerations like this may seem finicky, but the consequences of ignoring them are obvious in too many other buildings.



The bulk of the commons building (plans and section above) lies beneath the main walkway. The crossroads of the building is the two-story lobby at walkway level (photos, near and middle right). A cantilevered ring of offices surrounds the upper part of the lobby, sharing its skylight through strips of glass just under the roof.

Below the lobby, two arms of the 270-seat cafeteria extend out over sunken terraces to the north and south (top photo). The exposed concrete pan ceiling of the cafeteria is lighted in a lively pattern by fixtures suspended below intersecting ribs. Similar details appear in the conference room at the east end of the building (far right).



The student quarters are in four similar "walk-up, walk-down" structures — six-story buildings which are entered at third-floor level so that elevators are not needed. Four to six single rooms are grouped along each of the corridors that radiate from the central scissor stairs.

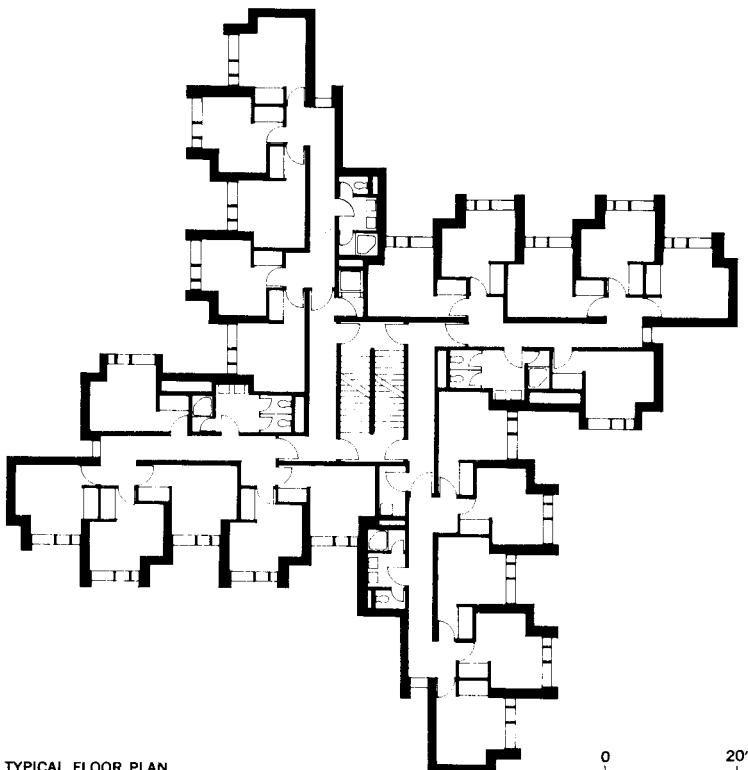
The convolutions of the exterior walls are based on the shape of the single room, which was thoroughly restudied by the architects. The notched plan allows the rooms to interlock (reducing corridor length) and yields several possible furniture layouts within a 120-sq.-ft. area.

All of the rooms have identical precast concrete window walls, meticulously shaped to fill many needs. As originally designed (sketch, right) the panels had a narrow strip of glass at the ceiling, through which ceiling and wall planes appeared to pass. The band of glass at conventional window height was interrupted by an operable casement window, set in a recess so that a window washer could reach all exterior glass surfaces. Sunlight was controlled by interior shutters over the casement and pivoting baffles in front of the fixed panes. The baffles would also have kept residents from using the air diffuser unit below the window as a shelf; instead they were offered two shelves cast into the concrete.

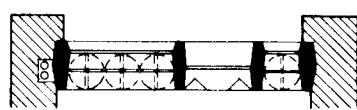
Because every convolution of the wall had a purpose, it was particularly vulnerable to last-minute changes in the name of economy. Now that the interior blinds and baffles have been replaced with a curtain, and the casement replaced by one hinged sash, air circulation is blocked, window washing is a challenge, and student belongings are piled on the air grilles.

Like the window wall, the circulation system may have been too carefully worked out to meet specific requirements. It makes sense for a resident going to his room from outside the complex. But to reach the cafeteria, the resident of a lower floor is asked to go upstairs, outside, then downstairs again. What he does, in fact, is to go out at ground level and cross the garden.

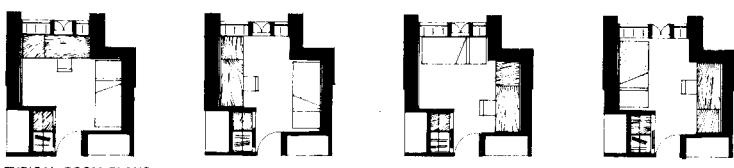
Aside from last-minute design changes and traffic short-circuits, however, the center is a remarkably civilized way to house 445 adult students on two acres of garden—and a sensitive addition to College Hill.



TYPICAL FLOOR PLAN



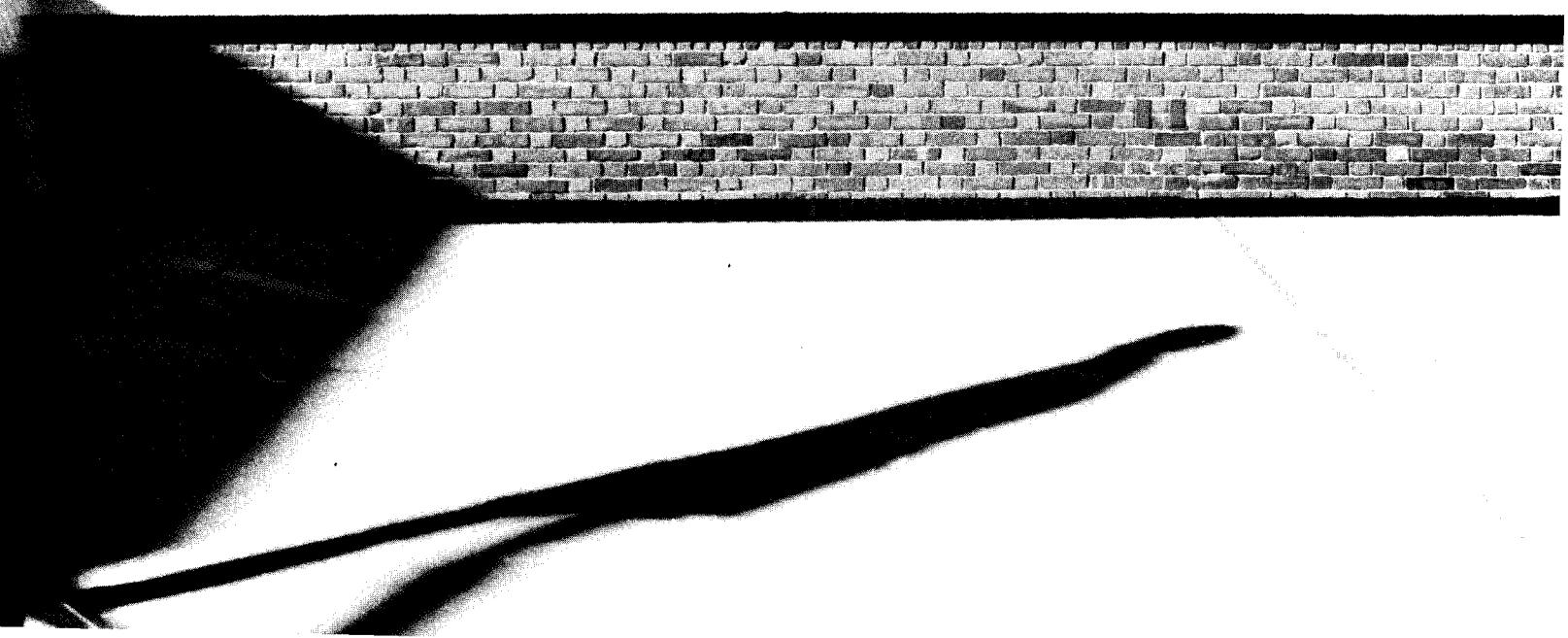
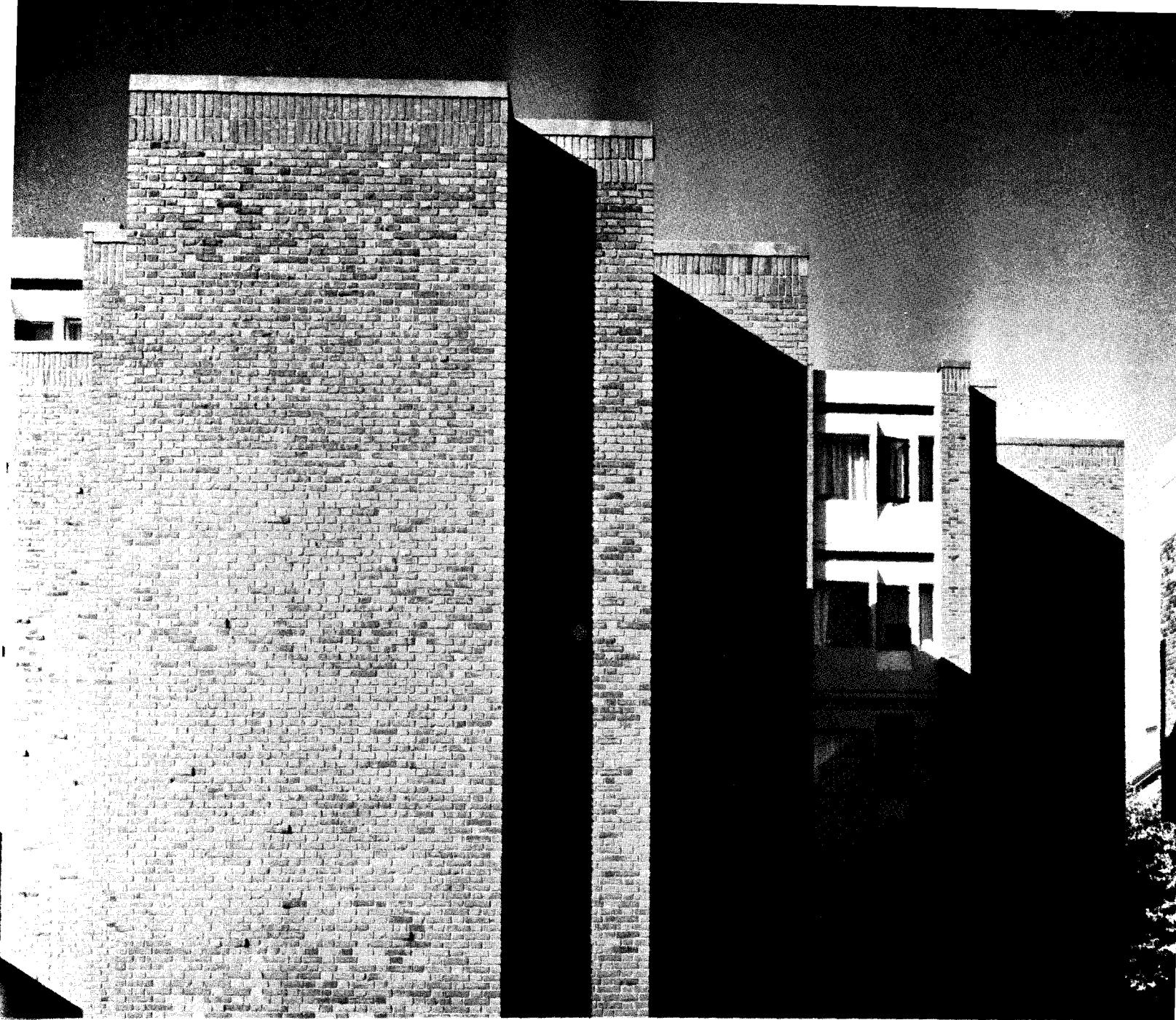
PLAN-WINDOW WALL



Each of the four corridors of the typical dormitory floor (top) can be closed off to form a suite of rooms sharing a bath. Every room has a complex precast window wall, with warm-air diffusers and book shelves built in. The curtain that was substituted for the shutters and pivoting blinds of the final design (sketch and detail) impairs the circulation of air. The uniform room plan allows for several arrangements of standardized beds and desks.

#### FACTS AND FIGURES:

Graduate Center, Brown University, Providence, R. I. Architects: Shepley, Bulfinch, Richardson & Abbott. Landscape architect: Elizabeth M. Carlhian. Engineers: Nichols, Norton & Zaldastani (structural); Buerkel & Co. (mechanical); Thompson Engineering Co. (electrical). General Contractor: E. Turgeon Construction Co. Building area: 163,000 sq. ft. Capacity: 445 students. Construction cost: \$4,400,000. PHOTOGRAPHS: Phokion Karas.



# PLANNING WORKBOOK FOR THE COMMUNITY

"Community participation" in planning is either required by regulation or demanded by community groups themselves in an increasing proportion of our redevelopment programs. But how do the community groups go about participating?

The workbook prepared for the state of New Jersey by the Research Center for Urban and Environmental Planning at Princeton University may provide a comprehensive answer. It is the first serious effort to give community participants a tool for *understanding* planning.

"Our political system depends on interest groups knowing what their own self-interest *is*, and fighting for it," says Bernard P. Spring, director of the research team that produced the workbook. "New groups are stepping forward to be heard, but too often they can express only vague demands or emotional reactions. We want to help them say something that is not just rhetorical."

The opening paragraphs of the 592-page workbook spell out its purpose in its own, remarkably clear terms: "The Planning and Design Workbook is for people who want to take action to make a better life in their community and in their housing. You can use the instructions and information in this book to help you decide what changes you would like to make. . . .

"When you use the Workbook, you will be able . . . to make concrete and detailed proposals which describe the specific changes you believe are needed. You will be able to work more effectively with the many officials and professionals who are involved in carrying out any proposal for change."

One thing the workbook does *not* promise the community, Spring emphasizes, is a key to tapping federal funds or cutting through red tape. Beyond referring to available lists of programs, says Spring, "there is no magic in knowing the ropes." A concrete program backed by a knowledgeable constituency, he maintains, offers the best chance for obtaining funds.

New Jersey's Commissioner of Community Affairs, Paul Ylvisaker, initiated the workbook project because he was concerned about the failure of many local groups to deal with real issues. Too often the groups formed to establish planning objectives

never got beyond questions of pecking order within the group. A device was needed that would direct their attention to more productive ends.

The scope of planning effort covered by this device was determined only as work proceeded on it. The major area to be covered was housing design, but many groups were concerned with areas larger than the single housing development, and this larger scale of planning is included as "community activity planning." Specific facilities other than housing—schools, parks, etc.—are not covered in the workbook, but similar devices for planning them are being developed at City College of New York, where Spring is now dean of architecture.

As the workbook progressed, the researchers checked out various approaches with actual community groups in Newark, Trenton and Hoboken. Through these exchanges they learned, for instance, what kind of drawings the participants could understand best. Meanwhile, seminars were held at Princeton, where community leaders, government officials, and other professionals (not planners) met periodically for several months in simulated community meetings. From these sessions, much was learned about how issues can be resolved in such meetings.

## Four volumes, looseleaf

The result of this process is a document in the form of 592 looseleaf pages. It can be divided—should be divided—into four virtually self-contained parts:

- a "how-to-use-it" introductory section, which also contains much supplementary material of a kind usually found in an appendix;
- a "community activity planning" section;
- a "site planning" section;
- a "dwelling unit" section.

No community group is expected to use all of these parts at once. For this reason, much of the material in the last three parts is repetitive; only the most involved procedures are converted separately in Part I.

Although every facet of the process is explained in laymen's terms, the workbook recognizes that the group will probably have some kind of trained adviser—whether technical assistant or professional consultant.

The workbook also recognizes that the community group is not

LINEAR ORGANIZATION

CENTROIDAL ORGANIZATION

FIELD ORGANIZATION

1

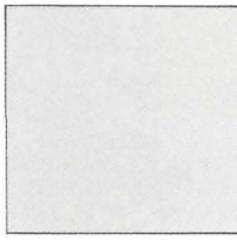
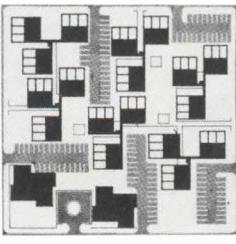
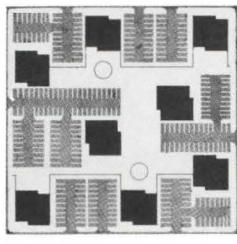
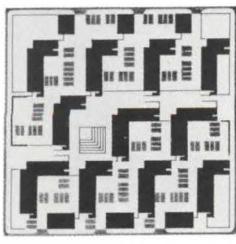
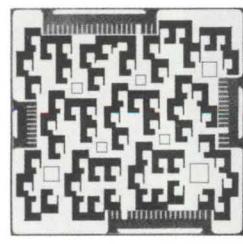
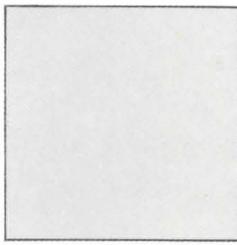
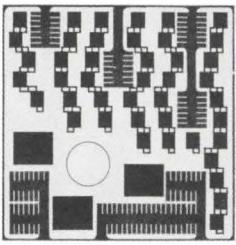
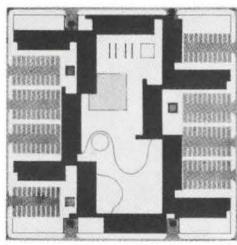
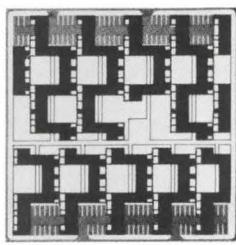
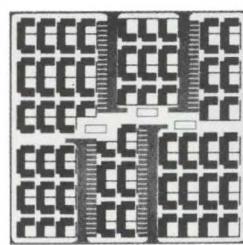
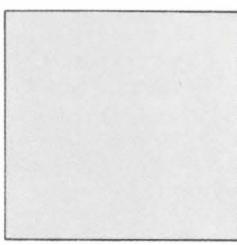
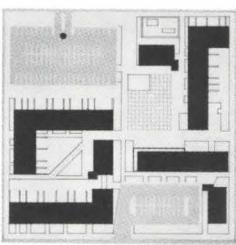
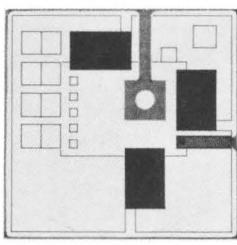
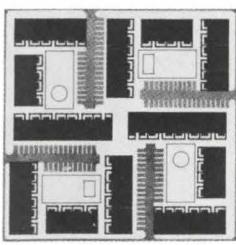
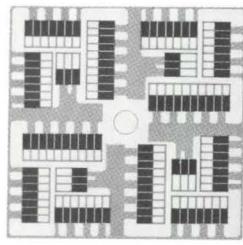
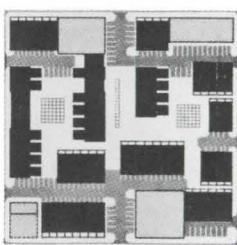
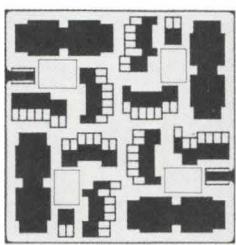
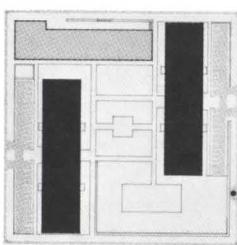
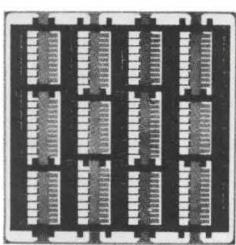
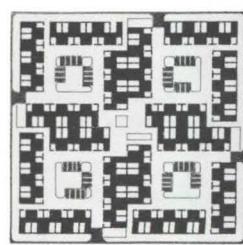
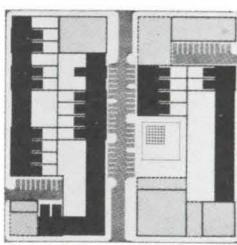
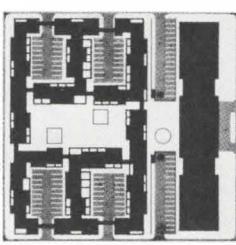
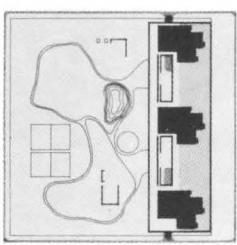
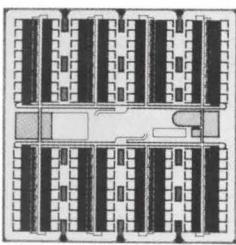
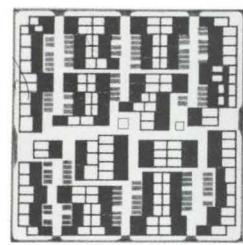
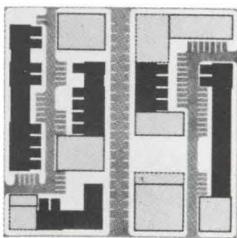
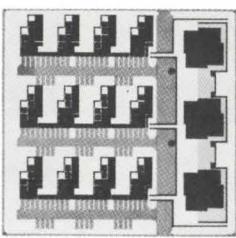
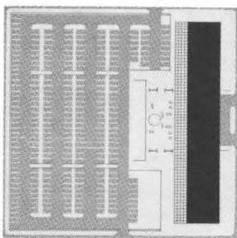
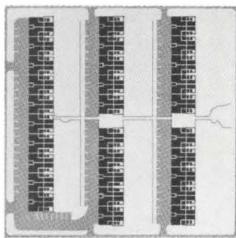
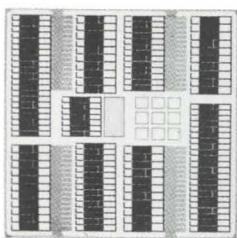
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6



A

DIRECT ACCESS  
LOW RISE

B

STAIR ACCESS  
WALK - UP

C

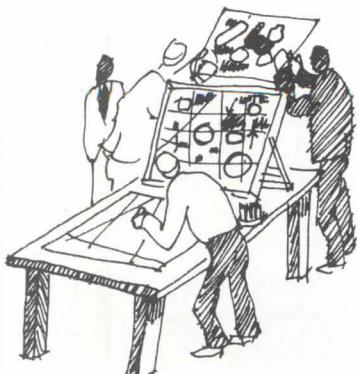
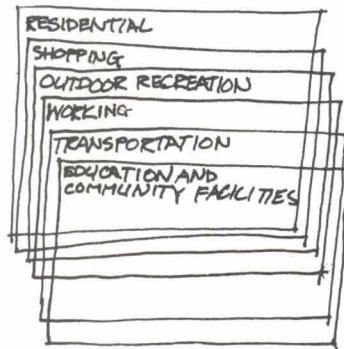
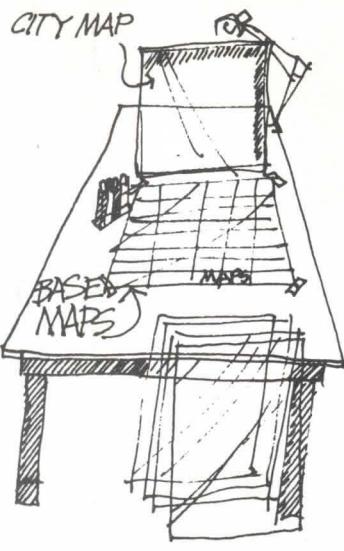
ELEVATOR ACCESS  
HIGH RISE

D

MIXED ACCESS  
LOW, WALK-UP, HIGH

E

REHABILITATION, INFILL  
LOW, WALK-UP



planning in a vacuum. There are reminders that any plans must be reconciled with those of adjoining communities, the city, and the region. In fact the procedure could be just as useful for analyzing and responding to plans from other sources as it is for initiating proposals.

#### Steps toward a plan

The decision-making method spelled out in the workbook has been carefully adapted to the needs of interested laymen meeting in groups (ideally groups of 25 to 30, and no larger than 50). The method used in all parts involves the same basic steps: determining issues, deciding on policies, setting priorities, preparing alternative plans, evaluating them, and selecting a final plan. It is made clear that the order of steps can be altered, that some steps can be left out or varied—or turned over to outside professionals.

Underlying this method is a recognition that the planning process is generally not linear, but "iterative"—that it is often useful or necessary to go back and reconsider earlier steps.

The object of the method is to resolve conflicts between needs and resources—or between interest groups that represent these needs and resources. It is made clear that no solution will satisfy all demands—that priorities must be established and some objectives traded off against others—or against the factor of time.

Architects will recognize this method as the one they have been following all along, whether they have realized it or not. But several adjustments have been made in this established method to make it more effective for community groups. For instance, the risk that any member will stake his position on a single decision—treat it as a vote of confidence—has been minimized by encouraging the group to take up a large number of issues; that way, none is likely to be magnified out of proportion, and many trade-offs are possible.

Another important adjustment is that no question ever calls for the answer, "That depends." Each decision is treated as an independent one, even though it may have to be reversed later, should conflicts appear in the physical plan. At that point, the group will have a clear record of both its original decision and the reasons for changing it.

In each of the planning parts of the book (after the introductory Part I), the process begins with identifying issues ("What problems do you want to work on?") and agreeing on policies for each ("What actions do you want to take to solve your problems?"). A list of *sample* issues—extensive but not closed—is provided, along with alternative policies for each, and some indication of "results" to be expected from each (top right). The group is then asked to assign *priorities* to their policies ("How important is each of the actions you wish to take?").

Next, they are invited to consider a selection of planning solutions—"How have other groups tried to solve the same problems you are working on?"). These representative solutions—skillfully abstracted so that they can be compared—are presented in sections frankly labeled "catalogues" (right, page 37, and page 39). For the most part, the catalogue entries are the same prototype solutions that planners and architects carry—or ought to carry—in their heads.

After considering the pros and cons of catalogue examples, the group is asked to prepare a proposal and analyze it and then, if they deem it necessary, to draw up alternative proposals and evaluate them before making a final selection. They are not encouraged to draw up several alternatives in the first place as professionals often do; only after the experience of working out an initial scheme do they go on to consider other possibilities.

In the last two parts, the workbook introduces another set of determinants called "standards." These are, as the workbook defines them: "Some features of any planning or design proposal that are not considered matters of choice in the United States at this time." They include, along with pertinent federal and state regulations, a parallel list of customary or advisable rules. The recommendation "Have the smallest possible number of crossings between pedestrian ways and vehicular streets," for instance, appears next to the FHA regulation, "Driveways shall enter public streets at safe locations."

As the scale of the problem narrows, the number of features "not considered matters of choice" increases at the expense of the open "issues." In the

#### COMMUNITY PLANNING

The largest scale of planning taken up is called "community activity planning" in the workbook to emphasize that it concerns distribution of functions, not structures as such. Using a kit of materials provided with the workbook, the group can draw up plans on acetate sheets over a base map of existing conditions, then examine several types of plans at the same time on a backlit easel (sketches, left).

Before beginning to plan, the group considers issues and policies, then sets priorities. A number of "sample issues" is analyzed in the workbook (right), but neither the issues taken up, nor the policies and possible results, are meant to be exhaustive.

The "catalogue" for community activities planning shows a number of basic ways in which housing, shopping, and outdoor recreation space can be arranged. The drawings at right show—in sketch, map, and aerial perspective form—a fine-grained mixture of high and low housing with community facilities.

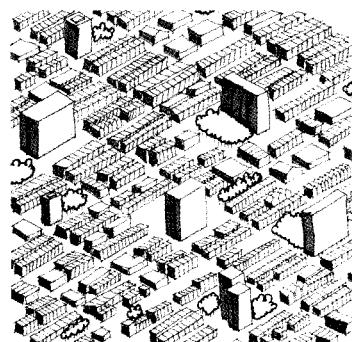
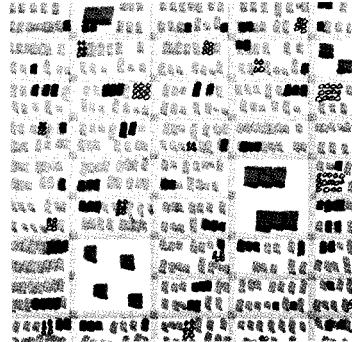
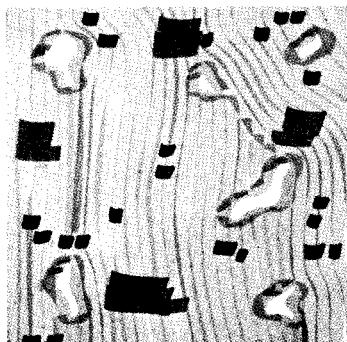
Another basic community plan shows highrise residential buildings concentrated around a central park. To the trained reader, the left column of sketch maps may seem strange and unnecessary next to the other drawings. But for laymen, they are no less familiar than conventional maps; and their shorthand of textures and blobs—once learned—can be used for on-the-spot exchange of ideas at meetings. They are also a reminder that the street grid on the other drawings is merely a handy convention.

IS THERE ANY PARTICULAR ORDER IN WHICH DIFFERENT PORTIONS OF YOUR PHYSICAL PLAN SHOULD BE BUILT?

Policy A	Policy B	Policy C	Policy D	Policy E
First start building a multi-activity demonstration project to show the kind of life that you hope will later be possible for all residents.	First start building housing on vacant land; then start work on facilities for education and other community activities; then shops and workplaces.	First get some new work-places; then tackle housing, education, and community facilities.	No matter what order, but get some portion of the plan started as quickly as possible in every district of your community.	Make your own policy on the relative priority of different portions of your physical plan:
<u>Possible results</u>	<u>Possible results</u>	<u>Possible results</u>	<u>Possible results</u>	<u>Priority (indicate by #1, #2, #3)</u>
A dramatic way to arouse interest in your plan, among people both inside and outside the community	Good for morale No displacement of residents	Least chance for success, because it is more difficult for the community to attract new work-places than to make important changes in other activities	Good for morale, because all residents can benefit quickly in one way or another Improvements in facilities for	Housing Outdoor recreation Education Other community services Shopping (goods and services) Work Transportation

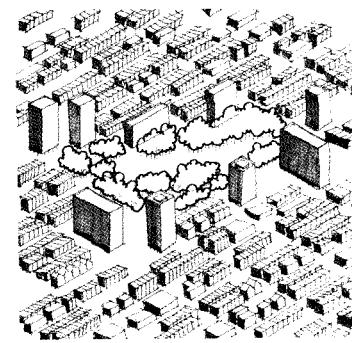
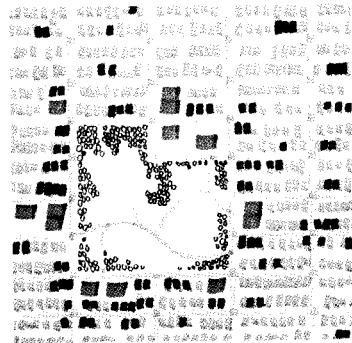
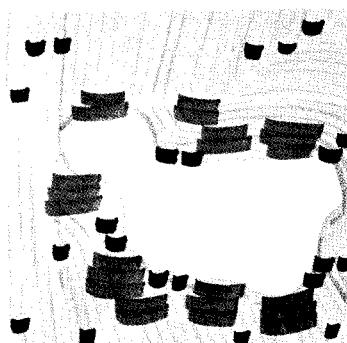
COMMUNITY ACTIVITY PLANNING: GENERAL ISSUE 10

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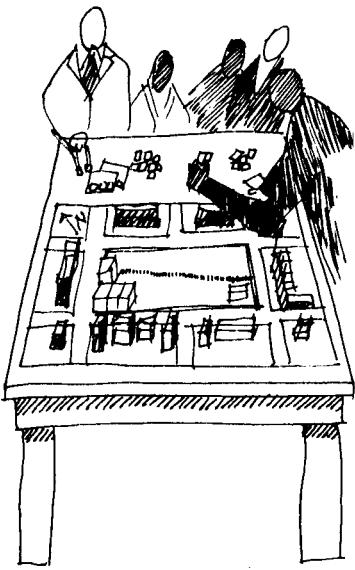
COMMUNITY ACTIVITY PLANNING: CATALOG 2

219



COMMUNITY ACTIVITY PLANNING: CATALOG 4

221



planning of the dwelling unit, there is little latitude for choice under existing standards.

Of course, the workbook provides for correlation between the *site plan* and the *dwelling unit design*. Interestingly, the workbook treats the *buildings* as merely the product of these other two planning processes. The community is bound to put a much higher priority on its dwelling units and site layout than on the shape of its buildings in any rational study of the problem. Maybe there is a lesson in this for architects.

The last step in each part of the workbook is to prepare a report, which is made up of records the group keeps of each step in the process. Included among the pages of this workbook, as in any "workbook," are pages with blanks—where policy and priority decisions can be recorded, where photographs of maps, plans, and models can be mounted, where rent and cost calculations can be worked out.

The wording of the workbook had to be very carefully considered to make it neither obscure nor patronizing. Where technical terms have been avoided—even common ones like "bibliography"—the substitute wording ("other books you may want to use") is not only straightforward, but has *added* meaning.

There is a section of definitions ("using planning and design language"), and some of the entries are concise, pointed essays. For example, "Limited-access highway: A highway which has few exits and entrances, and cuts off local streets that run into it. It carries high-speed traffic through an area without mixing it with local traffic and people. It is a big divider in the city, like a river."

#### Process vs. reality

Although the workbook has not yet been used in the field, its basic method has been. Bob Ganges, deputy director of the Trenton Model Cities Agency, for instance, has used roughly the same technique to focus attention of community groups there on issues, policies, and consequences, and he has passed on his experiences with it at the Princeton seminars. "Often, the community does not trust the plans its own hired professionals come up with," Ganges observes. "The usual reaction to something you don't understand is to

turn it down." Several architects involved in community planning assert that community groups are tired of being *told* what they need; they want to *understand* what they need.

"A lot of officials think that planning is too complicated for community participation," says Lynda Simmons of the workbook staff. "The workbook admits that it is a complicated process, then it gives them a roadmap through it." Some groups, she is quick to point out, may look over this "roadmap" and decide to let a professional follow it for them.

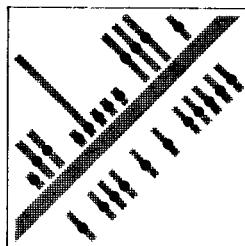
Ganges questions whether participation in planning of dwelling units isn't "going too far." He does not, however, rule out *issues* involving the unit plan. He has sat in on debates about the merits of a window over the kitchen sink, and he considers it healthy for community delegates to take up such issues.

One anticipated criticism of the workbook method is that it will be time-consuming. "You have to contend with impatience both in the community and in city hall," Ganges reminds us. The workbook recognizes this problem, and states its own defense: "The use of this method can take something like two to six months for the development of your own planning and design proposals. It will not make the whole process of getting something done in your community any longer than it has been." While this method may take longer in the initial planning phase, Spring explains, it may save time in the long run by eliminating the wasteful process of scrapping a design and going back to the drafting board.

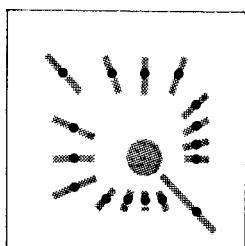
Max Bond, a New York architect and former head of the Architect's Renewal Committee in Harlem, questions this hope. "No matter how diligently you go through the process of developing ideas, they can be thrown out." This method, though admirably logical, is aimed at fixing priorities: "but priorities may shift quickly in a real situation." An incidental occurrence—the appearance of work crews at a site, for instance—can suddenly polarize community attitudes toward a project. Or a new opportunity may arise—perhaps when a new government policy is announced. But people may be reluctant, he notes, to revise policies they have so patiently and

## SITE PLANNING

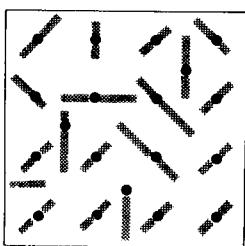
The community group can visualize a housing site concept using model blocks provided in a kit, which are placed on top of an acetate plan laid over a base map (sketch, top left). Proposals can then be recorded with an instant camera.



LINEAR



CENTROIDAL



FIELD

All catalogue plans are categorized in three basic types (sketches, below left) and arranged accordingly in a visual index (page 33). Each catalogue entry (example, right) is based on a project actually built in the U.S. or in Europe. For purposes of comparison, all of these plans have been adapted to a standard, square, four-acre site—roughly equivalent to two typical city blocks.

Several possible arrangements of private and common outdoor space and several ways to provide for parking are shown on one sheet (portion, right), each with references to examples in the site planning catalogue which incorporate them.

Alternative systems of access to individual dwelling units and ways of organizing units into buildings are presented on another sheet (portion, right), similarly keyed to entries in the catalogue. These "access types" and "building types," which reappear in the index to the dwelling unit design catalogue (page 39), can be used to check on compatibility between site plans and dwelling unit plans.

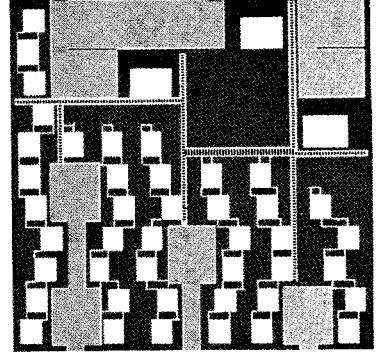
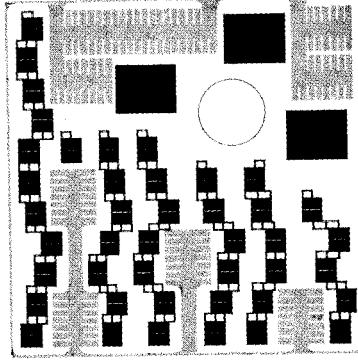
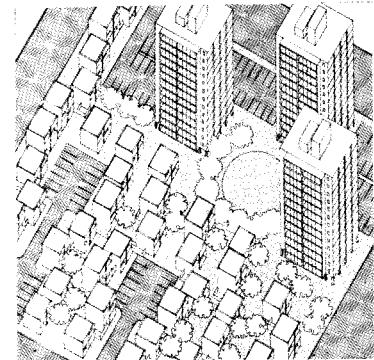
**DESCRIPTION**  
A field organization of:  
three fourteen-story, elevator interior core access towers;  
common open space on grade shared by all dwelling units;  
common parking on grade, separate from and shared by all tower dwelling units.

and:  
two and three story, direct access, row houses;  
private open space on grade, adjacent to dwelling units and common open space shared by groups of dwelling units;  
common parking on grade, adjacent/near to and shared by groups of dwelling units.

adapted from:  
Mill Creek Redevelopment Project  
Philadelphia, Pennsylvania  
Louis I. Kahn, Architect

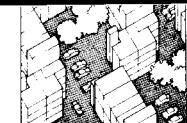
total number of tower dwelling units	234
total number of dwelling units	320
density in d.u./acre	80
total number of tower parking spaces	80
total number of parking spaces	136
parking ratio	0.4

total number of row house dwelling units	86
total number of row house parking spaces	56

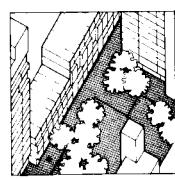


SITE PLANNING: CATALOG D5

399



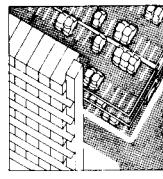
( refer to cases: B6 and E1 )



g. common open space shared by all dwelling units.



( refer to cases: C1,C5,C6, and D5. )



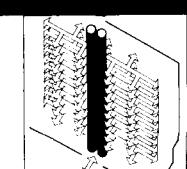
g. common parking in separate building structure, shared by all dwelling units.

OPEN SPACE ALTERNATIVES

PARKING ALTERNATIVES

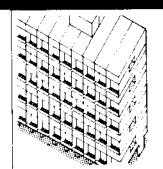
SITE PLANNING: CATALOG: CLASSIFICATION OF SITE COMPONENTS FOR ATTACHED HOUSING

374



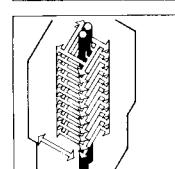
f. elevator, interior corridor access.

( refer to cases: C1,C3,D2, and D3. )



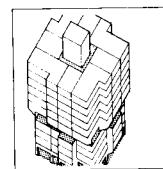
f. interior access stacked units forming a slab.

( refer to cases: B4,C1,C3,D2,D3, and E1, E2,E3 in rehabilitated units.)



g. elevator, interior core access.

( refer to cases: C2,C4,C6,D1,D4,D5, and D6. )



g. interior access stacked units forming a tower.

( refer to cases: C2,C4,C6,D1,D4,D5, and D6. )

III

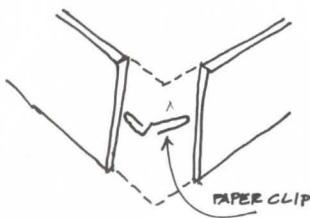
DWELLING ACCESS ALTERNATIVES

IV

GROUPED DWELLING ALTERNATIVES

SITE PLANNING: CATALOG: CLASSIFICATION OF SITE ORGANIZATIONS AND COMPONENTS FOR ATTACHED HOUSING

375



rationally hammered out.

Harry Quintana, of the Real Great Society Urban Design Studio in New York, wonders whether the workbook isn't a fine device for solving the wrong problem: "That's not the process community leaders should be learning." What they really need, says Quintana, is a guide to the political process. Although the workbook does not insist on "working through channels," it fails to encourage any "innovative approach to tackling the bureaucracy."

Bond questions the workbook's effect on politics *within* the community. At best, the workbook will familiarize only a few community representatives with the planning process. There is a risk of setting up an "informed elite," alienated from the rest of the community.

Like Bond and Quintana, Andrew Heard of Chicago's Black Architects Collaborative is impressed with the workbook as a document, but raises doubts about its effect. He sees a danger in directing so much attention toward rational consideration of issues. "If you take strong personalities out of community politics, you might get Milquetoasts." Inspired individuals, he points out, "can often get something out of higher authorities that they couldn't get with a reasoned approach."

#### Prospects for the workbook

The state's plans for using the device it commissioned are not yet firm. A lot depends on the attitudes—so far unknown—of the governor just elected. One thing, however, is certain, according to Alan Mallach of the state's Department of Community Affairs. "The workbook cannot be distributed blind, with no guidance." Mallach hopes to start a pilot program, running for about one year, in perhaps three or four communities. A team of three or four technical advisers could work with all of the communities.

For a full-scale program, the state would probably train a corps of technical assistants. In choosing these aides, the value of technical expertise would have to be balanced against the value of familiarity with the locale. Perhaps a representative from the community could go through a special training program and return to the group to handle technical details and records.

While the future of the workbook for its intended purpose remains in suspense, it has already been put to work as an educational tool for undergraduates in architecture at both City College of New York and Princeton, and it may soon be taken up by other architectural schools. But it could also be an excellent tool for training paraprofessionals—technical assistants, etc.—who will be needed in community planning everywhere. And it could be valuable to lawyers, economists, and other professionals involved in redevelopment projects.

For the present, the workbook remains a promising tool, not yet tested; parts of it will probably fail in some situations. "The workbook method can never make a viable situation out of an impasse," cautions Spring. In fact, he will be pleased if it works in 35 per cent of the situations where the state tries it.

The whole concept of community participation may suffer a temporary setback in the near future, as pent-up demand calls for immediate, tangible construction. In the long run, however, low-income groups which are now testing their organizational skills will not accept planning imposed from above; and middle-class groups are likely to follow suit.

The workbook itself foretells the situation simply and accurately: "In every community there are people who have been cut off from the decision-making process that determines important changes in the area. People who have been in such a position and who now want to use their rights as citizens to take part in the decision making process should find this workbook useful." —JOHN MORRIS DIXON

#### DWELLING UNIT DESIGN

Before community members can try out various unit layouts, using foam-core "walls" from a model kit (sketch, left), they must make policy decisions on a number of "issues" and familiarize themselves with many customary or official "standards" that will affect their design.

The issues cover a wide range of subjects, from income range of residents to window preferences (right). A further note on kitchen windows (not included here) points out that they may be less desirable, and more expensive to provide, in smaller units than in large ones.

The visual index to dwelling unit plans (right) indicates which of the representative layouts in the catalogue are applicable under various conditions of access and building type (previous page, bottom), as well as position in the building—indicated in symbolic sketch plans—and number of bedrooms. In the split boxes, one-story units are listed above the line, duplexes below.

#### CREDITS AND INFORMATION

Planning and Design Workbook for Community Participation, prepared under a contract with the New Jersey State Department of Community Affairs by the Research Center for Urban and Environmental Planning at Princeton University. Staff members: Bernard P. Spring (director), Carmi Bee, Lance Brown, Gordon Gebert, Elizabeth Kassler, Lynda Simmons, Dorothy Whiteman, Charles Zucker, and Margaret Nierenberg. Site planning catalogue drawings by Hanno Webber and Lance Brown. Copies of the workbook can be obtained from the Research Center for Urban and Environmental Planning, School of Architecture and Urban Planning, Princeton University, Princeton, N. J. \$15.00.

Examples in the dwelling unit catalogue (right) have been selected only from projects built recently in the Northeast U.S. under typical government regulations. Each plan is shown in three forms: an accurate plan superimposed on a 2-ft. grid; a diagrammatic plan—showing activity areas, openings, and circulation—which may be helpful to laymen in understanding the other plans and in making suggestions of their own; and a symbolic plan indicating only points of access and exterior walls (which is also used in the index above).

SHOULD THERE BE A WINDOW OVER THE KITCHEN SINK?

Policy A	Policy B	Policy C	Policy D	Policy E
Each dwelling must have a window over the kitchen sink.	Only dwellings with two or more bedrooms need have a window over the kitchen sink.	No window is needed over the kitchen sink if other direct light comes into the cooking area.	Natural light is not important in the cooking area.	Make your own policy on which sizes of dwellings should have a window over the kitchen sink, using the chart.
<u>Possible results</u>	<u>Possible results</u>	<u>Possible results</u>	<u>Possible results</u>	
Cooking and cleaning up is a much pleasanter job when there is a view outside.	Women with the largest families, therefore with the most kitchen work, rightly have the pleasantest working conditions	The cooking area can be cheerful if it has top light, or if it looks through the dining or living area to windows beyond	Many housewives disagree with this policy	
Mothers may be able to supervise outdoor play areas or chat with neighbors while they do their kitchen work	The women who are most likely to have children playing outside have a chance to supervise them while they do their kitchen work	Housewives have no chance to supervise outdoor play or chat with neighbors while they cook or clean up		

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ACCESS TYPES	BUILDING TYPES	DWELLING UNIT ACCESS AND ORIENTATION TYPES											
		0 br	1 br	2 br	0 br	1 br	2 br	0 br	1 br	2 br	0 br	1 br	2 br
Direct Grade	Units Forming a Row	1	5	11									14,17
	Court Units			11,12			13						14,16
	A	3 br	4 br	5/6 br	3 br	4 br	5/6 br	3 br	4 br	5/6 br	22	34	
											22,23	34,35	39
		22,26,27			32	33							
Stair-Exterior Gallery	Stacked Units Forming a Slab				0 br	1 br	2 br				0 br	1 br	2 br
	B										2,3	7	17
													14,16
					3 br	4 br	5/6 br				3 br	4 br	5/6 br
					26						23	34,35	39
					26,27								

DWELLING UNIT DESIGN: CATALOG INDEX

550

3 Bedrooms	A	3 Bedrooms			
3 Bedrooms	A	3 Bedrooms			
Total Area Shown Above	935 S.F.	Total Area Shown Above	1020 S.F.	Total Area Shown Above	755 S.F.
Max. Area / H.A.A. Standards	900 S.F.	Max. Area / H.A.A. Standards	900 S.F.	Max. Area / H.A.A. Standards	900 S.F.

DWELLING UNIT DESIGN: CATALOG 22

573



# LOGICAL LAND USE

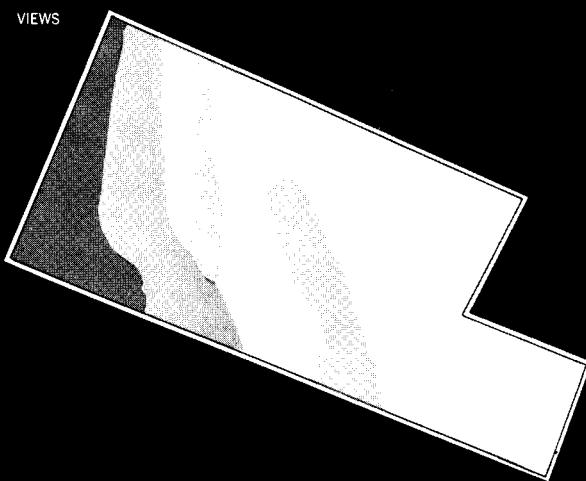
Housing in Vermont that preserves  
the land instead of destroying it

The attractiveness of the Vermont landscape is, ironically, its worst enemy, and the extraordinary influx of vacationers threatens to destroy the very qualities that make Vermont appealing. The challenge in using the land includes the challenge of saving it too, and the housing development shown here, although only four units at the start, has lessons for any area with the special dilemma of attractiveness.

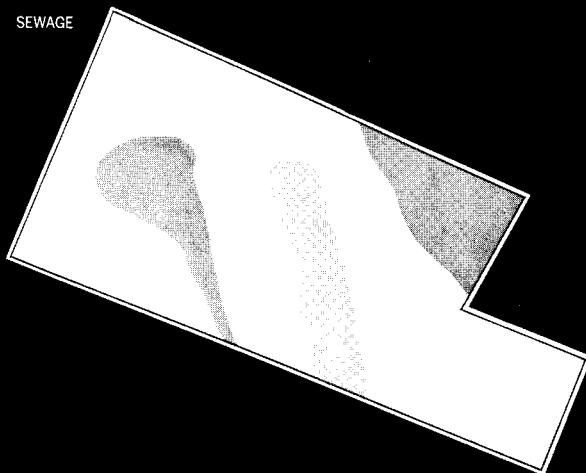
Even in the first four units of Locus Bolton, the intention of

the architectural designer, Peter Gluck, is clear. By clustering the units on the most favorable part of the large site, he leaves the rest largely undisturbed, and in the process gets sizeable parcels for community facilities.

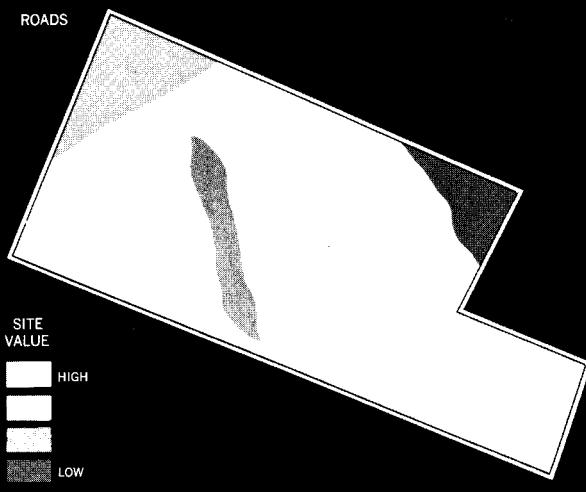
The concept is seen clearly on the schematic maps. First, the large site is evaluated in terms of several selected factors—views, sewage, roads—the lightest shade indicating the most valuable portions, and the darkest shade the least valuable. (Value refers to



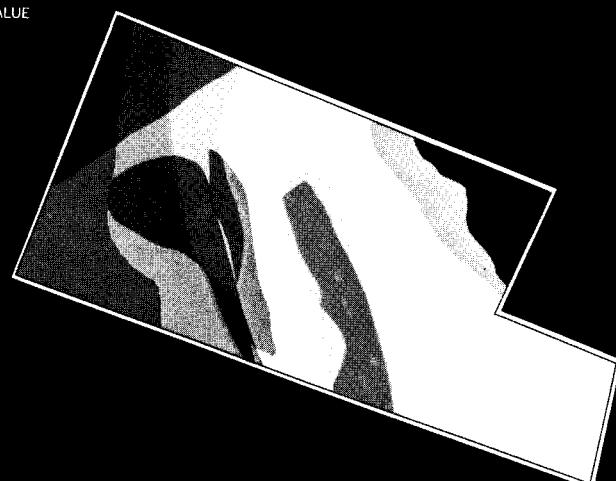
SEWAGE



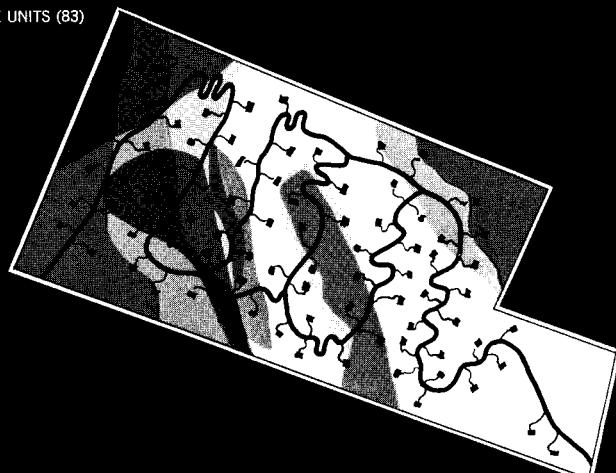
ROADS



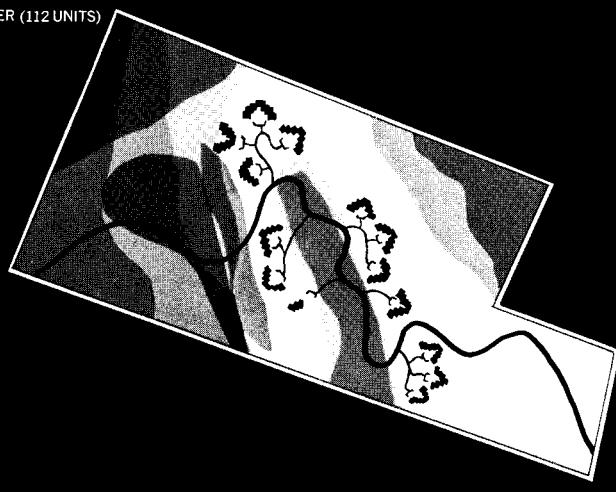
SITE  
VALUE  
HIGH  
MEDIUM  
LOW



SINGLE UNITS (83)



CLUSTER (112 UNITS)



dollar value—highest where the view is best or where it is least expensive to put in roads or sewage.) Other factors could also be evaluated—water supply, soil quality, or edge conditions.

Then the three maps are superimposed, and different layouts compared. It is immediately apparent that this site could hold only 83 units of conventional housing, compared to 112 units of clustered housing. It is also immediately clear that few of the single houses would end

up on the most valuable land. "The mind is a terrific computer," says Gluck, "and an architect does this kind of overlay in the mind all the time." But he finds these maps a good device to show a developer. For one thing, they speak the language of dollars and cents that a developer understands; there are no intuitive (and therefore arguable) opinions such as whether a house is best sited on the top of a hill or the side of a hill.

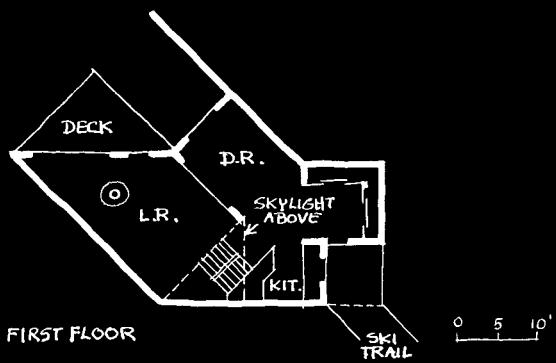
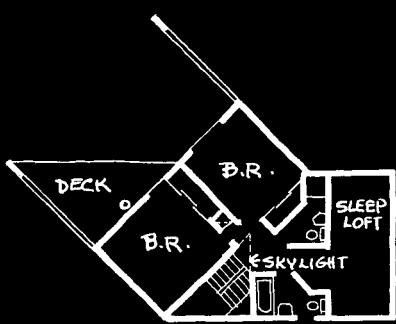
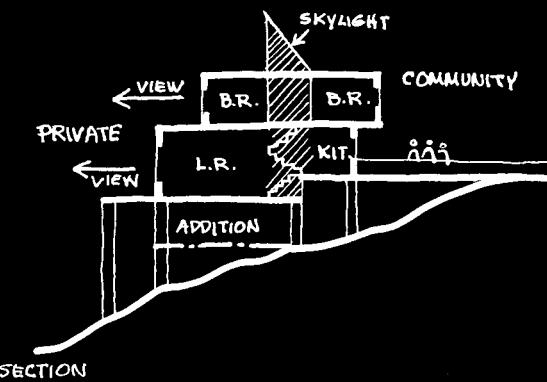
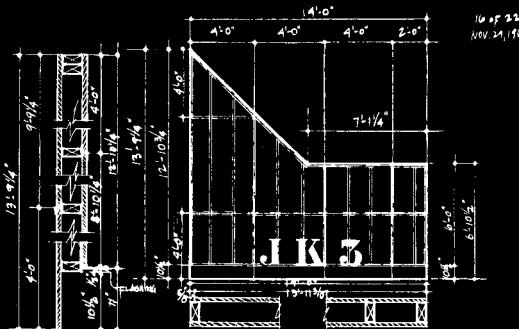
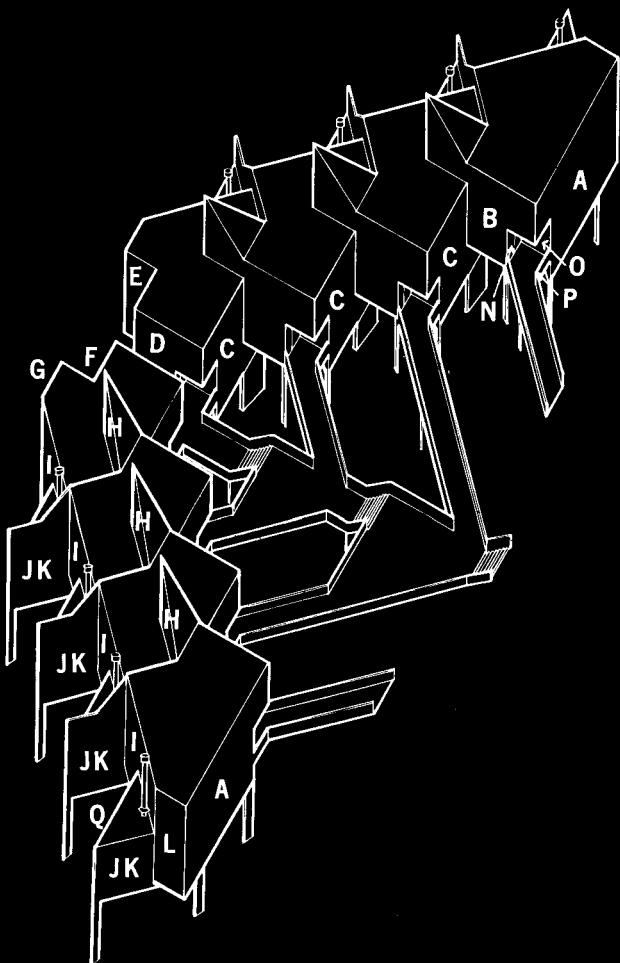
Gluck also analyzes the costs

of providing roads and utilities under both conventional and cluster development, and the argument for clustering—again on an economic basis—is persuasive. A developer's response to clustering is positive for still other economic reasons. With detached units, each owner usually wants a different design, reports Gluck, but with a cluster pattern the owner is more likely to accept standardized design. Then too, as a cluster development proceeds, getting more

community facilities, that community becomes *more* appealing to prospective buyers; while as a regular development proceeds, using more land, that community becomes *less* appealing.

#### The idea realized

When it comes to particular factors in the site analysis, or to the particular form of the housing cluster, Gluck says about Locus Bolton, "This is a way; anything specific is less important than the idea itself."



Locus Bolton, the first realization of the idea, is in the Bolton Valley ski area, some 18 miles east of Burlington. The four initial units are only half of a typical cluster; joined by a mirror four, they will demarcate a large deck on the entry side, making for a communal back yard that offers something more than the usual parking lot. Each house is reached by a private entrance bridge, and has private decks opening to the view. The broad-V staggered plan gives

complete privacy to these decks; the V-plan also gives each unit exposure on three sides (a skylight lights the fourth).

In a total of 1,200 sq. ft., each house has living room, deck, dining room and kitchen on the lower level, and four bedrooms, another deck, and two baths on the upper level. If more space is desired, an additional story can be hung below the lower level. Since this optional floor does not rest on grade, the house as a whole is independent of

fluctuations in grade; any differences in grade can easily be taken up by the entry ramps.

#### The structure prefabricated

Masonry walls divide the units, but otherwise the construction is conventional wood frame. The construction process, however, is anything but conventional.

The complicated outer form of the building was broken down into its component wall panels (see isometric perspective) and a shop drawing made of each of

the panels (see typical drawing). The drawings were turned over to a local carpentry shop, where craftsmen unaccustomed to building anything very sophisticated found it relatively easy to turn out these panels. The shop's employees—four to six men during this job—concentrated on making one panel at a time, making all they needed, then moving on to the next. (Floors, roofs and interior partitions were built on the site.)

This prefabrication system is



only two-dimensional—not a three-dimensional box system complete with electrical and plumbing work. Gluck believes that a panel system is not good enough, although it gives more design freedom than a box system. And the finished panels can simply be stacked against a wall in the shop until ready to go to the site. Boxes would present a serious storage problem, especially for the small shop that could otherwise easily manage this kind of job.

The real value of prefabrication in this case, says Gluck, lies in "getting the product fast, and getting it when you want it, and maintaining quality control." Also, he points out, it is a way of getting a rather complex building built at all, in areas of the country where builders will either refuse to bid such a job or will automatically figure it at a premium because of its unfamiliarity. The advantages of this prefabrication over conventional construction do not show up

markedly in the cost—these first four units of Locus Bolton went up at \$15.75 per sq. ft.—but a developer will see savings in the short construction period.

Gluck, in fact, finds that in analyzing the site and designing for prefabrication, he establishes, beyond doubt, the economic value of having an architect. He proves his worth by saving money for the developer and land for the residents. This worth is verified by the fact that Locus Bolton is expected to

move ahead this next year, along with similar Gluck-designed projects in the Virgin Islands and on Martha's Vineyard.

—ELLEN PERRY BERKELEY

#### FACTS AND FIGURES

Locus Bolton, Bolton Valley Ski Area Bolton, Vt. Developer: Architectural Research and Development Corp. Designer: Peter L. Gluck. Building area: 1,200 sq. ft. in each of four condominium houses. Construction cost: \$18,900 per unit (excluding site, water, sewage, road, fees).

PHOTOGRAPHS: Norman McGrath, courtesy of **House Beautiful**.

When Urban Design Development Group Inc. held a recent party for its staff and a few guests, it seemed especially appropriate that piled near the desks and drawing boards were plates of soul food. For this is a black design firm, created by black professionals, architects and planners, for and in their black community—in the heart of riot-torn Detroit.

Like the Urban Workshop in Watts (Jan./Feb. '69 issue), this firm started from an idea of training ghetto youths in planning and design, and it has grown into a highly professional operation which now has various projects in housing and planning underway, plus the originally intended program for students and trainees from the slums.

The enterprise began with a minimum of capital (\$2,000), the willingness to work 18-hour days and seven-day weeks for little or no immediate return, and the instinctive belief that they knew the special needs of their clients, because they had grown up alongside them in the ghetto.

Today, Urban Design has several dozen personnel, both full-time and some who still work for white architectural and engineering firms, devoting spare time to this venture. The offices occupy two floors in the Architects' Building, a seven-story structure in a district five minutes north of the prosperous downtown, but itself still engulfed by decaying apartment houses, bars, cheap stores, boarding houses and a skid row. On the upper floor are the architectural and engineering facilities; on the lower floor are administrative offices, and the training school. Eventually, the first floor will be rented for a future building trades program.

**A**ubrey C. Agee, a partner in the firm Griffin, Ward and Agee, heads up the architectural and engineering arm of the outfit. He, like his colleagues, is absolutely convinced that the rebuilding of the predominantly black central city slums must be done by black professionals: "They are related to the people. They are part of the areas. They talk the same language, have

**Mr. Aumente** is on the faculty of the Division of Urban Studies and Community Development at Livingston College in New Jersey.



## URBAN DESIGN WITH SOUL

BY JEROME AUMENTE

the same interests and wants.

"I live in the neighborhood. I live in Hendrie and St. Antoine, right in the heart of the area, and I can see the people next door. These people need help. There are so many things they don't know. They're good people, hard-working, honest people, and we could actually do something for them. It would strengthen the whole city."

Hank Rogers, 37-year-old president of Urban Design, sees black firms as the only true experts on the urban needs of blacks, and he says: "There's going to be a lot of money coming into the black community and I can see the white contractor, and architectural and engineering firms wanting to come back into the inner city to exploit this."

"As far as I'm concerned, all the work in the inner city should be done by black people—by

black designers, by black contractors, by black architects, and by black planners.

"It was our feeling that most of us [in Urban Design] had spent a lot of time working in white architectural offices, primarily working on industrial and commercial projects that were going to be developed in Suburbia USA. But very few of us did anything in developing the areas where we lived in the inner city."

Rogers argues that the white firms have a virtual monopoly in the suburbs, and the black firms need every bit of inner city work to redress the balance in a laissez-faire system which has not really worked out that way. He also sees this as a way of keeping money spent on redevelopment within the black community, rather than having the dollars bounce outside the ghetto.

"We were also," he adds, "cog-

nizant of the fact that as long as we stayed with the white architectural firms, at best, even with degrees in architecture, engineering, and planning, we would end up as glorified draftsmen, never really being given the opportunity to develop a project, head up jobs, and be in a position to make management-type decisions that relate to them."

Or as a young associate put it: "We are still in the day of Super Nigger. You have to be better than everyone in the office before they give you the job."

The thrust of Urban Design Development Group Inc. is their interdisciplinary approach. Rogers says that "pure architecture and pure engineering are not going to address themselves to the problems black people have in the urban areas (we call them urban areas now—that's more sophisticated). Because they are not pure architectural and engineering problems. There are sociological and economic and psychological aspects. There's education, training . . . black entrepreneurship.

"All of these things are part of the total problem in the urban areas that have to be addressed, and we feel a traditional A & E firm, cannot, in fact, address itself to the problems in our community."

As part of this interdisciplinary approach, Urban Design has provided assistance in business management, financing, industrial product development, and even personal services, all of which are geared to the needs of the black community.

**T**he firm has established a personnel agency to provide technical people to work in white corporations, though, to date, white firms have been slow to respond. It has developed a management division which is giving technical and financial advice to black businessmen seeking loans from private and public sources. And the management services division also includes a recently established experiment in which a dozen students (from Lawrence Institute of Technology) have formed an industrial design team. They will test, develop, and package patentable ideas from the black community and work with the industrial display services that are needed.

Other "free advice" has gone

to more than 43 neighborhood groups, primarily in Detroit, to wade through the morass of paperwork and planning related to nonprofit housing sponsors and amateur neighborhood conservators. It is helping dozens of such organizations incorporate as potential nonprofit housing sponsors. Among its more specific projects for such nonprofit sponsors is the rehabilitation of clusters of four-bedroom homes on Detroit's eastside, and of units on the westside. Some of these groups have unearthed funds, and are now beginning to return the favor with contracts for the firm's services.

Urban Design, too, sometimes finds itself in the role of ombudsman, as in its work with the group challenging dislocation in the Art Center area. In another instance, the firm found Detroit's estimate of relocation need for one project underestimated; it sought to bring it into more realistic dimensions.

**B**ut the firm's major projects do, ultimately, deal with housing. The firm has done studies for the ambitious eastside Elmwood Park renewal which began with the glass-sheathed apartment towers and townhouses of Mies van der Rohe in Lafayette Park, and belatedly is getting around to housing the poor who are displaced.

The firm is currently involved, with neighborhood groups, in proposals for redevelopment of five residential inner city sites, ranging in size from a 12-sq.-block area to a 1,000 acre site.

In two major projects, one in the riot-scarred 12th Street area, and one in the ghetto of Pontiac, Mich., where upwards of 10,000 blacks live, Urban Design has been working closely with Metropolitan Detroit Citizens Development Authority (MDCDA), established before the 1967 riot. With \$5 million from New Detroit Inc., the city's local Urban Coalition, it has pursued the twin goals of spurring badly needed low- and moderate-cost housing by providing seed money and technical advice to nonprofit sponsors, and encouraging black-run firms to do the work involved.

In the 12th Street area, Urban Design is the architect for the rehabilitation of nine apartment houses which have been bought from a slumlord by a

group, the United Tenants for Collective Action, which had successfully conducted rent strikes against slumlords. MDCDA loaned the tenants' group the initial funds, and ultimately they will acquire and rebuild the structures with federal mortgage guarantees. The total cost of acquisition and refurbishing of the 288 units in the buildings will be about \$3 million.

In 1968, Urban Design and MDCDA joined together to help a disparate coalition of black groups, from militant to moderate, plan for the redevelopment of one of Pontiac's worst slums, a swath of land near Crystal Lake, subject to flooding from the Clinton River, and pock-marked with deteriorating private and public housing. The area is marred by industrial uses, a junkyard, the scars of a mini-civil disturbance; and the neighborhood's 10,000 residents are almost all black. Many work in the nearby General Motors automobile plant.

Urban Design contracted to do the physical survey, produce recommendations for a comprehensive redevelopment plan, and coupled this with a social survey that probed the aspirations of the black residents. Harambee Inc. (Swahili for "Let us work together") was the coalition of black Pontiac groups that received the results.

Edward Ewell, vice-president of Urban Design, and the urban development and housing consultant says: "At that time, we had no experience in planning and we took that project as a challenge to prove ourselves in the area. In order for us as blacks to get into this, we had to do it at a third of what we should have been paid. We didn't even break even, but it was an entree for us to show what we could do."

Harambee Inc. and the city now have the results of the studies and a development plan calling for a staged program in which ultimately \$31 million in new construction, and 1,810 units of housing on 175 acres of land, would be built. The General Motors Corporation has advanced a \$1.1-million, interest-free loan to Harambee—which will be repaid as housing is built and is sold.

Agee has proposed several design concepts for free-standing (but cooperatively owned) structures, rentals and industrialized

housing. Two projects, the Martin Luther King Jr. Terraces and Medgar Evans Homes, will be lowrise; another will have two highrise towers and more single-family housing. Urban Design has proposals for creation of badly needed commercial facilities (an acre has been set aside for a shopping center for black-owned businesses), removal of the junkyard, transfer of public housing to cooperative ownership. Recreation would be tied up to cleanup of the polluted lake, and a wooded area.

Major realignment of traffic would reduce the heavy flow of transient movement through the neighborhood. Parks, tot lots, and greenways would soften the harsher qualities of the district. An Army installation would be put to recreational use. The stages of development would be staggered (building under various government programs) to allow residents to move into new housing without being displaced.

The plan must be worked into the city's master plan, and eventually the potpourri nonprofit housing, commercial development, and municipal urban renewal using federal funds could bring Pontiac's residents to a new community hand-tailored to their own dream.

**B**ut Urban Design has not lost sight of its original goal: nudge more black youth into the field. Hank Rogers says flatly: "Any 18-year-old black fellow that wants to be an architect is not going to stand a snowball's chance in hell unless he is going to meet other black people who are willing to give him a hand and assistance."

He believes black students as early as elementary school are discouraged from going into architecture and engineering, and those who do reach college are then advised to go into some "safe" area like teaching. He believes the federally funded job training contracts today are geared towards "last-end" jobs for the ghetto youth. If a black does reach the point of being hired by an architectural firm, he says, a generally discouraging period of being held back sets in; it is extremely hard for a black architect to make it.

Urban Design is a magnet for black students and trainees from the slums who believe that here is a place to do their own thing.

Even on weekends, the offices are busy with the youths in the training program called the Urban Design Institute; it is now licensed by the Michigan State Board of Education. Michael Franklin, who heads the program, estimates that about 15 youngsters from the ghetto have been trained each year, and there were 60 in the program this last summer. They are given free training, evenings and weekends, in drawing techniques, instructions in preparing planning surveys, maps, and reports. There is basic drawing for beginners, and more graphics and reproductions for the advanced. Additional help is given in urban design and model making, and methods of obtaining planning data. Some of the students have gone on to drafting jobs, university, or employment in local firms.

The firm has paid for the free training out of its own funds, and, despite letters and applications to federal and private funding agencies, has yet to get financial support beyond one small stipend. (The letters all generally praise the idea, and then boot the request on to another agency.)

The firm does hope to absorb some of its own trainees when the volume of work increases. The Model Cities effort in the city will be the source of additional contracts, and the firm will eventually benefit from the allocation of bonding for low-cost housing, under the auspices of the State Housing Development Authority.

In the meantime, Urban Design is strengthening its own projects and ideas and programs. As Aubrey Agee puts it: "A chain is only as strong as its weakest link. We can strengthen these weak links. We can have a solid city, and a people proud of themselves."

Does this mean that only the black professional can rebuild the black slums of the city, and hopefully do it as a profitable business venture?

"White, black, green or brown, whoever he is, if he has the interest . . . the people give him the same response as anyone else. It is not a matter of color," Agee says. Then he assessed the performance of most white professionals to date and added: "But they don't have this interest. Their interest is solely the dollar."

# ■ FOCUS

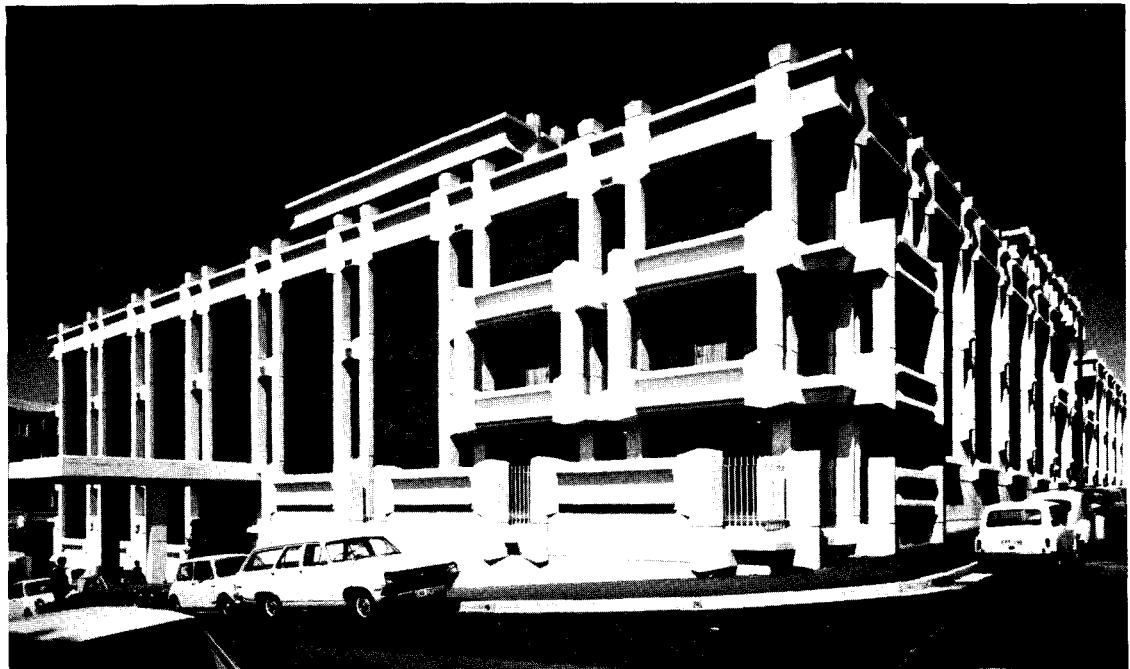


#### ORTHOTROPIC SPAN

The serpentine sweep at left is the bright blue, 2.2-mile-long Coronado-St. Diego Bridge in California. It weaves a 90-degree arc across the bay, and is the highest orthotropic bridge in the U.S. The continuous orthotropic girder is 1,880 ft. in length, in three spans, the center one being 244 ft. from the water. This orthotropic section allows unequal flexibility on two perpendicular directions along the girder.

The rest of the bridge is of prestressed concrete girders supported by pairs of concrete piers. No supporting structure rises above the surface of the bridge—only a 3-ft. concrete railing flanks either side of the roadway. This 60-ft.-wide roadway has five traffic lanes; the reversible center lane has remote-controlled pop-up tubes which automatically set the direction of traffic.

Architects Stephen Allen of San Francisco and Robert Mosher of San Diego designed the lines of the bridge.

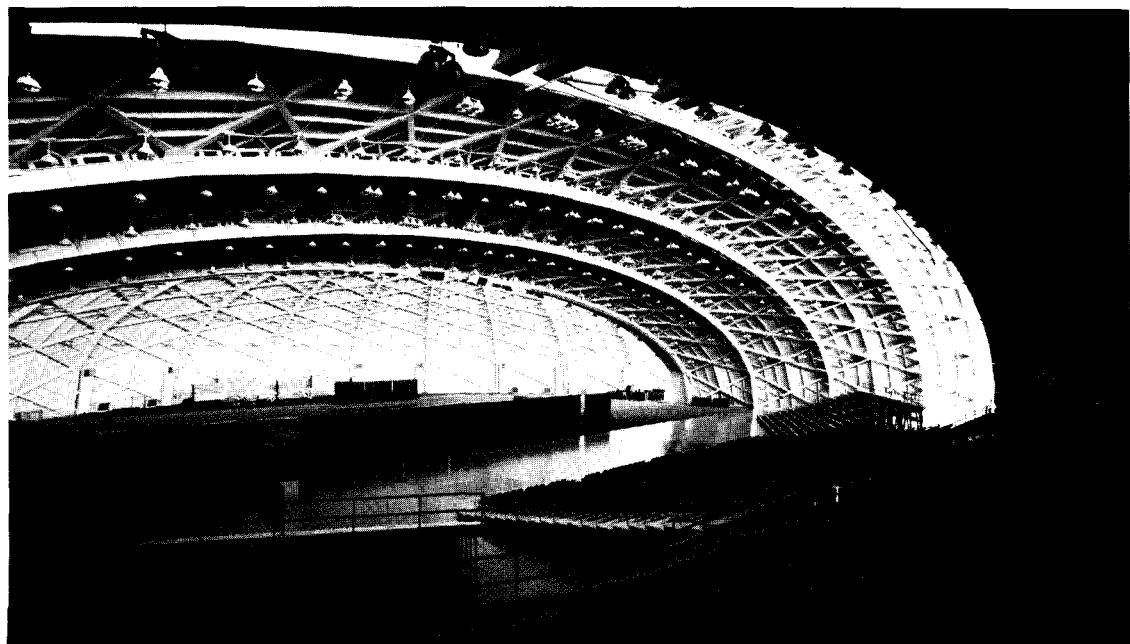


#### DIGEST DOWN UNDER

In a Victorian setting of massive warehouses and small terraces is the Sydney, Australia, office of the Reader's Digest Association. The \$2-million, 120,000-sq.-ft. structure was designed by John

James & Associates for the Digest's mail order business. The building is divided into four levels: parking (on the lowest level), storage, computer operations (for the mails), and administration. The exterior is of

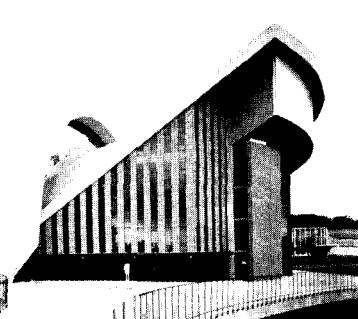
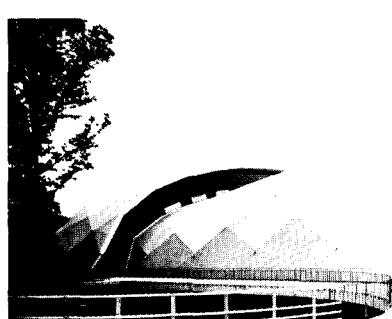
molded exposed structural elements and brick infill. Paired columns of poured-in-place concrete are connected by spandrels. Cast iron grilles, corner posts, and balustrades were added by Sculptor Douglas Annand.

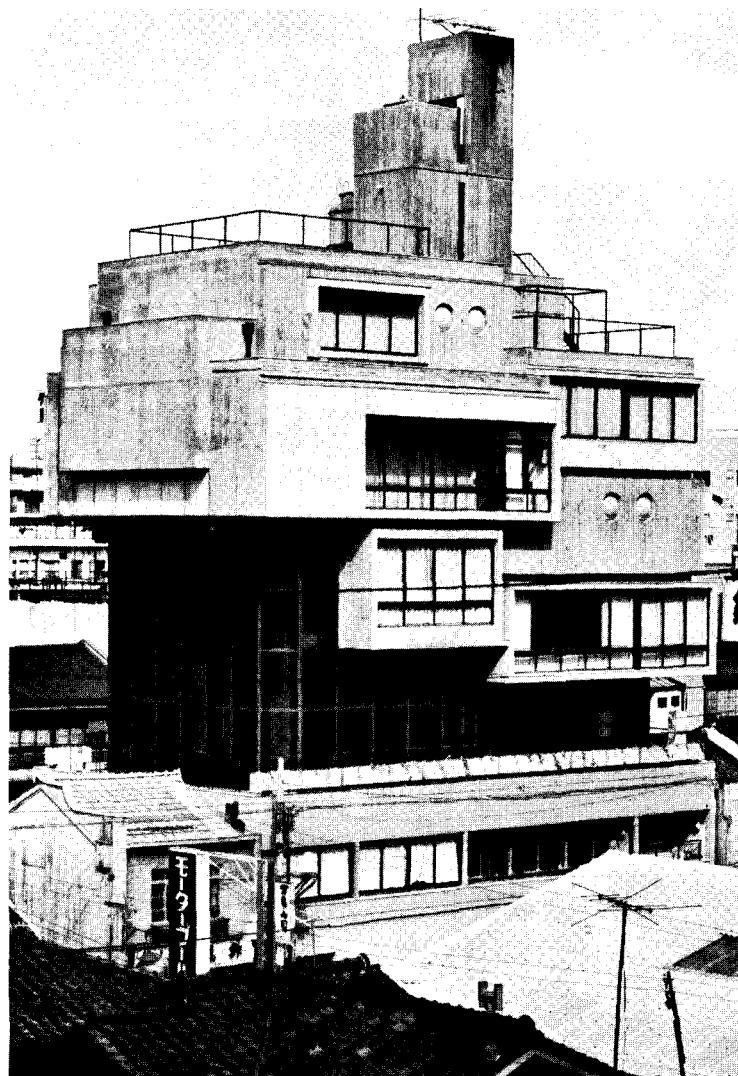


#### TIGERS' CAGE

The immense L. Stockwell Jadwin Gymnasium (alias "The Cage") at Princeton University looks like a giant snail leaving its shell behind. The shell, a 390-ft. span of exposed steel ribcage, covers (in two parts—a half dome and a half cone) basketball courts, tennis courts, and an area for track and field events. The third part of the structure

is a lobby with a balcony above where 3,500 permanent seats are installed. A lower level, mostly below grade, contains space for fencing, wrestling, squash, more tennis, baseball, and shotput. In addition to athletic events, the Cage can be used for meetings, graduation exercises, and concerts. Architects: Walker O. Cain & Associates; Engineers: Severud-Perrone-Sturm-Conlin-Bandel.





#### TEMPLE OF MANY FACES

The Jian-ji Temple in the developing downtown area of Osaka, tries to reconcile, in the same structure, the religious and the civic, the Japanese and the Western. And, at the same time, it tries to reconcile an assortment of building materials, textures, and planes.

The Temple is constructed on six levels; the first contains a worship hall and offices and the second has the priests' quarters. The third floor (glassed-in in photo right) acts as a transition between the religious floors below and the civic floors above. It has a lobby and refreshment area. Audio-visual facilities for classes, and exhibition space and a stage are housed on the fourth and fifth levels and are in the Western style. A Japanese-style meeting room is on the top floor.

Architect: Kiyoshi Kawasaki of Kyoto University.



#### CONVENTION CAVERN

New Orleans' latest addition to its new International Center is the enormous, six-block-square Rivergate Exhibition and Convention Center. The \$13.5-million center is constructed on four levels; two underground parking garages for 800 cars and two exhibition-convention floors above.

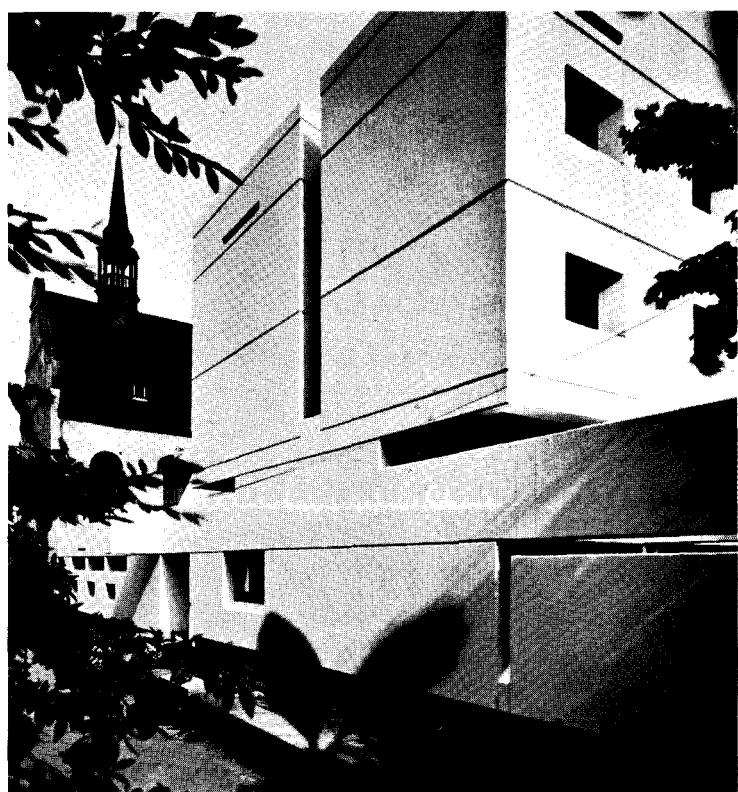
The 132,500-sq.-ft., column-free main hall rises two stories to an undulating concrete barrel roof (above) and can seat 17,500 persons. At the rear of Rivergate, behind the main hall, are two separate floors (447,500 sq. ft.) for meeting rooms, lounges and cafeteria space.

Architects for Rivergate were: Curtis & Davis, Edward B. Silverstein & Associates, and Mathes-Bergman & Associates.

#### CONCRETE CLOISTER

The monastery for the Brothers of the Church of St. Sebastian in Neus, near Düsseldorf, in Germany, was designed by Architect Joachim Schürmann. The cloister (below) is a single-story square surrounding an atrium-garden. The concrete wall facing the atrium is punc-

tured by slits of different heights and widths. The dormitory building adjoins the cloister; the lower level contains the rectory and recreation room opening to another garden. Monks' cells are located on the upper floors. The entire structure is of exposed reinforced concrete with the outer walls serving as bearing walls.

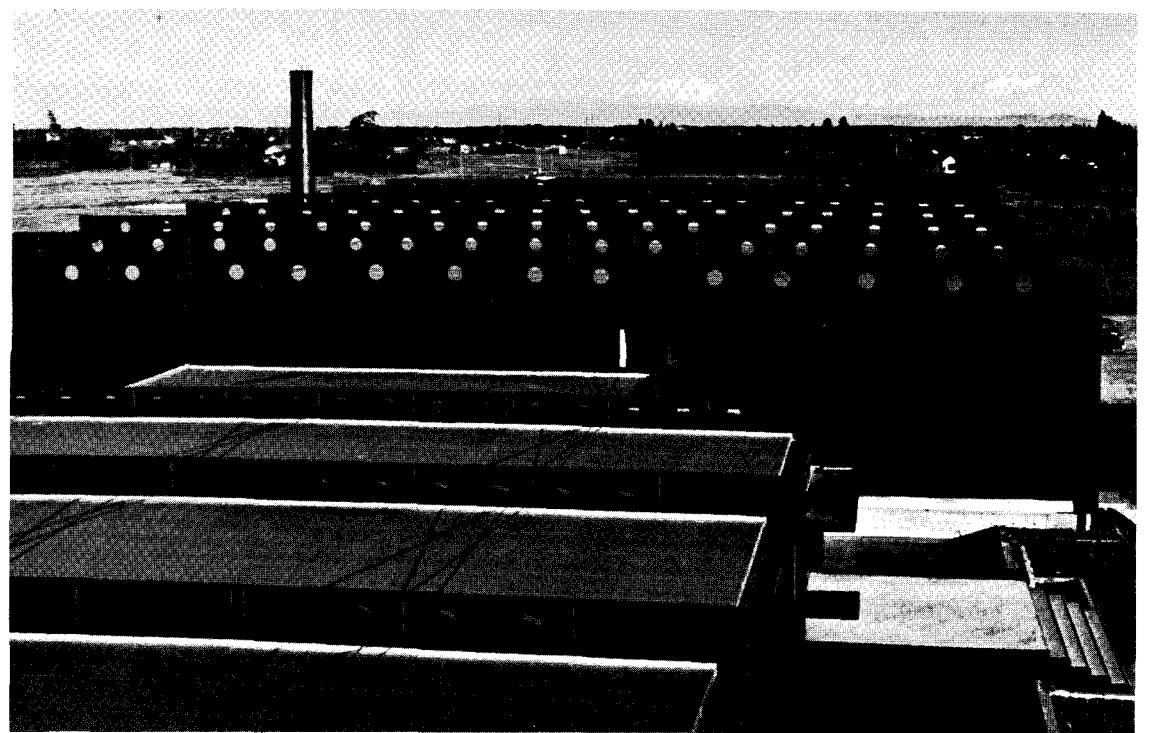




#### RECORD-SETTING FACTORY

CBS/Sony Records in Oigawa, Japan, chose a strategic location on the express throughway from Tokyo to Kobe for their new factory; it is convenient to the three major record sales outlets; Tokyo, Kyoto, and Osaka.

For the factory, the architectural firm of Takenaka Komuten Co. Ltd. chose a low-slung scheme based on a grid system. This grid is flexible and can be expanded, both for the factory wing and for the separate office wing, as the factory grows. The inner shell of the building is independent of the outer; walls of both are moveable. The trusses, (above) are exposed, revealing the modular system.



PHOTOGRAPHS: Page 47 (top), Diane Graham/John Garth; (bottom), Norman McGrath; page 48 (top left), courtesy The Japan Architect; (bottom), Helmut Stahl; (top right and page 49 top), Frank Lotz Miller; (bottom), Ryoo Hata, Studio Murai.

# WOMEN IN ARCHITECTURE

BY BEATRICE DINERMAN

**W**omen constitute less than one per cent of the total number of registered architects in the United States—under 100 out of a total of some 20,000. Only one architect in 200 is a woman and women represent less than 5 per cent of all architectural students.

Why do so few women choose to join the profession? Is there something inherently masculine about the field of architecture, requiring certain traits and capabilities not generally associated with feminine attributes? Why does the architectural profession appear to welcome women into its ranks and, at the same time, continue to erect subtle discriminatory barriers against them? And, most important of all, what can be done to stimulate more women to enter the profession and assure them a gracious reception from both clients and colleagues?

Architecture, much like law, engineering, and business, has always been thought of as a man's field. This distinction, an outgrowth of a cultural heritage that assigns quite different, mutually exclusive roles to men and women, has had an unquestionable impact on the architectural profession, diverting the energies of girls who might otherwise be attracted to architecture into more acceptable "feminine" careers.

The image of the architect as a masculine figure is a holdover from an earlier era when architects were closely related to unprofessional, skilled craftsmen,

and much of their work involved considerable physical strength and direct contact with construction crews, often in a supervisory capacity. Today, architecture requires more intelligence than manual expertise; the average architect spends far more time at his desk than straddling the steel framework of some building under construction.

Ignoring this shift in emphasis, the lay public has continued to view the architect as a relatively tough, masculine figure. Girls planning a career and firms employing architects are influenced by this stereotype.

This traditional, sex-linked division of labor has produced a number of potent myths concerning a woman's ability to function effectively in a field such as architecture. Doubts range from her very intelligence and competence, to her loyalty to the profession in terms of the pull toward home and family, to an excessive emotional involvement which could prevent an objective approach toward her professional responsibilities.

Architectural school deans across the country report no appreciable distinctions between their male and female students, clearly refuting the myth of inherent, sex-linked capabilities. On the contrary, it would appear that women tend to outperform men scholastically, exhibiting far greater motivation and far greater drive and accounting for a far greater proportion of top students.

"Although only 2 per cent of our students are women, they usually rank in the upper 5 per cent of their class," reports Dean Emil Fischer of the College of Architecture and Design at Kan-

sas State University. "In general," he continues, "women seem to be more definitely motivated and try to excel. Once they choose the profession of architecture, they apply their total energy toward becoming as proficient as possible." Women students who succeed in completing their program have tremendous drive, motivation and superior performance.

**N**ot only are women architects as competent as men, they share an equal dedication to their work, successfully overcoming the temptation to leave school, marry and raise a family. Architectural school deans report that the percentage of female dropouts is generally no higher than for men. While marriage and motherhood are dropout factors in some cases, more often those women who do discontinue their studies leave for much the same reasons as men—financial problems, or a change in career focus, or some personal setback.

"Marriage does not seem to be a factor," says Dean Robert Dietz of the College of Architecture and Urban Planning at the University of Washington. "Like the men, they simply keep on going to school, even during periods of obvious expectancy." In observing that most women students continue their studies and graduate, Joseph Sabatella, assistant dean in the department of architecture at the University of Florida, attributes this tenacity to the fact that "women who enter the program have generally made an extensive study of their relationship to the profession prior to beginning. Consequent-

ly, they possess higher interest and motivation."

Such observations could well represent a significant step forward in encouraging women to enter the architectural profession in greater numbers. Yet, the imperative of changing social tradition so that girls are no longer conditioned to see certain occupations as being masculine by nature remains a tremendous challenge. This exceedingly difficult task will, above all, place an ever increasing burden on educational counseling.

Unfortunately, high school and college counselors, far from encouraging more women to enter architecture, have had a negative influence. In raising the question with a representative sampling of female architects, close to two-thirds reported receiving no encouragement whatsoever from either professional counselors or university faculty members. In fact, over half of this group was actively *discouraged* from choosing architecture as a career, with sex representing the determining factor in virtually every case.

In tackling the problem of attracting more women into architecture, several constructive steps have been suggested: a greater emphasis on positive educational counseling; a central employment registry for women seeking architectural positions; the greater availability of part-time work; development of refresher courses for women architects who, having dropped out of the field to raise a family, now choose to return to their profession; research into sources of domestic help for professional mothers and tax relief for women so employed; an educational campaign designed to

Miss Dinerman is the co-author of *Southern California Metropolis*. This article is part of a book in progress on sex discrimination in various professions, including architecture.

change the image of architecture by, for example, depicting women architects at work in career brochures; and a more active involvement by architectural associations and by the women architects themselves.

But, the success of even a most rigorous program of this nature hinges on another question: Does the architectural profession truly want women as colleagues?

Most women architects feel they have been subjected to some degree of bias because of their sex, noting a wide variety of discriminatory practices.

Female architects agree that their most serious setback occurs in getting their first architectural position. "There is no doubt that discrimination exists" is the unequivocal conclusion of one self-employed West Coast female architect. "Some employers hire a woman so they can feel heroic, but most firms are more conservative, using a variety of excuses and rationalizations for not hiring a woman." Given the choice between an equally qualified male and female job applicant, the architectural firm will invariably select the male.

Other barriers mentioned most frequently include income disparities for comparable work, the need to specialize in residential architecture in order to win even a minimum of acceptance, and an intense degree of prejudice from contractors which forces architectural firms to limit their female professionals to office work, making advancement to managerial levels and to field supervisory positions so difficult as to be virtually impossible.

Women are often not even interviewed by certain firms for jobs such as project coordinator or field supervisor. One female architect engaged in a successful practice with her architect husband is more intense in her reaction, claiming that "a so-called preference for female architects in residential design is little more than a placebo, diverting attention from severe restrictions against women in other architectural specialties and transforming the female architect into little more than a glorified interior decorator." An ability to devote careful attention to small details is an essential characteristic of the competent architect, yet a woman's special faculty for such attention, used extensively as an excuse for limiting her to tedious, routine responsibilities, is totally ignored when her architectural potential is being considered.

Women architects are especially resentful of the fact that more is expected of them in terms of competence, personal standards, and working relations with others, viewing such expectations as discrimination via the "double standard." "In order to be equal," comments one experienced, middle-aged female architect in private practice, "a woman must be more than equal. Men anticipate her failure and so she must prove herself again and again." And, in fact, female architects are unified in their observation that women architects, to be accepted, must be exceptionally competent, possess an extreme degree of perseverance and stamina, work twice as hard, be gifted with both a thick skin and a sense of humor, and exhibit a consistently excellent

disposition in their working relations with others.

Women architects are not alone in their recognition of sex discrimination. The existence of prejudice in the field, and the degree to which such restrictions might well underly a reluctance of women to enter the profession, have been noted by quite a number of unbiased and objective sources.

Robert J. Piper, in his educational brochure *Opportunities In An Architectural Career*, comments that while there are many openings for women in the field, the opportunities for men are considerably greater, noting that "women are usually subject to lower salary schedules than are men—even for comparable work."

The Bureau of Labor Statistics made a similar observation in its 1967 *Occupational Opportunities Handbook*, terming the employment outlook for women architects "less favorable" than for men. While predicting ready employment for capable female draftsmen, the Bureau concluded that few women are able to establish themselves in private practice where earnings are much greater than those received by even a highly paid salaried employee of an established architectural firm.

Many architectural schools exhibit strong concern over the limited opportunities available for even their finest female graduates, noting a reluctance by numerous firms to even consider employing a female architect as a matter of company policy. Other barriers mentioned include restricted opportunities for advancement, the virtual exclusion of women from managerial positions and/or field responsi-

bilities, lower pay scales, prejudicial attitudes by contractors and construction crew members who resent taking orders from a woman, and a myriad of intangible, psychological obstacles stemming from a general reluctance to consider the female architect as being the equal of her male counterpart.

Some female architects attribute sex prejudice to an economic rationale—a belief that male architects don't want their field invaded by outside competition. Most women reject this explanation, placing greater emphasis on the fact that the successful female architect is viewed as a threat to the very masculinity and ego strength of her male colleagues.

This conviction is reflected in the type of advice offered by women architects to their sisters in the field. "The successful woman architect must take advantage of all opportunities to allow her male colleagues to express their ego," advises a female project architect for a leading university. "Men will only favor the female architect if they feel she needs their support. As she becomes strong, self-sufficient and comes to occupy a leading role, these same men will turn bitter and resentful."

As Ethel Charles so cogently stated in an address before the Royal Association of British Architects, "This should not be a case of men versus women, but a case of individual capability and aptitude. I suppose the reason why women should not practice architecture is because they have not practiced it before, and this is no reason at all."





# TERRACED HOUSE ON AN ALPINE LAKE

Until about 1950, Marcel Breuer was best known in the United States for the beautiful houses he had designed and built in New England.

Since then, much of his work has been on a considerably bigger scale, and he has not had the time to design many single-family residences. This has been a real loss to residential architecture here and abroad.

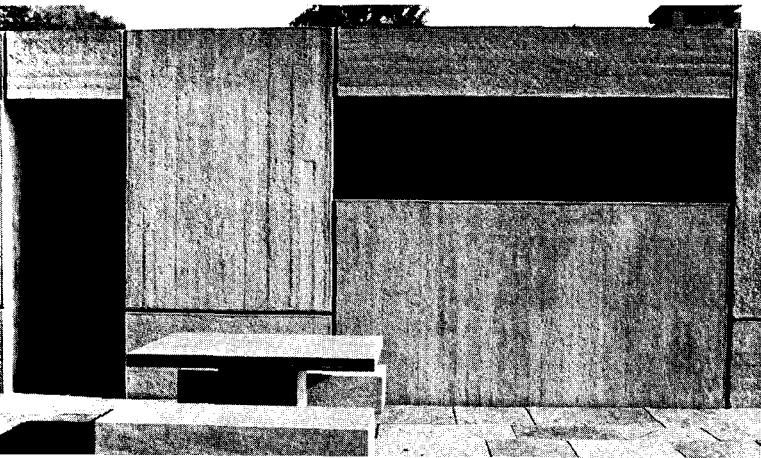
Still, occasionally Breuer has been tempted to go back to doing a house or two. The one shown on these pages, in the photographs of Kurt Blum, is one of the very best Breuer has recently built. It was designed for the Swiss art collector, Dr. Jacques Koerfer, and his family, on a site overlooking Lago Maggiore. And the pictures speak for themselves.

The materials are, largely, glass, concrete and granite. The only other ingredient, really, is art.

"The Koerfer house," says Breuer, "is built on a rugged hillside, affording an exceptional vista sweeping from southeast to southwest over Lago Maggiore. The steep terrain called for terraces to form level areas for outdoor use. The house, its terraces, and its retaining walls form a barrier between the entry side of the house (downhill) and the gardens above."

"The house is arranged on three levels," he adds. "The lowest of these is occupied by servants and services. The second, or main level contains the principal living areas, and the parents' quarters. And the top level is occupied by the children and by guests."

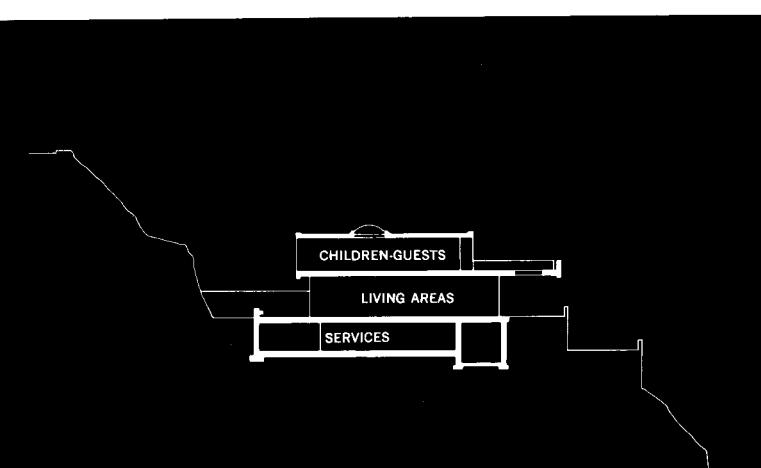
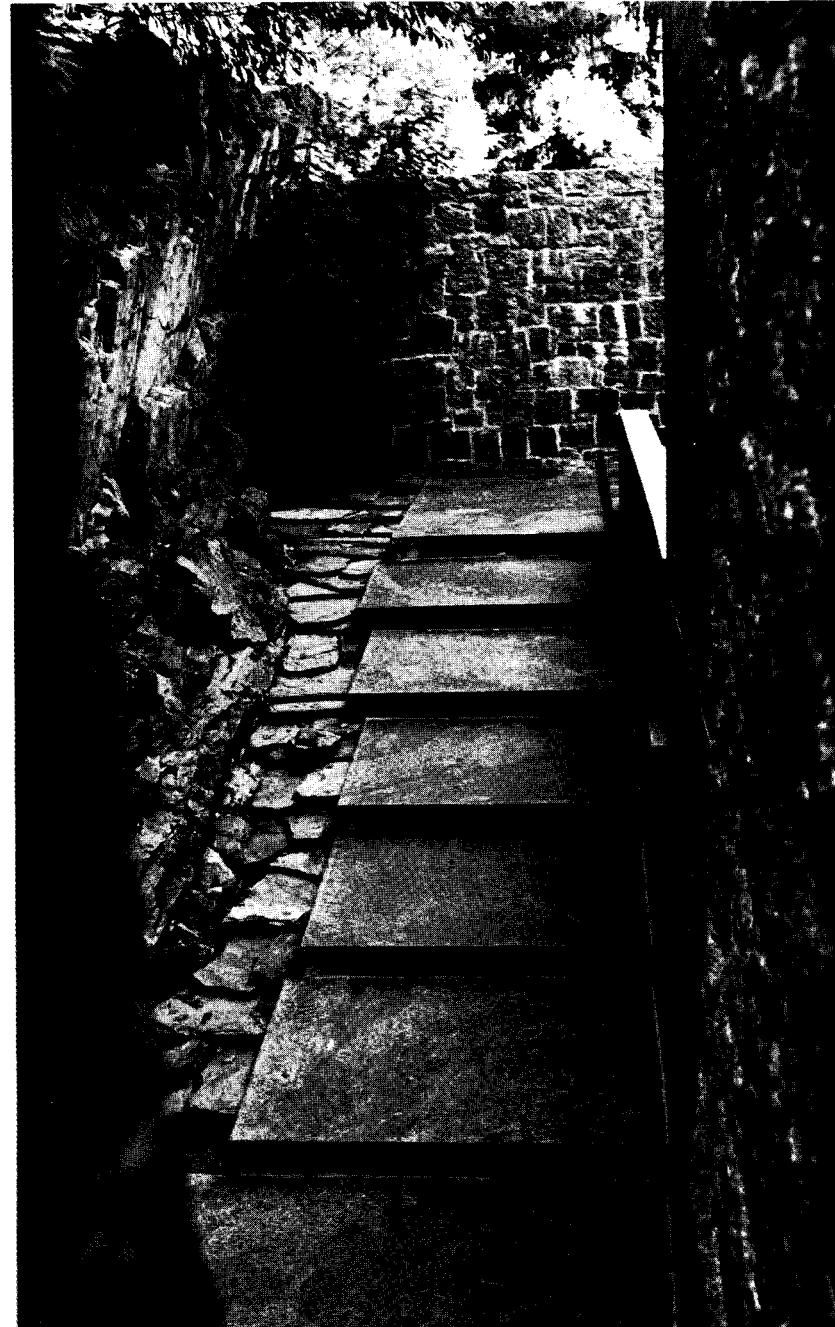
The basic structure is reinforced concrete, generally exposed. The walls are either glass, or rubble stone of a local, split granite. The same split granite was used in retaining walls, and a slightly different version of it was used for all floors. Smooth, white plaster walls are a neutral backdrop for the owner's paintings. Considerations of lighting his collection played an important part in the design of the house.







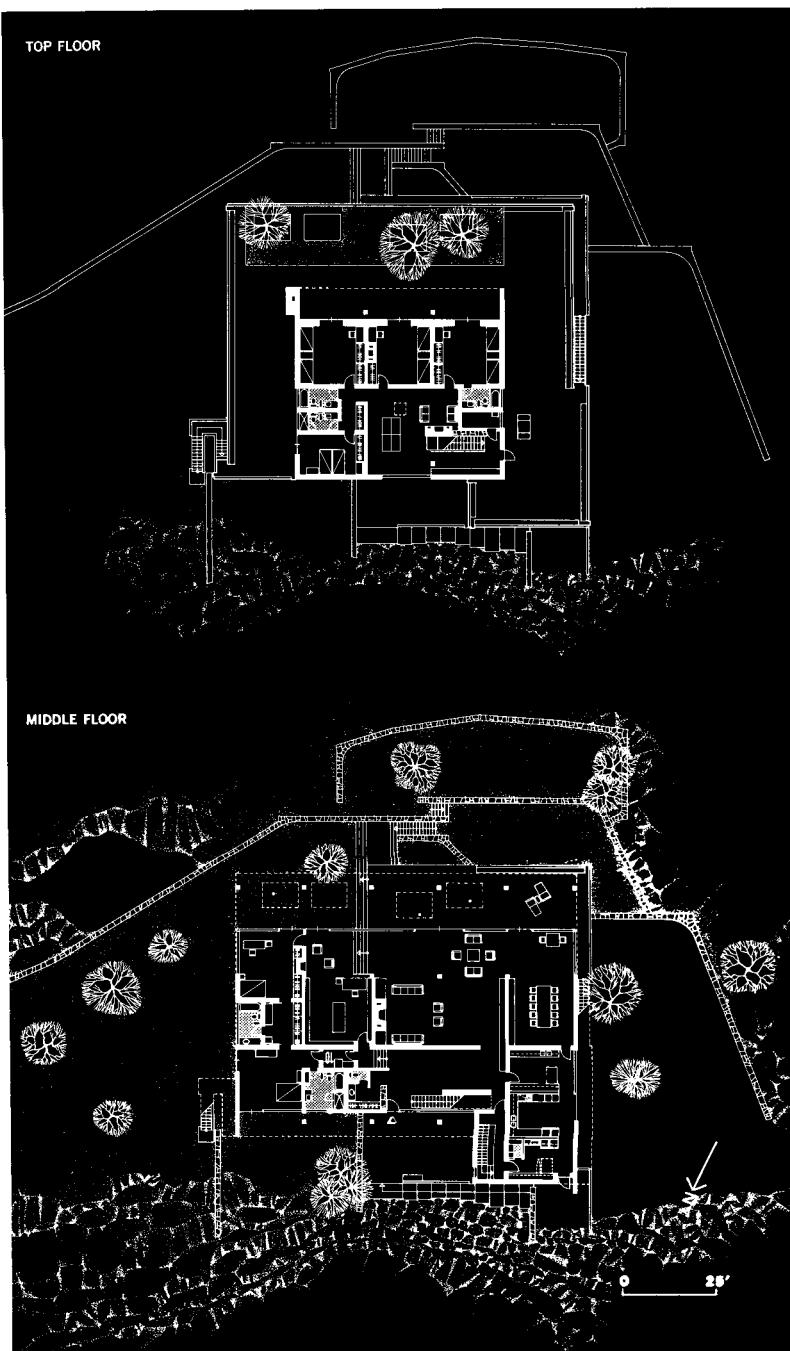
The house was planned on three levels: the lowest contains servants' quarters and utilities; the middle level has most of the living areas; and the top level is for children and guests. Uphill, above the main house, is an enclosed, all-weather pool, with dressing rooms. The photo below shows a paved walk that leads from the guest parking area uphill, and around the house, to the main entrance. The view at left is from one of the approaches to the west.

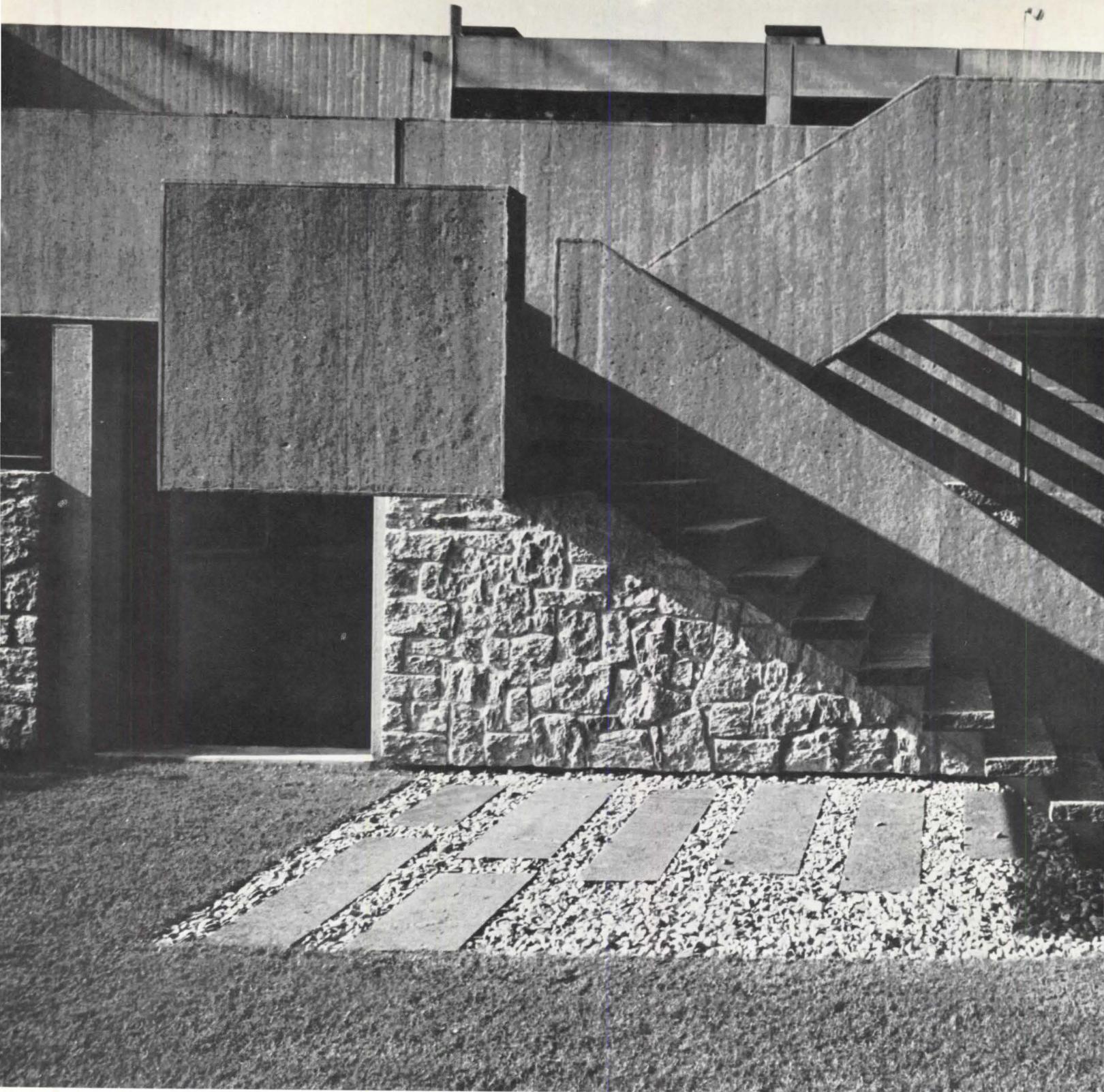


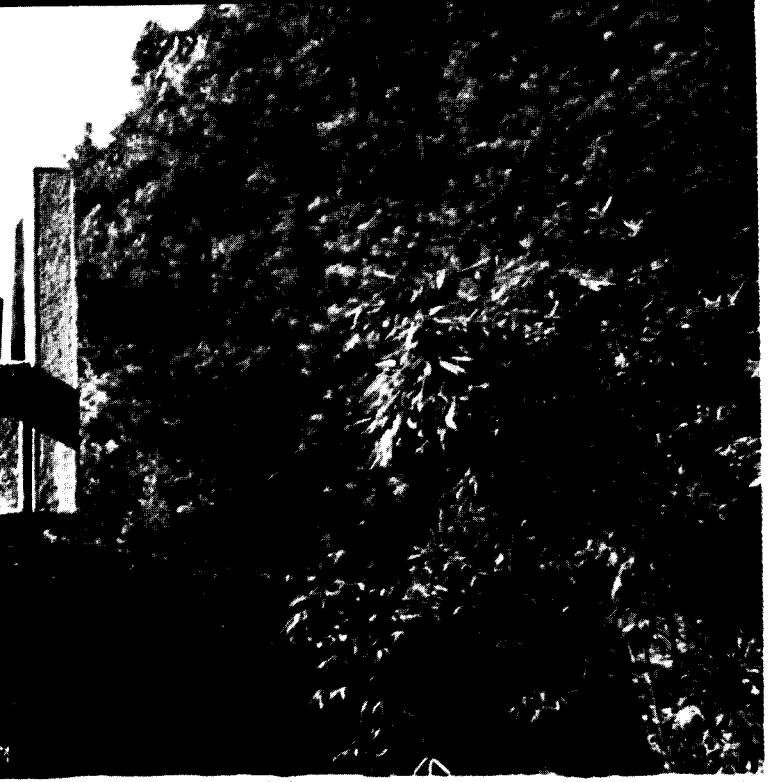




Plans of the middle level and top level, respectively, are shown below. The view at left is from the living room, looking out across the main terrace that faces the lake. Finishes throughout the house are granite (for floors and some walls), glass, exposed concrete, and plaster (for walls used to display the owners' collection of paintings). Much of the furniture used in the house was designed by Breuer—some of it more than 40 years ago.







Massive concrete and granite stairs connect terraces on three levels. These stairs, with their "floating" treads, are characteristic of Breuer's strong and expressive detailing. Views at left and below show close-ups of the outside staircase at the northeast corner of the house. The photo below also shows the top-floor terrace outside the children's and guest rooms. The lake—Lago Maggiore—is faintly visible to the south.



**FACTS AND FIGURES:** Dr. Jacques Koerfer house, Moscia, Tessin, Switzerland. Architects: Marcel Breuer and Herbert Beckhard. Engineers: Rene Meyer (structural); Fratelli Sulzer (heating-ventilating). Building area: 11,000 sq. ft. PHOTOGRAPHS: Kurt Blum.

# BOOKS

**WHO WAS LE CORBUSIER?** By Maurice Besset. Published by Skira Art Books and distributed by the World Publishing Co., New York City. 230 pp. 8½ by 9 in. Illustrated. \$10.00.

REVIEWED BY COSTANTINO NIVOLA

This book is outstanding in every sense except one: it does not fully address itself to the subject of its own title. Who really was Le Corbusier? The reader comes away with few new answers to the question. Besset deals effectively with the master's work, but furnishes few insights into Corbu as a man—which, after all, is what the title purports to reveal.

The conspicuous omission is unfortunate. Le Corbusier is now a legendary figure, and, like most legendary figures, he has been widely misunderstood and misjudged. This is perhaps more true of the man's personality than his architecture, though the two are difficult to disengage from each other. Myths abound about the quick-tempered, arrogant, and conceited nature of the genius. One could dismiss these misconceptions as irrelevant, were it not for their misleading influence on the perception of Corbu's work.

In all fairness, Besset himself recognizes the importance of bringing biographical material to bear on a study of this type, and even laments his own inability to do so:

*Rare indeed are the autobiographical documents accessible today; rarer still, any truly enlightening accounts by those who knew him. In the present deficient state of our knowledge, then, it still seems premature to attempt a synthesis that could truly claim to answer the question contained in the ambitious title of this book.*

Yet, had the author undertaken the extensive research and sought out at least a few more "enlightening accounts," he would have disclosed aspects of Le Corbusier that could have rendered the book more colorful, perhaps even analytically more interesting. For instance, a little-known fact about Corbu was that some of his closest friends were working class people, la-

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Mr. Nivola is a well-known artist and teacher, with headquarters in Easthampton, N.Y., and New York City. He was one of Le Corbusier's closest friends in the United States.

borers and artisans who lived in the Port de Clignancourt of this world. The master saw in these persons a simplicity and forthrightness which placed them, as he liked to put it, "*dans l'esprit de vérité.*" The clarity and directness of Corbu's mode of thought was reflected in these friendships, and may actually have been influenced by them.

By contrast, he often had little patience for his "sophisticated admirers." With opportunists, slick operators, and phonies he was devastating. His uncanny capacity to detect and dismiss pretentious people often caused consternation and probably earned him a reputation as a very poor diplomat, especially in places like New York.

During Corbu's disappointing stay in New York there were incidents such as these. A fancy, art-loving lady pestered Corbu for many months, until he finally consented to visit her apartment. Upon entering, he was struck by the absence of a single work of art anywhere. He turned and walked out, declaring: "Madame, the walls of your house are silent. Bon soir!"

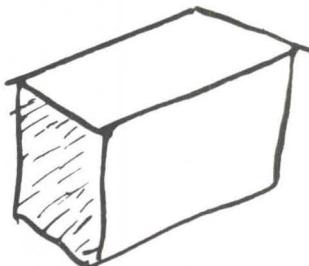
While in the States, Le Corbusier shared my studio in which several of his paintings were executed and kept. At one point there was talk of having the paintings exhibited, so a dealer came to see him. The dealer took not one look at Corbu's art, but proceeded immediately to discuss commercial matters, such as alternative headlines for press releases. Corbu threw the man out.

Such experiences were intimately related to Corbu's later feelings about New York and American society. He was fascinated by the city, but to me he expressed the fear that this was not a city capable of truly great artistic achievements. He concluded that history would judge the so-called Golden Era of the New York School "noisy," "unsubstantial," ultimately second-rate. (Corbu called Jackson Pollock "a hunter who shoots without aiming.")

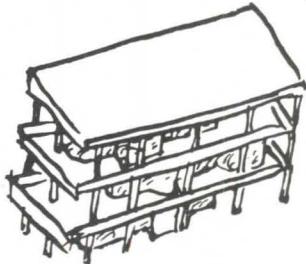
Corbu's misgivings about America (he called the skyscrapers "too small" and Americans in general "too timid"), combined with the notoriously lukewarm reception given him when he was here, resulted in the present paucity of his architecture in the United States. It is a significant and tragic irony that the wealthiest, most important city



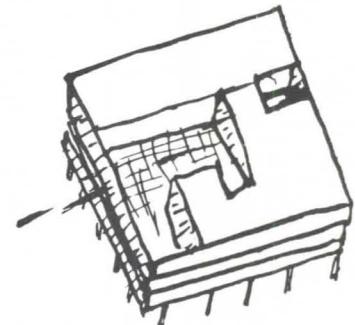
*genre plutôt facile,  
peut-être  
mouvement:  
On peut tout faire à la  
discipline, par classe  
et hiérarchie*



*pas difficile  
(saturation de l'espace)*



*pas facile,  
mais une  
combinable*



*pas généraux  
on affirme à l'extérieur  
une volonté architecturale  
on satisfait à l'intérieur  
à trop de besoins fonctionnels  
(insolation, contiguités,  
circulation).*

Corbu's famous "four compositions" based on his "soap bubble" theory that "the outside is the result of the inside." The first two houses pictured show the closed design; the last two show the open.

in the world is devoid of buildings designed by history's greatest architect, while economically disadvantaged places, like Rio, are graced with his structures, and a small university town (Cambridge, Mass.) stands as the only site of his work in North America.

A truly comprehensive study on Le Corbusier has yet to be written. To cast new light on both the sources of his creativity and his creations, such a book will have to search deeply into the unrecorded personal experiences and relationships of the man—not just his documented intellectual theories, technical sketches, and professional notebooks. Besset's contribution does not accomplish this lofty aim. The book is sensitively written, extremely well printed, nicely laid out, and enriched with good color reproductions. The reader is carried comfortably through the evolution of the master's concepts in architecture and city planning, including some unusual sketches from his travel notebooks in the early stages and ending with well selected documentation of his final *chefs d'oeuvres*. In addition, Besset does build a historical context for Corbu's development, disclosing the fact that some of his contemporaries played an active, critical role. For all this, however, what is lacking is a picture of Le Corbusier himself. And this may well be what is needed in order to fully grasp the greatness of his work.

Peter Blake. The well-written text is meaningful and short, leaving almost the entire book to the pictorial documentation of the buildings and projects. Each series of photographs is accompanied by a brief description of the project, giving dimensions and materials and other characteristic features. The book concludes with a statement "On Architecture," in which Ellwood says: "The development of great architecture is a carefully measured process, the slow and deliberate maturing and refinement of an order, the patient and unending search for moral beauty." And this is exactly what this book illustrates so well. It depicts a remarkably consistent development over 20 years from the first experiments to the sound statements of the most significant architect on the West Coast.

Craig Ellwood was born in 1922, in Clarendon, Texas. In 1946, after four years in the United States Air Force, he went to work for a contracting firm where he was involved in cost estimating, drafting, and supervision of construction. The contractor had as clients Neutra, Eames, and Soriano. This became Ellwood's education which he supplemented by studying structural engineering at UCLA.

In 1949 he designed his first house, the Hale House in Beverly Hills. To date there are 25 buildings and projects which are all documented in the book. Fifteen of these are houses, and it is particularly interesting to see how Ellwood was able to gain such a reputation on a dead issue. Of course, the individual house is still very much alive in the endless suburbia of Los Angeles, the city in which Ellwood lives and has worked throughout his career. It is therefore not surprising to find a strong influence of Neutra in his first projects. As Esther McCoy puts it: "Craig Ellwood's roots are the same as were Richard Neutra's in the 1920s—in lightweight steel construction utilizing high-tension towers, drawbridges, cranes, and other lifting devices composed of light steel members, the lightweight steel H-column that could be translated from industrial to residential architecture. It was the industrial landscape that had excited Neutra, and this he bequeathed to the next generation—along with some specific information

about steel sections."

However, Ellwood soon discovered Mies and graduated to his principles, becoming increasingly convinced of the basic truths of Mies' philosophy. Yet in no way is Craig Ellwood a mere imitator of Mies, rather he is one of the few architects who have not thrown away the lessons from the Master for their own "Monday morning" whims. Ellwood learned from Mies that architecture in our time has to be objective, that there are greater forces at work than the individual, that science and technology are the essential factors of our epoch, and that only a clear structure can lead to a valid form.

Of the 15 houses which Ellwood built, the Rosen House, designed in 1961 and constructed in 1962-63, is the outstanding example of his excellence. Approaching the house up a winding road, one glimpses white lines of steel and gray planes of brickwork against the tangled background of the shrub-covered Mandeville Gorge in Los Angeles. Eventually a beautifully precise structure "hovering" above an immaculately cultivated plateau is revealed. This is probably Ellwood's most successful statement of a steel house. The plan is a square, three bays of 26 ft., 8 in. wide in each direction. The central square of the plan forms a courtyard, thereby giving the major rooms in the central bays an enormous spaciousness, opening out not only to the outside but also to the interior court. This rigid arrangement seems to be neither autocratic nor to compromise utilitarian needs. With two exceptions, all walls and room enclosures are free-standing which is quite an achievement considering that the house has five bedrooms and six baths. The steel structure is clearly expressed and painted white while the two end panels of the front and back elevations are filled in with gray brick. The floor plane is raised three feet above a larger square of water-worn black pebble stones on the ground.

This solution may be questionable because it separates the house too much from its natural surroundings. The separation that is established through elevating the floor plane of the house would have been sufficient. The black pebble

square reintroduces and formalizes a rigid relationship of the house to its landscape, so successfully overcome inside.

Another good and very exciting project is the weekend house designed in 1964. It was developed as one solution to the scarcity and high cost of beachfront land in southern California. Much of the coastal frontage is cut and folded into natural canyons and has remained undeveloped. Craig Ellwood proposes to span such a canyon with a roofed bridge, leaving the land contours and natural watersheds undisturbed. The 60-ft. distance between the two sides of the canyon is spanned by two trusses which are divided into six parts, creating six truss bays of 10 ft. square. The width between the two trusses is 23 ft., 4 in., thus creating a very large open space which is only interrupted by a freestanding core. Obviously this scheme is not to everyone's taste or vertigo. However, it is a practical solution to a site problem which is particular to southern California.

Three years ago Craig Ellwood received the commission to do the master planning for the future facilities of Scientific Data Systems after the completion of a factory for them. The Administration-Engineering building for this complex (September issue), Ellwood's largest to date, is a testimony to his rare ability to produce elegance for competitive, reasonable prices. The three-story A-E building is a square of seven bays by seven bays, each bay being 48 ft. square. The columns, the floor framing, as well as the skin are made of rolled steel sections. One would expect a price of \$30 per sq. ft., yet, Ellwood actually built this building for a mere \$16 per sq. ft.

It seems that Craig Ellwood has now entered a new phase of his career. The 20 years of struggling to survive and the patient insistence on quality and honesty are bearing fruit—he is at long last receiving larger projects, and he is ready for them.

It is often said that the architect who can design a good house is capable of producing a good building for any purpose, no matter how complex. From the evidence of Craig Ellwood's work shown in this book, it may be that the house is not necessarily a dead issue after all.

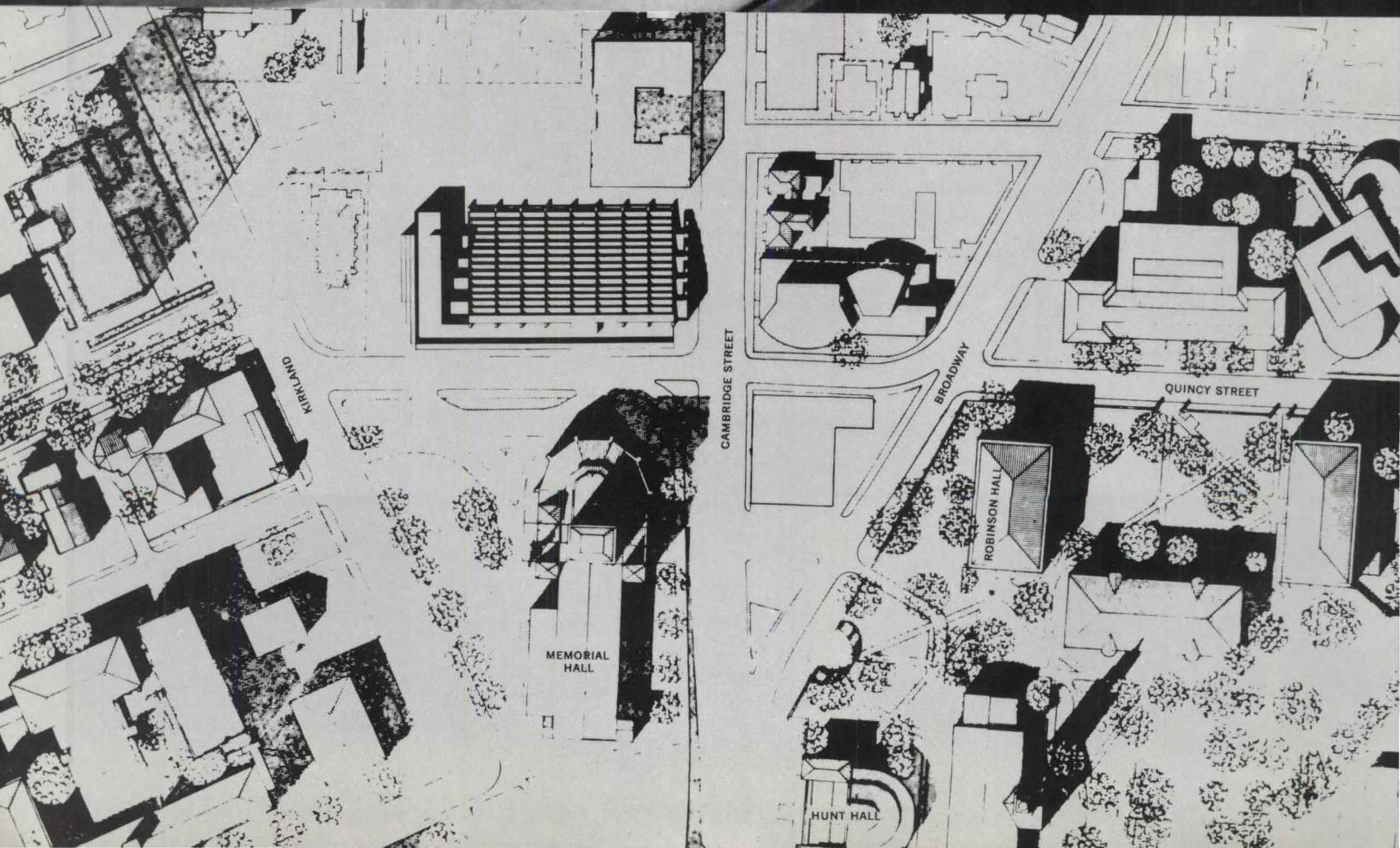
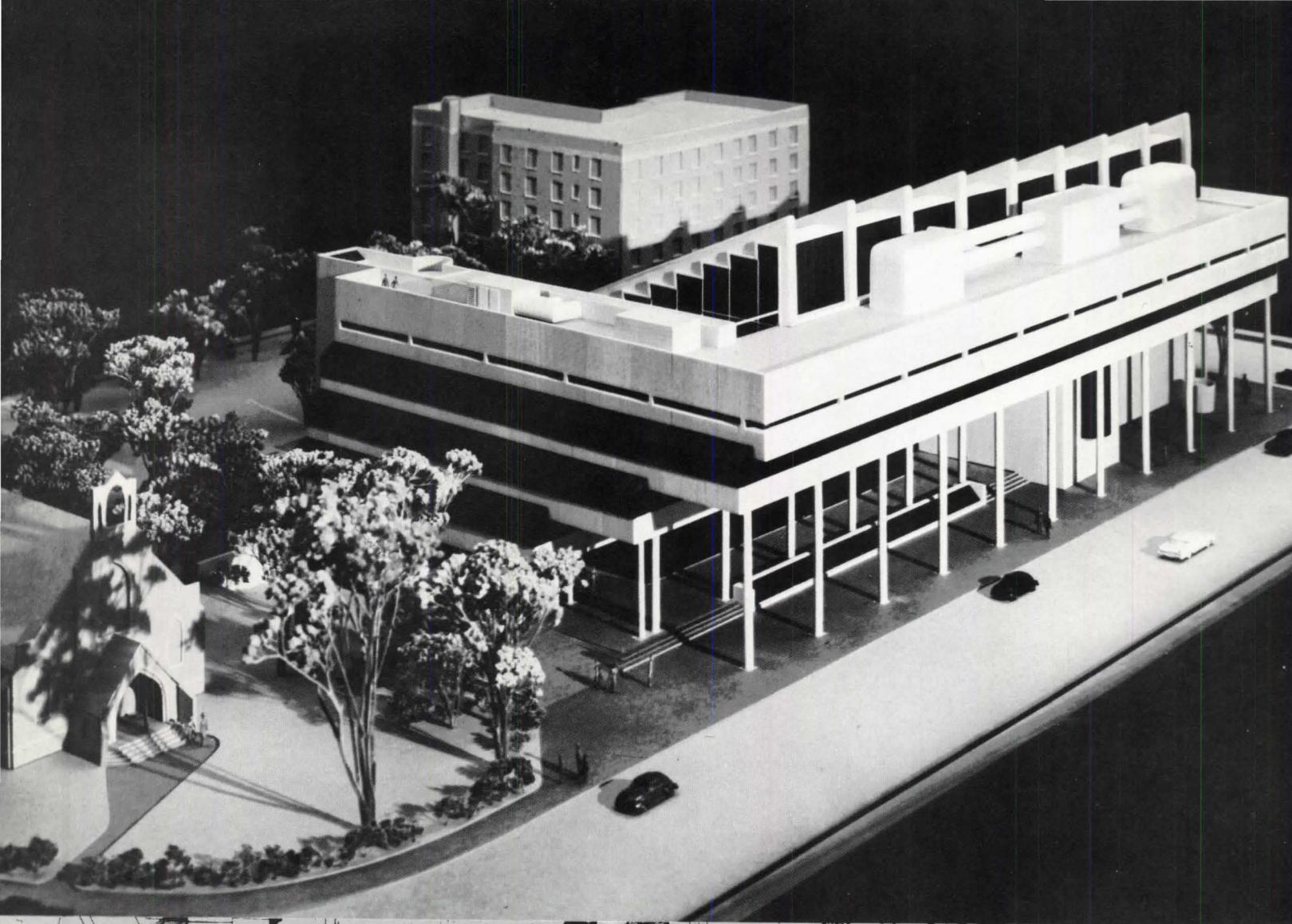
**CRAIG ELLWOOD—ARCHITECTURE**  
by Esther McCoy. Forward by Peter Blake. Published by Walker and Company, New York City. 155 pp. 9½ by 9¼ ins. Illustrated. \$15.00.

#### REVIEWED BY DIRK LOHAN

For many years Craig Ellwood's houses have been published individually, but this is the first time that his entire work, from the Hale House in 1949 to the current projects for Scientific Data Systems, appears in book form. It is his first, and well-deserved, one-man show.

The book is written by Esther McCoy with an introduction by

Mr. Lohan, the grandson of Mies, is a partner in the Office of Mies van der Rohe in Chicago.



# HARVARD GRADUATE SCHOOL OF DESIGN

The new building, just begun, promises open communication among all departments

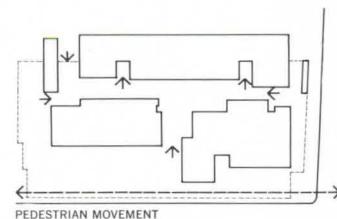
A group of Cambridge fifth graders wielded shovels at the recent ground-breaking of Harvard's new Graduate School of Design, symbolizing the school's promise to improve the environment of these and other inner-city children.

The remarkable building designed by John Andrews symbolizes other new directions—looking inward, it opens up new relationships among the disciplines; looking outward, it establishes a new relationship between the whole GSD and the rest of the university community.

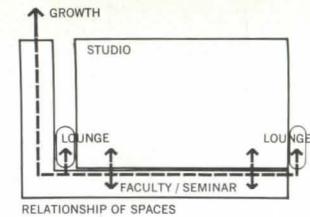
For its own students, the building gathers all studios into one open, integrated environment. Gone are the separate identities cherished by competing department "empires," and gone are the communication barriers that are erected with the walls, doors, and other spatial barriers. For the nondesign students just passing by—or, more accurately, passing through—the building brings an active awareness of what happens in a school concerned with a subject as esoteric as "the environment."

The George Gund Hall will consolidate departments and laboratories from five buildings into a site just across from Robinson and Hunt Halls, primary location of the present GSD.

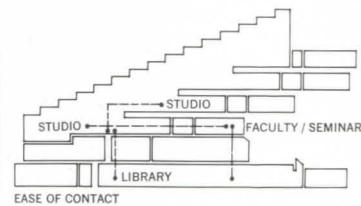
This part of the campus will see major academic expansion, and heavy pedestrian traffic. The building thus gives the pedestrian a covered walkway for the length of the block. Also, on the theory that what is good for the pedestrian can be good for GSD too, the ground floor gives a kind of shop window exposure (via its circulation/exhibition space) to the work of the school (below). Realizing that the building gives so much space back to the public, the city granted a variance from its 30-ft. setback requirement.



Organization of the building is simple. Faculty and seminar spaces wrap around two sides of each studio (see diagram, top right), with a lounge and a terrace as common ground between students and faculty.



The studios on all floors are open to each other (below), each studio tray overlapping the one beneath it and tucked under the one above. Stringing the studios out horizontally was impossible on this site; and stacking them vertically, without offset, would have cut off all interaction. Here,

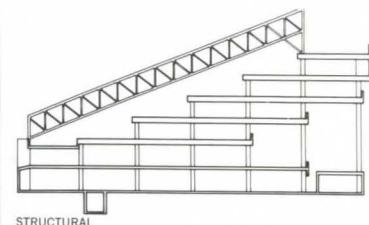


instead, there is free communication and easy contact between spaces.

The open studios met with some opposition. Harvard hired its own acoustical consultant, who then verified Andrews' analysis: with the roof heavily faceted, and its underside absorbent, background noise will be no greater than in a restaurant.

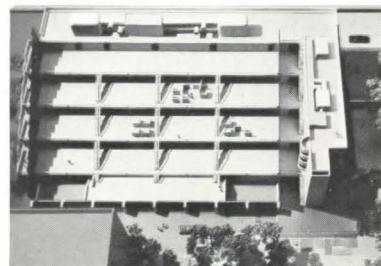
Over the staggered studios, the great trussed roof of tubular steel spans 125 ft. "It's one of the last of the railway stations," says Andrews.

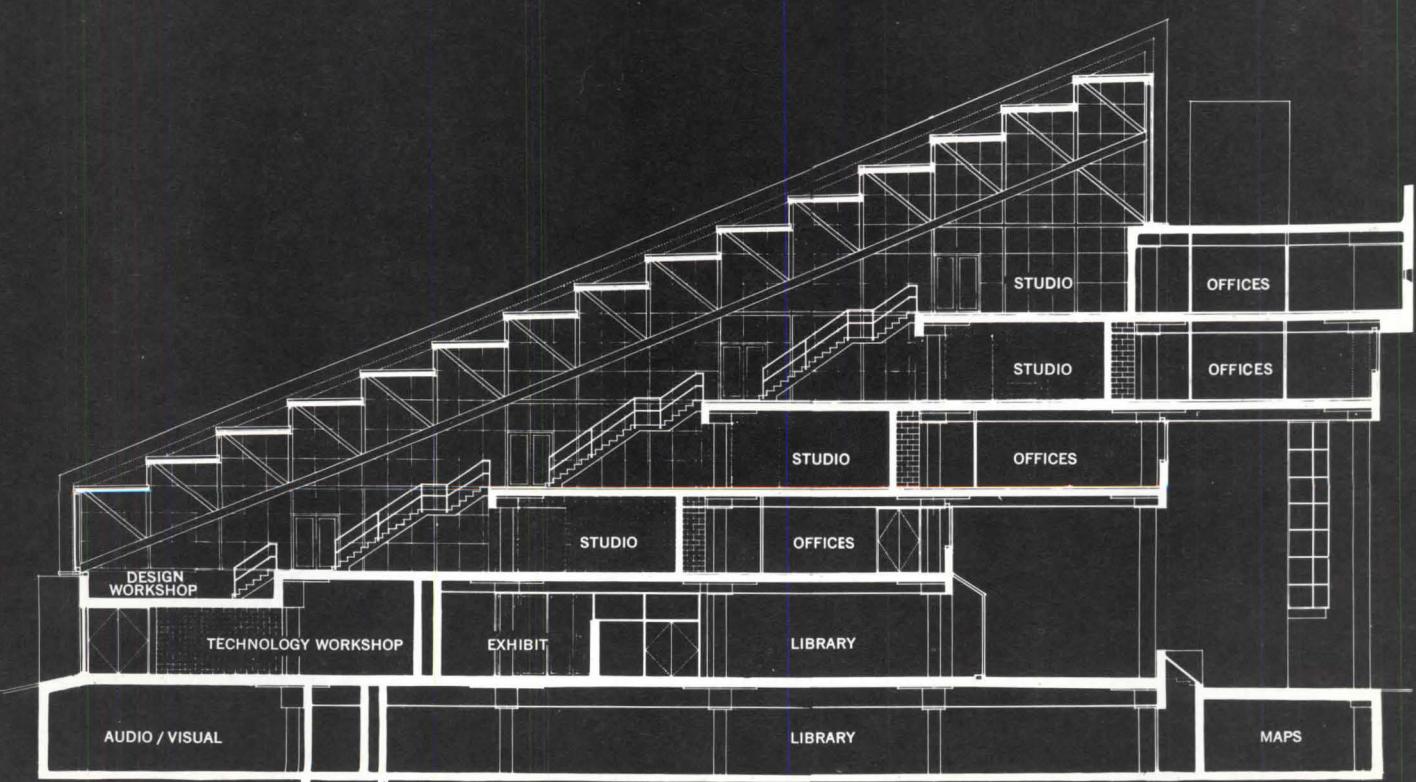
The structure of the building is reinforced concrete flat slab, on a 25-ft. grid (below). But the



structural *tour de force* is the great trussed roof—"a grand system of structure, services, and light," say the architects. The roof is an object lesson for students with its structural and mechanical functions completely visible.

The building as a whole is also an education, making possible a new kind of communication—and a new kind of learning—across the barriers that usually keep different disciplines ignorant of each other and keep outsiders ignorant of all the design professions.





# SOME COMMENTS ON THE BUILDING

## A critique of the building, discussing its development from an earlier scheme

BY PETER PRANGNELL

This year we have seen the dissolution of the Beaux Arts in Paris; without exception, students are at the forefront of our preoccupations. Only in this context is a critique of the Harvard Graduate School of Design building worthwhile or possible.

In common with Rudolph's Yale building and several others across the continent, John Andrews' project is derived from the need for *more space*. Coupled with this need is, of course, the unspoken hope of greater efficiency. The fact that a new building evolves from the pressures of cramped quarters implies a certain satisfaction with the on-going business. The *raison d'être* of a new building is, therefore, more of the same—heightened by the possibility of better technical facilities (computer terminals, darkrooms, laboratories) for greater efficiency.

In the light of current student events, the proposition "more of the same" gives rise to some doubts. It is disquieting that the education business is so corporation-minded. Unlike the situation precipitating the formation of the Architectural Association school in London—or even the establishment of the Bauhaus—I sense that at Harvard when this building was programmed there was no large declaration of faith, no manifesto of new directions that could commit students, teachers, and public to something beyond a *status quo*.

Of course, there was a building program!

What immense labors of earnestness these documents have become (each studio should be provided with a sink). In their determination to leave no loopholes, they can cripple the imagination. In saying this, I do not recommend the irresponsibility of many professionals who indulge their whims under the asylum of art. Instead, I anticipate a condition whereby it is possible to release creative energies so that we may capitalize on the potential of association and on a more subtle language for our common experiences.

Building programs too often

**Mr. Prangnell** is the new chairman of the Department of Architecture at the University of Toronto. Having taught at the AA School in London, and the Harvard Graduate School of Design (he is an alumnus of both institutions), and at Columbia University, he came to Toronto at John Andrews' invitation to initiate a new program within the department.

freeze a single-minded, one-moment-in-time concept of a building and the processes it is to accommodate. They carry immense conviction because of their objectivity, but in their determination to be objective they forfeit those subjective issues that can illuminate our purpose.

I am convinced that the most pernicious phenomenon of our times is the manipulation of the "sciences of man" into the terms and conditions of the natural sciences. Whether because of prestige or lack of faith, we lose the condition distinguishing these sciences—the use of subjective evaluation that we can accept because we are all men.

I have read the Harvard program and have found little enthusiasm for any philosophy of education; more importantly I have found little articulation of a position (or concern) for ideals of human association that may be encouraged within the building. (References to coffee lounges are not serious contributions.)

This building program was traditionally conceived; it listed and described all the foreseeable spaces deemed necessary to expand those facilities already established. (By expand, I include the concept of new departments and disciplines—one person at work is something like another.)

### The concept of terrain

Perhaps this connection between building program and project is clarified by considering John Andrews' first proposal for the building. The early scheme, to my mind, presented two extraordinary ideas that are at the heart of our situation.

The first idea refers to a condition in a building which I call "terrain." My concept is very simple. I propose that the matter-of-fact features of any building—the floors, columns, steps—are similar to the features of a natural terrain. Obviously a terrain can exist in its own right and does not require attention (or, better, cultivation) until some human need is put to it. The extraordinary thing is that we do try to improve or cultivate a terrain to suit our purpose. The more fertile it is, the greater the variety of cultivation possible. We are helped by the positive shape and the predictable nature of the forming elements—earth, wind, sun and so on.

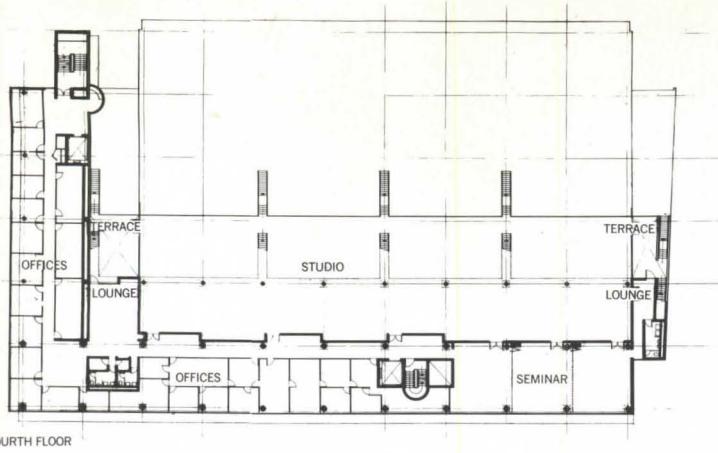
In short, to be fertile, the terrain must be *interpretable*.

There is a strong analogy here. If we accept a building as a terrain, we imply that we expect it to be cultivated. By anticipating the reciprocating actions of generations of users, we can bring a new concept of an architect's work into play. Architects will have to devise *incomplete* buildings; such buildings will be *supports* for the variety of predictable and unpredictable *fill* brought to them by their inhabitants: together, such supports and fill will define the scope of possible *human action*. It is obvious that supports, like terrain, having positive features, will aid interpretability. Our imaginations will be provoked (evoked?) and developed. We will grow through our work! Rather like grit to a pearl, we architects will have to provide those carefully dimensioned and arranged features of a support that may result in good actions. I must emphasize that I am recommending an attitude contrary to current concepts of flexibility and change. Bland anonymity will not aid us (just as a landscape without landmarks disorient us); nor will mechanical ingenuity, which obsesses us by the very possibility of changes we may never make.

It seems to me that the first project initiated such a concept of terrain; the very ground itself—the sidewalk—was stretched up into the air. The floors themselves took positive shape; they had sheltered places as well as exposed ones—the distinctive ceiling heights began the interpretive business. Of course, the ceilings could be ignored if you chose to ignore them. Obviously, the large roof prohibited certain interpretations—for example, it precluded the total subdivision of the studio space. It was a deliberate gesture on the part of the architect which, like the rule that preserves Central Park, perpetuates a social condition from being eroded by expediency. (The "great space" in Robinson Hall, present home of the School of Design, has always been in jeopardy simply because a mezzanine could easily be inserted.)

The second extraordinary idea develops from the concept of features in a terrain. Steps have already been noted as features. In a hilly landscape, steps will begin to organize a network of movement. By the position of steps, ramps, elevators and walls we are able, through the induced network of movement, to pre-

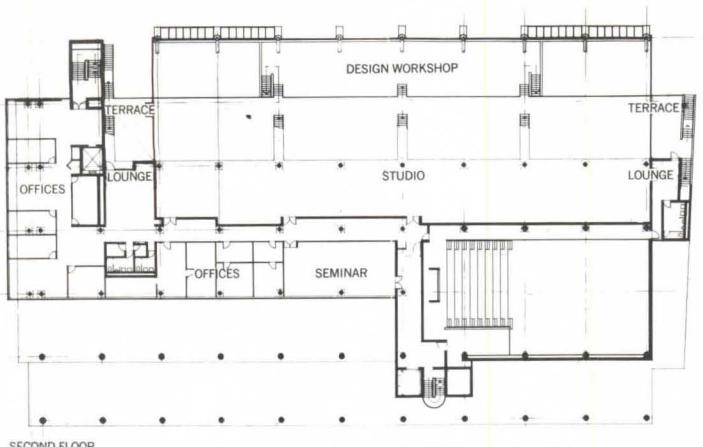
Open circulation and open studios in the new Harvard Graduate School of Design will encourage students to cross professional boundaries and learn from each other. The building provides for the departments of Architecture, City and Regional Planning, Landscape Architecture, and Urban Design, plus a large library, and the laboratories for Computer Graphics and Architectural Structures. Since each studio space is partly open and partly sheltered, students can pick their preferred environment. Andrews welcomes the constructions they will undoubtedly build—"I've made the space; they can make the place."



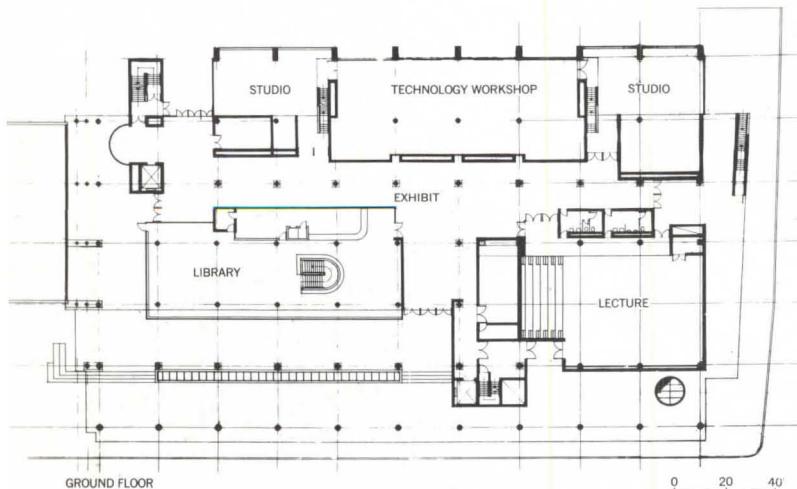
FOURTH FLOOR



THIRD FLOOR



SECOND FLOOR



GROUND FLOOR

cipitate a series of encounters and relationships that eloquently describe our human associations. This is the quality distinguishing the great cities of the world.

In the first project, the network was arranged so that, like *en suite* planning, any destination was reached through another. A marvellous mix would result—secretaries would brush through studios, as would deans. This simple idea was further developed to make many alternative routes available. Again this proposition is contrary to so much current practice whereby we condone, on the grounds of administrative efficiency, the division into departments. Admittedly we try to cement them together again by featuring cafeterias and lounges largely and expressively in our projects. Many new buildings support segregation of their officers. Rather like grand houses, they have a “behind the stairs” network giving the servants private routes. John Andrews’ proposal augured well for the close mutual interests of students, teachers and administrators!

#### The final project

It is from these imaginative and challenging premises that we have to look at the final about-to-be-built project. It is my opinion that the Building Committee from the School of Design has neutralized the provocative concept to one that is simply safe.

And it occurs to me that here is precisely the issue weakening our profession. For too long we have accepted a facile concept of efficiency that derives from the concept of “time-motion” studies. Such studies are blatantly intended to increase efficiency, production and profit. They have a good Puritan ring to them—eliminate waste—and they come well recommended by a Bauhaus ethic. But we have to develop a more literate sense of human association and relevance. Can we assume that the qualities distinguishing the associations of an academic community are understood? Surely they must be universal to every Harvard building. Yet some seem to be better at this trick of accommodation.

Can we do no better than to admit (as did the building program for the School of Design) that “students needs go beyond the mere provision of work areas

and will require a plan organization that encourages the intangible but important opportunity for relaxation and communication with students and faculty of all departments.” What priggishness! What is so bad about working? Why is human association so “intangible”? Are we so inarticulate about our business? Surely architects have been *building* this very meaning for many years now! Here is the rub: do the authors of a building program, by their inability to articulate “intangible” qualities, prejudice the outcome of such a project? They set their requirements in such a fashion as to preclude any central place for “intangible” qualities in their program, yet hedge their bets by requiring the architect to provide them nonetheless.

In this situation, my great fear is that “intangible” qualities will not even be recognized when they do, in fact, appear. In the final project, for example, I notice how much more rigid the layout of the faculty and research office has become in relation to the studio spaces. I suspect that, in this instance, it will be the masters who will have private routes “behind the stairs.”

In the same way that departments are a useful administrative device, so too are categorized areas of a plan. Lounges, offices, workshops and studios too easily become a shorthand that presumes a series of conventional decisions. My objection to the phrase “mere provision of work space” is based on my regard for the sofas that quickly appear *beside* drafting tables in our studios in Toronto. It is difficult to define a sofa as a device for relaxation when some of the most intense work may be carried out on it! Old-fashioned kitchens would confound the categorist. Unlike the anthropometrically correct model derived from space-saving standards and “flow” studies, the old-fashioned model had a fantastic ability to absorb a great variety of action from cooks, children, visitors or pets. These places had true flexibility because they permitted us to alter *our* relationships with *them*, rather than making us alter our relationships physically.

#### Isolated Studios

In the first project the studios grew out of a harder-to-define thing like a street. Their cli-

maxes were the street at the bottom and the potential of the sky at the top; we would work between the two. Now, in the final project, the studios are isolated. At the bottom there is interrupted connection to an exhibition foyer; at the top, a wall.

On every studio level there is a wall protecting the faculty offices. It is there because of fire regulations. By meeting these requirements, an essential element of the building has been devalued, and the everyday relationship between faculty and students suffers. Obviously I do not propose unsafe buildings. I do, however, complain when the quality of life within a building is jeopardized, for unfortunately there are no building codes protecting us in this matter. The studios remain as the somewhat self-conscious manifestation of all that was brave in the first project. Inevitably, many sacrifices are made during the development of any project. It is my regret that, so often, the developments undermine the original concept, rather than enhance it. I believe we all suffer by our lack of ability to make tangible those "intangible" qualities of human association. If such qualities were given articulate and eloquent voice, we would gain common ground between all the parties and the committees who are responsible for the development of projects like this. Further, we would not have to depend alone on the objective and quantitative criteria which form a restricted common ground at this time.

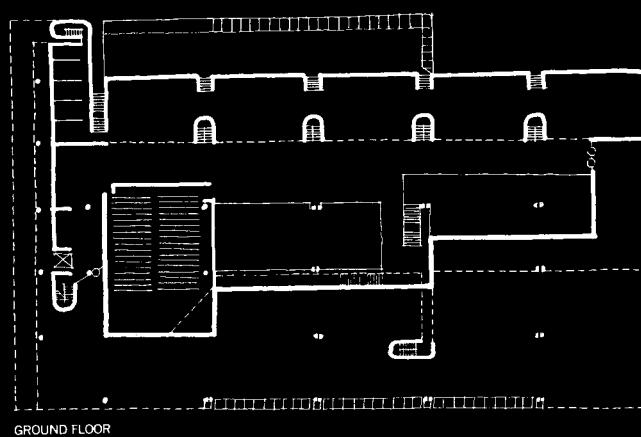
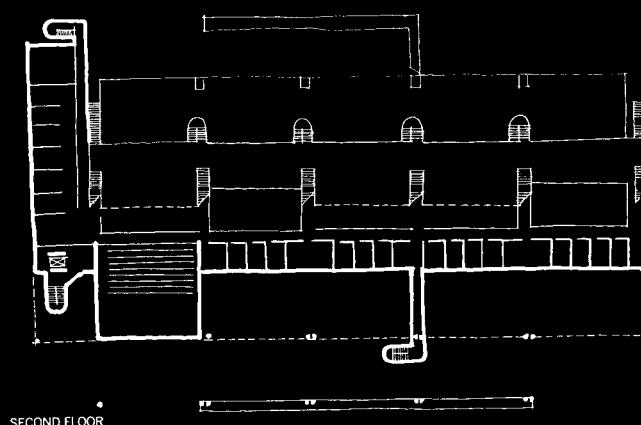
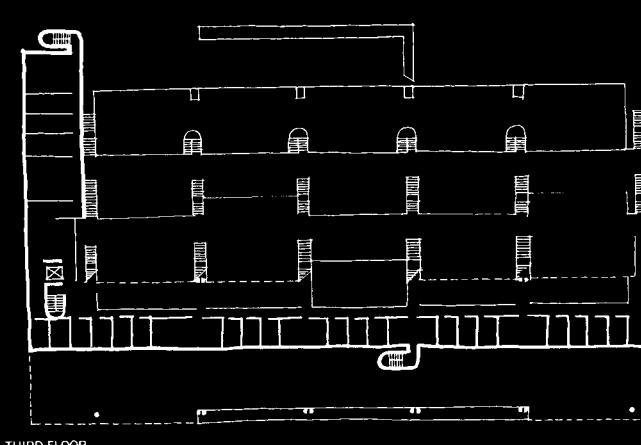
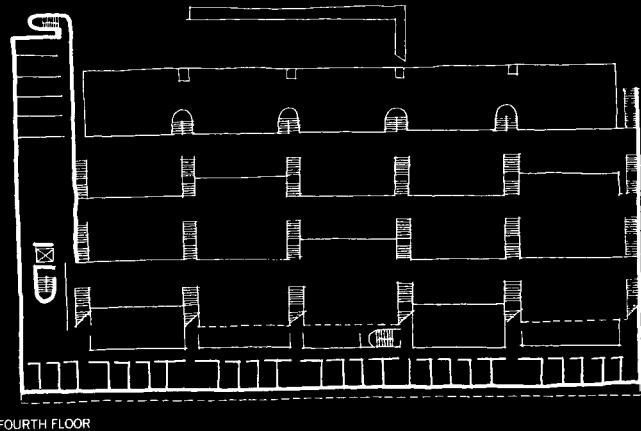
At this time our profession will turn to this new home for the Harvard Graduate School of Design looking for a phoenix. The Beaux Arts is dissolved; student unhappiness is most evident throughout the world. At this critical time, a new school of design is to be made. In it the students, the teachers and the profession—not to mention the public—will look for connections between them that will illuminate their purpose and commitment. I sense that this potential is in the terrain of this remarkable project and, if so, successive generations of students, with their teachers, can develop (and perhaps eliminate) the dividing walls. In this manner, I hope the building will prove to be a fertile terrain for all generations rather than a specific terrain for one generation—as far too many buildings are today.

Plans of the building as it is being built (opposite) and at an earlier stage (right). Chief differences are in the division between studio space and office space on each floor, and in the ground floor, as discussed in the accompanying critique. In the future, the seminar/office area may expand along one side of the open courtyard at rear; but the studios are considered ample for more students and newer disciplines. Planning for the future is indeed difficult; at the groundbreaking, one-third of the present students went on record as wanting to have the \$6 million spent instead on recruiting faculty and students from poor communities, black and white.

#### FACTS AND FIGURES

George Gund Hall, Graduate School of Design, Harvard University, Cambridge, Mass. Architects: John Andrews, Architects (designed by John Andrews, Edward R. Baldwin, and John Simpson). Engineers: LeMessurier Associates Inc. (structural); Harold R. Mull & Associates (acoustical); G. Granek & Associates (mechanical); Jack Chisvin & Associates (electrical). Building area: 160,000 sq. ft. Bid price: \$6,025,000.

PHOTOGRAPHS: Carol Rankin.

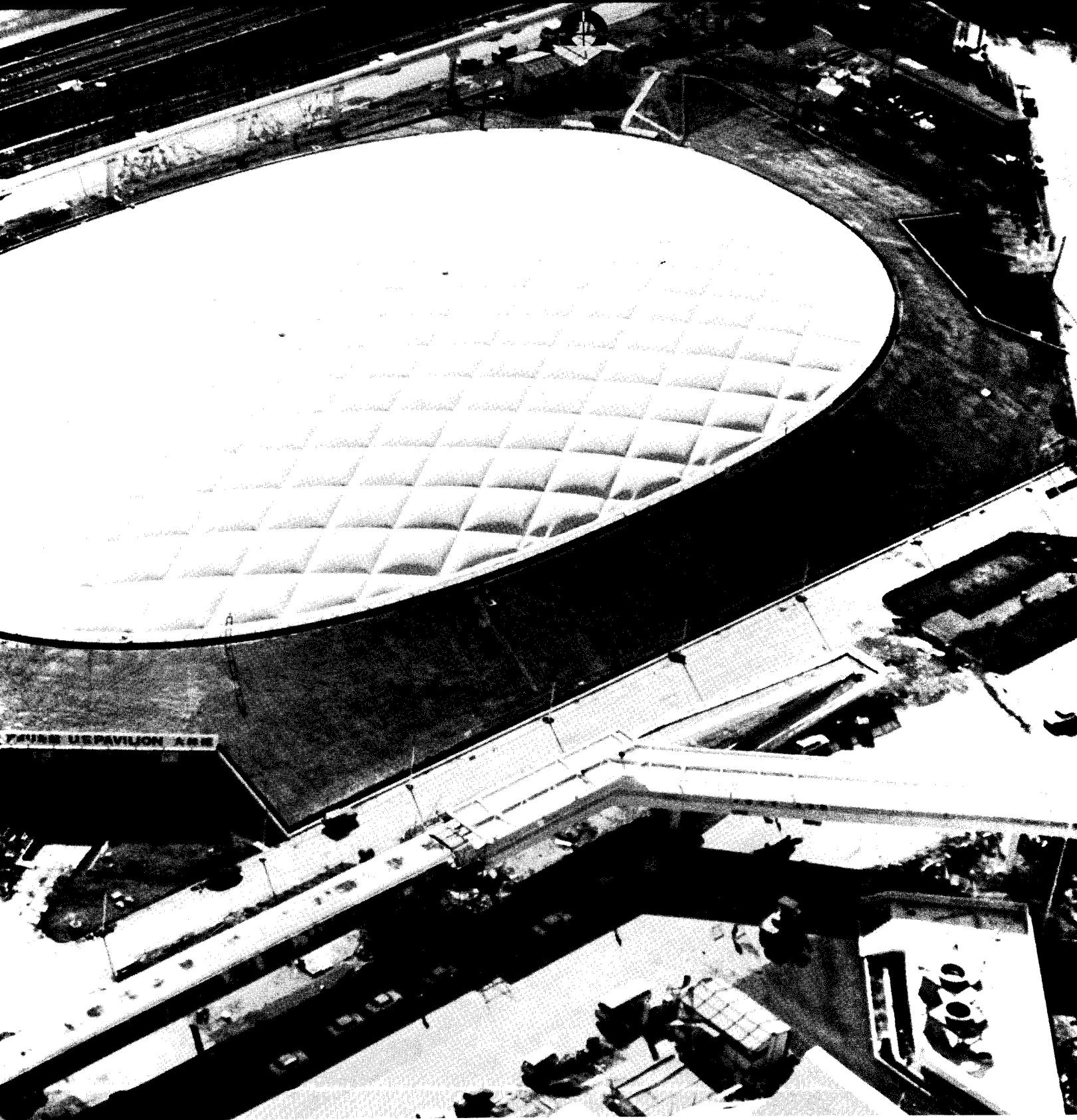


# BIGGEST BIG TOP



It isn't really a Big Top at all; it is a thin slice of translucent, air-supported, vinyl-coated, glass fiber fabric, reinforced by steel cables. It is a wafer-thin membrane, covering an area the size of two football fields, and hovering above a more-or-less elliptical bowl excavated from the Japanese earth.

It is, of course, the U.S. Pavilion now nearing completion for Osaka's Expo 70. All around it are the usual architectural acrobatics—domes, space frames, hyperbolic paraboloids, giant inflated tea cozies, and Marxist-Leninist platitudes. In the midst of this extravagant mess, the U.S. Pavilion is likely to be upstaged



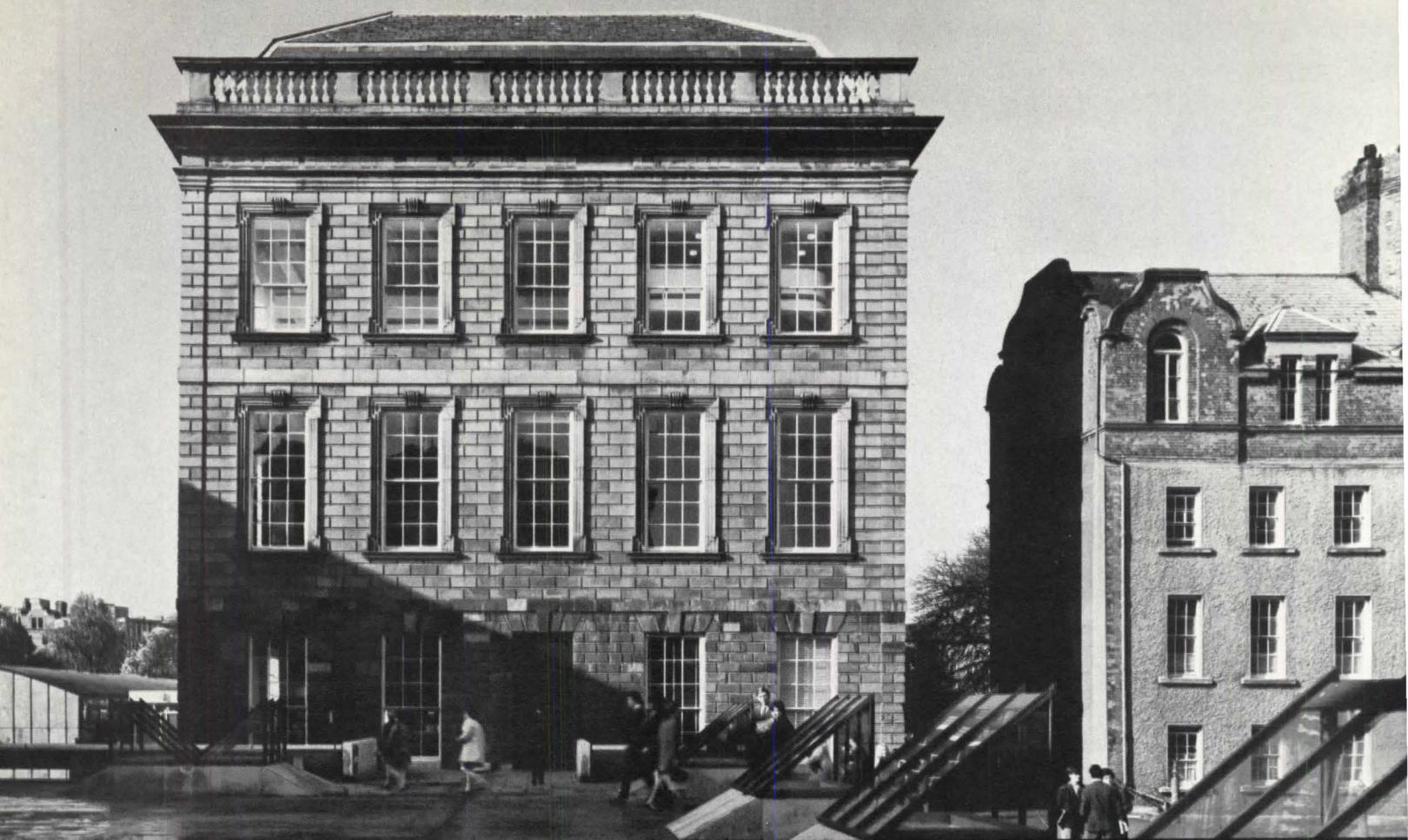
a bit, despite its elegant Davis-Brody architecture, and the Chermayeff / Geismar / de Harak infra-structure, or exhibits. (The exhibit on U.S. architecture, by the way, was developed in co-operation with the ARCHITECTURAL FORUM. We were also asked to help pick the designers, and we did.)

The architecture and the exhibit design at Osaka will be elegant; but when the historians of the Year 2,000 look back upon Expo 70, and upon whatever was significant about it, the chances are that this extraordinary wafer will be judged one of the few manifestations at Osaka that truly advanced the

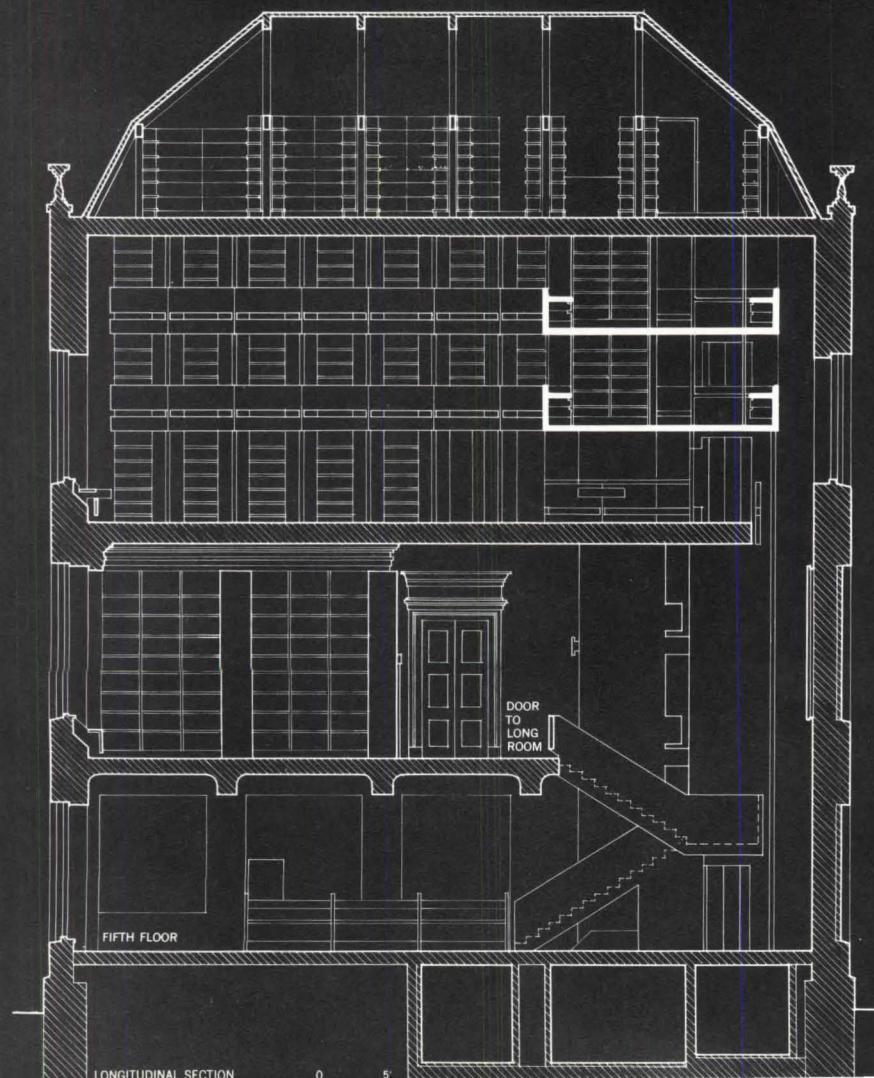
art of structure in the twentieth century.

One of the designers who will then be remembered, when the historians have handed down their judgments, is a young engineer called David Geiger. If the membrane stays up, it will be largely because of his extraordinarily inventive work.

**FACTS AND FIGURES:** U.S. Pavilion, Expo 70. Client: U.S. Information Agency. Design team: Davis, Brody, Chermayeff, Geismar, de Harak Assocs. Associated architects and contractor: Ohbayashi-Gumi. Engineers: David Geiger-Horst Berger (structural); Cosentini Assocs. (mechanical); Howard Branston (lighting). Landscape: M. Paul Friedberg & Assocs. Volume: 5.2 million cu. ft. Cost: \$10 million including exhibits. **PHOTOGRAPHS:** F. Yamamoto.



VIEW 1



Trinity College's 250-year-old library retains its exterior shell, but Architect Paul Koralek with Peter Ahrends and Richard Burton has completely modernized the interior. Balustrades of two new floors are visible (left) through the upper windows. The renovation separates tourist and student traffic, and also acts as a link to the new library (top right) also designed by Koralek. The renovation, too, leaves intact the beautiful 18th-century Long Room (right) which houses the ancient Book of Kells.

# NEW SETTING FOR RARE BOOKS

The exterior shell of Trinity College's 18th-century library in Dublin is preserved around a modernized inner core

BY NORMAN McGRATH

The heart of Ireland, of Dublin, and of Trinity College—Ireland's foremost university—is Trinity's 250-year-old library, designed by Thomas Burgh; it houses an invaluable collection of manuscripts and rare books dating from the founding of the university in 1591. The rarest manuscript in Ireland's history, the Celtic illuminated Book of Kells of 800 A.D. is found here. The library, too, shares with England's Oxford and Cambridge Universities the unique privilege of receiving a free copy of every book published in the Republic and in the United Kingdom.

The Trinity College Library draws thousands of visitors each year to view the Book of Kells, and the university itself is rapidly expanding. To handle the influx of both students and tourists, the university decided to expand and modernize its library facilities. A new library, the result of an international competition (photo, top right and Oct. '67 issue), was completed in the summer of 1967. Designed by Paul Koralek (with Peter Ahrends and Richard Burton), this building is certainly one of the best works of modern architecture in Ireland.

Koralek's firm was chosen, too, to renovate the interior of the

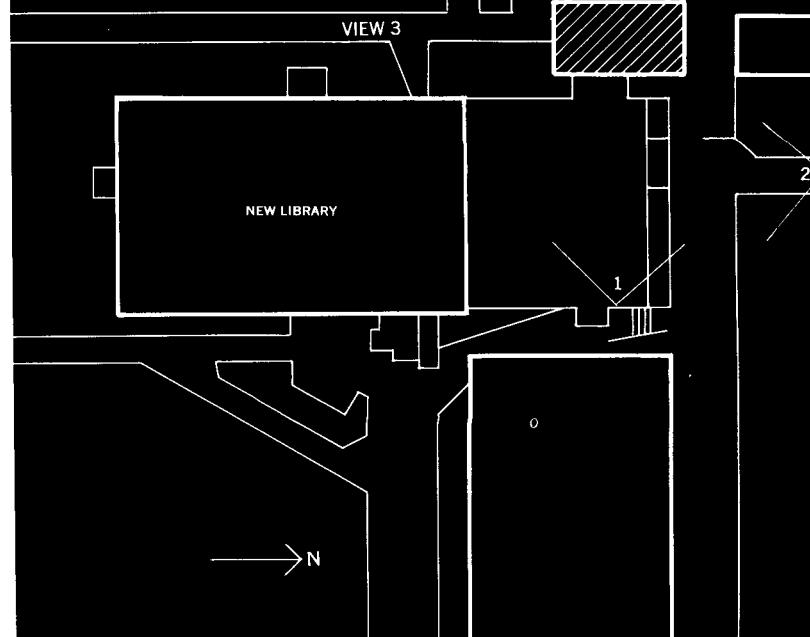
Mr. McGrath, a photographer and trained engineer, returned to Trinity College where he had been a student, to photograph and record his impressions of the library's new interior. He is the son of one of Ireland's first modern architects, Raymond McGrath.



VIEW 2



VIEW 3





East Pavilion, or wing, of the old library building. With the increase of visitors to the library, the university wanted to plan an interior in which the two functions, tourist and student, would be separate. They wanted, also, to make a link between the old building and the new.

Without sacrificing his own contemporary approach, and without touching the exterior of the old library, Koralek resolved both problems. He has created controlled access to a visitors' reception area and to the beautiful two-story, 18th-century Long Room (right) where the Book of Kells is on display; and he has created separate access for students (from a tunnel connecting the old and new buildings) to the Department of Rare Books above the reception area.

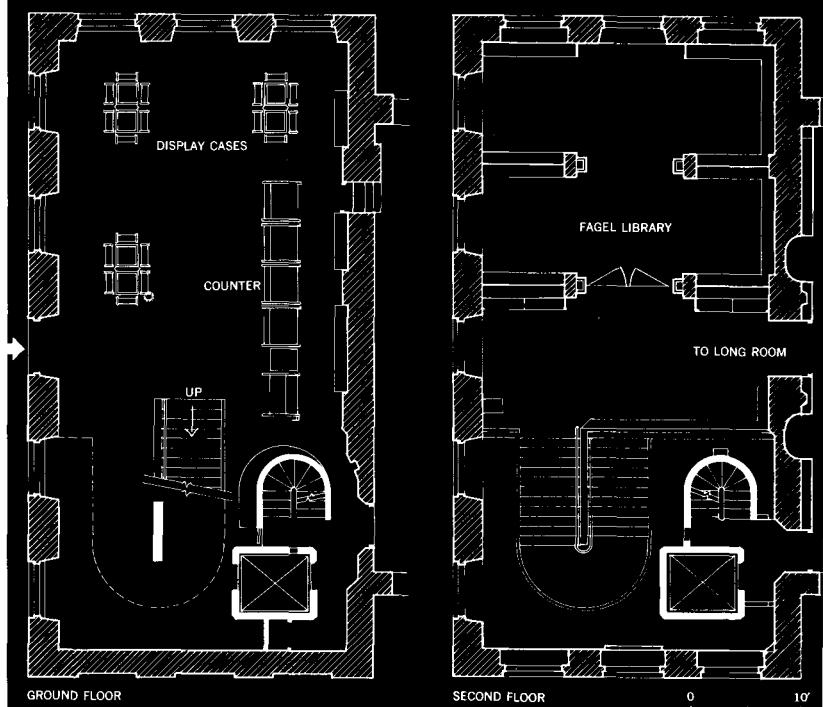
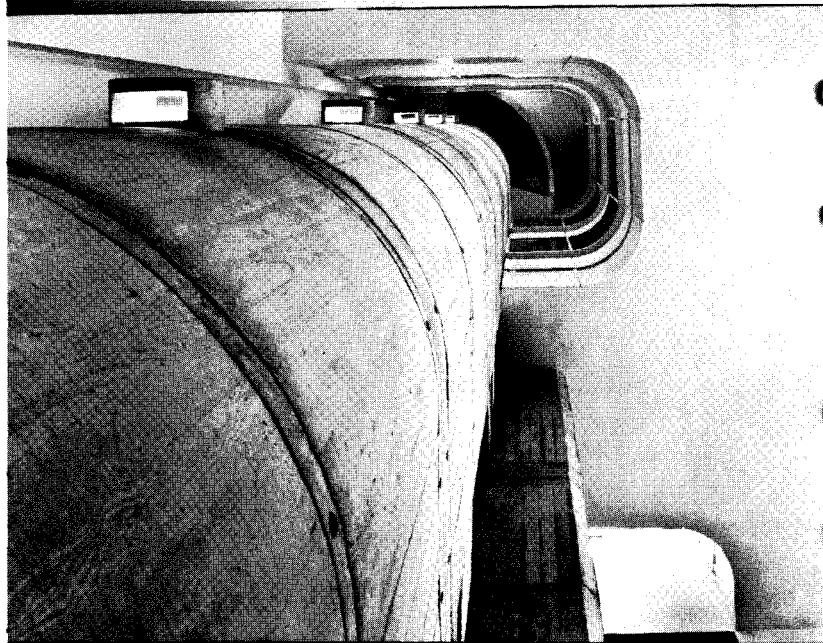
As the visitor enters the East Pavilion from the forecourt, he finds himself in a high-ceilinged reception area with glass-fronted black counters and freestanding black display cases for publications and slides. On the rear wall hang black panels for display of reproductions, etc. These black surfaces contrast strongly with the otherwise simple white interior, and with the magnificent classic windows.

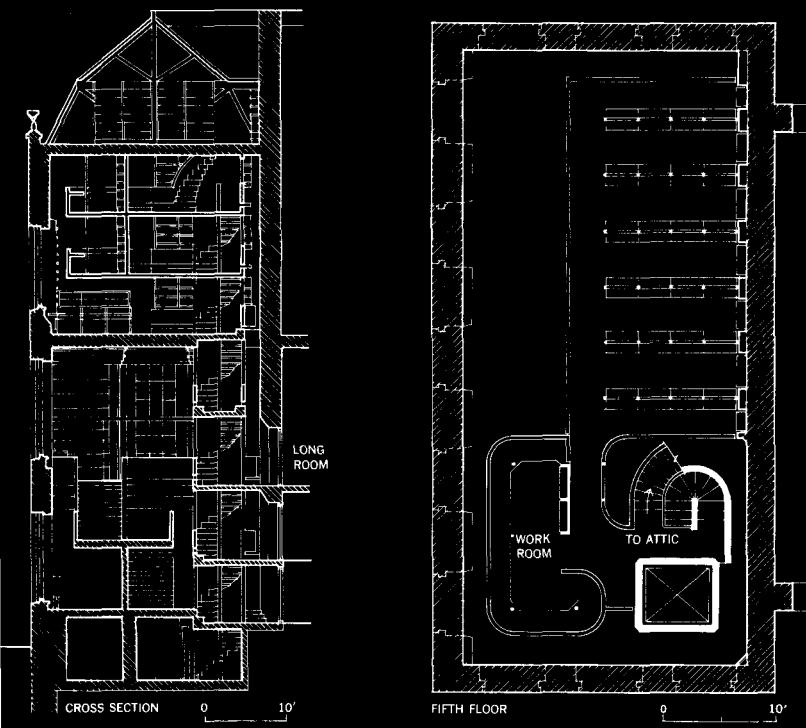
Beyond the reception area, a wide concrete stair (plans right and photo left) takes the visitor to the second floor and to the main entrance to the Long Room. The former entrance, located at the other end of the room, is now used as an exit, to control visitors' traffic.

The second floor itself, in the East Pavilion, retains the original carved wooden bookcases filled with rare books that occupied the same place in the library before restoration. This remnant of the old becomes a visual link to the Long Room for the visitor.

The Department of Rare Books occupies the top three floors of the library. The boldest feature of Koralek's design, a two-part concrete shaft enclosing stairs and an elevator (left, beyond visitors' stair), provides controlled access to these floors which are not open to the pub-

A wide curving visitors' stair (left and top right) flanks a separate concrete shaft which contains stairs and elevator used by students who wish to go to the Department of Rare Books. Stained glass covers one of the original windows (left).





lic. Only privileged students and staff can enter the department, passing first through a turnstile and control point at the main floor level. Both stairway and elevator bypass the second floor and visitors' staircase.

The concrete shaft rises dramatically through the double-height space at the northwest corner of the reception area, and thrusts past openings on the upper three floors, penetrating all the way to the attic. These openings permit view to the attic (photo, top left) where parchment-covered volumes of enormous size nestle between roof trusses.

The only problem arising from the placement of the shaft is noise transmission; to solve this, the openings were glazed with plexiglass, thus blocking out the sound while still preserving the visual effect.

Above the third floor reading area Koralek has suspended two additional floors from steel roof trusses, thus avoiding junctions at mid-window height. Small reading areas and work spaces are provided adjacent to the bookstacks on these floors. Each floor is encircled by a white-painted balustrade (photos, left and right); both balustrades are visible through the upper windows of the west facade from the forecourt (see page 70).

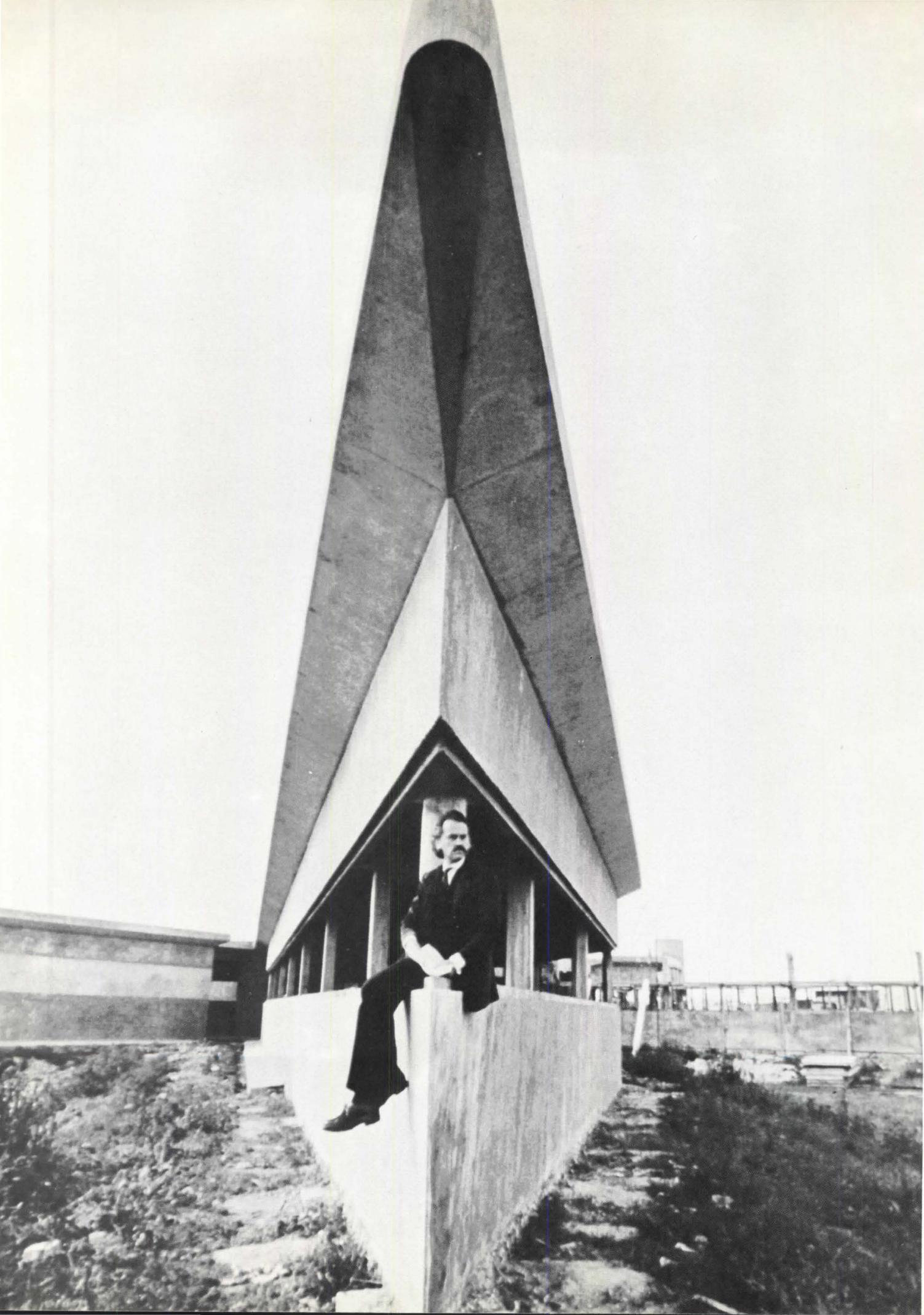
Everywhere Koralek has maintained a careful attention to detail: light fixtures on the rounded end of the stair shaft punctuate each floor level; anti-glare baffles on the neon light fixtures illuminate many of the bookstack areas; and a beautiful stained glass window (photo opposite) camouflages one of the original windows which would otherwise have caused an awkward break in the wall plane.

---

The two top floors are suspended from steel roof trusses, between which stand rare parchment-covered volumes (top left). These floors, with their white balustrades (bottom left and right), overlook the main reading area on the third floor.

**FACTS AND FIGURES:** East Pavilion, The Old Library, Trinity College, Dublin, Ireland. Architects: Ahrends, Burton & Koralek (Paul Koralek, architect in charge; Paul Drake, associate architect). Engineers: Felix J. Samuely & Partners (structural); Steensen Varming & Mulchachy & Partners (mechanical). General contractor: G. & T. Crampton Ltd. Cost: approximately £80,000 or \$240,000.





election year. Board members voted unanimously, though in absentia, out on the hustings.

● More than a year ago, a team headed by Engineer William Mouton Jr., and including Architect Philip Johnson, submitted the proposal (top right) for a U.S. Pavilion at Osaka's Expo 70. A committee organized by the U.S. Information Agency rejected the Mouton-Johnson scheme (see Oct. '68 issue).

Last month, the same project cropped up once again—same architect, albeit with a new structural engineer: Lev Zetlin & Associates, and this time at Niagara Falls, N.Y., about 7,000 [flying] miles from Osaka. It also has a different (though generally related) purpose: the great, vaulted hall (above right) is to serve as the main arena of the \$18-million Rainbow Convention Center. Japan's loss will be our gain.

## TURNABOUTS

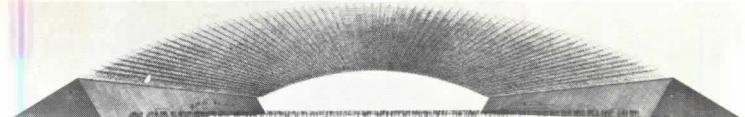
### KING LEAR STEAMS AHEAD

Out in the sands of Nevada is a 3,600-acre wonderland, called Learville, where impossible dreams come true. Overseeing this land is Mastermind William P. Lear, creator of the Lear jet and of 135 inventions that have helped shape the development of electronics and aeronautics.

His latest project is the smogless Larmobile and the larger Lear coach. (Wm. P. believes in signing his *chef d'oeuvres*—"If it is good, why shouldn't I be proud of it?") Both the Larmobile and the Lear coach will be steam-propelled.

Fire from kerosene burners will maintain a constant flame; steam will come from a super-dense water called (hold on!) Learium. The steam will drive a turbine, the turbine a generator, and the generator will supply electricity to individual motors on each wheel. The steam will condense and be recycled as Learium once again.

Lear has spent over \$4 million of his own money (he is worth over \$200 million), and will continue to shell out about \$250,000 a week until the vehicles are roll-



ing off production lines, hopefully early next year.

San Francisco County has agreed to purchase a Lear coach and the California Highway Patrol will buy a Larmobile.

Anyway, our bet is that Lear, who has the guts to name his daughter Shanda, and who has been cited by President Nixon as an "authentic genius," cannot fail to make the Larmobile a household item.

### DYING FOR ITS SINS?

After 30 years in charge of MIT's Instrumentation Laboratory, where over \$54 million a year is spent on defense (mainly weapons) research for the Pentagon, Dr. Charles Stark Draper is to be replaced by Charles Miller, head of MIT's civil engineering department and of the two-year-old Urban Systems Laboratory. The I Lab, plus the communications-and-radar Lincoln Laboratory (\$68 million a year), will then, as of January 1, concentrate on environmental problems and urban research—pollu-

tion control, housing, community development, and transportation—instead of projects like the inertial guidance systems for submarines (SINS) that made the I Lab Number One in defense research under Draper.

Draper is not leaving quietly—he is bitter. But the students and faculty who initiated the move to "peaceful" research are even less quiet. Sporadic, but intense, protests have been breaking out on the MIT campus (below), mainly over the "slow pace" of conversion of the lab, and because of a letter some student radicals stole which they said proved the I Lab's demise to be a fraud.

The changeover is, in fact, to undergo a seven-month trial period under Miller's guidance, and none of the previous commitments to the Pentagon, including the MIRV, will be dropped. The 1,900-man staff of the lab is mainly trained in defense research and will have to be retrained or replaced. Talks with government agencies and foundations lead Miller to be-



## FOOTNOTE

**STAR**—The gentleman perched on what appears to be a concrete ship is the French Painter Georges Mathieu, and he is actually sitting on the window-sill of a transformer factory he has designed. The plan of the factory is shaped like a seven-pointed star, and Mathieu explains that the building combines "beauty of design with practical amounts of functionality." Photo: Paris Match.

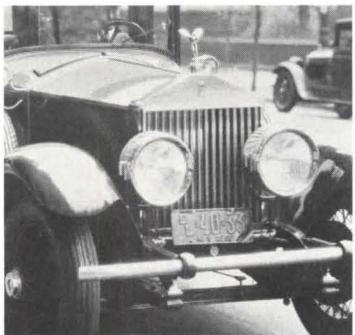
lieve that MIT will not lack for projects. And, the lab will be renamed the Charles Stark Draper Laboratory, and Draper himself will continue to participate in the lab's activities as senior advisor on space and defense (not weapons) projects.

## UPS & DOWNS

### CUT-RATE PARTHENON

A lot of people used to think and say that the traditional radiator-front of the Rolls-Royce was, in essence, the Parthenon of Industrial Design—and we agree. Indeed, that flat, classical, smashingly chromium-plated facade (below) even makes the almost-as-classic Mercedes radiator look like a screened porch.

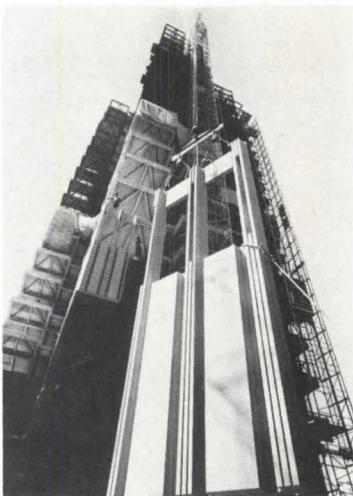
Last month, as it must to all symbols of the British Empire, decline and fall came to the magnificent radiator—and at the hands of none other than the U.S. branch of Rolls-Royce itself. In some unlikely place called Paramus, N. J., Rolls-Royce is planning to build a 25,000-sq.-ft. National (U.S.) Headquarters. The milk of human kindness and



the fear of a libel suit prevent us from identifying the architects—but above is a rendering of their creation, anyway: it incorporates, among several other cunning details, a giant replica of a Rolls-Royce grille (albeit re-styled to look awful) over the entrance portals.

As we studied this extraordi-

nary work of architecture, we recalled that the double-R on the traditional grille was changed from red to black when Sir Henry Royce died, about 40 years ago—the only substantial change made in the design over the past 65 years. Perhaps the time has come to paint the rest of that grille black also.



### MORTGAGES AND TOOTHPASTE

Rising over San Francisco's waterfront is the first office tower of Embarcadero Center (above). The developers are Trammell Crow of Dallas; John Portman of Atlanta (architect, planner, and managing partner); and David Rockefeller of New York. Eventually, the view from this tower will resemble the drawing (above, right), looking out over the center, the elevated Embarcadero Freeway, and the landmark Ferry Building, toward the Bay.

But Phase Two of the project has already run into snags. Construction of the \$25-million "Rocky West" hotel (right background), which was to have begun January 1, may be delayed because of tight money and "toothpaste."

High interest rates have made financing much more difficult than it was a year and a half ago when the partners took out a \$36-million loan from Metropolitan Life. "Toothpaste" is Portman's word for the surprisingly spongy land at the foot of Market Street—bay-fill from over a century ago—that will require 120-ft.-long pilings to anchor the hotel.

So the group has economized by pushing up the number of hotel rooms, and cutting out an access to the subway and 50 subsurface parking stalls.

Speculative builders with less



weight than David Rockefeller have, of course, made the same discovery: try to buy some money these days and the ground turns to toothpaste underfoot.

## REBIRTHS

### LINCOLN CENTER FINALE

The Juilliard School in New York City has acquired a home equal to its burgeoning activities and, in some ways at least, equal to its reputation. An astonishing number of the artists who appear nightly throughout Lincoln Center were trained at Juilliard, and the school appropriately



completes that monumental complex for the performing arts.

Opening night, black tie ceremonies included a nationally televised, 90-minute concert featuring Juilliard alumni as soloists (host Leonard Bernstein evoked the Socratic ideal, in which "teachers learn and students teach"); and a spontaneous and unrehearsed drama in which Mrs. Richard M. Nixon, daughter Julie, and son-in-law David Eisenhower got stuck in an elevator to the consternation of the Secret Service.

The building (below)—designed by Pietro Belluschi, in association with Eduardo Catalano and Helge Westermann—includes six performance halls: the 1,100-seat Alice Tully Hall (whose acoustics are universally praised); a Lincoln Center facility (1,060 seats); the Juilliard Theater (961 seats); the Paul Recital Hall (277 seats); the experimental Drama Workshop (277 seats); and an Opera Theater (which may not open to the public until the fall of 1970).

And as if that were not impressive enough, the stage of the Opera Theater alone is larger than the stage at the New York State Theater by Philip Johnson, across the way.

Though separated from the rest of the center by a cross-town street, the architecture of the building provides no marked generation gap with its neighbors. But the student body quickly introduced an atmosphere of academe into the somewhat staid environs. Two weeks after the school opened in October, students were performing in the plaza in support of the Vietnam Moratorium.

## MAIN STREET, U.S.A.

Like the dermatologist who scrapes away new wrinkles to revive an old luster, two designers and a Community Design Committee are slowly changing the face of downtown Medina, Ohio (population: 8,235).

Elmer Zarney, Ken Lipstreu,



and the committee encouraged Ziegler's department store (above) to strip away its "modernized" front and the arched brows of its canopy. Under it all were some more arched brows, but these were High Victorian Italianate, and very elegant (top right). The new canopy simply reflects the cornice.

Two shops down the street, Longacre & Son were tearing down their sign so they could put up a new one, when they discovered their long-forgotten, original marker, set in Tiffany glass (right). At Zarney's recommendation, they kept it.

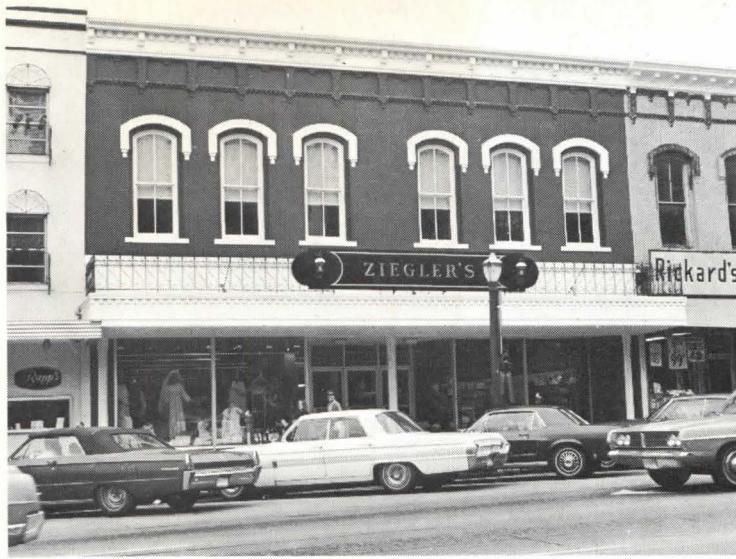
Six other stores have been, or are being renovated with the help of the committee; a creative street-lighting plan has been presented to the city council; shade trees, sign ordinances, and consolidation of state highway signs have been discussed; and an inventory of old houses has been taken with a view toward preserving some of them as local historical landmarks.

Young Zarney is somewhat defensive about Medina's Victoriana ("We're not trying to turn the clock backwards"). But as fashion designers will attest, the new is really the old revived, and the good goes on forever.

## PEOPLE

### MIES MEMORIAL

Some 300 friends of the late Ludwig Mies van der Rohe gathered in Crown Hall, Mies' masterpiece on the IIT campus, on Saturday, October 25, to honor his memory. It was a joyous occasion, a celebration of a long and enormously productive



life, and attended by men and women who had come from all over the world to celebrate. The day was clear and sunny, and made even more pleasant by a delightfully anecdotal talk about the great man by Museum Director James Johnson Sweeney (below, with Mies' grandson, Dirk Lohan). There was a beautiful and solemn rendition by Cellist Janos Starker of two Bach suites, and that was it.

There was no sadness; in the city of Chicago, newly built or being built to a great part in the image of Mies, one recalled the inscription on Sir Christopher Wren's tomb in St. Paul's, ad-

dressed to visitors to that great cathedral: "If you seek his monument, look around you."

### FOR ANGLOPHILES

The proposed Paul Mellon Center for British Art and British Studies at Yale University will be designed by a former faculty alumnus, Architect Louis I. Kahn. A \$1-million gift of Pittsburgh Philanthropist Paul Mellon, the center will house his collection of British painting, drawing, and rare books, and is described by Yale as "the most comprehensive center of British culture outside the British Isles."

• Perhaps the least comprehensive dedication speech ever, anywhere, was made by Britain's Prince Philip while officiating in a drenching rain at the opening of a City Hall annex in Vancouver, British Columbia. Said the Prince: "It gives me great pleasure to declare this thing open—whatever it is."

• Lord Llewellyn-Davies, who is planning a new town near Syracuse, N.Y., for the New York State Urban Development Corp. (Sept. issue, page 32), has re-



signed his post as professor of architecture at London's University College to head up a new School of Environmental Studies.

The object is to expand the education of prospective architects and planners to include such subjects as environmental engineering and the economics of urban development. "There are a number of schools of environmental planning," says Lord Llewellyn-Davies, "but they are generally just assemblies of autonomous departments. We intend to do away with these old professional boundaries. There's nothing like it, even in America."

• Most intriguing match of the month: Ronald J. Herron, one of the six British architects who formed the Archigram group and designed "plug-in" cities thought far-out by the squares, has become director of urban design for the Los Angeles firm of William L. Pereira & Associates.

### HONORS AND ELEVATIONS

• Daniel Patrick Moynihan, President Nixon's advisor on urban affairs, got an Executive vote of confidence last month with elevation to Cabinet rank. He will share the title of Councilor to the President, formerly held by Arthur F. Burns, with Bryce Harlow, the President's former Congressional liaison. Burns moves on to head the Federal Reserve Board.

Moynihan will be the Administration's urban thinker, providing "long-range vision" and "innovation," according to the official language, while John D. Ehrlichman, the President's former counsel, will oversee the development of specific policy and programs in the newly created post of assistant to the President for domestic affairs.



• Architect Ralph Walker (above), of New York City, was named last month a Member Emeritus of the AIA, marking both his 80th birthday and the golden anniversary of his entry into the architectural profession.

# WALTER MCQUADE

## NOTES ON THE MARGIN OF A MASTER PLAN

Just at this moment in time I feel that I know quite a lot about the diction of city planning. The "Master Plan" or "Comprehensive Plan" for New York City is about to be published, which means that, as an appointed member of the planning commission, I have, during the past two years, had the privilege and duty of reading through some thousands of pages of manuscript drafted by professional planners in various sections of this monumental document. The Plan will be bound in six volumes containing some 450,000 words to be issued separately over the next eight months.

This is the first modern master plan for the city of New York, following in the distant wake of Peter Stuyvesant's Nieuw Amsterdam layout and the gridiron street solution. The new plan has taken some 32 years to produce, although it was one of the early charges to the planning commission by Mayor Fiorello



LaGuardia in 1938 when the commission was first brought into being. The commission at that time was also given two other immense, continuing jobs to get done every year, which probably helped to cool the burning desire for a master plan. The first task was the administration of the oldest but not least complicated zoning provision of any major American City, and the second the preparation of the yearly capital budget for the mayor, which recently has been approaching a billion dollars annually.

Another reason for the delay may be the gingerly approach of most city planners to prose composition. City planners are among the pleasantest, most decent, wittiest, and warmest people I've known, and almost all of them are winning speakers. But when they write it down, they disappear. After you've read a few thousand words of their writing you begin to forget what they look like. They've vanished,

leaving no footprints behind in the prose. You're left alone, in a tent of paper. Here is an unpublished example of what I mean: "If findings support the contention, it is suggested that the possibility of voluntary supported, fee charging service for both functions be explored."

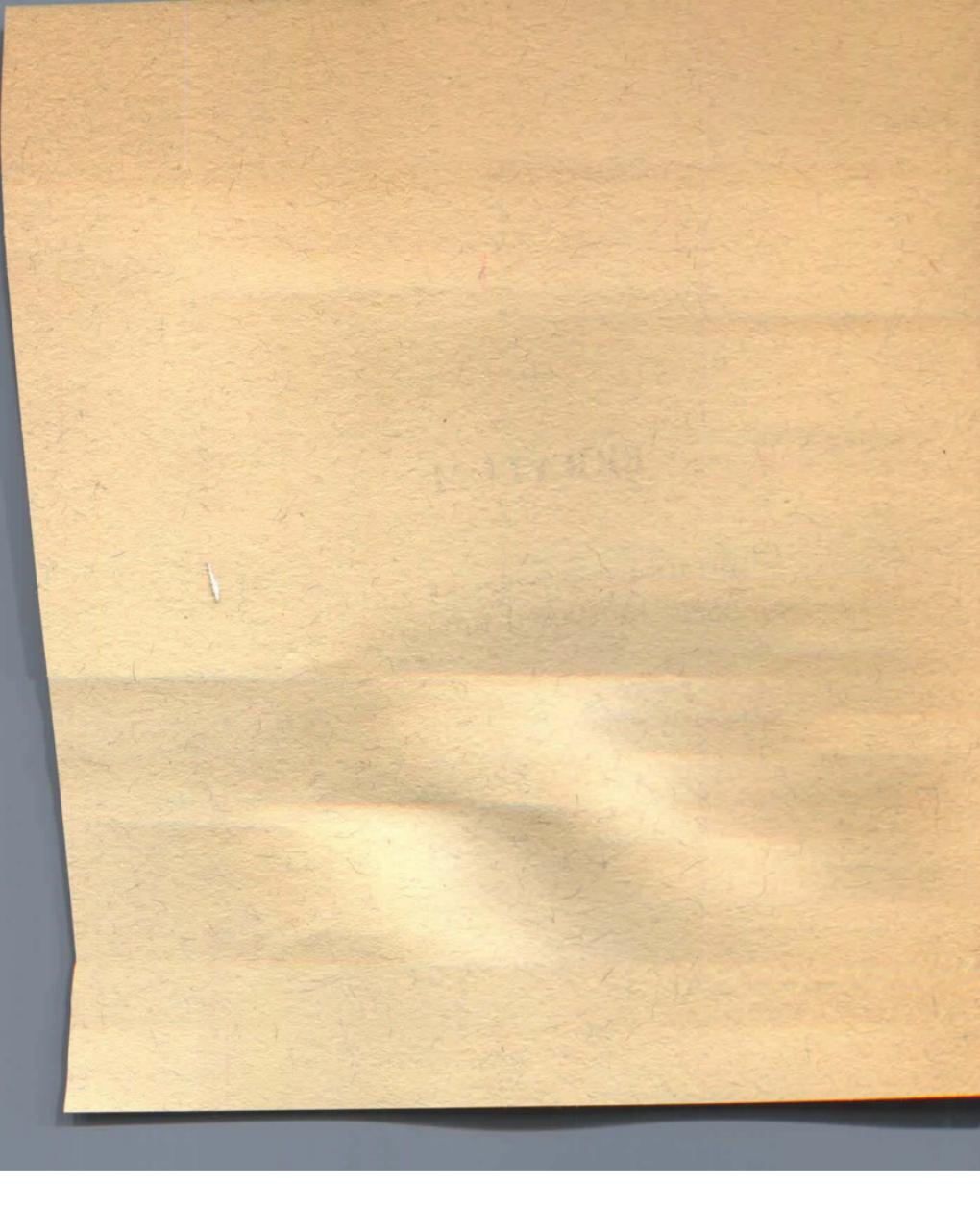
The real reason no master plan appeared during the commission's first 32 years may have been the presence on the political and planning scene of that great city-shaper Robert Moses, who prevailed completely in the 1930s, 1940s, 1950s and the early half of the 1960s. The mighty Moses is said to have preferred to wear his private master plan for New York in the lining of his hat, where it could easily be adjusted to the exigencies of political reality.

But the hat is off now. Finally New York City, the largest city in the United States—and, in a manner of speaking, its common-law capital city—will have a master plan.

PHOTOGRAPHS: Page 21, Wide World Photo; page 22 (bottom left), Nana Photo; page 23 (bottom), George Cserna; page 24, Julius Shulman; page 77 (second from top), Louis Checkman; (bottom), UPI; page 78 (auto, left) General Motors Photo; page 79 (left and top), F. Eugene Smith; page 80, The Port of New York Authority.

## **ERRATUM**

Illustrations on *pages 84 and 86*  
were transposed in error.



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# ■ PREVIEW

## CLIMATIC COMPLEX

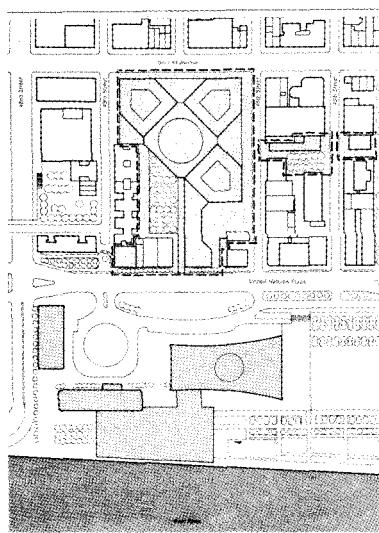
Nicollet Mall in Minneapolis (Jan./Feb. issue) will be "carried into a climate-controlled environment," says Architect Philip Johnson who, with John Burgee, and with Edward F. Baker Associates of Minneapolis, has designed a huge new complex covering a full block adjacent to the mall. The complex will be dominated by a 51-story crystalline office tower for Investors Diversified Services; the tower will be

sheathed in tinted glass, and an eight-story office annex will be attached to it. The two buildings will be serviced by 30 elevators.

The IDS Center will also include a 19-story hotel and bank building (the bank occupying the first three floors) at the corner of Marquette and 7th, a two-story Woolworth building at Nicollet and 7th, a theater, restaurants, and underground parking. Four "skyways" will connect

the complex to adjacent blocks.

In the center of the complex will be the "Crystal Court." It will be roofed over with faceted glass pyramiding upward from the second story of the retail store to the seventh floor of the tower. The court will be ringed by two levels for shopping; the upper level will overlook the court's fountains and "gardens." A third level underneath will be a shoppers' concourse.





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Hotel (1928), standing proudly in the background to illustrate the test of time.

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# PREVIEW

## REFLECTIONS FOR THE U.N.

In 1968, the New York State Legislature created the United Nations Development Corporation with powers to approve a plan for the U.N. district, and to acquire property to implement that plan. A first proposal by Architects Kevin Roche, John Dinkeloo Associates (June '68 issue) has been supplanted with another unveiled last month.

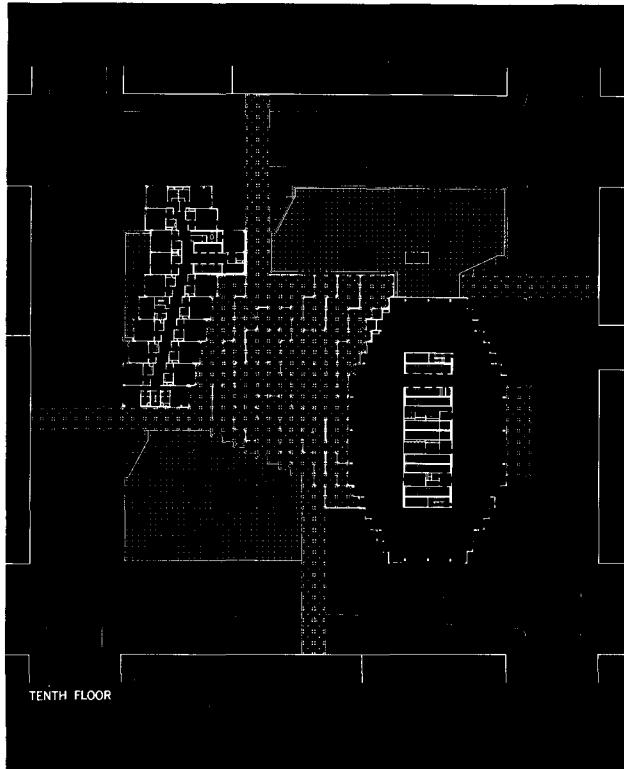
In the same two-block area immediately to the west of the

General Assembly building, between 43rd and 45th Streets and First and Second Avenues, will rise four buildings—one will be an apartment-hotel; the other three will be used for office space for the U.N. and related international organizations. These three towers, each 40 stories high, will splay out from a 40-story glass-enclosed, domed "arcade" which will have some balconies connecting upper floors of the three

structures. All three towers will be sheathed in a mirror-like glass reflecting nearby buildings.

A rotunda at the base of the glassed-in arcade will lead to three levels, all devoted primarily to visitors' facilities. The top-most level will enclose a park with trees and a swimming pool.

Acquisition of the land should begin in late 1970; construction of the \$300-million center will begin in 1972.

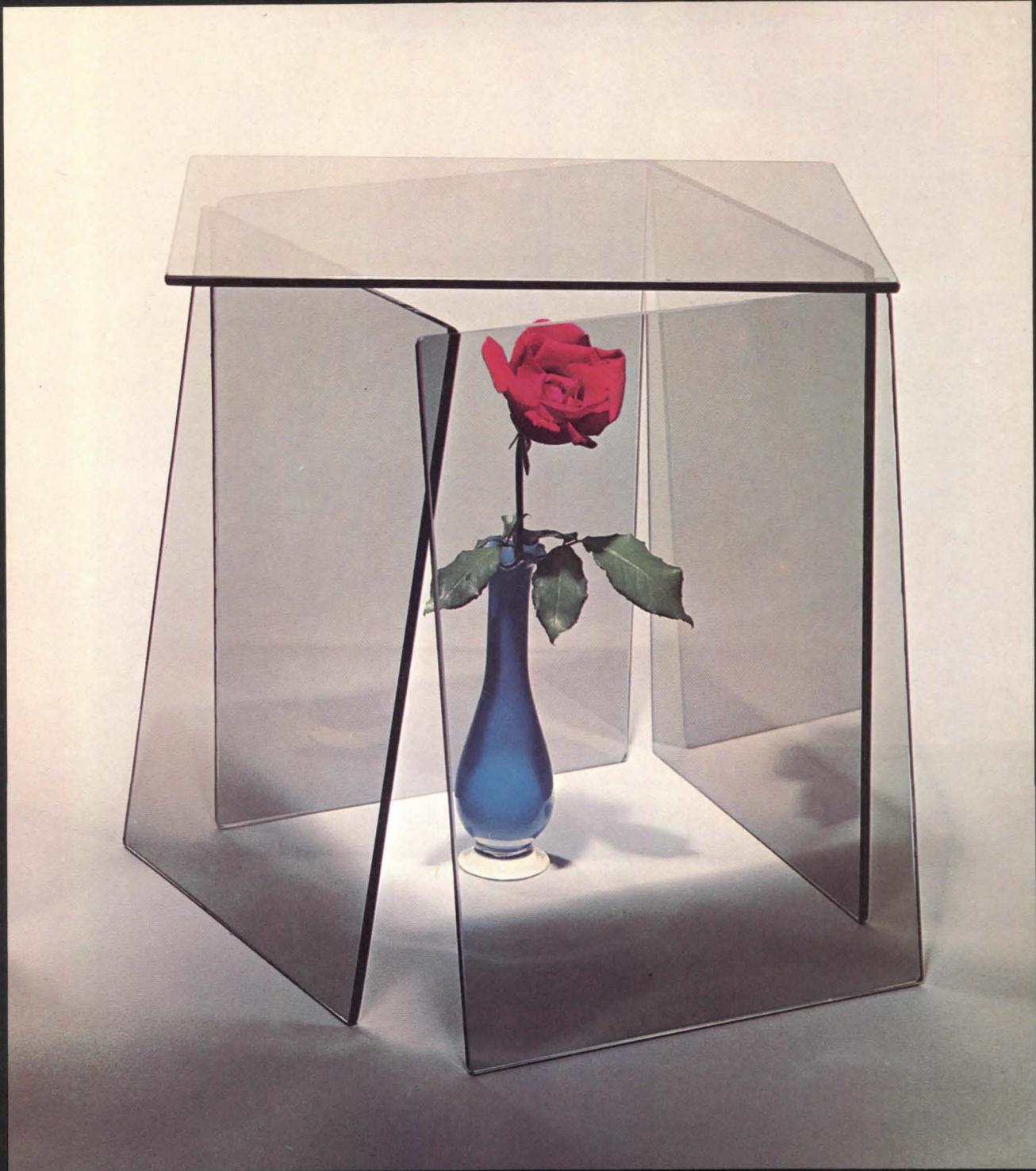


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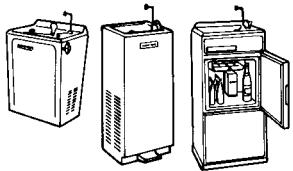
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**Capacity** — 60 cups per hour of 180° to 145° water — or 10 cups rapid draw — from gooseneck, lever-operated cup filler.

**Available as** — a factory-installed accessory on Halsey Taylor wall-mount cooler WM-14-CB, and floor-standing coolers SC-14-CB, WT-14-CB, and compartment type model CP-3-CB.



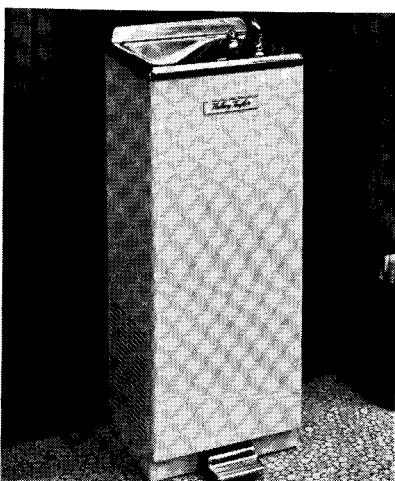
Write for Catalog and specifications.  
THE HALSEY W. TAYLOR COMPANY  
1564 Thomas Road, Warren, Ohio 44481  
SUBSIDIARY-KING-SEELEY THERMOS CO.



## HALSEY TAYLOR COFFEE BAR AVAILABLE ON...



WM-14-CB



SC-14-CB



CP-3-CB

**WRITE FOR  
NEW CATALOG**

Latest information on HALSEY TAYLOR electric drinking fountains and water coolers. Send for your copy today.



# Versatile Electric Heating/Cooling System Provides Economical Operation, Comfortable Environment in New Bank



The American Bank in Galveston, Texas, features an exterior of Mexican brick and graceful arches of steel tubing painted white.

**PROJECT:** The American Bank, Galveston, Texas.  
**ARCHITECTS:** Paul S. Wahlberg and Richard V. Morales, Houston, Texas. **CONSULTING ENGINEERS:** Joe E. Lee & Associates, Houston, Texas.

**DESIGN CHARGE:** To design a modern bank with a large public lobby, six teller stations, a board room, vault, general and private offices, a snack lounge, bookkeeping facilities and storage areas.

**DESIGN RESPONSE:** Architects Wahlberg and Morales designed a modern two-story structure of dipped white Mexican brick with graceful arches of steel tubing painted white to provide a feeling of Spanish architecture in keeping with the historical traditions of Galveston. Two drive-in teller stations are located on the south side of the building and a third is located on the west side. Parking is at the rear.

The spacious interior has a two-story public banking area finished in white brick and plaster. The president's office, a conference room, six teller stations, and a customer/employee snack

lounge equipped with a coffee bar, are all located on the ground level. The mezzanine, designed to meet future expansion of office space, is currently being used by the bookkeeping department. All of the carved oak doors, teller counters, and check-writing stands came from old buildings in Galveston or New Orleans.

The bank is conditioned by an electric system using two packaged electric air conditioning units mounted on the roof and two air handling systems, both located on the mezzanine. One serves the banking area, the other the mezzanine. Each unit is equipped with strip heaters and direct-expansion coils and each is controlled by a separate humidistat and thermostat with automatic switchover from heating to cooling and vice versa.

Engineer Joe E. Lee says that the strip heaters can be used for the reheat and humidity control so essential in the Gulf Coast region. He also says that the electric system has proved to be far more economical to operate than originally estimated "even with all that glass area."

Gentlemen:  
Please send the complete series of Electric Heating Case Histories as they become available to me at the following address:

Name and Profession: \_\_\_\_\_  
Firm, University or other affiliation: \_\_\_\_\_  
E Address: \_\_\_\_\_

Zip Code: \_\_\_\_\_

## **1 CATEGORY OF STRUCTURE:**

Commercial—Bank Building

## **2 GENERAL DESCRIPTION:**

Area: 8,400 sq ft  
Volume: 98,000 cu ft  
Number of floors: two  
Number of occupants: 30 plus patrons  
Number of rooms: 14  
Types of rooms: 6 teller stations, banking lobby, private and general offices, conference room, drive-in windows, lounge area, storage area, vault

## **3 CONSTRUCTION DETAILS:**

Glass: single  
Exterior walls: solar glass and double brick (R=2) steel frame, gypsum board on metal studs; U-factor: 0.39  
Roof and ceilings: built-up on roof 2½" light-weight concrete (R=4) over metal deck, suspended acoustical tile; U-factor: 0.17  
Floors: concrete slab, with tile and vinyl  
Gross exposed wall area: 5,880 sq ft  
Glass area: 2,310 sq ft

## **4 ENVIRONMENTAL DESIGN CONDITIONS:**

### **Heating:**

Heat loss Btuh: 400,000  
Normal degree days: 1,211  
Ventilation requirements: 3,100 cfm  
Design conditions: 25F outdoors; 72F indoors

### **Cooling:**

Heat gain Btuh: 390,000  
Ventilation requirements: 3,100 cfm  
Design conditions: 95F dbt, 80F wbt outdoors; 75F, 50% rh indoors

## **5 LIGHTING:**

Levels in footcandles: 20-100  
Levels in watts/sq ft: 1.5  
Type: fluorescent and incandescent

## **6 HEATING AND COOLING SYSTEM:**

The bank is conditioned by an electric system using two packaged electric air conditioning units mounted on the roof and two air handling systems located on the mezzanine. One serves the banking area, the other the mezzanine. Each unit is equipped with strip heaters and direct-expansion coils and each is controlled by a separate humidistat and thermostat with automatic switchover from heating to cooling and vice versa.

## **7 ELECTRICAL SERVICE:**

Type: underground  
Voltage: 265/460v, 3 phase, 4 wire  
Metering: secondary

## **8 CONNECTED LOADS:**

Heating & Cooling (35 tons)	160 kw
Lighting	35 kw
Cooking	2 kw
Water Heating	9 kw
<b>TOTAL</b>	<b>206 kw</b>

## **9 INSTALLED COST:\***

General Work	\$ 70,000	\$ 8.35/sq ft
Electrical	16,800	2.00/sq ft
Mechanical	22,500	2.70/sq ft
Plumbing	7,500	.90/sq ft
<b>TOTALS</b>	<b>\$116,800</b>	<b>\$13.95/sq ft</b>

\*Building was completed 10/65

## **10 HOURS AND METHODS OF OPERATION:**

The bank is occupied 5½ days per week.

## **11 OPERATING COST:**

Period: January 1968 through December 1968  
Actual degree days: 1,455  
Actual kwh: 299,232\*  
Actual cost: \$3,889.98\*  
Avg. cost per kwh: 1.33 cents\*  
\*For total electrical usage

Month	Degree Days	Demand	kwh	Amount
1/68	381	109	34,704	\$ 377.58
2/68	404	115	29,808	343.75
3/68	233	101	37,296	395.49
4/68	8	92	24,912	309.92
5/68		96	20,304	324.06
6/68		96	11,952	265.77
7/68		75	16,848	267.50
8/68		72	26,352	329.18
9/68		79	28,800	357.08
10/68	4	73	22,320	302.59
11/68	142	81	17,568	270.48
12/68	283	84	28,368	346.58
<b>TOTALS</b>	<b>1455</b>		<b>299,232</b>	<b>\$3,889.98</b>

## **12 FEATURES:**

The strip heaters are used for reheat and humidity control, an important advantage in the Gulf Coast region.

## **13 REASONS FOR INSTALLING ELECTRIC HEAT:**

The designers recommended an electric heating-cooling system for the following reasons: the system offered zone control, flexibility of design, and maximum utilization of floor space. In addition, the electric system permits the lower level to be on heating while the upper level is on cooling to provide maximum indoor comfort the year around.

## **14 PERSONNEL:**

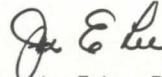
Owner: The American Bank  
Architects: Paul S. Wahlberg and Richard V. Morales  
Consulting Engineers: Joe E. Lee & Associates  
General Contractor: Tex Thornton & Associates  
Electrical Contractor: Pfieffer Elec. Co.  
Utility: Houston Lighting & Power Company

## **15 PREPARED BY:**

Jack M. Cobb, Manager, Sales Promotion and Research, Houston Lighting & Power Company.

## **16 VERIFIED BY:**

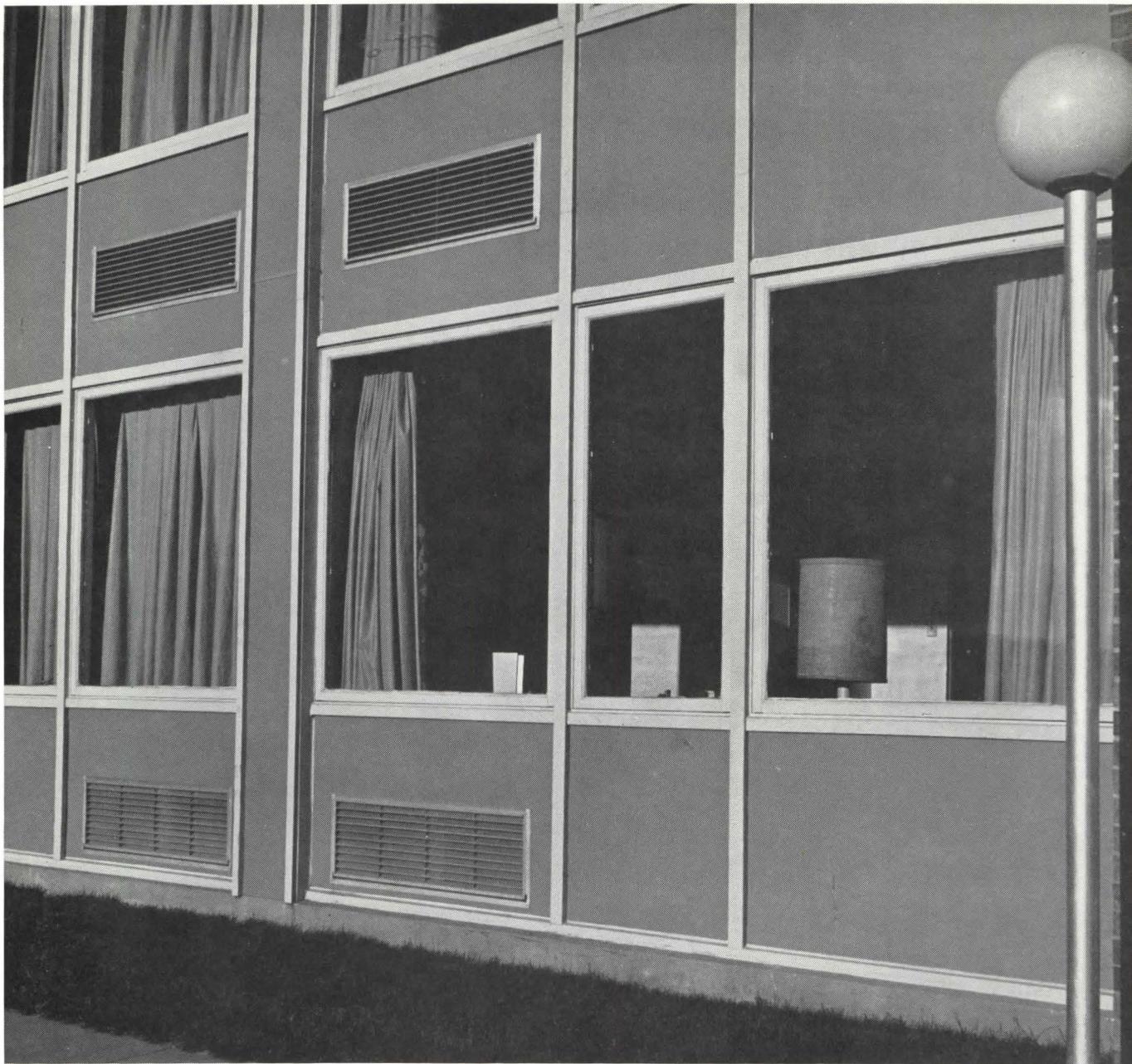
  
Richard V. Morales, Architect

  
Joe E. Lee, P.E.



**NOTICE:** This is one of a series of case histories of buildings in all structural categories. If you are an architect or consulting engineer; an architectural or engineering student; an educator; a government employee in the structural field; a builder or owner, you may receive the complete series free by filling out the strip coupon at the left and mailing it to EHA. If you are not in one of the above categories, you may receive the series at nominal cost.

ELECTRIC HEATING ASSOCIATION, INC. 437 Madison Avenue, N.Y., N.Y. 10022



## What's going on in there is one of our business.

And our business is air conditioning. And heating. And refrigeration. Here at the new Holiday Inn at Valley Forge, for example, it's our versatile Newport III that's hard at the job of heating and cooling. 320 Model ISC-9 Newports conveniently turn the temperature up and down throughout this totally modern sleep and eat complex. 312 guest rooms, two banquet halls, two suites for private parties, a sizable dining room, and a bar, are effectively, economically, and gracefully served by these sleek all-climate centers. Anodized aluminum louvers blend in with any decor. These self-contained, all-electric, air-cooled performers eliminate the need for bulky, space



consuming equipment such as boilers, chillers, and cooling towers. And this benefit adds another one by sharply reducing installation costs. Individual room control allows for more efficient control of equipment and power usage, plus giving guests the advantage of individual temperature control. And, Newport III is easy to get along with, working equally well with hot water (up to 24.6 MBH), Steam (up to 26.8 MBH), or electric heating (up to 5.0 KW). Don't be blind to the possibilities of Newport. One look and it's usually curtains for competition.

Dunham-Bush, Inc., West Hartford, Conn.  
06110 Ontario, Canada • Portsmouth, England.

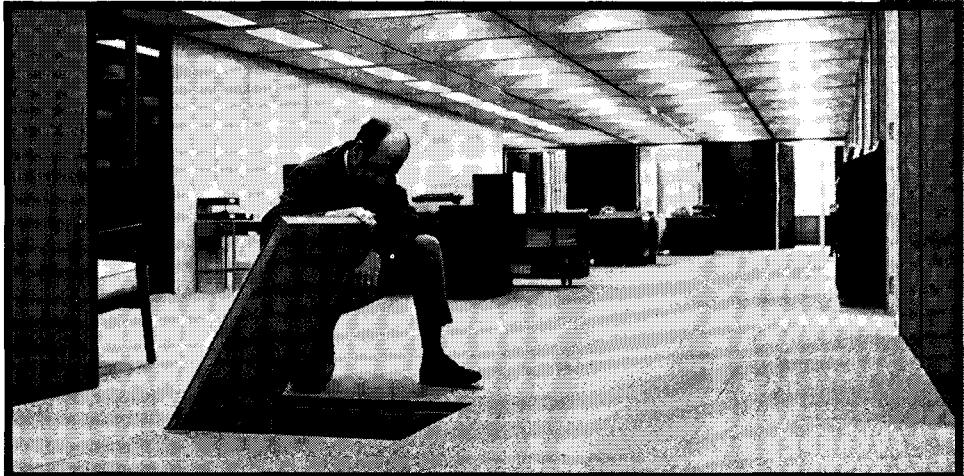


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# chicago high-rise shapes trend to access floors

A new concept comes of age,  
as more and more architects  
cease to think of access flooring solely  
in terms of special-purpose applications.



Typical of the growing trend toward access floor systems in general construction is this new office building designed for the American Hospital Association by Chicago architect, Richard O. Evans of Schmidt, Garden & Erikson.

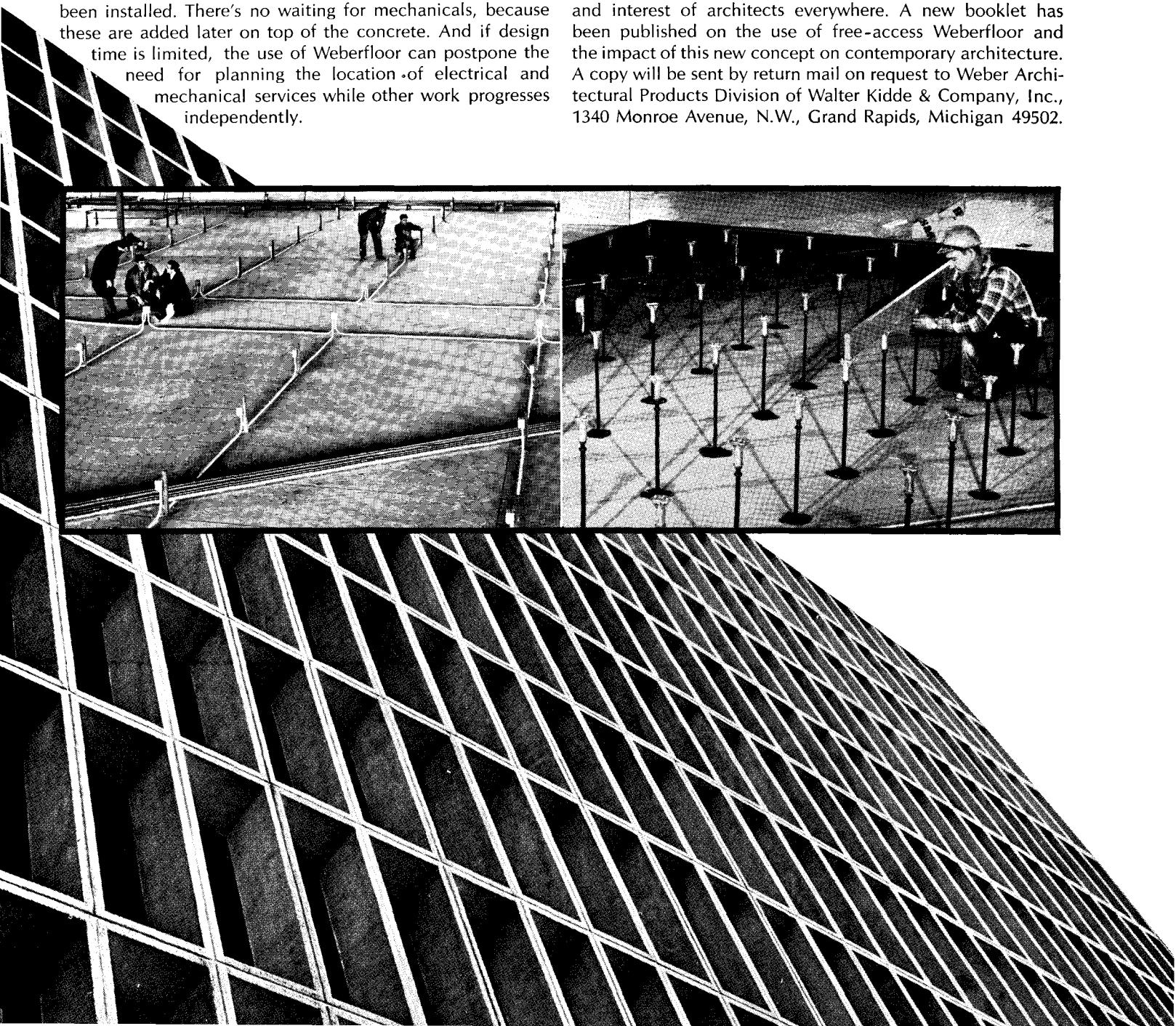
The building is planned for nineteen stories, of which twelve are now completed and occupied. So far, a total of 128,300 square feet of free-access Weberfloor has been used in the first twelve stories, and about 90% of this is carpeted. Installed cost of the floor was less than \$2.00 per square foot (not including floor covering) but it was felt the cost was easily justified by direct savings in construction and by future savings in the building's maintenance and use.

Generally the decision to use an access floor system begins paying off early in the structural phase. For example you can pour a floor slab as soon as the formwork and reinforcing has been installed. There's no waiting for mechanicals, because these are added later on top of the concrete. And if design time is limited, the use of Weberfloor can postpone the need for planning the location of electrical and mechanical services while other work progresses independently.

Notice too that no raceways or headers are required, and since the floor pedestals are readily adjustable for height, power troweling and other floor finishing costs are often eliminated altogether. In many areas, where local codes permit the use of the underfloor cavity as an active air plenum, Weberfloor can affect dramatic savings in the elimination of air distribution ducts.

But perhaps the single reason most often cited for adopting the Weberfloor concept is unlimited freedom to meet changing requirements with maximum ease and economy. New service outlets can be quickly tapped in virtually anywhere in the building without digging costly trenches or making core drillings in the concrete.

**Write for free booklet.** These are only a few of the major advantages and cost savings that have captured the curiosity and interest of architects everywhere. A new booklet has been published on the use of free-access Weberfloor and the impact of this new concept on contemporary architecture. A copy will be sent by return mail on request to Weber Architectural Products Division of Walter Kidde & Company, Inc., 1340 Monroe Avenue, N.W., Grand Rapids, Michigan 49502.



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## PRODUCT LITERATURE

To order material described, circle indicated number on self-addressed Reader Service Card, facing page 95.

### DOORS/WINDOWS 601

Architectural glass. 8-pg color catalog. Drawn sheet, enamelled, floated plate, tinted, solar, figured, diffusing. Properties, applications. Glaverbel (USA) Inc. On Reader's Service Card, circle 101.

Catalog includes technical information on LOF glass; includes VariTran (TR) and Vigilpane (TR) SA 68. Libbey-Owens-Ford Co. On Reader's Service Card, circle 102.

Catalog 170/OV covers typical installations, specs, test performance data, ASTM acoustical testing and rating procedure. Door, frame, acoustical seal details. Overly Mfg. Co. On Reader's Service Card, circle 103.

12-pg Performance Data booklet gives data, applications, performance, cost, installation and glazing recommendations for Heated Twinwindow units. PPG Industries, Inc. On Reader's Service Card, circle 104.

Plexiglas in Architecture-24-pg full color catalog shows full range of architectural uses for acrylic sheet: glazing, fascia, sunscreens, domes. Rohm & Haas Co. On Reader's Service Card, circle 105.

20-pg illustrated brochure details specs, uses of Haskins Fire Resisting Doors, Rolling Shutters and Shutterdoors. Morris Singer & Haskins Ltd. On Reader's Service Card, circle 106.

### ELECTRICAL EQUIPMENT 602

Master Time Systems  
8-pg 4-color brochure highlights features of Lewis' Master Time Systems. Includes illustrations. Lewis Engineering Co., Horological Div. On Reader's Service Card, circle 107.

### Communications

12-pg full color brochure covers Teletalk Zoned Communications: system planning aid & uses for private switch of dial controlled intercom, sound, music & paging equipment. Webster Electric Co., Inc. On Reader's Service Card, circle 108.

### FLOORING 603

Weberfloor. Unique access flooring in use in many jobs with few, if any, special-purpose requirements. 12-pg illustrated brochure details construction and economic benefits. Weber Arch. Prods. Div. of Walter Kidde & Co. On Reader's Service Card, circle 109.

### FLOOR COVERING 604

"Successful Contract Carpeting with Du Pont Fibers," a new book addressed to the specifier in the important, growing contract market. Extremely helpful to you in going after those big sales. E. I. Du Pont de Nemours Co. On Reader's Service Card, circle 110.

4-pg color brochure of architectural guide specs for direct glue-down installation of double jute-backed carpet. Specs prepared by W. E. Lunt, Jr., CSI in conjunction with Universal Carpet Service. Jute Carpet Backing Council. On Reader's Service Card, circle 111.

12-pg full color brochure on outdoor carpeting, includes applications, cleanability, quality standards program. Monsanto Co., Textile Div. On Reader's Service Card, circle 112.

### FURNISHINGS 605

8-pg color sampler illustrating the wide selection of decorator hues available for GF office furniture. General Fireproofing Co. On Reader's Service Card, circle 113.

### HARDWARE 606

16 pgs of catalog and special information on LCN Door Closers, includes surface mounted, overhead concealed and floor models. LCN Closers. On Reader's Service Card, circle 114.

Fire control devices—8-pg brochure contains illustrations and diagrams of complete line of fire control equipment for doors, Norton Door Closer Div. Eaton Yale & Towne, Inc. On Reader's Service Card, circle 115.

1970 Condensed Catalog. New 20-pg catalog describes full line of advanced architectural hardware including specs and function charts. Sargent & Co. On Reader's Service Card, circle 116.

### HEATING/AIR CONDITIONING 607

"Instant Warming." 4-pg brochure on fan coil air conditioning. Carrier Air Conditioning Co. On Reader's Service Card, circle 117.

16-pg brochure on unit heaters, vertical and horizontal, complete performance ratings and piping systems. Dunham-Bush Inc., Space Conditioning Div. On Reader's Service Card, circle 118.

### INSULATION/ACOUSTICAL 608

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### LIGHTING 610

New folder of prismatic lighting design elements for interior illumination now available to architects and specifiers. Compleat set of photometric and mechanical design data. Plaskolite, Inc. On Reader's Service Card, circle 120.

### MASONRY 611

Stonehenge architectural panels; cultured stone materials for inside or outside. 6-pg brochure has pertinent data, full size color sample to show deep relief surface. Johns-Manville Corp. On Reader's Service Card, circle 121.

Precast Concrete Exterior Units Brochure, 24-pg, color, shows 41 precast panel instructions. Medusa Portland Cement Co. On Reader's Service Card, circle 122.

### COATINGS/SEALANTS 614

12-pg color catalog shows how Desco's surface coatings may be adapted to architectural requirements of virtually any building. Desco Div. MacNaughton-Brooks Prods., Ltd. On Reader's Service Card, circle 123.

New 4-pg brochure features Thiokol's Seal of Security, tells how to specify Thiokol's Tested and Approved Polysulfide Base Sealants. Thiokol Chemical Corp. On Reader's Service Card, circle 124.

### PLUMBING EQUIPMENT 615

Form C 150. 12-pg color catalog of water coolers. Architect illustrations. Cordley Products, Dispenser Div. Eaton Yale & Towne, Inc. On Reader's Service Card, circle 125.

16-pg color trade catalog featuring basic plumbing fixtures and brass fittings for homes, apts., commercial and institutional bldgs. Eljer Plumbingware Div. Wallace-Murray Corp. On Reader's Service Card, circle 126.

32-pg color catalog #168; drinking fountains, water coolers—includes specs, drawings. Haws Drinking Faucet Co. On Reader's Service Card, circle 127.

1969 32-pg color catalog illustrates electric water coolers, drinking fountains, accessories; incorporates drawings for units. The Halsey W. Taylor Co. On Reader's Service Card, circle 128.

### ROOFING/SIDING 616

8-pg 2-color brochure on seamless Terne roofing contains standard and seam specs. Illustrated. Follansbee Steel Corp. On Reader's Service Card, circle 129.

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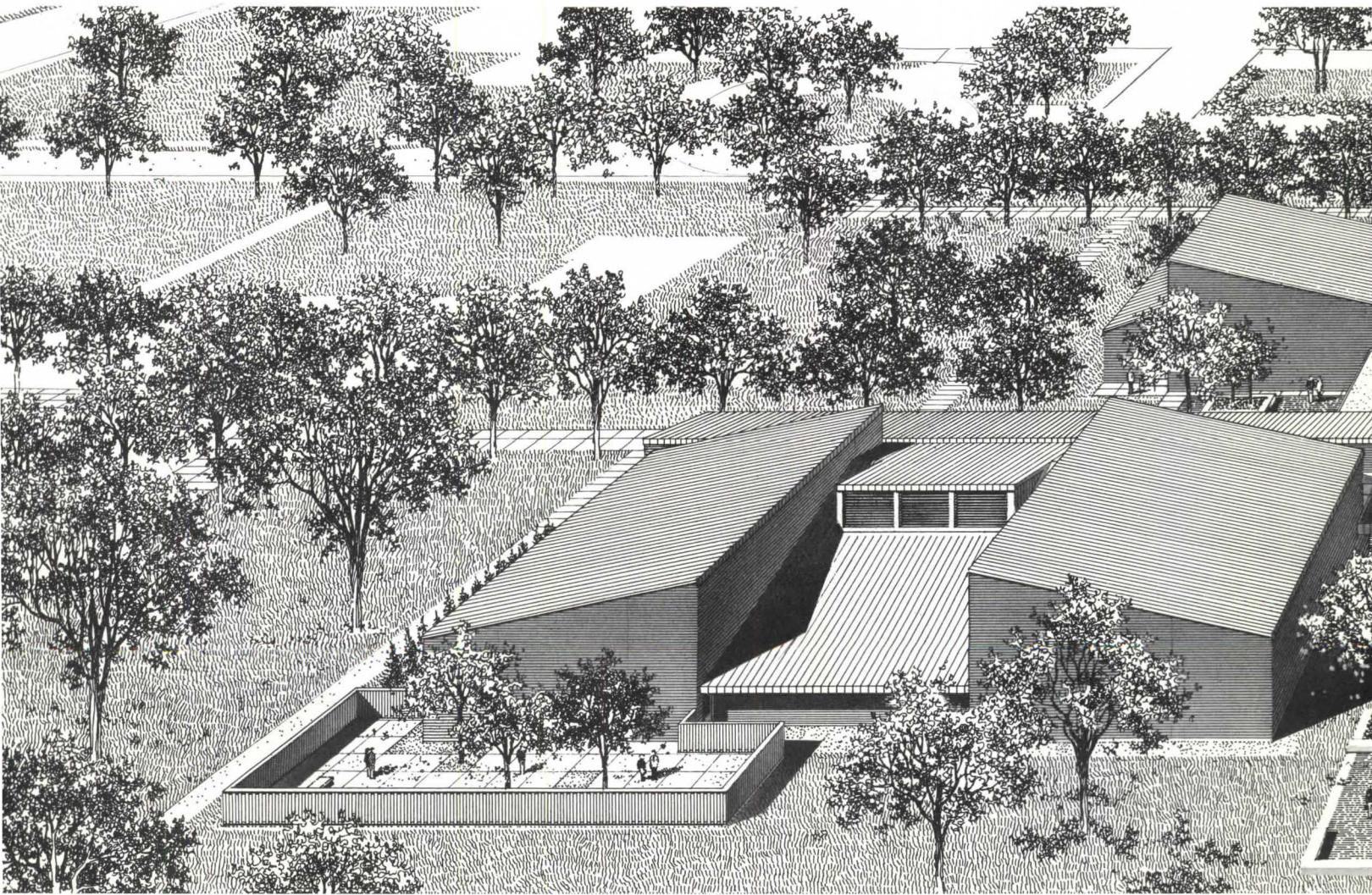
# TCS:

Rehabilitation Center  
Buffalo State Hospital  
Buffalo, New York

Rendering by Brian Burr

Architects: Milstein, Wittek, Davis & Hamilton  
Buffalo, New York

A project of the New York State Health and Mental Hygiene Facilities Improvement Corporation for the New York State Department of Mental Hygiene



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Your own problems may well be different, but TCS provides equally cogent solutions in virtually every situation involving either roofing or weathersealing.

May we send you the substantiating evidence?

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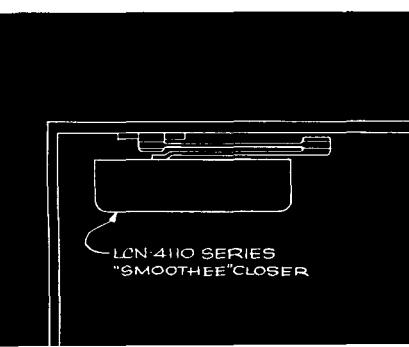


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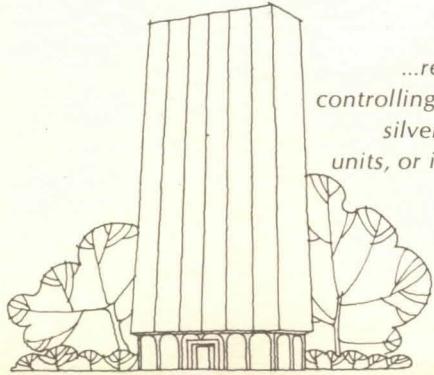
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