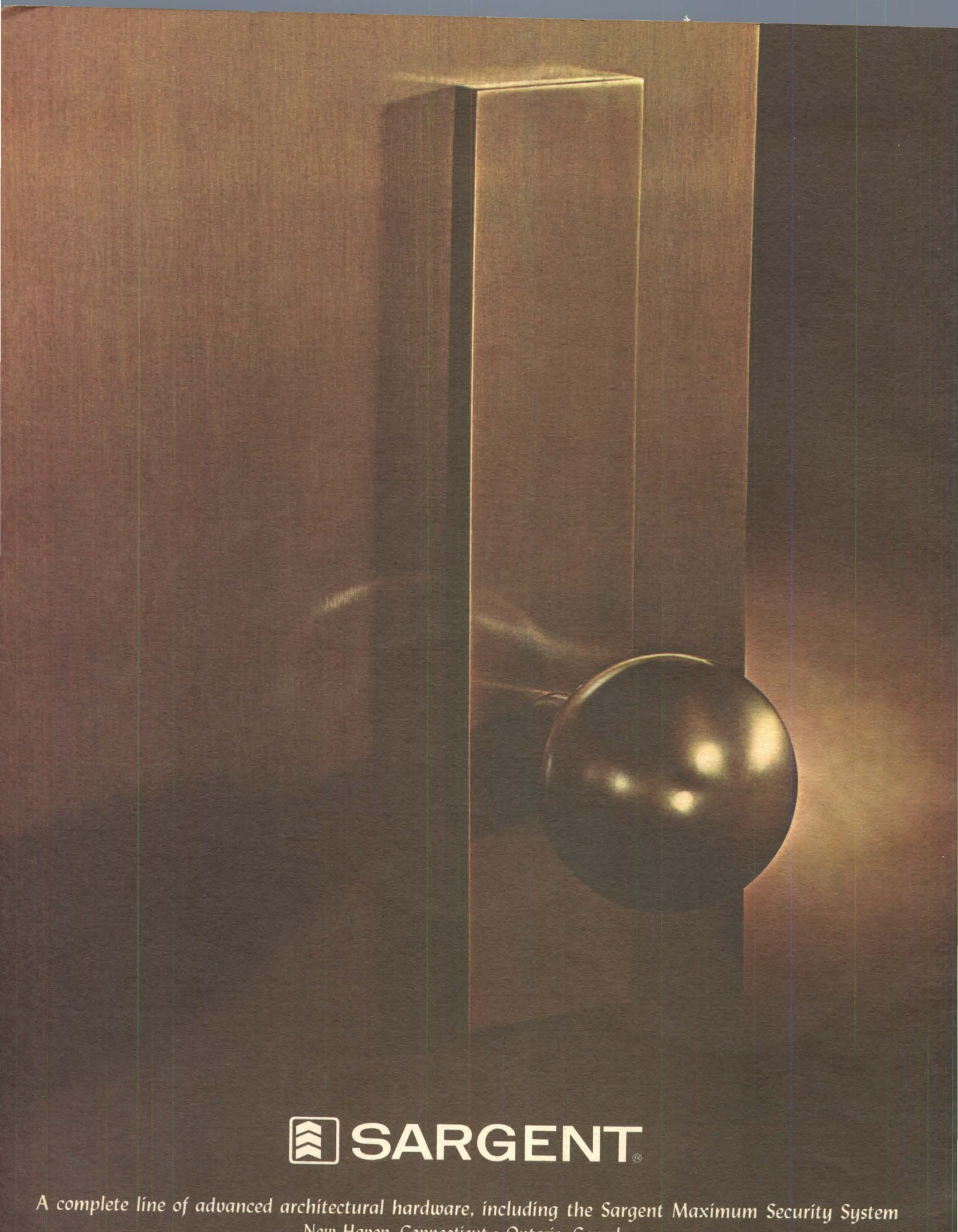
ARCHITECTURAL FORUM / MARCH 1970

FORUM



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Cover: From a construction photograph of a factory designed by Renzo Piano (p. 64).

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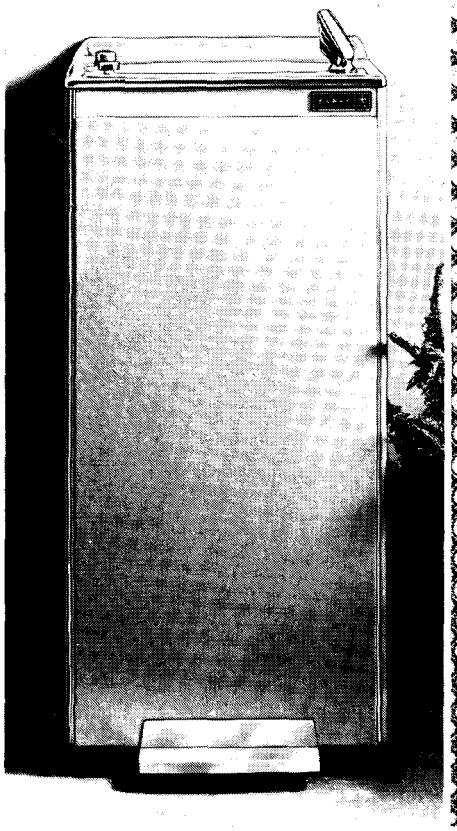
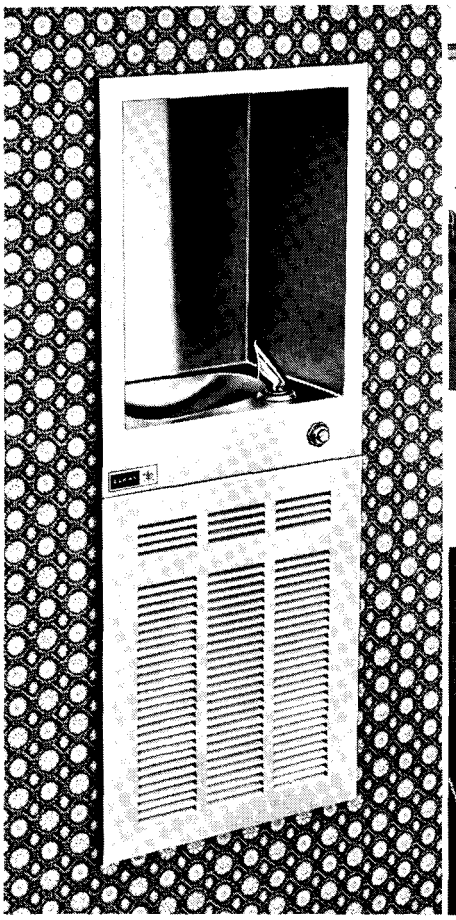
Elkay refrigerated water coolers fit today's creative design ideas for every type of building. Easily replaceable decorative panels of laminated vinyl in nine colors and two in baked enamel are offered at no extra cost and for immediate delivery. A unique cascade design, anti-splash basin with built-in, vandal proof drain teams up with a hooded stream projector and separate control button. The complete water cooler line includes Elkay innovated corner models, floor models and wall models, in regular and compact sizes. Three sizes of fully recessed and two capacities in semi-recessed coolers complete the line. Parts interchangeability and standardization are part of the Elkay concept in improved water coolers.

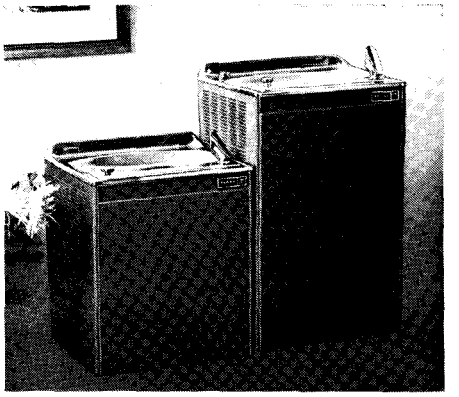
Ingenious corner model permits full utilization of space—eliminates corridor traffic problems. Meets "Hill-Burton" program requirements.



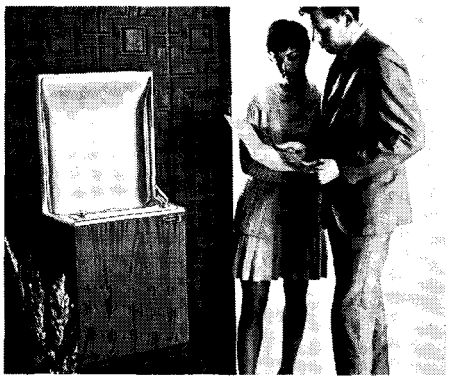
Floor models in 5 capacities. An attached child's size is available for side-by-side installation. Hot and cold water supply optional except on Model EF 4.



3 styles of fully recessed coolers in 8 and 12 gallon capacities created by Elkay comply with "Hill-Burton" program requirements.

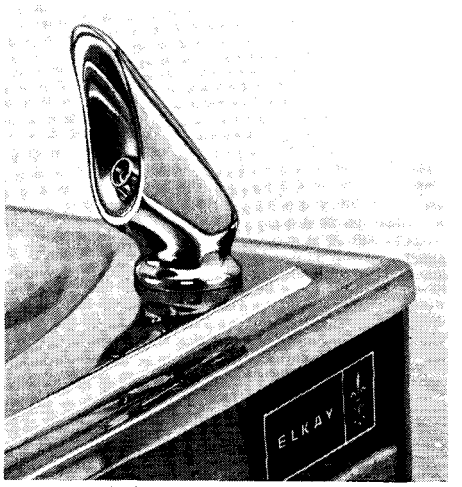


Regular and compact sizes in wall mounted coolers are available. Combination two level cooler. Attached child sizes are also in the complete line of coolers. Hot and cold feature available on all models.



Made in two capacities. Both of the Elkay semi-recessed water coolers take the same rough-in dimensions and incorporate the famous cascade basin.

from the ELKAY® family of firsts



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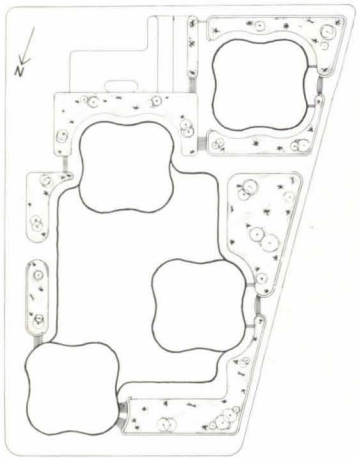
FOCUS

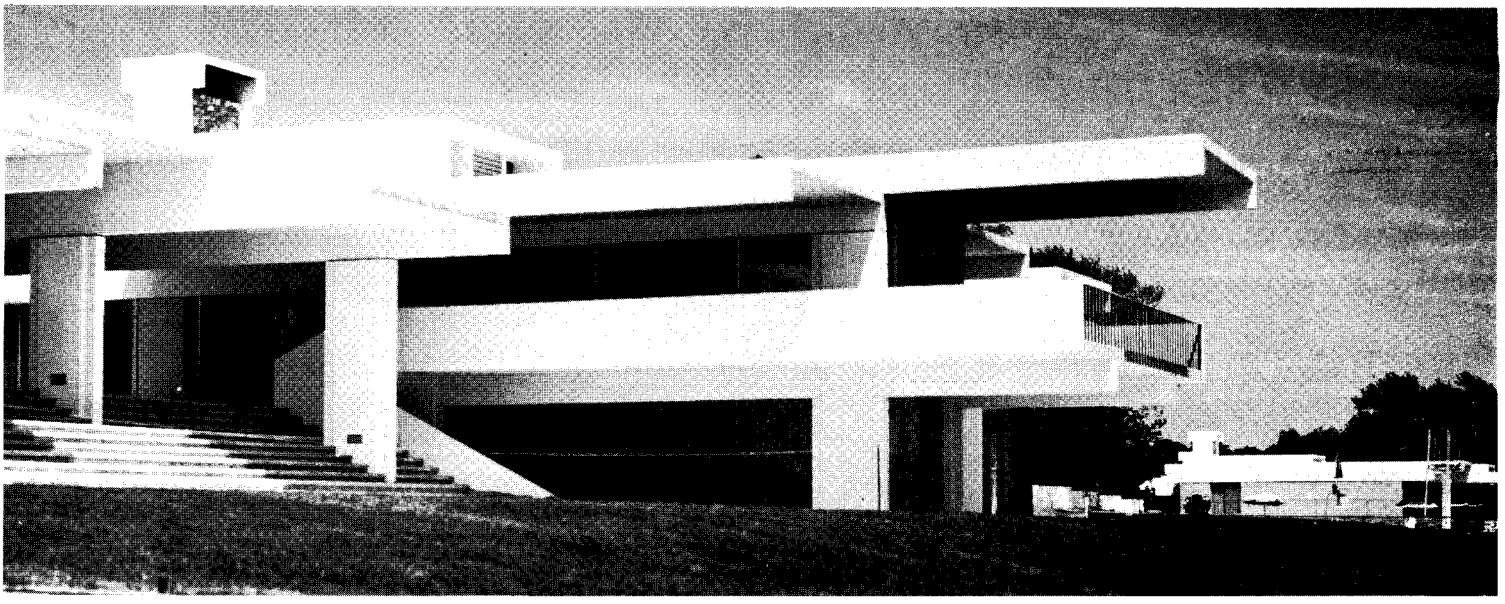
BARCELONA GLASS

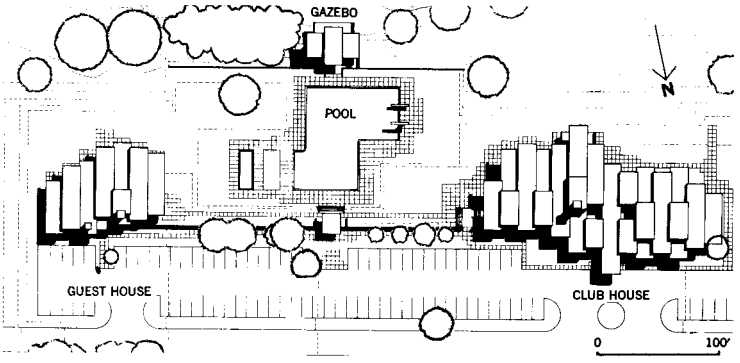
These four office towers, reminiscent of Mies van der Rohe's drawings of a glass skyscraper project of 1921, were designed by the Spanish Architect José Antonio Coderch. Three of the 10-story-high towers (see plan, below left) are clustered around and connected to a glass-enclosed two-story building housing a restaurant, assembly hall, auditorium, gym and sauna, hairdresser, and bank. The fourth stands separate.

Each "clover-leaf" tower has a square central core which contains stairs, elevators and utilities. Steel columns around the perimeter of each building support a sawtooth-edged curtain wall. The sawtooth design heightens the interplay of reflections of older, traditional Spanish architecture across the surface of the towers.

Because of the intensity of the heat from the sun in Barcelona, each tower has an air conditioning system which can be controlled according to angle of the sun on the curtain wall at any given moment.







COUNTRY CLUB LOOKOUT

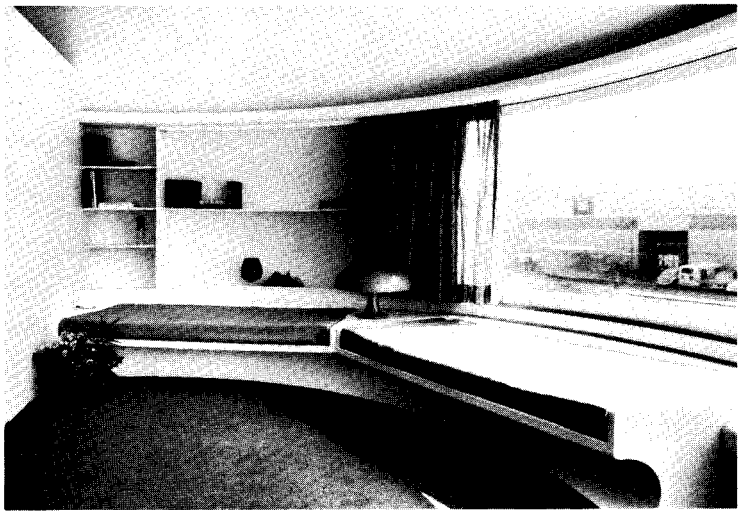
Architect Paul Fortune Losi has designed the Toms River Country Club in New Jersey so that all the structures (for golf, tennis, swimming, social and guest facilities) would have a distinct one-directional emphasis: the club is situated on a hill overlooking a golf course and a river beyond. Losi wanted the view to be the all-important factor in his design.

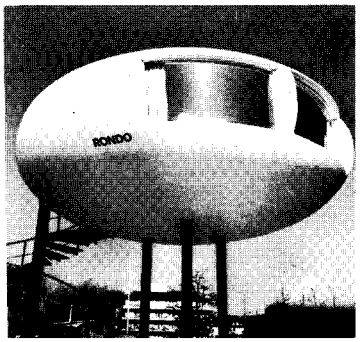
The structures, which are grouped around a central swimming pool (see plan left), are comprised of repetitive 14-ft.-wide oblong channel-shaped roof components of vinyl-coated wood in varying lengths. These components project over concrete block walls which, on the front and back of the buildings, have infill panels of stones or wood siding.

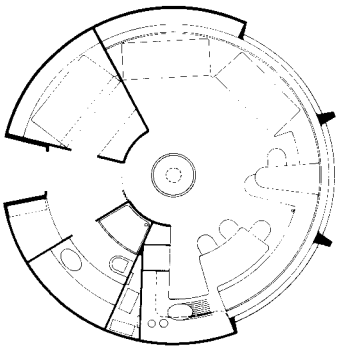
SING A RONDOLAY

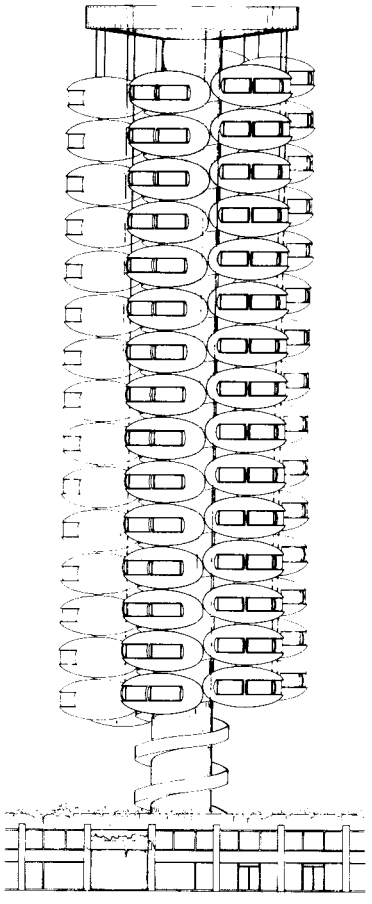
A new, versatile prefabricated house, called Rondo by its designers Casoni & Casoni of Basel, Switzerland, will be available later this year. This elliptical structure consists of a self-supporting shell of sandwich construction—polyurethane foam between two fiberglass-reinforced polyester layers. The house is easily transported and can be fitted together on the site.

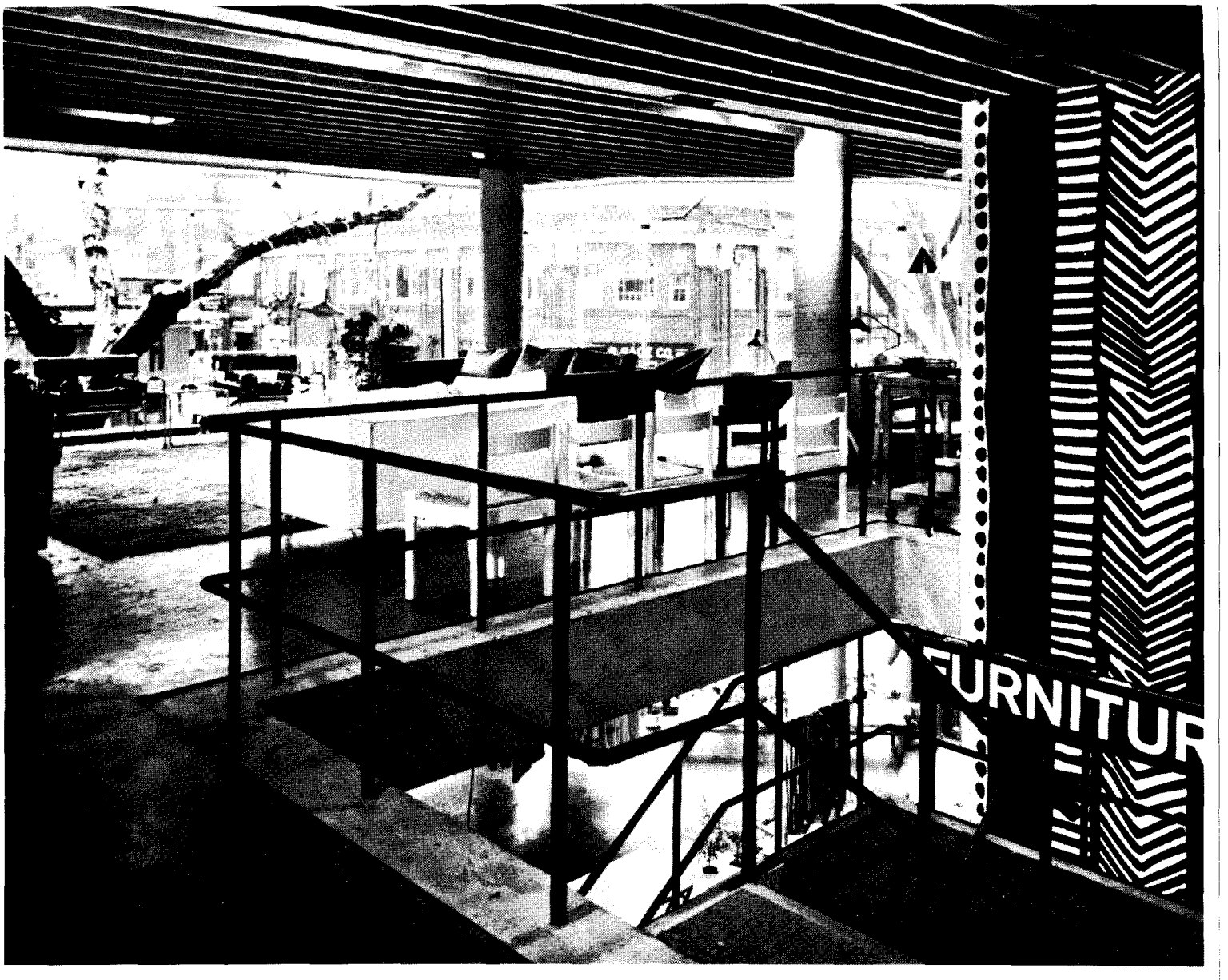
The module (about 24 ft. in diameter) can go solo (as in photo below right), standing on three stilts and accessible by an exposed, spiral stair. Or it can be combined in a variety of ways (see elevation for one example). In the multistory scheme, Rondo is approached across a bridge from the central core which contains elevators and utilities.

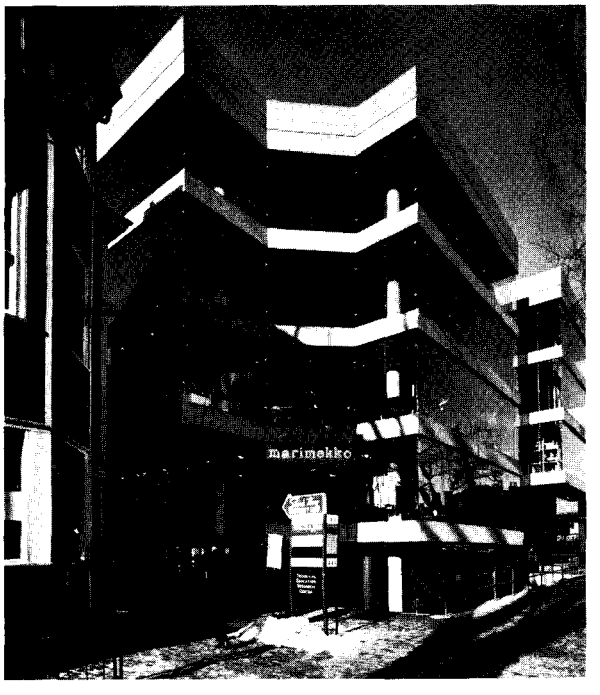












D/R'S TOTAL ENVIRONMENT

Design Research, noted for its high quality in furniture, clothing and other goods, has attained the same level of excellence in its new headquarters in Cambridge, Mass. The 27,000-sq.-ft. building was designed by D/R's founder-president, Benjamin Thompson, who has his own architectural firm.

What Thompson has created is a fusion of store and street—which draws visitors in from street to store. The store is in perfect scale with the surrounding buildings, yet stands out by its crystalline, prismatic bands of mullionless, tempered plate glass. The glass is offset by strong angular concrete slabs at the different floor levels.

The focus on total environment carries over into the interior as well. Sidewalk brick continuing into the store introduces the visitor to the store—the interior focuses on the "integration" of setting, merchandise, plants and people. The three floors for merchandise are subdivided into five levels ranged around a broad open stairwell. All products, fabrics, etc. are out in the open, to be looked at, touched, tried on—the feeling is of an open air market or bazaar.

Two upper floors are for D/R's offices.

PHOTOGRAPHS: Page 5, Alfonso G. Escera; page 6 (top), Paul Fortune Losi; (bottom), courtesy **Rivista Tecnica;** page 7, Hillel Burger.

(continued on page 9)

Westinghouse Mark IV Elevators don't forget lower-floor tenants.

In Chicago's new First National Bank building, lower-floor tenants don't get shortchanged. A Westinghouse Mark IV System is the reason. The exclusive Digital Demand Divider and Service Expeditor apportion the demands so that *all* floors get equal service. The nearest available car is expressed to answer a call. Waiting time is cut at least 30%. And the exclusive Demand Preferential feature eliminates long waits. For lower floors. Any floor.

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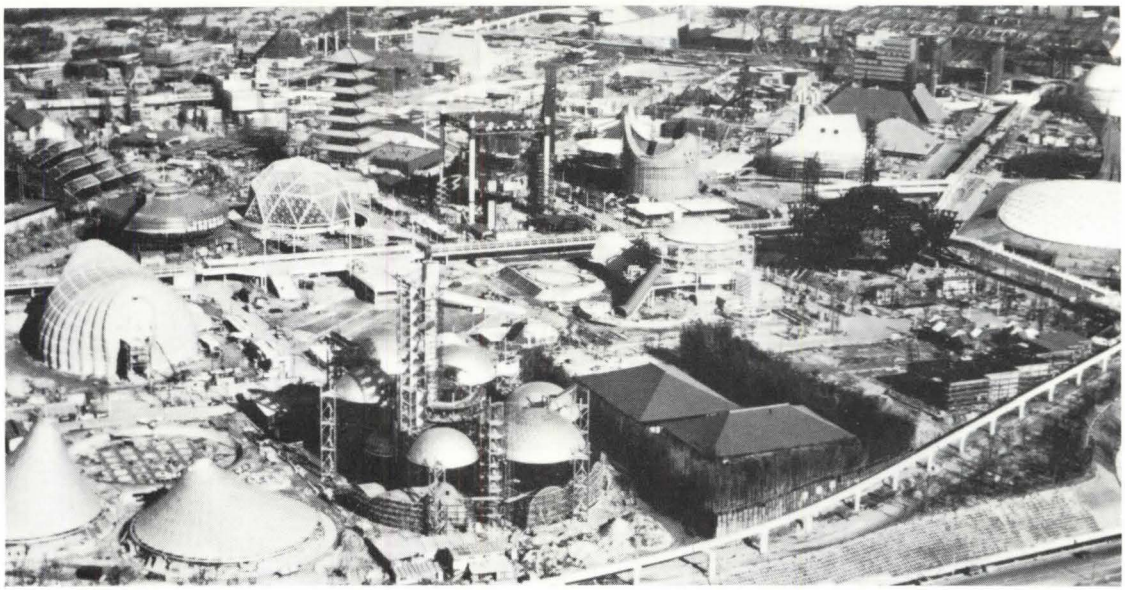
FOCUS

(*continued from page 7*)



EXPO EXPOSED

The conglomeration of shapes shown here is the just-opened Japan World Exposition (Expo 70) at Osaka. Conceived according to a master plan by Japanese Architect Kenzo Tange, the fair is laid out in quarters on a strict north-south, east-west axis. Photographed here is essentially the western half of the fair, which spans from the gigantic soaring spire of the U.S.S.R. pavilion (lower left in bottom aerial) across to the elliptical, air-supported, almost invisible roof of the U.S. pavilion (Dec. '69 issue). Between the two cluster most of the other international pavilions, as well as exhibits by major Japanese industries, eg: the Fuji Group pneumatic tunnel-pavilion (lower right, bottom photo), and the Takara pavilion (pages 32-35).

Other pavilions of interest (lower left to right, above): the two cones of the Automobile Manufacturers; the mushrooms of Sumitomo Group; the traditional Japanese rooflines of the Matsushita Group. And, beyond the U.S. "pad," (from right to left): the open frame and suspended dome of the Toshiba Group; the two-eyed Gas Pavilion; and half-moon Suntori Group. All are reached by stretches of moving sidewalk; connections occur at plazas named for days of the week.

A symbol area, with theme hall, floating stage, museum and theater, divides the two halves on the north-south axis (see its frame cutting across upper left of photo below). The theme of the fair is "Progress and Harmony for Mankind."

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PREVIEW

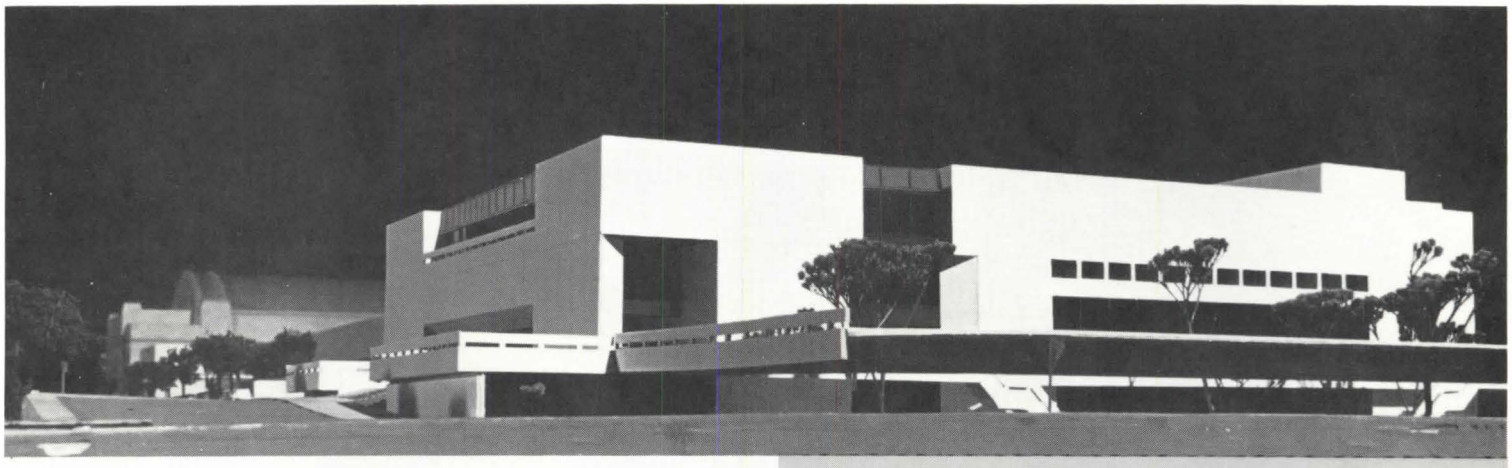
GROWING CIVIC CENTER

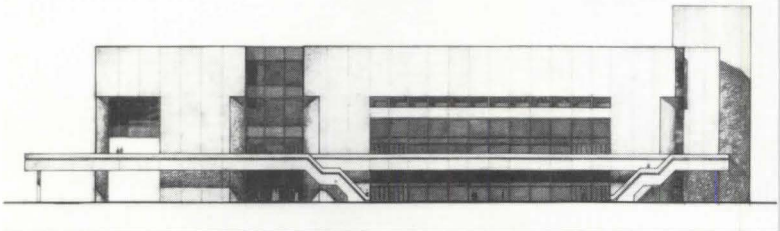
The Philadelphia Civic Center will expand to 421,500 sq. ft. of exhibition space with new "Pennsylvania Hall." The sculptural building is last in a line that spans almost 1,500 ft.—and a good many years of architectural history. (Neighbor to the north is by Ed Stone.) Architects are Davis, Poole & Sloan, in association with McCormick, Taylor & Associates, engineers; design is by Paul O. Heyer.

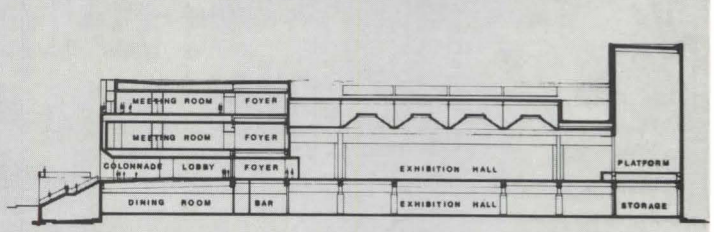
The $8-million hall, funded largely by the Commonwealth, will function autonomously or with the existing center. A service route will connect the entire complex, and the ground floor will have 285,000 sq. ft. of continuous exhibition space. A garage will go up to the south.

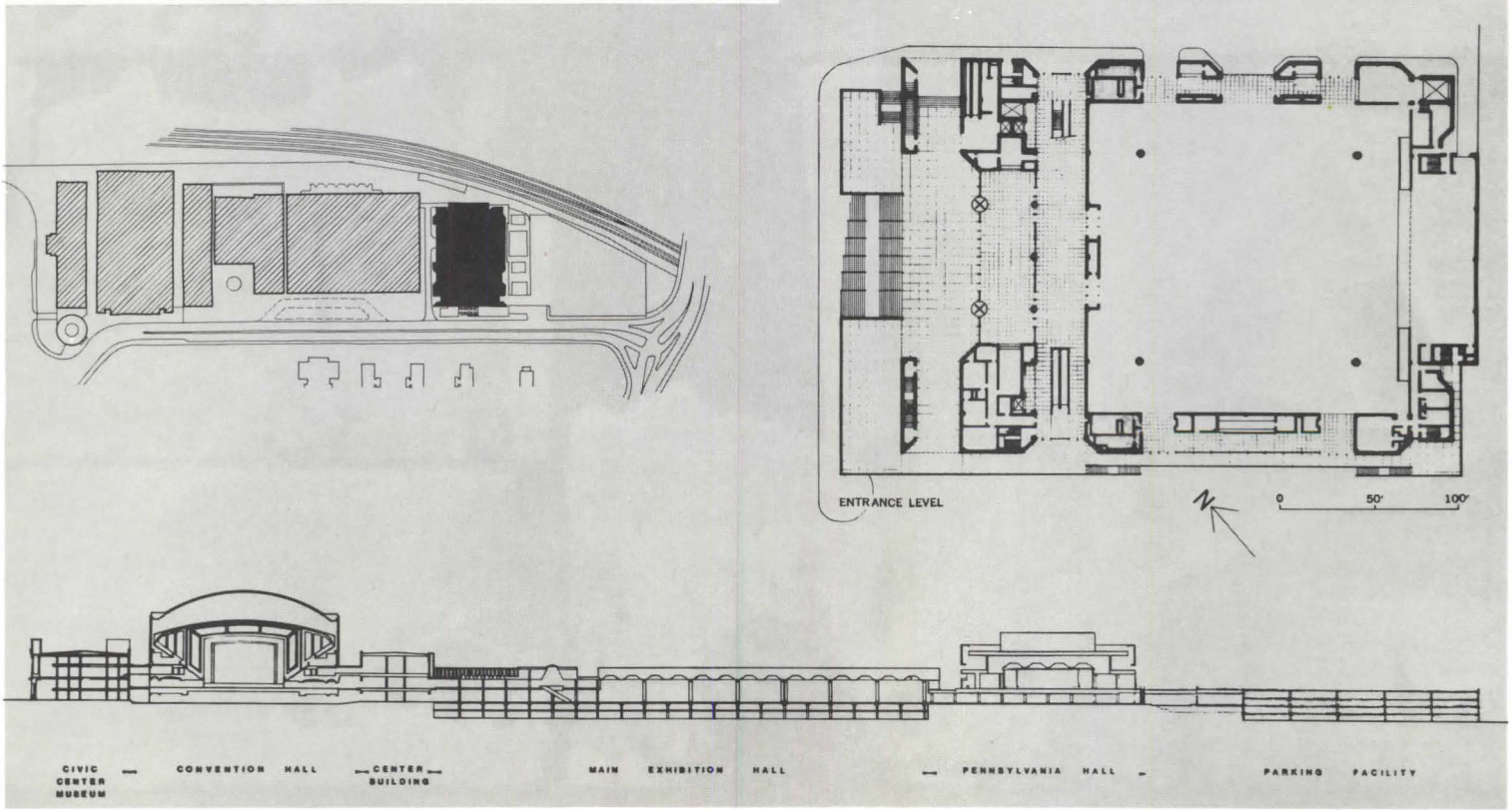
The building is a study in solids and voids. In plan, two elements straddle the foyer—the meeting/exhibition/dining spaces on the street side, and the main 180 by 180 ft. exhibition/auditorium space on the other. The facade unifies the design, though; large introverted spaces are expressed on the exterior as solid masses, while the more personal spaces are glazed.

The structure is steel frame, on a 30-ft. grid (two 10-ft. booths and a central aisle within each bay). The large exhibit area has a clear span of 120 ft.









(Continued on page 13)

USS Cor-Ten Steel...naturally

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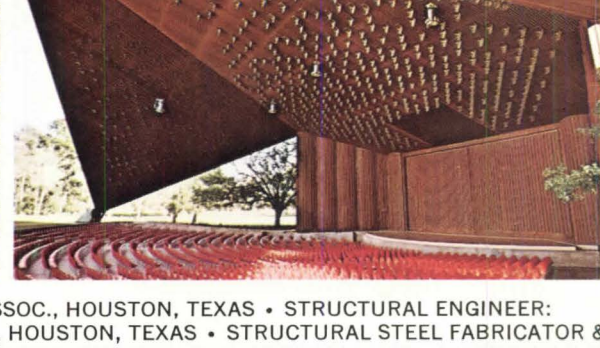

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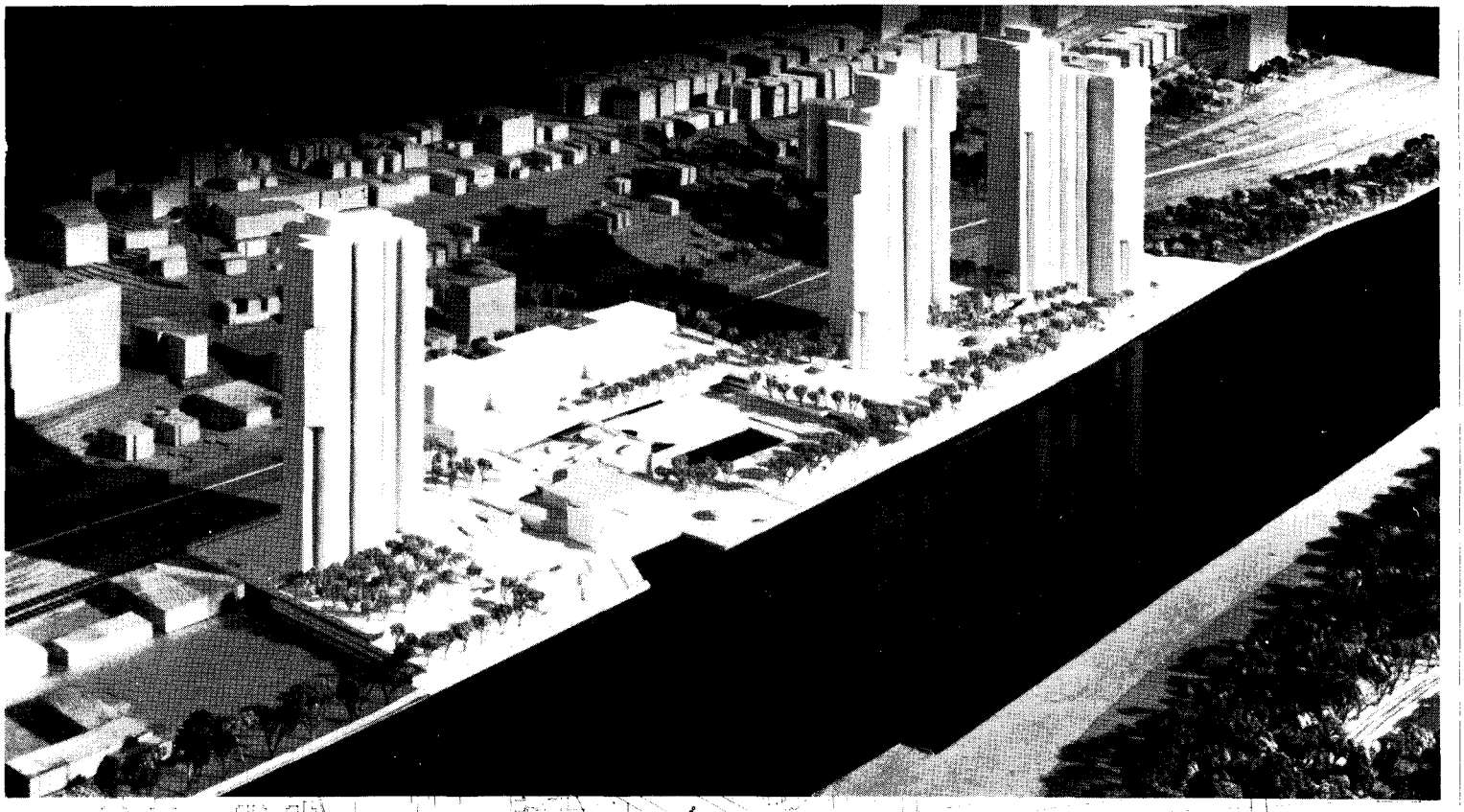
PREVIEW

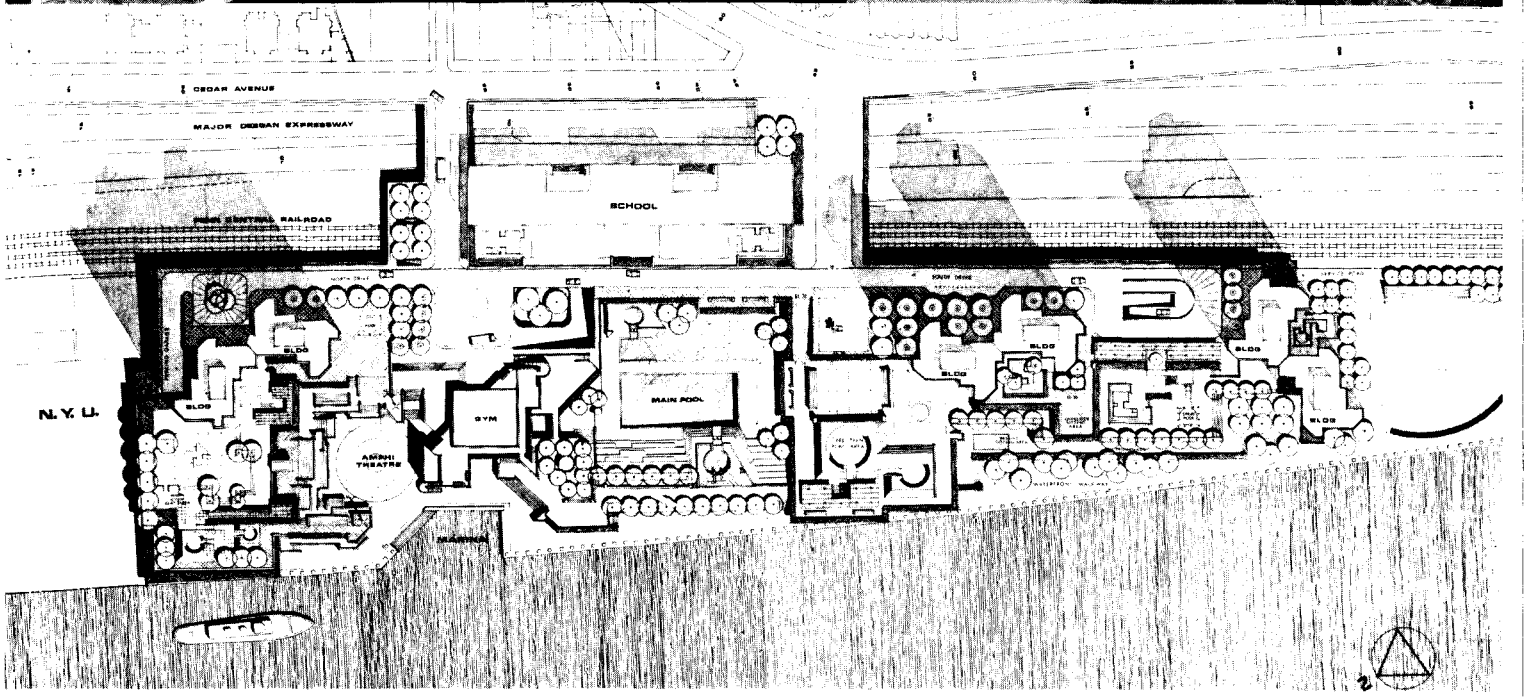
LIFE ALONG THE HARLEM

A 22-acre project on the Bronx shore of the Harlem River will be the first phase of an unprecedented mixed-use development in which state-sponsored housing will go up in the midst of a state park (the first state park ever planned for a site inside New York City). Also included will be a city public school, built by a state agency on air rights over a railroad.

This remarkable exercise in collaboration will be just one of four "activity nodes" in the park, which will eventually extend about 1½ miles along the river. In the overall park plan, drawn up by M. Paul Friedberg & Associates, these nodes are points where the riverfront is linked—across a double barrier of railroad and expressway—with neighborhoods on the bluffs to the east.

At the center of this node is a multilevel waterfront plaza, with intensive facilities for swimming, boating, outdoor theater, etc. North and south of the plaza will be housing for 2,000 low- and middle-income families, to be designed by Davis, Brody & Associates for the state's Urban Development Corporation. UDC will also build the air-rights school, which will be equally accessible to both new and existing communities.





120,000 sq.ft. of free-access Weberfloor...

speeds construction of Administrative & Research Center

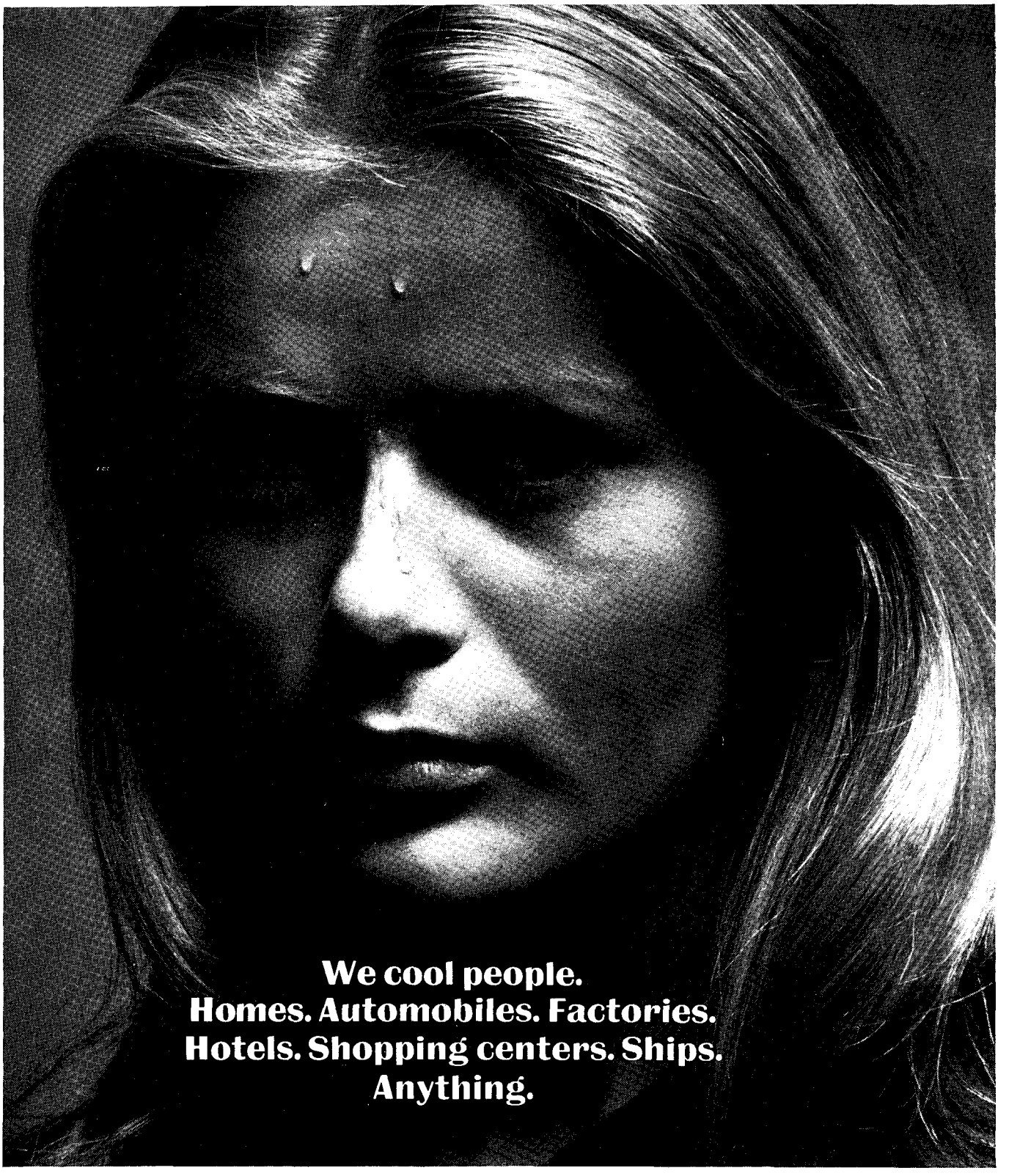
Globe-Union, Inc. of Milwaukee gave architect Charles W. Harper of Harper-Drake Associates two demanding goals for its new administrative engineering and research complex. First, a 10-month completion deadline requiring steel erection in less than 30 days. Second, complete flexibility in building design to accommodate constantly changing services of all kinds.

With Weber's access flooring, electrical and communication lines, the special plumbing required for laboratories, heating and ventilating ducts and mechanicals of all kinds could be installed after the floor slabs were poured. These utilities were designed while the building shells were being completed. Once the buildings were closed in, installers of the various services were able to work faster and more accurately under comfortable indoor conditions.

With unrestricted access to all services under the Weberfloor, Globe-Union has the flexibility it needed for modifying or relocating these utilities at any time. Offices and laboratories can be rearranged without tearing up expensive flooring and without the expensive mess of drilling through concrete to conventional raceways.

With savings in electrical, plumbing and mechanical services deducted, Globe-Union's finished Weberfloor, about half of it carpeted, netted out to approximately $1 per square foot.

Write for free booklet, giving many other advantages of Weberfloor in general construction. Please contact Weber Architectural Products, Division of Walter Kidde & Company, Inc., 1340 Monroe N.W., Grand Rapids, Michigan.



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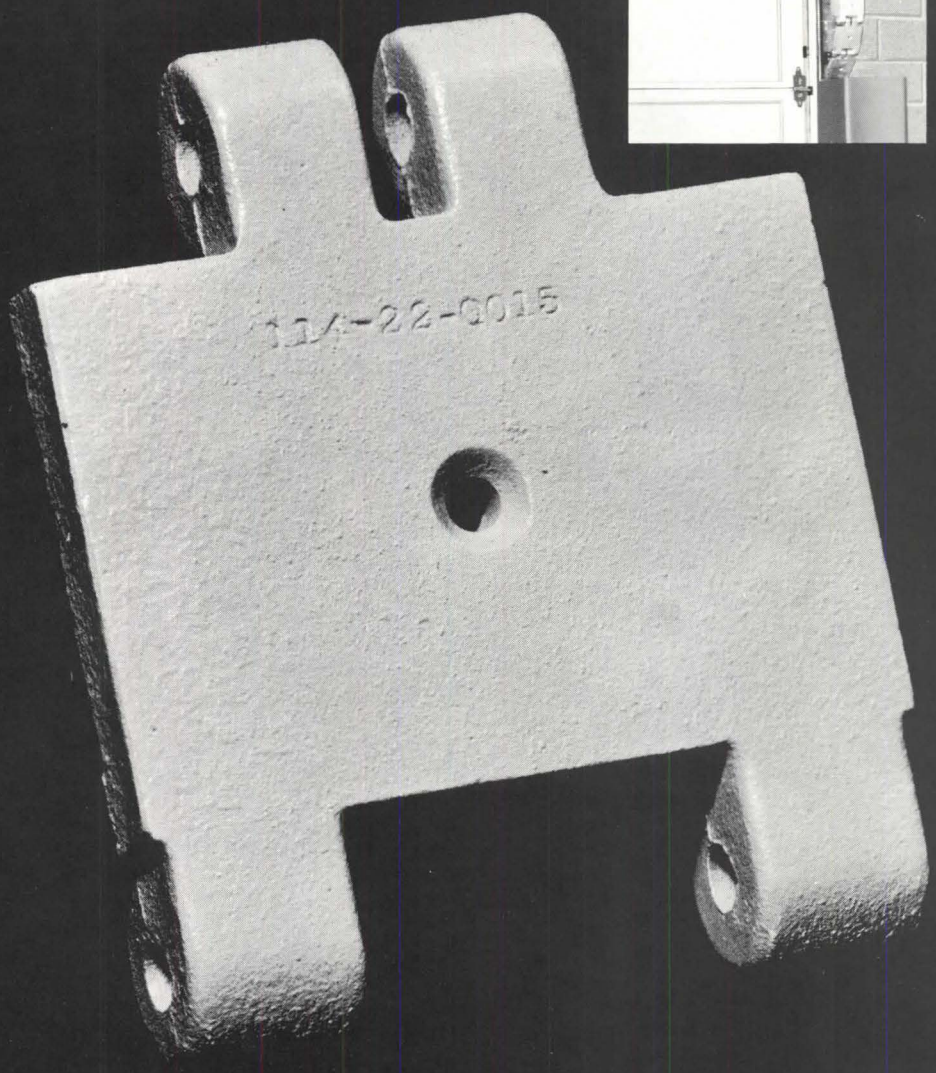

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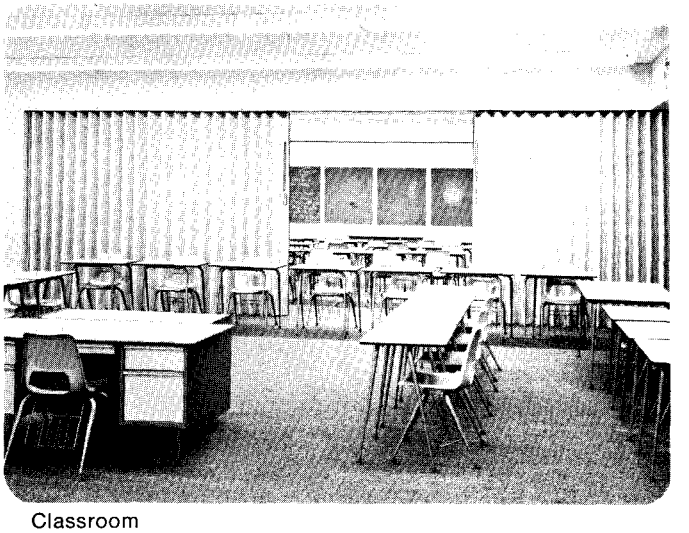

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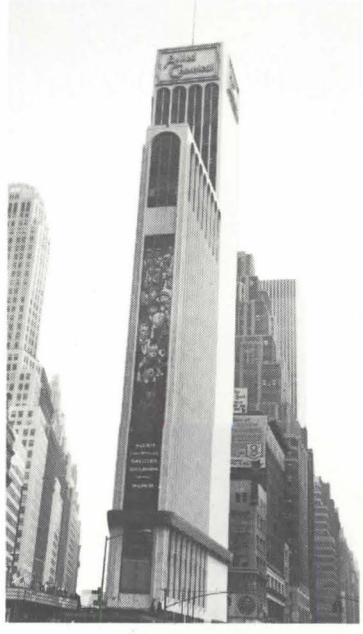

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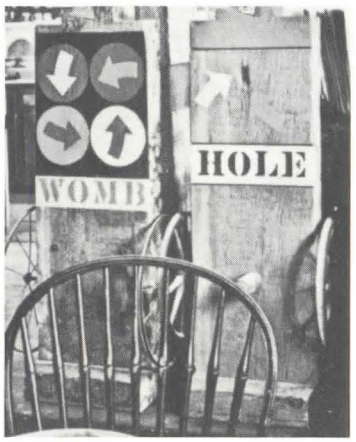
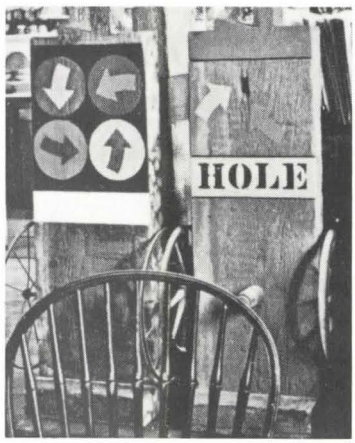




FOUR LETTER WORD

The February issue of the Hearst publication, *House Beautiful*, contains a picture story on the apartment of painter/sculptor Robert Indiana, photographed by Hans Namuth. Mr. Indiana, who is possibly best known for his beautiful red-blue-and-green word-painting reading L-O-V-E, has recently gone in for word-sculptures; and smack in the center of his living room is one which reads W-O-M-B.

Well, W-O-M-B (like L-O-V-E) is a four-letter word, and so the publishers of *House Beautiful*, ever conscious of their responsibility for America's manners and morals, decided that Mr. Indiana's word-sculpture was just a trifle racy—so out it went. Above is Mr. Namuth's photograph before and after it was retouched by *House Beautiful*'s arbiters of taste. Mr. Indiana might not agree with us, but *we* certainly sleep more securely knowing that Hearst's minions are still up there guarding our ramparts.

STUDENTS

SPRING OFFENSIVE

The environment, judging from the President's rhetorical emphasis, is the number one issue at last (see cartoon). It is so popular that it may crowd God, mother, and country out of 4th of July speeches this year. Judging from the budget, however, the Administration has far to go in convincing us of its priorities.

The government is certain to be given no quarter by students, capable of much rhetoric themselves, and no strangers to putting on the squeeze.

The spring offensive gets under way this month with advance guard campus actions leading up to a nationwide Environmental Teach-In slated for April 22. One such primer, starting March 11 at the University of Michigan, will set the general tone: workshops and seminars, informal discussion groups; films and exhibits; mass rallies; sponsorship of local school and civic group activities; presentation to local authorities and industry of environmental inventories; community action projects; the drafting of possible environmental legislation; etc.

"Flip y' for it"

The Teach-In, originally the idea of Senator Gaylord Nelson (Dem., Wisc.), has been entirely turned over to students. Support of any kind may be offered to: Environmental Teach-In Inc., 2000 P Street N.W., Room 200, Washington, D.C. 20036.

The national student planning committee of the Associated Student Chapters of the AIA, meanwhile, will take up at the AIA convention in Boston in June where they left off last year in Chicago (see story below). This year the target has expanded from quality of life in the cities to the environment at large. The students will be coming to Boston with a coordinated program (and the experience of the April Teach-In) that may steal the show again.

AIA RESPONDS

The AIA's Board of Directors has approved a series of items on the 1970 budget that put "the profession's social responsibility program," as it has been called, right on the line with a dollar and cents commitment.

The Board's action emanates from last summer's AIA national convention in Chicago which made headlines when black and white architecture students prevailed as "a moral force" in getting the 23,000-member organization to resolve that $15 million would be raised by the AIA "toward improving life for all citizens in U.S. cities." A small AIA Task Force headed by George Rockrise was then recruited to define money priorities and its advice led to these four allocations in the budget:

- $50,000 to AIA's Scholarship Fund for Equal Opportunity. ($500,000 is already committed for minority scholarships over the next five years.) AIA will send the first group of students to school in the fall of 1970.
- $20,000 for educational improvement of the six schools of architecture which graduate the majority of black architects in the U.S.—Hampton, North Carolina A & T, Tuskegee, Tennessee State, Southern University, and Prairie View A & M.
- $30,000 to provide materials, and to promote and raise money for community design centers. (Twenty such centers are already at work "to help ghetto residents improve the environments in which they live.")

• $45,000 for personnel services—paying for a consultant from Philadelphia's community design center program, and for a coordinator of AIA-VISTA activities, plus others.

In addition, the Board approved a fund-raising campaign among those interested in giving personal support to the program. (Matching grants from national foundations are already being sought as well.)

As William Slayton, the new executive vice president of AIA, put it: "Until now, AIA has done little as an institution to take a professional role in the environmental regeneration of the community." AIA's new pace "is more of a hesitant walk than a march. But it is a beginning."

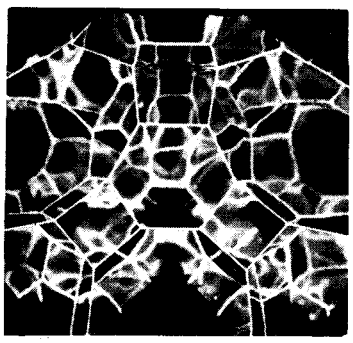
ENVIRONMENT

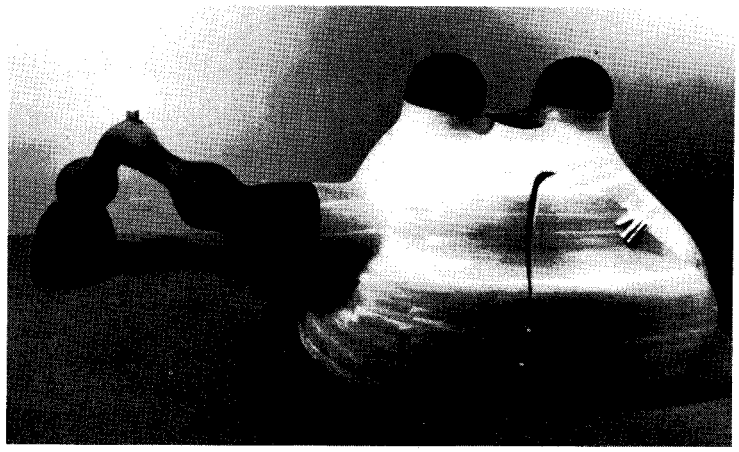
TUNE-OUT, TURN-IN, TAKE-OFF

As our increasingly unlivable environment crept up on the nation's list of priorities, Manhattan's Museum of Contemporary Crafts was having something prophetic to say about man in an urban setting. There, man could crawl into any of a row of foam-rubber cubicles, lie down, look out through a small skylight on New York's polluted sky, and listen to the nearly subliminal murmurings of recorded waves breaking on the shore, of song birds, or crickets.

The show — "Contemplative Environments"—had 16 palliatives, like the aural one by Irv Teibel of Syntonic Research Inc. The entire first, and mezzanine, and second floors were rearranged by Architect Gamal El-Zoghby into a chain of private cloisters, each to be experienced in turn according to a route that was both orderly and unexpected.

Early on, Peter Nicholson's "Yantra" (the Tibetan word for meditation) was a "rhombicuboetahedron-shaped" dome (below)





with highly reflective interior surfaces, under which the participant played with the restful illusion that he and the geometric facets of the dome were being projected into infinity. With a control panel of three light dimmers, he could alter the effect with warm and cool colors.

For contemplatives into the *I Ching*, Artist Ralph Hawkins provided a telephone-booth-sized metal cabinet lined with wood and fresh moss. In it, one could sit, close the door, and cast prophesies electronically from the ancient Chinese "Book of Changes."

Robert Bornn's "bio-electronic translater" encouraged one to "relax and tune in to the quieter rhythms in himself." The device translated electronically one's heart, respiration, and sweat-gland activities into a sound-and-light show in a small, stretch-fabric enclosure.

The un-named object pictured at top is by Artist Wendell Castle, which seems to explain things just as well. It is solidly constructed of laminated oak and flocked fiberglass, with a shaggy upholstered interior and skylight. As the photo also makes clear, when the light bulb on the curvacious "neck" is lit, the womb is occupied.

NEWS IN THE AIR

Nightingales may come back to sing in London's Berkeley Square any spring now. Rare songbirds, such as the snow bunting, the hoopoe and the great northern diver, who flew to suburbia almost a century ago to escape Picadilly's famous fog are happily homing in on London, an almost pollution-free metropolis. Shocked by the fact that 1950's "pea-soupers," as Sherlock Holmes once called them, were costing the Empire $700 million a year in lost business efficiency and cleaning bills, Parliament acted. They drafted and passed the 1956 Clean Air Act, zeroing in on industrial polluters *and* the little man in the street who traditionally burned coal in hearth grates at home. A decade and $1 billion later, three-quarters of the city is said to actually be smokeless. Reports the House of Lords, "London now gets 50 per cent more sunlight in the winter than before."

UNDERGROUND COUP

Politics has a way of creeping into the most innocent of environmental issues. Last month a group of students at Hunter College, on Manhattan's upper east side, painted a Valentine's Day greeting to the city on the walls of their neighborhood subway station. The all-night love-in left painted footprints on the ceiling, flowered contact paper on ticket booths (below), and walls of curvy colored stripes.

The Metropolitan Transportation Authority had been approached by a student, Mrs. Lois Hoyt, and had denied its consent. At the eleventh hour, the newly appointed environmental protection administrator, Jerome Kretchmer, went to Mayor Lindsay, vowing that he would be arrested along with the students if the MTA refused to cooperate. That did it. MTA Chairman William J. Ronan then appeared to blow up balloons and serve coffee to the workers. Mrs. Hoyt was upset.

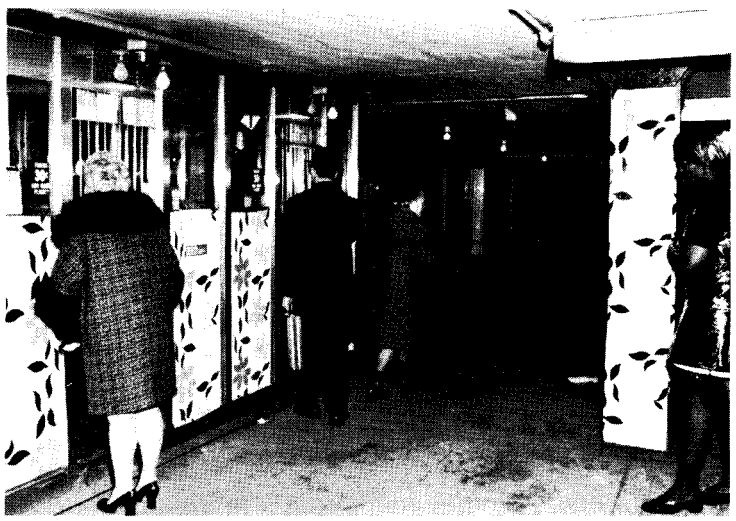
"He was right there when the flashbulbs started popping," she said. "This is not a political thing," she pointed out as one young artist wrote "Free the Panther 21" in his alloted space. Mrs. Hoyt painted it out.

Two nights later, two of the contributing artists returned with paint and brush and destroyed their murals. Their complaint: "The artist was just used for political purposes." Not until they read about it in the paper, they said, did they know that Mrs. Hoyt had undertaken the project for credit in her political science class.

ONE YEAR LATER

A "January 28 Committee," in Santa Barbara, Calif., observed, on that day, the first anniversary of the Union Oil Co.'s off-shore oilwell blow-out (Mar. '69, page 27), with a day-long conference on environmental problems. More than any other thing, Santa Barbara's troubled waters have helped to center nationwide attention on the threat of industrial pollution.

After initially shutting down operations in the channel a year ago, Interior Secretary Hickel has authorized some resumption of drilling. A Presidential science panel recommended last June that oil pressures beneath the ocean floor, which had caused



spontaneous leakage following the blow-out, be relieved.

Several syndicates are making exploratory probes at points distant from "Block 402" where the big leak occurred; and Union, in partnership with Texaco, Gulf, and Mobil, has two platforms at Block 402 producing 30,000 barrels a day. The U. S. Geological Survey says that leakage has been reduced to eight barrels a day, but Santa Barbarans report a chronic, if small, oil slick in the channel, subject to sudden wind changes that bring it ashore periodically.

The cost to the oil companies for clean-up operations have been estimated at $5 million, and damage suits have been filed against them for some $2 billion, including one "class action" by some 17,000 Santa Barbara residents for $1.3 billion.

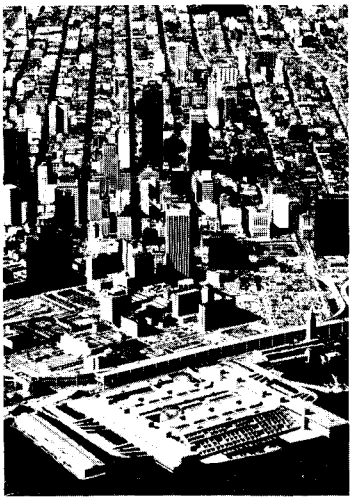
Damages to the tourist trade and the ecological balance are, of course, inestimable.

BIG PLANS

FORD HAS ANOTHER IDEA . . .

The Ford Motor Co. recently announced its plans to construct two multimillion-dollar urban complexes, one on company land surrounding its corporate headquarters in Dearborn, Mich., and the other jutting 1,000 ft. out into San Francisco Bay. The latter has yet to be approved by city agencies.

Both would be owned and operated by a Ford subsidiary and are designed by Architects William L. Pereira & Associates. The Dearborn complex (below) would be organized along two environmentally controlled shopping malls — or "spines" — intersecting at a "town center." Situated along the spines would be office buildings (for leasing to other companies) hotels, apartments and condominiums, and "green-belt" areas.



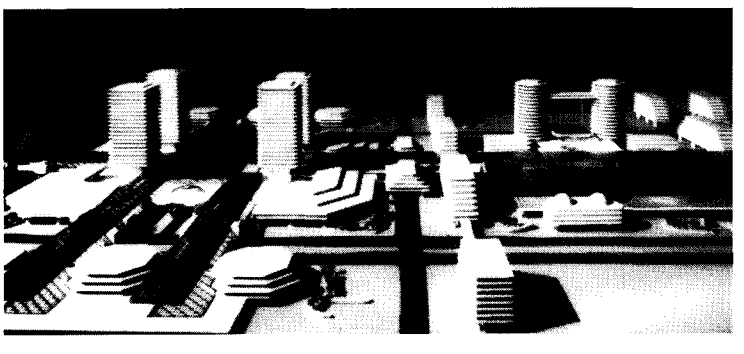
The San Francisco complex would be a six-level structure set on piles in the Bay (above). It would include the same facilities as at Dearborn, plus a marina. But up to 15 per cent of the total floor space would be devoted to the sale and service of Ford-built automobiles.

Questioned at a news conference, Board Chairman Henry Ford II said that the Dearborn project would be racially integrated. (Dearborn is virtually all white, even though thousands of blacks work there in the Ford plant.) But, he said, there would be *no* low-cost housing.

. . . G.M.'S FORGOTTEN MAN

The General Motors Corporation, meanwhile, announced a second $1-million, interest-free loan to support low-cost housing in its company town of Flint—for "the guy who goes to work every day but finds it hard to own his own home." G.M.'s first loan, for the same purpose, had gone to Pontiac, another company town (Dec. '69 issue).

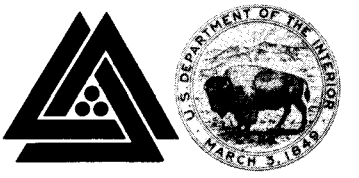
The Flint loan is to the Genesee Community Development Conference and will be used to buy land. Eligibility for the housing will be determined by income (between $5-10,000 per year) and family size; monthly payments will range between $90 and $120.

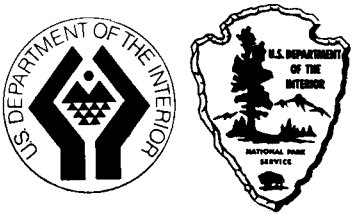


GRAPHICS

SIGNS OF THE TIMES

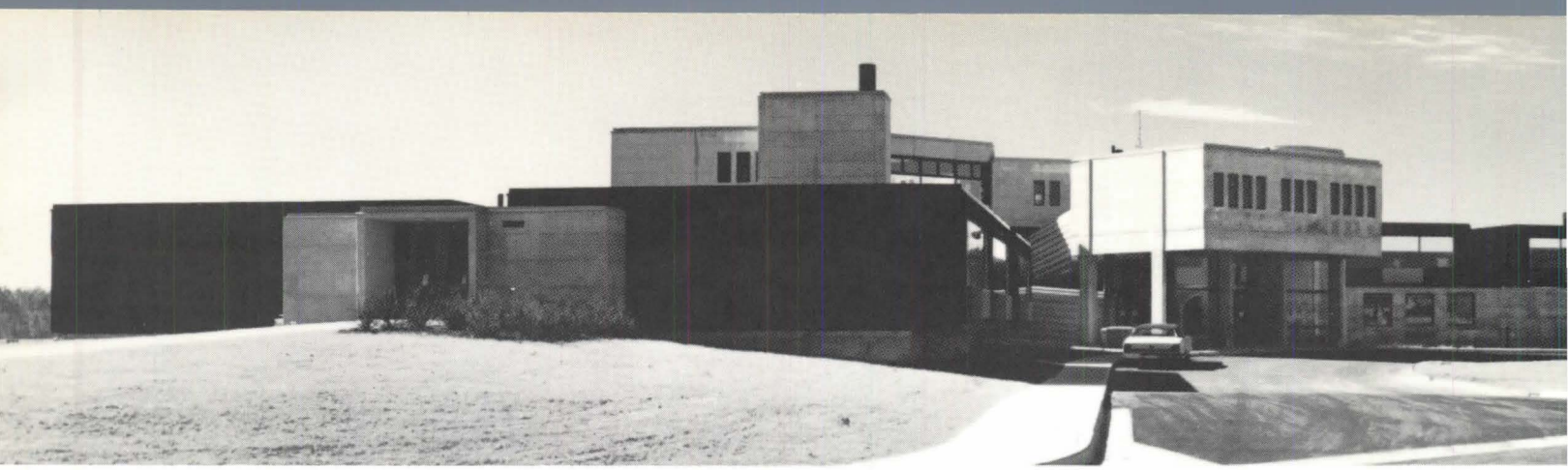
The sharp Department of the Interior insignia drawn up by graphic designers Chermayeff & Geismar during Udall's reign has been shelved and, to start off 1970, Hickel has trotted out the old 1929 sign with its wary-looking buffalo backdropped against a romantic sunrise. He has also consigned the new triangular National Park Service seal designed by the same firm to mothballs and will revive in its place the rather Victorian-looking 1951 arrowhead emblem with its trees, mountains, and mini-bison in storybook silhouette. Why the move backwards by our Washington woodsmen? Both old signs are preferred because they are "traditional" explain Interior Department tastemakers, unphased by bringing back wilderness graphics that could be considered "camp."





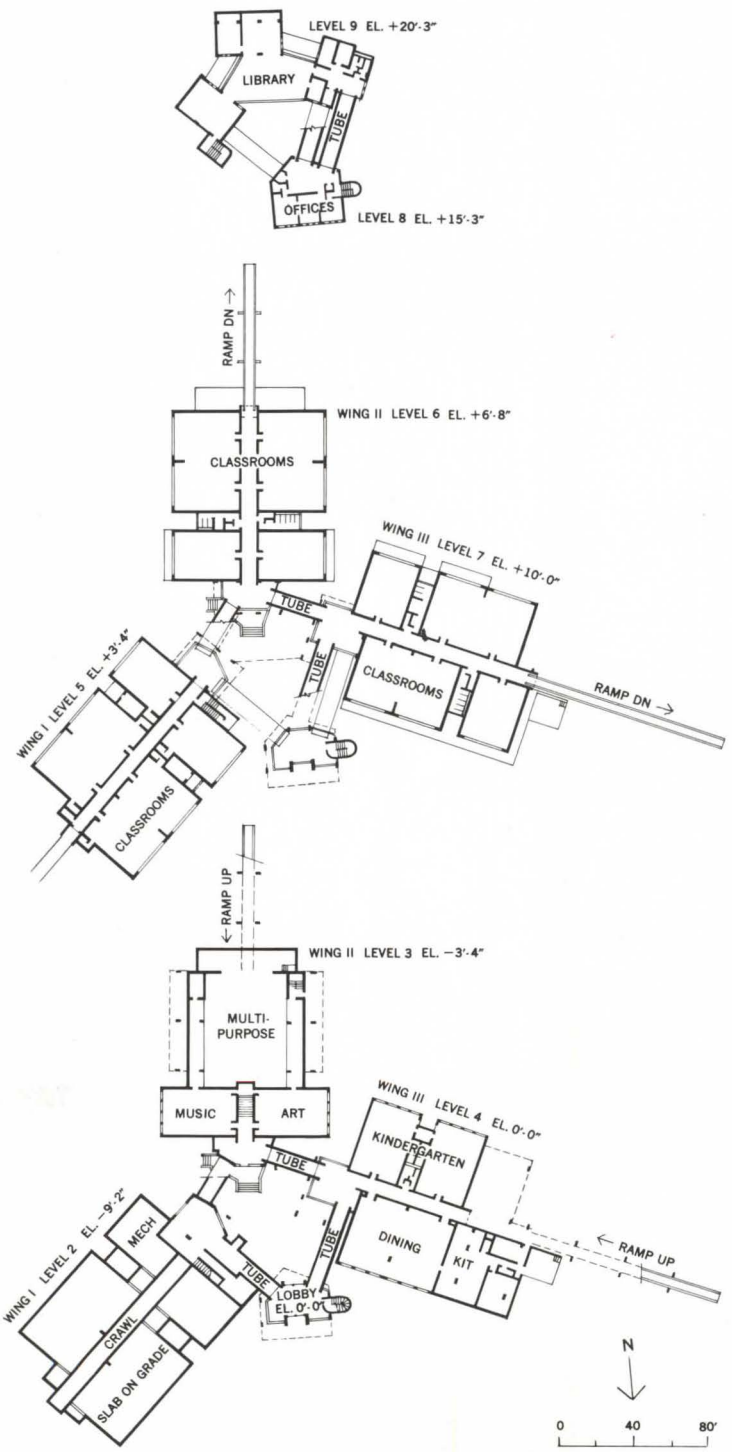
Up in New England, however, more and more goodlooking, state-designed roadsigns are pointing the way. Vermont goes right along with the Maryland politician who recently com-

(continued on page 70)



TWO MORE FOR COLUMBUS

Columbus, Ind., with its 14-year history of outstanding building, now has an elementary school by John Johansen and a junior high by Eliot Noyes (page 28).



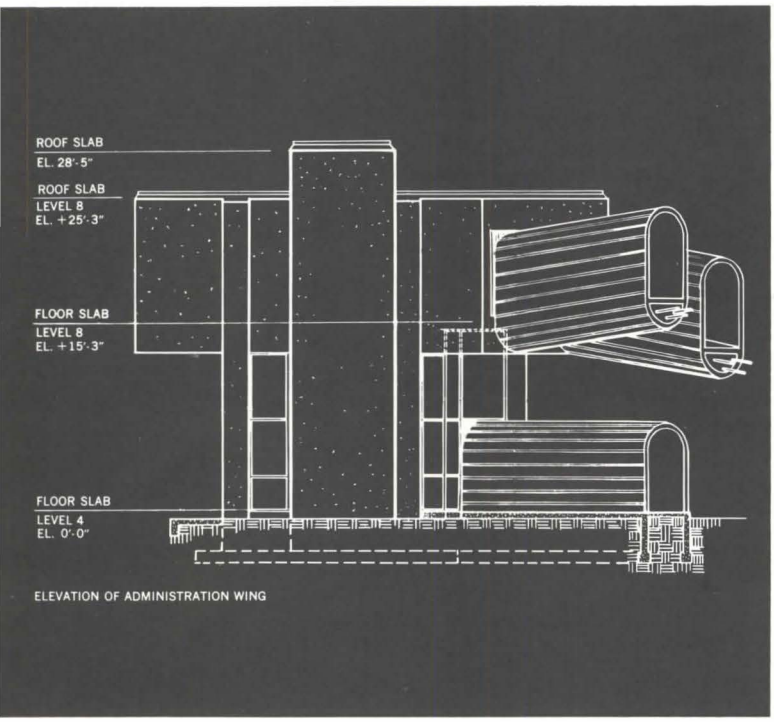
1.

L. F. Smith Elementary School
John M. Johansen, Architect

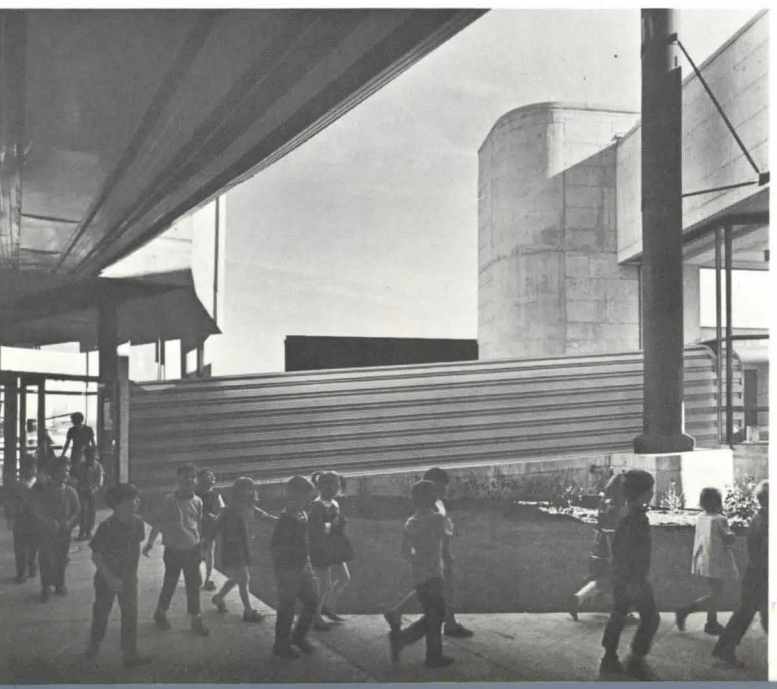
Although this school was immediately controversial—visitors and residents alike wonder if it is even architecture—many think it comes closer to the reality of Columbus, Indiana, than do any of the other famous buildings in this now-famous town. This school by John M. Johansen is planted in the middle of a rye field, occupying space and enclosing space like the direct farm buildings in the Midwest. In a sense it is like a collection of farm sheds that has grown up too organically to be pretentious.

The organizational concept is simple. Three wings spiral upward, around an open central core, for a total of nine levels. All "special" spaces are of concrete, tailor-made to their functions—kindergarten, dining, multipurpose room, administration, library, art and music rooms. All standard classrooms (and the ramps leading to and from them) are of steel—light, demountable prefab-like components that can be extended should the need arise. The classrooms are of oxidizing steel. Around the open core (which is used for play on the ground floor and becomes the library at the top-most level), brightly colored tubes carry mechanical/electrical systems and people from one "nodule" to the next. (Nodules are the small points of connection between core and wings.) This language of growing things—such as nodule—is intentional; Johansen thinks of the lightweight steel elements as the petals of a flower, attached to something quite different, the calyx or support of the plant.

A glance at the floor plans makes the relationship clear. First and second grade classrooms are at 3 ft. 4 in. elevation (Level 5, Wing I). Directly beneath them in the same wing is the mechanical area, at Level 2. Third and fourth grade classrooms are in the next wing at the next level (Level 6, Wing II), which is 6 ft. 8 in. above grade; directly beneath them are the double-height multipurpose room, and the art and music rooms, at Levels 1 and 3. Fifth and sixth grade classrooms move on to another wing and another level (Level 7, Wing III) 10 ft. above grade; the kindergarten underneath is at grade (Level



ELEVATION OF ADMINISTRATION WING



The tubes that act as corridors and as mechanical conduits—and are also a lot of fun—have outer and inner skins of metal, an inner lay of ½ in. sheetrock (for a one-hour fire rating), and an innermost surface of carpeting on floor, walls, and ceiling. The classrooms themselves do not require fireproofing. This school has been the most controversial in Columbus, but almost everyone who experiences it—as student, teacher or skeptical outsider—registers a delighted approval.

4). In the core at Level 8 are the administrative offices, out of the way of the heaviest traffic. The library is half a flight further up, at Level 9.

All columns are adequate to take additional floors, giving a flexibility over and above that of being able to remove the colorful exterior ramps and extend the classrooms horizontally. As they stand now, the classrooms represent a point midway in the school board's thinking between conventional teaching in defined spaces, and team teaching in open lofts. Folding partitions to divide the classrooms were omitted after the bids came in; they can always be added, but everyone is happy with the combination, in each wing, of smaller and larger spaces.

Johansen more or less "lets things happen" in design; he may push a bit here or there for composition, or for a little frivolity, but nothing is done to be deliberately jarring. His work is not antiarchitecture; it has a precise esthetic. Johansen describes his desire to make a building that expresses itself, explains itself, honestly and simply. "You can't sit down and design a beautiful building," he points out.

Johansen and his associate in charge, Ashok Bhavnani, speak of the "romance of prefabrication"; this building is expressive of prefabrication even though it is conventionally built. The lightweight wall and roof sections were put together on the site, after unproductive attempts to have the units fabricated offsite. Actually, with two sides open, the classroom boxes would have been difficult to ship assembled. Ultimately, though, they were not prefabricated because there were not enough units to be worth it to a manufacturer, and there was not enough money for the school district to launch an expensive pilot project.

The building suggests a quality that Johansen describes variously as "happy, quick, out-of-catalog, direct, honest—naughty," the opposite of an architecture that is handcrafted, historic. He feels strongly that buildings should be lighter and cheaper, and go up more quickly. He is leery of a profession that claims to be building for all time, and he is derisive of structures today that commonly weigh ten times the amount they can sup-

port. Although the cost of this school is not extraordinarily low ($26.10 per sq. ft., including carpeting and kitchen equipment, excluding movable furniture), Johansen says it is "as cheap as anything in its class of architecture." Construction time was extraordinarily short, though—the job was finished in 14 months; it would have been 11 months, without strikes.

To build quickly, the architects wanted to avoid any materials affected by weather (masonry or plaster); to build economically—and naughtily—they used straightforward industrial materials and details. Glass butts against glass, with metal clips, like a standard storefront; all pipes and conduits are exposed; concrete is poured against plain plywood forms, with no patterning to hide defects. "It can be bad, seductive, to have too much money," says Johansen; but the contractor, with different values, has tried to patch some of the concrete. Johansen is particularly pleased with the stack, which is designed simply as a smoke chamber, laterally supported. Its use and structure are honestly expressed (although the detailing is not strictly conventional—two straps instead of the regular three are used).

Designing this way does not necessarily mean cutting corners. The incinerator, for instance, has a pollution control device costing about $300, added at the insistence of the engineers. And there are carpets where needed, to give a play of soft surfaces against hard and to soak up the noise. The tubes are continuously carpeted—floors, walls and ceiling. Classroom ceilings are of metal, but since classroom noise is primarily in the low frequencies, it is readily absorbed by the carpeting. The lunchroom is deliberately noisy—it is the one place where children can break out and *know* they are noisy. Color is noisy, too; Johansen refers to it as a "brashness of color"—almost an industrial color. The circulation tubes make a vibrant kinetic break from the restrained and static environment of the classroom blocks.

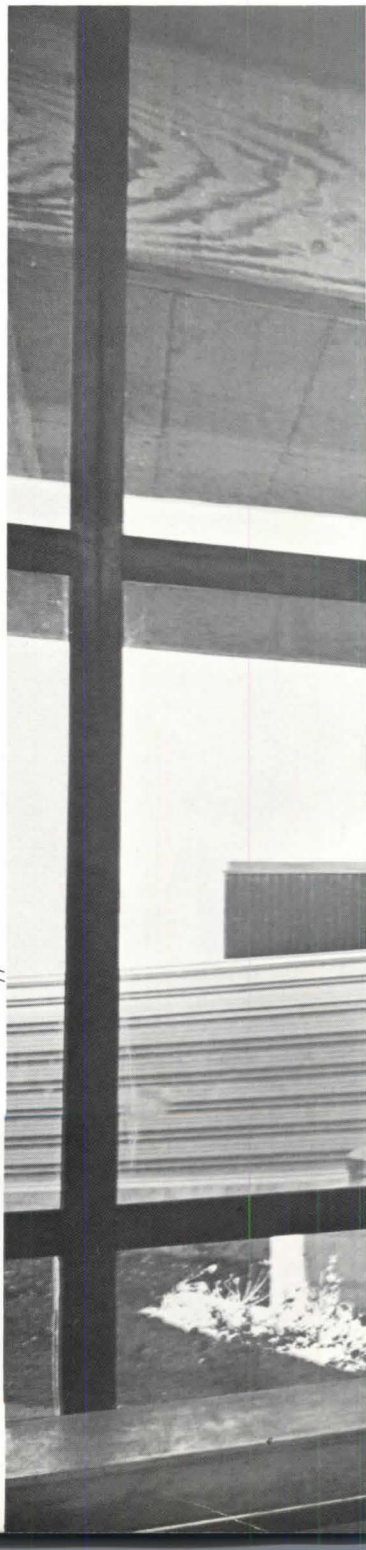
The school is an adventure for children. Primarily a "walk-to" school, it allows the children to seek out their own ramped entrances, which most of them prefer to the main entrance. The children are stout defenders of the unorthodox architecture. When criticism of the building appeared in the local paper, the rebuttal came from students. They understand the rationale and the dynamics of this building—and they love it—far more than their elders, some of whom may ask, "Where's the architecture for an expenditure of more than a million dollars?" or, "When are they going to cover the pipes?" A state inspector was somewhat embarrassed to find himself asking, "Well, *are* the walls finished?" (they are the same rough concrete inside and out), and yet there are probably more negative comments about the steel that weathers to rust than about the raw concrete. But for the few people who think the building looks like a cement factory or slaughterhouse (the tubes are the cattle chutes), there are a growing number of enthusiasts, most of them skeptics until they had visited the building or until their children were enrolled in Johansen's school.

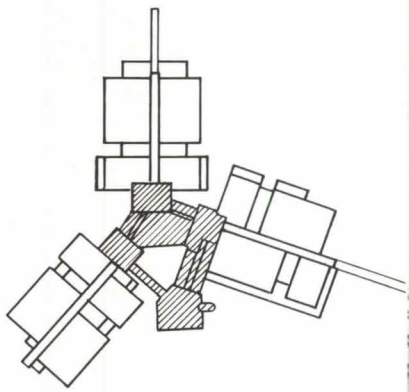
The building generates an excitement that one member of the school district's administration finds unrivalled in his 15-year career in education. He doubts that it is due to the newness of the building, because, as he describes it, no one treats the building as if it were new anyway. The place has become one gigantic bulletin board, and underneath this vivid temporary environment, the occasionally splotchy concrete looks, to him, as if it were in fact designed to look that way.

This is a building that excites the young of any generation. Bhavnani, the associate in charge, points out how hard it can be today to keep young people happy in architectural offices. "A job like this does it," he says. It does indeed.

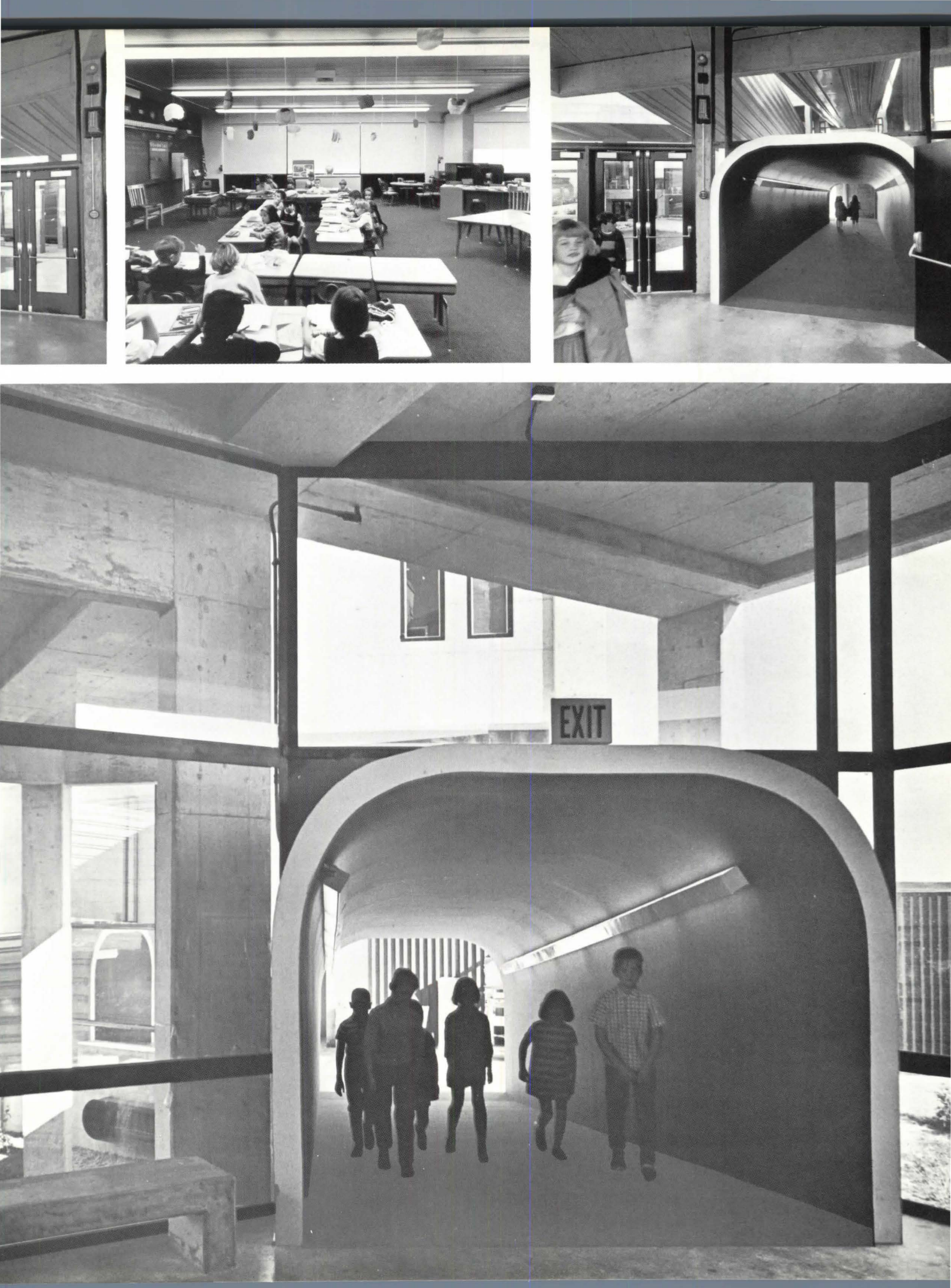
FACTS AND FIGURES

L. F. Smith Elementary School, Columbus, Ind. Owner: Bartholomew Consolidated School Corp. Architect: John M. Johansen (Ashok M. Bhavnani, associate in charge). Engineers: Rudolph Besier (structural); Abrams Moses Solomon (mechanical/electrical); SIECO Inc. (local representatives). Other consultants: Robert P. Stockmal (site work/landscape); Robert D. Chatfield (food service equipment). General contractor: Repp & Mundt Inc. Building area: 50,000 sq. ft. (gross). Cost: $1,325,416 (excluding land, financing, furnishings, fees). PHOTOS: Balthazar Korab.





Johansen is convinced that buildings must be cheaper and quicker to build, in these days of rapidly escalating costs for conventional construction. Esthetically, too, his preference is for "industrial" materials and detailing. The school's apparent compexity reduces to a simple system: three wings surround a large open core; special functions are housed in concrete; above them are the regular classrooms, of steel; and connecting the wings are colored tubes that carry people and mechanical equipment.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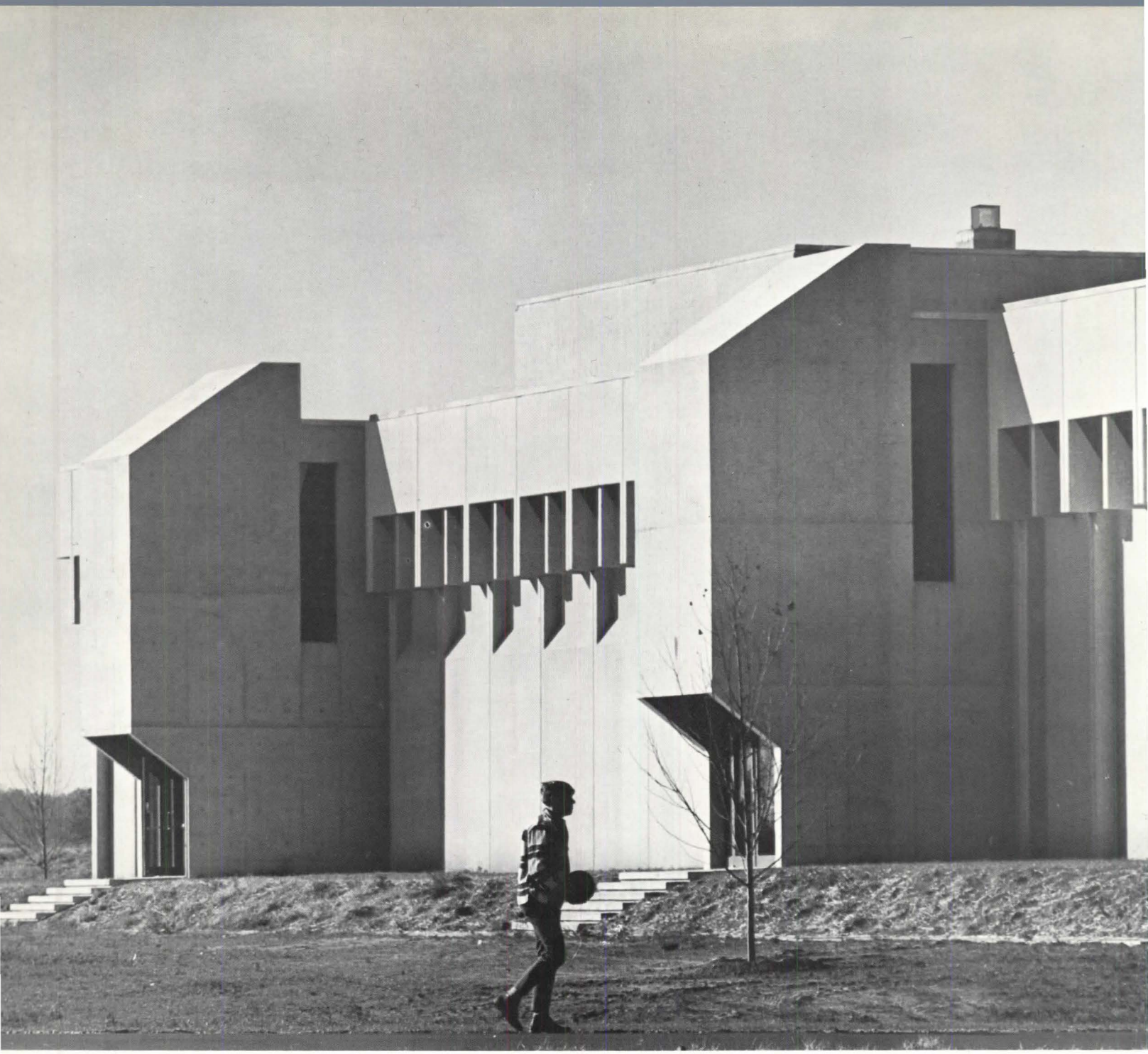
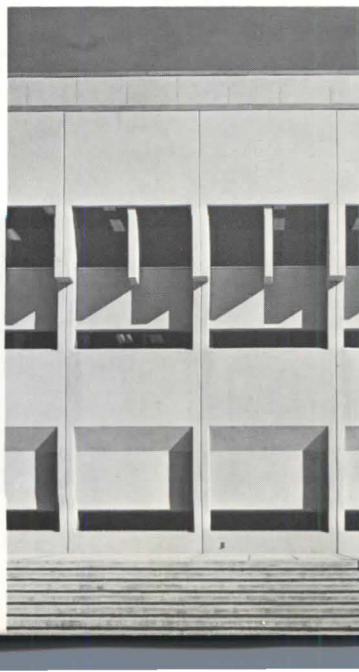




COLUMBUS, IND.

2.

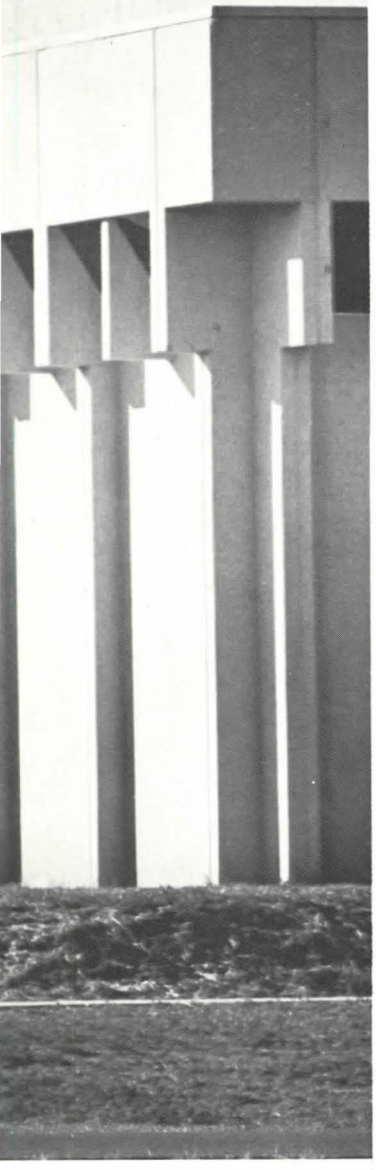
Southside Junior High School
Eliot Noyes, Assoc., Architects

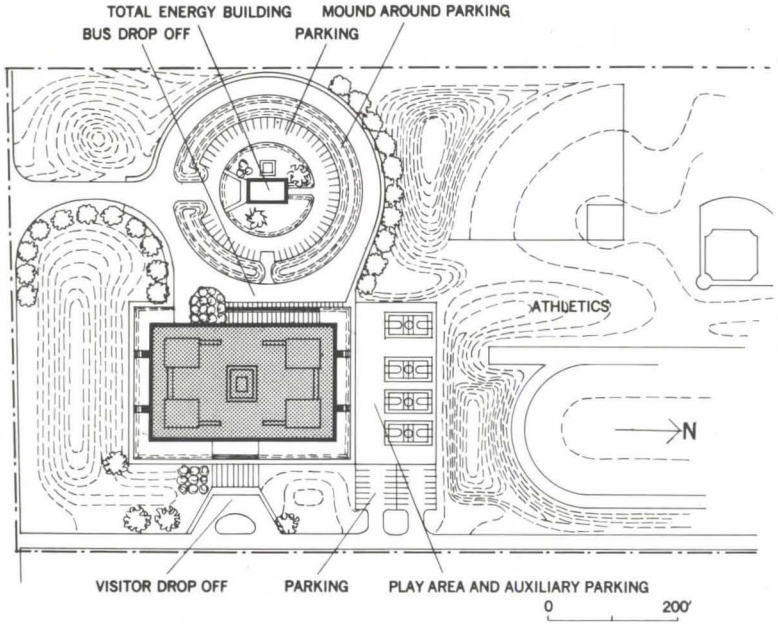
The much larger Southside Junior High School, a complex for 1,200 students, has caused little controversy in Columbus. It simply belongs to the mainstream of excellent architecture which the town has come to take for granted over the years (see Dec. '65 issue).

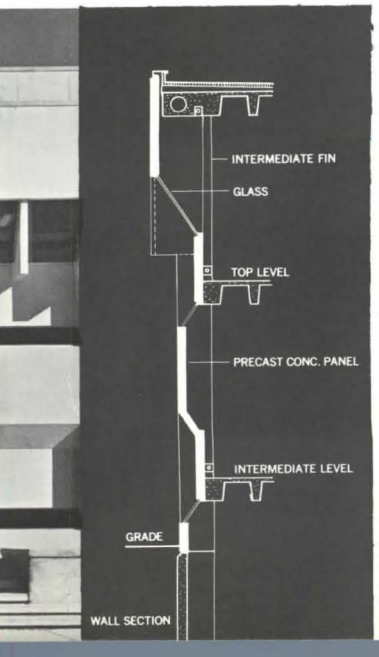
This nationally unique school-building program—started by Irwin Miller, president of Cummins Engine Company—has brought the country's finest architects to Columbus; the Cummins Foundation pays their fees. Ultimate selection of the architects is by the local school board, from a list of ten top architects presented to them by an outside committee; Miller picks the chairman of this committee, who then picks two others. Thus Miller himself, although a practiced and thoughtful client of contemporary architecture, does not even meet with the chosen architect; he first shook hands with Eliot Noyes, in fact, at the dedication of the school.

The 33-acre site for Southside was once a field of soybeans, with no more than a one-foot differential in elevation from one end to the other; it has ended up as an intricately contoured place with, for instance, a mound 15 ft. high, a depression 20 ft. deep, and the building itself bermed up to a podium for extra emphasis. This site work is not entirely for visual impact; some of the mounds shield parking areas, and in the absence of storm sewers some of the depressions serve as lagoons for run-off.

When Noyes received the educational specifications for the school (the school designed by Johansen was similarly programmed by a committee of teachers and administrators), he was struck by the likeness between this school-to-be and any city. Like a city, this school would have its own stores, restaurant, theater, recreational places, even its own power plant. But a town has a town square to pull it all together and make it memorable, Noyes felt, and thus was developed the central idea of the school: a two-story commons at the heart of the building. This was "nonprogrammed space," of course, and the school







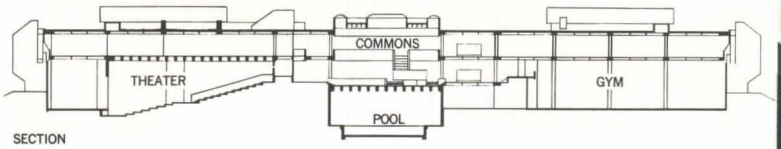
Designed to be "larger than life," this school reminds at least one resident of the massive simplicity of ancient Rome. The facade is made up of monolithic precast panels which are sunshading and loadbearing in one unit; the top of the panel is always glazed, while other portions are glazed or not, as required. The site is extensively contoured, for visual and other reasons (for instance, storm run-off, far left); the "total energy" installation is exhibited in its own small building, bermed like the main one.

board was reluctant at first. To persuade them, the architect showed that he had simply taken all the lobbies programmed for separate places, and drawn them together into a single space.

The commons is always alive with people; since the day is made up of 15-minute time segments, there are always some students changing classes—and most of them are drawn to this magnetic space. Although there are secondary stairways throughout the building, almost everyone uses the grand stairway that feeds theatrically into the space.

In plan, the bottom floor (not reached by the commons) contains the noisiest activities—the gym, swimming pool, theater, and workshops. The intermediate floor has the "not quite academic" rooms—home economics, art and music. On the top floor are the classrooms, with each of four clusters including a large resource center, "standard"-size classrooms, smaller seminar rooms, and smallest conference rooms. The architect took pains to avoid long corridors on this floor—the short loop-corridors feeding these clusters make for a smaller scale (they are also low-ceilinged, to conceal air-conditioning ductwork).

Structure is reinforced concrete one-way joists, with the ceiling a series of deep pan-molded coffers, 25 in. wide, that establishes the basic module of the whole building. The intention was to let the basic structure show wherever possible (interior walls are unpainted concrete block; and the exterior panels are monolithic, the same sandblasted grey concrete inside and out) so that students can learn how a building is made. Warm woods and bright carpeting enliven the interior, and Ivan Chermayeff is designing four murals for the interiors of the stair towers.



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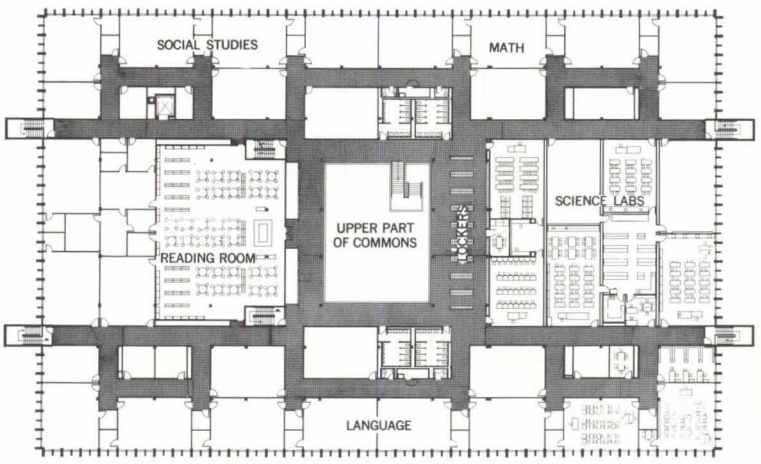
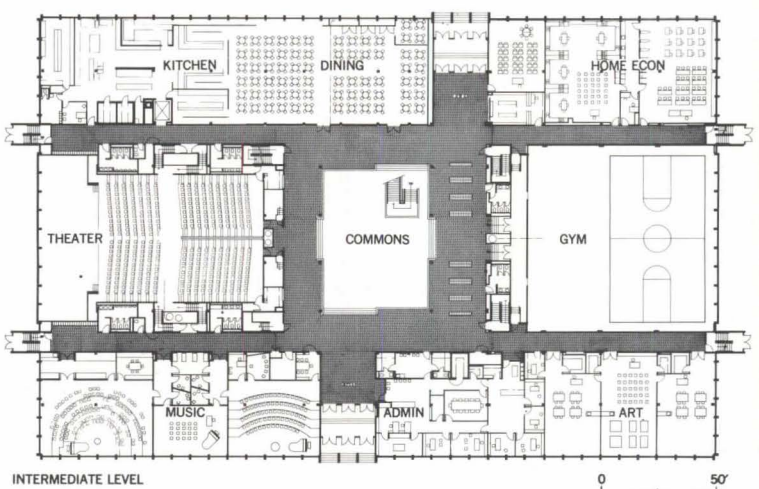


TOP LEVEL



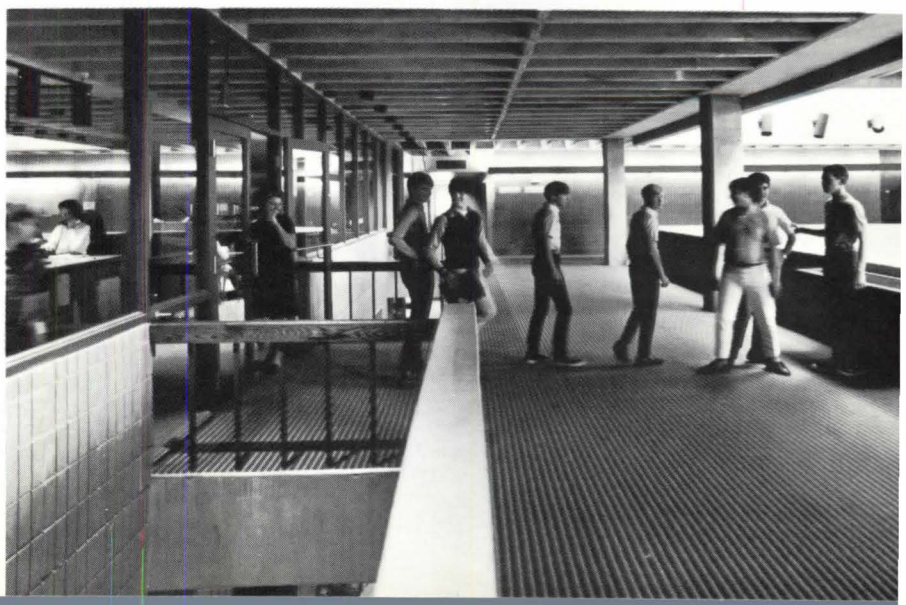
INTERMEDIATE LEVEL

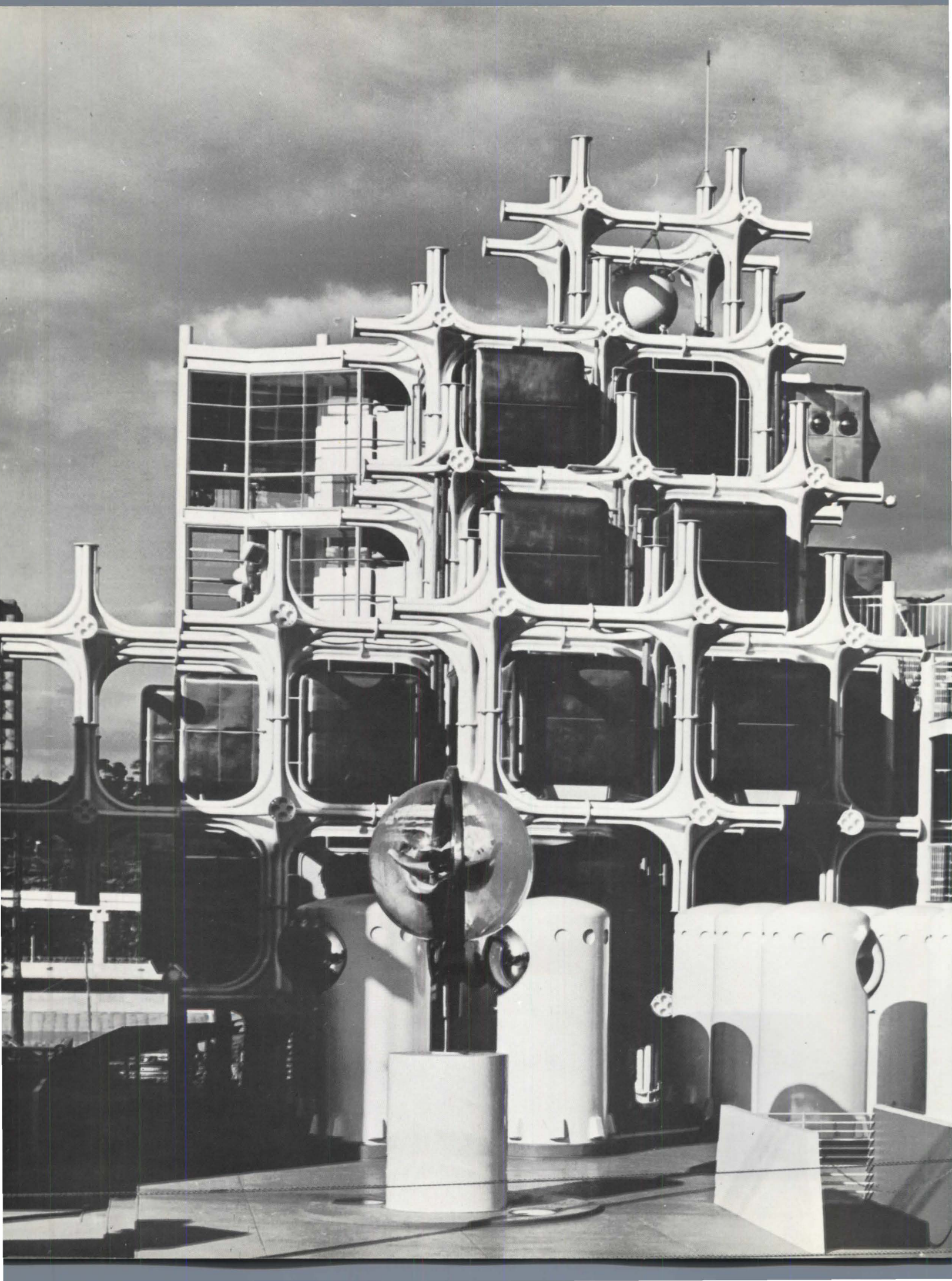
0 50'

Lighting is quite imaginatively used "in lieu of applied finishes," to provide definition of interior forms. The principle has been to light objects rather than rooms, but local people have complained that some areas are too dim. With the school's total energy installation, lights can be (and are) on all night. The system runs on natural gas (and on donated Cummins engines) to generate the building's heating, cooling, and electrical power.

FACTS AND FIGURES

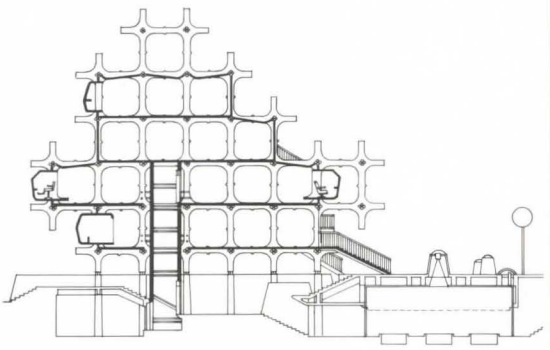
Southside Junior High School, Columbus, Ind. Owner: Bartholomew Consolidated School Corp. Architects: Eliot Noyes & Associates (Alan Goldberg, associate in charge); James Associates, supervising architects. Engineers: Werner-Jensen, Korst & Adams (structural); Hill & Harrigan (mechanical / electrical). Other consultants: Currier, Andersen & Geda (landscape); Sylvan R. Shemitz & Associates (lighting). General contractor: Repp & Mundt Inc. Building area: 170,000 sq. ft. (gross). Cost: $4,025,000 (excluding land, financing, furnishings, fees). PHOTOGRAPHS: Balthazar Korab.





A GLIMPSE OF THE FUTURE

BY ROBIN BOYD



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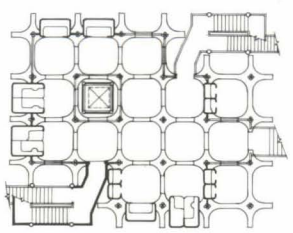


FIRST FLOOR PLAN

The frame of the pavilion is assembled out of six-armed units, measuring about 11 ft. in each dimension, fabricated out of steel pipe. At the base of the pavilion, they are anchored to concrete piers; at the sides and top of the structure, they appear ready to sprout extensions.

The most exciting piece of architecture among the almost hysterically excited company of buildings just completed or (at the time of writing) nearing completion on Osaka's Expo 70 site is not one of the national pavilions nor the biggest of the commercial ones. It is not the wildest nor even necessarily the best building (if it is fair to judge any of them before their official openings). Yet in all that surfeit of weird shapes it is the most compelling because it gives a glimpse, as through a glass polarized darkly, of what a building of the future might look like.

The building labors under a horrible name: "Takara Beautilion." It is the pavilion of the Takara Group of four furniture companies, and it is the design of one of the founders of the Japanese Metabolist movement: young (36) Noriaki Kurokawa. It is the best manifestation yet built of the sometimes fevered Metabolist theory—mainly qualities of growth and change.

As I write this, before opening day, the builders have long left it. But is it finished? It seems so, yet it certainly looks unfinished, and this, for a Metabolist building, is the most extravagant praise. For a first rule of Metabolism is that a building should be capable of growth wherever and whenever required.

In this case, the structural system is based on a single prefabricated framing unit which is repeated some 200 times. Each unit is made up of 12 blunt right-angle bends of steel pipe (10 cm. diameter) welded to make six arms, each consisting of four pipes grouped in a square, thus forming overall a 3-D, six-pointed cross measuring 3.3 meters in each of the three dimensions. The steel is painted white.

The end of each arm is welded to a flat circular disc, like a hand, holed for bolts. When several of these units are bolted together at the discs they make up a space frame of repetitive cubes. The frame is spiked externally by its unengaged arms, and at the extremity of each arm is one of the flat hands, waiting with its bolt-holes ready to grasp the hand of any other unit that might join it.

Mr. Boyd, the Australian architect and critic, is a member of our Board of Contributors. Among his books is **New Directions in Japanese Architecture.**

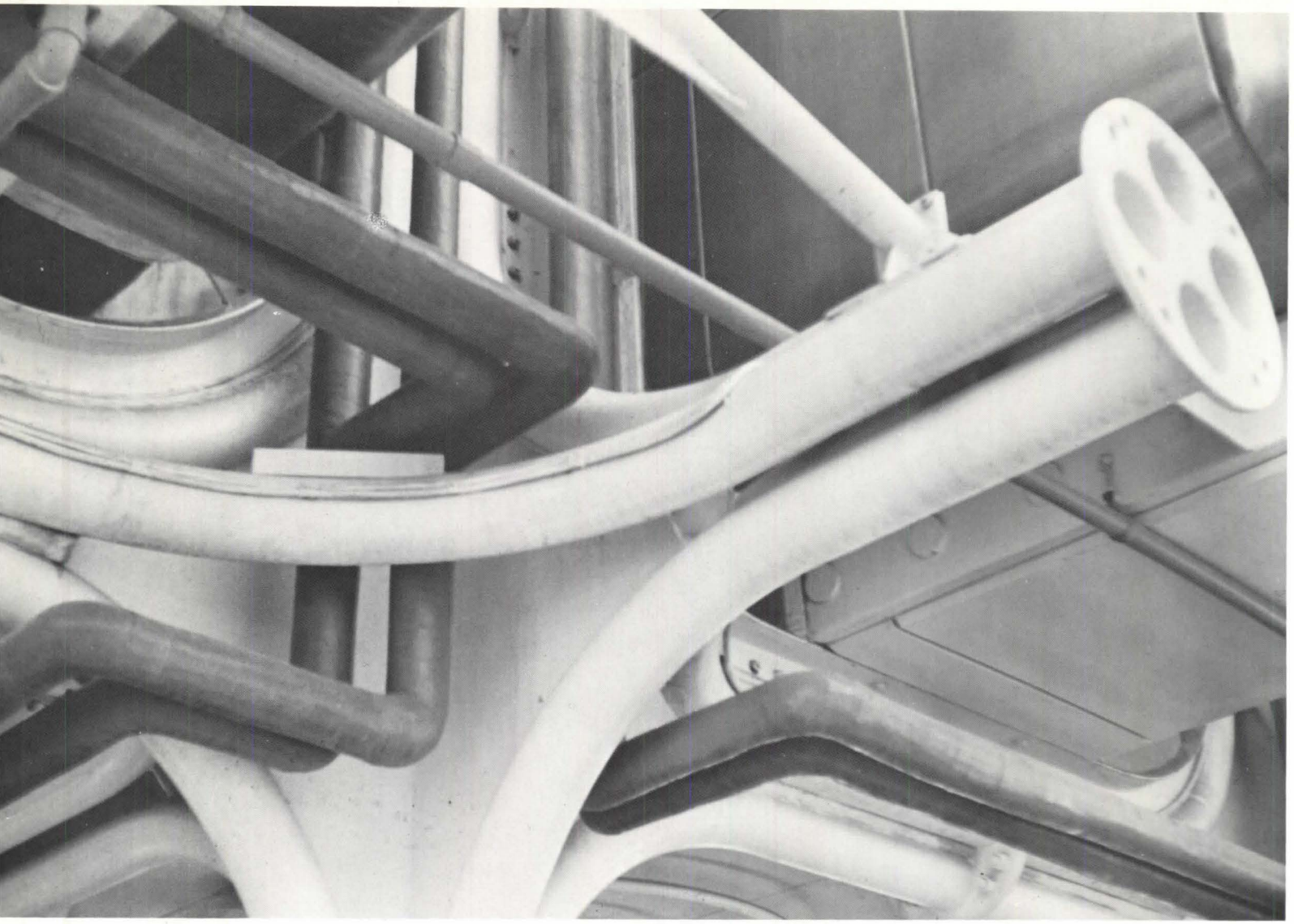
Floors are of precast concrete slabs, dropped into the steel frame. The whole system looks as easy and as full of fun as a toy construction kit. Yet the larger scale brought structural limitations, and Kurokawa cautiously restrained the overall shape, keeping to a fairly conservative irregular pyramid, four stories high above the concrete foundation piers. However, he could not resist adding a few unusable extra units on top, and some others cantilevered out front, just to show off the system. Free arms grope blindly in the air like a robot octopus searching for a mate.

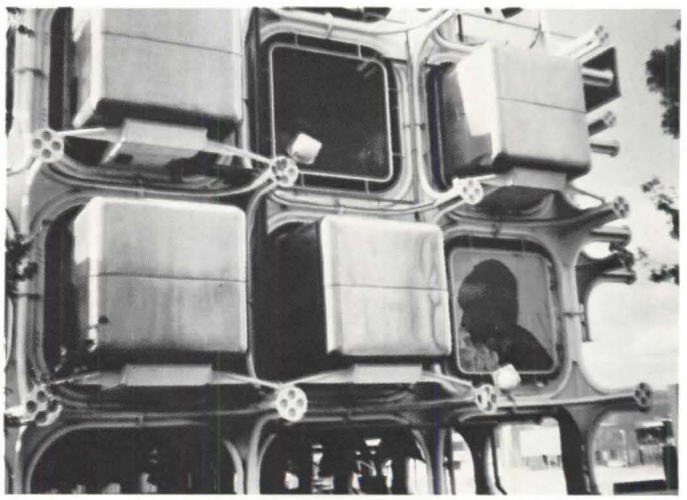
Into the square holes of the body of the pyramid, Kurokawa has plugged at random various things designed to keep the rain out and his visitors entertained: 30 stainless steel boxes containing exhibits, some colored glass Pop pictures, cones, bubbles.

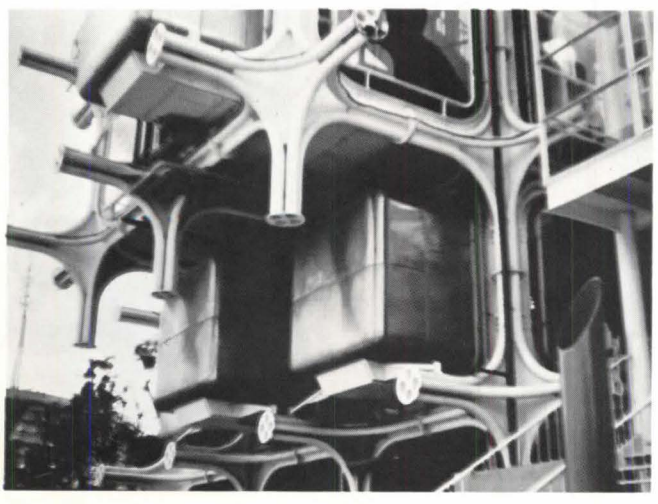
Exhibitionist extensions

The whole thing may sound, so far, suspiciously like a beautifully simple concept which might result in a beautifully unified building, but there is more to come. Service pipes and ducts cannot easily be accommodated in such a trim frame system. Does that worry a Metabolist? Of course not. The services are led externally in and out the framing members and are painted in bright code colours (although it is to be noted that the publicity model displayed no service pipes). Two stairs were required. Do they embarrass Kurokawa? Evidently not. The main one, wrapped in glass, and an open escape stair are stuck on each side of the systematic frame, bearing no structural or geometrical relationship to it. They are quite big stairs. Taken together they almost compete in bulk with the building they serve. And from some aspects they threaten, along with all the pipes and plug-ins, to destroy the architectural identity of the system. Maybe that is why it has to assert itself with empty exhibitionist extensions.

Suffocation by its own servants may be the future of architecture: a Frankensteinian end, as many have been hinting. The Takara building actually demonstrates the possibility for the first time; and demonstrations like this are among the best justifications for World Fairs.



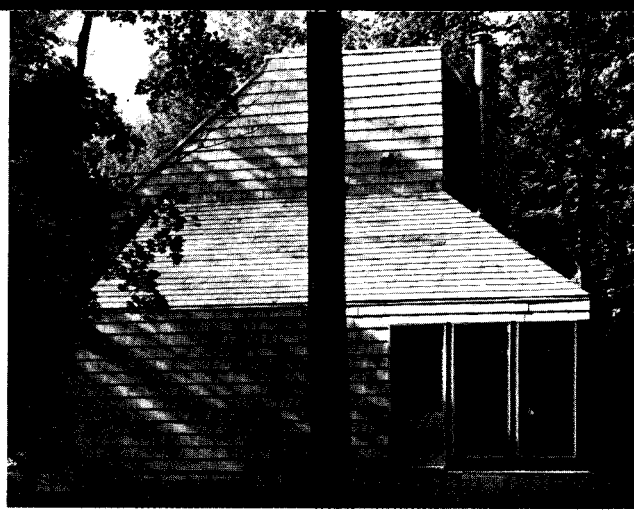


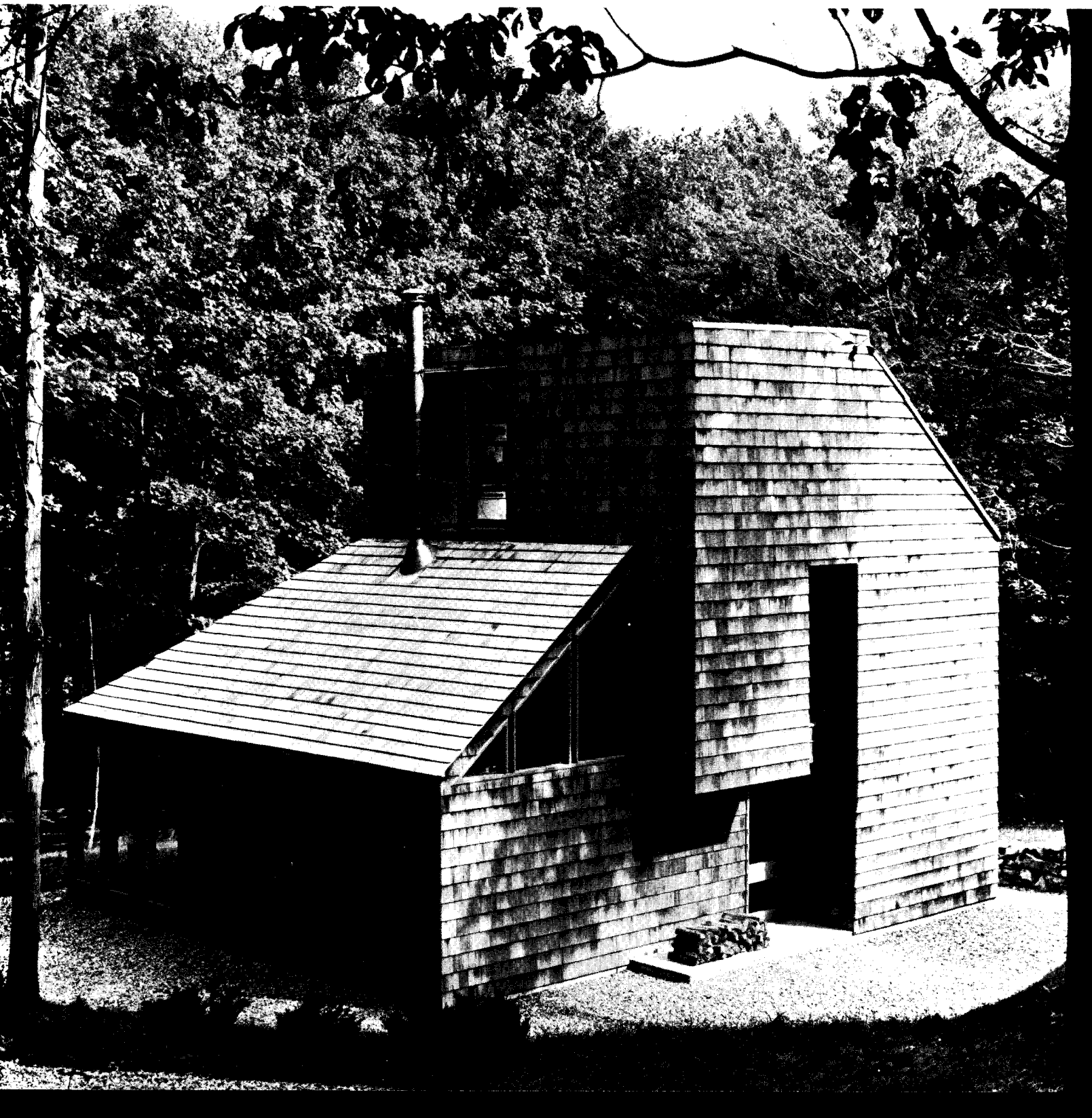


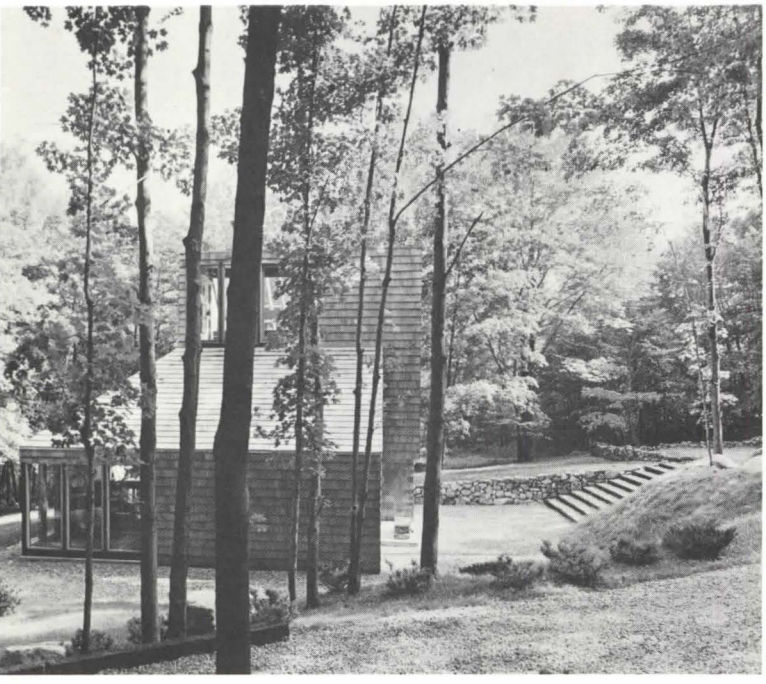
Snaking around the white-painted structural frame are utility pipes (top photo), painted vivid red and blue. Stainless steel boxes and glass panels form enclosures within the frame (left and above). Prominent stair towers (right) compete visually with the vigorous structural forms.


タカラビーチ

SHELTER IN THE WOODS







The gently sloping site is covered with second-growth maple and dogwood and crossed by stone walls that mark long-abandoned fields. Views downhill from the approach drive (left and above) reveal the full extent of the house and minimize its apparent size. Seen from other angles (top photos), the house hardly intrudes on the natural scene. Inside, the three-story volume ascends in an S-curve (section, top right) between balconies.

It is not easy to find wilderness for sale within commuting distance of New York City, but Architect Youssef Bahri was able to find nine acres of isolated woodland—protected on two sides by state park land—less than 60 miles from Manhattan. "On such a site," says Bahri, "days are spent outdoors discovering new birds and plants. The house is nothing but a shelter."

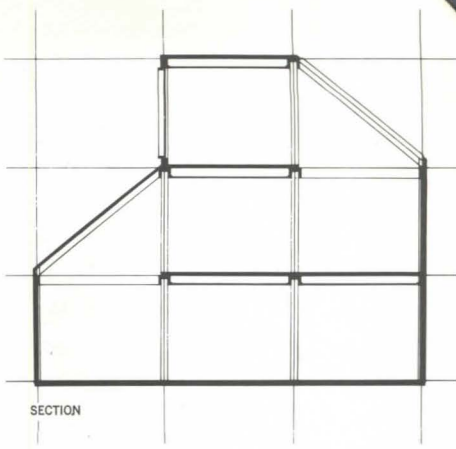
Strictly in terms of function, Bahri is right: his house is a simple shelter, with hardly any permanent divisions inside. And from outside, it looks like a cabin in a clearing—a single, irregular volume, sloping inward toward the top and covered all over with one natural material—red cedar shingles.

But Bahri realized that the interior would have to provide more satisfaction than a simple cabin. Nobody can spend all of his time outdoors, and there is no other diversion nearby. Inside his apparently rudimentary shelter, Bahri has created a set of spatial experiences that can be examined and savored in much the same way as the natural world outside.

The whole house is contained within an imaginary "cube" 30 by 30 ft. in plan and 26 ft. high. (That may not be a cube, geometrically, but it *looks* more correct than a perfect one.) This overall volume is composed of 27 smaller volumes of the same proportion (10 ft. by 10 ft. by 8 ft. 8 in.), stacked three wide, three deep, and three high. These subdivisions—the bays of the wood structural frame—are not very obvious from the exterior since the building envelope does not follow them consistently.

Inside the house, however, these structural divisions are always quite evident. The interior is not divided into three floors; it is a single volume three stories high. Partial floors on each of the upper levels make it impossible to see the entire volume from any one point, but there are always clues (such as light coming from an unseen source) that space continues.

The climb up to the top level follows a sequence that is carefully calculated—yet not pretentious. Each of the two identical stairs goes up to a landing with minimum head room, then follows the roof slope to the next level. On the first flight, the roof is solid and the wall to one side is glazed; on the second, the wall



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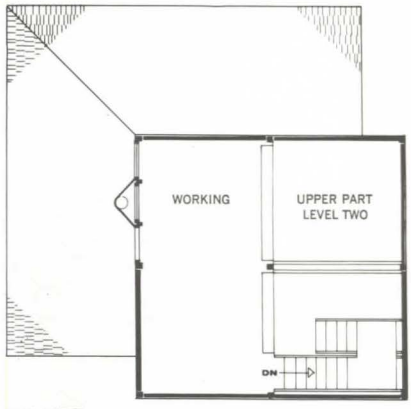
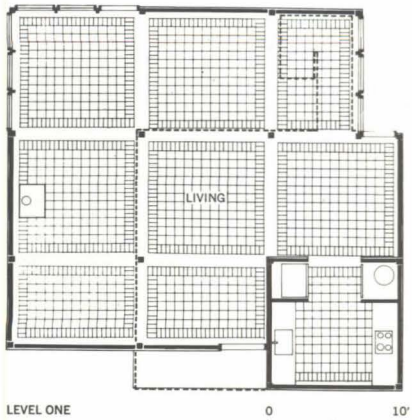


LEVEL THREE

LEVEL TWO



LEVEL ONE

0 10'

is solid and the roof is glazed. From the studio loft at the top there is a broad view to the south, using the skylight of the level below as a window.

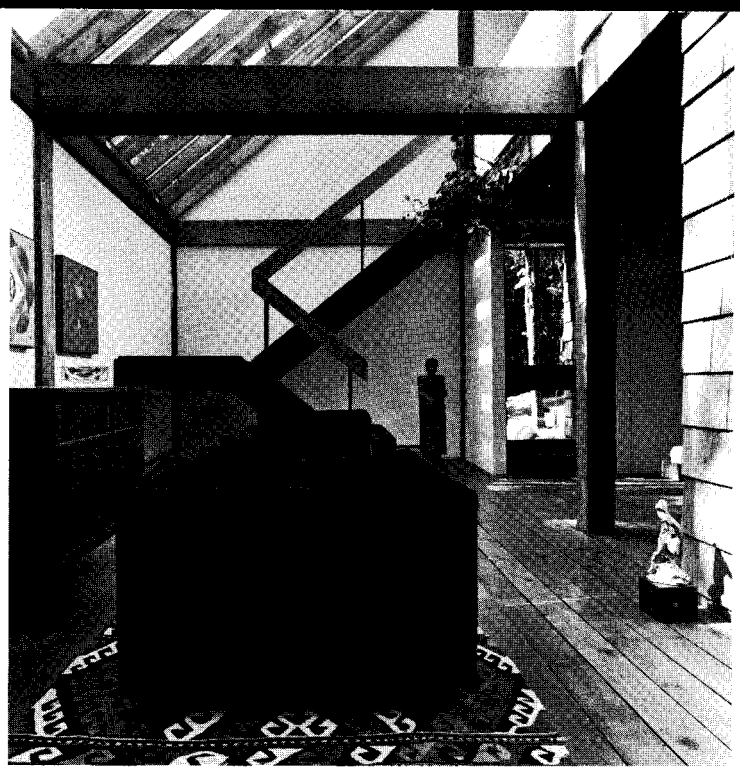
As you move up through this sequence and back finding new vantage points, there are always interesting relationships to observe. The sides of the 10-ft.-square structural bay appear in many variations—closed, open, glazed, bisected by a sloping roof. In views up or down, the outlines of the bays are always articulated—by the paired beams or by the pattern of brick pavers on the first floor.

Although Bahri has manipulated space as an esthetic medium, he has sacrificed little in domestic convenience. Only one room, the bath, is completely enclosed, but no more privacy is really needed in a simple house for a bachelor. The bedroom balcony and the loft above are screened visually from other levels.

There are other ways, of course, in which the space inside a simple house can be made visually absorbing. There is a whole school of architects who fill rustic exteriors with fastasias of odd-shaped cutouts and supergraphics. Bahri has chosen instead to construct an environmental experience out of well-ordered space. Opening and enclosure vary, light comes from unexpected places, but structural members and surface materials are unobtrusive and follow a consistent set of rules. Interior walls, for instance, are of white-painted gypsum board, set between the columns; but when an exterior walls bends around and penetrates the interior, its shingled surface is carried through.

The unobtrusive interior materials provide a sympathetic backdrop for items to be enjoyed at close range—old prints, antique chests, table sculpture, etc. A view from any one point may take in the details of a 19th-century engraving, the grain of pine flooring, the room below, and the woods outside. Such visual satisfactions, at many scales and ranges, can make a place to live into a work of art.

FACTS AND FIGURES
House, Putnam Valley, N. Y. Architect: Youssef S. Bahri. Mechanical consultants: Cosentini Associates. Building area: 1,500 sq. ft. Cost: $32,000 (not including site work).
PHOTOGRAPHS: Gil Amiaga (except previous page, top, *by architect*).



Exposed framing of unplaned timber divides the interior into structural bays. Just inside the entrance (right), the bays are defined by freestanding columns and a flat, gypsum-board ceiling. Farther inside (above), the ceiling opens up to reveal upper levels. A corner stair leads up to the sleeping balcony (top photos), from which an identical stair goes on up to a studio loft. A sloping skylight over two bays yields unexpected views into the treetops to the south.

WATCHTOWER ON BROOKLYN HEIGHTS

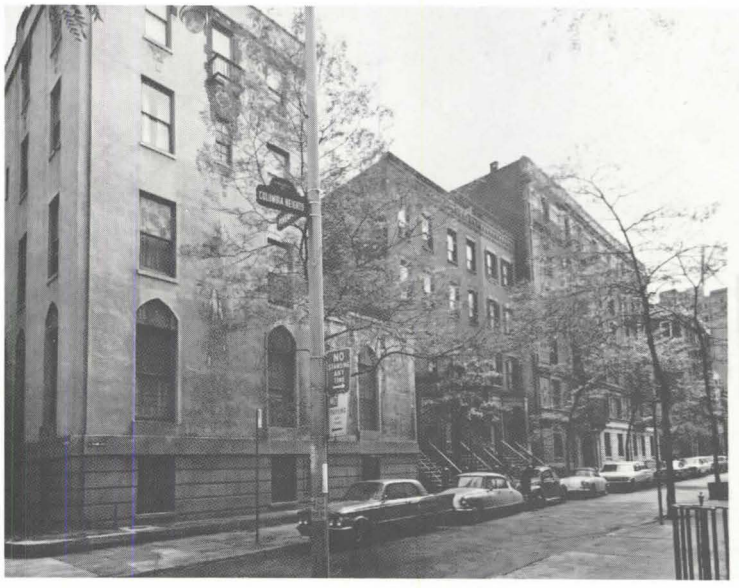
This is a unique building, for a unique client, and on a unique site. Yet the principles that shaped the building are applicable to many similar situations.

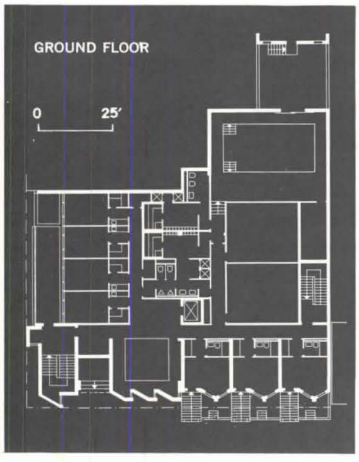
The building is a hostel for some of the 1,400 Jehovah's Witnesses who make up a missionary "family" in the area; the client is the Witnesses' Watchtower Bible & Tract Society; and the site is a prominent corner in New York's Brooklyn Heights—an attractive residential area that was made a National Registered Historic Landmark some five years ago. (The city's Landmark's Preservation Commission had previously labeled the area an "historic district.")

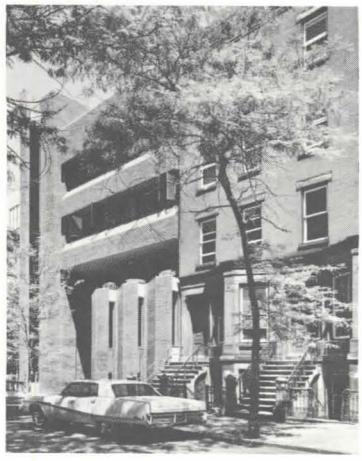
The Witnesses own a great many buildings in the area, and built some tall, ungainly residences over the past 20 years, before Brooklyn Heights became an historic district. But when they got ready to build another such dormitory, the Brooklyn Heights Association demanded that a more sensitive solution be found, and suggested that the Witnesses retain architect Ulrich Franzen to find it. They did, and this building is the result.

What Franzen attempted was not merely to retain three certified historic buildings on the site, but to replace the corner building (not a certified landmark) with something that would, in fact, enhance the street —but without resort to "Colonial Williamsburg" devices.

To achieve this, Franzen used an iron-spot brick that closely resembles the brickwork used elsewhere along the street. He broke up the facade of his new building with three "bay windows" that echo those of the historic buildings next door (and, incidentally, light the two-story lounge near the entrance to the new residence). And he aligned the parapets of the new buildings with those of the neighboring landmarks. A kind of symbolic watchtower containing a fire stair rises above that line to punctuate the corner.





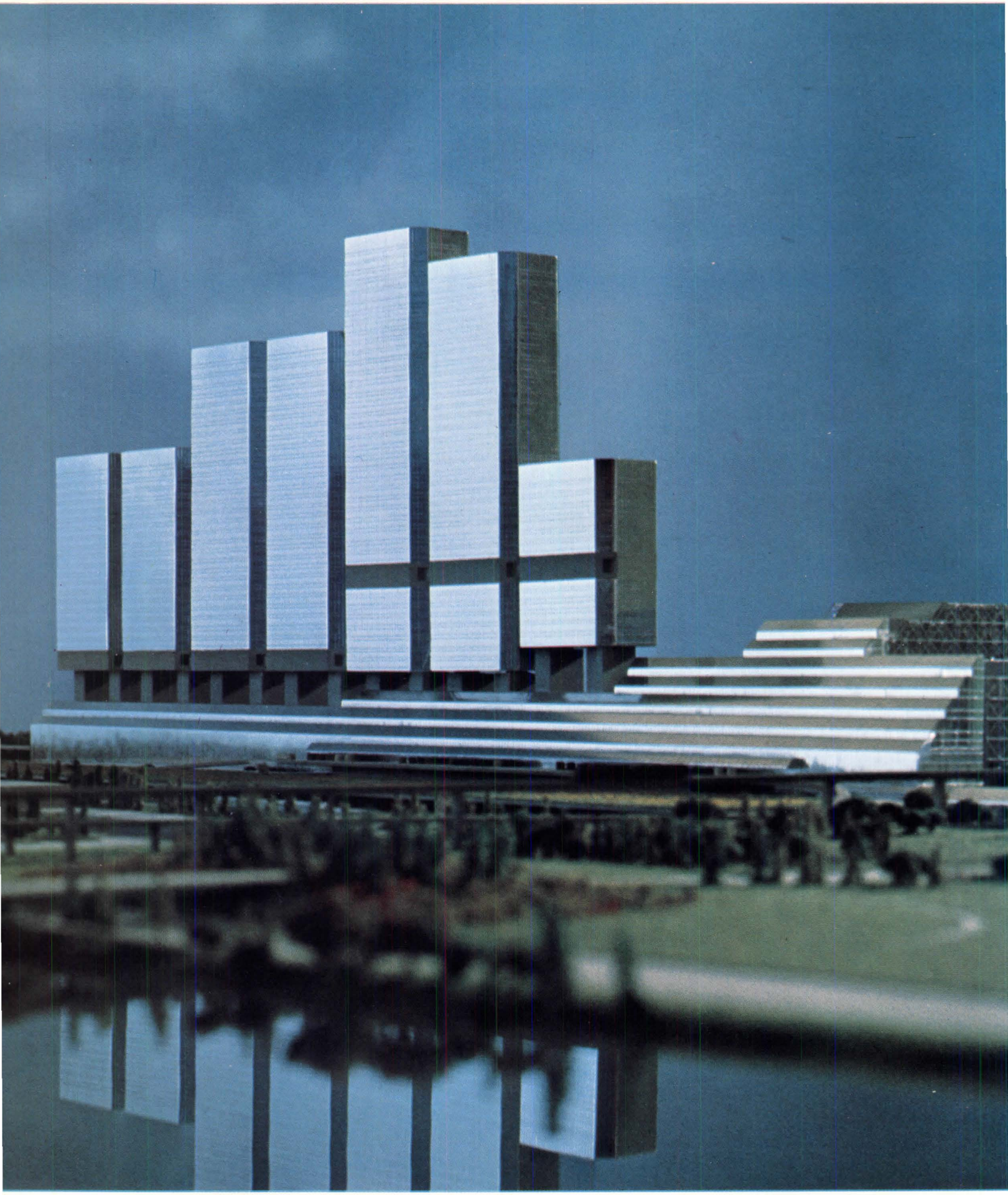


Existing corner building (top right) was replaced, but three adjoining landmarks were left untouched on the outside, remodeled inside to become a part of the new hostel (see plan). By aligning the new building with its neighbors, and repeating the bay-window motif along its facade, the architect managed to extend and enhance the spirit of this historic district. Most of the spaces inside were decorated by the Witnesses themselves with undistinguished results.

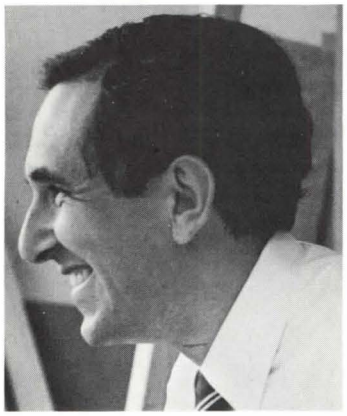
FACTS AND FIGURES

Watchtower Bible & Tract Society Residence Building, Brooklyn Heights, N.Y. Architects: Ulrich Franzen & Associates and A. L. Seiden, Associated Architects (Samuel E. Nylen, associate in charge). Engineers: Severud-Perrone-Sturm-Conlin-Bandel (structural); Ian Grad Associates (mechanical). General contractor: Turner Construction Co. Building area: 43,300 sq. ft. Cost: $2,000,000.

PHOTOGRAPHS: George Cserna.



CESAR PELLI



PUBLIC ARCHITECT

BY SIBYL MOHOLY-NAGY

As briefly reported (Nov. '69 issue), the first prize in the international competition for an International Organizations Headquarters and Conference Center in Vienna was awarded to the design team of Gruen Associates in Los Angeles, with Cesar Pelli as partner in charge. It is the first time that an American partnership has won a European contest. This victory puts the spotlight on new trends that are worth analyzing, not the least for the benefit of those who accuse the profession of hopeless stagnation.

The basic factor supporting a new approach to industrial and monumental building is an increased design awareness among a few big "total service" firms. For decades SOM was the shining exception, having managed to maintain high design standards despite a spectacular expansion. When Daniel, Mann, Johnson & Mendenhall hired Cesar Pelli in 1964 as director of design, they made architectural history in California.

Pelli had worked for ten years with Eero Saarinen as designer in charge of such projects as the TWA Terminal, the American Embassy in Oslo and the Stiles-Morse Colleges on the Yale University campus. His orientation was clearly towards architecture as the art of individual building design.

In the next three years, Pelli won several awards for Sunset Mountain—a high density megastructure draped over a California mountain—whose realization was prevented by financial failure of the developers; and for COMSAT, the research and production plant of the Communications Satellite Corporation—now nearing completion at Clarksburg, Md. The Century Medical Center at Los Angeles, and the Teledyne Systems Company in Northridge, Calif., are in full operation.

In 1968, Pelli, then 42 years old, became partner in charge of all architectural design in the firm of Gruen Associates, Los Angeles. It was a decision of mutual risk-taking. The five senior partners at Gruen would have to accept an individualist of high artistic integrity as collaborator; Pelli would have to find a workable balance between suggestions and decisions and develop—in his own description—"sympathy for the toughness of urban problems, for tight budgets, short schedules and political complications."

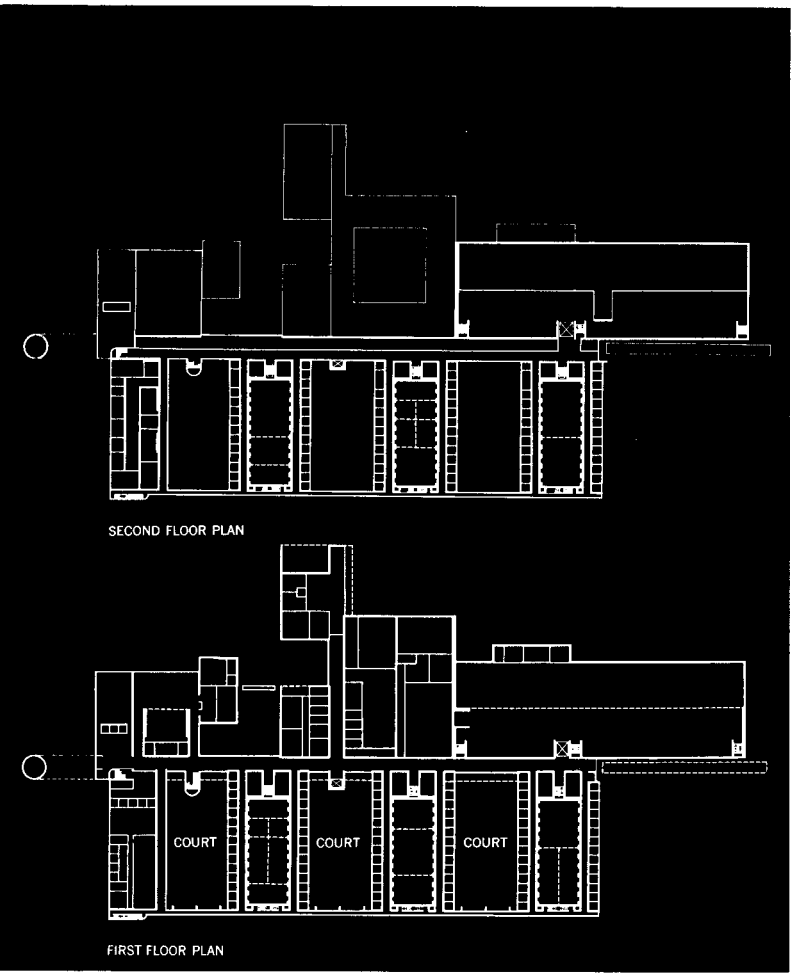
Mrs. Moholy-Nagy is visiting professor at Columbia University's School of Architecture and a frequent contributor to this magazine.

A great design potential

For an Easterner it is a somewhat humbling thought that this experiment in ideological-pragmatic cooperation succeeded so well in the planless building wasteland of Southern California. But then, things can only get better in places where they cannot get worse. In five years of California practice, Pelli has established himself as one of the most talented public architects of today, a designer whose buildings are makers of public environment and creators of public esthetic. In his adaptability to the uniqueness of each commission he shows the influence of Eero Saarinen who had written in 1958: . . . *to examine problems with the specific enthusiasm of bringing out of the particular problem the particular solution. I align myself humbly with Le Corbusier and against Mies van der Rohe.*

And, like Saarinen, Pelli accepted as challenge a phenomenon of our time—the industrial building complex in the open landscape. Our rhetorical preoccupation with the city obscures the fact that, besides distressing suburbias, the industrial park has become a major architectural development with a great design potential because industry has shown an equal capacity for the worst and the best in its architecture. Pelli's solutions, though, are fundamentally different from those of Saarinen. The IBM Center at Yorktown Heights, N.Y., the Bell Telephone Laboratories in Holmdel, N.J., and all other Saarinen designs are elegantly self-contained, finite ideas. Pelli's industrial complexes are open-ended beginnings, taken expansion and change for granted. A modular system of reflective envelope and transparent inner spaces mediates between the production system inside and the landscape on the outside.

COMSAT and Teledyne are the most characteristic examples of this high degree of fluid interaction. The COMSAT plant stretches along a ridge whose wooded crest lends contrast to the expressive roofline profiled



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by astrophysical instruments. The plan, an initial 254,000 sq. ft. estimated at $8,885,000, is a succession of office and enclosed court modules that can be multiplied on a preplanned grid (1). While the laboratories are sheathed in aluminum, the unifying design feature—a spinal corridor—is all glass. Here workers of all hierarchical levels meet, relax, meditate, looking out at courts with different planting and earth sculpture. A second floor balcony with a total vista of interior and exterior spaces relieves the myopia of laboratory work.

A new urban monumentality

Teledyne, a miracle of budget economy, $14.70 per sq. ft. (2), has the same linear theme on a smaller scale. Here the social corridor is on the outside of the laboratory core, offering from two levels an unobstructed vista of the countryside and a carefully preserved grove of grapefruit trees. Only the cafeteria, a stationary point terminating the passage, is concentrated around a sunken core area. A high performance, solar heat-reflecting glass skin makes daylight exposure on the south and west elevations possible and provides a strikingly beautiful spectacle of changing reflections and inside-outside constellations, which are enhanced by different planes and which form facets.

The opportunity to experiment with a new urban monumentality came with the Century Medical Center in Los Angeles, (3) and the Pacific Center South Project for Vancouver, B.C., Canada. These reflective-translucent geometric volumes do not derive from the Meisian mullion wall and its somber, light-rejecting darkness, but from Cermak's 1928 exhibition tower in Brno, Czechoslovakia. The steel grid projects no more than 3/8th of an inch beyond the glass skin to make an impression of the visual tension system of sun rays and reflections. Where the close context of the street has been maintained, as in Vancouver, the reflection produces three-dimensional collages of the old and the new cityscape.

When the routine job of remodeling the Jeweller's (4) Exchange in downtown Los Angeles came his way, Pelli concentrated on an interior light well which had been left to decay. He painted the four enclosing building walls in delicate shades and framed new windows with elegant thin steel profiles. Then he covered a basement skylight with reflective glass prisms that mirror overhead clouds in the blue California sky, as well as walls, and windows in a startling space illusion.

This ability to think in maximum and minimum ranges of perception found its expression in another project that reduces the design scale even further with even more imaginative visual effects. The lobby of Simpson's Department Store (5) was to be transformed into a social court for gathering, eating, and looking. Pelli created a deep dome with a central light well. Psychedelic color effects extend to the floor and the continuous curved wall, which, in an instant, can be changed into a rotating billboard. The solid wall and its span are no longer background, but turn into Pop Art—into the medium and the message as one kaleidoscopic entity.

Building as sculptural art and as civic expression showed Pelli's talent from still another angle. The extension of a tunnel (6) in the Bunker Hill Renewal area of Los Angeles was, believe it or not, given to an architect to design! As a dominant element in urban context, it had to have, in Pelli's words "city scale, and it had to be simple, strong and beautiful." It was a long process of experimentation with complex curves, developed by computer analysis, and section drawings. The result is a flow of lines and planes from two-centered vault to exterior rectangle, and from the darkness of the tunnel experience to the light vibrations on the upward swinging opening.

All these experiences, packed into less than five years, found their application in the solution the Gruen team submitted for the Vienna competition. It is the most intellectual of all Pelli-directed projects, and the one he will have to defend hardest against criticism. The objections center on two points—that he brutalized the Vienna cityscape, and that he found no better symbolism for international co-

PHOTOGRAPHS: 2, Julius Shulman; 3, 6, Arthur Golding; 4, Sibyl Moholy-Nagy.

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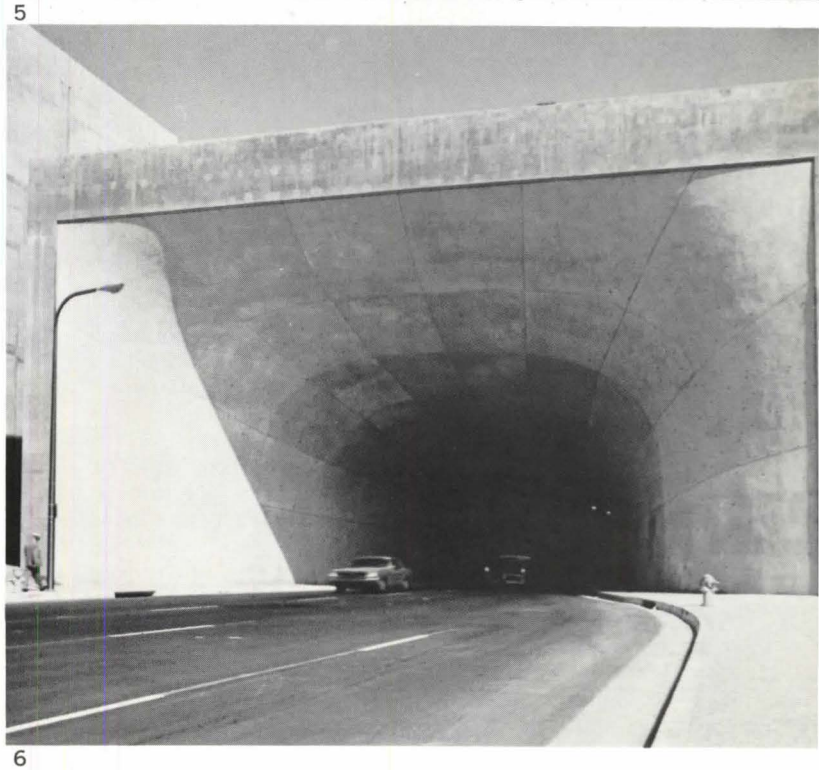

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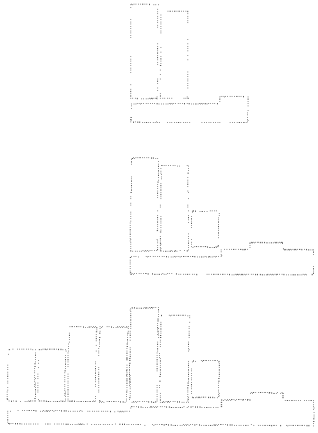
operation than seven modular glass boxes (7).

The arguments offered by the designers have an irrefutable logic. It is the purpose of the sponsors to lease for $1 a year an international meeting place whose worldwide economic and cultural connections will benefit a small land-locked nation and a city stifled by its traditions. A regional scale would have been as misplaced as if Julius II had commissioned St. Peter's to harmonize with the medieval parish churches of Rome, or as if Le Corbusier had designed the acropolis of Chandigarh as an annex to the Red Fort in Delhi. The international complex will, fittingly, stand on an artificial island in the Danube River, removed from the old city, and related in scale and the reflection of its tower skins to sky, water, and a still to be designed international housing project. The seven headquarters were laid out in precise compliance with their spatial needs. Their common function is service to an international bureaucracy, subject to bureaucratic building codes. They are not cathedrals. Austrian law demands an outside window for each space unit. This leaves as design alternatives either conventional ribbon windows separated by masonry bands, or a transparent wall system, which was what Pelli chose. At night, the seven prisms will become seven beacons, permitting each onlooker as much symbolic interpretation as his faith in the brotherhood of nations will bear. As in all Pelli projects, the basic point of design departure is modular expansion (drawings below), providing for successive growth according to a volumetric plan that offers at all stages a harmonious balance between horizontal and vertical volumes.



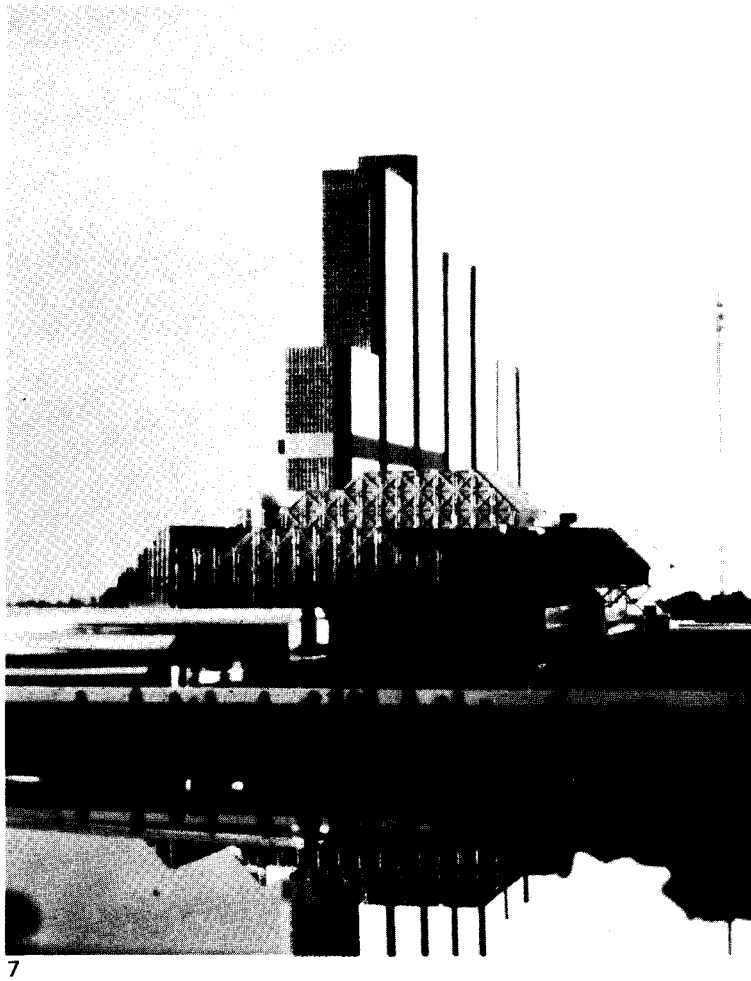
Matter into architecture

The demand for minimum space economy in public buildings has provided Pelli and his collaborators with only limited opportunities so far to show their mastery of space design. Sketches (8) of the conference center lobby are an anticipation of several spatial principles that will, hopefully, find refinement and elaboration in future projects. Structure is used as space modulator—it is exposed only where it is a vital part of the total concept. The dense forms of the gigantic trusses give a luminous depth to the expanse behind them. While this is an architectural trick as old as the hypostyles of Egypt, space dynamics is a specifically contemporary invention. A network of bridges, ramps, escalators and balconies provides horizontal, vertical and diagonal movement in a constant interaction of the human and the technological scale.

The third space promise is neither historical nor contemporary, but (if anything) futuristic. It abolishes the current obsession with round-the-clock artificial light. The vast public concourse which must be traversed by everyone who uses the headquarters facilities is lighted through folded glass skylights along the side enclosure. Looking upward, the visitor sees the headquarters towers in perspective elongation as if the purpose of the entire complex were, like a rocket launch, written into the sky.

It is certain that the intrigues and political rivalries which seem to be the specific affliction of European competitions, will give the winning team of the Vienna Conference Center a tough time.

But even as a project, seen in context with Pelli's other work, it represents a new concept of public monumentality. Form is a mere edge between outer and inner space. There is no mass, but only volume that spins its own skin. Each Pelli elevation is a strong electric field of radiant energy, and in every detail of matter formed into architecture.



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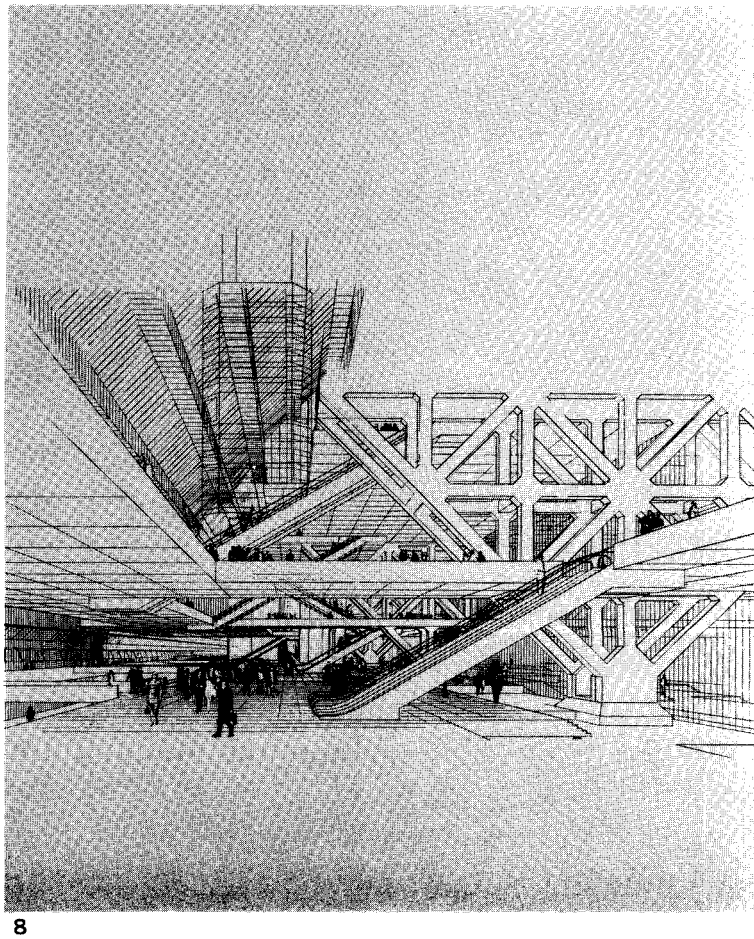

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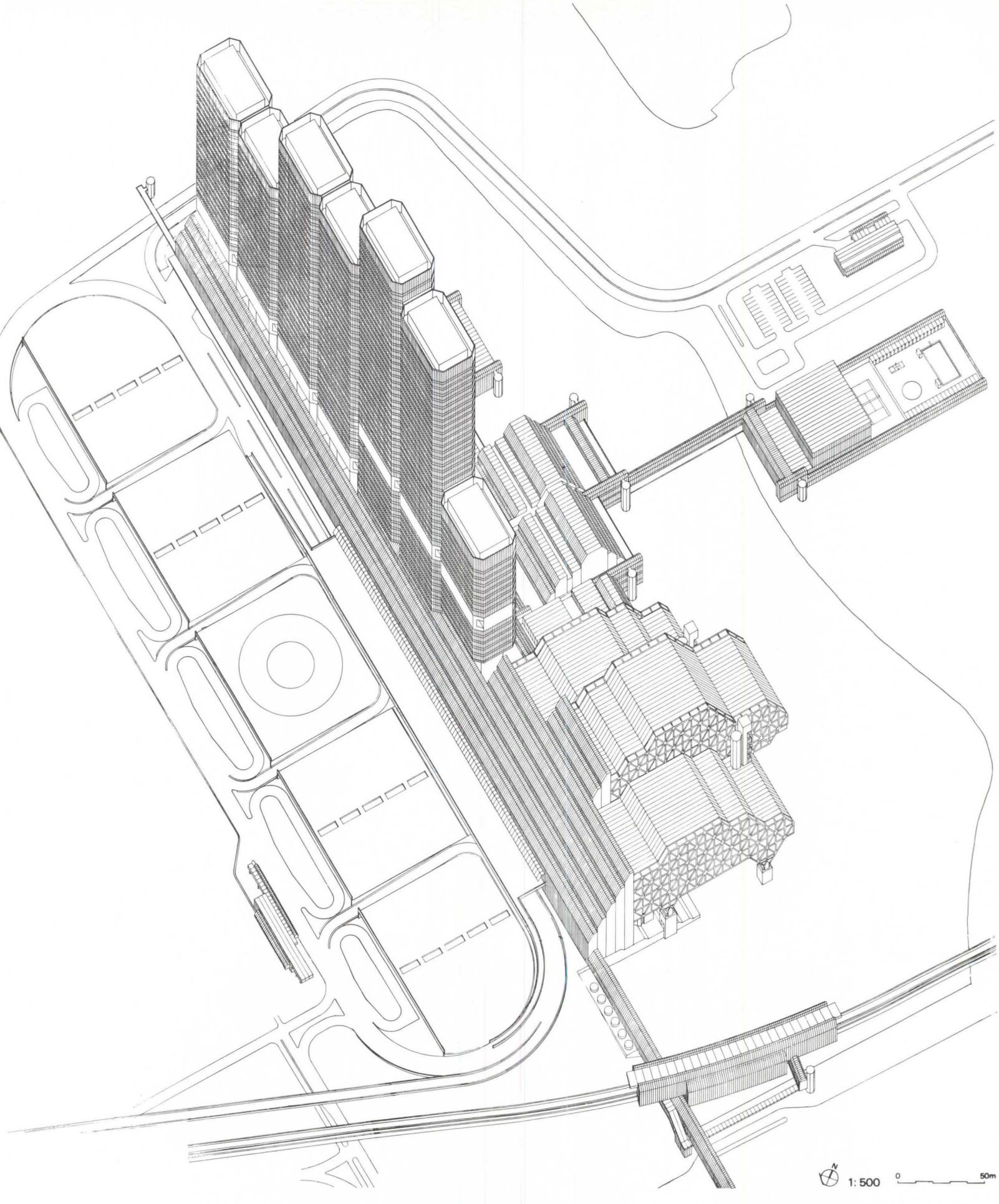
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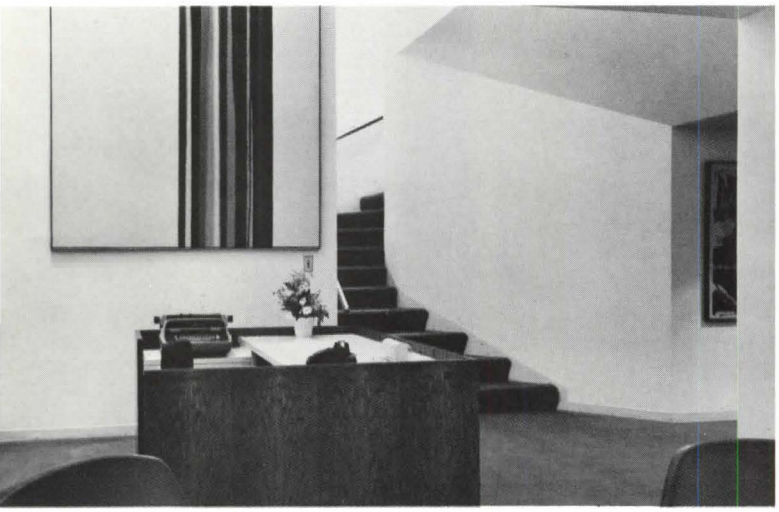
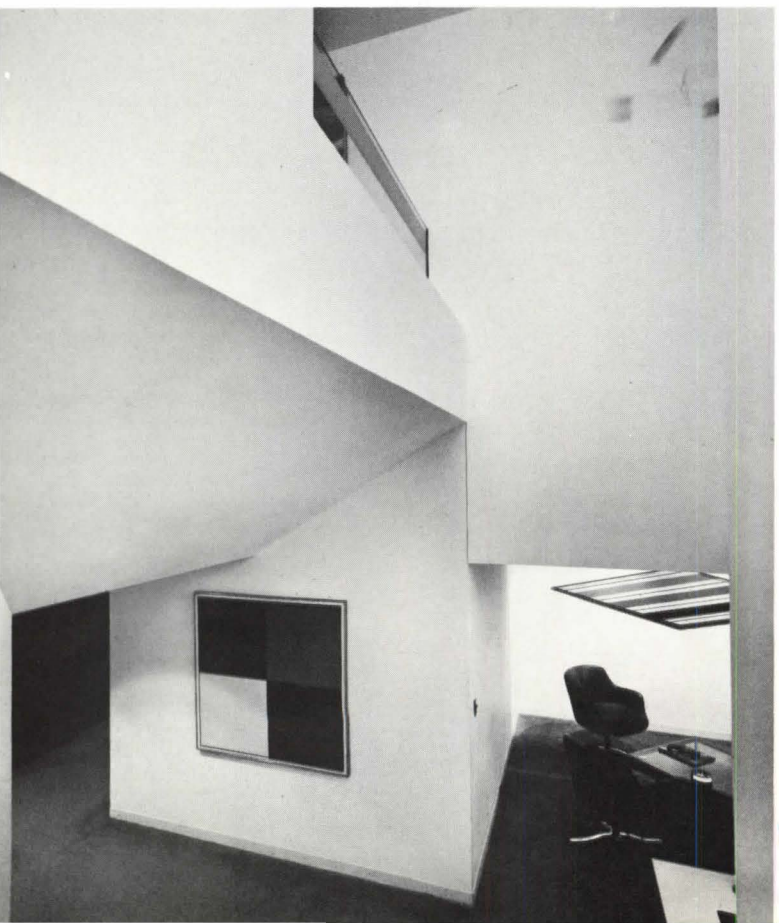
ARTFUL OFFICES

The "express" corridor (left) on each of Wellington's two floors runs around the building's service core, which has been coated with a super-black paint usually used inside optical equipment. A continuous, mirror-finished aluminum light fixture floods the white wall opposite. Paintings at the ends of all long corridors serve as visual objectives. The elevators open in the center of the black-painted core (top right). Angular false walls direct visitors toward the reception desk in a strikingly different kind of space—high, white, and sunlit. A broad stair (middle right) and angular walls and soffits (bottom right) bind the two floors together visually. The seating area here is small, since most visitors are directed to sub-reception areas.





The work of an investment management firm has to be quick, precise, and coordinated, but it must never lapse into routine. The offices of Wellington Management Company in Boston are efficiently laid out, but they are also designed to combat complacency.

Architects Prentice & Chan have given Wellington's staff—and its clients—spatial sequences and visual challenges to keep them on their toes: curves and angles that break into the rectangular order at special places; corridors that are murky black on one side and light-flooded white on the other; panoramic views of the city reflected off of sleek, curved glass.

The management firm itself has provided visual elements that *change* from time to time: selections from its own outstanding collection of contemporary art, which was presented to the public at the Boston Museum of Fine Arts before moving to its office home. Items from the firm's growing store of about 200 paintings, drawings, and prints are not just hung on available walls, but displayed in the carefully designed gallery that has been worked into the offices without adding a single square foot of floor area.

The two floors on which this happy integration of use takes place are high up in the New England Merchants Bank Building, a slender 40-story slab that was meticulously designed by Edward L. Barnes (with Emery Roth & Sons). The building's small office floors (about 15,000 sq. ft. each) yielded plenty of perimeter office space—with fine views of Downtown Boston and the harbor—for the executives and experts who make up a large portion of Wellington's 120-man staff. But the division of the space between two floors created circulation problems, and the small dimensions between central service core and exterior walls (22 ft. on one side and 31 ft. on the other) left little leeway in dividing up the space.

Breaking the office grid

Within these constrictions, the architects were able to carve out spaces in which large-scale paintings can be seen from an adequate distance. And they have unified the two floors—functionally with two sets of stairs, visually with a two-story reception space. The visitor coming out of the elevator and walking to the reception desk (top and middle, left) is immediately aware of the distinction between the core and the rental space, and he can see that the company occupies a two-story block of space. He knows, too, that the views out must be exciting, but the solid backdrop behind the reception desk blocks all but a tantalizing glimpse of it.

Although the overall density of personnel per square foot is not high, much of the floor area is given over to corridors, reception spaces, and meeting rooms of various sizes. Most actual work spaces, as a result, are laid out to close tolerances. To keep individual rooms from seeming tight, the architects have chosen furniture with little apparent bulk: chairs and tables with tubular, polished steel supports; seating covered with natural leather and raw silk. Tall elements such as filing cabinets have been absorbed into walls.

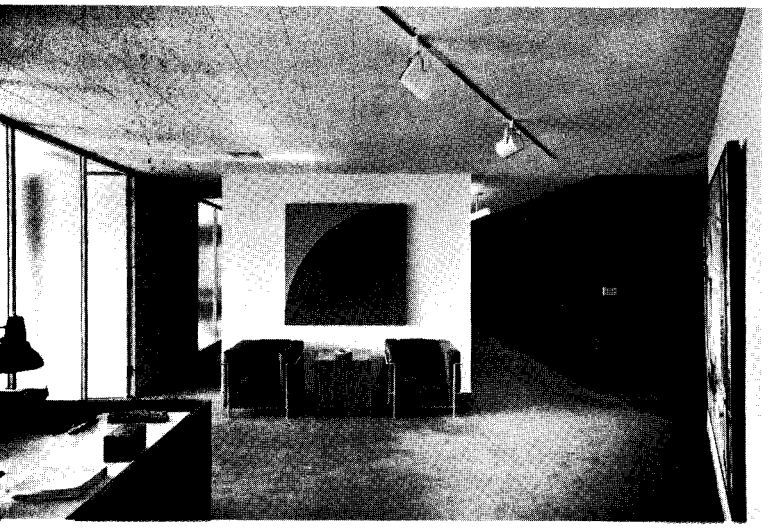
Black and white backdrop

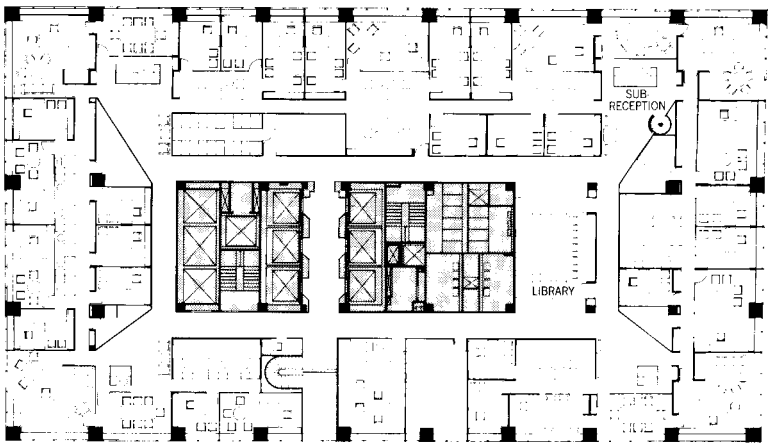
Most of the office chairs are from a collection of pedestal types by Nicos Zographos, who also designed custom desks for each partner. Classic furniture by Le Corbusier, Breuer, Mies van der Rohe, and Eames has been introduced in some areas. All of the natural wood—on table and desk tops, reception counters, etc.—was cut from two choice logs of English oak.

Except in the art works, the range of colors is very limited: black and white, spiked with polished metal and softened by the natural browns of oak and leather. Only the carpet has a deliberate color, and that is a dark gold very close to the color of the oak.

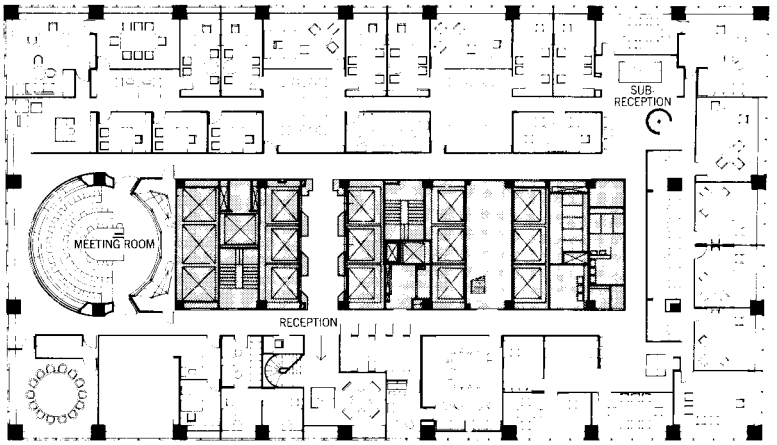
All of the art works—many of them vividly colored—are shown against white walls. Reception rooms and other large spaces have movable lighting on tracks along the walls where art is displayed. But even the smallest office has one wall, lighted by a single swivel fixture, set aside for art. The paintings—according to a message for the company's employees—will be changed often "to refresh the visual environment." That is all to the good, of course, but this is one office environment that hardly seems to need refreshing.

JOHN MORRIS DIXON





27TH FLOOR



26TH FLOOR

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The two office floors are laid out to accommodate seven working teams, each under a managing partner (corner offices). Express corridors around the building core leads to sub-reception areas (photos top and middle left) for each team; a parallel system of internal passages links each director to his staff. A circular stair between two sub-reception areas makes a second link between the floors. Paintings on angled walls can be seen well from many points. The meeting room (photos bottom left and facing page) is where the principal staff members gather every morning before markets open to map the day's strategy. The room is equipped for rear projection; audio connections to each seat allow for telephone conferences with staffs in other cities. A strip of glass around the rear of the room (which can be covered by black curtains on a concealed track) commands a broad view of Boston.

FACTS AND FIGURES

Offices for Wellington Management Company, New England Merchants Bank Building, Boston, Mass. Architects: Prentice & Chan (Francis C. Wickham, architect-in-charge). Audio-visual consultants: Ranger Farrell & Associates. General contractor: Aberthaw-Turner (joint venture). Rentable floor area: 33,593 sq. ft. Cost (including construction, furnishings, and equipment, but not fees): $623,000. PHOTOGRAPHS: Norman McGrath.

SELF-HELP AND BEYOND

A simple modular housing system stimulates a self-help group to form its own construction company

Out towards the eastern tip of Long Island, N.Y. lies a belt of potato country. Here, only about 65 miles from New York City, some 20,000 migrant workers come up from the south each year to pick the crop. Some bring their families; some come alone. Like their counterparts in California and elsewhere, these groups of migrant workers live in extreme poverty. At $30 a week, they see little hope for bettering their condition.

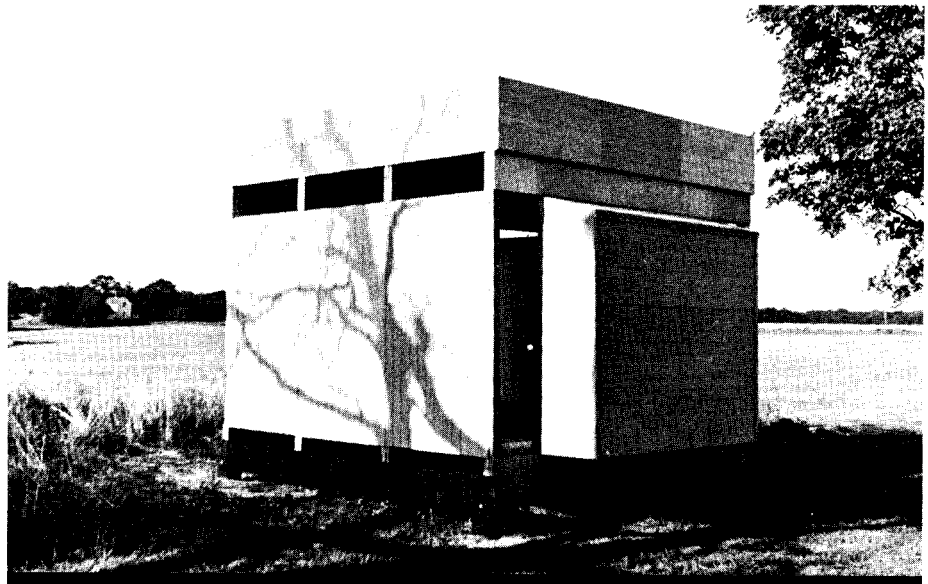
But here in Calverton, near Riverhead, some small effort is being made on the workers' behalf. Twenty-four-year-old Theodore Hammer, a recent graduate of the College of Design, Architecture and Art at the University of Cincinnati, has developed a modular housing system that can be quickly and easily understood and used by the migrant workers themselves, with the minimum of skills, materials, cost and time.

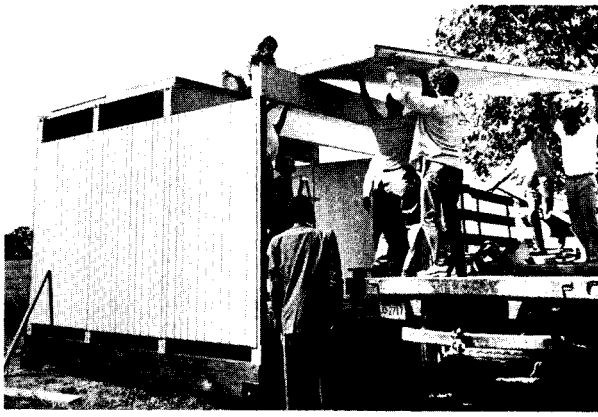
The self-help concept in housing originated in Nova Scotia, Canada, over 30 years ago. It has been in evidence in this country, especially in California (see March '66 issue, Nov. '67 issue), controlled, for the most part, by the Office of Economic Opportunity with its accompanying restrictions and red tape.

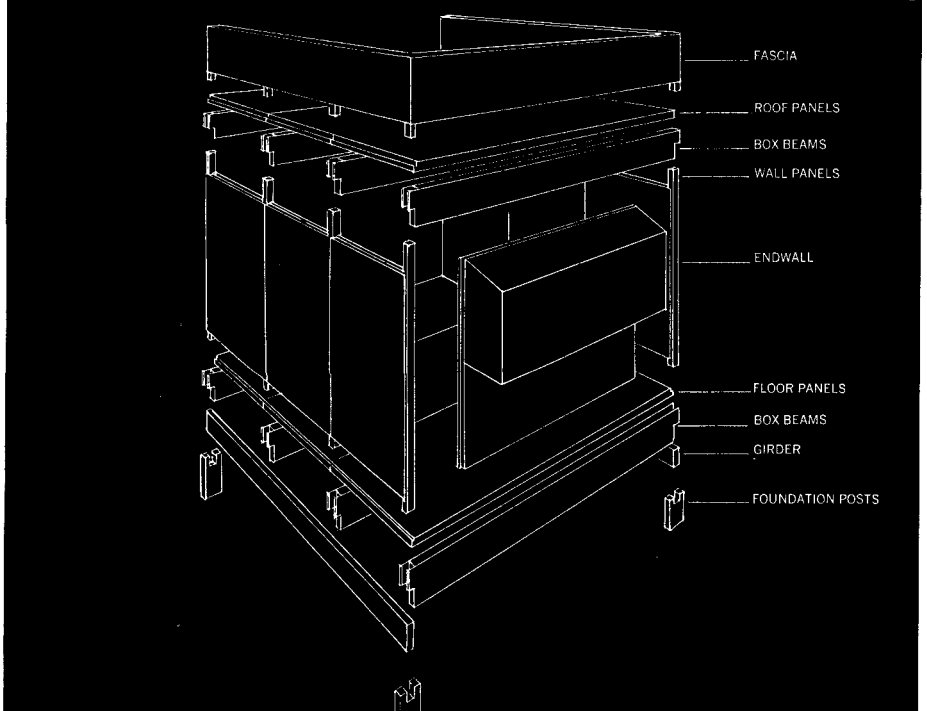
The self-help concept has a number of obvious problems: most construction techniques and most materials today are very sophisticated, and the self-help worker, with his lack of education, is ill equipped to understand either.

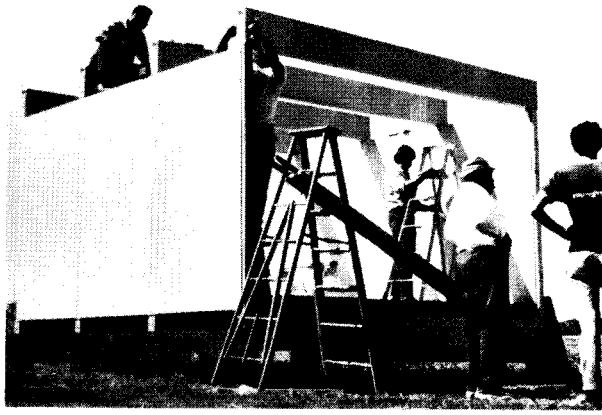
A self-help system must, therefore, be simple and straightforward. Hammer's system, developed out of a sixth-year thesis project at Cincinnati, is simple, and, like other self-help systems, concentrates on two basic concerns, expense and "liveability," as well as on modesty of design. It is a modular system, employing only four different components—post, beam, girder, and wall panel (and end panel)—all of which can be prefabricated from the simplest of materials—wood—and which can be put together by a single, simple joint system.

The module, says Hammer's co-developer, 24-year-old Phillip Tabb, is "self-dimensioning" (see plan): structural members and infill panels can be put together in a number of ways according to the requirements of the individual module, be it living room, bedroom, kitchen or bath. Each is designed so that another module can fit into it, and each has a free endwall which can









contain built-in components—desk, shelves, bed or bench.

After Hammer perfected his design, he and Tabb started a training program with a group of workers connected with the Self-Help Center in Calverton. This crew, originally recruited from surrounding farms, had built their own houses in a conventional way. Hammer and Tabb worked up some graphic presentations of their system, showing plans for a basic three-bedroom house, as well as for more complex structures. In a nearby schoolhouse basement, they built a set of components using lumber from a local lumber yard, and last summer supervised the construction of a 12-ft.-square module as the final stage in the training program.

As can be seen from photographs of work in progress and from an exploded isometric drawing, the system *is* simple. It took only four hours to erect the 12-ft. square module. The system requires no excavation: four posts, each 7-ft. long, were spaced across the plot and set into the ground to a depth of six feet. Two 3-in. by 6-in. girders set into grooves in the posts supported four 16-in.-deep box beams. Panels, for floor, walls and ceiling (all fabricated with 4-in. foil insulation) fit into joints in the beams. Roofing is built up over the ceiling.

In the expanded system, interior walls of $1\frac{1}{8}$-in. plywood and interior, hollow core doors would be introduced, and end-walls with built-ins and windows made on jigs punctured into walls—or clerestory windows between wall panel and ceiling. Houses can be detached, or clustered; and they can be more than one story in height.

The New Careers program at New York University will subsidize the construction of one entire house, and this coming summer nine other houses will be built, in varying dimensions according to the needs of the individual families. Funding, in long-term loans of $10,000 for house and land, will come from the Farmers Home Administration.

The 15 workers, committed to the construction of these nine houses, have formed their own organization—Calverton Industries—and are involved in a variety of other construction projects. They are hoping to open a cooperative lumber yard and a cooperative factory to manufacture the components. When the factory is in full swing, they plan to produce components, modules, and houses also for the middle-class market—besides continuing to work with self-help projects.

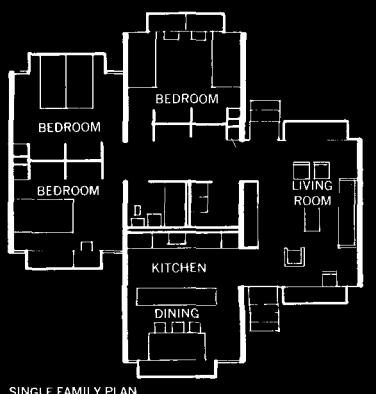
Hammer, too, pursues further adaptations of his system: proposals for farm labor dorms (see rendering), for men who come in the summer and leave their families behind, and a similar multi-story scheme for student dormitories, are underway. —B. T.

FACTS AND FIGURES

Hammer modular system for self-help housing, Calverton, N.Y. Designer: Theodore S. Hammer. Co-developer: Phillip J. Tabb. Building area (for three-bedroom house): 1,000 sq. ft. Cost (materials only, for self-helpers): $6,600; on open market: $11,500 (including fixtures, heating, plumbing, etc.). Funding: $10,000 for house and land for self-helpers only, on long-term loan basis from Farmers Home Administration.

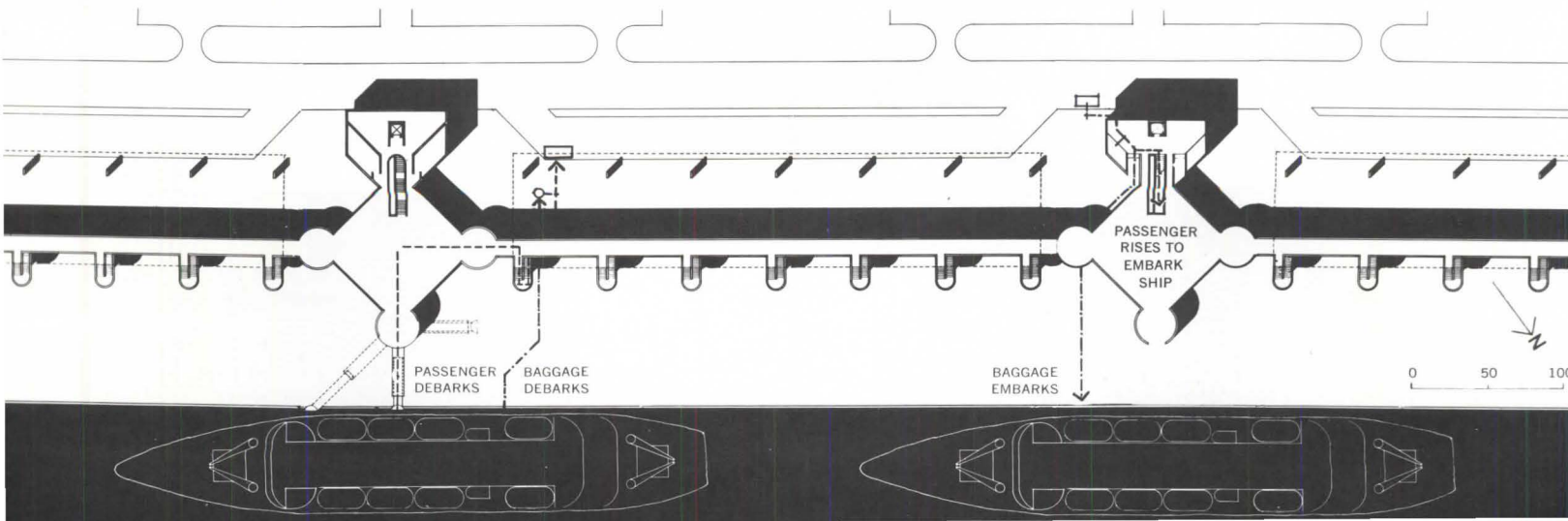
PHOTOGRAPHS: Mike Levy.

Theodore Hammer's modular system using only four basic components is extremely versatile. A prototype module (far left) took only four hours to build (work in progress, near left). The module can be adapted in a number of ways; a two-story scheme for labor workers dormitory is at right. Plans show other versions of the scheme.



SINGLE FAMILY PLAN

DORMITORY PLAN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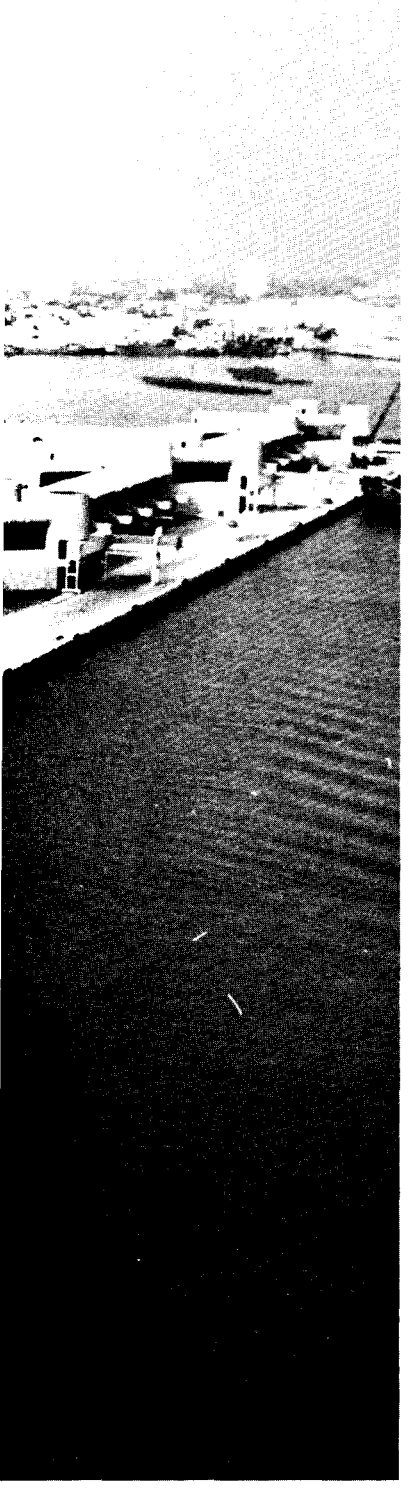
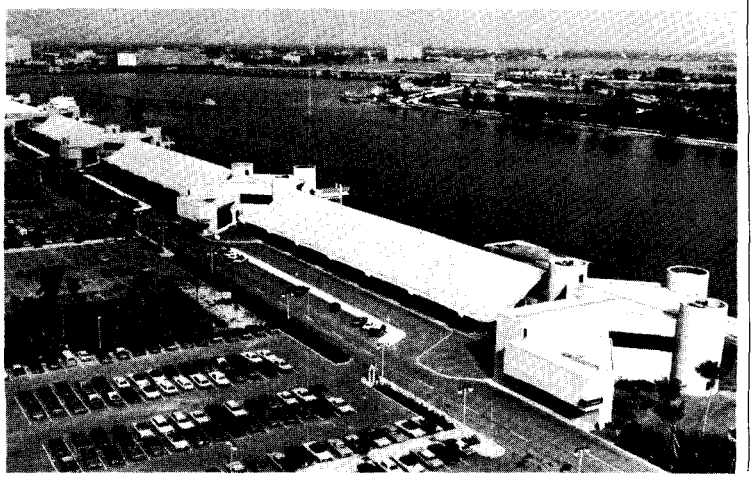
HALF-MILE GANGPLANK

The Port of Miami's new passenger terminal introduces airport planning to cruise shipping





Above, the Port of Miami's new passenger terminal, with the chaotic skyline of the city in the background. The terminal is located on a 275-acre, man-made rectangle of land in the center of Biscayne Bay. It consists of five "nodes" (punctuated by cylindrical towers) through which passengers pass; and four vaulted customs sheds. Stairs that project from sheds lead passengers down to where they can clear their baggage (catching another glimpse of the docked cruise ships on the way). Right: a view of two elements of this string of buildings, from the roadway and parking lot side.

"There is no other terminal like it anywhere," says Irvin J. Stephens. He ought to know: not only is he the director of the Port of Miami; he is also a retired U. S. Coast Guard admiral who has seen quite a few passenger terminals in his time.

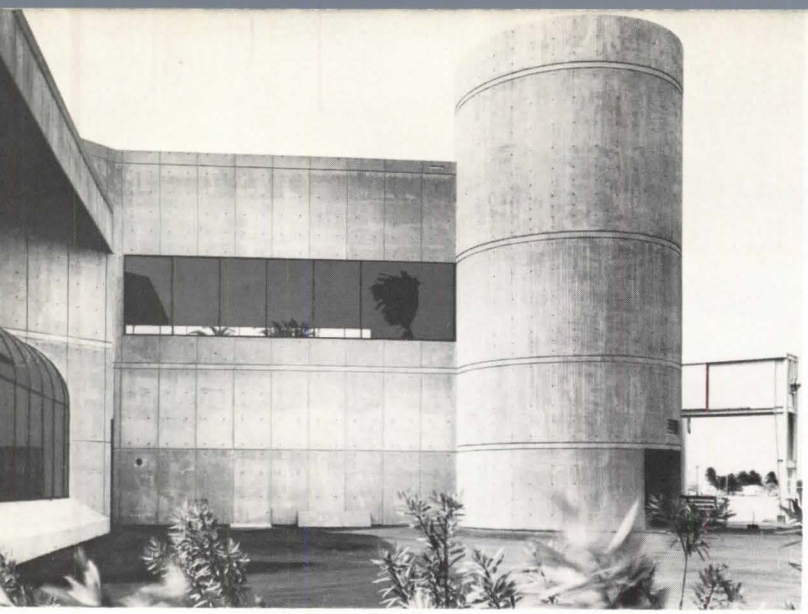
The building to which Admiral Stephens points with pride may reflect some of the most searching re-examination of passenger and baggage movement since somebody invented the gangplank. This re-examination of traffic patterns, curiously enough, owes more to the highly advanced discipline of air terminal design than it does to any studies made in recent years by routine seaport planners. Further, it owes much to local circumstances that brought about this building, and to the team of architects and engineers who grasped the opportunity that was offered to them.

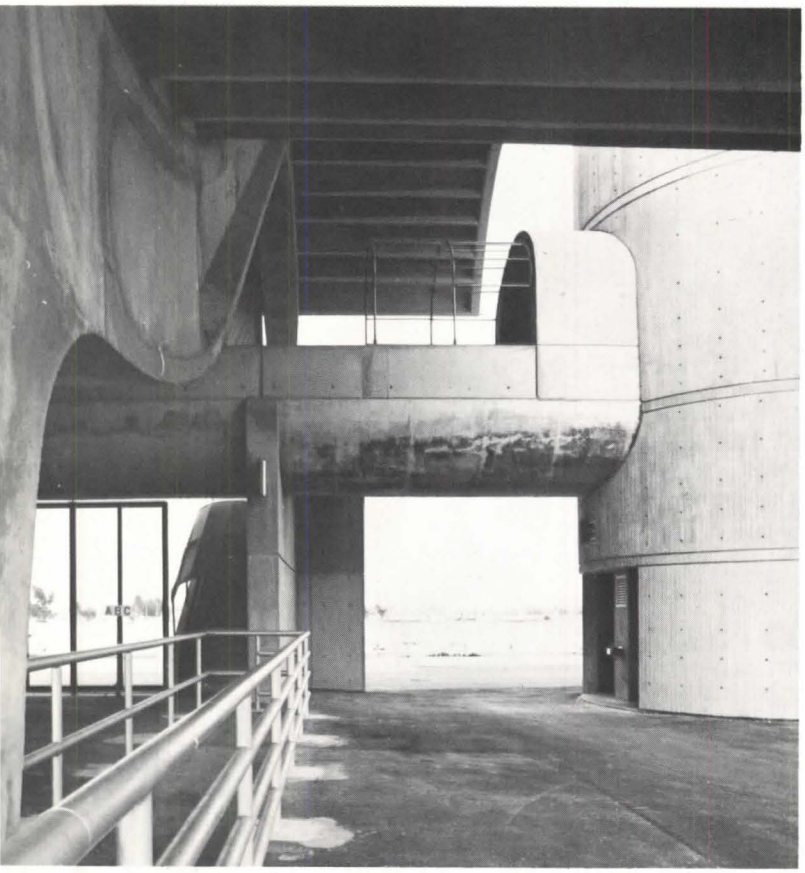
There had been an earlier design for a new passenger terminal, by a different group of architects, and it resembled the sort of building one has come to expect from Port Authorities from New York to San Francisco. This time, however, citizens protested, and demanded something less prosaic for this dramatic, man-made site in the middle of Biscayne Bay (see view at left).

The Dade County Commission responded, and retained not only David Volkert & Associates (engineers/architects) of Miami, but also, in a truly inspired move, John Andrews, the Australian-born, Toronto-based architect who designed Scarborough College and the forthcoming Harvard Graduate School of Design (May '66 and Dec. '69 issues, respectively). Although the *New York Times* reported that Andrews "designed the terminal with special emphasis on esthetics," anyone who has seen Scarborough knows that Andrews contributed more than an occasional cosmetic touch.

For, like Scarborough, the Miami Passenger Terminal is a kind of machine, designed to facilitate and express patterns of movement.

It is, basically, a simple machine, because the patterns of movement are simple: passengers are handled through five "nodes" that closely resemble satellites found out on the ramps of the most modern airports. Indeed, like such satellites, these





nodes have self-positioning, telescoping walkways that reach out for the passengers' entrance and exit lounges of any cruise ship, and permit passengers to embark or disembark directly and comfortably, without having to dodge baggage carts and other service vehicles. (Each node, incidentally, is air-conditioned and contains a restaurant and a lounge for passengers.)

Baggage, meanwhile, is loaded and unloaded on a lower level, on grade with the roadway in back of the terminal. In unloading, the baggage passes through one of four customs sheds that link the five nodes. After disembarking through the node, a passenger goes along an elevated walkway that overlooks *his* customs shed; when he sees his bags at an inspector's station, he goes downstairs to claim his belongings, and then carries them to a taxi or a bus.

The building, or string of buildings, that expresses these simple movement patterns is, of course, very handsome indeed: concrete arches (nicknamed "sea horses") span the customs sheds; and cylindrical towers punctuate positions of vertical movement at the nodes.

But the significance of this string of buildings, as stated earlier, transcends esthetics. This is the sort of building that suggests a new, late-20th-century approach to the creation of urban systems, in which different kinds of traffic are sorted out from one another horizontally, but connected vertically wherever necessary. Like Scarborough College, this building is really a multilevel street, half a mile long, and interrupted, at regular intervals, with points of special function or special interest. It is a remarkable building; and the view on the previous page, with the helter-skelter skyline of Miami in the distance, offers a dramatic contrast between the cool sanity of the new Machine Age, and the chaos and confusion of today's and yesterday's *laissez-faire* cities.

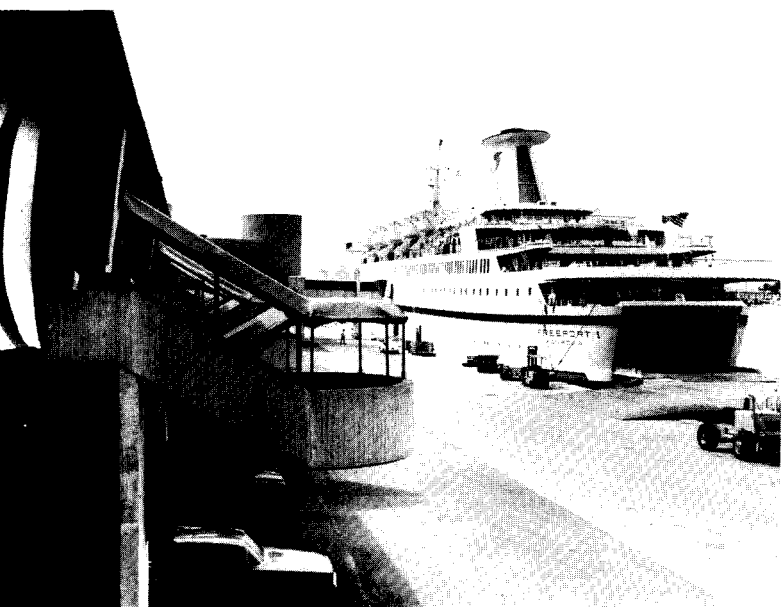
It is strange that so many of our best, new buildings seem to be "machines," not only in functional terms, but also in terms of formal expression (see John Johansen's school, pages 22-26.) Or is it? This is a building easily as good as the ships it serves —and nobody has designed a terminal, recently, that could make that claim. —PETER BLAKE

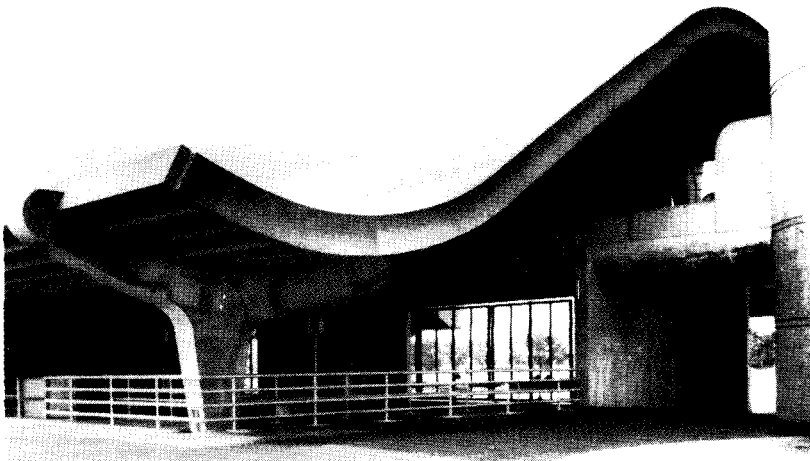
Left: Close-ups of one of the five "nodes" that handle passenger traffic in and out of cruise ships. The center photo shows the connection between "node" and customs shed. Right: views of a vaulted customs shed. Arches (nicknamed "sea horses") were cast in place, but double-tee planks are precast. Striped awnings cut out glare. Elevated walkway (top) serves passengers and connects "nodes."

FACTS AND FIGURES

Marine Passenger Terminal, Port of Miami, Fla. Owner: Seaport Dept., Metropolitan Dade County, Miami. Architects and engineers: David Volkert & Associates (chief architect: Henry O. Trimm). Special architectural consultant: John Andrews and Associates, Architects. General contractors: Magruder Paving and Engineering Co. (site work—phase I); Raymond Concrete Pile (foundations); International Builder of Florida Inc. (building and site work—phase II). Building area: nodes 104,225 sq. ft.; custom shelters 94,370 sq. ft. Cost: $5,025,000.

PHOTOGRAPHS: aerials, Miami-Metro Dept. of Publicity and Tourism; rest by Deidi von Schaewen.





BOOKS

NEW DIRECTIONS IN AMERICAN ARCHITECTURE. By Robert Stern. Published by George Braziller, New York City. 128 pp. Illustrated. $5.95.

BY THOMAS SCHUMACHER

"A great epoch has begun; there exists a new spirit!" Le Corbusier, 1922
"The times, they are a changin'." Bob Dylan, 1962

The climate of opinion among avant-garde architects of 50 years ago was very optimistic. They believed that they were about to embark on a new age of discovery in which the architect would be given a central role in fashioning the future, and as early as 1908 Frank Lloyd Wright projected the architect as ". . . saviour of the culture of modern American society. . . ." But now the times have changed, and with them the attitudes of architects. In 1967, Robert Venturi renounced the earlier viewpoint of modern architecture by stating that: "The architect's ever diminishing power and his growing ineffectualness in shaping the whole environment can perhaps be reversed, ironically, by narrowing his concerns and concentrating on his own job."

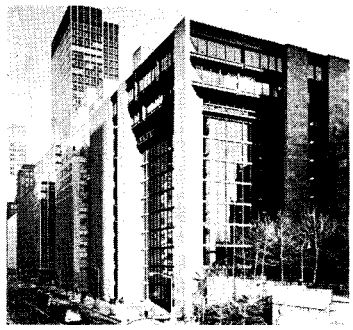
Robert A. M. Stern's *New Directions in American Architecture* reflects this change in attitude. He claims that a new philosophical stance has been adopted by a third generation of modern architects now approaching maturity. In a somewhat simplified overview, he presents modern architecture as consisting of three distinct generations with corresponding attitudes toward the architect's role and responsibilities. The first generation, the International Style, spanned roughly from 1920 to 1940, and after World War II was superceded by a second generation, represented here by the works of Philip Johnson, Kevin Roche, and Paul Rudolph. The third generation, which so far has built very little but has had an important theoretical influence, is represented by the works of Robert Venturi, Romaldo Giurgola, and Charles W. Moore. Louis I. Kahn bridges the generation gap.

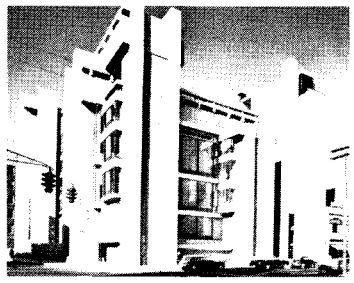
Briefly, the differences between the second and third generations appear to be more philosophical than methodological or formal. The second generation is characterized by a constant, ". . . searching for prototypical solutions for various programs (housing, civic centers, and so on)." This attitude, appearing as a holdover from the first generation of modern architecture, is depicted by Stern as complementing the compulsion of 'orthodox' modern architecture to, ". . . remove its references from the familiar surroundings of everyday life," and is described as the 'exclusive' approach to design. By contrast, the third generation, which is 'inclusive,' is characterized by a rejection, ". . . of that heroic stance which orthodox modern architecture assumed to itself as the source of cultural values in favor of a more flexible position in which architecture embodies the values which society, not just other architects, values and supports. It struggles to approach each problem on its own terms and rejects the prototypical solution in favor of the individual case."

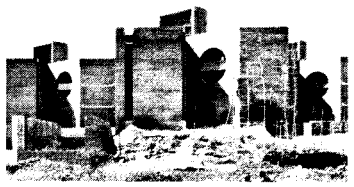
After briefly discussing the accomplishments of his seven selected architects, Stern then devotes considerable space to a discussion of the problems of today's city and how the inclusive approach has already succeeded in creating viable environments where the exclusivists and other inheritors of the pretentions of the International Style have failed miserably. It is here where Stern is best. Perhaps his most graphic examples are two major projects for the West Side of Manhattan, the Lincoln Center for the Performing Arts and Lincoln Towers on the one hand, and the Upper West Side Urban Renewal Area on the other. The former is described as, ". . . two massive projects in search of a neighborhood, one for culture, the other for living." The latter, substituting 'extensive rehabilitation' for the 'big ball,' has more or less retained the character of the old neighborhood with reference to scale, daily amenities, and ethnic mix. It is an example of a situation where no one mind has had the opportunity to impose a rigid, formalistic, prototypical solution to a large scale project.

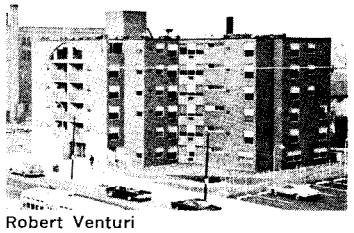
On these points no one, I believe, would attempt to refute or even alter Stern's argument. Yet, in the discussion of the alleged differences between generations, a few gross oversimplifications seem not only to cloud the issue but also to pidgeonhole

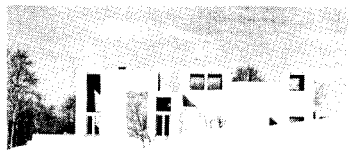

Philip Johnson


Kevin Roche


Paul Rudolph


Louis I. Kahn


Robert Venturi


Romaldo Giurgola


Charles W. Moore

Thomas Schumacher is an urban designer now working in New York City.

many practitioners into slots where they simply don't fit. The insistence on building types theory as an overriding influence in contemporary work is probably the major idea for which Stern can be called to task. Kevin Roche, for example, who is presented as the most exclusive of the exclusivists, is so uninvolved with prototypes that even his office buildings (a program most easily typified) are extremely individualized solutions to specific circumstances. It is more likely those specific forces which Roche chooses to recognize as the generators of form rather than any intention to create prototypes that Stern might have more justifiably criticized.

Many apparently idealized buildings are not ideal solutions to generic problems but are the reactions to specific circumstances and present the end result of a process that reduces these reactions to specific gestures. The Wells & Koetter winning solution for a housing competition in Brooklyn, cited as 'exclusive,' is a good example of what its authors might call the 'contexual' approach to relating specific program requirements to a given situation. Their scheme can be viewed as 'inclusive' of the scale, building height and massing of the existing buildings and streets. There the generic problem is tempered by an existing condition, and the solution is 'deformed' by economic, cultural, and formal inputs. One doesn't wish to push the point, but architectural criticism is flexible enough to apply to most phenomena if an articulate spokesman like Stern (or Venturi or Moore) is there to give it form.

Perhaps the biggest questions raised by this book are those created by omission. Although our national boundaries stretch from ocean to ocean, Stern has confined most of his text to explaining developments on the eastern seaboard. It reads more like a regional account of recent innovations emanating from New York and New Haven than any exposition of national tendencies. Perhaps it is impossible to render a cohesive picture of American Architecture as a whole at this time, but one wishes that Stern had tackled this problem with more than just a note in the preface. More significant, however, is the omission of two primary forces in contemporary American architecture (both of which have influential proponents in the east). They might be described as "International Style Revival" and "Technological Determinism." The first is characterized by a renewed interest in many of the forms of the 1920s and 1930s by a young and increasing group of architects who are now at the level of designing highly publicized houses but whose practices are burgeoning.

The second group's viewpoint takes literally the International Style attitude concerning the role of the architect in creating the future out of the expanding technology of the present. (Bucky Fuller is perhaps the most influential of them).

The one represents and caters to a complacent *bourgeoisie,* the other appeals to a crisis-ridden populace looking for a panacea to social problems through the idealization of a technology that constantly promises them the good life and fulfills those promises with television sets and hi-fi's. Obviously, the omission of these influences in *New Directions* is no accident. It appears that Stern is making a conscious effort to say that the new directions lie neither in revivals of forms nor of theories. The architect's contribution to the city should be, as he quotes Giurgola, ". . . the ideas of a city rather than a theory of it." And if the architect is to make a contribution, it begins not with an abstracted concept of a particular life style or with a construction module lighter than the very air we breathe, but with an attempt to intuit what the life styles of different groups are, and to give these form.

It is in this attitude that the major problems of this book, and of the inclusive approach to design as we know it so far, lie. To date, the primary figures of inclusivism, Moore and Venturi, have involved themselves in some contemporary manifestations of popular culture and have used these as the images necessary to the topical significance of their work. "Learning from Las Vegas" implies a system of analysis in which the popular image goes through a process of reconfiguration. Hence, the common objects of everyday life—the commercial strip, the suburban housing estate, neon lights, etc.—are roughly equivalent to the ocean liners, grain elevators, factories and bridges of the international style. They are symbols from which metaphors are made. Here again an intense present seems to prefigure an inevitable future, and the similarity is reinforced by analogous developments in painting and sculpture.

The question remains as to the result of elevating common culture to high culture. Will the ideal of creating an architecture for the 'people' by intuiting the 'will of the people' end up in the same dead end with reference to its intentions as did the ideal of creating a new world out of intuitions about technology? Is inclusivism so far no more than another elitist 'slumming' in the back yards of the poor and uneducated resulting in a patronizing emulation of cultural cliches, or is it a real attempt to deal with immediate problems? Has the saviour role of the architect finally been buried or has he simply changed his tactics? To claim a corner on what society ". . . values and supports . . ." for the purpose of reversing the ". . . diminishing power and effectualness . . ." of the architect is perhaps a presumption. But to work with ". . . ideas of a city rather than a theory of it . . ."—well, that seems to be more to the point.

AMERICAN ARCHITECTURE SINCE 1780, A Guide to the Styles. By Marcus Whiffen. Published by the MIT Press, Cambridge, Mass. 313 pages. Illustrated. 5⅞ by 7¾ in. $7.95.

In his preface, Marcus Whiffen tells how he set out to give U.S. architecture-watchers the same kind of glove-compartment reference that the *Field Guides* have long provided for bird watchers. Since buildings are even harder to classify than birds, Whiffen's guide is not quite so neat or precise as a real Field Guide, but it is not so stubbornly serious either.

The exercise of sorting out building styles by visible features has led Whiffen to make a number of subtle distinctions that will be new for most of us. But once he has opened our eyes to tell-tale idiosyncracies of cornice, chimney, or string course, we'll never be content with the vague categories we have been making do with up to now. All of the buildings we used to call Italianate, for instance—and a few we couldn't identify at all—are now deftly sorted into Italian Villa Style (picturesque massing); Renaissance Revival: Romano-Tuscan Mode (symmetrical, plain surfaces, no arches); Renaissance Revival: North Italian Mode (symmetrical, ornate, lots of arches); and High Victorian Italianate (distorted arches).

The distinctions are nice, but the labels are obviously awkward. Apparently Whiffen realized this, too, for he pins down later styles with succinct labels like Chateauesque . . .

. . . Jacobethan . . .

. . . and Bungaloid.

The illustrations throughout have been shrewdly chosen to show the scope and salient features of each style in three or four photographs. The examples chosen are hardly ever the ones Whiffen cites as pacesetters or landmarks in his capsule histories of the styles. (That can be frustrating, if you're unfamiliar with these buildings.) Instead, he shows many little-known examples from unlikely places: a Federal Style house in Harrodsburg, Ky.; a High Victorian Gothic bank in Belfast, Me.; a Sullivanesque office building in El Paso, Tex. The inference is clear: armed with this handy guide, you'll be able to spot some rare specimens, even in Metuchen. N.J. —J.M.D.

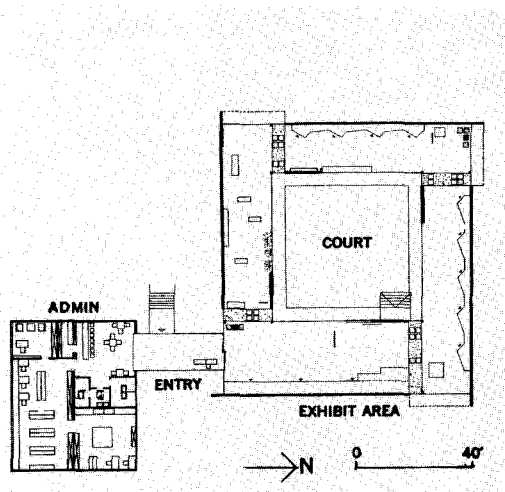
PINWHEEL MUSEUM

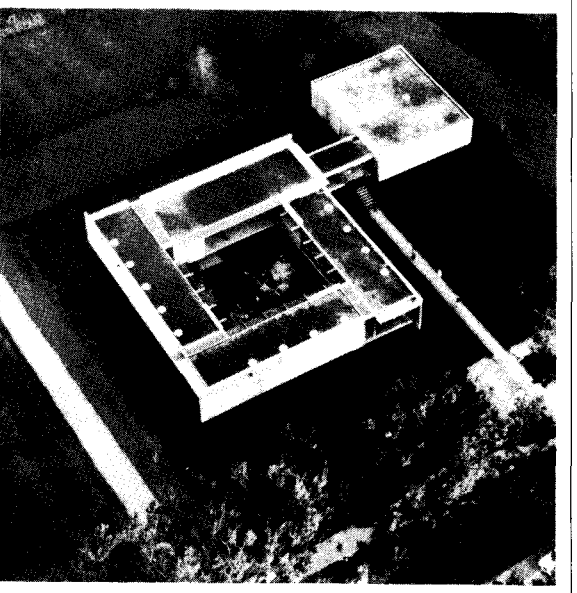
The neat little wood-and-glass structure shown on these pages is the latest museum designed by that remarkable architect of other, remarkable museums: Professor Manfred Lehmbruck, son of the famous sculptor. This particular museum was built to house pre-historic artifacts of the region (south of Ulm, west of Munich), and it is located close to the areas in which those artifacts were originally discovered. (The nearest village is Bad Buchau, a summer resort, and the museum is kept open primarily during that season.)

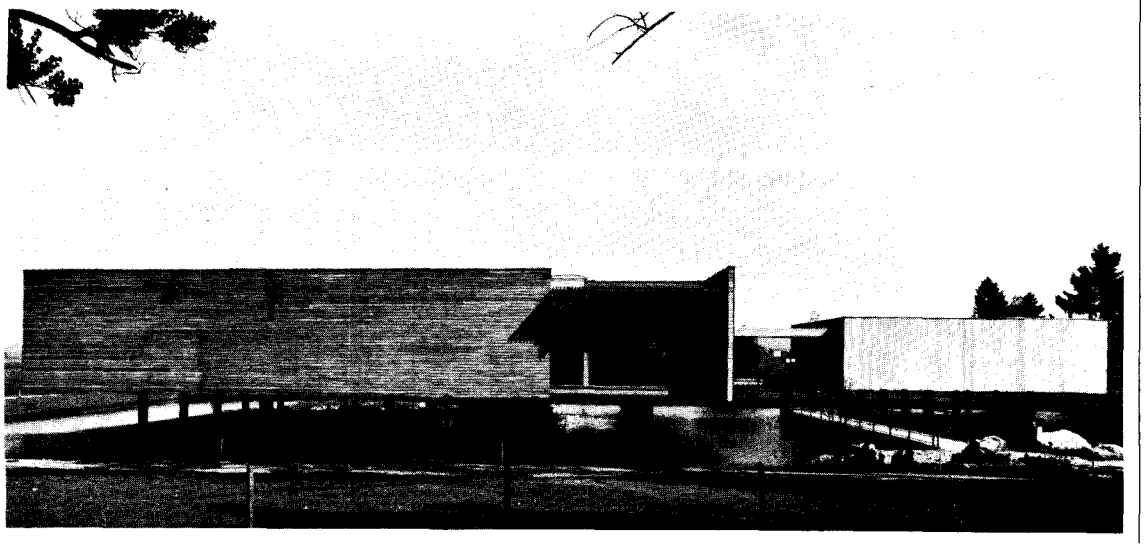
Although the architect was fully conscious of the need to relate the building to its setting, particularly since that setting had produced the artifacts to be displayed inside, he made no effort to introduce sentimental, "native" themes. Lehmbruck's approach was much more subtle: he started out by building an artificial lake (a very real "theme" in this area), and he then placed his building on slender concrete piles to hover above the surface of the lake, and be reflected in it. As the visitor approaches the building by way of a footpath across surrounding moors, and a footbridge across the artificial lake, he is made intensely aware of the ecology of the region. This awareness is heightened as he enters the building and looks down into its central court—another part of the artificial lake, containing some rocks and plants indigenous to the area.

Actually, the museum is two buildings linked by a glazed entrance lobby (left): the pinwheel with the water-court at its center is the actual museum; and the smaller block to the south of this contains administrative and research facilities, as well as a small restaurant/bar for visitors. A third "research wing," to extend from another leg of the basic pinwheel, has been planned—but it has yet to be built.

Before discussing the building as a museum, it seems worth considering the pinwheel as an increasingly important, modern plan-theme. There have been many pinwheel plans over the past 20 years or so, ranging in scope from small vacation cottages to skyscrapers. They have proved to be extraordinarily flexible, adaptable, and "modern" in the sense that a pinwheel seems to suggest the possibility of unlimited future growth. (Each wing could, presumably, be extended indefinit-







Left: Glazed link connects the administrative and service wing at left, and the museum proper at right. The link doubles as an entrance lobby. Artificial lake under entire complex supplies dramatic mirror images. Right: Plan and bird's eye view explain basic scheme. A research wing, planned but unbuilt, will be located to the east. Bottom photo shows the museum from its approach side.

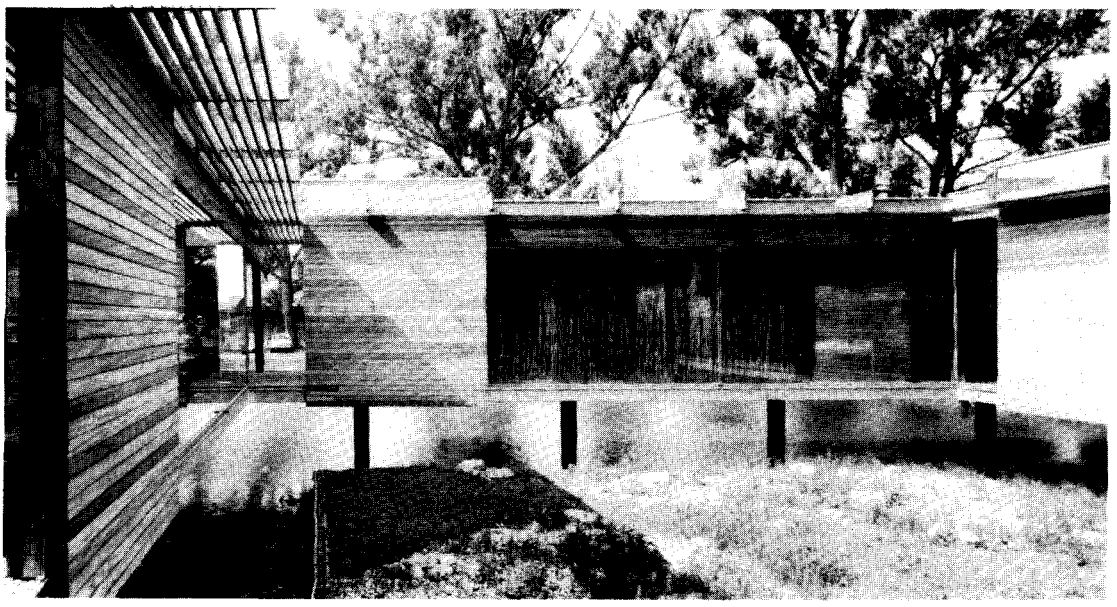
ely past the neighboring wing.)

This inherent flexibility is, of course, the very opposite of rigid, formal and traditional symmetry. It is non-directional rather than axial, and it lends itself to many subtle variations. In this museum, for example, the first wing a visitor enters is about 25 per cent wider than the other three; and there are slight variations in those other wings as well. Finally, a pinwheel plan seems to facilitate the addition of "satellite" structures (like the administrative block in this museum)—by means of connecting links that extend from the main building at its corners.

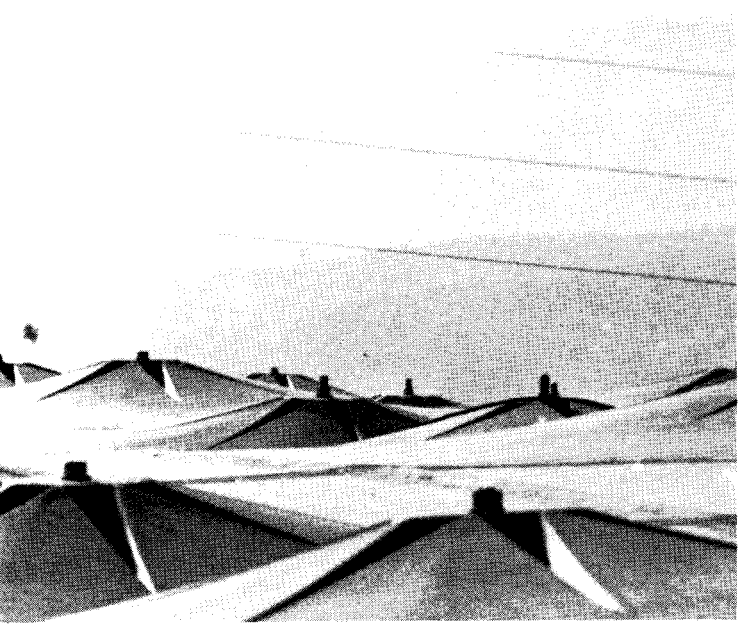
As for this particular pinwheel structure, it is one of the pleasantest of its kind to have been built to date—and it works very nicely as a museum. The circulation is "forced"—but not too badly, since distances are small and visitors can walk back and forth at will. Moreover, the glazed water-court in the center of the building makes it very easy for visitors to orient themselves in relation to the galleries they have already seen, or are about to see—all of which reduces museum-fatigue to a minimum. Finally, the multidirectional, natural lighting that is possible in a pinwheel plan (especially in one with a central court) make for a lively space animated as much by changes in sunlight as changes in exhibits or exhibition techniques.

The natural lighting is handled with considerable *finesse*. Louvered overhangs have been used to reduce sky-glare; and these louvered visors are carried into the interiors as well, where they form skylights and help articulate the plan (see aerial on previous page). In addition, there are acrylic-dome skylights—and, further, there is considerable side-lighting through walls of glass. All of these devices, in combination, create a balanced and relatively shadowless and glareless gallery space. Only changes in sunlight change the quality of the gallery lighting. Such a natural lighting scheme is highly prized by many museum directors; it has been achieved here without mechanical trickery. At night, artificial light from the same general direction comes into play.

FACTS AND FIGURES
Federsee Museum, Bad Buchau, S. Germany. Architect: Prof. Manfred Lehmbruck.
PHOTOGRAPHS: Sepp Mayer.



Left: Close-ups of interiors, including entrance link. Bottom photo shows the partially landscaped interior court. Right: View into one of the galleries at dusk, showing the museum's artificial lighting. The louvered slots in the roof plane form skylights inside, and protective sunshades where they turn into overhangs above the glass walls.



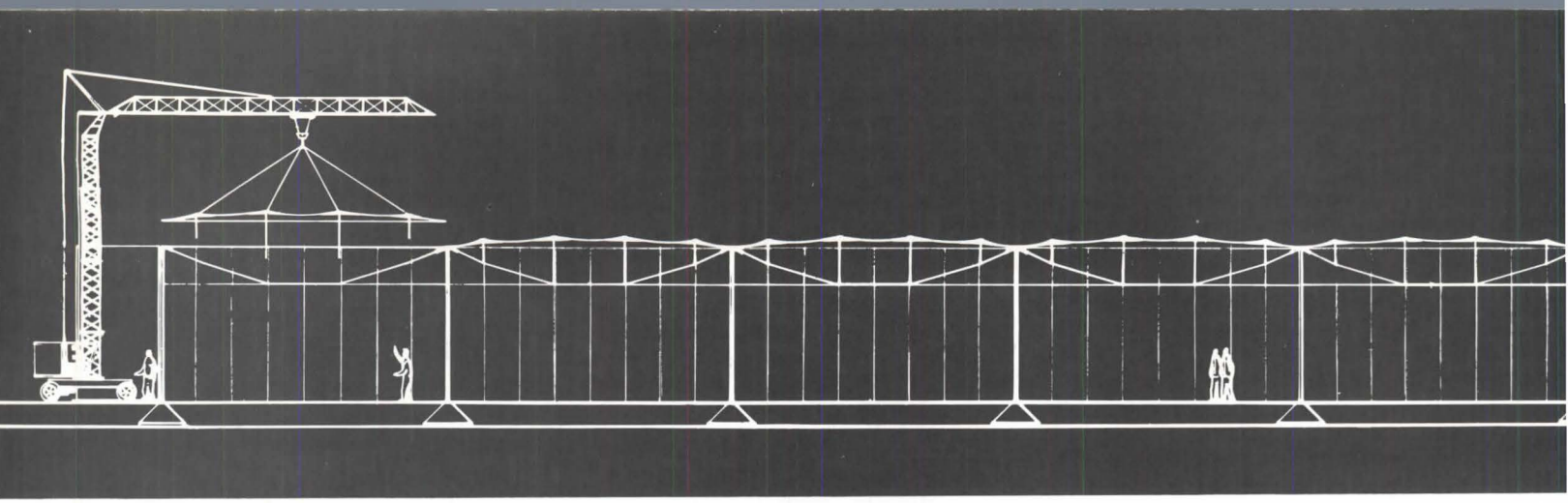
RIGGING A ROOF

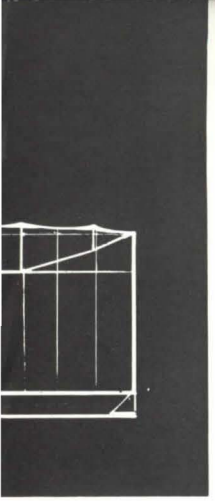
Architect Renzo Piano of Genoa, Italy, has been experimenting with lightweight structures since the early 1960s. In addition to several demonstration projects using molded plastics, he has completed a sulphur storage shed in Rome (1965), built of folded plastic sheet, and a laboratory in Genoa (1968) roofed with plastic sheet over a light steel space frame.

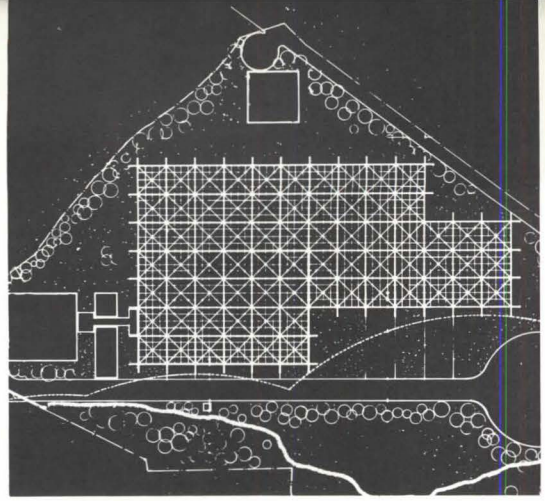
Shown here is his most advanced work to date, a plastics processing plant near Genoa. For this sprawling industrial building, Piano has combined thin molded plastic panels with steel cables in a composite system weighing less than 2 lbs. per sq. ft., which is pulled taut like the rigging of a sailing ship.

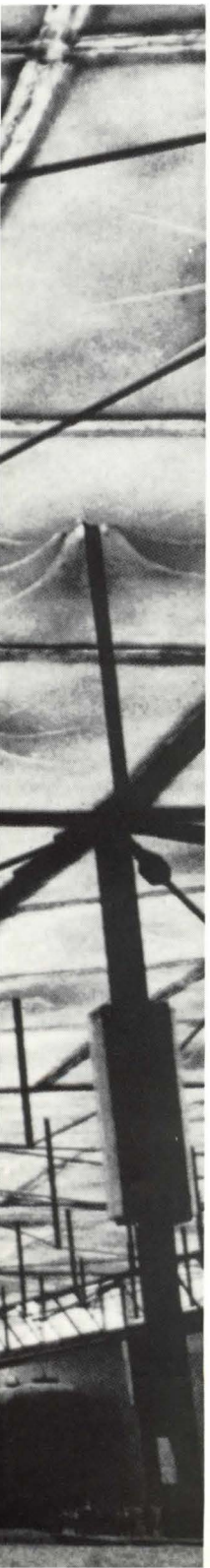
The factory roof is made up of fiberglass-reinforced polyester panels about 8 ft. (2.5 m.) square, weighing about 62 lbs. each. The panels are lifted into place above a net of steel cables and connected to them—or rather *separated from* them—by steel struts which pass through the center of each panel, emerging at adjustable connections above the roof (top photo). Once the panels are in place, the whole assemblage is tightened to produce a strong, translucent canopy over each 32-ft.-square structural bay.

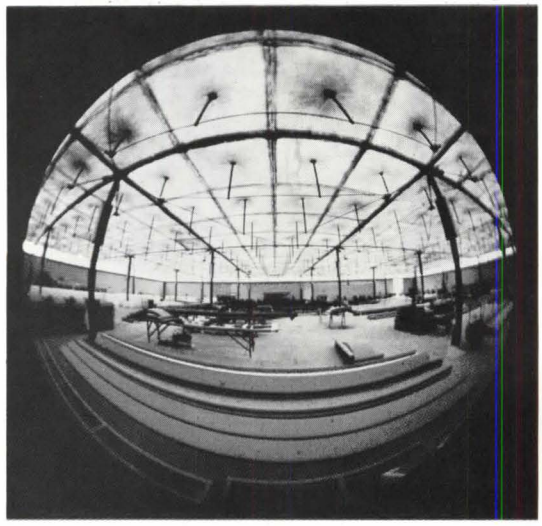
Piano emphasizes that his approach to design is not strictly technological. He maintains that he has *two* objectives: optimal structural performance and "precise, expressive rapport between form and structure." The photos here and on the following pages are ample evidence of that rapport.

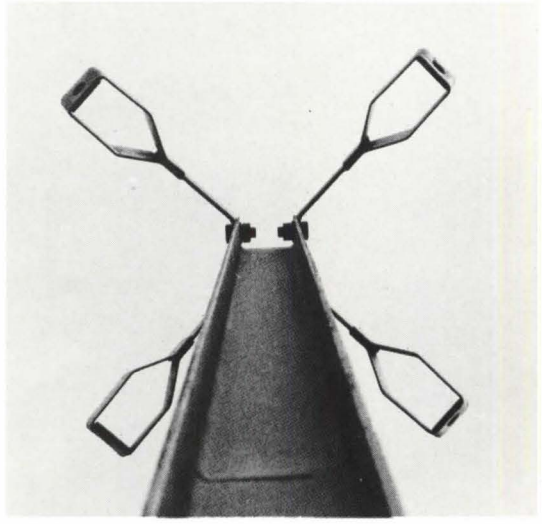


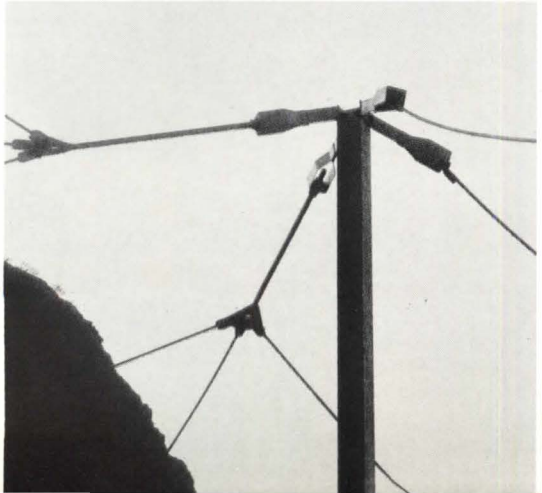












The 32-ft.-square plastic covering for each structural bay is lifted into place by a mobile crane (far left, top) and connected to a network of steel cables (far left). The master plan for the building (top left) comprises 71 structural bays—24 completed and in use (fish-eye view, above left) and the rest to be erected this year. The entire roof structure is suspended from steel stirrups bolted to the heads of the H-columns (detail photos, left).

The 16 plastic panels covering each structural bay are welded together chemically at the site, by applying polyester resin to the overlapping exposed ends of the glass fiber reinforcement. The resulting bay-sized canopy —about 32 ft. (10 m.) square— is then lifted into place using 16 cables attached to the center points of each panel (top drawing, far left).

This top membrane of plastic has little rigidity, but when it is attached to the network of cables by steel struts, a very stable two-layered system is produced. When the plastic roof is set in place, the tension in the cable system is relatively low. Only after all connections have been made for the entire bay is the tension increased, by adjusting the bolts that protrude through the roof.

Because of the expanse and light weight of the roof, great care had to be taken to prevent destructive flapping under wind load. Local wind patterns had to be studied, and tension in the system had to be regulated so that the period of oscillation of the structure could not possibly coincide with the period of wind variation. The roof has been adjusted to oscillate within a maximum vertical range of about 4 in., and it does so regularly with no harmful effect.

There are no openings in the roof. Air drawn in by a forced ventilation system is exhausted through high windows around the edge of the plant. So light and flexible is the roof that it rises more than an inch at some points when the air conditioning is turned on.

One great advantage of this roof structure is the uniform, tempered natural light that it transmits to the working space below. The polyester panels absorb about 40 per cent of incident sunlight, diffusing the rest throughout the interior.

Each of the 8-ft.-square plastic panels of the roof actually has two membranes, with an interior void to increase insulation value and to prevent condensation. The upper membrane of the panel varies in thickness upward from a minimum of 1/10 in.; the lower one is only about 1/16 in. thick. The center of the panel, where concentrated stresses occur, is reinforced by a star-shaped pattern of corrugations around a steel plate, which is embedded in the panel when it is molded.

Since the plastic tends to "creep" over a period of time, dissipating some of the stress in the cables, tension in the system must be checked and readjusted periodically to maintain the stability of the structure. For this building, adjustments were scheduled for three months, nine months, and 24 months after construction.

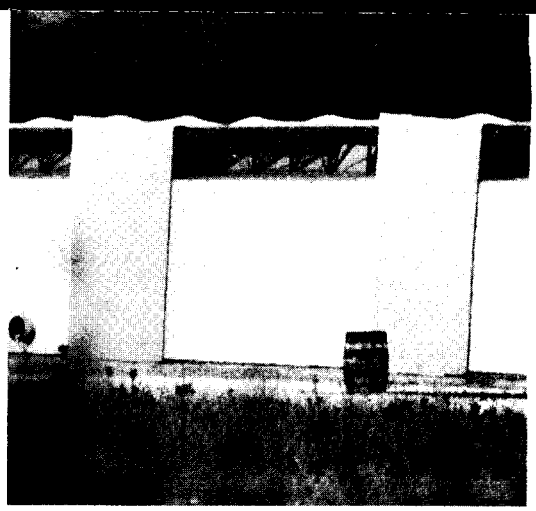
Tensile stresses built up in the roof system must, of course, be counteracted in some way at the edges of the building. In this case the stress is transmitted from the heads of the perimeter columns to winglike concrete buttresses, which are in turn anchored to massive concrete footings below grade. The connection between the buttresses and the footings is also subject to periodic readjustment.

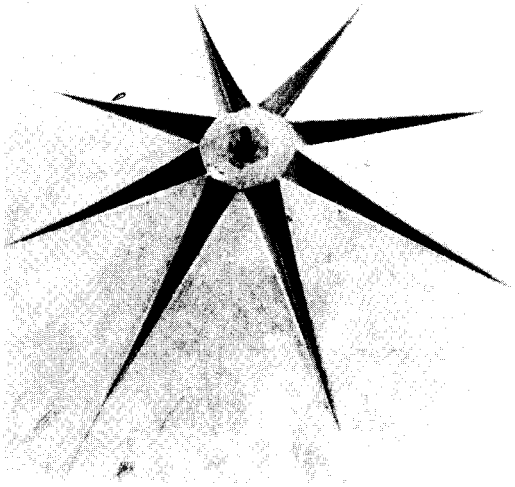
Piano speaks of the need for a "dynamic architecture" which takes the "time dimension" into account. That sounds a bit occult, but he is actually just talking about the kinds of things that happen in this building: the structure responds to outside forces with controlled countermovements, and like any dynamic structure—an automobile, for instance, or a human body—it is kept in shape through periodic checkups.

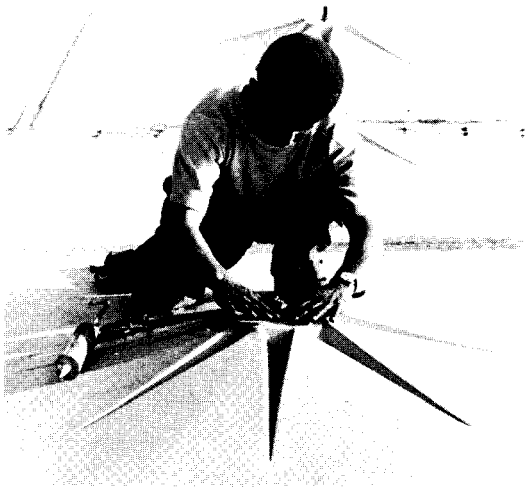
FACTS AND FIGURES

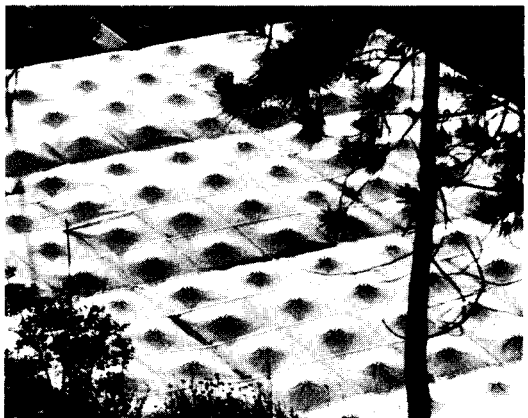
Factory for I.P.E., Genoa, Italy. Architect: Renzo Piano. Building area: 24,000 sq. ft. (first phase); 60,000 sq. ft. (final). Cost (first phase): $60,000.

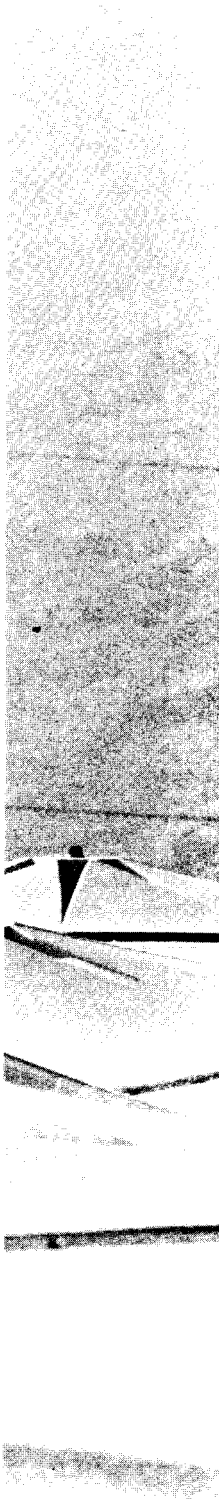
Along the exterior (top right) the building is enclosed with removable concrete panels; wing-like concrete buttresses anchor the roof system to massive buried footings. Bolts protruding through the metal-reinforced center of each panel (detail photos, right) are used to adjust tension in the system. The undulating roof surface (bottom and facing page) shows visibly where the structural stresses are concentrated.







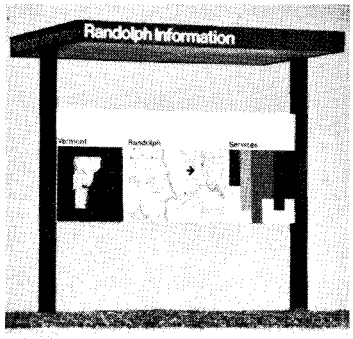




FORUM

(continued from page 21)

plained of our huge billboards: "You can't even escape them by speeding up. They loom on the horizon for half a mile." So in 1968, the Vermont legislature passed a law providing for the eventual removal of all "off-premise" outdoor advertising within the state. In December 1969, their Highway Department put up the first of its simple and easy-to-read "business directional signs" in a town named Vernon. Color-keyed—pink for lodging facilities, orange for food, gray for gas and brown for recreation—



these handsome new markers, plus the roadmaps slotted into roofed plazas, put woodsy Vermont well in front with traffic graphics.

CITIES

CALIFORNIA GRAPES . . .

The following remarks were made by Architect Nathaniel A. Owings at a conference of the National Commission for UNESCO. (The panel, described as "over 30 and over the hill" by its moderator, Congressman James H. Scheuer of New York, was discussing "Man and His Environment . . . A View Toward Survival.")

"What we need in our cities is people. Now you tell me what the hell the Bank of America Building [designed by Owings' own firm] has to do with one little human being.

"We made a mistake as architects in designing it when I think of what we could have done. Look at that building and I'll tell you how far we've gotten away from what it's all about. We could have put apartments for people on top of that building and put a vineyard in front and maybe a carnival. That's what California streets need. Think of it—hundreds of people on a Sunday squashing grapes. . . ."

. . . NEW YORK POP

As if following Nat Owings' advice (see above), the William Kaufman Organization and Architects Emery Roth & Sons are building a 26-story office building (77 Water St.) that will bring carnival to New York's financial district, absent since Abbie Hoffman tore up some dollar bills on the floor of the stock exchange.

There will be no apartments on top, but there *will* be an exact-size replica of a World War I landing strip, complete with grounded Sopwith Camel constructed by Artist William Tarr of reinforcing rods and welded scrap metal (being raised, at top); a 150-ft. runway; and windsock. Curse you, Red Baron!

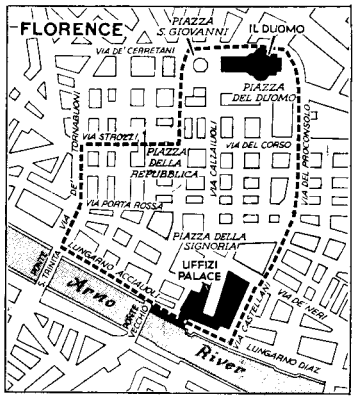
There will be no vineyards for a Sunday Stomp-In, but there *will* be a "forest" of honey locust trees on the plaza. Here also will be a stream emanating from a stainless steel sculpture of a city. The city will freeze over in the winter, but the stream will flow year round through a lobbyless, ground-floor arcade, described as "see-through" by the p.r. men.

ABROAD

TRAFFIC STOPPERS

Downtown Florence (Italy), at once the commercial and the tourist heart of the city, is to close a ten-acre area to all vehicular traffic (see map). This historic center which retains its medieval-renaissance character despite a few facelifts since the 1966 flood, is a tortuous maze of tiny intertwining streets, many with no more than a sliver of sidewalk and not much more room for the more than 300,000 cars which circulate daily.

Shopkeepers are outraged, thinking that the halt to traffic will slow down business as well; what they do not seem to understand is that it is the pedestrians who buy—drivers are more intent, especially in Italy, with the



thrill of getting through the center alive, and without a dent.

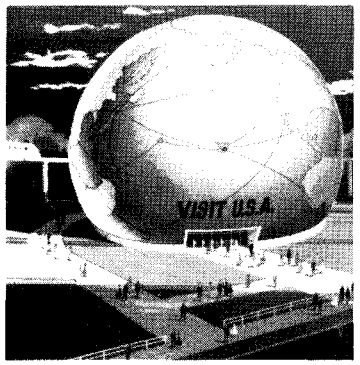
Three years ago, a similar, but less ambitious plan to stop traffic was initiated in the statue-filled Piazza della Signoria, but with the flood it was cancelled. Other Italian cities, notably Rome, Bologna and Siena, have tried such schemes with varying degrees of effectiveness.

But, in the final analysis, it is the city government which might fail with this plan. Like Italy's own government, the city bureaucracy changes constantly; if the pressure from the shopkeepers proves too strong, this traffic-stopping proposal might be squelched. Hopefully, it won't.

STOP THE WORLD . . .

American tourists spend over $2 billion each year in travel abroad; foreign travelers coming to the States spend only $170 million. The federal government, obviously concerned with this discrepancy, is putting on a big show to bring in the bucks. Six federal agencies, along with 13 travel industries, are creating a "replica of the Earth" for Expo 70 at Osaka.

The huge sphere (see "artist's conception," below), complete with ice caps and major air routes to the U. S., will be of two-ply, neoprene-coated nylon and will be air-inflated. Inside, on a 180-degree, 22-ft.-high screen, will be projected more than 220 black and white and color slides of 25 different tourist locations in the U. S. The slide show will be accompanied, and programmed, by a special "In The U.S.A." theme song, ex-



cerpts from "2001—A Space Odyssey," and a Japanese narration.

As the viewer enters the sphere he will see a film of a sunset over his head which will gradually change to nightfall, during which the 12-minute slide show will take place. After the show, as after a dream, the sun will rise, and the viewer will file out —obviously uplifted and inspired to visit the U. S.

After the fair the sphere will "go on the road," says the Department of Commerce—first stop: Sydney, Australia.

FRONT-LINE SPA

Bidding was recently hot and heavy between eight contractors rushing to put up a resort in the Sinai Desert (before and after, right). The job was won by Amnon Barness, a Tel Aviv-born, Beverly Hills businessman with entrepreneur credentials.

Although building a resort in the Sinai Peninsula might seem a bit like putting a Hilton on the Ho Chi Minh trail, Barness thinks it's smart money to invest a million in a 300-bed oasis in a place named Sharm el Sheik. Even if the Egyptians regain the land, Barness figures that Nasser wouldn't mind bolstering his economy with Gulf of Aqaba tourism. Off-the-track nomads are already inquiring about reservations, says Barness, and for them he is breaking ground for prefab, air conditioned cottages and trailers, even a floating restaurant modeled after one in Hong Kong. Barness, who fancies himself an historian as well, has dreams of phasing out camels with dune buggies—or, in his words, "civilizing an area that has never been civilized in the history of man."

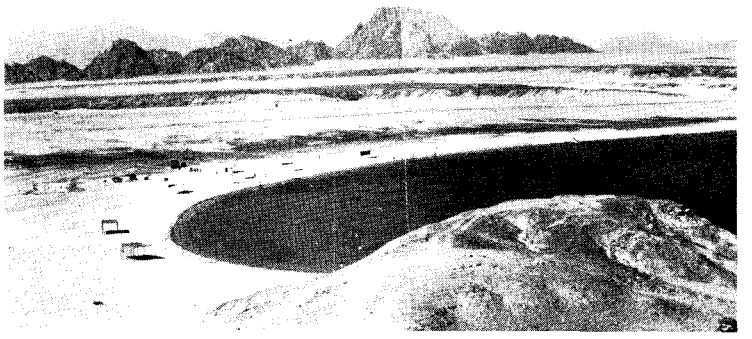
CHOICE OF TOWERS

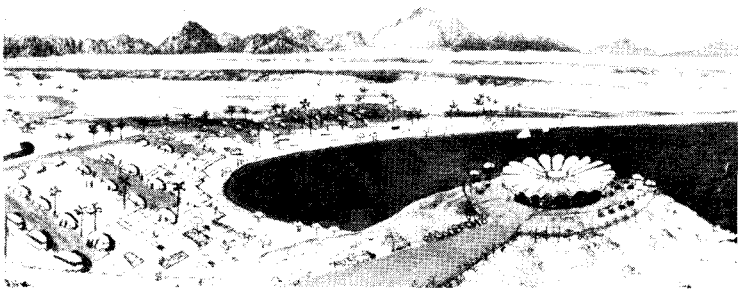
When the National Westminster Bank in London presented its plans for a new headquarters in the Bishopsgate–Old Broad Street district, a great controversy arose. Two schemes, by Architect Richard Seifert, called for office towers that would be higher than any other building in the area; either would dwarf the landmark St. Paul's Cathedral by Sir Christopher Wren. In scheme one, the tower is 600 ft. high; in scheme two, it is 500 ft. high—and the extra floor space is contained in an adjacent 184-ft.-high building.

Both towers look alike, albeit with dissimilar proportions: three wings, sheathed in glass, cantilever from a central core at three levels (scheme two, above).

Both would incorporate the existing historic banking hall of Bishopsgate (top).

Because of the controversy, the City of London Corporation and the city planning commission decided to solicit public opinion concerning the two schemes. But, even if public opinion prefers one over the other, the bank will probably proceed as it wishes. The architect prefers the taller building; he and the corporation feel that the public will not influence the bank much.





SEQUELS

WHAT'S HAPPENING . . .

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

• David Rockefeller and his associates, Trammel Crow of Dallas and John Portman of Atlanta, have not been able to find enough money—at tolerable interest rates—to purchase land for a hotel in San Francisco's Embarcadero Center (Dec. '69, page 78). They have been granted an extra six months by the San Francisco Redevelopment Agency to raise the money for the optioned land. Meanwhile, they are losing money on the deal. Unlike other developers holding similar options, the Rockefeller-Crow-Portman group had entered into an agreement with the agency whereby they continue to make payments in lieu of taxes on the land they do not even own.

• The eight television cameras mounted on lighting poles over the main street of Olean, N.Y., for police surveillance (Apr. '69, page 87) are coming down, victims of their own inefficiency and voter disapproval. Mayor-elect William O. Smith made the "eye in the sky" a campaign issue: "It smacks of an invasion of privacy."

• The federal-state-local agreement reached in January to forbid the building of a jetport near the Everglades in Florida (Oct. '69, page 88) contains some unexpected and welcome provisions: the single runway already constructed for flight training may be used only under strict federal supervision; when another site for the jetport has been found, "priority will be given to the construction of training facilities," said a White House statement. "And when these facilities have been completed, all training operations conducted at the present airport will be transferred to that site."

Further, the agreement gives the federal government the right to terminate even the limited operations at the Cypress Swamp strip should they be found to endanger the area.

PROTECTING THE PLAZA

New York's 63-year-old landmark, the Plaza Hotel, has at last been certified as such. The Land-

marks Preservation Commission, describing it as a "superb example of elegance and opulence that characterized the period just before World War I," made the Plaza the 316th New York building thus protected. Designed by Henry J. Hardenbergh (who also gave Manhattan the Dakota—March '59 issue), the 18-story hotel is one of the few buildings, besides his own, that Frank Lloyd Wright really liked; he made it his New York headquarters.

This landmark designation also adds muscle to the unique rezoning ordinance passed for the area in November, 1968. It zones all of Central Park South, and Fifth Avenue (from 59th to 61st Street) exclusively for residences or hotels: i.e., no more tall office buildings like the GM Building opposite the Plaza.

PEOPLE

GSD APPOINTMENT

Maurice D. Kilbridge, acting dean of the Harvard Graduate School of Design since the retirement of José Luis Sert last summer (June and Sept. '69) has been appointed Dean by President Nathan Pusey.

At ground-breaking ceremonies for the GSD's new George Gund Hall (Dec. '69 issue), Kilbridge pledged that the school would be directed toward environmentalism and a future in which one may "hear the chant of nature and no silent springs."

PENN APPOINTMENT . . .

A joint trustee, faculty, and student committee has selected Martin Meyerson to succeed Dr. Gaylord Harnwell as president of the University of Pennsylvania in September. Meyerson, at 47, will bring to the crowded, downtown campus, surrounded by a ghetto, an extraordinary record in city planning, urbanology, administration, and cooling of campus radicals.

Meyerson, as acting chancellor, was credited with having eased tensions during the height of the Free Speech movement at the Berkeley campus of the University of California in 1964; and again, as president of the State University of New York at Buffalo, when militants seized a building to force the hiring of more minority construction workers.

Prior to Berkeley and Buffalo, he served on the faculties at Penn, the University of Chicago, and Harvard, where he was director of the MIT-Harvard Joint Center for Urban Studies from 1959 to 1963.

. . . PENN RETIREMENT

G. Holmes Perkins announced last month his intention to retire as dean of the Graduate School of Fine Arts at the University of Pennsylvania in June of 1971. He will, however, continue as professor of architecture. Perkins came to Penn as dean of the GSFA in 1951 from Harvard, where he had been chairman of the department of regional planning. From 1958 to 1968, he was chairman of the Philadelphia City Planning Commission.

AWARDS

Following a somewhat time-honored tradition (Apr. '68, page 33), the AIA has followed the lead of the Royal Institute of British Architects in honoring America's architects. Buckminster Fuller (below), recipient of the RIBA Gold Medal in 1968, will

be awarded the AIA Gold Medal at the Institute's 1970 convention in Boston, June 21-25.

Fuller's geodesic domes now cover more space on earth—and with less structural material—than any other single kind of shelter ever devised, says the AIA. Surest mark of the authentic genius, his concepts in engineering and the physical environment have either been accompanied by new words to describe them—Dymaxion—or old ones revived to encompass them—geodesic, synergetics.

The author of 15 books and many articles, Fuller is also the holder of 20 honorary doctoral degrees, a multitude of special academic appointments, and professional awards, not the least of which was "Humanist of the Year" for 1969.

• Other AIA awards for 1970: Architectural Firm Award to Ernest J. Kump Associates of Palo Alto, Calif.; Fine Arts Medal to Sculptor Richard Lippold; Craftsmanship Medal to weaver and textile artist Trude Guermonprez; Industrial Arts Medal to "Supergraphics" Designer Barbara Stauffacher Solomon; Allied Professions Medal to Robert L. Van Nice, for his instrument survey and detailed architectural investigation of the Mosque of St. Sophia in Istanbul; Architectural Photography Medal to George Cserna, whose work in this field began in 1958 through contributions to the ARCHITECTURAL FORUM; Citation of an Organization to the U. S. Department of the Interior's National Park Service for its ten-year conservation and construction program "Mission 66"; Architectural Critics' Medal to Henry-Russell Hitchcock; Architectural Critics' Citation to the American Broadcasting Company Inc. for its documentary "Cosmopolis," with comments and prognostications by, among others, Buckminster Fuller.

• The RIBA, meanwhile, has honored with its Royal Gold Medal for 1970, Scottish Architect and town planner Sir Robert Matthew CBE, PPRIBA, MTPI, ARSA, FRIAS.

The reputation Sir Robert enjoys derives largely from his work between 1946 and 1953 when, as architect for the London County Council, he helped develop its post-war housing and town-planning policy, which produced such projects as the Roehampton Housing Estates and London's Royal Festival Hall. His later work, as senior partner in the firm, Robert Matthew, Johnson-Marshall and Partners, includes New Zealand House, a familiar London landmark, and the Royal Commonwealth Swimming Pool, Edinburgh, which opened in January of this year.

PHOTOGRAPHS: Page 19, Hans Namuth (top); Bruce Shanks, *Buffalo Evening News* (bottom); page 20, Ferdinand Boesch (top and bottom, left); page 70, © 1970 by the *New York Times* Co., reprinted by permission (map, right); page 71, Central Press (top and above, right); page 72, courtesy Clemson University, College of Architecture, Semester Review (bottom).

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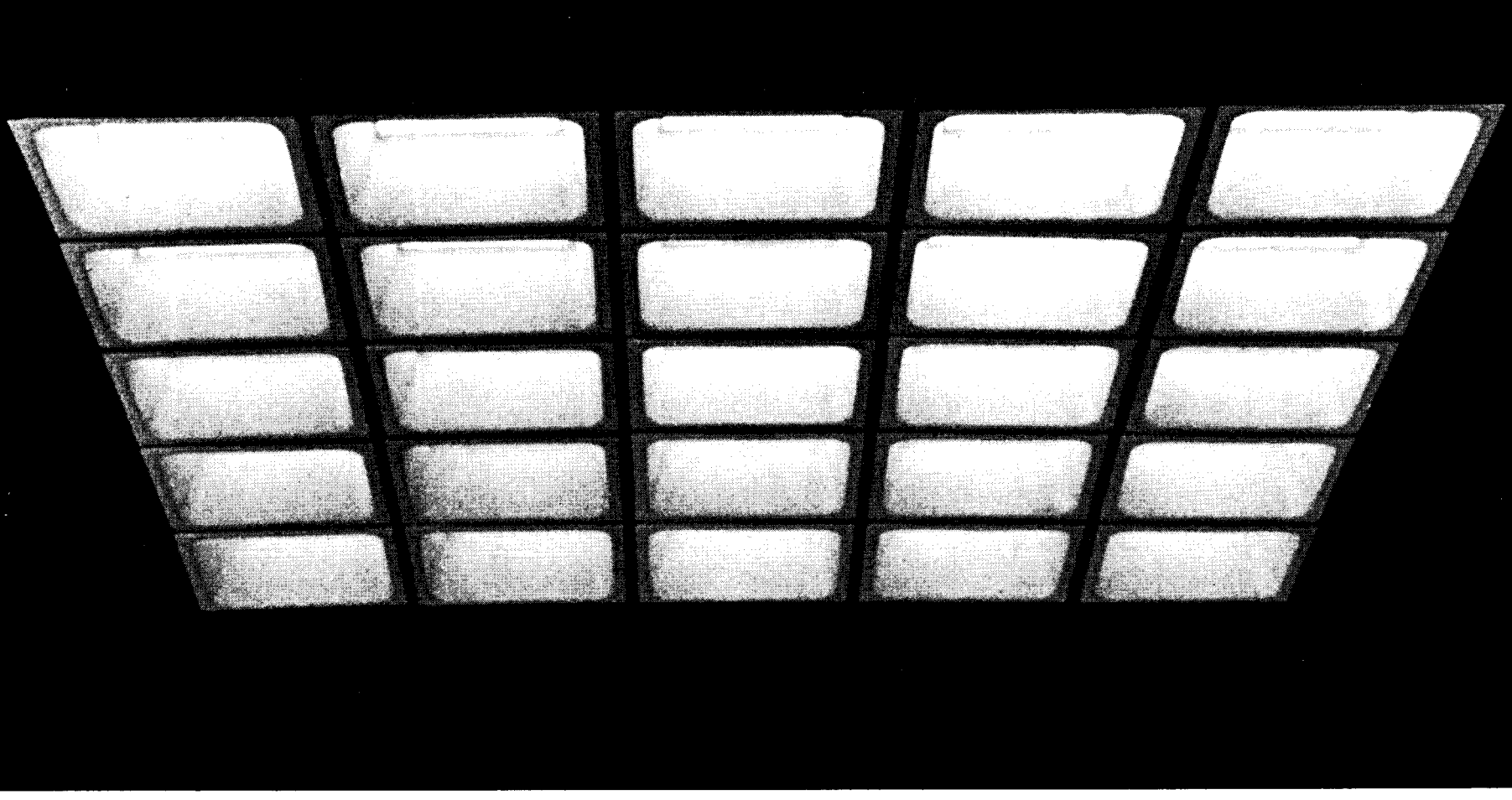

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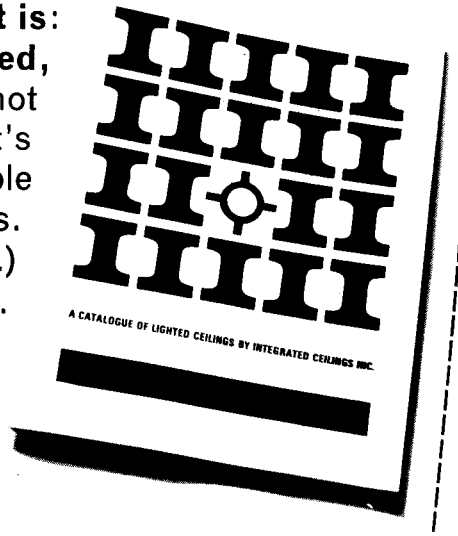

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LETTERS

ASPIRATIONS FOR THE 70S

Forum: Inasmuch as January—established by a capricious calendar—is regarded by most (that is to say, the Silent Majority) as an opportune time to express hopes for the future, I might just as well, as a good "conserva"tionist, follow the habit.

Thus I wish to the ARCHITECTURAL FORUM, progress in spreading the knowledge that the greatest hindrances and dangers for the human race lie in PSEUDO-PROGRESS, MISDIRECTED GROWTH, and FALSE GLORY. . . . Wishes, I understand, may still be uttered freely in the U.S. without being "agnewed" with suspicion, and one can still "aspiro" towards them. So I wish for less "progress" in many ways. Less progress in new weaponry, in production of superfluous materials, goods, and discovery of "Outer Space."

I wish for more emphasis on "Inner Space"; less preoccupation with "horsepower" and more with "human power"; less enthusiasm for outer growth and more attention to inner growth; less concern for the "glory" of nations, and more concern for the needs of people; less admiration for the "mechanical brains" and more for human hearts and minds.

Let us set our hopes on a majority that is NOT silent—but roused to speak out after acquiring the gift and ability to think!

VICTOR GRUEN
Architect and Planner
Vienna, Austria

DEFENDING THE CITIES

Forum: While I'm not altogether sure that Martin S. Harris Jr.'s letter about abandoning cities [September] isn't an amusing put-on meant to get a rise out of city planners, I can't let it go by without comment.

Passing over the fact that by ignoring problems affecting urban growth one, in fact, dooms those millions who are not lucky enough to be part of Mr. Harris's "mainstream" middle class that moves at will to the suburbs, I am willing to take my stand on the proposition that the city was, is, and will continue to be a desirable place to live.

Cities exist because their power to concentrate economic and cultural forces provides their dwellers with a richer and more exciting environment than is possible in a rural or suburban environment. To suggest that we should all live in rural Vermont because core areas are experiencing transition problems is, to put it kindly, a non sequitur.

Mr. Harris also seems unconcerned that the suburbs he admires can only exist in a big city context and that this vital interrelation on the metropolitan level grows more obvious, and necessary by the day.

The city is and must be kept viable.

LEWIS W. HILL
Commissioner of Development and Planning
Chicago, Ill.

NEW YORK'S MASTER PLAN

Forum: I was surprised to see, in Walter McQuade's column in your December issue, his repetition of one of the popular clichés about New York City's Master Plan. The currently proposed version, of which only one introductory volume had been issued at the time of your printing, is not ". . . the first modern Master Plan for the City of New York following in the distant wake of Peter Stuyvesant's New Amsterdam layout and the grid-iron street solution," as Mr. McQuade describes it.

Soon after New York's present City Planning Commission was established in the late 1930s, work was started on formulating a Master Plan as called for in the city's charter. In 1951, under the chairmanship of Dr. Rexford Tugwell, a Master Plan was proposed by the City Planning Commission, published and debated—one that was more clearly formulated, as a matter of fact, than the vague generalities one can see of the present version from the introductory volume available as of December 1969.

It was this 1941 Master Plan that contained, among other

(continued on page 78)

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LETTERS

(continued from page 76)

things, a proposal for a *greenbelt* or *park way* threading through the still available open spaces of the outer boroughs, much along the line of the thinking that went into the *County of London* plan that was being developed at the same time.

But the 1941 Master Plan proposal was ridiculed by Robert Moses and eventually failed of adoption. It was, nevertheless, an honest effort in the direction of a comprehensive Master Plan for the city. Numerous segments of this plan were subsequently modified and adopted as legal parts of the city's Master Plan, adding up to a more tangible, technically usable document than the current proposal.

ROBERT C. WEINBERG
Architect and City Planner
New York City

SURE SIGNS

Forum: I found the article on the National Arts Centre [Ottawa: October issue] most interesting, well done and eminently fair. The author, John Morris Dixon, makes a valid criticism about "the lack of a clear way to enter on foot." Unfortunately, the exterior signage planned for the Centre is still not in place, although we have been open for six months. When it is—soon we hope—I believe we shall have gone a long way towards meeting Mr. Dixon's criticism, which I might add is shared by those of us who operate the Centre and the very wide public who use it.

G. H. SOUTHAM
Director General, National Arts Centre
Ottawa, Canada

MORE FOR THE LADIES

Forum: As a female student at the University of Chicago planning to attend graduate school in architecture, I was quite excited to see, at last, an article dealing with women in the architectural profession.

I was strongly disappointed by the token coverage the article presents. The statistics are forcefully enlightening and the content, albeit meagre, addresses itself candidly to manifest discrimination, but I found Miss Dinerman's analysis of the causes and solutions to the problem superficial and indeed misleading. To be specific, the author attributes the lack of attraction of women into the field due to the fact that "the image of an architect as a masculine figure is a holdover from an earlier era when architects were closely related to unprofessional, skilled craftsman, and much of the work involved considerable physical strength." She also finds that the lack of positive counseling for high school and college students partially responsible for the dearth of female architects. These supposed psychological and societal causes are only minor factors.

Obviously, it is the mental, not the physical, capabilities which have traditionally formed the image of doctors, lawyers, and academic professionals, yet similarly small percentages of women are found in those fields. Obviously, small girls are discouraged from playing with constructor sets and building tree huts, and by high school very few girls have cultivated the kinds of interests and aptitudes that lead into such "masculine" professions as architecture. It is because the antiquated socialization process has never allowed women to exercise their capabilities outside of the roles of mate and mother that there are few women with careers.

There is no question in my mind that the measures which the author suggests will produce only small scale increases in the number of women architects. Not until we can choose when and how many children we want, not until the husband assumes equal responsibility and the community provides facilities for care of our children, and not until we have full legal rights, will women be free to become active participants in all segments of society.

The achievement of total consciousness of the problem and the widespread societal changes that are needed is a broad concern, perhaps beyond the scope (but certainly not the sympathy) of the ARCHITECTURAL FORUM. I am pleased you have started somewhere and I hope that you continue and increase your coverage of women in architecture.

MARGO JONES
Chicago, Ill.

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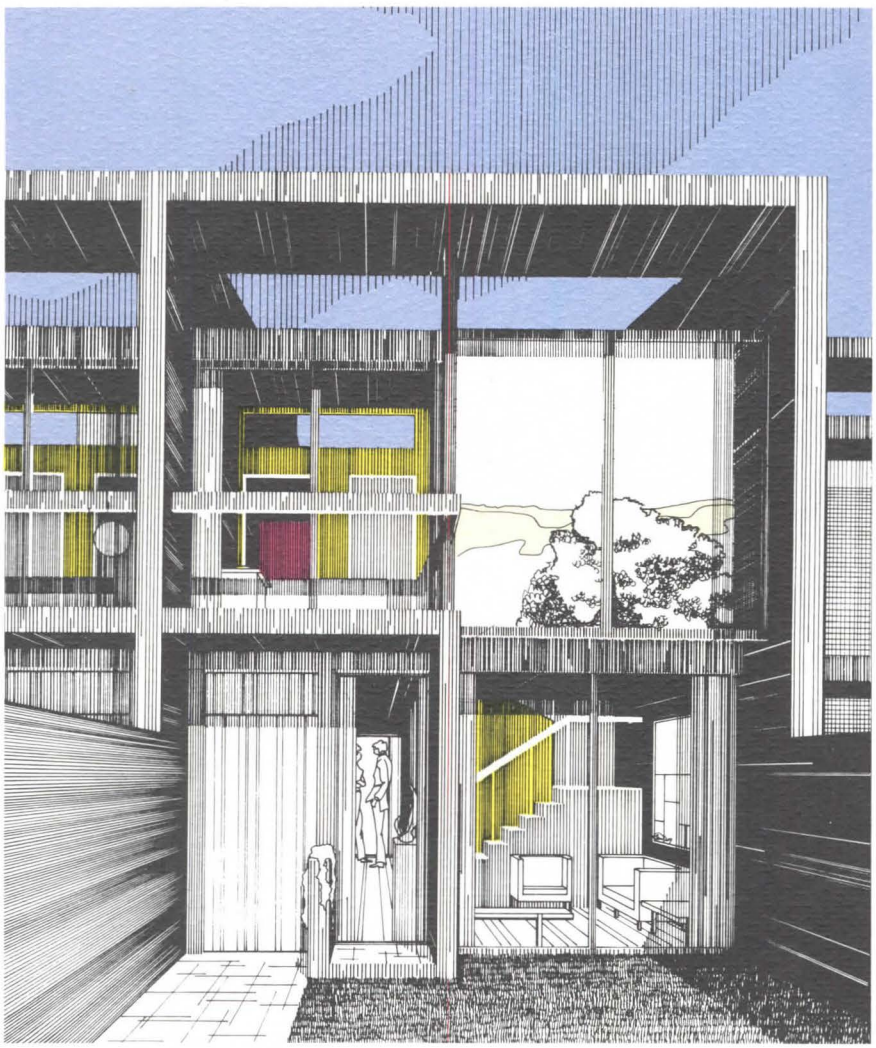
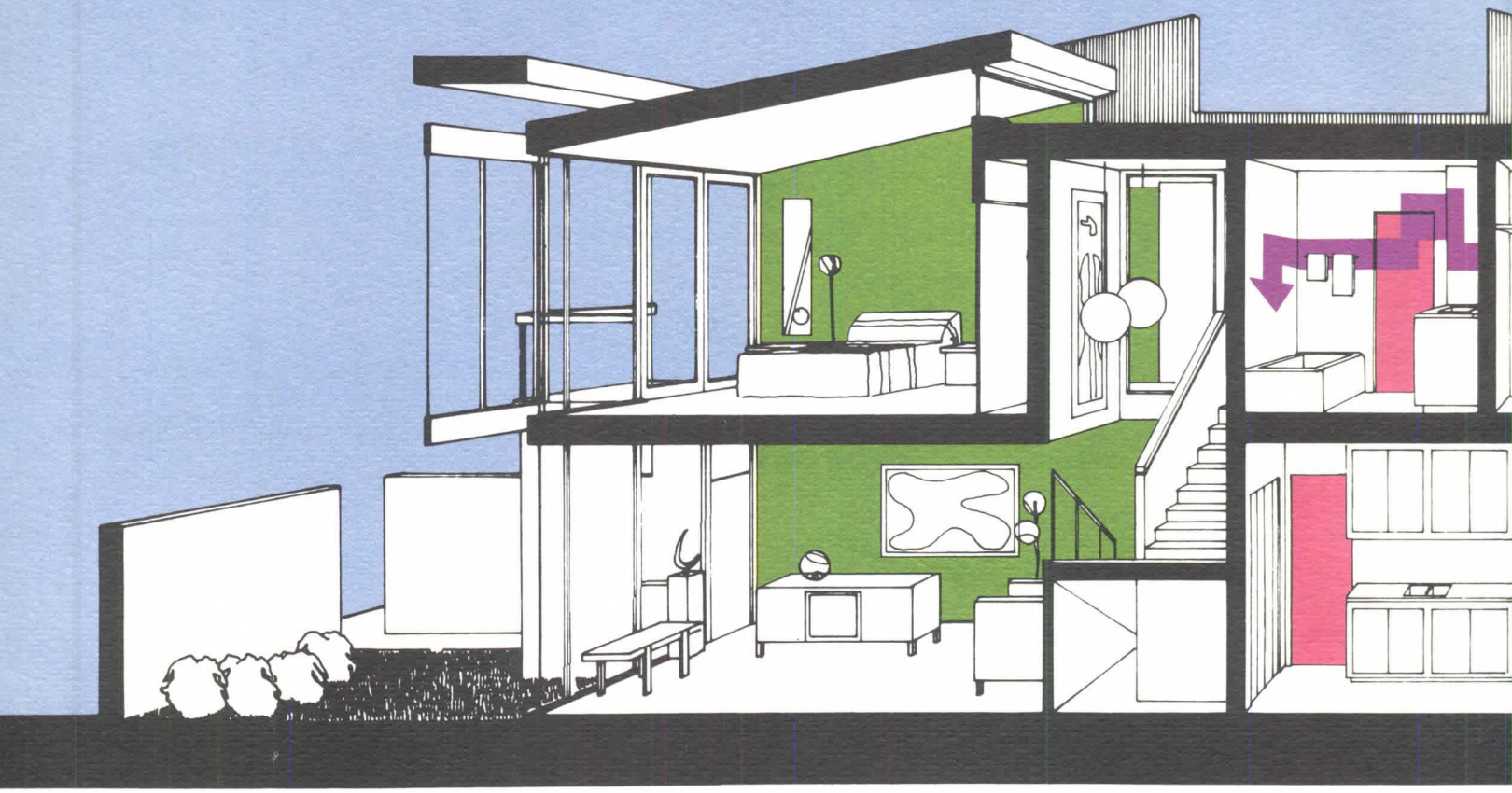
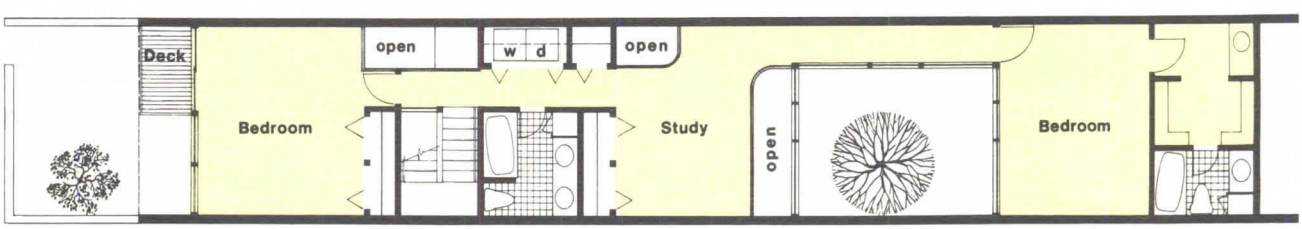


A concept by Clovis Heimsath Associates of Houston, Texas, Architects/Planners.

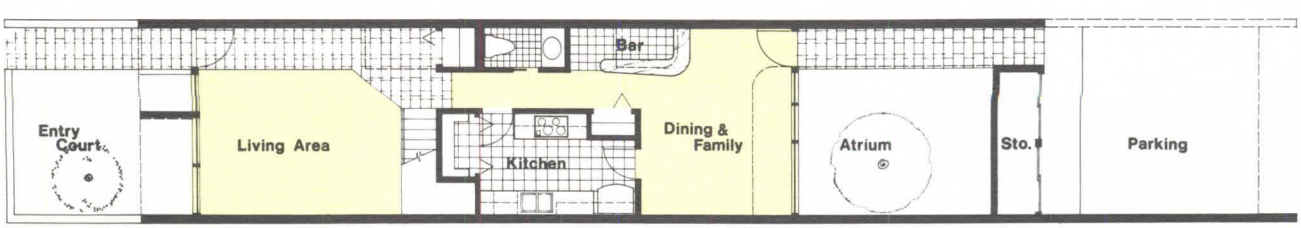
L-O-F HI-PERFORMANCE GLASS

Be prepared for surprises.





Second Floor Plan



First Floor Plan

Like the way rooms open up to embrace the outdoor world, but with no lack of family privacy.

These townhouse-like apartments are designed for thorough utilization of narrow lots. They achieve a density of 20 units per acre, yet tenants or owners will not feel "boxed in".

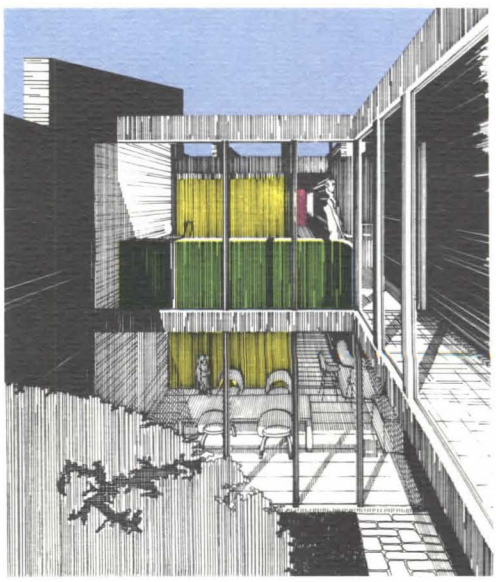
Liberal use of floor-to-ceiling glass walls and sliding glass doors provide visual interest spaces as well as daylighting the interior. And the kinds of glass selected are for aesthetic as well as practical purposes.

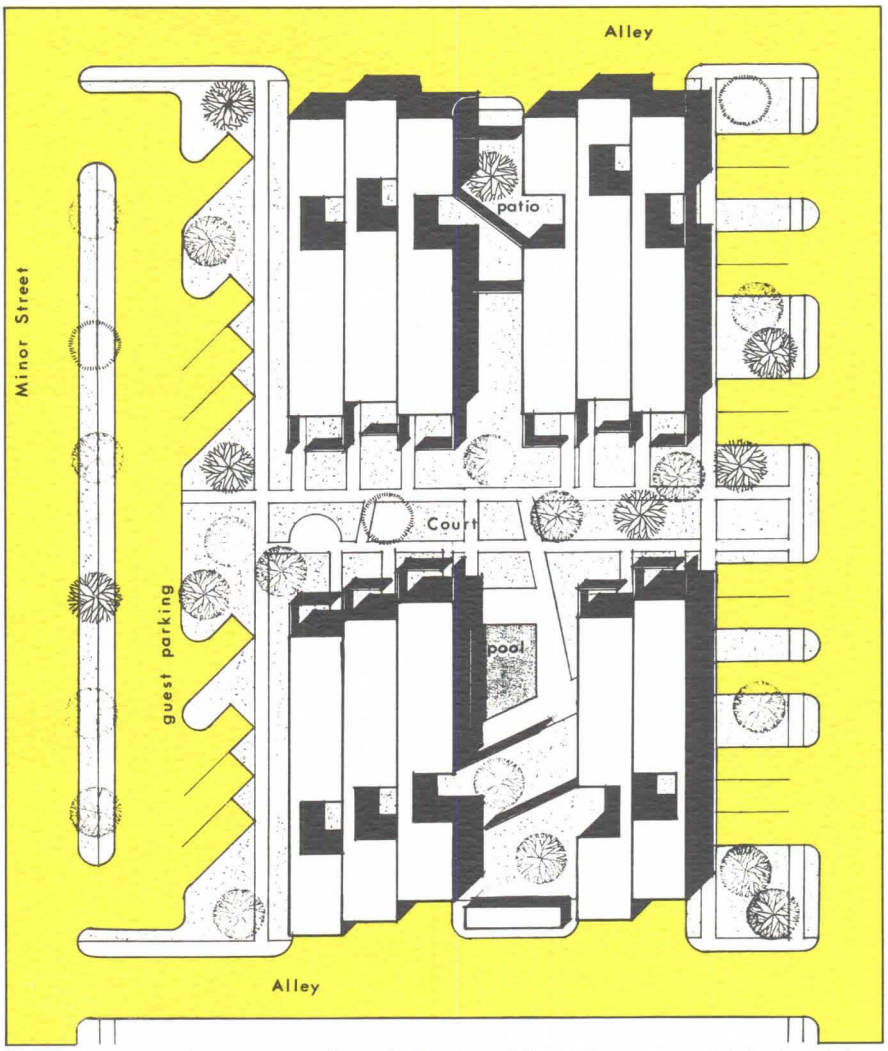
For safety, tempered Tuf-flex glass would be used in sliding doors. Nothing joins a house to the outside better than a glass door.

For the deck sun screen on the second floor, laminated Vari-Tran® reflective glass in a golden tone would provide superb control of solar radiation while mirroring the surrounding environment.

And for window walls facing the atrium, the choice is Parallel-O-Grey® plate glass. It adds color contrast to the court's stucco walls and reduces solar heat transmission.

In the south and southwest where air-conditioning is essential, and heat load from glass areas is often a critical factor in figuring air-conditioning tonnage, the above selection of L-O-F glass makes the air-conditioning feasible.





For the next project on your boards, be it residential, commercial, industrial or institutional, talk to an L-O-F Architectural Construction Specialist. Or call your L-O-F Glass Distributor or Dealer listed under "Glass" in the Yellow Pages. Libbey-Owens-Ford Company, 811 Madison Avenue, Toledo, Ohio 43624.

POLISHED PLATE GLASS
Parallel-O-Plate®, 1/4"
Parallel-O-Grey®, 13/64", 1/4"
Parallel-O-Bronze®, 1/4"

HEAVY-DUTY PLATE GLASS
Parallel-O-Plate®, 5/16" to 7/8"
Parallel-O-Grey®, 3/8", 1/2"
Parallel-O-Bronze®, 3/8", 1/2"

FLOAT GLASS, 1/4" regular

LAMINATED SAFETY PLATE GLASS
with Vari-Tran® Coating

HEAT ABSORBING FLOAT, 1/4"

INSULATING GLASS — Thermopane®
Regular, tinted or with Vari-Tran Coating

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ROUGH PLATE, Regular or Tinted
(Rough 2 Surfaces)
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Vitreous colors fused to back of
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One-way vision glass

L-O-F HI-PERFORMANCE GLASS

Tectum Full-Span Corridor Panels. They're even kid-proof.

You know how boisterous students can be. They even bounce books off ceilings. So you need a material that can take it. Tectum can. Available in natural or painted finish, its textured surface of resilient wood fiber offers a degree of protection not found in any other acoustical product.

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TECTUM

The name Gold Bond identifies fine building products from the National Gypsum Company. For further information on Tectum Full-Span Corridor Panels, write Dept. AF-30T, Buffalo, New York 14225.

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They are also impressive, attractive, functional, economical. You design Smith Walls to present the image and fulfill the requirements of your specific building project.

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Smith Walls are custom-engineered to your design and specifications, manufactured, delivered and erected by our own people. We call it the Smith Single Responsibility concept. We do it ourselves so we know it's right. And you know you and your client will be satisfied. Our record of repeat contracts proves it.

Specify Smith Walls in place for your next assignment . . . new building, expansion or remodeling. For full details, write:

General Electric Company Plant, Oklahoma City, Okla.

Architects: Benham-Blair & Affiliates, Oklahoma City, Okla.

General Contractor: Manhattan Construction Company, Oklahoma City, Okla.

Smith C-Panel, 1½" insulation, aluminum exterior finished in Kynar II. Ribwall profile on fascia. The main wall consists of Contourwall profile panels.

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To order material described, circle indicated number on self-addressed Reader Service Card, facing page 88.

DOORS/WINDOWS 601

35-pg color catalog on steel, aluminum and stainless steel windows and curtain walls. Complete drawings, specs for the architect and engineer. The William Bayley Co. On Reader's Service Card, circle 101.

Illustrated brochure on Crane Fulview Revolving Doors, Elevator Cabs and Entrances. Includes specs. Crane Fulview Glass Door Co. On Reader's Service Card, circle 102.

16-pg 2-color comprehensive 1970 catalog spearheads Crawford's bid to capture a significant share of the $25 million rolling door, grille and shutter market. Illustrations, specs. The Crawford Door Co. On Reader's Service Card, circle 103.

Catalog includes technical information on LOF glass; includes Vari-Tran® and Vagilpane® SA 68. Libbey-Owens-Ford Co. On Reader's Service Card, circle 104.

"Weldwood® Architectural Doors." 20-pg 4-color with illustrations and specs for all type doors. Information on special type doors included. U.S. Plywood Corp. On Reader's Service Card, circle 105.

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 Architectural Prods. Div. of Walter Kidde & Co. On Reader's Service Card, circle 106.

FLOOR COVERING 604

"Design World: A Collection of Printed Carpets." Package includes beautiful color examples and details special features of these attractive patterns. World Carpets. On Reader's Service Card, circle 107.

FURNISHINGS 605

New Burke table catalog—20 pgs of Burke, Acton and AMV tables from 18" round occasional tables to 24' conference tables with many varieties of materials and designs. Burke Acton. On Reader's Service Card, circle 108.

"Image 2000." Unique new line of office furniture, reflecting the new emphasis on environment. 8-pg color brochure illustrates these "next-century" designs. Design Products, Inc. On Reader's Service Card, circle 109.

HARDWARE 606

12-pg booklet on Architectural Hardware for Schools and Colleges covers wide variety of hardware items; many unusual designs, information re Corbin's Master Keying Systems. Form No. K-873. P & F Corbin Div. Emhart Corp. On Reader's Service Card, circle 110.

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 111.

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 112.

HEATING/ AIR CONDITIONING 607

4-pg illustrated brochure on Complete Clean Room Systems describes AAF's technique for precise temperature control. Lists features of their Gage Labs and Metrology Labs. American Air Filter Co., Inc. On Reader's Service Card, circle 113.

Spec data hermetic and open Turbopak chiller, 670 to 1030-ton capacity range. York Corp., Div. of Borg-Warner Corp. On Reader's Service Card, circle 114.

LIGHTING 610

The new Sculptura ceiling system, with a complete catalog of lighted ceilings by Integrated Ceilings, Inc. On Reader's Service Card, circle 115.

MASONRY 611

Precast Concrete Exterior Units Brochure, 24-pg, color, shows 41 precast panel instructions. Medusa Portland Cement Co. On Reader's Service Card, circle 116.

METALS IN BUILDINGS 612

16-pg booklet highlights various architectural metal products, including doors, windows, curtain walls and custom metal work for architecture. The Michaels Art Bronze Co. On Reader's Service Card, circle 117.

"Lead—A Metal for the Future." An 82-pg booklet highlighting the history of lead and its major applications. Available from St. Joseph Lead Co. On Reader's Service Card, circle 118.

OPERABLE WALLS 613

Brochure highlights features and specs of Quiet Wall operable walls. Includes fabric sample, as well as cutaway drawing and technical data. New Castle Products, Inc. On Reader's Service Card, circle 119.

COATINGS/SEALANTS 614

A Guide to Sealant Quality and Performance. New 4-pg brochure detailing Thiokol's Tested and Approved Program. Thiokol Chemical Corp. On Reader's Service Card, circle 120.

PLUMBING EQUIPMENT 615

Cast Iron Soil Pipe & Fittings Handbook—comprehensive and authoritative, fully illustrated, covering use and specs of cast iron soil pipe and fittings. Cast Iron Soil Pipe Institute. On Reader's Service Card, circle 121.

1970 16-pg catalog on Oasis Water Coolers. Gives spec data, applications, with full-color illustrations. Includes selector guide. Ebco® Mfg. Co. On Reader's Service Card, circle 122.

New Line of water coolers, drinking fountains. 20-pg catalog offers performance specs, detailed photos, data charts and index, color chart. Elkay Mfg. Co. On Reader's Service Card, circle 123.

32-pg color catalog #168; drinking fountains, water coolers—includes specs, drawings. Haws Drinking Faucet Co. On Reader's Service Card, circle 124.

1970 24-pg catalog illustrates drinking fountains, plumbing fixtures and trim. Includes drawings, special application data. The Halsey W. Taylor Co. On Reader's Service Card, circle 125.

ROOFING/SIDING 616

"Façad®." Complete brochure and catalog showing examples, details, finishes, colors for interiors and exterior applications of new system incorporating sculpture and textural relief in building design. U.S. Plywood Corp. On Reader's Service Card, circle 126.

STRUCTURAL 617

12-pg fully illustrated brochure shows details of "Safeguard" Gravel Stop System and "Modu-Line" Fascia Panel System. Includes diagrams and specs. W. P. Hickman Co., Inc. On Reader's Service Card, circle 127.

WALLS/LAMINATES/ PARTITIONS 618

"Panel Systems 1970." 8-pg 4-color illustrated booklet gives installation, application and maintenance data on panels for high-moisture areas and large-area commercial applications. Formica Corp. On Reader's Service Card, circle 128.

Spec info on all panels includes Marlite plank and block, Korelock and fire-test panels. Marlite Div. Masonite Corp. On Reader's Service Card, circle 129.

Full color catalog on Demountable Partitions. All Heights. Technical information. National Gypsum Co. On Reader's Service Card, circle 130.

Metal Wall Panels, including new Foamwall. 20-pg catalog includes complete specs with color photos of walls in place. Elwin G. Smith & Co., Inc. On Reader's Service Card, circle 131.

"Element I®." A portfolio of splendid original designs of meticulously crafted wall-covering products to inspire creation of exciting architectural interiors. U.S. Plywood Corp. On Reader's Service Card, circle 132.

Three full color brochures showing examples of Glasweld® for Curtain Walls, Exterior Paneling and Interior Paneling. Brochure includes color samples and spec data. U.S. Plywood Corp. On Reader's Service Card, circle 133.

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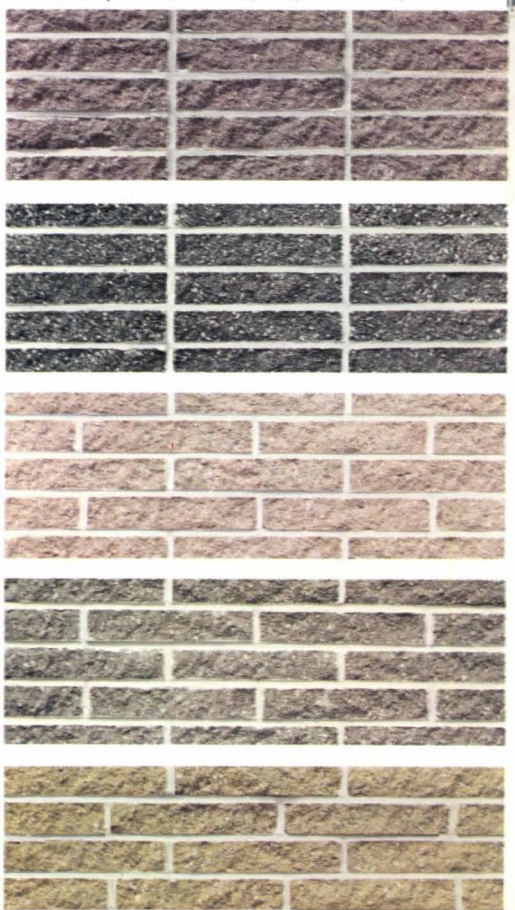
Permanent Resident at the Marriott... Split Block of Medusa White.

COLORED SPLIT BLOCK WITH MEDUSA WHITE

Color Samples: Chas. Svec, Inc., Cleveland, Ohio



Split block of Medusa White assures walls of ageless distinction . . . walls that are attractive to Marriott guests. These handsome, soft textured concrete units capture light and shadows for a variety of changing effects. They are economical and fireproof.

The true white color of Medusa White Portland Cement also assures more accurate results when color pigments are used (see samples at left).

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MARRIOTT HOTEL, Crystal Plaza, Arlington, Virginia. Architects: Weihe, Black, Kerr & Jefferies, Washington, D.C. Owners & Gen. Contractor: Charles E. Smith, Inc., Washington, D.C. Split Block Producer: ("Random Rock" A-65) Nitterhouse Concrete Products, Inc., Chambersburg, Pa.

MEDUSA PORTLAND CEMENT COMPANY

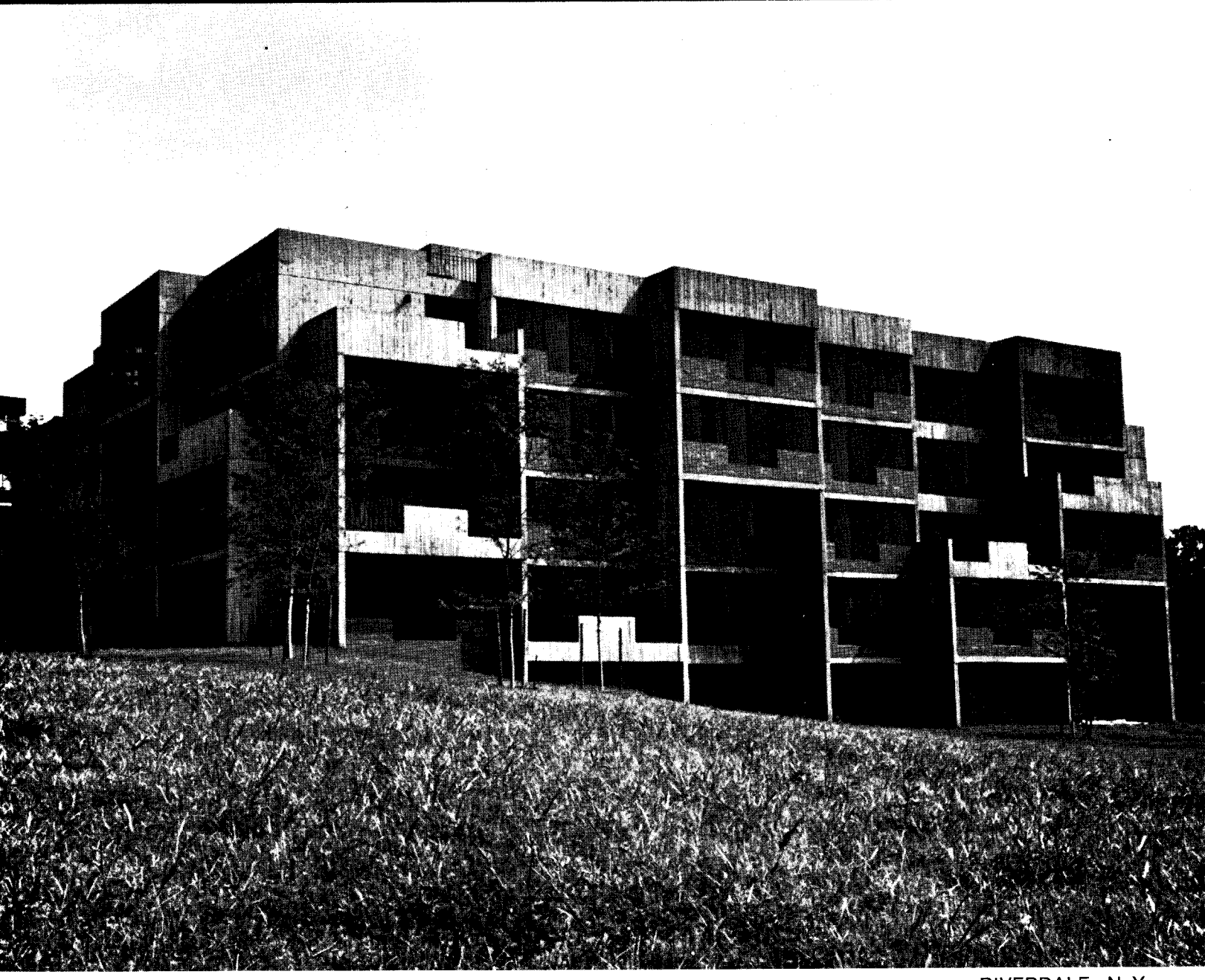
White and Gray Portland Cements • White, Gray and Custom Color Masonry Cements • "CR-85 Series"® ChemComp® Cement

On Readers' Service Card, Circle 223

Since **HOPE'S** *1818*

STEEL WINDOWS

STEEL WINDOWS HAVE THE STRENGTH AND RIGIDITY THAT NO OTHER WINDOW CAN MATCH



HEBREW HOME FOR THE AGED — RIVERDALE, N. Y.

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In designing this modern building for senior citizens, the architects' goals were beauty, comfort and cheerful environment. To assist in achieving these goals, a substantial number of heavy intermediate steel windows were furnished to the architects' specifications and installed by Hope's own workmen. These custom-built windows, important elements in the over-all design, contribute much to the success and efficiency for which the structure has won recognition.

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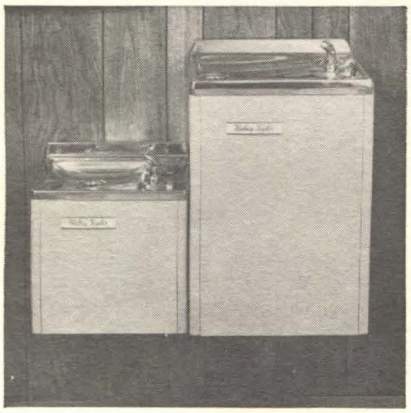
SPECIAL SERVICE FOR THE YOUNGER SET

NEW! MINI-COOLER

Measures only 20½" from fountain top to bottom edge of apron. Occupies a minimum of wall space. Can be mounted as low as 30" (from fountain top to floor) to serve small children — or at normal 40" to serve adults. Available in 8 and 13.5 GPH capacities. Cabinets come in baked gray enamel, stainless steel, or vinyl-clad steel.

THE HALSEY W. TAYLOR COMPANY
1564 Thomas Road, Warren, Ohio 44481



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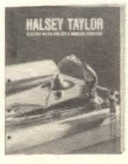
Safe, practical way to serve drinking water to adults and children. Designed for left side mounting on any WM Series water cooler. Gray baked enamel, stainless or vinyl-clad steel cabinets to match adjoining WM cooler. Waste outlet and water supply are integral with electric water cooler.

THE HALSEY W. TAYLOR COMPANY
1564 Thomas Road, Warren, Ohio 44481

On Readers Service Card, Circle 224

WRITE FOR NEW CATALOG

Latest information on Halsey Taylor electric drinking fountains and water coolers. Send for your copy today.



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MODEL RWM-8 or RWM-13

RWM SERIES Semi-recessed Water Coolers

Two Capacities — 8.0 and 13.0 G.P.H. of 50° water.

Cabinets — Vinyl-clad steel, silver spice and mocha brown; also stainless steel and gray baked-on enamel.

Features — Extends only 10 inches out from wall. Needs only a 4½-inch back recess for mounting.

Furnished with — Separate mounting frame with electrical and plumbing knockouts — helps reduce installation costs.

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One wall paneling makes it easy to be creative. The Idea Paneling—Marlite. This versatile plastic-finished hardboard can be any kind of wall your client wants. Bold or pastel colors, deep-embossed textures, authentic woodgrains or tasteful decorator patterns.

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So Marlite paneling is ideal for walls in heavy traffic areas. Or where maintenance costs are a problem. (Just once-over-lightly with a damp cloth is all the "painting" Marlite needs.)

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