

Creative styling in a new light: New 800 Series in Azrock vinyl asbestos floor tile

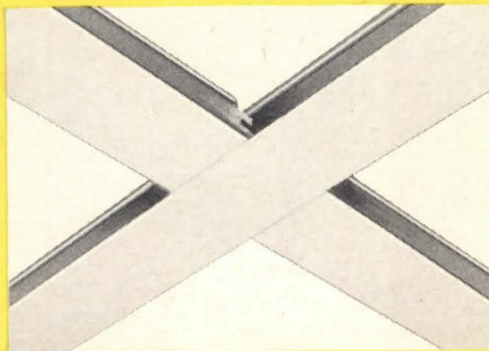
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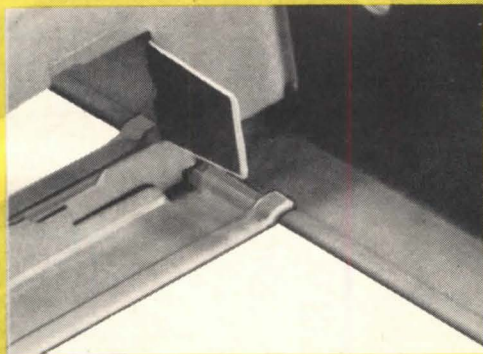
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No butts about it!



Viewed from below, Firesafe's flanges meet perfectly. Actually, there's an over-riding lip. In case of fire, expansion is facilitated; structural integrity maintained. What goes up need not come down!* Yet, members are locked in tension to resist torsional and lateral displacement. See Sweets 14c/Ea, or write for complete specs.

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some) solution to the problem.

- 164 **ATHENIAN AMPHITHEATER:** Winners of a competition for design of a development plan for a hill opposite the Parthenon in Athens used an abandoned quarry as the site of a modern amphitheater.
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- 174 **KANSAS CITY ENVIRONMENT:** Students at the Kansas City Art Institute are being exposed to technical drawing, landscape architecture, and environmental



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THIS MONTH IN P/A

Progressive Architecture® July 1967

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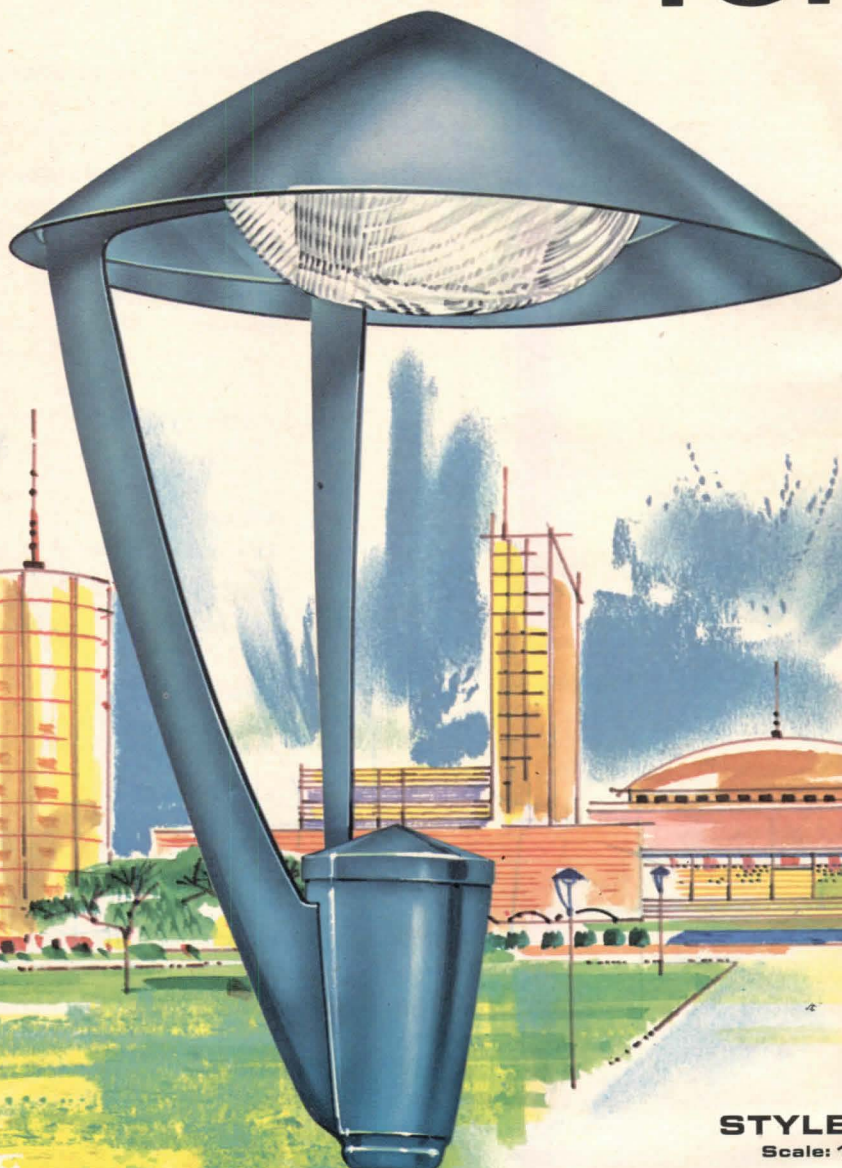
105 **EDITORIAL**
P/A's Editor discusses the idea of involvement as it applies to architectural thinking.

COMMENTARY AND ANALYSIS
LIGHT AND AIR HOUSES
106 **INTRODUCTION:** A recent graduate of Yale has designed five houses on the East Coast that pay particular attention to wind movement and light. PETER GLUCK, ARCHITECT.

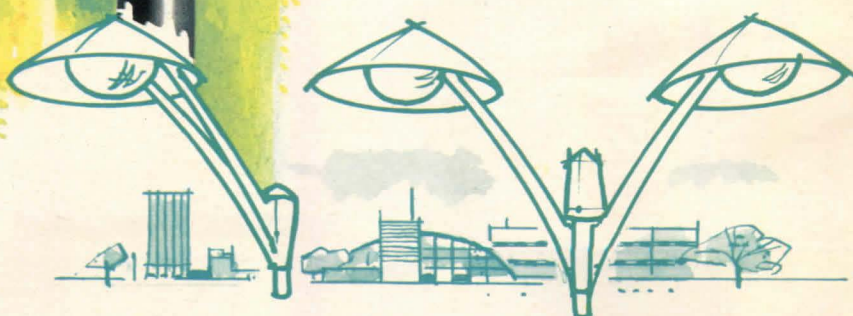
107 **FIRST BEACH HOUSE AT WESTHAMPTON, L.I.:** For a beach house commissioned by his parents, the architect suspended floor and ceiling platforms from 40-ft

design IDEAS IN OUTDOOR LIGHTING

FOR THE



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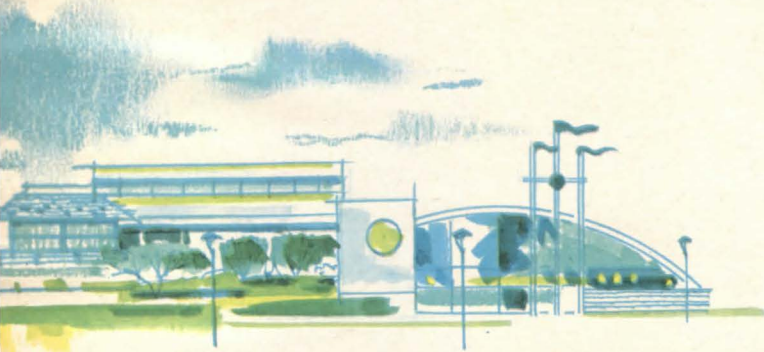
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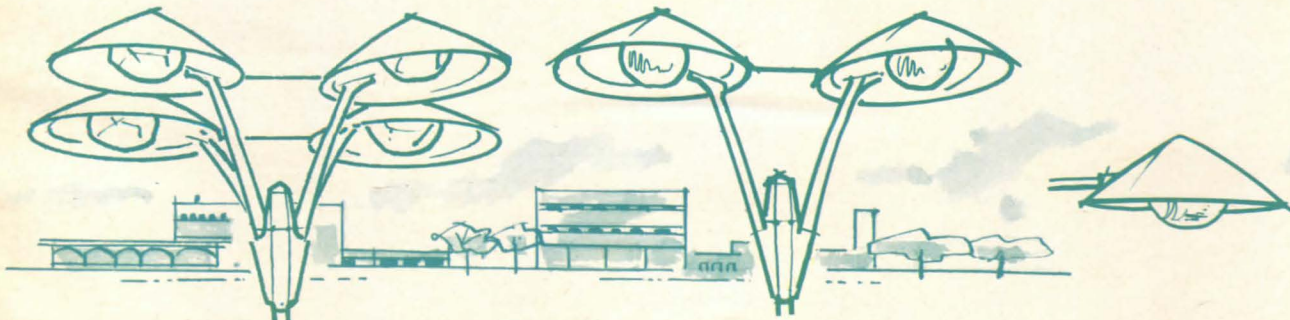
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VIEWS

A First in the Architectural Press

Dear Editor: Kudos to the Romleys and P/A for pioneering a new first in the architectural press. To wit: the gorgeous color photo of the Romley pot party, facing p. 154 in the MAY 1967 P/A.

Do I take it that the zigzag cigarette papers on the table, the fellow on the right sifting grass, and the one on the left dragging on his joint add up to a grass party?

SIM VAN DER RYN
Associate Professor of Architecture
University of California
Berkeley, Calif.

[P/A's photographer forgot to ask them what they were doing — Ed.]

Ugliness Revisited

Dear Editor: Re your article on the Guild House, MAY 1967 P/A: You may call this building "controversial"; the architect may talk about the "spatial demands of the street"; you may discuss points about the rear being "purposely boring"; you may question whether the building is a "parody"; you may wonder whether the large lettering is "vulgar"; But the plain, inescapable fact is that it is simply an ugly building. Ugly, ugly, ugly!

"Subtleties of scale in the cyclone fencing" . . . the château at Anêt . . . argh!

RAYMOND J. WISNIEWSKI
Windsor, Conn.

[That should settle it. — Ed.]

A Book Review Is a Book Review Is a . . .

Dear Editor: Re the book review on p. 192 of the MAY 1967 P/A: "Less Becomes — At Last — Less."

Was the book reviewed?

T. HOWARD SHOLLER
Easton, Conn.

Interior Design Curriculum

Dear Editor: I was pleased to read your story on Pratt Institute's new graduate program in interior design (p. 54, MAY 1967 P/A).

To elaborate on my remarks: I discussed the forthcoming curriculum study by the Interior Design Educators Council, and stated that, after the completion of that study, there may not be more than a handful of interior design curricula meeting recommended requirements.

This happens to be the case in architectural education as well. In fact, a curriculum study currently conducted under

the sponsorship of the AIA at Princeton University may soon publish its recommendations. It may turn out that not more than a handful of architectural programs, as they exist today, will meet the standards to be suggested by that study.

ARNOLD FRIEDMAN
Professor of Design
Pratt Institute
Brooklyn, N.Y.

Questioning McLuhan

Dear Editor: I have read the message by Marshall McLuhan on the frontispiece of the MAY 1967 P/A. I consider it an excellent selection and very appropriate for an architectural publication.

What does it mean?

HARVEY A. BERG
Flushing, N.Y.

[John Stuart Mill said it better than we could: "To question all things; never to turn away from any difficulty; to accept no doctrine either from ourselves or from other people without a rigid scrutiny by negative criticism; . . . above all, to insist upon having the meaning of a word clearly understood before using it, and the meaning of a proposition before assenting to it — these are the lessons we learn from ancient dialecticians." — Ed.]

Multifarious Malls

Dear Editor: The article on "Mall for Houston" (NEWS REPORT, MAY 1967 P/A) confuses the proposal of the Houston Chapter AIA's "Blueprints for the Future" program and a different mall project, subsequently designed by our firm in a different location.

There is no doubt that the AIA's proposal to roof over and air condition Main Street in downtown Houston created a receptive atmosphere for the underground mall we designed. This mall is for a one block section of Walker Street, adjacent to several new high-rise office buildings, but at right angles to, and not really a part of, the Main Street concept.

Mayor Welch has ordered a feasibility study of the Walker Mall to be performed by Bernard Johnson & Associates, Engineers.

RALPH A. ANDERSON, JR.
Houston, Tex.

Here's Hoping

Dear Editor: Re your generally excellent April "Earth" issue:

First, architects with more than passing interest in earth architecture and underground construction will want to know of the existence of the long-established international group of engineers and architects, CPITUS (Comité Permanent International des Techniques

et de l'Urbanism Souterrains). Headquarters are at 94 Rue Saint-Lazare, Paris IX. The group publishes a quarterly magazine, *Le Monde Souterrain*, and meets each year for symposia and study-tours.

Second, P/A's history of San Francisco Bay and "fill politics" seems to me to be incomplete in its failure to even mention John Reber and his ambitious scheme to turn the Bay into a fresh water lake. Here's hoping P/A will give some more work and space to studies in depth on the future of the Bay.

WILLIAM M. RICE
New York, N.Y.

An Upsetting Observation

Dear Editor: Didn't you notice the photograph on p. 128 of the MAY 1967 P/A? It's not often one is in an elevator lobby that is upside-down. I know Rudolph's plan is "irregular," but I don't think he is irregular enough to build from top down!

WILLIAM MARSTON
Cornell University College of Architecture
Ithaca, N.Y.

[Ed.]
— [Sometimes these details slip by us.]

Landfill Nostalgia

Dear Editor: Congratulations on the APRIL 1967 P/A.

The article "Great Big Fill," reporting the development of the Lake Shore fill near New Orleans, brings back many nostalgic memories of my work in and around New Orleans. The present fill is opposite the great drainage project, which in about 1910-15 required the construction of three large drainage pumping plants, in order to reclaim the swamp land, to provide dry land on which to build a large subdivision known as Metairie, adjacent to New Orleans.

At that time I was engaged in promoting a landfill, instead of a drainage development. My plan was to use the money spent on the pumps, canals, and levees to fill the area and raise the land level to 10 or 15 ft.

Doing this would have eliminated the expense of maintaining the pumping plants, and at the same time provided a better foundation for the buildings. Therefore, the new project justifies my contention of 57 years ago.

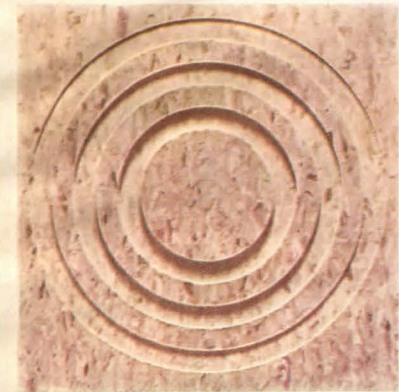
Here in Florida, there is a hue and cry put up by some misguided citizens when a landfill is proposed. My rebuttal evidence is that if the wasted land or earth is not reclaimed from the water areas, eventually all the land will be washed into the sea.

Continued on page 10

This exclusive Ruberoid formula outwears any other vinyl asbestos floor tile.

(Below) Good Hope Intermediate School, Mechanicsburg, Pa.
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 General Contractor: Reisinger Bros., Inc., Carlisle, Pa.
 Architect: Bender Burrell Assoc., Camp Hill, Pa.

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Architect: Mario J. Ciampi and Associates
Saint Peter's Church, Pacifica, California

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Continued from page 6

However, I have a plan to circumvent this problem. But if I related it to you, I would probably be branded as "crazy."

Wishing you health, success, and good editing of your P/A. I obtain great benefits. Keep up the good work.

W. R. PENDER
St. Petersburg, Fla.

Good, But Not Enough

Dear Editor: Your issue on "The Earth" is the first comprehensive treatment of the subject I have seen and is a valuable contribution to your readers' understanding of this important subject. Although I agree with the concepts expressed, I feel that too little emphasis has been placed on many limitations that are unavoidable in working with earth. Chief among these is soil mechanics.

ROBERT A. HELLER
Stamford, Conn.

Addition to Earth Issue

Dear Editor: While I thoroughly enjoyed your issue on earthmoving (APRIL 1967 P/A), I could not help but be struck by one glaring omission. Earth is made up of soil, gas, and water; and, of the three, water, the most critical, is not mentioned.

Frost heave makes a washboard of the most accurately constructed highway; moisture changes lift or settle building foundations; piping has collapsed mighty earth dams; excessive pore pressure has moved sides of mountains; springs have delayed many projects; even minor raising of water tables floods basements.

RICHARD W. SOUZA
Cambridge, Mass.

Professional Conspiracy Noted

Dear Editor: Certain examples in the April issue raise a query: Are architects borrowing the sensible practice of their brother professionals, physicians, and burying their mistakes?

ELISABETH COIT
New York, N.Y.

Wright as Earth Mover

Dear Editor: Your Editorial on the art of shaping the earth as architecture (APRIL 1967 P/A) was fitting for the issue, but when you say, "Wright, with his organic theory, made the earth sacrosanct. To change the shape of a mound, to move a rock, or to cut a tree was taboo to his followers," I feel you should examine the record.

Consider his handling of earth in the following works: the Jamestown exhibition pavilion, Broadacre City, the berm-type cooperative homesteads for Detroit Auto Workers, the Herbert Jacobs "solar hemicycle house," Taliesin Dams, the Keys house, the Harry G. John residence, the underground storehouse at Taliesin

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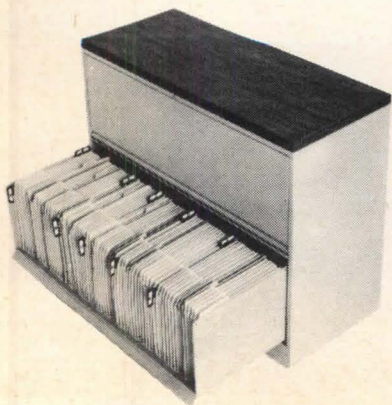
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Continued from page 10

West, Leesburg Floating Gardens, The University of Bagdad, and the lagoon and island for the Marin County complex.

Among his followers, William Wesley Peters planned an underground house for Evansville, Indiana, in the early 30's, and later, in 1965, an auditorium to be built on shaped fill on the bay at Sarasota, Florida, and, in 1966, a berm church at Alma, Michigan. Paolo Soleri, whom you mention in your issue, was trained at Taliesin.

The inspiration Frank Lloyd Wright found in his sites in no way prevented

him from shaping those sites to best serve his clients' needs. His work in this respect was far ahead of his time and present practice to date.

CHARLES MONTOOTH
Scottsdale, Ariz.

Sea Ranch Imperiled?

Dear Editor: After reading the MARCH 1967 P/A, I was sorry to see what had happened to the Sea Ranch Athletic Club. The proposed version met with my approval, as it did that of the Design Awards jury.

The resulting design and final completion leaves a lot to be desired. The final version is basically weak. I can under-

stand how, through budget cutbacks, final designs can be on a lesser scale, but this is no excuse for poor design. The only thing that deserves special attention is that of turning one of the load-bearing walls into a buttressed member.

The graphics of Barbara Stauffacher do a lot for the interior of the bathhouse, which was in need of a little help.

I surely hope this is not the beginning of poor design in the development of Sea Ranch structures.

DOWNING B. YOUNG
St. Augustine, Fla.

Kline Tower a Hulking Blight?



Dear Editor: I was completely taken aback by your article, "Locus for Gown, Focus for Town" (FEBRUARY 1967 P/A). The Kline Biology Tower, the self-proclaimed "best university building" of Philip Johnson, may qualify as an academic gathering point, but it is certainly suspect from a secular point of view. This hulking mass of a thing is a real blight to New Haven.

No reservations were evident in your coverage, of course, since you portrayed the tower only in its immediate surroundings and not the real world. Neither were the critics you cited able to transcend the varsity outlook. I am disappointed in my professors; Charles Moore deems this building "successful in the city-scape" and Vincent Scully claims "it is beautifully sited . . . it is in relation to the street, the hill, and the city."

When are architects, critics, and publishers going to take a truly responsible stance?

ROBERT H. KUEHN, JR.
School of Art and Architecture
Yale University
New Haven, Conn.

[We hope you've graduated by the time this issue comes out. — Ed.]

CORRECTIONS:

The designers of the Glenside Nursing Home (MAY 1967 P/A) were Madeline Karl and James A. Howell of the Howell Design Corporation.

The project director of the Hot Springs High-Rise (MAY 1967 P/A) was Jack Mitchell, who is now Associate Director of the School of Architecture at Rice.

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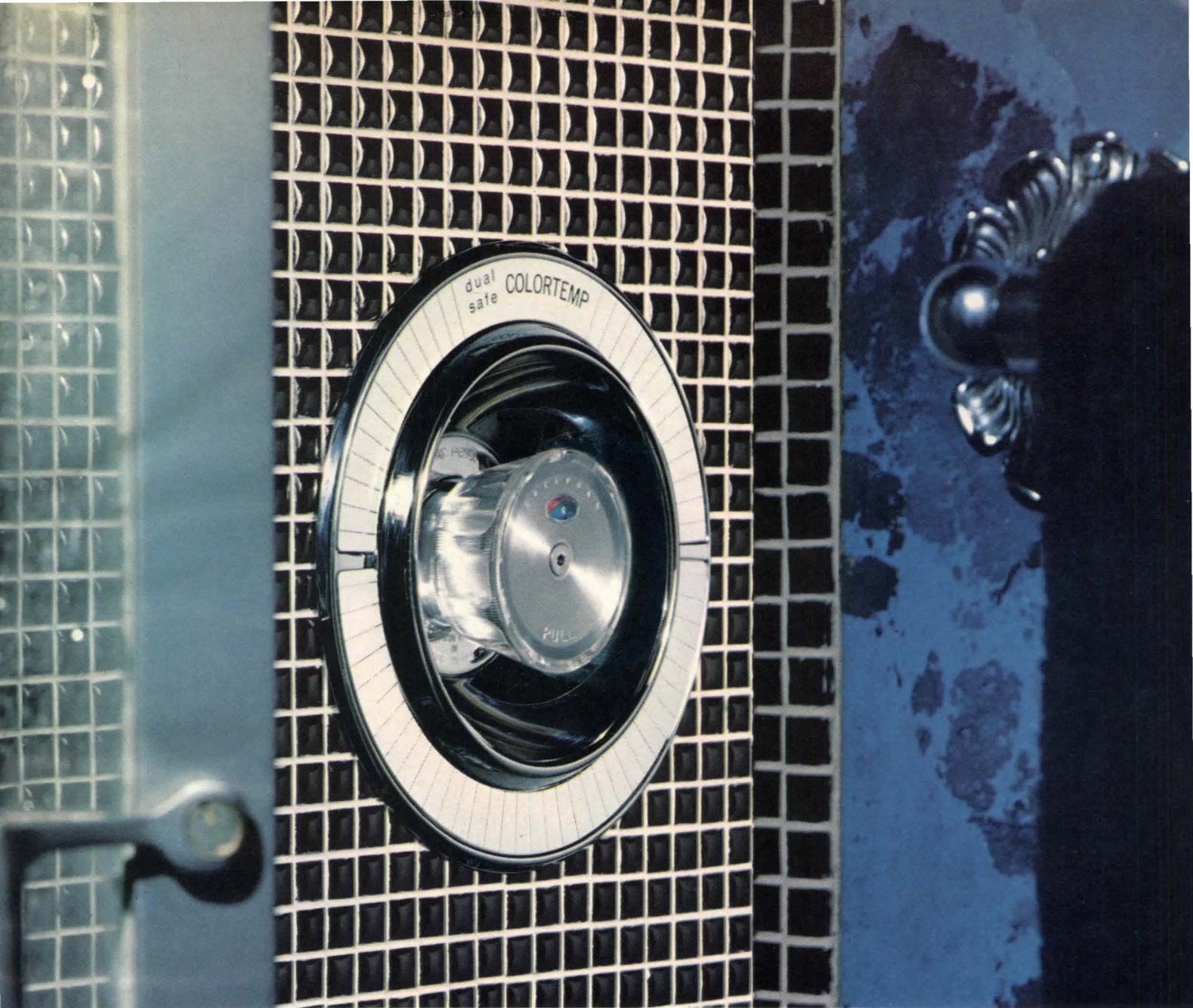
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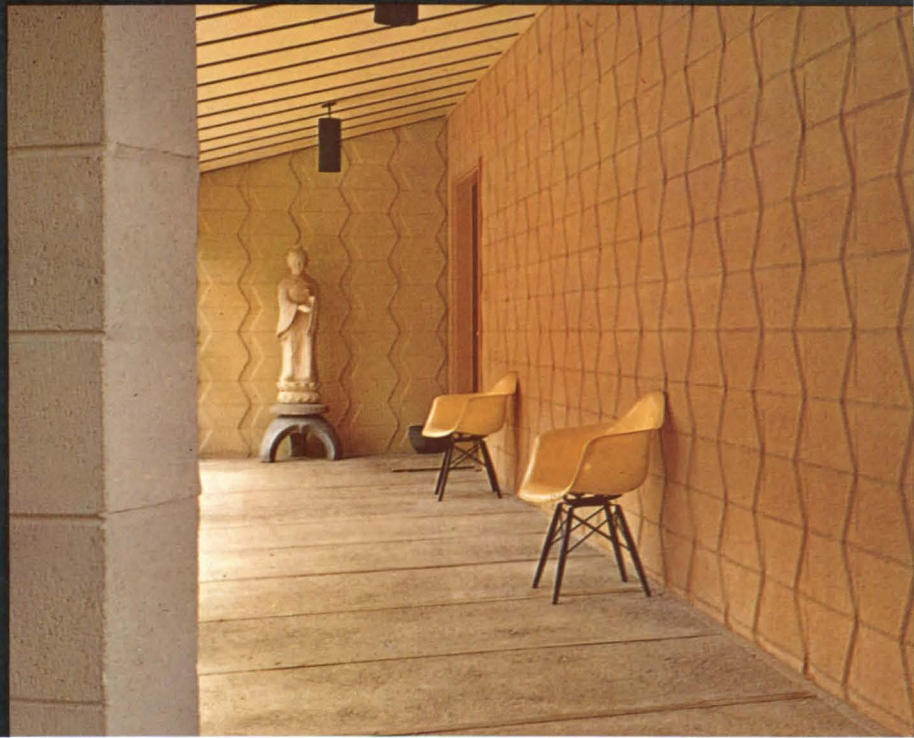
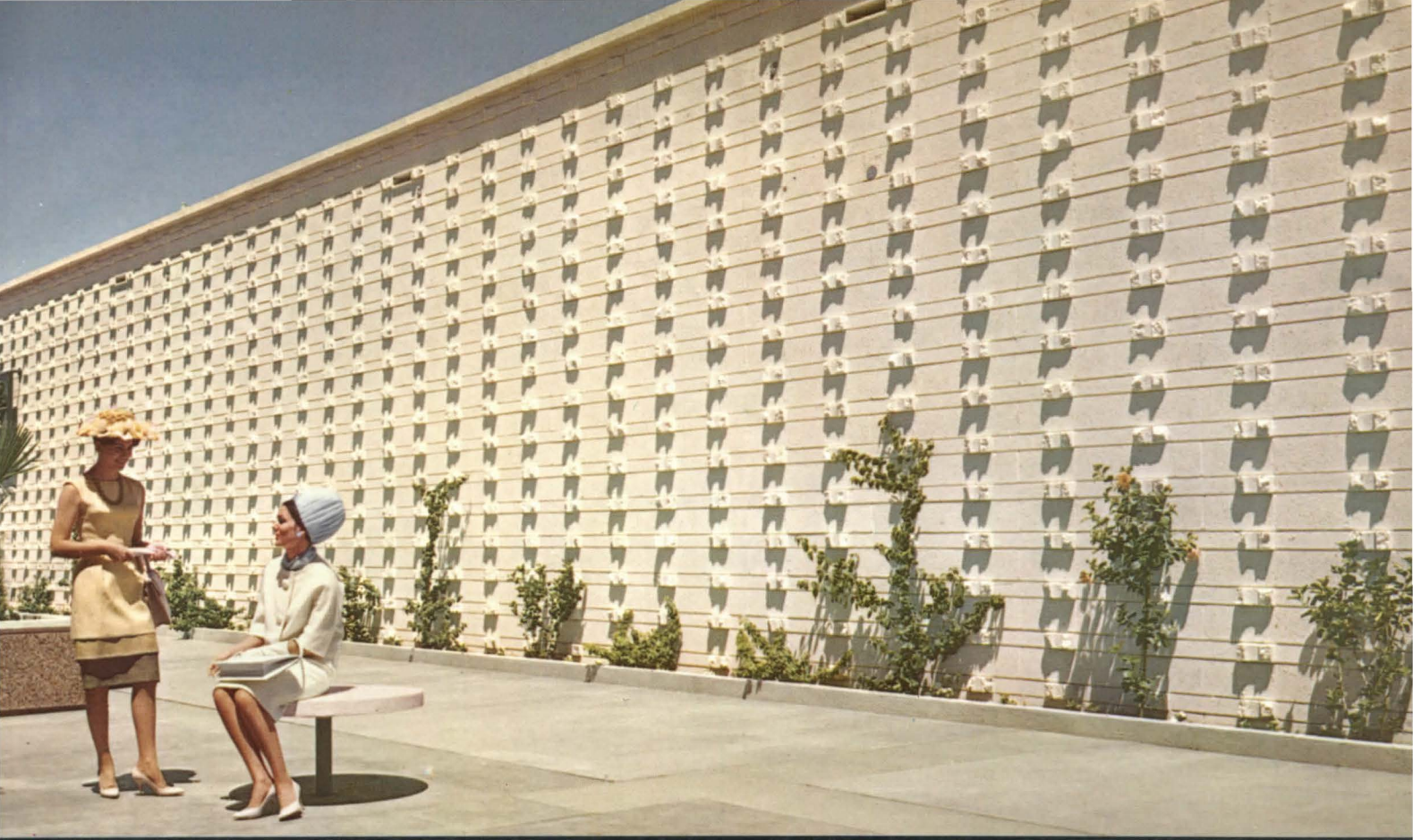
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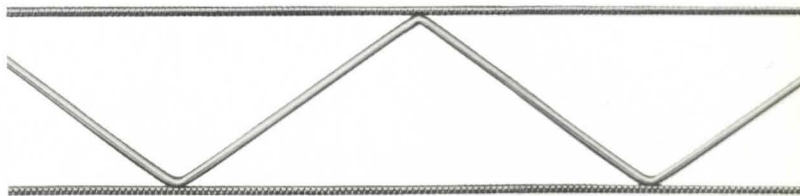
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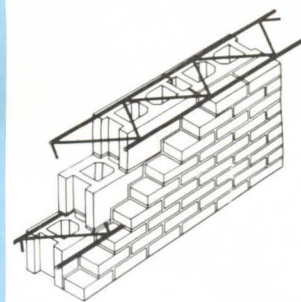
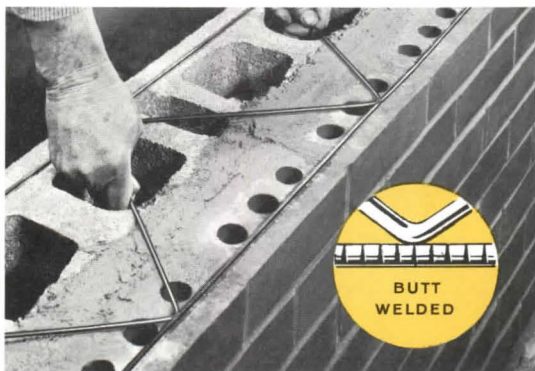
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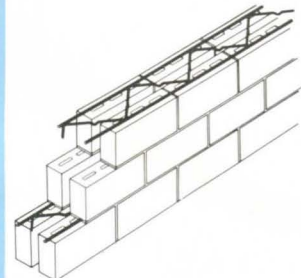


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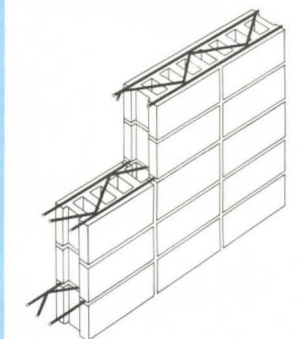
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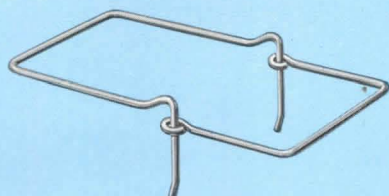
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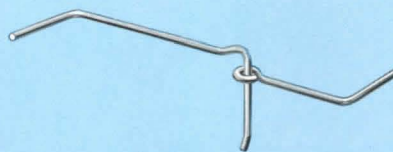
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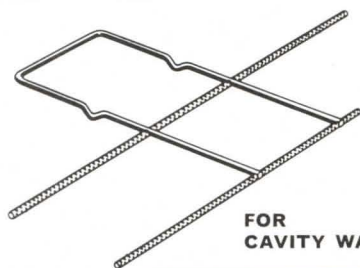


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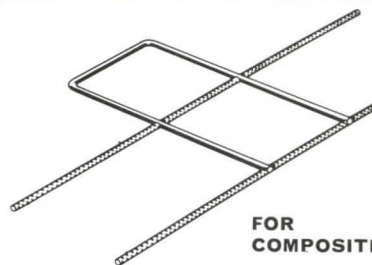


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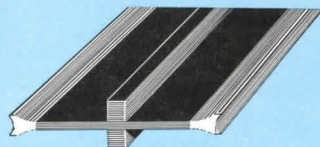


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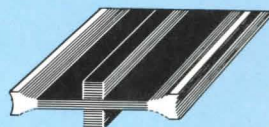


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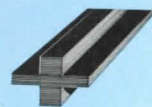
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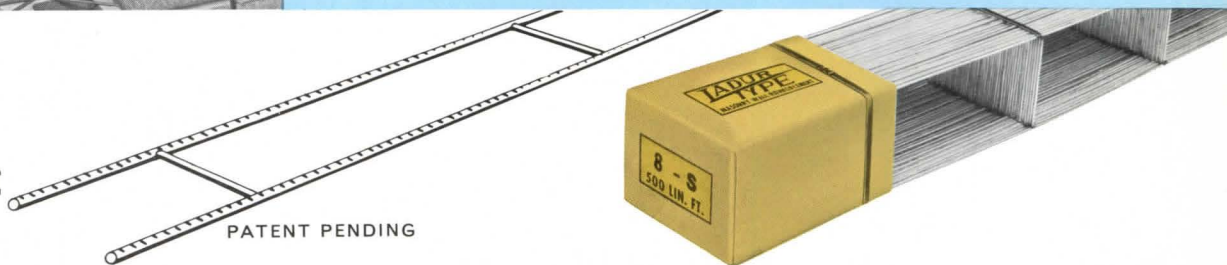


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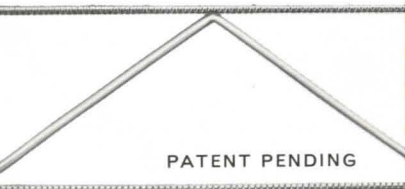
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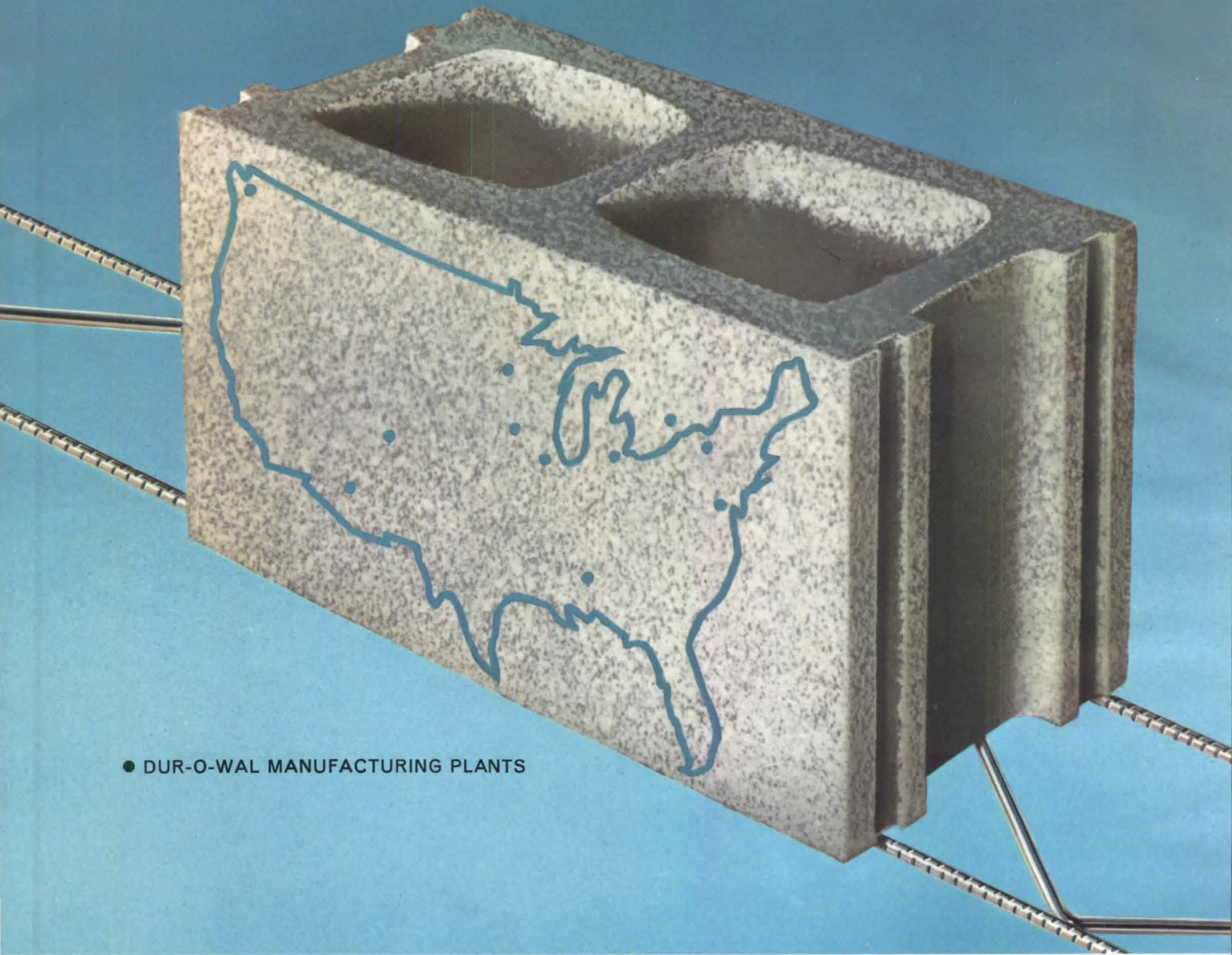
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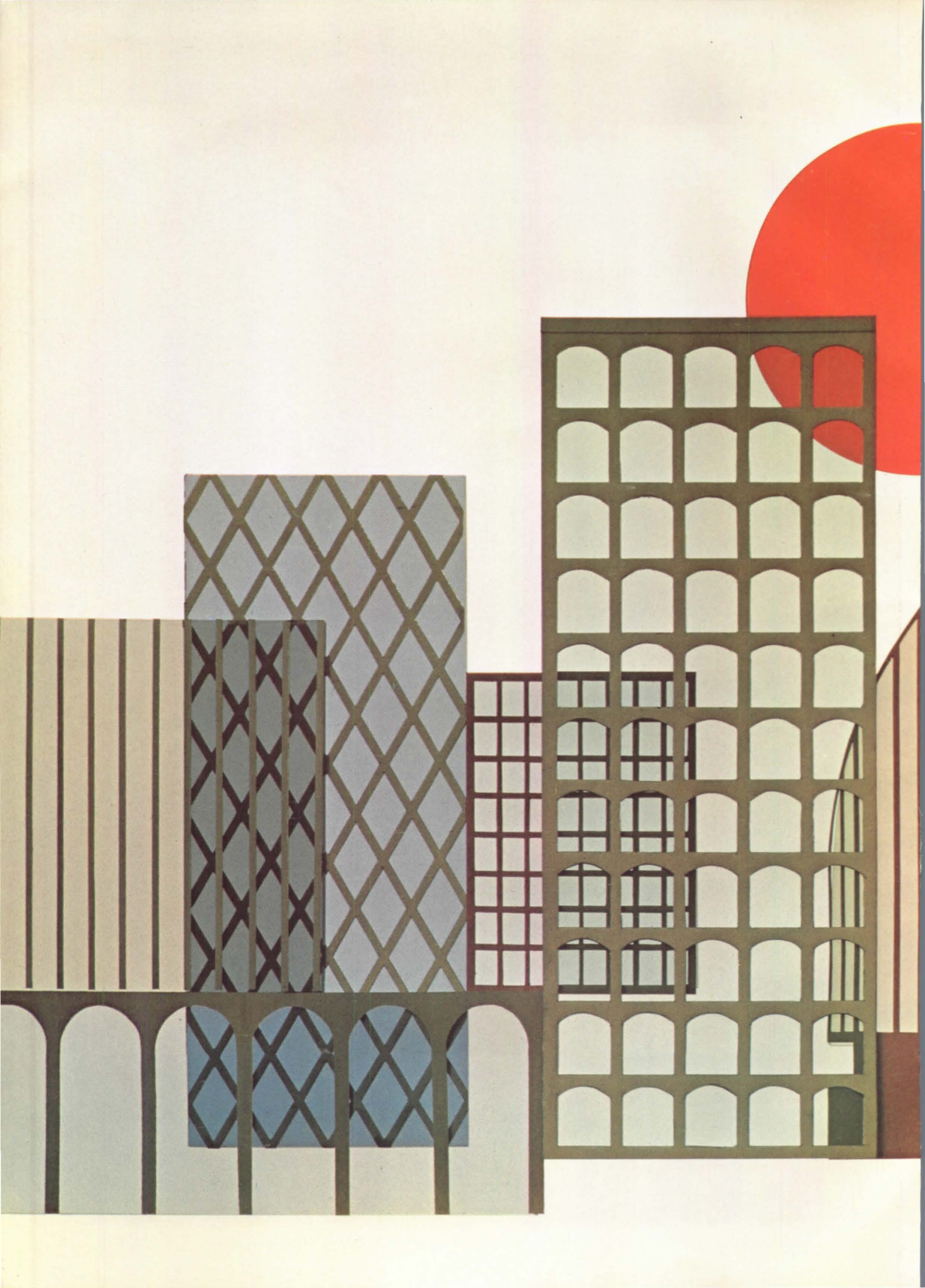
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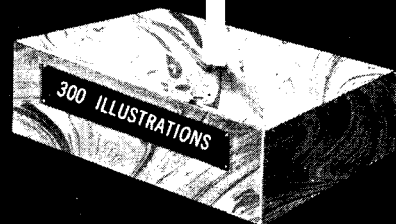
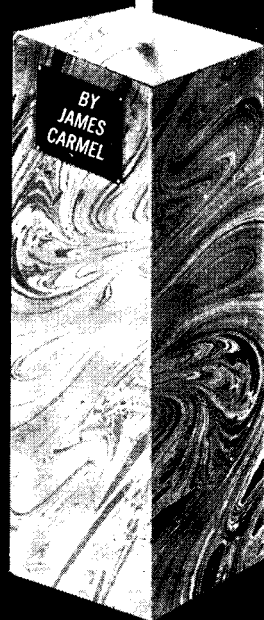






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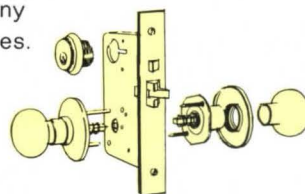
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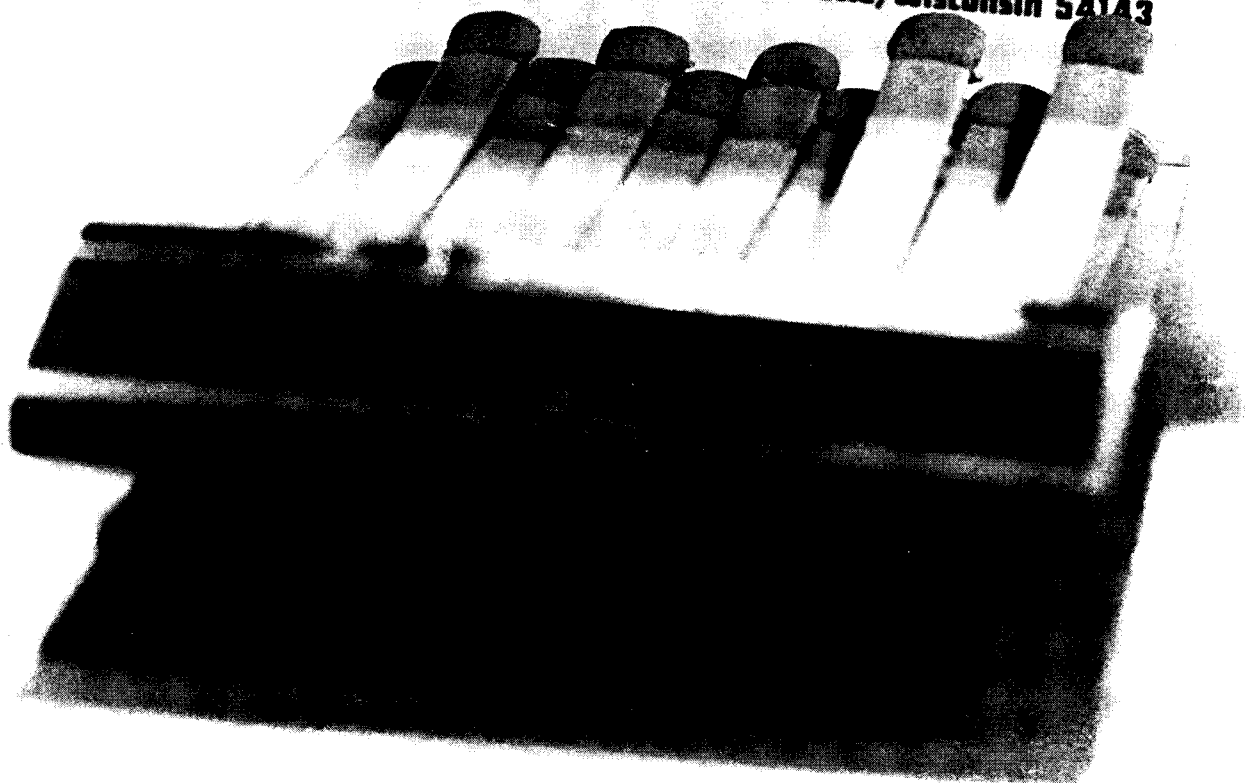
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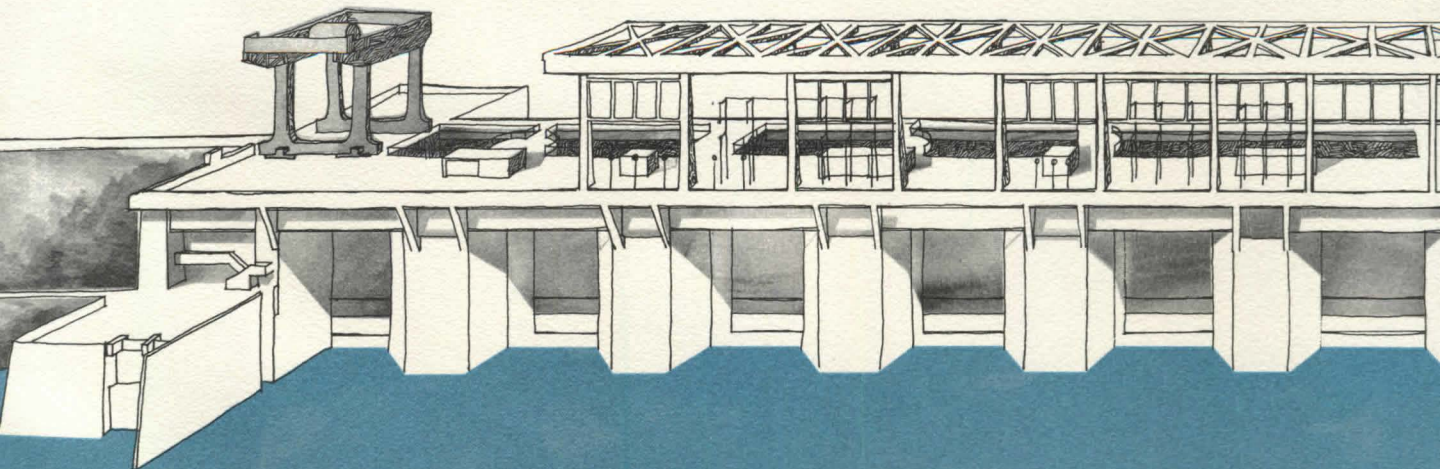


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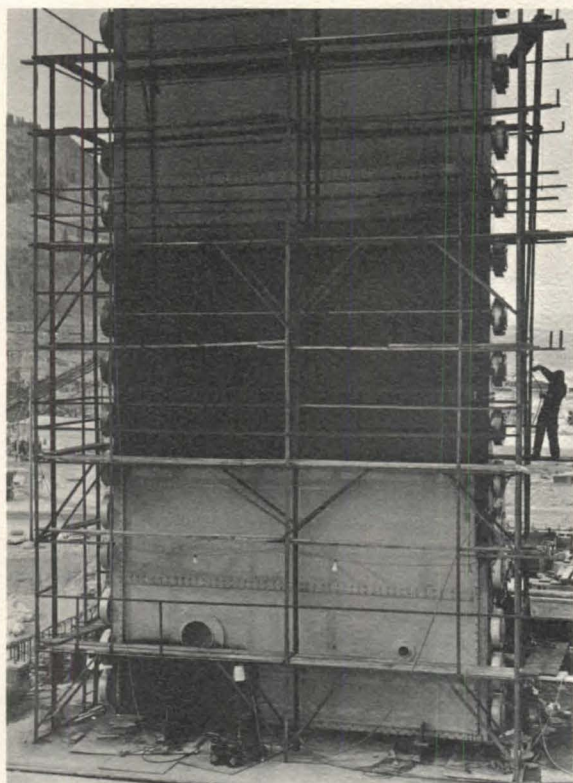


On the following pages you'll see 4 specific examples of how Koppers building products have helped architects and engineers obtain greater latitude of design and save money for clients. These Koppers products are either permanent in themselves, or give permanence to other materials.

Wells Dam, Columbia River



Unique dam gets steel corrosion protection from Koppers coatings



Wells Dam on the Columbia River in Washington is drawing world-wide attention for its unique design featuring power units, spillways, and fish passage facilities all in a single structure . . . the "Hydrocombine."

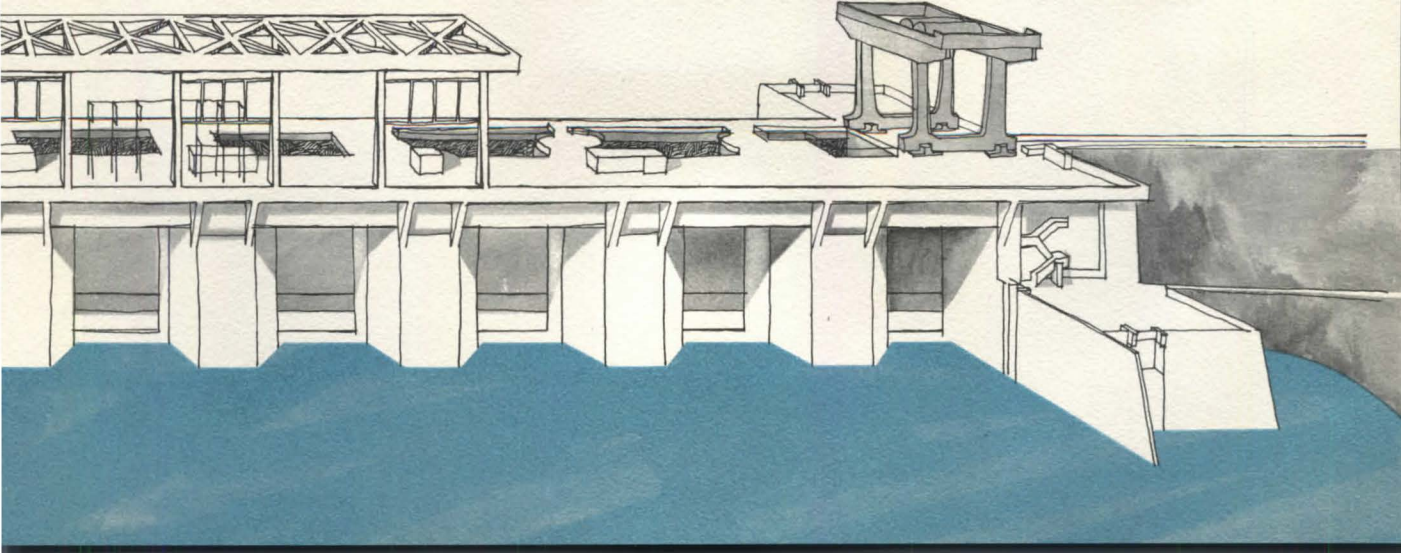
Work began on November 1, 1963, and first power will be on line by September 1, 1967. By the end of the year, initial peak power production will be 618,000 kilowatts from seven units. Projected peak production will be about 820,000 kilowatts from ten units. Overall length of the dam is 4,150 feet; height at the "Hydrocombine" is 185 feet from bed rock; the reservoir will stretch upstream for thirty miles to Chief Joseph Dam.

To protect the dam's huge power intake gates, spillways, and draft tubes from corrosion, almost 20,000 gallons of Koppers coal tar coatings were applied. The steel was sandblasted and shop-coated with Bitumastic® 11S Primer, with field application of Bitumastic 300M of 16 mils minimum thickness. The coal tar coating provides excellent corrosion resistance (even when immersed in salt water) and can withstand considerable physical punishment from the impact and abrasion of logs or other debris.

Though this project is very new, the Koppers coal tar coatings used here are not new or revolutionary. They are the same basic coal tar coatings that have been used successfully for years. For instance, the condition of the original Bitumastic coating of the penstocks of the Panama Canal, after minimal maintenance and nearly a half century of continuous service, is still being rated today by inspection teams as excellent.

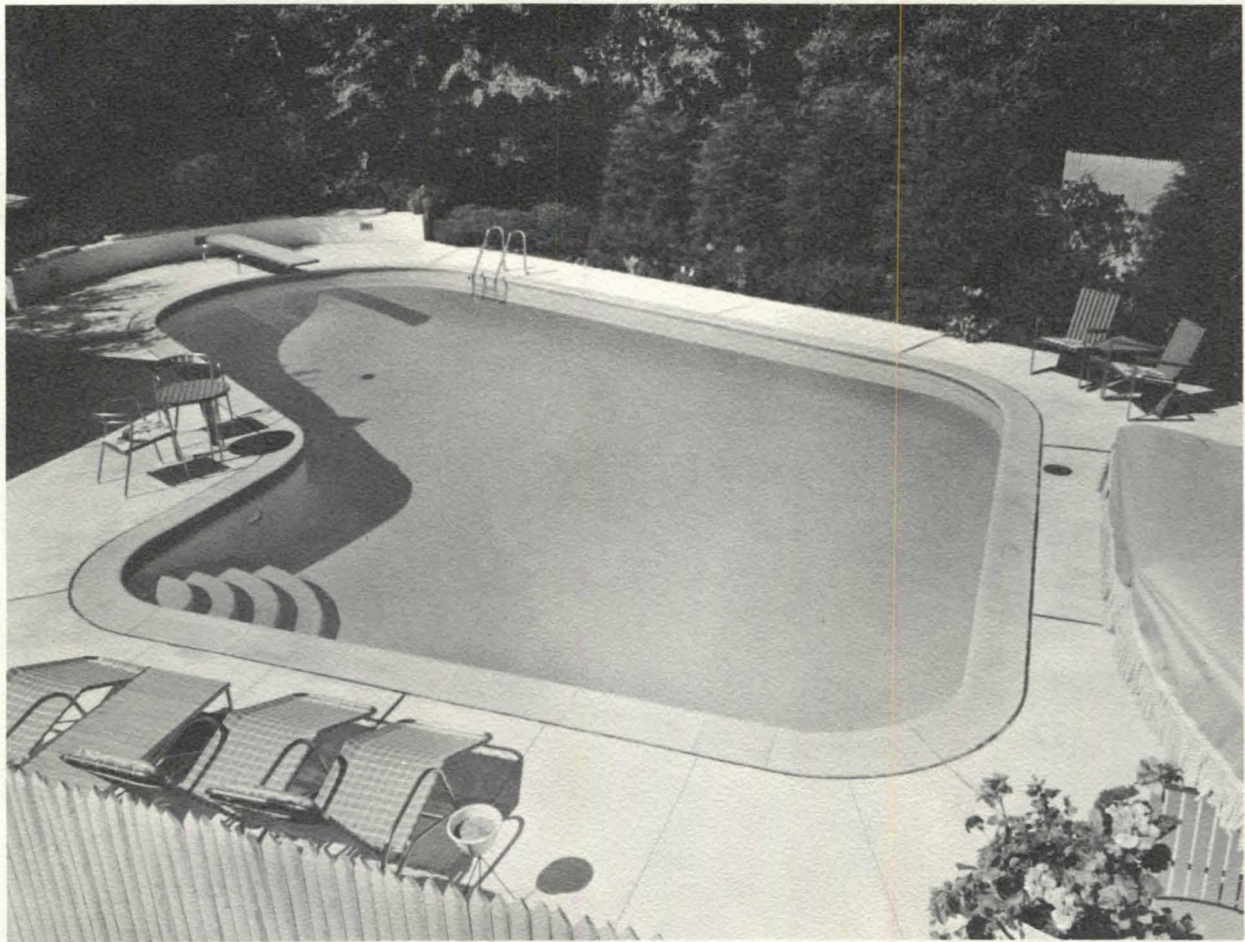
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Owner: Public Utility District No. 1 of Douglas County, Washington
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Consulting Engineer: R. W. Beck and Associates
Contractor for the Hydrocombine: Douglas County Constructors
(Morrison Knudsen Co., The Kaiser Co., Perini Corp., Peter Kiewit and Sons Co., Utah Construction and Mining Co.)



4

Award winning pool protected with Ramuc Enamel



Designer: Wagner Aquatech Pools

When this pool was completed in 1960, it received a Silver Medal Award in a national design competition for swimming pools. Award winner or not, the builder used good judgment when he protected the concrete with Ramuc® Enamel. It stood up well and gave the pool a clean, bright appearance. The pool was repainted in 1965—with just one coat of Ramuc Enamel, Aquagreen.

Every pool material—concrete, plaster-finish, steel, aluminum, fiber glass—needs a different type of paint, and Inertol® makes them all: rubber-base, epoxy, vinyl, and more. And they are all easily applied with brush, spray, or roller. When repainting a pool, the new coating must be compatible with the old coat, in order to get a good bond.

Here's a handy chart to keep for reference on concrete pools. For other materials, or for more information or specifications, check the coupon.

Concrete Pools*	Coats	RAMUC Types	Coverage†
Unpainted or sandblasted	1	Undercoater A (chlorinated natural rubber-base)	200
	1	Enamel A (chlorinated natural rubber-base)	250
Painted with: Chlorinated natural rubber base	1	Enamel A (chlorinated natural rubber-base)	250
Synthetic rubber base	1	Enamel PC (synthetic rubber base)	250-300
Vinyl-base	1	Enamel AV (vinyl-base)	250
Epoxy-base	1	Enamel EP (epoxy-base)	450

*If your pool is constructed of a material other than concrete, we'll furnish specific information without charge.

†In square feet per U. S. gallon. If a lighter color is used for repainting, two coats may be needed.

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CORROSION PROTECTION—CONCRETE & MASONRY	X	X			X													
PROTECTION OF ASPHALT PAVEMENT						X												
INSULATION											X	X						
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FIRE PROTECTION FOR WOOD								X										
TERMITE, ROT & DECAY PROTECTION						X		X	X									
SOUNDPROOFING														X				
WATERPROOF ADHESIVE FOR WOOD															X			
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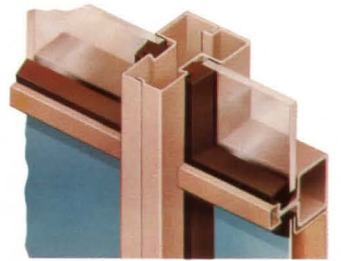
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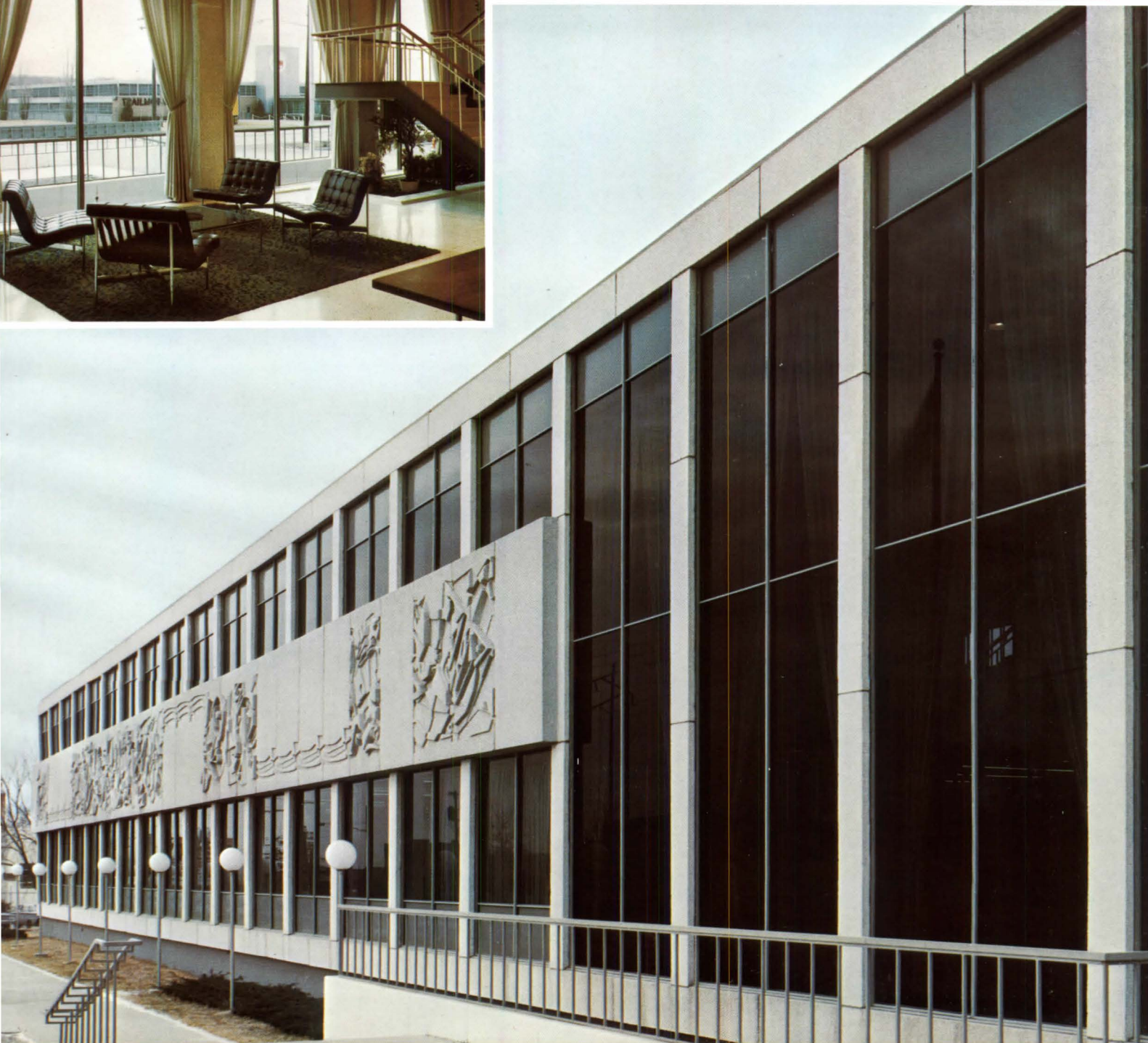
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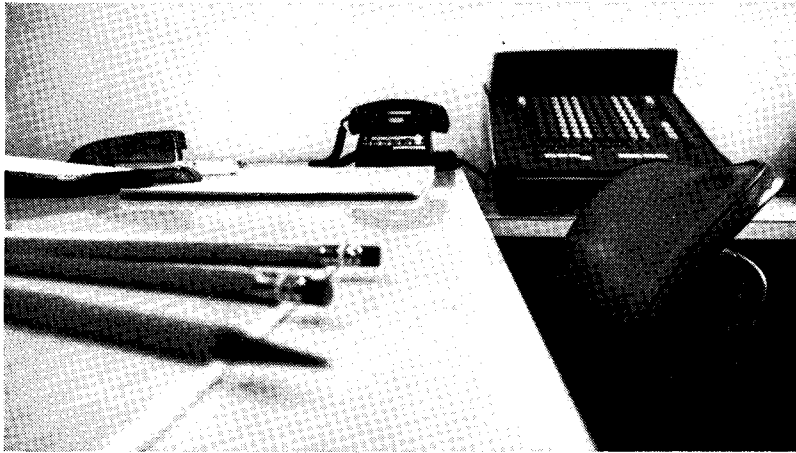


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P/A NEWS REPORT

Progressive Architecture's Monthly Digest of Buildings, Projects, People and Products

July 1967

ON THE OTHER SIDE OF THE HIGHWAY

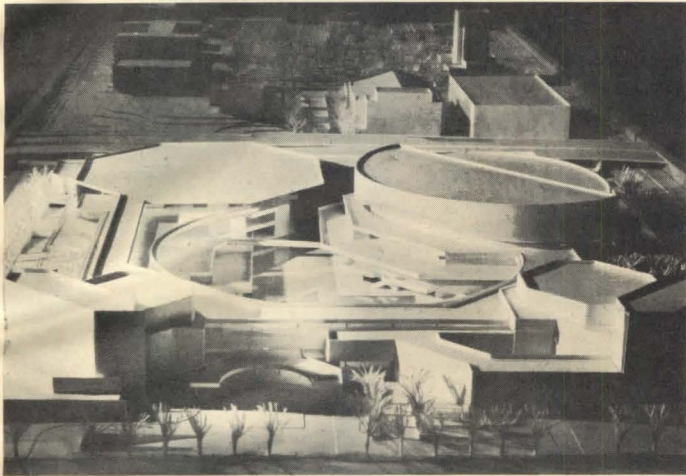


Photo: Jimmy Wilson Studios

BIRMINGHAM, ALA. Geddes Brecher Qualls Cunningham of Philadelphia won a contract to design a \$25 million civic center for Birmingham. Their entry in the nationwide competition was selected over 275 others, and their contract, soon to be signed, will be worth something more than \$1,300,000.

Sponsored by the Birmingham-Jefferson Civic Center Authority and the AIA, the competition called for a 13,000-seat coliseum, a 100,000-sq-ft exhibition hall, a 3000-seat concert hall, and a 1300-seat theater. Birmingham has, with good reason, been concerned with the image it presents to the country, and, indeed, to the world, and the Civic Center is a step toward giving that image a patina of respectability. There is talk of luring New York's Metropolitan Opera here once a year, and although Birmingham has no theater or symphony group of note, perhaps an attractive new performing arts arena may spark improvement.

What Alabama has is a football team. Not too long ago, the Alabama legislature approved a request from the athletic department at the university for a private airplane to be used in scouting promising high school prospects. One wonders whether the Alabama Arts Council will be given the same treatment when it asks for \$150,000 a year to be used in part

for maintaining the center. (Already the legislature has approved special taxes on cigarette and hotel rooms to provide capitalization for a bond issue for funds with which to construct the center.)

The new center will be located on four full city blocks just north of the City Hall and the Jefferson County Courthouse. A raised interstate highway will cut between the two areas. The center talked the railroad into moving its tracks, now running between the two, with the aid of the Federal urban renewal funds. And there is some hope that the Bureau of Public Roads can be talked into changing its plans. As it is, the public highway is the one flaw in an otherwise laudable plan.

The Geddes Brecher Qualls Cunningham design has a layout that in a way apes Lincoln Center, but which looks as if it will be much better. The four buildings are grouped tastefully around a sunken central reflecting pool. Running around the pool and connecting the buildings are amphitheater-like steps, which become three tiers of walkways and promenades when they get to the building level. Beneath the entire site will be a parking garage for four thousand cars. All buildings are roughly circular, low and flat in silhouette, of cast-in-place concrete with precast skins, and large areas of glass, facing

the reflecting pool. They are not so unusual in shape or design that they might cause controversy in Alabama, and, in their quiet way, they do tie in with the civic buildings on the other side of the interstate highway.

Site clearance, accomplished with urban renewal funds, will get underway soon in the area of rundown homes and warehouses. Construction should be completed by 1971, Birmingham's centennial year.

Second prize of \$15,000 went to Ralph Rapson of Minneapolis, and third prize of \$5000 to Fridstein & Fitch of Chicago.

Jurors for the competition, which was the largest in terms of money ever held under AIA regulations, were: architects Max Abramovitz, Gyo Obata, John Carl Warneke, and theater experts Harold Burris-Meyer and John Fernald.

SOLTAN BECOMES CHAIRMAN AT HARVARD

CAMBRIDGE, MASS. Upon announcement that Benjamin Thompson, chairman of the Department of Architecture at the Harvard Graduate School of Design, would take a year's leave of absence, Jerzy W. Soltan was appointed as the new chairman. Soltan, who has been the Nelson Robinson, Jr., Professor of Architecture and Urban Design, was long an associate of Le Corbusier in Paris. Raised and educated in Poland, his career in that country was interrupted by World War II, during which he spent six years as a German prisoner of war. After the war, he went to France, where he collaborated with Le Corbusier on some of his most important projects: the design of the city La Rochelle-Pollice in western France; the master plan for St. Die in Alsace, the Unité d'Habitation in Marseilles, and the famous books on the modular system. After four years in France, he

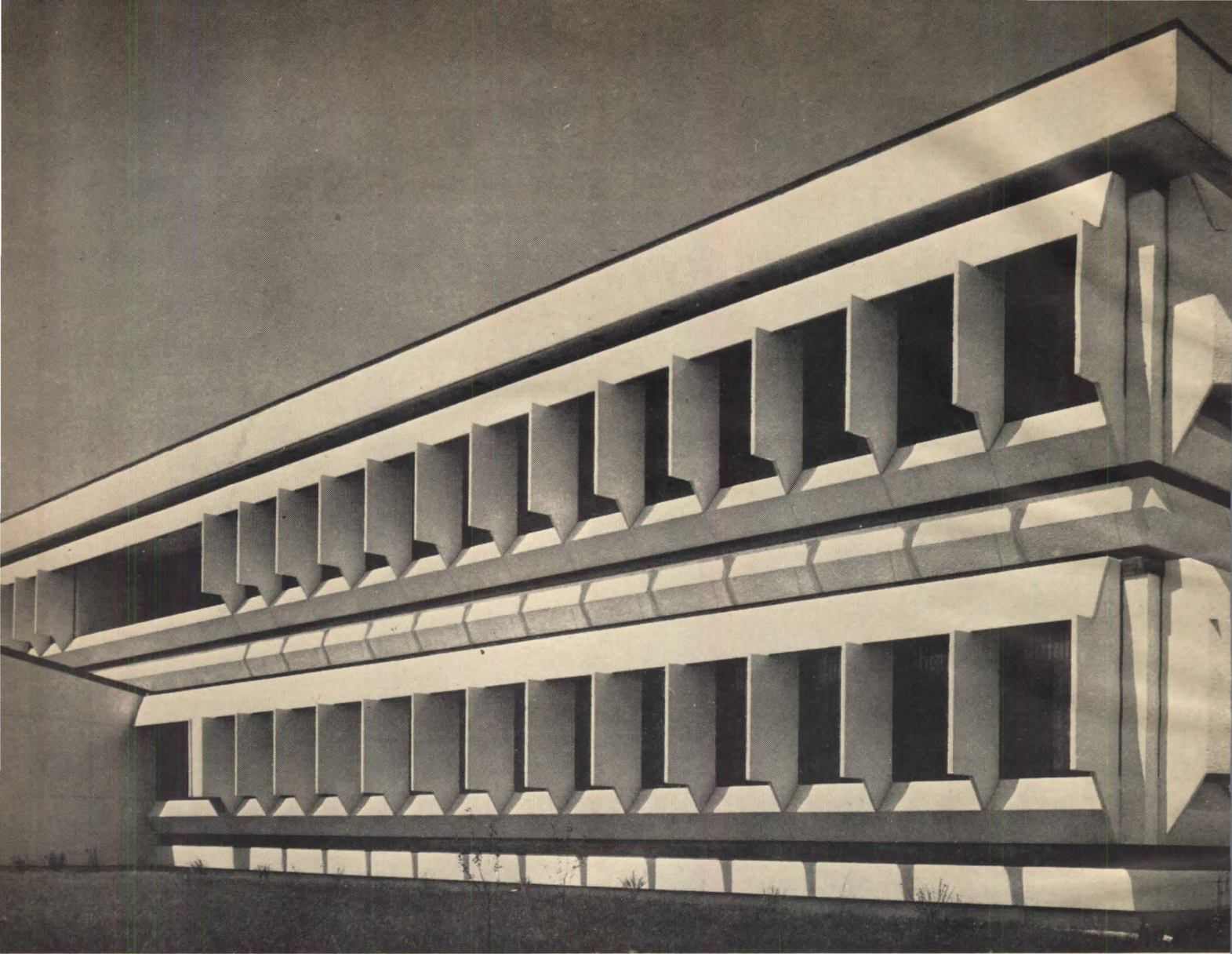
practiced for a time with the Belgian architect Claude Laurens in Brussels, then returned to the Research Institute of Fine Arts in Poland, where he specialized in architecture and urban design, including plans for the commercial center of Warsaw-Wola, the commercial center of Solsztyn, the sports center of Warsaw-Mokitow, and the Warsaw Central railroad station. He also designed exhibition pavilions and industrial exhibitions in Paris, Damascus, New Delhi, Brussels, and New York. In addition to his teaching at Harvard, Soltan taught at the Ecole Nationale Supérieure de Beaux Arts in Paris, and the Academy of Fine Arts in Warsaw. In 1956, he received an international gold medal for his Damascus exhibition hall.

Although Professor Soltan plans no sweeping changes in the curriculum, he will establish a permanent curriculum committee with student representation to review regularly the effectiveness of the teaching program.

THE SEARCH FOR A NEW ARCHITECT: THE AIA IN FUN CITY



NEW YORK, N.Y. In all, 5120 persons attended the 99th running of the convention of the American Institute of Architects. Only 1822 of these were corporate or associate AIA members, but they seemed willing to concentrate



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on their prime reason for being in New York. All the convention sessions were well attended, and although not every event drew the 1500 or so persons that Marshall McLuhan did when he gave the Purves Memorial Lecture, it was obvious that the business at hand competed successfully with the other lures of New York. One corporate member we know spent almost every free evening at Arthur, Sybil Burton Christopher's discothèque, but he never got there before dinner.

This year's theme was "The New Architect," probably a fitting topic, since the AIA completed its first century of yearly formal meetings. But the convention seemed much more concerned with the present architect than with the new one. The gold medal, for instance, went to Wallace K. Harrison; of the honor awards, five went to Skidmore Owings & Merrill and two to Walter Gropius' Architects Collaborative. And Charles Luckman, one of the convention's major speakers, is hardly a new architect, although he did point out that the fee system is "archaic," and "immoral." (Luckman's office charges either a lump sum fee or, where the scope of a project and the budget are unknown, a lump sum fee plus costs.)

Perhaps John Portman, who also spoke, is more representative of what the architect will become: "The practice of my firm is 60% self-generated," he told the audience, and perhaps because he is so often his own client his work shows a concern for environment and a thorough knowledge of subjects thought peripheral to architecture, such as finance and real estate (see this month's *P/A OBSERVER*).

But if the convention showed a reluctance to leave the old aside, it provided at least a few glimmers of what the new might be.

Marshall McLuhan, for example, sees the advent of an electronic age, where the senses are bombarded by a host of stimuli. "The Western world," he pointed out, "long based on visual values of rational continuity, finds itself cut adrift from these sensory ground rules. . . . The multi-sensuous world is one of making in which space is not a

cavity to be filled, but a possibility to be shaped." In this, he agrees with scientist Arthur C. Clarke, who reminded the convention that already one generation has grown up who never knew a world without TV. "One communication revolution has taken place in our lifetimes. The next revolution, perhaps the final one, will be the result of satellites and microelectronics, which will enable us to do literally anything we want to in the field of communications and information transfer — including, ultimately, not only sound and vision but *all* sense impressions." Clarke envisions entire populations brought suddenly into the 20th Century because of satellite television, which will do away with the need for ground stations in countries lacking the technical know-how or financing to build them.

For the most part, though, their words seemed to fall on minds otherwise occupied. McLuhan, partly because of the elliptical thought patterns and hesitant delivery, which seems to be part of his message, set his audience into a paroxysm of fidgeting and coughing after only 15 or 20 minutes. Clarke came off better, but it was evident he was speaking of a world only a few of his listeners believed they would have to practice in.

Can the Young Be New? It is among the students that the new architect is already being formed. Clarke spoke briefly to the students one morning, telling them of the worlds opening up beneath the sea and in space, both of which will require special types of architecture. He spoke of hospitals in space and orbiting hotels and this time his audience was right with him. Questions came from students who had written the National Space and Aeronautics Administration for whatever information is available and from students who seemed to be avidly following undersea exploration.

In part, whatever the new architect will become is up to the schools. The convention heard Dr. Harold Taylor, a past president of Sarah Lawrence College call for the teaching of arts in all schools at all levels. "The problem," as Taylor sees it, "consists in

developing the sensibility of the young, and of everyone not young, toward visual experience, teaching people how to see." To an extent he is right, and there can be no doubt that such an aroused sensibility would make an architect's job easier. But the problem for an architect is no longer just visual. Roger Katan reported (to the students) on a study done by a

self to acknowledge and incorporate these changes. And the convention heard Dean Robert Geddes of Princeton outline briefly a study he is doing in the hope of bringing many disciplines into the architectural curriculum.

The Change at the Top. But Taylor is right that good environments and good architecture become a lot more



Spectacular Canadian exhibit.

Photo: B&G International Photos

committee of the Association of Collegiate Schools of Architecture. It called for a system of internships, during which students go out into the cities to learn first hand of the problems of people who live there. "Architectural training," he maintained, "for too long has been developing a visual aesthetic (a gift of the 19th Century) and it is still by the visual impact of their buildings that the architects wish to be judged and to judge each other. Visual strength tends to exclude consideration of environmental comfort and efficiency, that which I call the fifth dimension, one of well being, where the visual is on a par with socioeconomic criteria for a complete harmony. We still covet the single building as a chance for self-expression." He sounded a little like McLuhan, plugging for an understanding of the changes taking place around us. If such changes are seen and understood, he and McLuhan would both say, then we become able to shape them rather than having them shape us.

Slowly, of course, architectural education is forcing it-

possible with an enlightened population aware of what can be done. New York Mayor John Lindsay tried to tell what New York was doing under his guidance to use the talents of architects and make it easier for them to exercise that talent. He announced the appointment of a five-man Urban Design Group within the City Planning Commission "to advance the cause of aesthetics in every area of the Planning Commission can influence from street signs to skyscrapers." He even had his Housing Commissioner announce to the convention that architects working on middle-income housing for the city would get a 30% increase in fees. And his Parks Commissioner, August Hecksher, showed slides, taken from a helicopter, illustrating the little realized fact that New York is a seashore city.

It took Philip Johnson more than 30 minutes of rapid monologue to set the record straight. "Sure New York City is surrounded by water, but you have to get up in a damn helicopter to see it." According to Johnson, New York is still a mess and it still takes over six months

to get an architectural plan approved and implemented by the city. The attitude toward architecture seems to have improved at the top levels of New York City government, but the vast bureaucratic morass below remains unaware of the change.

Everybody Dance! The convention was not all work and no play. There was a swinging reception in the vast tapestry-hung foyer of the Metropolitan Museum of Art. For some, there was a nighttime boatripe, with jazz band, through the harbor. And there was a night at the ballet at Lincoln Center. Dressed in formal exquisiteness for the ballet, the architects and their wives proved once again that the old architect is concerned with the visual: It was as handsome a group as has filled Wallace K. Harrison's Metropolitan Opera House. But, as is often the case with their buildings, the architects were not as sophisticated as they looked. One ballet lover we know, who happened to be there that night to see Nureyev and Fonteyn dance a new ballet, *Paradise Lost*, with the Royal Ballet Company, told us he had thought at first this was the perfect ballet audience. No one talked, or even coughed, during the performance. But as the performance went on, he noticed that neither was there any reaction to the excellent, sometimes spectacular, dancing. Nureyev, he thinks, used to the warm applause of the afficianodos, only made one curtain call, as if put out by what he considered an inadequate appreciation. Perhaps it did him good. Following the ballet, everyone went dancing in the vast reception hall in Philip Johnson's New York State Theater next door. "It's the happiest night of my life," said Johnson.

Exhibits. Almost as many product exhibitors as architects showed up. There were 1163 representatives of 123 product suppliers, but only one group, 14 Canadian producers, had much to show besides smiling faces. Confined to one small room, the Canadian exhibit of mirrors and shipping crates that doubled as display cases gave an illusion of limitless space. It was so handsome that it had

everyone talking and was presented a special commendation scroll by the AIA. "In the unanimous opinion of the Product Exhibit Awards Jury, the Canadian Exhibit was the best product exhibit the jury had ever viewed." Said one spokesman: "Education is the prime objective of the exhibits section of the convention, and the appeal to an architect must be through his sensitivity to sophisticated presentation and fine design." The U.S., it turns out, can learn a lot by watching Canadian design.

By vote of the architects present, American Saint Gobain Corporation won a special certificate of excellence for its exhibit. Second place was a tie between Libbey-Owens-Ford Glass Company and Art Metal, Inc./Knoll Associates, Inc. Third place went to the Weyerhaeuser Company.

Photo: B&G International Photos



President-elect Kussabaum.



Lev Zetlin tells it like it will be.

Hoving's new joint.

Photos: except as noted: Ed Carpenter



The students react to the Gold Medalist.

Photo: B&G International Photos



"Take that back."



"The . . . er . . . medium . . . er . . . is the whatchacallit."

Photo: B&G International Photos



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ARCHITECTS IN VIET NAM

Photo: B&G International Photos



"That's a navel attitude to take."



Business session convened.



Tour of the Seagram Building.

July 1967

SAIGON, SOUTH VIET NAM. As a group of professionals met in New York City during last month's AIA convention to protest the war in Viet Nam, other professionals, architects, and engineers were actively participating in it.

Of the several American A & E firms now operating out of Saigon, probably the largest is Adrian Wilson & Associates (AWA) of Los Angeles, which, besides the master planning of 18 air bases (six of which are entirely new facilities), has put some \$200 million worth of construction into place there and has \$30 million more on the boards. AWA's involvement started in early May 1965, about the time of U.S.'s stepped-up activity in Viet Nam. Although AWA's contract was with the Navy (The Naval Facilities Engineering Command is in charge of all military construction in Viet Nam), the projects will be used by the Air Force and Army, and include planning and construction of U.S. Army headquarters for 60,500 men on a 23-square-mile site at Long Binh.

Opening an office in Saigon is not like opening one in, say, Des Moines, for everything had to be flown in — pencils, erasers, paper, lights, wastebaskets, typewriters — everything except drafting boards, which AWA built themselves. These materials, and personnel, converged on Saigon from other AWA offices in Pakistan, Korea, the Philippines, and the U.S. As preliminary drawings got underway, it became apparent that the initial office space taken by the firm was inadequate, and, in crowded, hectic wartime Saigon, no more suitable space could be found. What AWA did, was to take over a French villa in a fancy Saigon residential neighborhood. The villa needed some renovation, of course, and for a year the staff rehabilitated it from home into office. During that year, design work went on in the midst of the noisy activity of a small private army of carpenters, plasterers, and painters. By the time work was finished, the AWA staff, including secretaries, soil analysts, civil engineers, sanitation engineers,

and architects and planners, numbered 140. Almost all were recruited in the States, checked for security by the Government, given a medical exam, and sent to Saigon, where, because of an impossible civilian traffic situation, they had to be met by company cars, which also had been flown in.

All this hubub in a residential neighborhood attracted attention, little of it favorable. And then they set up their own auxiliary power plant. With the electricity situation in Saigon, there could be no air conditioning, and, perhaps more annoying, only sporadic blueprint machine operation. Finally, the general manager cabled the home office for an electric generating plant. One was rounded up and flown to Viet Nam. With it, the office there could work on a round-the-clock schedule that military demands dictated.

If the Saigon office was pleased, its neighbors, particularly a Frenchman in an adjoining villa, were not. The Frenchman called the U.S. Embassy to remind them of his and General de Gaulle's feelings about the situation in Viet Nam in general and the noise of electric generators in particular. The AWA manager sympathized, but the generator is still producing light, power, and French complaints.

Another problem is communications. Anyone who has tried to make a phone call in the Far East comes home with a respect that approaches awe for AT&T. In Viet Nam, guerillas cut phone lines, and, when it rains, the service goes out anyway. Even if you do get a connection, it sounds as if whoever you're talking to is speaking in a whisper — underwater. You have to shout a lot on the phone. Whenever a person makes a phone call, he can be heard for a couple of hundred yards.

Naturally, the most pressing problem is the security of men and property working under battle conditions. So far, AWA's record has been good. All AWA personnel working in the field are armed, and at least on-site selection trips are accompanied by platoons of soldiers. The only reported

P/A News Report 41

22 at the Hotel America in Houston, Tex., will feature workshops on the impact of

Convention of the California Council, AIA, to be held October 5-8.

will connect by tunnel to one of the stops on the expanded MBTA system.

July 1967

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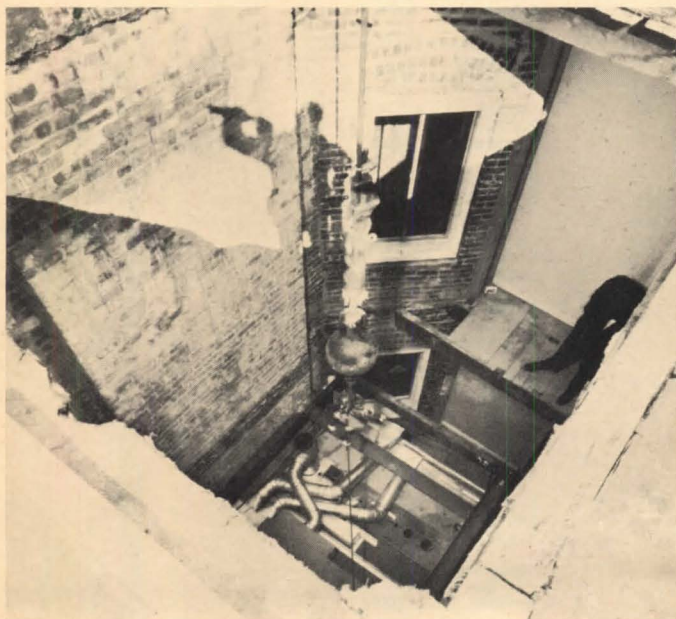
48-HOUR REHABILITATION. WHAT NEXT?

NEW YORK, N.Y. Today, the loudest noise in the 600 block of East 5th Street on Manhattan's Lower East Side is the chirping of pigeons. For two days in mid-April the quiet that was to come could only be taken on faith. For, in a 48-hour period during which the tenement building at 633 was completely rehabilitated, the seeming chaos of frantic, intensely organized activity kept the street awake to the sound of sledge hammers, the whine of cranes, the shriek of foremen's whistles, and later the sonorous, amplified tones of speeches by city and Federal officials.

As almost everybody knows



Preassembled kitchen-bathroom core unit being lifted to roof of building.



Core unit being lowered into building for installation.

by now, this 48-hour rehabilitation was the final step in an experimental program that was started more than a year ago (see p. 62, MAY 1966 P/A). The idea was to gut an existing run-down building by cutting a hole in the roof and taking out all debris in a large bucket lowered through that hole. Once the building was cleared, walls, ceilings, floors, heating plants, and preassembled kitchen-bathroom units would be lowered through the roof and secured inside. For almost a year, Conrad Engineers who were backed by \$1 million of financing from HUD experimented on adjacent buildings at 637 and 635 E. 5th Street. With the help of various industrial suppliers, they developed a system of plastic coated flooring, an adjustable window unit, vinyl covered, washable

wallboard, a grid system ceiling, doors with split metal frames and pre-cut closets with bifold doors, and, of course, the preassembled kitchen-bathroom units. The latter, lowered through the roof, are stacked one above the other, providing facilities for apartments on each floor.

Gutting the building (debris spewed from the building down chutes from the windows and through the hole in the roof) and installing the new interior took 47 hours, 52 minutes, and 24 seconds.

Although the project proceeded in the glare of intense, favorable publicity, backed by the quiet skepticism of many professionals, it seems to have worked. Edward K. Rice, president of Conrad Engineers, puts the cost of 633's 48-hour renovation at \$11,000 per unit (there are 15 units)

— a cost that does not, of course, include the experimentation that went on beforehand. The \$11,000 compares with \$13,000 per unit for more conventional rehabilitation work in New York City and with \$7000 per unit that Rice had predicted a year ago.

Perhaps the most pleasant aspect of the project is that the work was completed without turning the 12 families who lived in the building out of the neighborhood. The day before work began, all personal belongings were put into storage, and the families were moved to a West Side hotel. "It was like a holiday," said Eli Escobar, superintendent of 633 last month. "Everyone was joking and laughing." The smiles still haven't faded. When the families returned, there was about two weeks of work to be done on the building: Some flooring had to be laid, some wiring put in and touch-up painting done, but the building was clean and the

apartments were light, convenient, and easily maintainable. A garbage chute takes garbage from each floor to a bin in the basement. No longer will trash have to be thrown out windows or left reeking in the hallways. It was as if TV's white knight had ridden by and touched the building with his lance.

Touched also was the spirit of the neighborhood. Already six other buildings on the block are undergoing renovation; three are almost completed. Escobar points to a building across from 633 and explains to a visitor that most of the neighborhood's undesirable characters had lived there; now, all are gone. The neighborhood is changing, but the desire to live there is strong. For some 35 vacant renovated apartments at 635 and 637, there are 300 applications. Rents have more than doubled. But no tenant will have to pay more than 25% of his income in rent. The difference will be made up by the Federal rent subsidy program. Eli Escobar, for one, is a happy man.

Plans are under way to use the 48-hr rehabilitation process on other buildings. The City of New York is talking of using it on 10 buildings, and both Tishman Realty Company and Conrad Engineers are negotiating with private contractors. It may be almost as successful a program as its developers make it out to be.


**OBITUARIES**

William H. Davis, an architect who for 14 years served in various advisory capacities on the New York State Housing Commission, died May 7 at the age of 73.

Ludwig K. Hilberseimer, former professor and director of the Department of City and Regional Planning at the Illinois Institute of Technology, died May 6 in Chicago. Hilberseimer was a long-time colleague of Mies van der Rohe, and headed the department of city and regional planning at the pre-war Bauhaus. After fleeing the Nazi regime in 1938, he joined the staff of Armour Institute in Chicago, a predecessor institution of IIT. Among his five books published in the U.S.

are a biography of his friend Mies, a history of the development for contemporary architecture, and a book on Berlin architecture in the 20's.

William Hussey died May 9 at his home in Toronto. He was 87. At the request of John D. Rockefeller, Sr., Hussey went to Peking in 1917 to plan and design the Peking Union Medical College, an institution that was important in the introduction of Western medical practice into China. After the medical center was completed, Hussey remained in China and became very active in diplomatic and political affairs. A friend of both Sun Yat-Sen and Chiang Kai-shek, he left China in 1949.

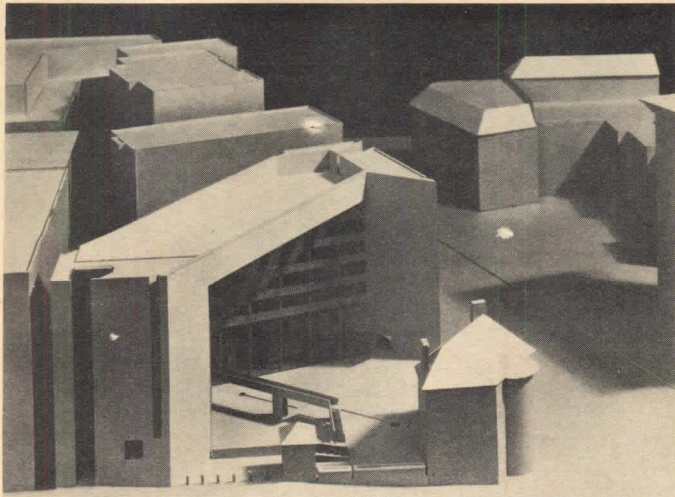


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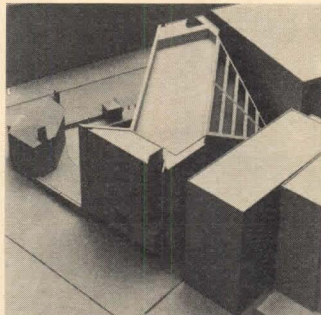
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REVISED PLAN FOR AIA HQ. SPURNED BY FINE ARTS COMMISSION



NEW YORK, N.Y. Mitchel/Giurgola Associates presented a revised design for the \$4 million AIA headquarters building to the convention in May. It was approved unanimously by the Board of Directors, but in late June, almost exactly a month later, it was turned down by Washington's Fine Arts Commission.

Asked to redesign their competition-winning entry, when the decision was made last year to expand the site behind the Octagon House, Mitchel/Giurgola maintained the design direction explored in their first design. However, they almost doubled the amount of floor space — from 70,000 sq ft to more than 130,000 sq ft. Principal changes were in the façade and in the provision of a single main entrance to both AIA functions and office floors from New York Avenue. Originally, the façade was designed as a circular one, faced in concave glass. In the revised design, above the two-story exhibit and conference area at ground level, the five office floors stepped forward successively over the garden space beneath. In this way, maximum space was left for the garden, and the interior



floors were shielded from the southwest sun. At the rear, the office floors stepped down and were skylighted. The building would serve as a backdrop for the Octagon, which will be sold to the AIA Foundation (final approval of the sale was given by the convention) and will be restored if the needed \$1 million can be raised.

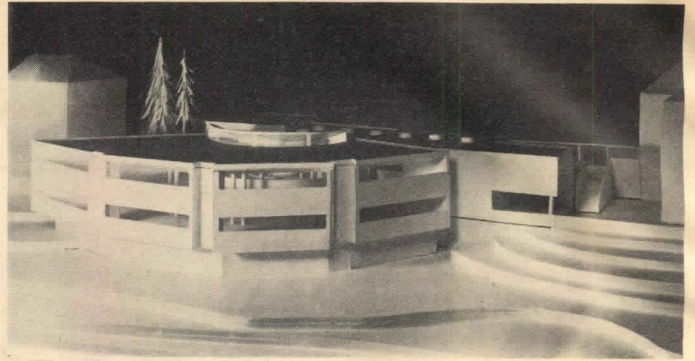
In turning down the design, the Fine Arts Commission called the plans "too domineering and out of keeping with the feeling of the Octagon House." Although the AIA has not decided what to do, it is thought that another modification in the existing approach would not mollify the commission. One spokesman stated: "The whole concept is basically wrong, and there is little they could do to alter the basic design."

NO. 2 FOR AALTO

MOUNT ANGEL, ORE. Alvar Aalto's second building in the U.S. will be a library for the monks of the Order of St. Benedict. Located on the grounds of an abbey, on the side of a hill, with a view of the Cascade Mountains and the Willamette Valley, the li-

brary will hold 200,000 volumes.

Currently, there are 120 monks of the brotherhood, which dates back to the Fifth Century, living at the abbey. All have taken vows of poverty, chastity, and obedience and work at farming,



teaching, and printing.

Although no definite date has been set for construction, the building is expected to cost \$1 million, and final plans have been approved by Aalto, who visited the West Coast site recently. DeMars and Wells of Berkeley are associated architects on the project, and Erik Vartiainen, who worked on the plans as a student of Aalto's in Helsinki, has joined the DeMars firm and will supervise construc-

tion of the project.

The plan of the library shows a semicircular structure fanning out from a rectangular building, which houses a lobby, bindery, rare book room, and offices. In the fan-shaped portion are the stacks, 22 in all, forming the spokes of the fan. At the pivotal point will be a central control desk.

Aalto's other building in the U.S. is Baker House, a dormitory at MIT.

IT'S SUMMER IN THE PARKS



Photos, above and below: Maude Dorr

NEW YORK, N.Y. "It relaxes your mind," said the girl in the mini-skirt with the Bronx accent, looking at the waterfall in William S. Paley's million-dollar pocket park. Paley Park, packed with trees, lunchtime strollers, tables, Bertoia chairs, and planters, is a bit of manufactured calm in the midst of the vast hubub of New York City. It leaves visitors sitting dazed as if they had fallen by mistake through the rabbit hole into Wonderland. At one end of the park is a man-made waterfall, splashing and bubbling as 1800 gal of water recirculate each minute, tumbling down a 20' wall. Landscape architects Zion & Breen, who designed the park, hope the waterfall will screen out some of the sounds of the city,



much as the 17 honey locust trees they planted screen out some of the sights. An attendant is on hand at all times and a small snack stand tucked away in a corner sells soft drinks and coffee. In the summer, the iron gates swing shut at 10 P.M., and the park is closed until 8 A.M. the next day.

While Thomas Hoving

And in such language! But . . . can you blame an owner whose heating and cooling costs are going up and up? Now it looks as if he may have blown an account by deciding to use that bargain insulation.

It worked all right at first. But gradually it lost efficiency. Why? Maybe the vapor barrier? He knew vapor barriers weren't foolproof. They deteriorate. Maybe building movement split it. Then moisture permeated the insulation. Con-

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What will bargain insulation do to repeat business?

(He just found out!)





reigned as Park Commissioner in New York City, the parks system here became the focus of national attention. When Hoving tried something like opening pocket parks or closing the main parks to automobiles on Sundays, other cities did the same. New York became, as it should be, a sort of urban recreation leader. Now that Hoving has departed, projects he initiated are still coming to fruition. Paley Park is one. The Adventure

Playground in Central Park is another.

"I was worried about that fence, too, at first," says Richard Dattner, speaking of the 10'-high spike iron fence that surrounds the Adventure Playground he designed for Central Park. "But now I see that the mothers like it. It keeps the kids from running off and getting lost." Not that there is really much danger of the kids running off. "I don't want to go, Mommy,"



whined one little girl. "I don't want to go to another playground." She seemed to be summing up the reaction of about 30 children playing there on a recent sunny afternoon. Ranging in age from two years to seven years old, the children were accompanied by 35 mothers and nurses, who, with the exception of the one mother who evidently wanted to try for greener grass on the other side of the fence, were enjoying the playground as much as the kids. They sat or stood in groups, often barefooted, digging their feet into the sand that covers most of the area, de-



Hoving, Dattner, and Hecksher.

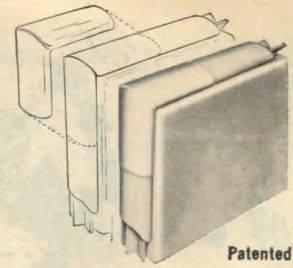
lighting in the shade of the many trees. There seems to be something for everyone. For the children there is a tree house, a wood and metal jungle gym, an igloo-shaped structure of stones that you can climb over and into, a wading pool with a sprinkler in it for running through, and slides and sand. But because the space is so pleasant, teenagers come there to sit in the sun. Older couples sit on the benches that ring the perimeter. "We don't turn anyone away," Alec Neus, the afternoon superintendent told a journalist recently, "but don't print that. We have enough to handle now." Neus has four assistants, who see that play goes smoothly. These assistants go to less affluent neighborhoods near the park and bring in groups of children. Although the supervision does not extend to watching individual children, the supervisors hope to have semi-planned activity such as story telling and painting on a big strip of brown paper wrapped around the jungle gym. "How

much we do depends on the particular response," says Neus. The Adventure Playground was paid for by an \$85,000 gift from the Estée and Joseph Lauder Foundation.

Also last month in New York, Central Park was closed to automobiles on Tuesday evenings. Open only to horse-drawn carriages, bicycles, and pedestrians, Central Park became a truly peaceful place; the quiet was almost eerie. When the suggestion was made to August Heckscher, Commissioner of Recreation and Cultural Affairs, that Fifth Avenue should be turned into a pedestrian mall on weekends, he nodded knowingly. "That is the way they abolished war in Europe in the Middle Ages, by limiting it slowly to fewer and fewer days of the week. Maybe that's the way to defeat the motor car in New York." Perhaps not, too. But New York would be a better place on weekends if some of its avenues could be turned over to strollers and cyclists.



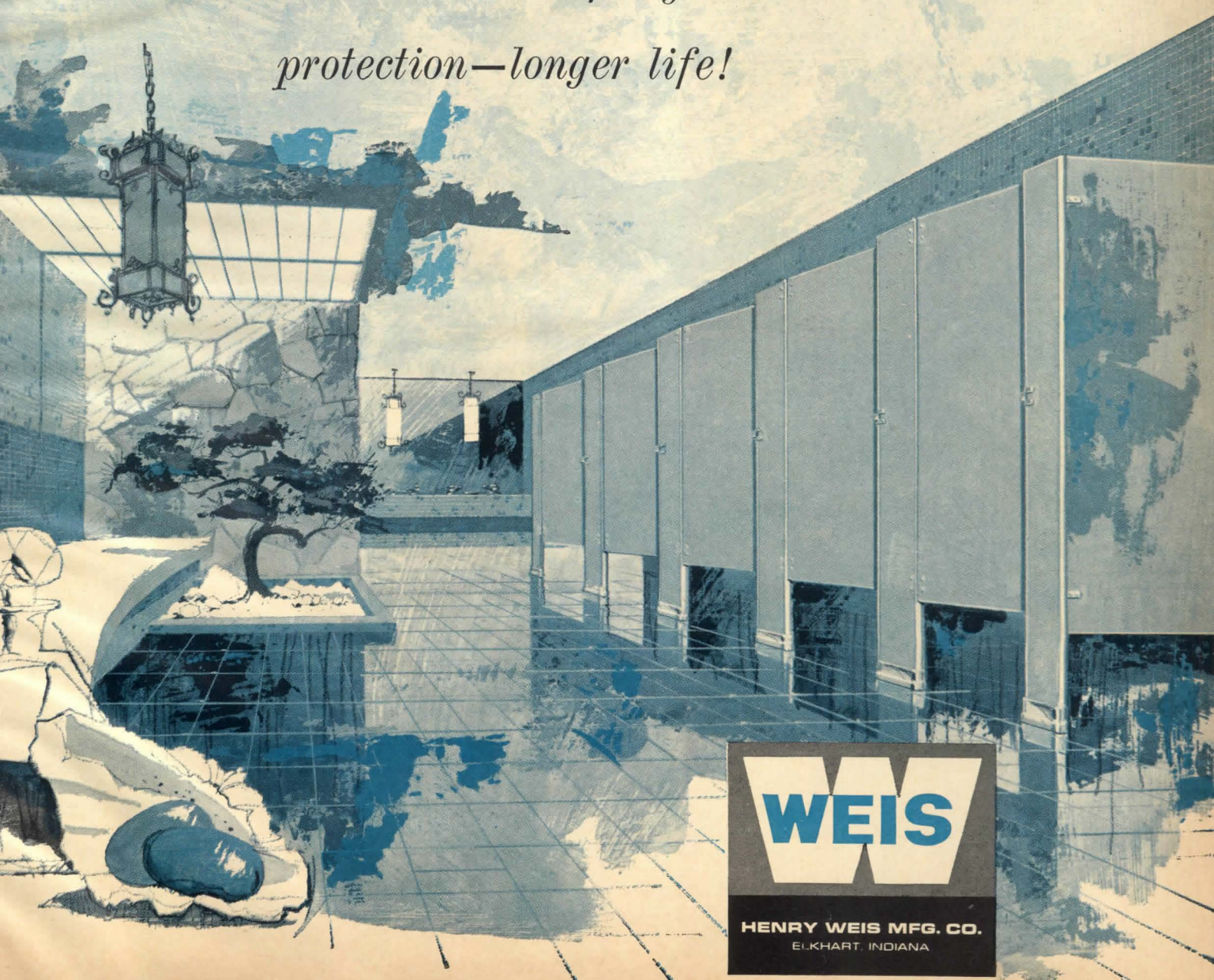
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WASHINGTON/FINANCIAL NEWS

by E. E. HALMOS, JR.

Highways: Unsafe and Ugly

— All signs point to a bumpy ride this summer for architects and engineers as Congress looks into highway safety.

Abandoning (for the time at least) probes into right-of-way and contractor shenanigans, that special House subcommittee on highways (the "Blatnik Committee") has opened a new line of inquiry: It wants to know whether the U.S. is "building in" hazards on its new highway systems that contribute to the horrendous annual highway death and injury toll.

Opening its hearings, the committee struck immediate publicity pay dirt in the person of an earnest TV repairman from the Bronx, N.Y., who has made a one-man crusade out of highway safety, and has taken thousands of pictures to prove his points. For more than three days, fascinated Congressmen watched a pictorial display of such hazards as massive sign-bridges erected within the highway shoulders that quite literally "stop you dead," in the witness' words; guard-rail installations that would lead a skidding car directly into a solid bridge abutment; other guard-rails that are themselves hazards, having been installed to protect signs — not people.

Also up for severe criticism by the committee were such items as attempts at architectural treatment of bridges and highway underpasses that result in projections, and masonry work that seem calculated to wreck vehicles that wander off the roadway; insistence of designers that their bridges not be marred by inclusion of signs or other informational devices; "beautification" efforts that contribute little but obscured views to travelers on the highways.

Obviously, some of the evidence to be adduced in the summer-long hearings will be used by opponents of Mrs. Johnson's cherished "beautification" program; some of the comments are uninformative. But a good deal that

has been turned up (including lack of super-elevation at curves, poor choice of pavement types that create skidding hazards, needless plantings and structures) really deserves criticism and correction.

Result, without question, will be a demand for a Federal criteria for installation of any roadside material; Federal limitations on architectural treatment of structures; and an over-all demand for tight coordination of all elements of highway construction, design, sign erection, and the like — possibly under the over-all control of a single person within a highway department.

(To forestall just such a development, the American Association of State Highway Officials has already submitted a suggested set of criteria to the Bureau of Public Roads.)

Labor Drags Its Feet — With a surprising array of support — including the AIA — at their side, construction contractors had reached a peculiar position (as of early June) in their battle against the perennial effort of labor unions to gain the legal right to strike an entire construction site over a dispute with any single employer ("common situs" picketing, this year embodied in HR 100):

They were sure they had the votes in the House to kill the measure outright. But labor-minded members of Congress had managed to bottle up the bill, refusing to bring it out of the labor committee for a vote.

The contractors would rather have the vote now — thus (if they're right) killing the idea for the remainder of the current two-year Congressional session. If the bill isn't killed, it can be slipped out any time labor thinks the opposition is napping.

Meanwhile, many architects and contractors took a grave view of a Supreme Court decision — in Dockets 110 and 111 — that upheld a carpenter union refusal to allow members in Philadel-

phia to handle some 3600 prefabricated doors on a housing project. Many believe this is a "back-door" opening to allow unions to boycott any or all prefabricated units, on grounds it takes away "traditional work" of union men. The recent experiment in New York City of rebuilding slum-dwellings by installing prefabricated cores could thus be threatened. The unions could conceivably dictate to architects what type of materials and equipment they must specify in their buildings.

Federal Well Runs Dry

— The accelerating Congressional attack on many of the "Great Society" programs enacted last year, plus the Administration's fear of a huge deficit (now predicted to run to more than \$20 billion), will hurt the flow of money into construction projects but it could have some salutary effects as well.

The Congressional attack had already (as of early June) produced a House cut-off of almost all funds for rent supplements in housing programs; possibly significant changes in direction in the aid-to-education programs; an obvious reduction in the highway beautification plans. Administration action had produced a cutback of nearly half in funds requested for such matters as water and sewerage construction; pared requests for money for other housing work; some tightening in Federal building construction requests.

One result, however, could well be to force many local urban renewal and other projects off dead center, under the threat of complete loss of funds. That has already happened in Cleveland and San Francisco, where HUD cut off money for long-projected (but unapproved) local projects in favor of others on which work was in a better state for an early start.

The message is clear: Get moving, stop delaying; money is limited, and you'll lose your share unless things are brought to active stages.

(As many architects and planners know, the fault is not entirely on the side of local officials: The endless delays and complications imposed by the various Federal

agencies — and in many cases their insistence on enforcing social objectives as well — have been cause for discouragement and delay also. Again, the pinch of funds has finally forced many of the agencies to get around to giving some answers — either yes or no — that have been held up for years, in some cases.)

Capitol Study Authorized

— There's an important footnote to the ever-recurring debate about development of buildings and plans for Capitol Hill:

A joint resolution (S.J. Res. 74) already approved by the Senate, that directs the Architect of the Capitol, "in consultation with the National Capital Planning Commission" to "enter into a contract . . . with a consultant firm of national reputation, having a working office within the Washington metropolitan area," for a study and analysis of present and anticipated future development needs of the Capitol grounds.

The study, report, and recommendations that result are to be presented to Congress within nine months of the time such a contract is signed.

Financial — Concern over a probably record-breaking Federal deficit is cutting into an important area for the construction industry: future planning. So far this year, there has been little cutback in actual spending by the Federal agencies, but the cutback in future commitments will be felt first by architects and engineers.

□ There's a significant corollary in the field of state and local financing. According to the Investment Bankers Association, the current level of scheduled bond elections (for the remainder of 1967) is "far below the norm," despite continuing strong voter approval of bond issues presented. At \$386 million, the number of bond issues to be presented to taxpayers is almost a third of the \$1,524,000,000 scheduled at the same time a year ago. This is particularly significant, said IBA, in view of the fact that in 1966, dollar volume of such state-municipal bond issues reached an all-time record of more than \$4 billion.

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*U.S. Patent D-206, 119

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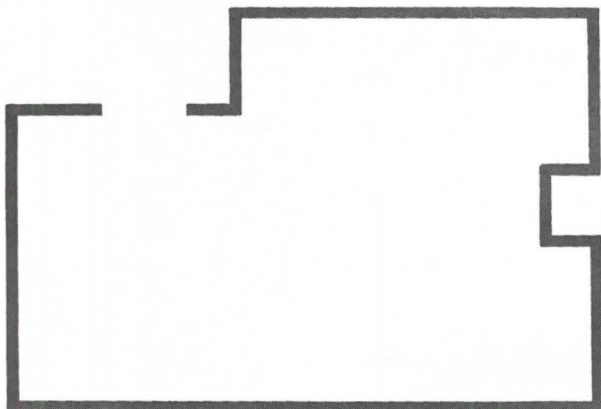
The kind you get with Armstrong Tegular Travertone. The individual panels of this system extend 1 1/32" below the grid, creating a uniquely bold dimensional effect. Tegular Travertone is noncombustible, fire retardant, and acoustical. Available with small through perforations for ceiling-wide air diffusion, it's fabricated for standard 24" x 24" grid suspension systems. And you can create extra drama with a black or bold, brightly colored recessed grid system.

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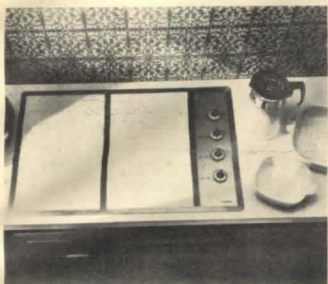
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PRODUCTS

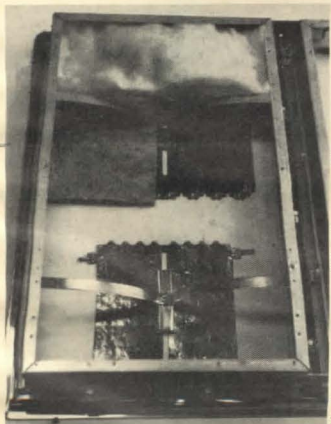
COOKING COUNTER



A handsome white cooking surface eliminates unsightly stove-top clutter and looks like part of a kitchen counter.

The surface is a sheet of opaque white "Pyroceram" (a family of glass ceramic materials used originally for nose cones in ground-to-air missiles), with four cooking areas marked by sunburst designs. Electric heating elements underneath the sheet operate on 220v a-c, and concentrate thermostatically controlled heat in two 8" and two 6" areas; the rest of the sheet remains cool enough to touch.

"The-Counter-That-Cooks" is sold with eight Pyroceram cooking utensils that have optically ground and polished bottoms to make perfect contact with the cooking surface, which is also polished flat. Although conventional flat-bottomed pans may be used, cooking is more efficient with the special cookware.



The unit is made up of three panels: two 12" x 20" ceramic glass cooking panels plus the thermostatic control panel; all are framed with stainless-steel mounting strips. Over-all dimensions are 32 1/4" x 21 1/2" x 4 1/4" deep. The two cooking panels are sealed to 3"-deep aluminized steel heater boxes each containing one 2000w and one 1200w heating unit. The heating elements are rib-

bons of resistance alloy wound on a sheet of mica and held in place by a spring device. Insulation is a glass-fiber batt. Down the center of each element is a bulb-type thermostatic sensor that provides heat control from 120F to 475F. Red lights below the control knobs on the top side of the unit indicate when "burners" are on.

Pyroceram, also fabricated for curtain-wall panels and noncooking countertops (see PRODUCTS, MARCH 1967 P/A), is chemically strengthened and has a very high resistance to thermal shock. Its impact resistance is illustrated in everyday terms by the manufacturer, who states that a 4 lb saucepan dropped from 9" will not damage the glass ceramic sheet.



Photo: Courtesy, "Appliance Manufacturer"

At this time, the availability of the unit is limited to 10 cities in 6 states: Rochester, Syracuse, Albany, and Buffalo, N.Y.; Boston and Springfield, Mass.; Los Angeles, Calif.; Phoenix, Ariz.; Hartford, Conn.; and Providence, R.I. But other areas will be added during the next year. Price for the complete "system" (cooking unit plus utensils) is about \$350, not including installation. Corning Glass Works, Corning, N.Y. Circle 100, Readers' Service Card

AIR/TEMPERATURE

Air cleaner. A recent addition to the growing list of equipment for cleaner indoor air is an electronic filter composed of a series of plates and pads that will eliminate most airborne household contaminants, including bacteria, claims manufacturer. Suitable for residential air-conditioning and forced-air heating

systems, the air cleaner electrically charges airborne particles causing them to attach themselves to the dust-collecting pads and grounded plates. Larger particles are caught in an aluminum mesh pre-filter. The Payne Co., 855 Anaheim-Puente Rd., City of Industry, Calif. 91747.

Circle 101, Readers' Service Card



Addition to the heat-of-light system. A constant-volume air induction box developed for use in manufacturer's "Lite-Therm" water-cooled luminaire system reduces primary supply duct sizes and provides zone temperature control. The box can be laid into a suspended ceiling or mounted in the plenum with duct collars for room air returns and room air supply. A space thermostat mounted on the box transmits temperature requirements to a pneumatic motor controller in the induction box, which actuates tandem dampers regulating induced air flow. On cooling demand, dampers are positioned so that induced air comes from the occupied space. On heating demand, dampers are positioned so that air comes from the ceiling plenum after it has been drawn through the Lite-Therm luminaires. Environmental Systems Corp., Box A, Conyers, Ga. 30207.

Circle 102, Readers' Service Card



Cylindrical units and lower prices. Recently developed group of cooling units will replace manufacturer's current split-system central residential cooling equipment up through four tons. New designs plus

improved manufacturing techniques are expected to reduce the installed price of a home central cooling system by \$75 to \$150. Units available include two cylindrical air-cooled condensing units: standard, in five sizes from 18,000 to 48,000 Btuh, for tract and low-cost homes; and "deluxe" in four sizes from 24,000 to 48,000 Btuh. Units are compact (48,000 Btuh unit is 30" dia and 29" high), and discharge air upward. Other units include a water-cooled condensing unit for apartments, cooling coils adaptable to all types of furnaces, fan-coil units, and electric heating coils for all-electric heating and cooling. Carrier Corp., Syracuse, N.Y.

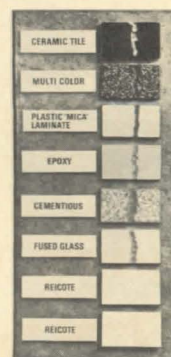
Circle 103, Readers' Service Card

CONSTRUCTION



Two-way corners. Vinyl-covered moldings fit either inside or outside corners. Available in wood-tone colors (to harmonize with manufacturer's hardwood paneling) and black. Casings, bases, stops, coves, and shoes are also surfaced in the durable vinyl finish. General Plywood Corp., P.O. Box 1403, Louisville, Ky.

Circle 104, Readers' Service Card



Plastic-coated hardboard goes inside or out. "Reicote" building panel is coated with a "vitreous-hard" polyester gel

finish. Manufacturer reports unit to be first plastic-coated hardboard for both interiors and exteriors. Available in a wide range of nonfading colors. Cost is competitive with plastic-coated hardboards for interior use and less expensive than glazed tile. Photo shows results of a pinpoint sandblasting test. Reinforced Plastics Div., Reichhold Chemicals, Inc., 20545 Center Ridge Rd., Cleveland, Ohio 44116.

Circle 105, Readers' Service Card



Open-work wood. Slatted panels, factory assembled in 1' modules and several standard lengths, offer a variety of designs for exterior and interior use. Constructed with 1 5/8"-wide rails of varying thicknesses, they are nailed and dowelled together. "Lincoln-Wood" panels are shipped either finished or unfinished. Photo shows openwork sun-screen panels. Kinnear of Washington, Inc., Box 216, Centralia, Wash. 98531.

Circle 106, Readers' Service Card



Changing faces. Folding wall panels feature flat, removable faces that can be changed after installation. Four-ft-wide panels, hinged in pairs, operate on an overhead track. Mechanical seals, extending to floor and ceiling, form a

tight acoustical seal and rigid wall, says manufacturer. No floor track is required, and seals are retractable. Partitions have been rated from STC 38 to STC 43. Hough Mfg. Corp., Janesville, Wis.

Circle 107, Readers' Service Card

Stainless patterns. A soft stainless steel with an over-all mottled pattern has been added to the increasing number of stainless-steel products available for sheet metal work such as roofing and flashing. The small random pattern hides scuff marks, and is formed on both sides of the sheet. "Eze-form" is available in either matte or shiny finish, in several gages and widths. Atlas Alloys Co., 1100 W. 11 St., Cleveland, Ohio 44113.

Circle 108, Readers' Service Card

FLOORING

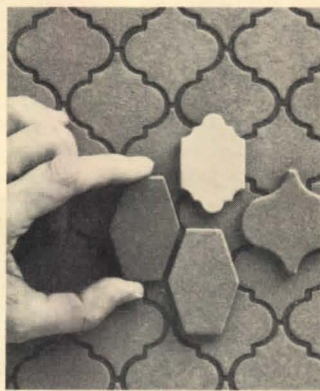


Cork work. Strips of cork, in varied lengths and widths and in shades from dark brown to light tan, make random designs for two tiles: a striated pattern in jack-straw widths ("Algerie"), and a wide-stripe (1 1/2") design in four cork shades ("Maroc"). Although meant for floors, there is no reason why a swinging modern Proust couldn't line his walls with the all-cork tiles. Size: 12" x 12" x 3/16". Kentile Floors, Inc., 350 Fifth Ave., New York, N.Y. 10001.

Seamless flooring. Liquid-applied flooring consists of colored resin chips in a urethane binder. Designers may specify color chip combinations. Slightly textured surface created by resin chips improves the nonslip quality, and the finish may be gloss, semi-gloss, or matte. Materials are lightweight, and may be used

inside or out. "Monosaic" cures in a week, and is suitable for hospitals, offices, schools, kitchens, and so on. Mankato Tile-Terrazo Co., 301 W. Mabel St., Mankato, Minn. 56001.

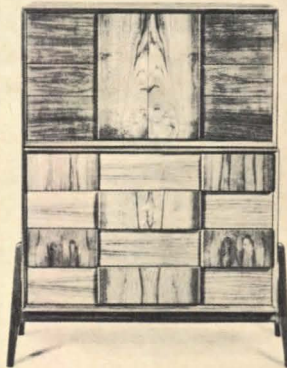
Circle 109, Readers' Service Card



Tiny tiles. Extruded quarry tile, approximately 1" x 2", are available in the four shapes shown above, mounted on 1 sq ft sheets. Fabricated in five earth colors, they are suitable for floors or walls, interior or exterior, in residential or light commercial and institutional structures. Summitville Tiles, Inc., Summitville, Ohio.

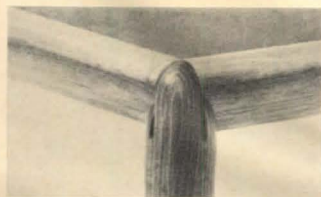
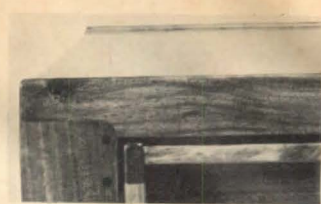
Circle 110, Readers' Service Card

FURNISHINGS



Scandinavian bedrooms. Are Scandinavian men really different? Spivak claims their chests are, and offers a wide variety of proof in tall, short, narrow, and wide designs. There are plenty of drawers and shelves; some have wardrobes, some have tambour doors, some hinged doors. They are hand-crafted in the Scandinavian countries in "wild-grained teak or romantic rosewood." Spivak, 460 Park Ave. S., New York, N.Y.

Circle 111, Readers' Service Card



Italian furniture and the Le Corbusier chairs. Among the handsomely crafted pieces from Italian designers are a number of substantial wood and upholstered chairs and sofas that, in leather, almost demand to be surrounded by the wood paneling of a men's smoking room. Other available upholstery fabrics, however, tend to soften this character. Two details at top show honest wood joinery of tables; middle group is by designer Tobia Scarpa; bottom, by Gianfranco Frattini. The newly formed Atelier International (whose founders include two architects) has obtained American distribution rights to a number of furniture groups from the Italian firm of Figli de Amedeo Cassina of Milan, which also manufactures the three Le Corbusier chairs reviewed in PRODUCTS in the FEBRUARY 1967 P/A. Although there is some confusion about U.S. distribution of those chairs, it appears that they will also be available from Atelier International, Ltd., 6 E. 53 St., New York, N.Y. 10022.

Circle 112, Readers' Service Card

Goat hair carpeting. The tough, durable hair of the goat has been combined with carpet wool (15-18%) and a small amount of viscose rayon (2-5%) to make a handsome carpeting available in



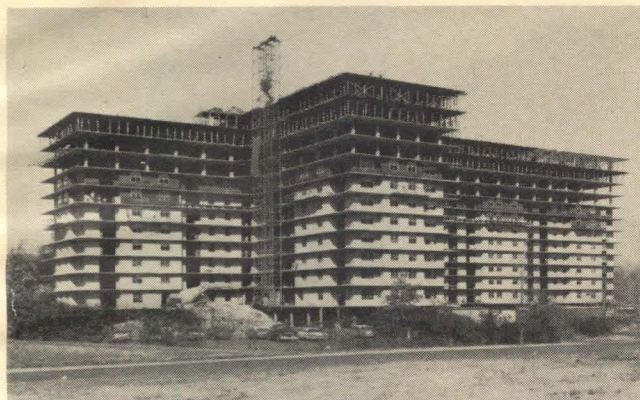
THE PRESCON MEMO NEWS

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APARTMENTS

High-rise apartment designs can have greater floor planning freedom and reduced structural costs when the Prescon System of post-tensioning prestressed concrete becomes part of the engineering. Examples are rising everywhere, as any Prescon representative will proudly show you.



A Total Saving of \$177,000.00 — by use of post-tensioned 5" flat plate construction instead of mild steel reinforced 6" flat plate, was accomplished in the construction of Arlington, Virginia's 360-unit Dolly Madison Apartments. Preliminary investigations leading to the decision to use post-tensioning indicated a 10-cent per square foot savings over a mild steel flat plate. During design, other savings became apparent, such as in columns and caissons due to reduction of dead load; in elimination of beams at openings; in elimination of 790' of expansion joint and its double column; reduction of steel and concrete costs; in associated labor; and in the masonry.

One of the most interesting aspects of the project was the ease with which it was built — 13 floors in 13 weeks and one day on a scheduled 37,724 square feet of concrete floor area every 5 working days.

A detailed analysis of the structure and economics of this magnificent apartment has been prepared by Robert L. Meyer of the structural engineering firm Horatio Allison Associates. Write for your copy.

Architect — Sheridan, Behm & Associates Owner/Builder — Dittmar Company
Structural Engineer — Horatio Allison Associates

The Eichler Summit 30-story apartment building (San Francisco) has completely column-free living areas. It is thought to be the tallest concrete building west of Chicago. The 10" floor slabs are post-tensioned in the 35' direction by Prescon tendons, with reinforcing steel in the other direction. Bays are 35' x 104'. The first six floors are for parking and the lobby. An unusual design feature includes the tapering-in of the upper part of the nine columns while the cantilevered post-tensioned floor slabs project out farther, so that the structure flares outward and is wider at each succeeding level.

Owner — Eichler Homes, Inc.
Architects — Neill Smith & Assoc.; Claude Oakland, Associate Architect
Structural Engineer — Stefan J. Medwadowski
Contractor — Eichler Homes, Inc.



POST-TENSIONING ALLOWS FLOOR PLAN FLEXIBILITY — LOWERS STRUCTURAL COSTS

Post-Tensioned Flat Slab Construction — used in this San Mateo, California senior citizens apartment project, (The Park Towers) substantially reduced the final cost per square foot. Greater column spacing achieved by the post-tensioning technique provided the architect with greater interior design freedom — the resultant lighter weight structure enabled him to achieve an unusually clean-cut exterior. Cost per square foot for structural framing system was \$4.038.

Extended economics will be enjoyed by the owners in reduced maintenance costs, made possible by control of damaging slab deflection.

Architect — DeLong, Zahm, Associates
Engineer — Cecil H. Wells, Jr.

Contractor — Carl W. Olson & Sons, Inc.
Owner — The Leslie Foundation



Park Towers Apartments — utilized a number of innovations in the construction of their 8-story building overlooking Corpus Christi Bay. This was the first structure in the United States



to combine load bearing masonry walls supporting a one-way post-tensioned slab. The floor system consists of 7" thick one-way continuous slabs, post-tensioned over 26' spans, with an overall dimension of 58' x 180'. Tendons are eight 1/4" wires maintained in flat parallel by special clips. Post-tensioning was applied by a new technique which enabled the tendons to be stressed at approximately the midpoint of their length — eliminating the usual anchorage projections and the need for stressing platforms and scaffolding.

Total savings from the use of flat, centrally stressed post-tensioning were computed to be over \$5,000.00 per floor.

Architect — Walter Wisznia
Engineer — W. Clark Craig

Contractor — Braselton Construction Co.
Owner — Buffalo Apartments, Inc.

Modern apartment design requires up-to-date engineering to combat rising costs and to provide the free spans and column spacing necessary for efficient space utilization. Post-tensioning provides these and many other advantages.

Some of the more recent apartment structures are shown here to give some indication of the flexibility and economy already enjoyed by some of the country's leading builders. For more complete examples and technical information, write for literature — or contact a Prescon representative.

THE PRESCON CORPORATION

General Offices: 502 Corpus Christi State National Building
Telephone: 512-882-6571, Corpus Christi, Texas 78401

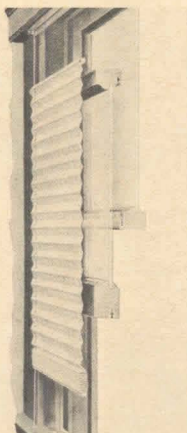
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D67

On Readers' Service Card, Circle No. 378

20 tasteful colors from bright red to subdued grays and browns. The dense, low pile has a ribbed appearance (somewhat like corduroy), created by crimping the long-staple goat hair mixture into a rubber backing with heat and pressure; a secondary jute backing reinforces dimensional stability. Available in two grades: standard "Dur-hair" for moderate traffic, and super for heavy traffic, such as found in elevators. The carpeting was designed for use in galleries, museums, restaurants, offices, etc. Durkan Carpet Corp., 208 E. 60 St., New York, N.Y. 10022.

Circle 113, Readers' Service Card



Accordion window shades. Fabric pleated horizontally makes a very attractive and efficient window shade. The close-weave, hard-finish cotton in neutral colors, such as white and tan, can either be used as the finished shade, or as a backing for designers' own fabrics. Widths up to 17' are available, and height is "unlimited." Shades can be lowered from the top or raised from the bottom. The cord case (1 1/8" x 1 3/16") is installed at the window head, and painted to match the fabric. Athey Shade Co., 372 E. 162 St., New York, N.Y. 10056.

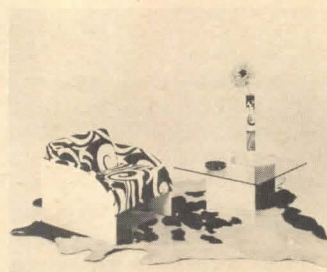
Circle 114, Readers' Service Card

Custom carpeting. A design service offers architects the opportunity to confer with manufacturer's consultants in selecting fibers, densities, pile heights, backing, and cushioning suitable to the varying requirements of different public areas. Carpets are then woven to specified modular widths to fit the building under study. A

selection of wool, acrylic, nylon, and polypropylene fibers is available for "Modu-Floors." Elimination of waste and easier installation keeps costs down on the custom-tailored commercial carpeting, claims manufacturer. Commercial Carpet Corporation, 10 W. 33 St., New York, N.Y. 10001.

Circle 115, Readers' Service Card

Naugahyde "leather." A soft-surface addition to the Naugahyde family is a pattern called "Gladstone." It has a rugged, leather-like texture and appearance and is available in 14 firm, earthtype colors, including Buckskin, Avocado, and a dark brown. Uni-Royal, 1230 Avenue of the Americas, New York, N.Y. Circle 116, Readers' Service Card



"For people with cool" is the manufacturer's description of this collection of Milo Baughman furniture that makes generous use of Op patterned upholstery fabrics in such color combinations as pink and lime or orange and pink, as well as basic black and white. Frames are lacquered plywood fastened with giant brass screws. An added fillip is the extra set of covers, in a contrasting pattern, to be sold with each upholstered piece — tailored "to fit as well as the upholstery itself." Besides the chair and glass-topped table shown, the collection includes a boxy sofa and a love-seat. Thayer Coggin, Inc., High Point, N.C.

Circle 117, Readers' Service Card

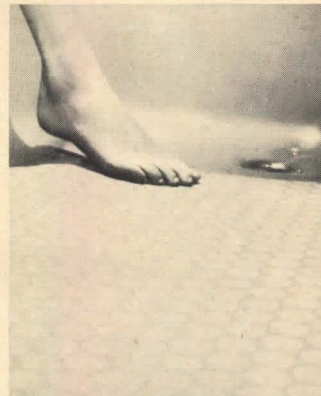
LIGHTING

"Convert-A-Lites." Lighting fixtures convert medium base porcelain receptacles into iodine quartz fixtures; they can be screwed into existing receptacles, and require no rewiring. Units will accommodate 300w or 400w double-ended

iodine quartz lamps, increasing the light output per fixture. Swivelier Co., Inc., Dept. 186, Nanuet, N.Y. 10954.

Circle 118, Readers' Service Card

SANITATION PLUMBING



Improved design in hospital fixtures. Several design innovations in hospital plumbing fixtures include a wheelchair lavatory, a perineal bath and a bathtub with a nonskid bottom. The fixtures allow maximum self-care for postoperative or geriatric patients. The lavatory is designed to allow a wheelchair patient to wash while sitting down; the perineal bath, in contrast to the old sitz bath, allows patients to sit in a comfortable position with their feet on the floor. The bathtub (shown), which should also be an asset in the home, has a slip-resistant surface of 1"-dia circles, nonglossy but smooth; available in white or colors. American-Standard, 40 W. 40 St., New York, N.Y. Circle 119, Readers' Service Card

Bathtub massage. Four water jets built into the sides of a conventional-looking 5' tub create a turbulent whirlpool for hydrotherapy or simple relaxation. Circulating pump and plumbing are concealed. Factory assembled unit requires same areas as that of a conventional 5' tub; porcelain enamel in white or colors. Briggs Mfg. Co., Warren, Mich.

Circle 120, Readers' Service Card

SERVICES

Floating sidewalks. Solid blocks of "Dyfoam" expanded polystyrene encased in a 1"-thick coat of lightweight concrete make modular sections that are bolted together to



make boat slips and walkways for marinas. The "Unifloat" system is said to have superior stability, and to be comparatively economical. It is adaptable to various marina sizes. Top photo shows section coming out of a mold. Huntington Engineering Corp., 7355 Slater Ave., Huntington Beach, Calif.

Circle 121, Readers' Service Card

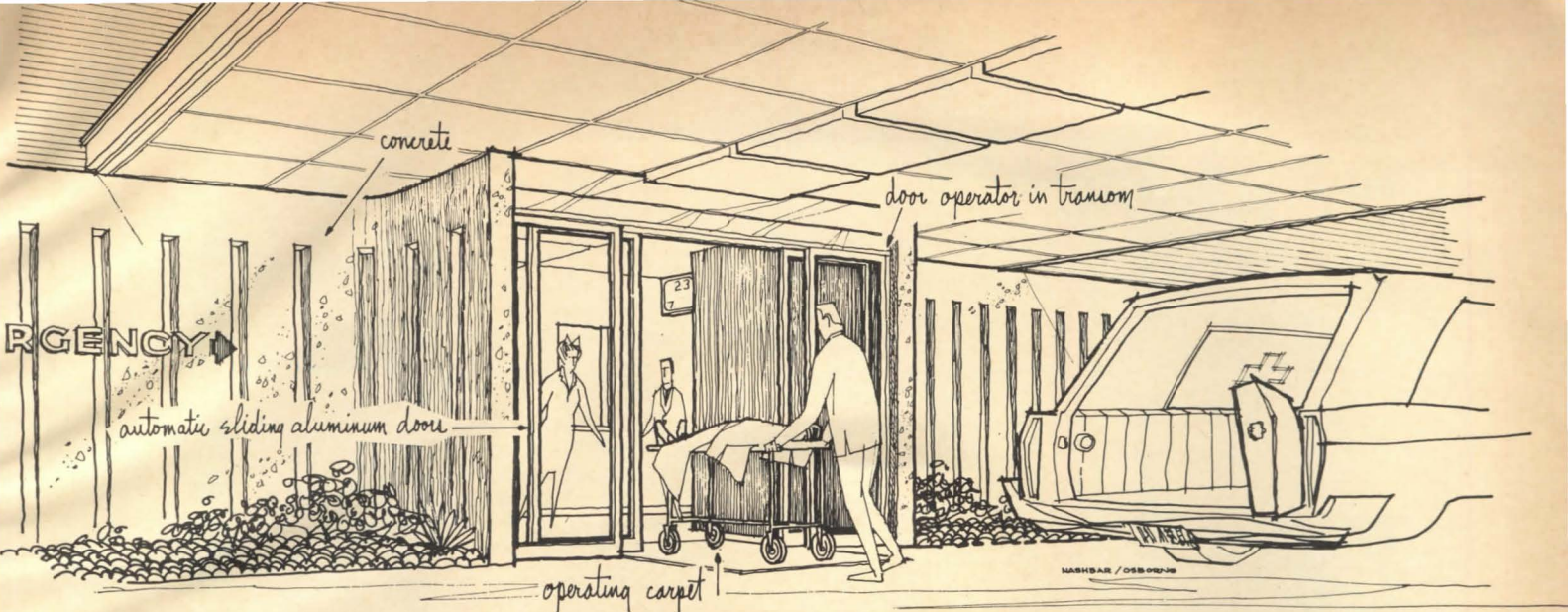
SPECIAL EQUIPMENT



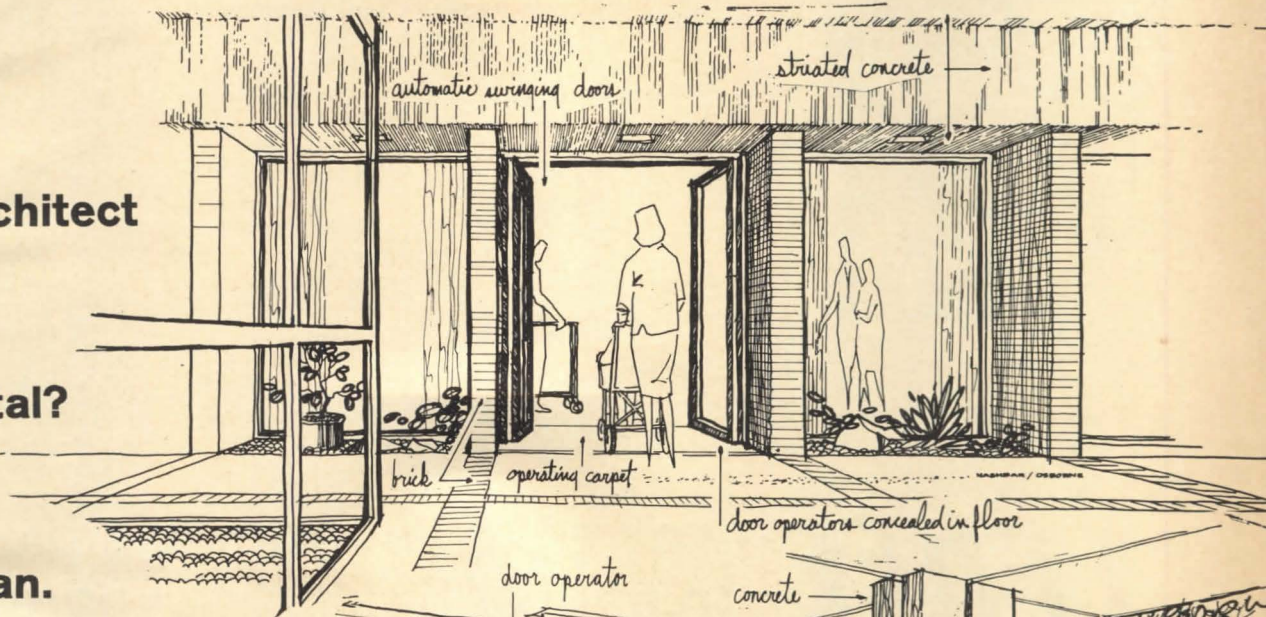
Low-line ventilator. Designed to keep intrusions on a building's skyline at a minimum, rooftop ventilator is 36 1/2" high and exhausts 32,000 cfm through double outlets. Access door allows cleaning without disassembly. G.C. Breidert Co., P.O. Box 1190, San Fernando, Calif.

Circle 122, Readers' Service Card

"Camping" out. An artificial grass, molded from green polyethylene in 12" squares with 7000 individual blades of inch-high grass, is probably more "camp" than chic. How-

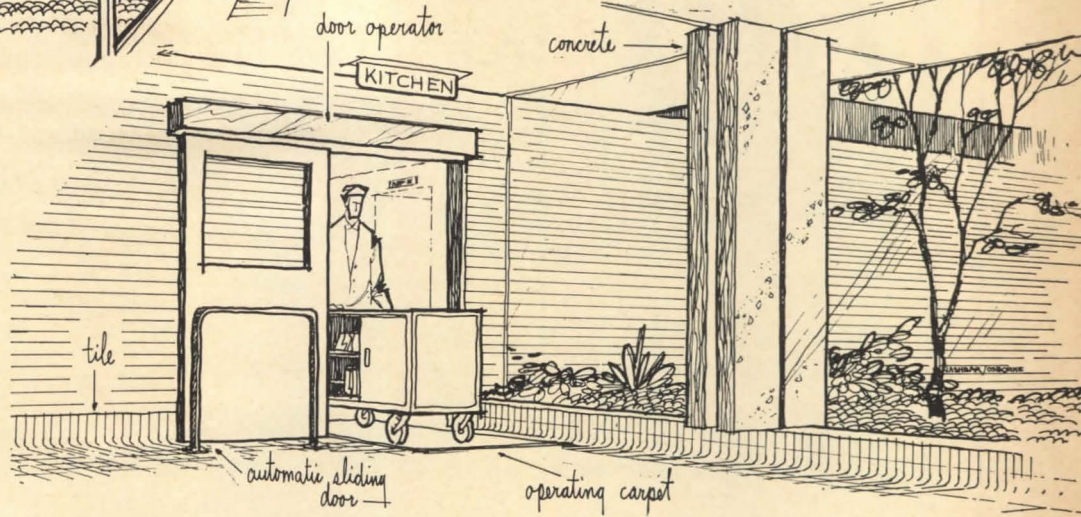


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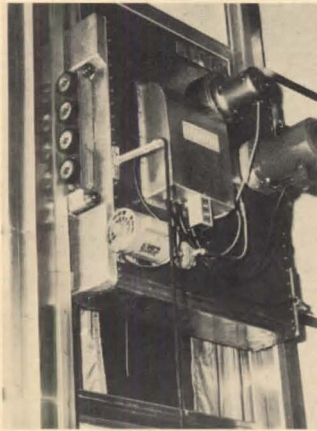
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On Readers' Service Card, Circle No. 393

ever, it is not unpleasant under foot, and might indeed prove a satisfactory ground cover for especially barren spots. A few mad Mods have even carpeted their bathrooms in "Perma-Grass." Squares are fastened together with overlapping tabs and posts, and may be cemented or nailed down. OBI, Inc., 649 Bergen Blvd., Ridgfield, N.J. 07657, Circle 123, Readers' Service Card



Look, Ma, no hands! Automated wall washer scrubs down windows and panels of curtain wall buildings at a vertical speed of 60 ft per min.

The compact unit (55" high x 14" deep, and ranging from 18" to 60" wide) needs human help only when it is transferred from one track to the next. Rubber-coated, steel drive wheels lock onto a special flange on each mullion, and the unit can be operated either from the top or bottom of a building. Surfaces of buildings up to 40 stories are cleaned by brushes and squeegees with a cleaning solvent. Unit can be adapted to 60 stories with a special hoisting system. Alpana Aluminum Products, Inc., 14105 State Highway #55, Minneapolis, Minn. 55427.

Circle 124, Readers' Service Card

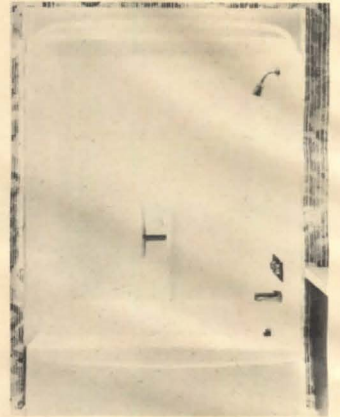
Fire sprinklers turn themselves off. Electric/electronic sprinkler control system automatically turns sprinklers off when the fire is out, thus minimizing water damage; if fire is rekindled, the on/off cycle continues. "Firecycle" control system continues to function reliably after prolonged exposure to water and high temperatures, manufac-

turer claims. The Viking Corp., Industrial Park Rd., Hastings, Mich.

Circle 125, Readers' Service Card

Glass chalkboard doubles as projection screen. Neutral white glass serves two purposes in visual presentations — as a chalkboard and as a front or rear projection screen for slides and films. "Nucite" was developed 25 years ago, but colored chalks then available were not satisfactory for use on glass, reports manufacturer. An improved vitreous enamel plus improved colored chalks now make the glass board, or screen, a double classroom asset. Dark green chalk is recommended but deep pink, purple, and orange, among others, are also available for the teacher with a colorful personality. The positive impression is said to improve readability for students. The shock-resistant plate or float glass is fused to a vitreous enamel containing fine abrasive particles, and is guaranteed for the life of the building. Sizes: 1/4" thick and up to

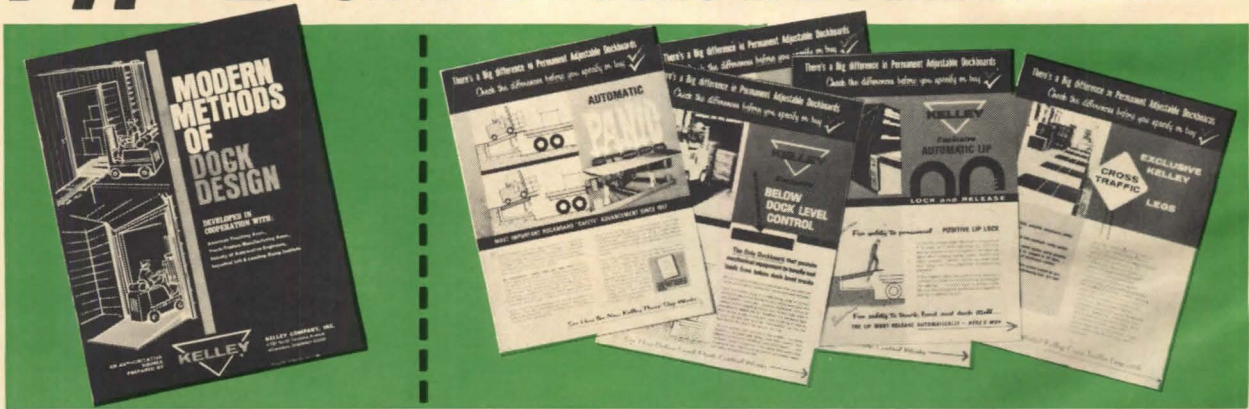
72" x 140". Pittsburgh Plate Glass Co., One Gateway Center, Pittsburgh, Pa. 15222. Circle 126, Readers' Service Card



Molded plastic. Fiber glass tub/shower unit is one-piece construction with integral walls. Tub is 5', and total height of walls is 75". Manufacturer is also fabricating a compact 32" fiber-glass shower stall. Units are available in white and six colors. Universal-Rundle Corp., New Castle, Pa.

Circle 127, Readers' Service Card

FREE FACT-FILLED BROCHURES ON TRUCK OR RAIL DOCKS & DOCKBOARDS



New, 16 page Modern Methods of Dock Design gives recommended standards on dock lengths, widths, construction, slopes, lighting, aprons, access roads, etc. It's an authoritative source.

Difference sheets point out dockboard features necessary for fast, safe, efficient dock operation. Sheets show how each feature is applied to actual use, and gives the operating characteristics.

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On Readers' Service Card, Circle No. 414

Pittsburgh Corning,
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Celramic-Board™

first roof insulation able to "breathe"
without loss of insulating value.

The secret's in the remarkable new glass nodules developed by Pittsburgh Corning (like the one shown below, cut open and magnified). Each contains countless closed cells which trap still, dry air—the ideal insulating medium—inside a vaporproof, moisture-proof shell of glass.

Most roof insulations get their insulating value from air spaces around fibers. These air spaces can absorb moisture. In new CELRAMIC-BOARD, moisture never touches the sealed-in air.

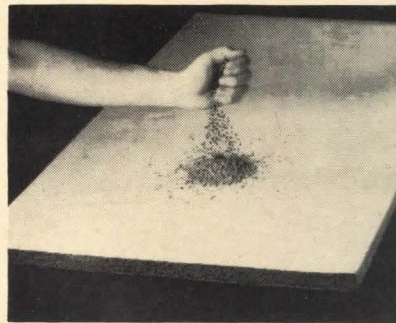
Each 2' x 4' x 1" CELRAMIC-BOARD contains thousands of these multicellular nodules in a bituminous binder. A network of tiny air passages between the nodules permits the board to "breathe." Trapped vapor is dissipated harmlessly. No vapor pressure can collect beneath the built-up roof and cause felts to separate from the insulation. Wrinkling and buckling is minimized or eliminated.

CELRAMIC-BOARD cannot deteriorate. Laboratory tests have proven its ability to withstand all

normal roofing hazards. It can be installed quickly and easily. Its bituminous binder makes it compatible with pitch and asphalt. It conforms to normal irregularities on decks without danger of breaking or cracking.

CELRAMIC-BOARD costs little more than the lowest price insulation.

Send for complete information and sample. Call or write Pittsburgh Corning Corporation, Dept. PP-77, One Gateway Center, Pittsburgh, Pa. 15222.



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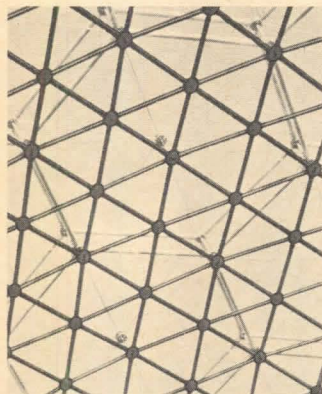
MFRS' DATA

AIR/TEMPERATURE

Electric heating studies. Monograph is first of a planned four-per-year in the National Electrical Contractors Association's newly initiated information service for architects and engineers. The monograph, "All-Electric Concepts for Architecture," is primarily a series of case studies: an elementary school with radiant and duct heaters; an office building with through-wall heating-cooling; a two-story office building using heat-of-light; a medical building with four heat pumps; and Marina City in Chicago. 20 pages. National Electrical Contractors Assn., Marketing Services Dept., 610 Ring Bldg., Washington, D.C. 20036.

Circle 200, Readers' Service Card

CONSTRUCTION



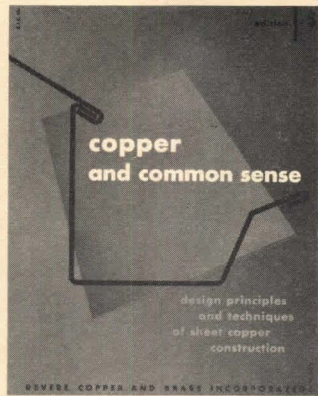
"Natural Light Through Domes and Arches of Plexiglas." Design booklet of Plexiglas-glazed domes and vaulted areas covering swimming pools, atria, restaurants, and a botanical garden is well illustrated with color and black-and-white photographs. 36 pages. Photo shows detail of geodesic dome over Missouri Botanical Garden in St. Louis. Rohm & Haas Co., Washington Square, Philadelphia, Pa. 19105.

Circle 201, Readers' Service Card

La piazza terrazza, among others. Squares, malls, lobbies, halls — terrazzo is a durable surfacing for any area of heavy public traffic. The "Terrabond" system is said to minimize thickness to 1/2"-5/8" (as opposed to 3"-3 1/2" for sand-cushioning) by using manufacturer's special adhe-

sive with conventional portland cement terrazzo topping. Booklet describes simplified installation, and gives specifications. 8 pages. Thiokol Chemical Corp., Chemical Div., P.O. Box 1296, Trenton, N.J. 08607.

Circle 202, Readers' Service Card



Copper literature. "Copper and Common Sense" won a well-deserved award last year in the literature competition sponsored jointly by the AIA and other groups in the building field. It contains information on design principles, physical properties, and an extensive compendium of flashing, roofing, and expansion joint details. 140 pages supplemented with photos, graphs, charts, engineering data, and an index. Companion booklet "Master Specifications for Copper Roofing and Sheet Metal Work in Building Construction," gives guide specs. 22 pages. Revere Copper and Brass Inc., 230 Park Ave., New York, N.Y.

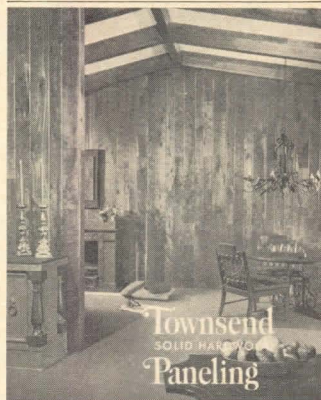
Circle 203, Readers' Service Card



Paneling and remodeling. Wood grains (14) and solid colors, both bright and subdued (34), on polyester sheeting, face "Videne" wall panels. Special adhesive will

bridge as much as 3/8" on old brick walls, or walls out of plumb, claims manufacturer, and can be applied to concrete, wood, and plaster as well. System also includes matching doors and moldings. Vertical moldings are of two types: a one-piece extruded vinyl-U-channel into which adjacent panels are fitted; and a two-piece molding comprising a retainer strip attached to the wall and a face strip snapped on after panels are put up. Full-color brochure explains advantages and installation of various components and shows color samples of panel facings. 16 pages. The Goodyear Tire and Rubber Co., Videne Div., Akron, Ohio 44316.

Circle 204, Readers' Service Card



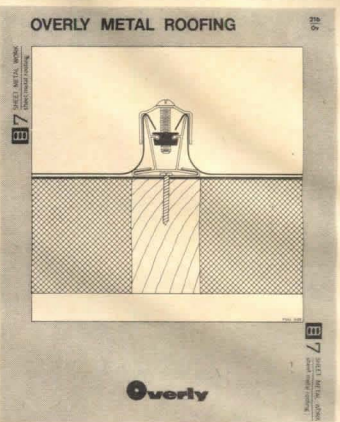
Solid paneling. In these days of imitations and veneers, solid hardwood paneling is not so easy to find. Manufacturer offers it in pecky cypress (3/4" thick), cherry, willow, walnut, maple, oak, and ash (all 1/2" thick). Available in select or colonial (with knots) in smooth, rough sawn, or wattled surface. It is packaged in random widths, end-matched to lengths of 8', unfinished or with two coats of clear acrylic. Photos, brief specs, molding profiles, dimension and quality information. 6 pages. Townsend Paneling Inc., Stuttgart, Ark.

Circle 205, Readers' Service Card

Rough-sawn Southern pine. Design booklet on rough-sawn pine siding is illustrated with color photo examples of vertical and horizontal siding patterns and stain finishes. Finishes combine pigment (off-whites, blues, greens, grays) with water repellents and preservatives. Also included are brief application instructions and sample speci-

fications. 12 pages. Southern Pine Assn., P.O. Box 52468, New Orleans, La. 70150.

Circle 206, Readers' Service Card

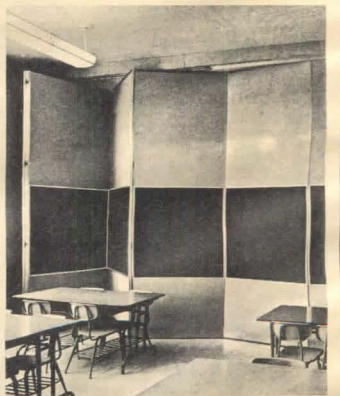


Batten and Bermuda. Prefabricated metal batten and Bermuda roofing systems are detailed and specified in bulletin that includes photos of architectural examples. 4 pages. Overly Mfg. Co., Architectural Metal Products Div., 574 W. Otterman St., Greensburg, Pa. 15602.

Circle 207, Readers' Service Card

Trees you can't see for the forest products. Georgia Pacific's extensive and comprehensive forest products catalog for 1967, in a dozen sections from A to L, from Concrete Forms to Interior Paneling, generously illustrates text with charts, photos, and technical data. Available by letterhead request. Georgia-Pacific Corp., P.O. Box 311, Portland, Ore. 97207.

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AWARDS PROGRAM FOR PROJECTS NOT YET BUILT

PROGRESSIVE ARCHITECTURE announces the fifteenth annual Design Awards Program. Awards will be made to U.S. architects and their clients for projects now in the design stage to be built in 1968 in the United States. Any building or group of buildings will be eligible.

PURPOSE of the Design Awards Program is to give recognition to good design in the period of design development, rather than after completion, in order to encourage the designers and owners of the projects so honored.

FIRST DESIGN AWARD, AWARDS, AND CITATIONS may be given by the jury listed below to the best projects chosen on the basis of site use, choice of structural system and materials and methods of construction, solution of the client's program, and over-all design excellence.

JURY will be composed of the following architects, planners, and engineers: LAWRENCE B. ANDERSON, Partner, Anderson, Beckwith & Haible, Architects; Dean, School of Architecture and Planning, Massachusetts Institute of Technology, Cambridge; GUNNAR BIRKERTS, Gunnar Birkerts & Associates, Architects, Birmingham, Michigan; RICHARD P. DOBER, Partner, Dober, Walquist & Harris, Inc., Planning and Landscape Architecture, Cambridge, Massachusetts; ROMALDO GIURGOLA, Partner, Mitchell & Giurgola, Architects, Philadelphia; Chairman, Division of Architecture, School of Architecture, Columbia University, in the City of New York; FAZLUR KHAN, Associate Partner Structural Engineering, Skidmore, Owings & Merrill, Chicago.

JUDGMENT will take place in New York during September 1967. Winners of Awards and Citations will be notified (confidentially) immediately after the judgment.

ANNOUNCEMENT of the winning projects will be made at a

presentation in the home town (if practicable) of the recipient of the First Design Award. Winning projects will be featured in January 1968 P/A. As in the past, P/A will arrange coverage of winning projects in news media, particularly those in the localities of all the Award and Citation winners.

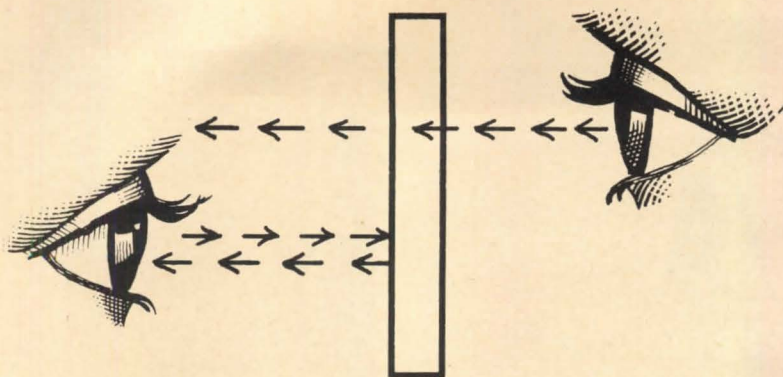
SUBMISSIONS do not require filling of an application blank. For each project you submit, simply send:

1. On a 5" x 8" card, type the client's name, location, and proper name of project; name and address of the architect; and identify all items included in the submission.
2. Brief explanation of the program and your solution.
3. Description of materials and construction methods used, and the reason for their use.
4. Site plans; basic building plans; pertinent sections and details.
5. Perspective or model photographs.
6. A statement that (a) the project is now in the design stage and that construction is anticipated in 1968, and (b) that submission of a project for judgment gives PROGRESSIVE ARCHITECTURE first rights in the architectural field to publish both the project and the finished building if it receives an Award or Citation.

It is preferred that you submit 8" x 10" prints, photostats, or photographs bound in a folder. **Original drawings, actual models, or mounted exhibit panels will not be accepted and no material is to exceed 11" x 17" in size.** Each project is to be submitted under separate cover.

DEADLINE FOR MAILING is August 31, 1967. Address entries to Awards Editor, PROGRESSIVE ARCHITECTURE, 430 Park Avenue, New York, N. Y. 10022.

P/A will guard and return all submitted material.



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gymnasiums, or large kitchens where damage resistance and easy-to-clean surfaces are important. Wood-core, wood-veneer accordion folds are suitable for dresser installations. Large folding panels (4'-5' wide) are fabricated with various facings, such as pegboard or chalkboard (shown). Color photos, size charts, brief specs, details, hardware. 20 pages. Holcomb & Hoke Mfg. Co., Inc., 1545 Calhoun St., Indianapolis, Ind. 46207.

Circle 208, Readers' Service Card

Space setters. A group of updated folders for the Modern-fold manual includes brochures on manufacturer's accordionfold partitions: "Splendoor," "Audio-Wall," and "Soundmaster." Color samples and a swatch folder are also included. Specifications, data tables, installation details, etc. New Castle Products, Inc., New Castle, Ind. 47362.

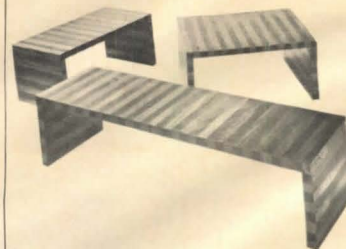
Circle 209, Readers' Service Card

FLOORING

Wood veneer flooring. Thin wood flitch (12 mil) in a multilayer sandwich (clear vinyl protective face and aluminum foil/vinyl/asbestos backing) is available in plank sizes (pegged or unpegged) and tiles for parquet floors. Walnut, cherry, mahogany, oak, or teak face the .08"-thick "True Wood" flooring. Photographs, sizes, and physical characteristics. 4 pages. Wilcox-Woolford Corp., P.O. Box 86, Spring City, Pa. 19475.

Circle 210, Readers' Service Card

FURNISHINGS



Butcher-block look. Laminated wood tables have the solid look of solid Honduras mahogany and walnut. Stools, a bar, and decorative display "tower" for objects are also included in catalog of Ben Seibel designs; photos and dimensions. Photo shows cock-

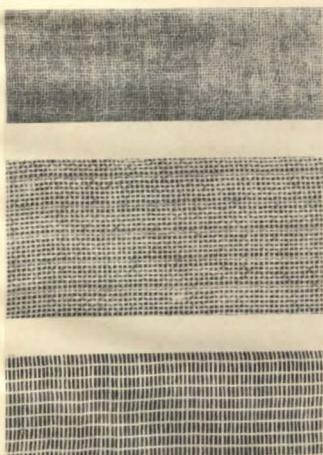
tail tables that might also be used for benches. Carl Lendinara Furniture, 401 E. 163 St., New York, N.Y.

Circle 211, Readers' Service Card



The outdoor world. Circular four-seater picnic table, traditional rectangular tables and benches, and portable bleachers have glass-fiber-coated plywood or fir seats mounted on steel tube frames. Suitable for playgrounds and parks; Available in six pleasant colors. Color photos, dimensions, construction details. 8 pages. Dentin Mfg. Co., 2600 Washington Blvd., Bellwood, Ill. 60104.

Circle 212, Readers' Service Card

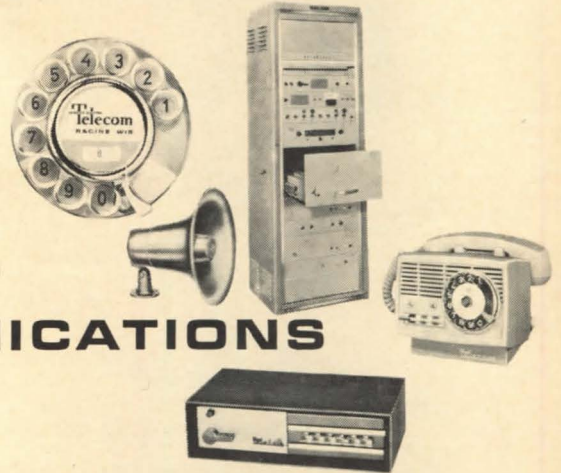


Controlling light. "Light and Shadow," a new casement collection of 22 basic fabrics, is designed to control light and create shadow. Covering a useful range of textures and weaves, the collection is in white, off-white, and subtle neutrals. To aid the designer, the percentage of light transmission through each fabric has been measured (the closest woven fabric permits approximately 15% light transmission; the most open, approximately 67%). A ring of mounted swatches, each 3" x 9", shows every fabric and

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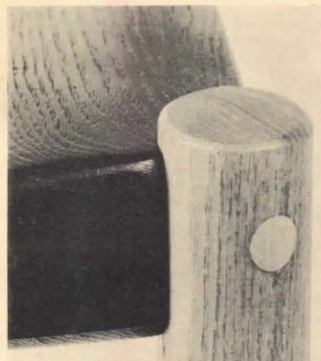
DESIGN SERVICE – The Gaylord Ventilator is adaptable to all equipment – upon request we will provide design services and layout drawings for each of your installations showing not only our recommendations for the utilization of the Gaylord Ventilators but complete air engineering for the job – at no cost or obligation.

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On Readers' Service Card, Circle No. 340

gives descriptive information including color, width, repeat, fiber content, and percentage of light transmission. Jens Risom Design Inc., 444 Madison Ave., New York, N.Y. 10022.



Wood, leather, and fabrics. Two furniture groups of sturdy Shakerlike simplicity include chairs, tables, and sofas designed for dormitory and library but equally at home in any minimal interior. The "Ash Group" designed by architect Hugh Stubbins uses some trim upholstery on wooden frames; the "Oak Group" by Borge Mogensen uses cane and leather for seats and backs on solid oak frames. Photos, dimensions, price list. CI Designs, 230 Clarendon St., Boston, Mass. 02116.

Circle 213, Readers' Service Card



"Refrigerated Furniture" is an aptly titled folder of data sheets on compact refrigerators that can be brought into the library without embarrassment. They are finished front and back in the "finest hand-rubbed hardwoods — genuine walnut, teak or rosewood — finished in either epoxy or linseed oil." Specially treated tops resist heat and stains. Several models combine storage cabinets and bar tops with refrigerator units. Dimensions, descriptions, pho-

tos. Springer-Penguin, Inc., Brookdale Pl., Mt. Vernon, N.Y. 10550.

Circle 214, Readers' Service Card

Woven wall covering. Random weave kraft fibres laminated to a #2 hanging paper are coated with a glossless, transparent polyvinyl acetate to make wall coverings that can be cleaned with a mild detergent. Folder contains samples of four weave patterns in a number of color combinations. Specifications and installation details. 4 pages. Deltex, Inc., 35 Wisconsin St., Oshkosh, Wis. 54901.

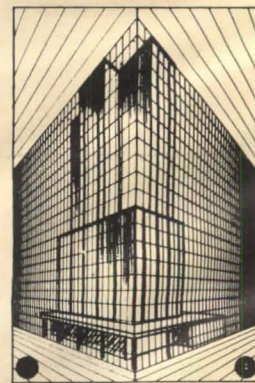
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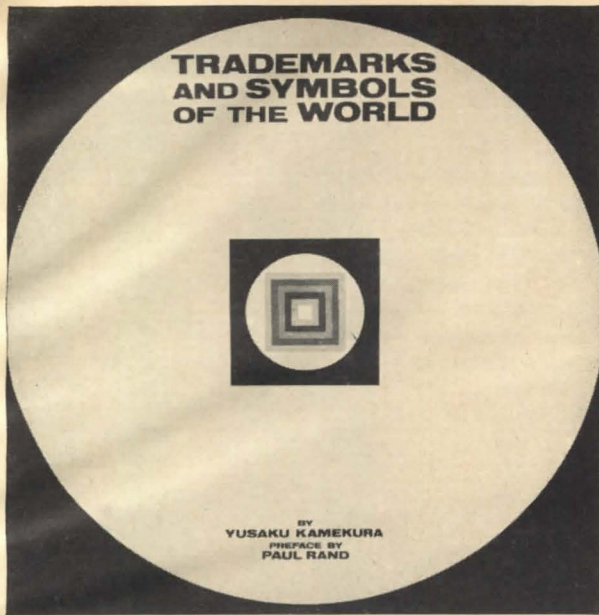
One hundred and seventy-five chairs . . . for office and school library include traditional designs plus those with a Scandinavian-modern slant. Swivel chairs, armchairs, and side chairs are all wood or upholstered in leather, naugahyde, gros point, and nylon fabrics, or designer's own fabric. Photos. 52 pages. Jasper Chair Co., Inc., Jasper, Ind.

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OFFICE EQUIPMENT



Perspective graph paper. Underlays for two- and three-point perspectives, isometrics, and other grid papers for three-dimensional drawings from different angles — both interior and exterior — make handy aids for the draftsman.



Trademarks and Symbols of the World

by Yusaku Kamekura, Preface by Paul Rand


"It is easier to remember a person's face than his name" is a statement often used to explain the importance of trademarks.

In this extraordinarily beautiful book, the best trademarks designed during the last 10 years are reproduced at large scale in black and white and color. The high level of imagination and skill that designers of many countries have brought to bear on this most important design assignment is clearly visible. The trademark designs presented cover a wide variety of fields, such as advertising, packaging, and television. Since a recent trend in trademark design is the use of color, the book contains pages printed in as many as six colors. Complete new designs for old and new firms — as well as examples of the re-design of old trademarks — are included. Examples range from Erik Nitsche's design for General Dynamics and Saul Bass's design for Alcoa to Giovanni Puitori's signs created for Olivetti products and Paul Rand's complete design programs for I.B.M. and Westinghouse.

264 pages, 11 x 10³/₈, 60 pages of illustrations in many colors, 164 pages of illustrations in black and white. \$22.50

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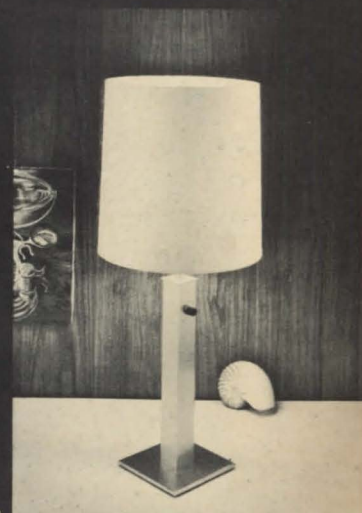
These electronic dimming devices offer several advantages; provide a wide range of lighting levels...use a standard one way bulb...increase bulb life by 5 to 6 times.

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NESSEN LAMPS INC., 317 East 34th Street, New York City 10016



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NS1024



NS1027

NS1025-CP



NS975



Drawings illustrate booklet; prices included. 8 pages. Graphicraft, Box 509, Westport, Conn. 06880.

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Inch-pounds to metric system.

New edition of "ASTM Metric Practice Guide" provides a complete table of conversion factors, listed both alphabetically and by subject; and gives instructions for introducing units from the modernized metric system *Système International d'Unités*. 46 pages. Single copy available by request on company letterhead; additional copies are \$1 each. American Society for Testing and Materials, 1916 Race St., Philadelphia, Pa. 19103.

SPECIAL EQUIPMENT

In the swim. Diving boards, diving board stands, pumps, lights, slides, lifeguard chairs, cocoa matting, lane markers, cleaning equipment, and generally all accessories necessary for outfitting and maintaining commercial and

professional swimming pools are in this catalog, including a diving trampoline that looks rather fun. Brief descriptions, dimensions, drawings, and photos. 28 pages. Ocean Pool Supply Co., Inc., 17 Stepar Place, Huntington Station, N.Y. 11746.

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Just like the Sahara. For those who like it hot, pre-built sauna rooms come fully equipped—except for the Scandinavian lass, of course. Self-contained unit (walls, ceil-

ing, floor, and benches of kiln-dried redwood) are insulated, carpeted with sisal, and include light and heater. Assembly is by built-in, locking hardware—no nails. Sizes range from 4' x 6' to 6' x 12'. Manufacturer also fabricates to designers' specifications for either commercial or residential installations. Brochure contains size, wiring, and other data. 8 pages. Viking Sauna Co., 2459 Lombard St., San Francisco, Calif. 94123.

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Shielded rooms keep out unwanted radiation and signals.

Protective rooms for hospital, research, and industry testing may either be prefabricated or built as an integral part of new construction. Manufacturer has developed shielding systems for X-ray and gamma ray radiation, and enclosures to protect sensitive equipment against radio interference. Descriptive text is supplemented with test data, performance charts, installa-

tion details, and typical layout for an X-ray room. 8 pages. Ray Proof Corp., 50 Keeler Ave., Norwalk, Conn. 06856.

Circle 220, Readers' Service Card

Cool water. Drinking fountains (free-standing and wall-mounted in a variety of finishes) are catalogued, specified, detailed, and illustrated in a catalog that includes accessories, capacity tables, and installation instructions. 38 pages. Larco, Inc., 2413 San Fernando Road, Los Angeles, California 90065.

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PROGRESSIVE ARCHITECTURE NEWS REPORT

REINHOLD PUBLISHING CORPORATION
A subsidiary of Chapman-Reinhold, Inc.
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EditorJan C. Rowan
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Cabot's STAINS at expo67

more than 20 Expo buildings treated with Cabot products



Pavilion of Trinidad, Tobago, and Grenada;
Architect: Peter Bynoe, Port of Spain, Trinidad;
Associate Architect: F. A. Dawson, Montreal, Canada; Cabot's Stains throughout.

Cabot's Stains Preserve, Protect, and Beautify

Architects from many lands took part in the creation of Canada's Expo 67; many of them specified Cabot's Stains for exterior and interior wood surfaces. International recognition such as this is a tribute to the quality and dependability of Cabot products. Shown here is the Pavilion of Trinidad, Tobago, and Grenada . . . other buildings treated with Cabot products are: Pavilion of Canada, Switzerland Pavilion, Pavilion of Monaco, Pavilion of West Germany, Pavilion of Italy, Man the Explorer Pavilion, and many others.



Samuel Cabot Inc.

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Please send architectural information on Cabot's Stains

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NEXT MONTH IN P/A

"If these men got John Glenn into orbit and back, could they get a father to work a little bit faster and get him home a bit sooner?"

The question was from Edmund Brown when he was Governor of California. He answered affirmatively and awarded four important contracts for the study of his state's environmental systems. His thinking reveals that we are beginning — only beginning — to take advantage of the gigantic advantages that could be ours were we to direct the powers within man's scientific and technological grasp into architecture and planning.

Governor Brown was talking about the capabilities of the aerospace and defense industries. In the August PROGRESSIVE ARCHITECTURE, we enlarge the scope to include the whole spectrum of endeavor and research that has come, in the last three decades (and especially since World War II), to be known variously as "systems analysis," "operations research," "systems engineering," or some similar locution. In examining the potentialities of systems techniques in the solution of architectural and environmental problems, P/A has decided that an appropriate term to cover the field is

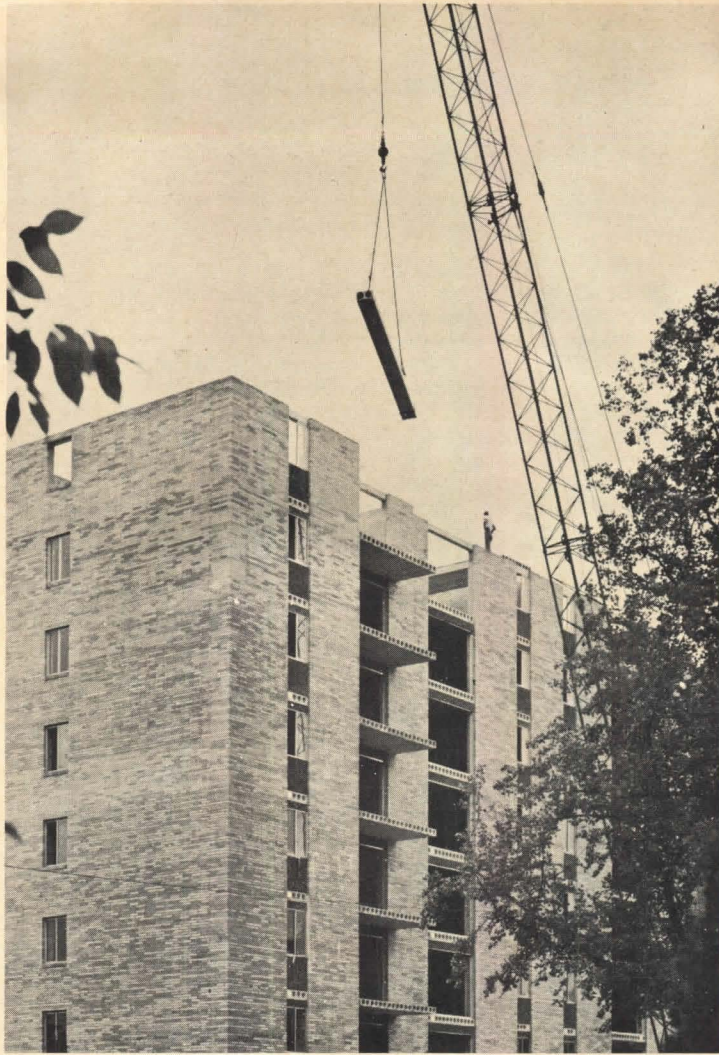
PERFORMANCE DESIGN

and that is what the August issue will be about.

It has been said repeatedly — most recently by Dr. Arthur Clarke at the AIA Convention in New York — that things are going on that will wipe out the necessity for architects and architecture if they do not grasp the prime opportunity for assuming an important role in tomorrow's society. In no other area today is this more apparent than in Performance Design. Here is a place the architect can start to act today in preparation for his responsibilities tomorrow. And that goes for the 58-year-old practitioner as well as the just-graduated beginner — that's how fast things are happening.

August P/A will follow the thread of Performance Design in its many guises through government, business, politics, building, military, the sciences, technology, industry, transportation, planning, and (with a glance to the future from professionals who have already become immersed in this subject) architecture. We hope that this issue will act as a reliable launching pad for those architects who wish to accept the mantle of new vision and new responsibility offered by an increased understanding of the ever-more sophisticated means at their disposal in the field of Performance Design. And we, as people interested in the future of architecture and planning, hope that there will not be an architect anywhere who refuses that mantle, that vision, that responsibility.

To receive the August P/A on Performance Design and many more equally informative monthly studies, all you have to do is fill in and send in the subscription card at the rear of this issue. Our own "systems" will take over for you after that.



Eight story apartment uses Hi-Stress Deck on masonry bearing walls.

New HI-STRESS DECK is prestressed concrete. It does a better job.

Close up, that HI-STRESS slab looks pretty much like the original Flexicore unit. And it has all its traditional good characteristics: high-speed erection, immediate work deck, high fire-resistance rating, and the other benefits of concrete construction.

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This slab is fully prestressed, so it has all the advantages of prestressed concrete. This means it will give much improved structural performance over a conventionally designed slab.

New fire tests give you 2-hour fire resistance rating on untopped decks, 3-hour on decks with 1¾ inch topping. UL, Inc. labeling service is available.

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Check up on new HI-STRESS DECK. Phone your local representative: see the white pages of your phone book. Or write The Flexicore Co., Inc., P. O. Box 825, Dayton, Ohio 45401. It may be just right for your next job.



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DOORS



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Architect: John Knapp, A.I.A. • Builder: Van Sweden Associates



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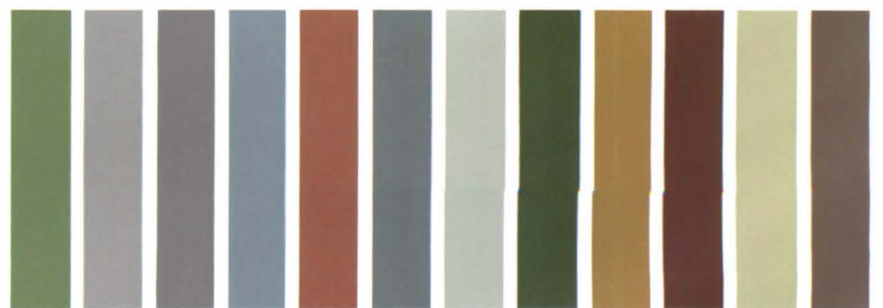
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Nature-tones





blend with the soft beauty of the environment

Now you can work from a palette of twenty-four matte-finish Nature-tones, to develop a soft, subdued projection of Nature herself in porcelain enamel.

These new porcelain hues were created by color experts, in conjunction with leading architects. They are fully in tune with the low-chroma values of contemporary design.

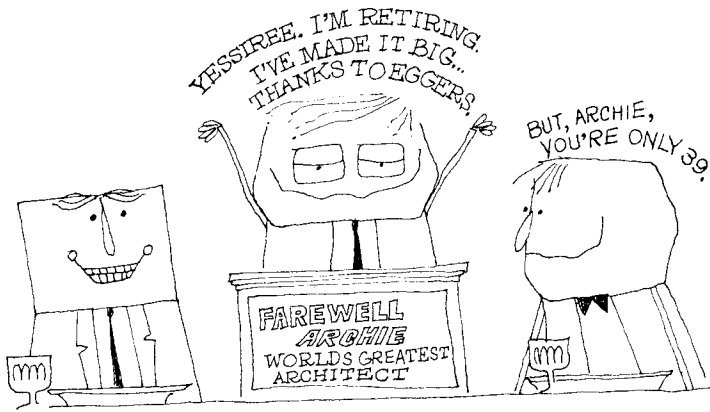
Nature-tone finishes retain all the traditional advantages of porcelain-on-steel panel construction—resistance to dirt, weather, and

atmospheres. Their colors are permanent; the finish is durable. And the panels are available in a wide variety of textured treatments.

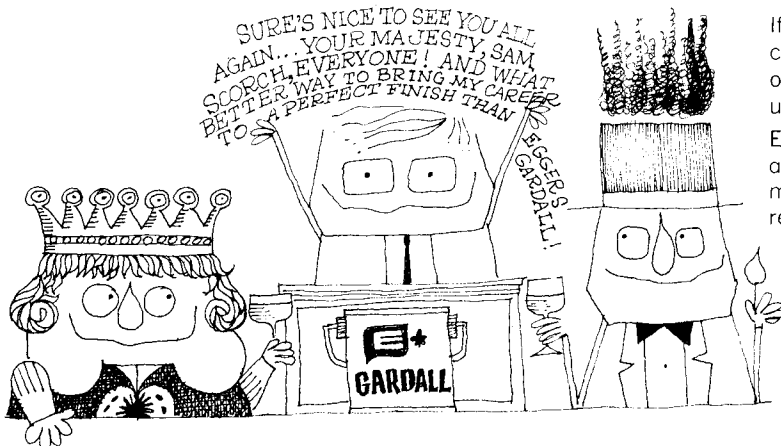
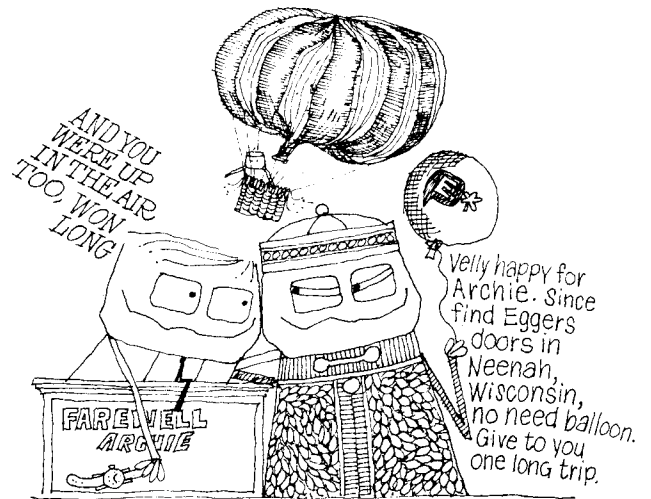
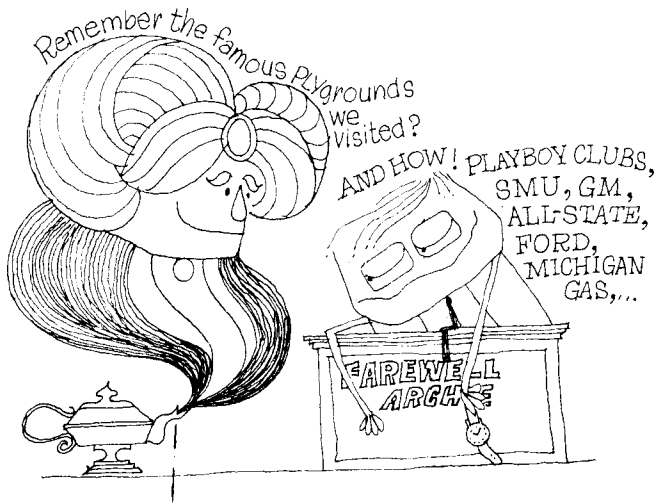
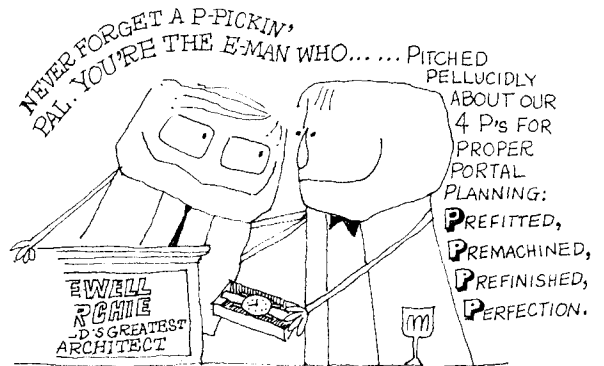
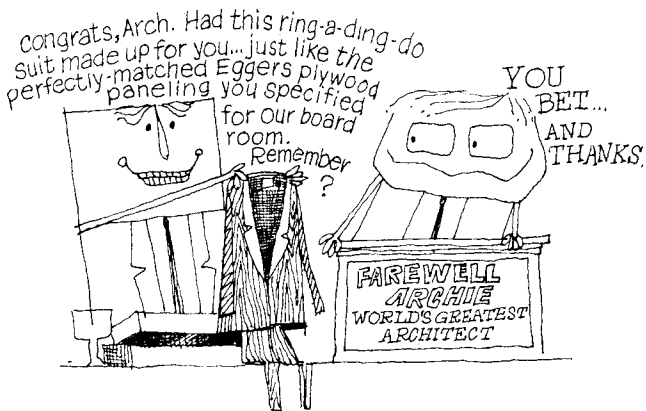
Bethlehem supplies special enameling steel sheets to fabricators who form and coat Nature-tone architectural panels. We are very enthusiastic about the aesthetic possibilities of Nature-tones, and will gladly send the Porcelain Enamel Institute's brochure and color chips upon request. Room 1047, Bethlehem Steel Corporation, Bethlehem, Pa. 18016

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AULD LANG SYNE OR HOW TO RETIRE IN STYLE



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The multi-purpose roof.



Tectum form plank shapes this roof and ceiling at George Williams College Leisure and Creative Arts Center, Downers Grove, Illinois.

Architects: Mittelbusher & Tourtelot, Chicago.
Contractor: Turner Construction Company, Chicago.
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For further information write for Bulletin 6701, or see us in Sweet's.

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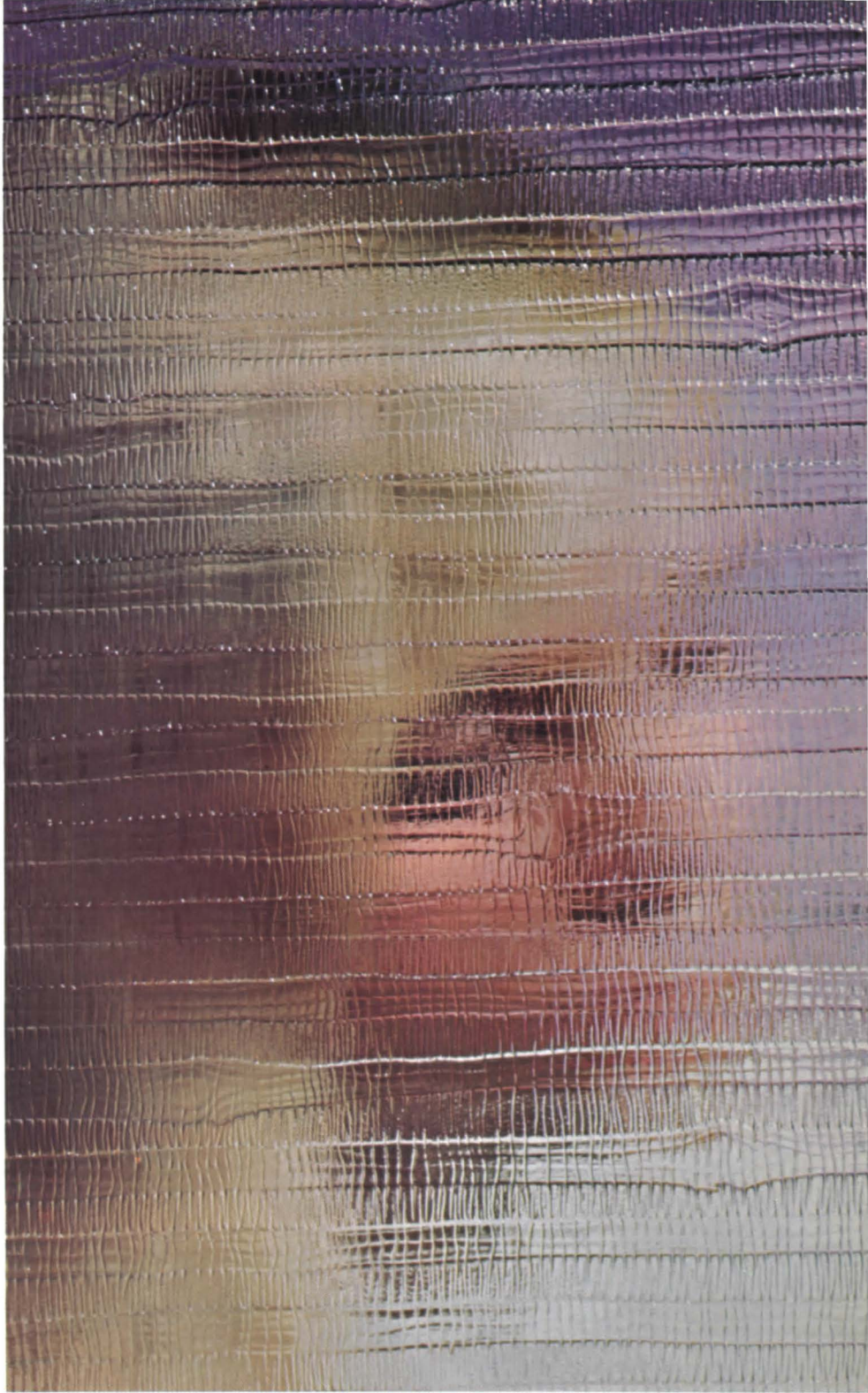
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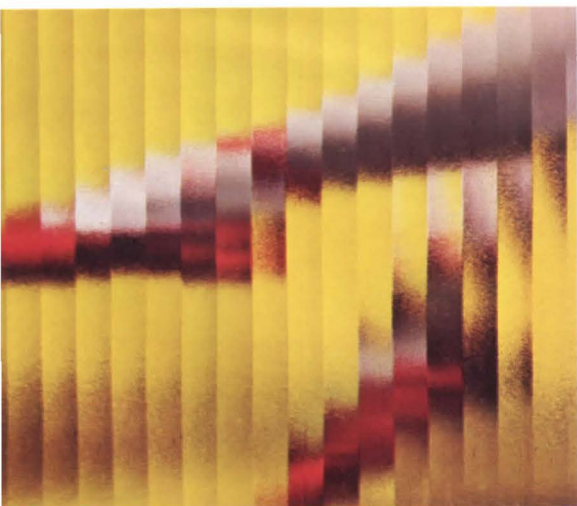
Privacy can be beautiful.

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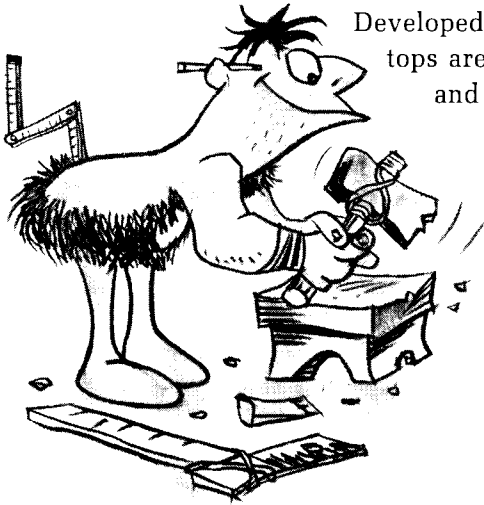


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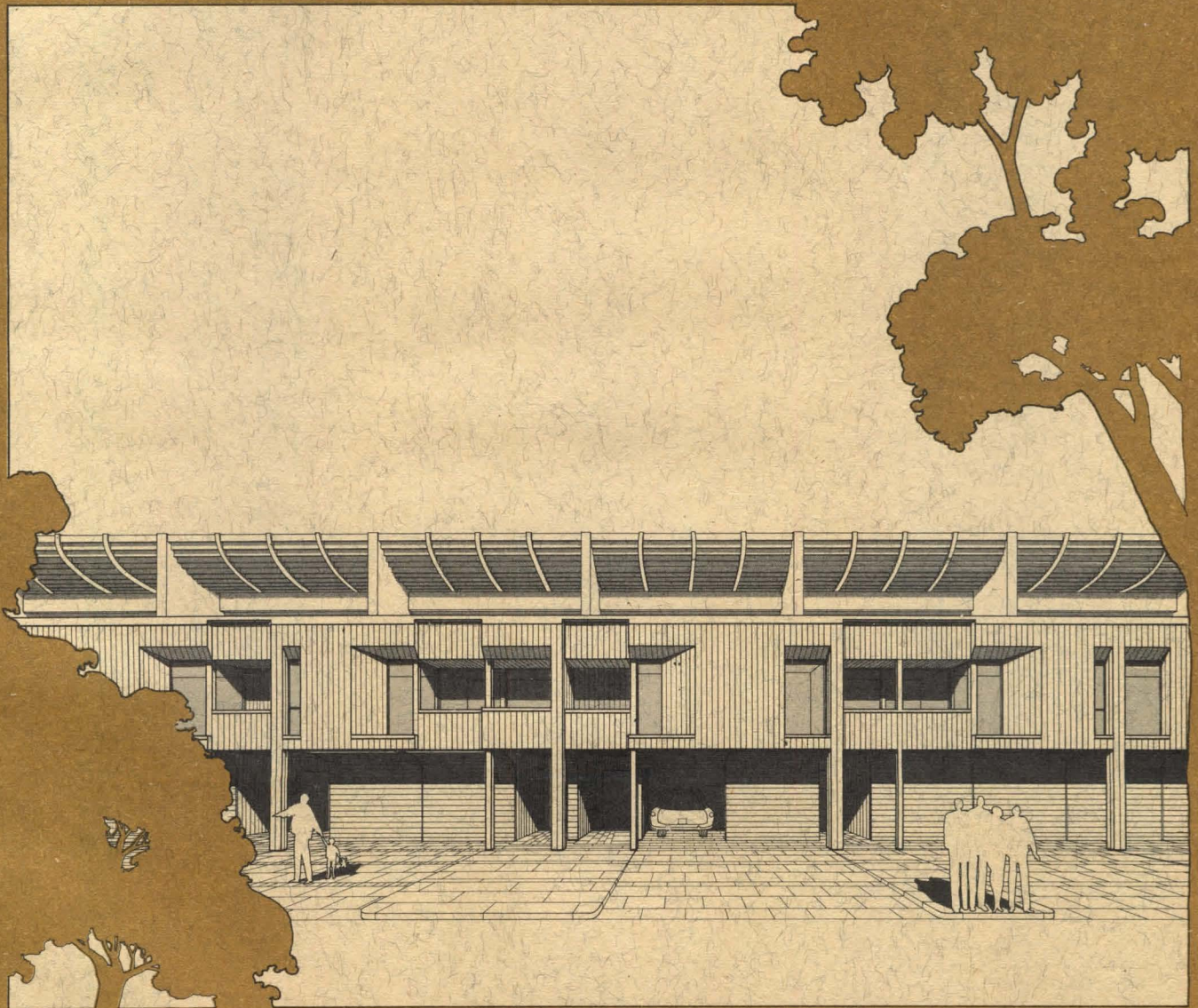
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Chrysler Corporation, Huber Ave. Foundry, Highland Park, Mich.
Architects—Engineers: Giffels & Rossetti, Inc., Detroit, Mich.
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CLOVIS HEIMSATH
USES NATURAL LIGHT
TO COMPLEMENT
THE WARMTH OF WOOD
IN HIS CONDOMINIUM
TOWNHOUSES



Weyerhaeuser Company has commissioned a number of leading architects to create design innovations which highlight the potential of wood in public and commercial buildings. This original design by Clovis Heimsath, A.I.A., of Houston, Texas is the 12th in the series.

"EXCITEMENT IS A CEILING OPEN TO THE SKY..."

"A townhouse is an adult world, demanding variety, excitement, yet control.

"Variety is achieved by tiering the plan, creating a family terrace on the third floor, a master bedroom overlooking the living room and the living room opening onto a private garden.

"Excitement is a ceiling open to the sky, allowing north light to flood the interior rooms.

"Control comes from the adjustable, laminated wood louvers which ride above the glass and filter the light.

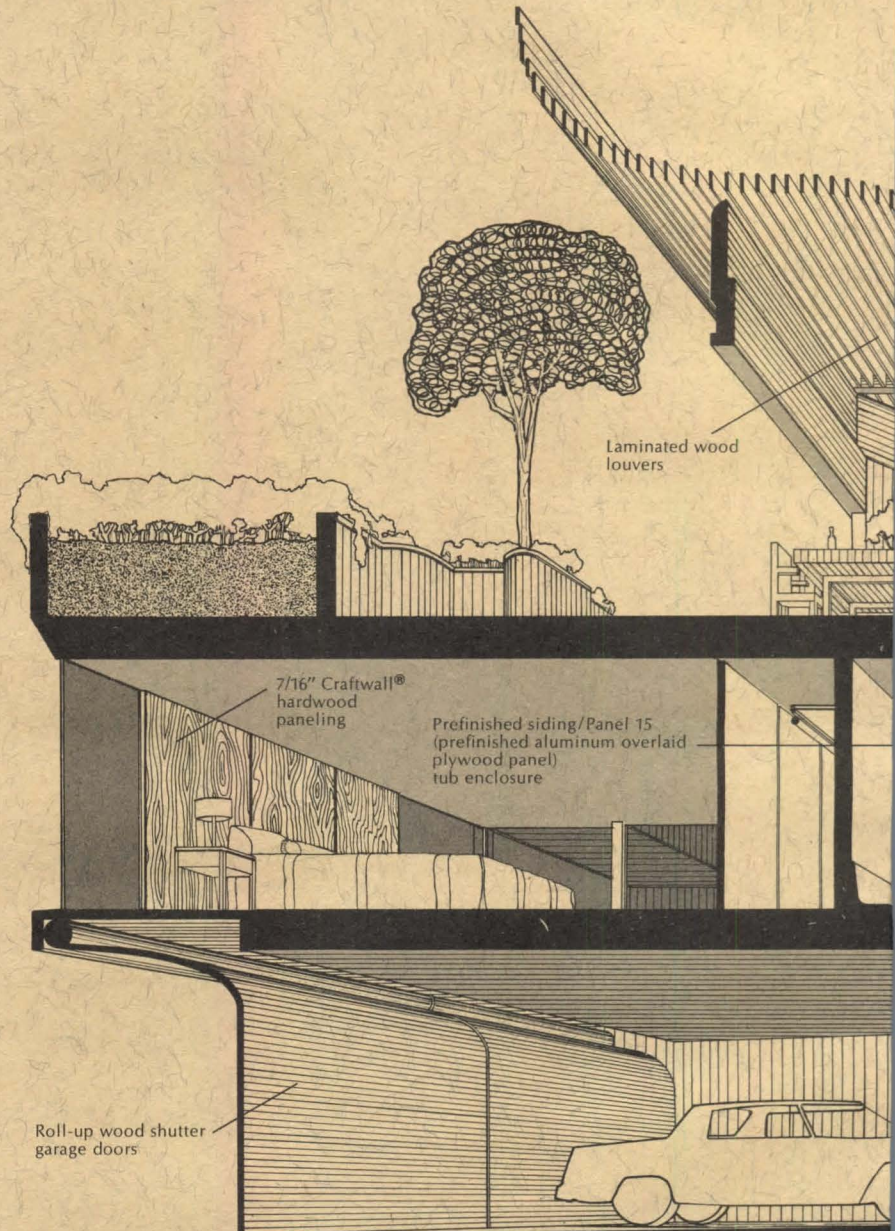
"The major laminated roof beams are double purpose. On the underside they carry glass set in neoprene gaskets; on the curved laminated wood member they carry the undulating line of wood louvers, adjustable by motor control.

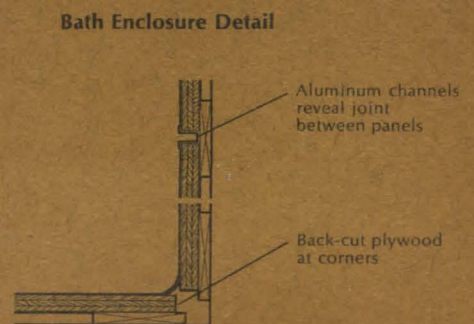
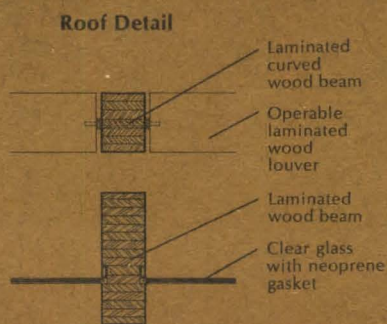
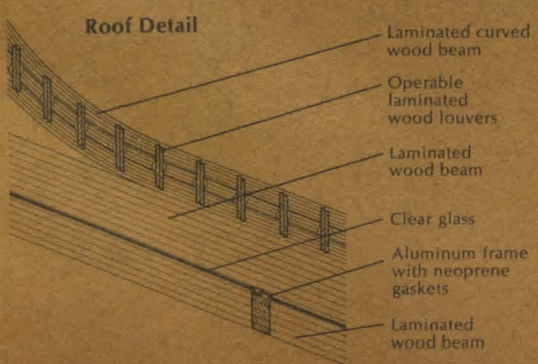
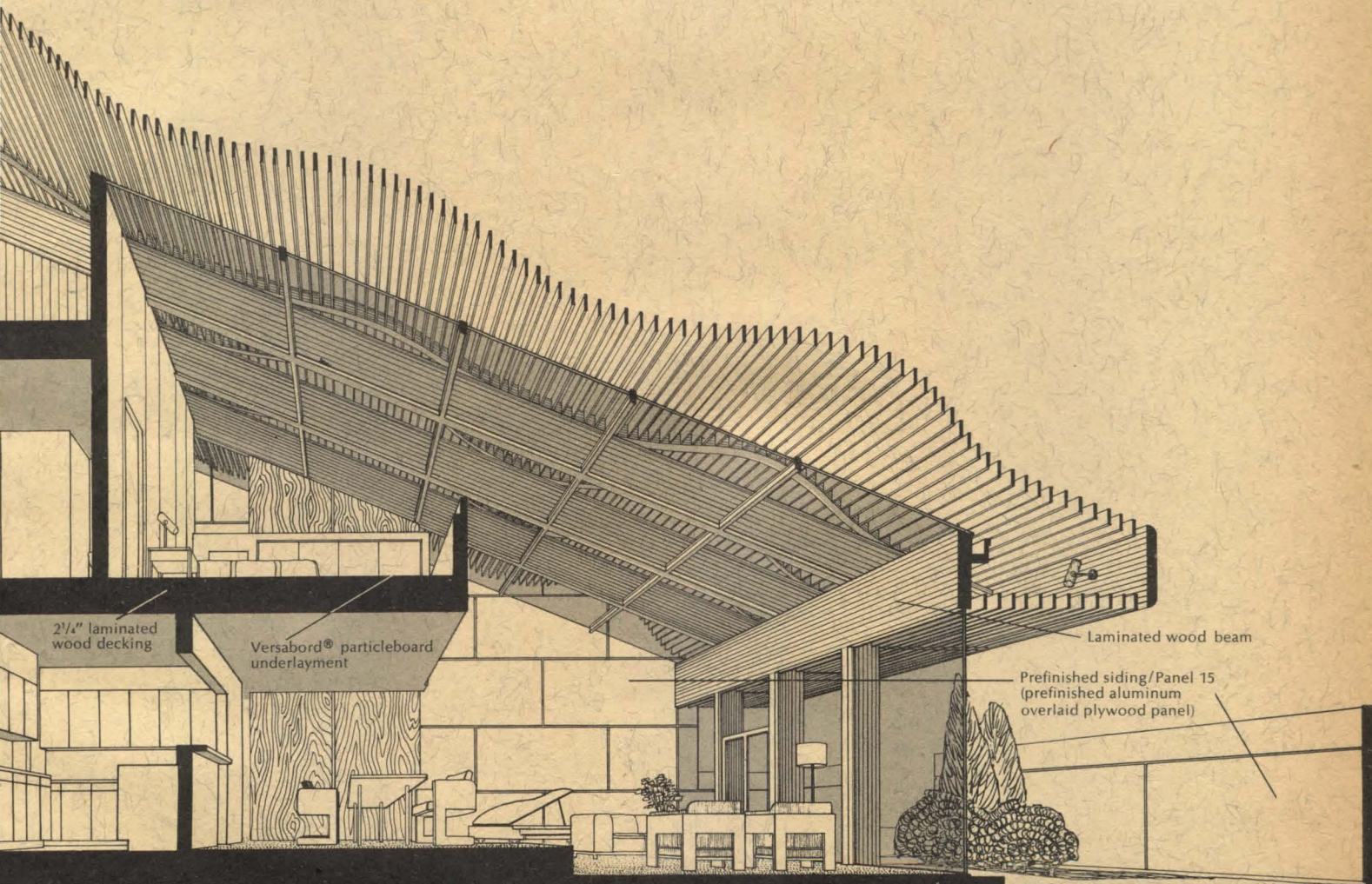
"To give the side walls a durable finish and large scale, a prefinished aluminum overlaid plywood panel is used with the staggered joints expressed. This paneling is also a logical choice for a tub enclosure and a garden wall enclosure.

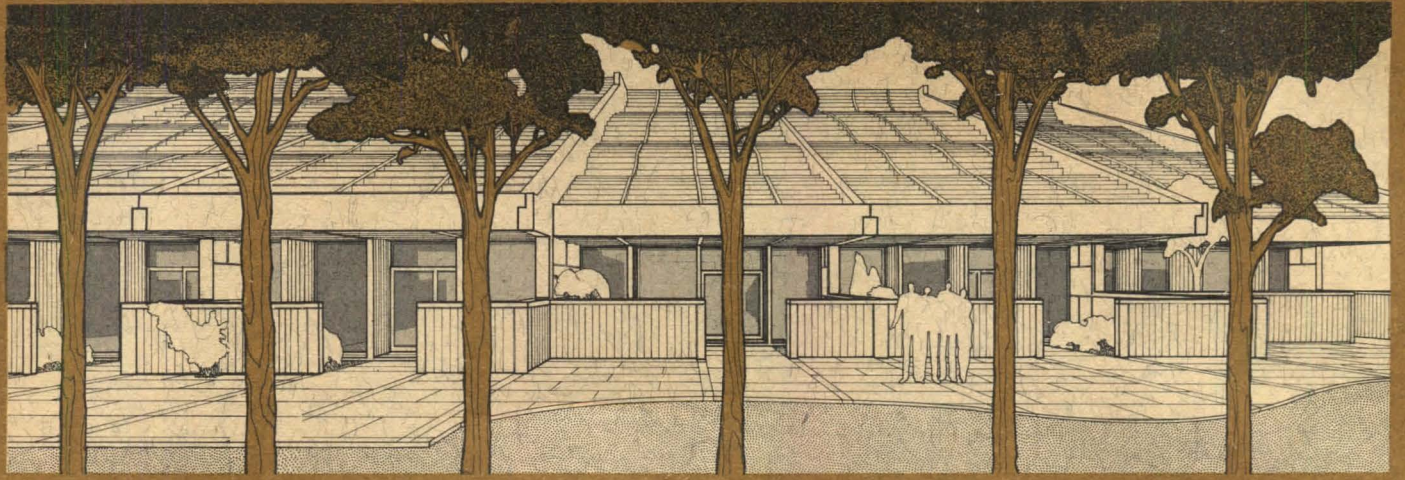
"The second floor structure is laminated decking on beams. Carpet is used throughout for sound control, set on particleboard underlayment. The roll-up wood garage door is designed to be compatible when closed with the vertical wood siding of the front facade.

"Cars are parked in the front of each unit so that the living room in the rear will open onto the private garden. The walk beyond leads to the common pool and recreation space, a center of interest for the whole complex."

Clovis Heimsath







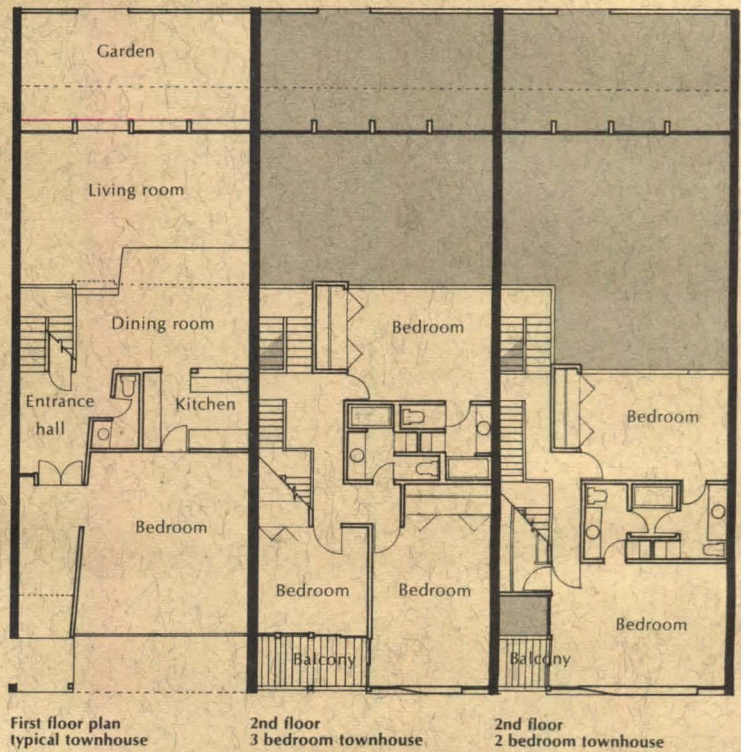
**"AN ADULT WORLD—
DEMANDING EXCITEMENT,
VARIETY, CONTROL."**

Wood is the key element in the excitement, variety and control of Mr. Heimsath's imaginative townhouse concept.

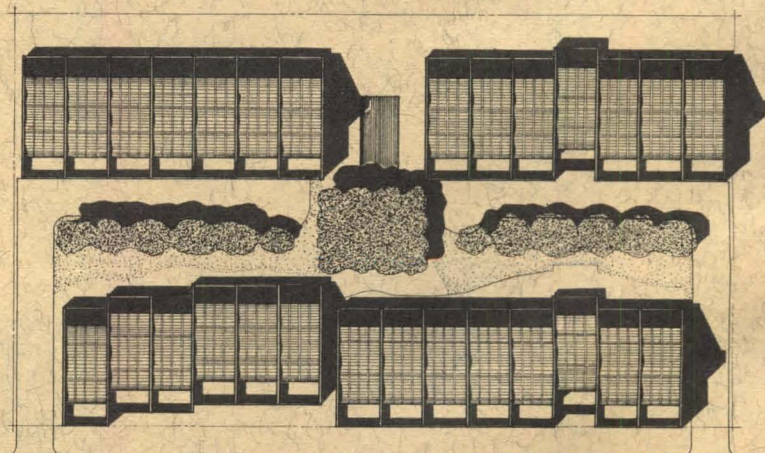
Probably no other material has the warmth, beauty and workability of wood. No other material is enhanced so much by the open-sky treatment and the natural light that results from it.

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Site plan

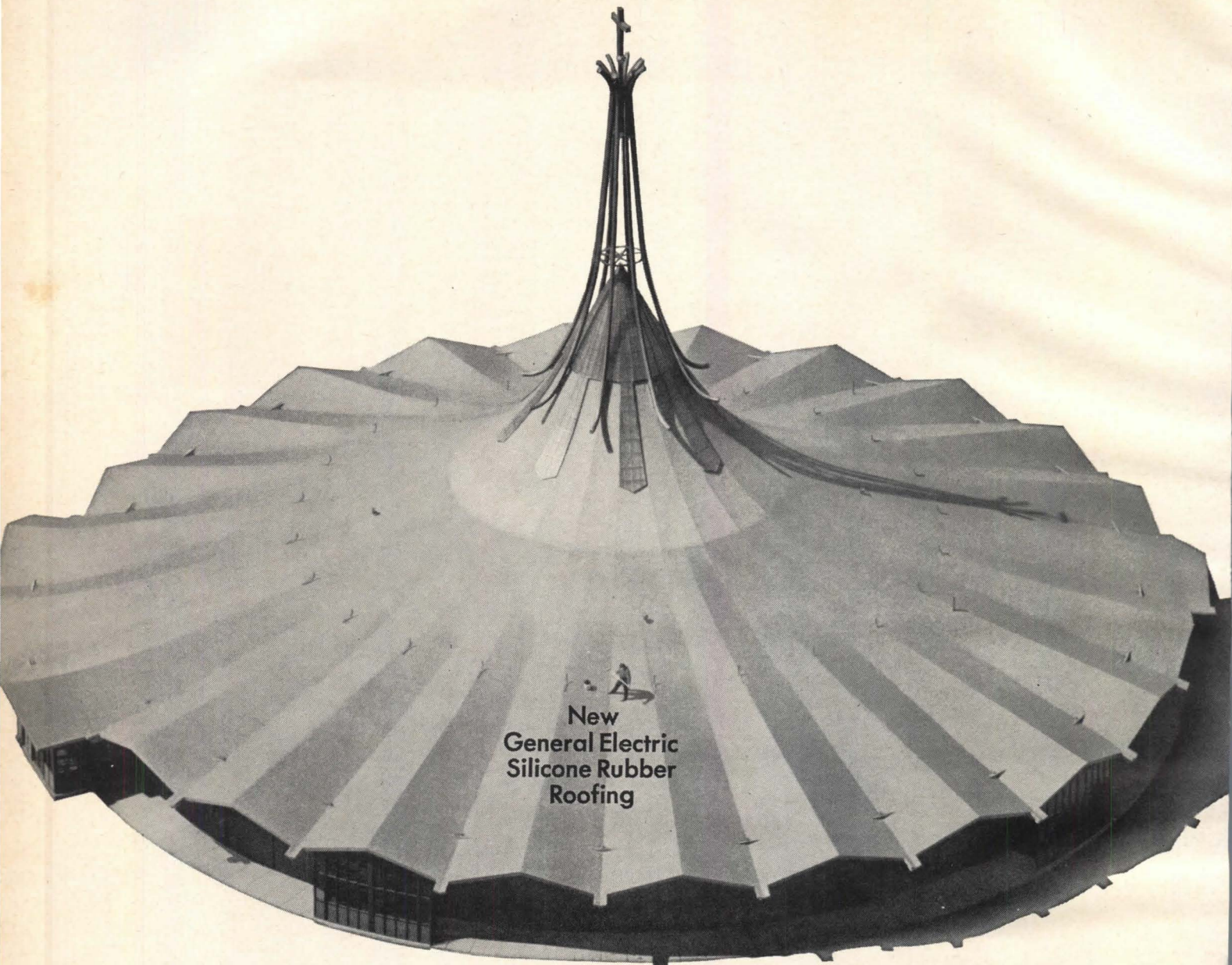


You see Stanley in all the best places.

Places like Yale University's Stiles and Morse Dormitories, the Public Service Company in Denver, and Chicago's U.S. Gypsum Building. The newest places. The most modern places. Places

where the choice of hinges was considered an important element of the total design. Stanley hinges were chosen because of their well-engineered insides, and their clean, elegant appearance. On Readers' Service Card, Circle No. 392

Stanley hinges . . . the perfect finishing touch. Stanley Hardware, Division of The Stanley Works, New Britain, Connecticut. **STANLEY**



Immaculate Conception Church, Weymouth, Mass.
Architects: Holmes & Edwards, Boston, Mass.

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A liquid GE Silicone Rubber Roofing System covers any shape you can design . . . elliptical, straight pitched, doughnut shaped . . . to make a long lasting, seamless elastic skin.

And, Silicone Rubber Roofing will stay weather resistant, seamless and resilient for years, if the substrate does its job. And that solves the most common problem of intricate roofs like this. Leakage.

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seamless as long as the substructure does its job.

Another beauty of Silicone Rubber Roofing is that it weighs only 1/20th of conventional built-up roofing. That opens up all kinds of design possibilities. It goes on in fewer man hours than any other liquid applied system. That keeps costs in line. And it doesn't take much skill. That's a help.

So, if you'd like to guard against goofs on your next showcase design, get the facts on GE Silicone Rubber Roofing. Write Section Q7271, Silicone Products Dept., General Electric Co., Waterford, N. Y. 12188.



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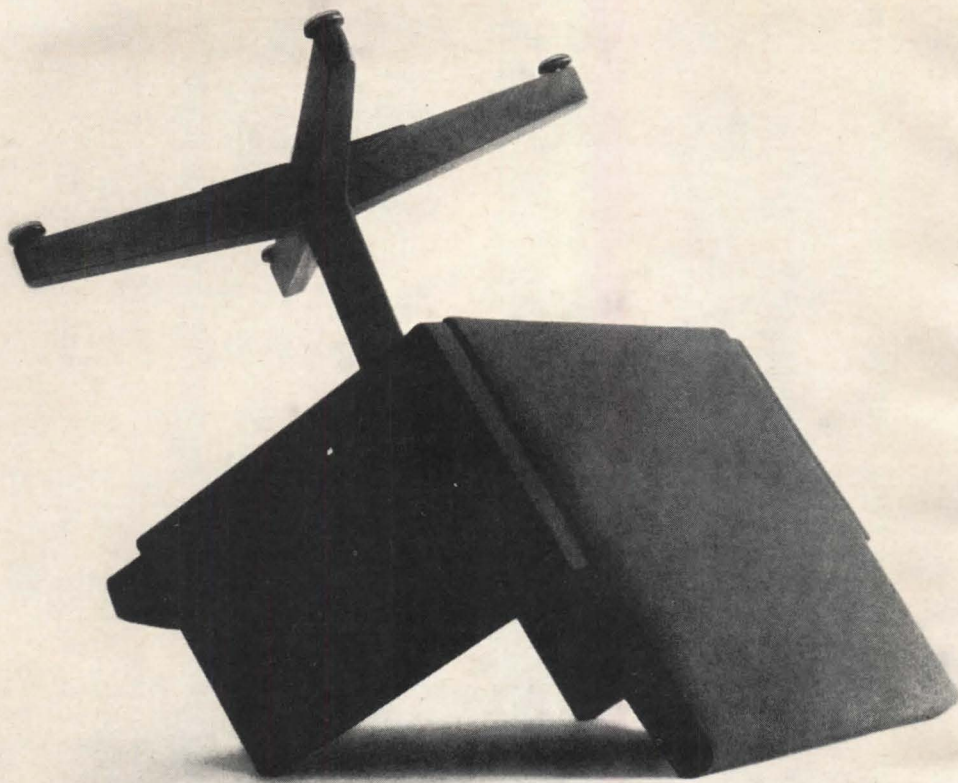
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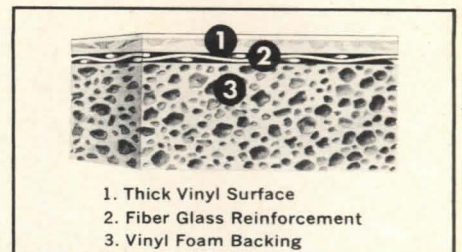
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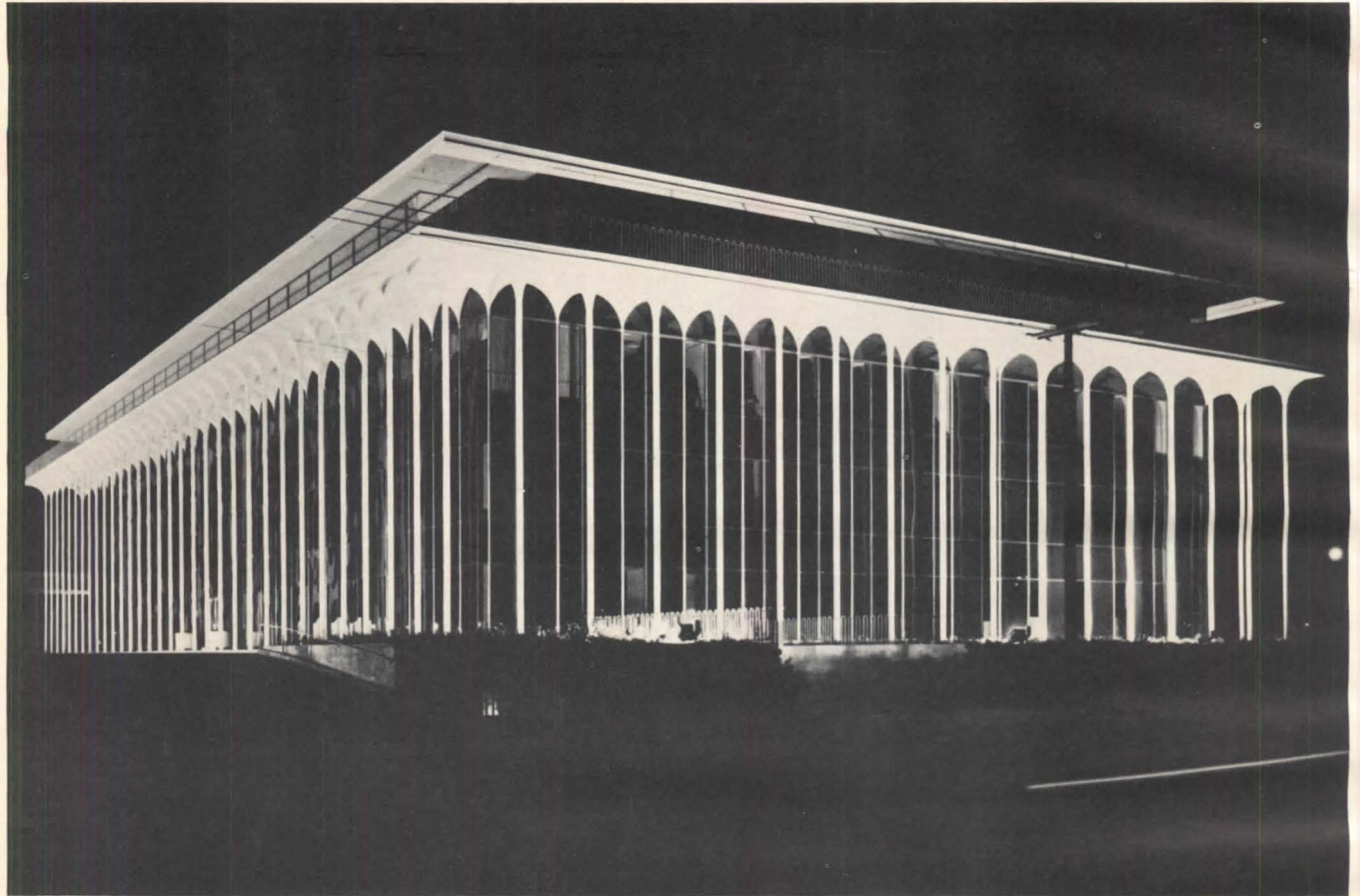
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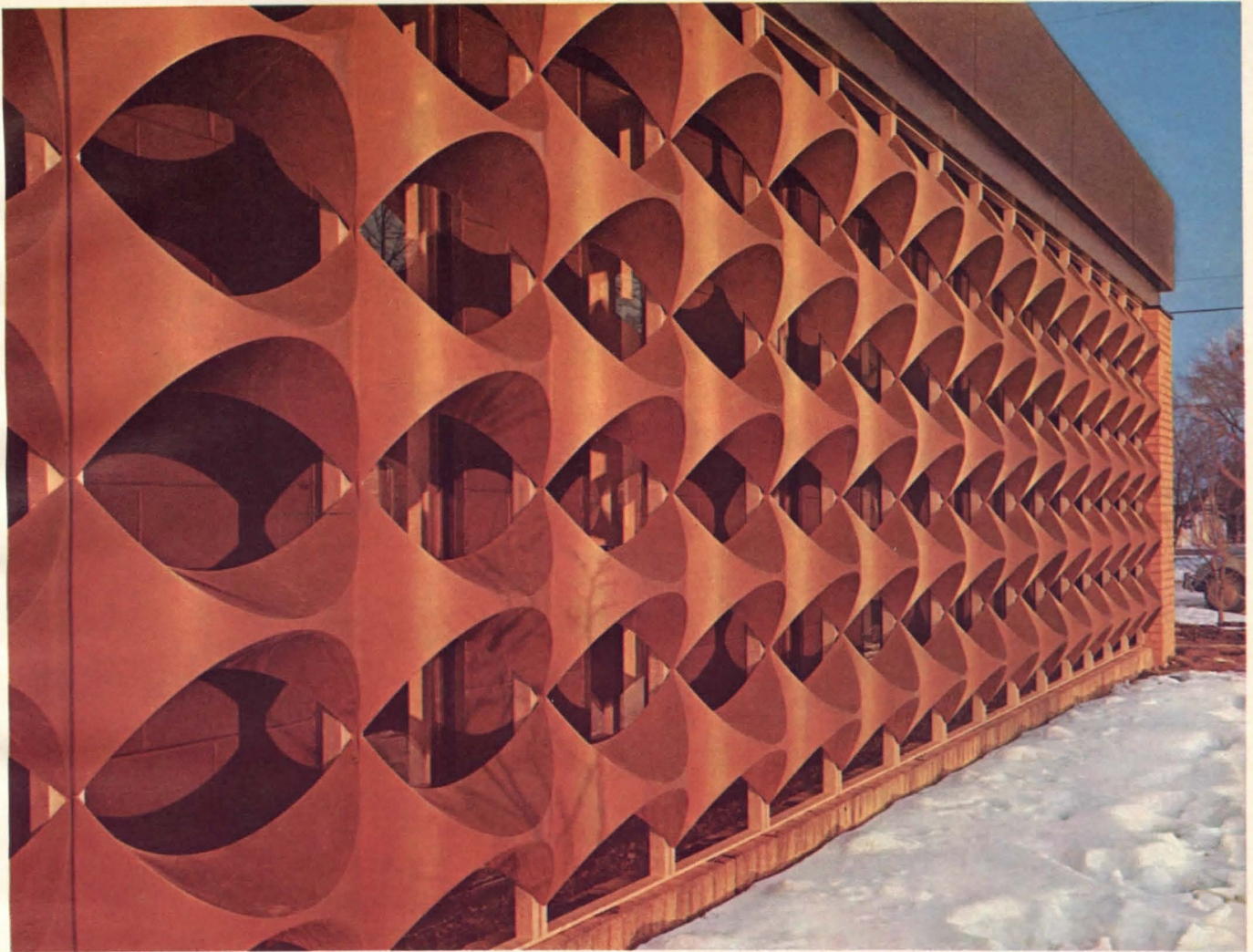
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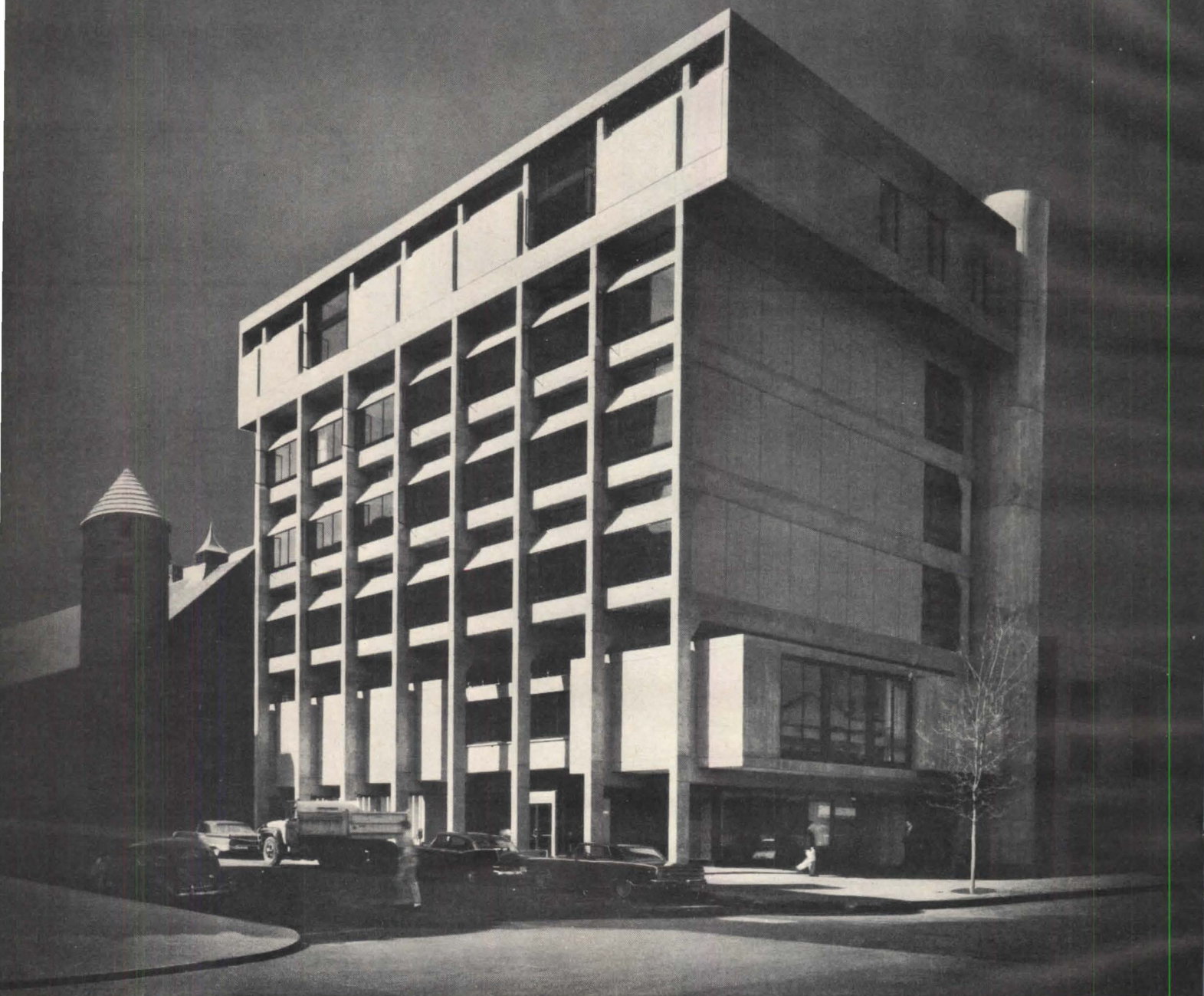


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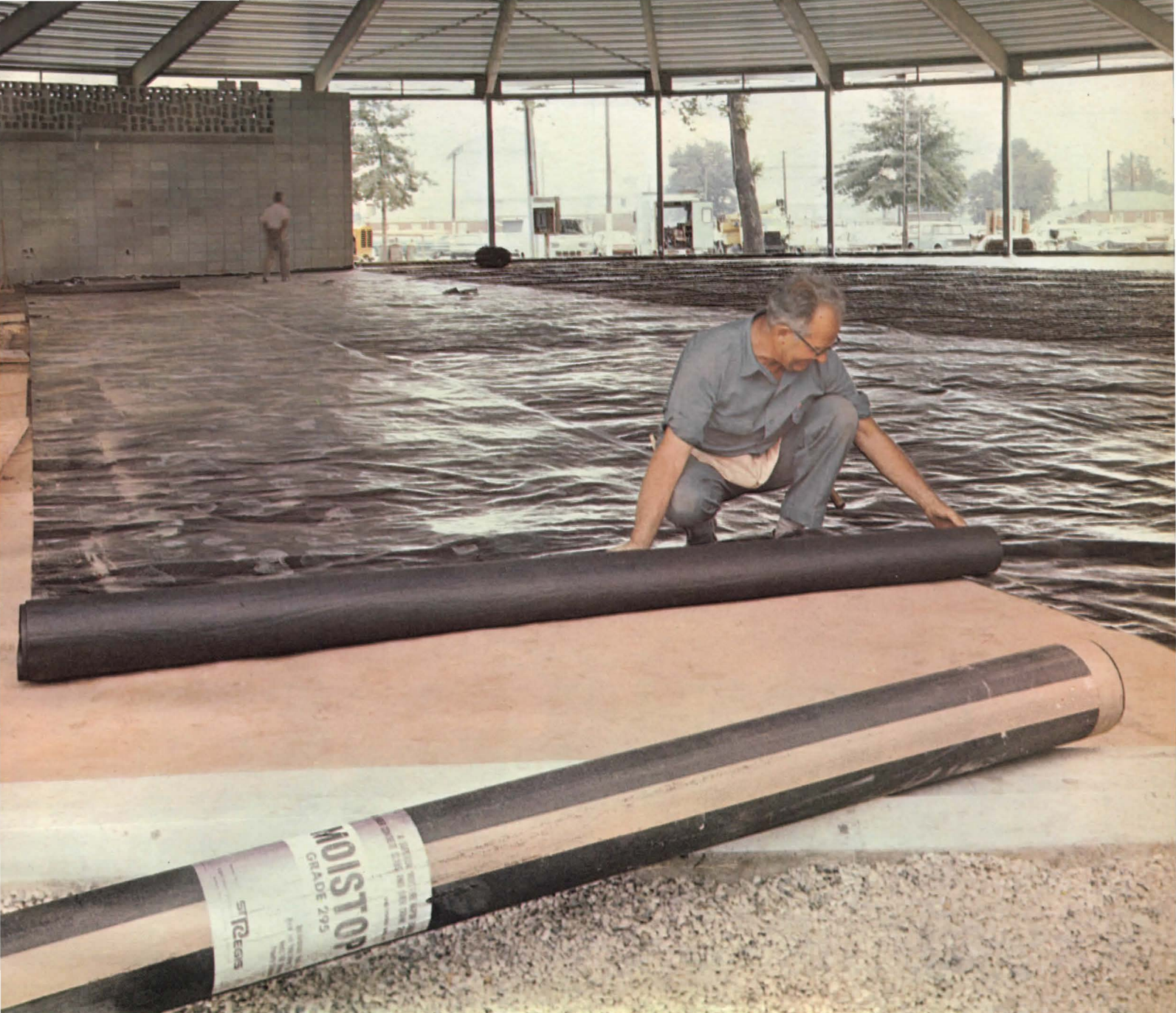
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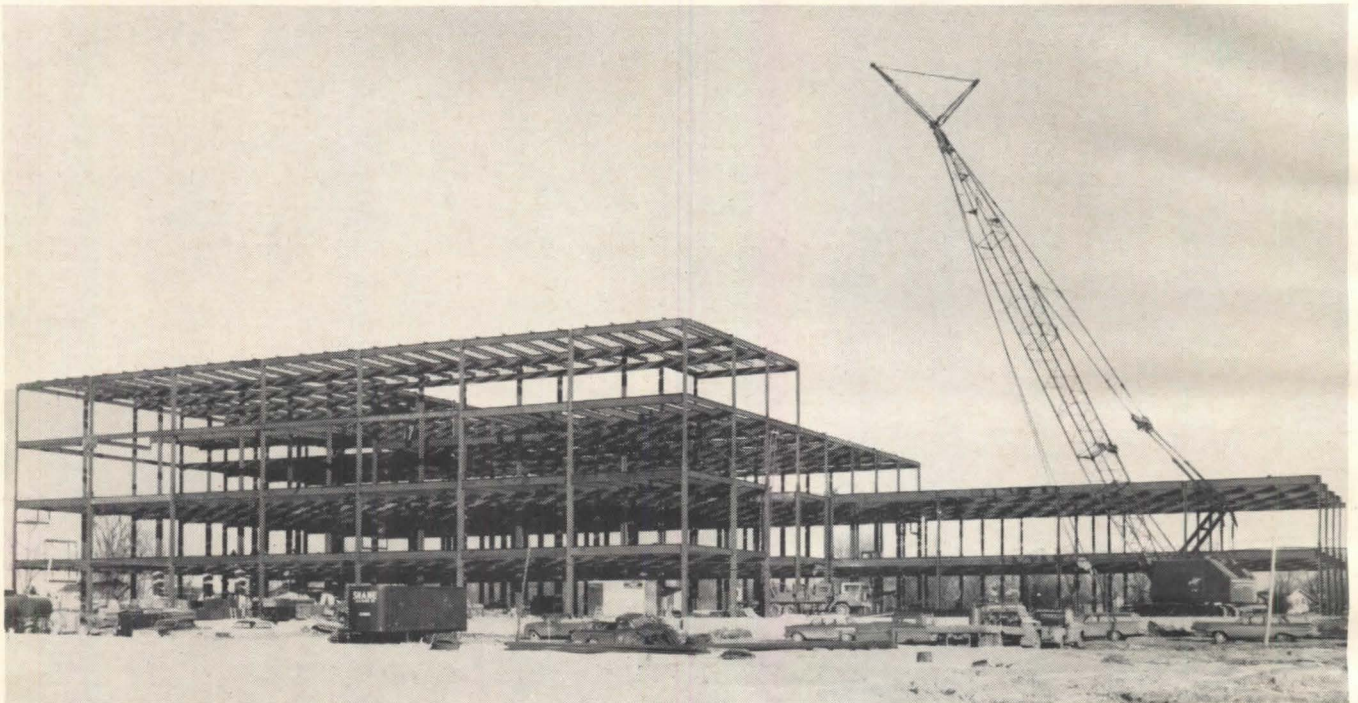
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On Readers' Service Card, Circle No. 386

Food for thought at General Mills—



Ex-Ten Steel Frame cuts cost of building designed for tomorrow.



General Mills' new food processing plant in West Chicago. Engineers and Architects: A. Epstein and Sons, Inc. Steel Fabricator and Erector: Chicago Heights Steel Division of General Bronze Corp. General Contractor: George A. Fuller Company.

The criteria governing the design of a group of new food-processing buildings for General Mills, Inc., were: function, sanitation, cost, and construction time . . . *plus adaptability to future changes and expansion.*

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The floor system uses 5" reinforced

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July 1967

PROGRESSIVE ARCHITECTURE

“Cities will go on growing, of course, like dinosaurs — for the same reasons, and with the same results. I can even see the time when only the uneducated and criminal elements are left in the cities; the wars of 2001 may be internal military operations against the decaying concrete jungles.”

ARTHUR C. CLARKE



EDITORIAL

Involvement is a popular word nowadays. Be it work or play, you must be involved. And if you cannot be involved, you become alienated—which is another word used frequently in recent years. Alienation does not necessarily mean noninvolvement. Refusing to accept the values and way of life of its parents, most of the younger generation is alienated from the mores, ideals, and aims of the political, economic, and social structure presently controlling the country. But this does not mean that they are not involved. On the contrary, they are very much involved in building up within their own group a different world—a civilization they can believe in and, therefore, be involved in.

As Marshall McLuhan pointed out at the recent AIA Convention, in this age, real involvement cannot exist without total and simultaneous use of all the senses. If one wants to play a role rather than merely do a job, all faculties must be used at once. This all-at-onceness, as he called it, necessitates a re-evaluation of many ideas sacred to the tradition-bound architect.

One example of an architectural (and social) disaster caused by the over-emphasizing of one experience only is, according to McLuhan, a typical slum clearance program. Since invariably the visual (pictorial) aspect is played up in the architectural solutions, only one sense, that of sight, is given recognition. Not being offered stimuli to the other senses, people refuse to be involved, and because not involved, resent the new environment created for them. This happens even in the rare cases where the pictorial element is of some quality.

Such evaluation of our urban renewal efforts is surely of interest to architects. If it is true that the static and linear experience of contemplative seeing is diminishing in importance to the TV-bred generation, then the idea that architecture is a visual art needs re-examination.

This is exactly what some are attempting to do. The exhausted girl (or is it a boy?) on the facing page, resting after an "architectural" exercise described in this issue, does not bring back memories of an antiquities sketching class or even a basic design studio course. No doubt, such epidemic antics will upset quite a few practitioners, because it is not easy to question the many years of one's schooling, work, and life.

If architecture is to be an environmental art rather than a visual art—which is what comprehensive servicemen tell us it should be—then an environmental experience must take precedence over a purely visual experience. This multi-sensory approach, now clearly evident in all the other visual arts, is beginning to infiltrate the ranks of architecture. Result: Just as not so long ago the profession was split between the traditionalists and modernists, today it is fast becoming split between the contemporary traditionalists and the all-at-once environmentalists. In the next few years the rift will inevitably widen, the argument become more heated, and the front lines more clearly defined.

How do you reconcile an attempt at a more systematic way of problem solving with the vagaries of nonquantifiable sensory perceptions will be discussed next month in our issue devoted to Performance Design. But another question, how do you edit an architectural magazine aimed at the whole profession at a time when the interests of the practitioners are becoming distinctly divergent, is one that will have to be solved during my own sleepless nights. ■

Jan C Rowan

LIGHT AND AIR HOUSES



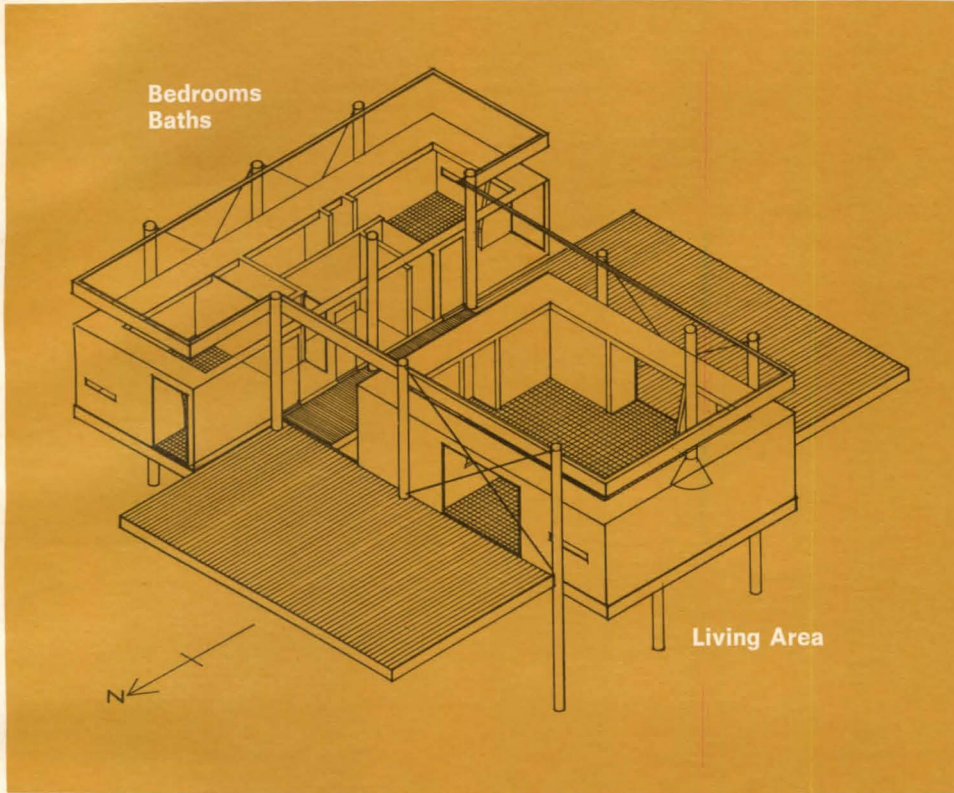
Photos, except as noted: Peter Gluck

One hot afternoon in 1963 found two young architects, Peter Gluck and David Sellers, getting hotter and hotter. They could not understand it. All they were doing was sawing up telephone poles for the foundations of a house designed by Gluck for his parents on the beach in West Hampton, Long Island. As it turned out, flying Creosote was a sort of super Man-Tan that gave them a super burn. The only relief was a cool dark bar that turned them out at 2 A.M. when all they wanted to do was sit in front of the air conditioner.

Gluck, like many of his Yale contemporaries (MAY and NOVEMBER 1965 P/A), is plunging head-on into architecture — designing, building, and developing — without wading through a long apprenticeship, or waiting for the client to come to him. He graduated in 1965 and to date he has designed four houses, which have been completed, and has two others on the boards. The first, for his parents, was designed and built during two summers while in architectural school. "Since they don't teach much about construction during the first year," says Gluck, "I had to learn as I went along. When I started on foundations, I read up on foundations, when I got to windows, I reviewed all the windows in the book, looked up and down the beach and finally made up some of my own." During two summers of living on the beach, Gluck got some first-hand knowledge of wind and weather. From his experience, he has designed volumes tailored for air circulation, privacy, and protective outdoor spaces, all of which are developed in his later houses.

Like many young architects, Gluck is concerned with the lack of quality in standardized building products and in protest he has designed his own fireplace (with movable hood) and furniture system, both of which he hopes to put into production.

Gluck has also purchased 100 acres of ski country near Warren, Vermont, and has plans for designing and constructing 80 vacation units (in three or four stages) while leaving 70 to 80 per cent of the land untouched. "The only way to save land," says Gluck, "is to do it yourself." And that seems to be the spirit of Yale in the 1960's.



First Beach House, Westhampton, L.I.

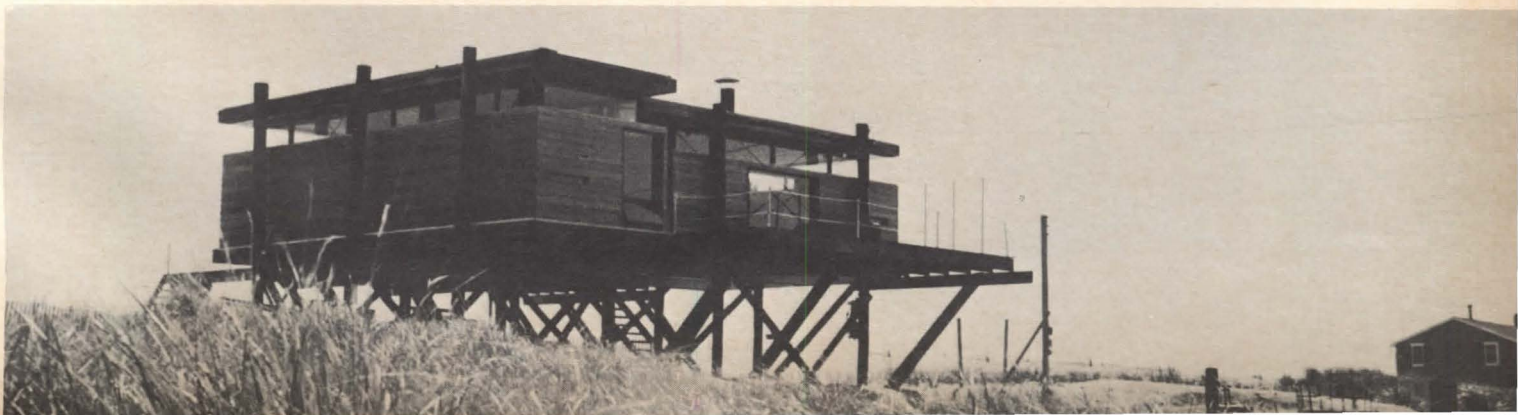
Mr. and Mrs. W. H. Gluck, the architect's parents, requested a vacation house that was easily maintainable, contained two bedrooms, two baths, and a large living room. For privacy, the architect separated the living room from the bedroom wing, and the latter took on the minimum dimensions and shape required by the bathroom core and bed space.

The structure is supported by 40-ft telephone poles sunk 23 ft into the ground. Floor and ceiling platforms are hung from poles, and the walls are independently supported by a ring of 2-ft-thick plywood box beams that house the cupboards, kitchen unit, and a bank of seats. The interior is finished with tongue and groove cedar boards and rosewood trim (salvaged by the architect from a local tree). "Things happen when you begin to build yourself," says Gluck. "The buttresses, for instance, turned out to be perfect storage spaces for the window shutters; from regular working drawings this would not have been obvious." One lesson learned from the parental house was how to and how not to handle the wind: The space between the two units becomes a veritable wind tunnel on a blowy day — a real chiller in cold weather — but when it is hot, it is the one cool, shady, and breezy spot on the premises. Cost: \$13,000 for 820 sq ft of interior space, 700 sq ft of deck, and — two summers of filial labor.

Photo: Maude Dorr



Living room includes kitchen (in far corner), dining area (right), and U-shaped bench wrapping around west end (foreground).





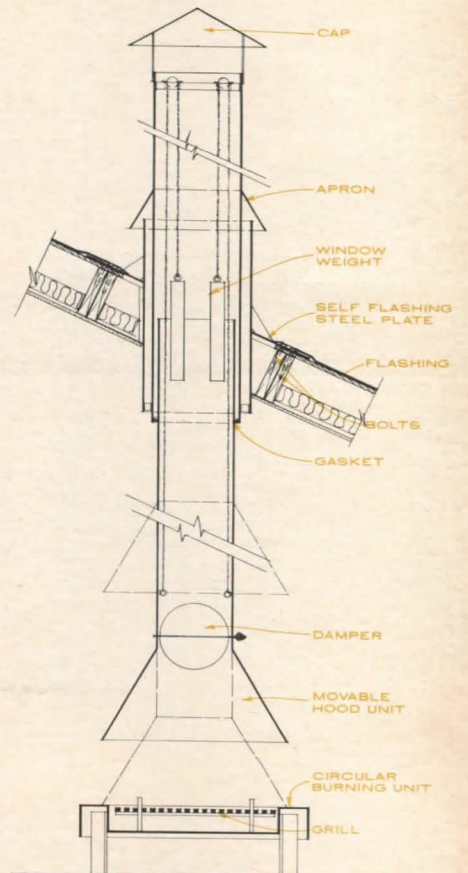
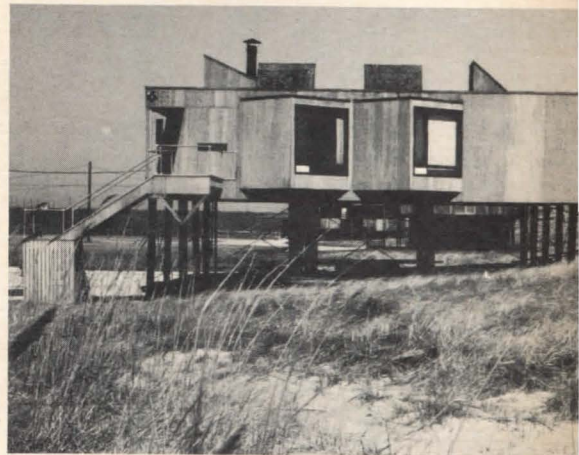
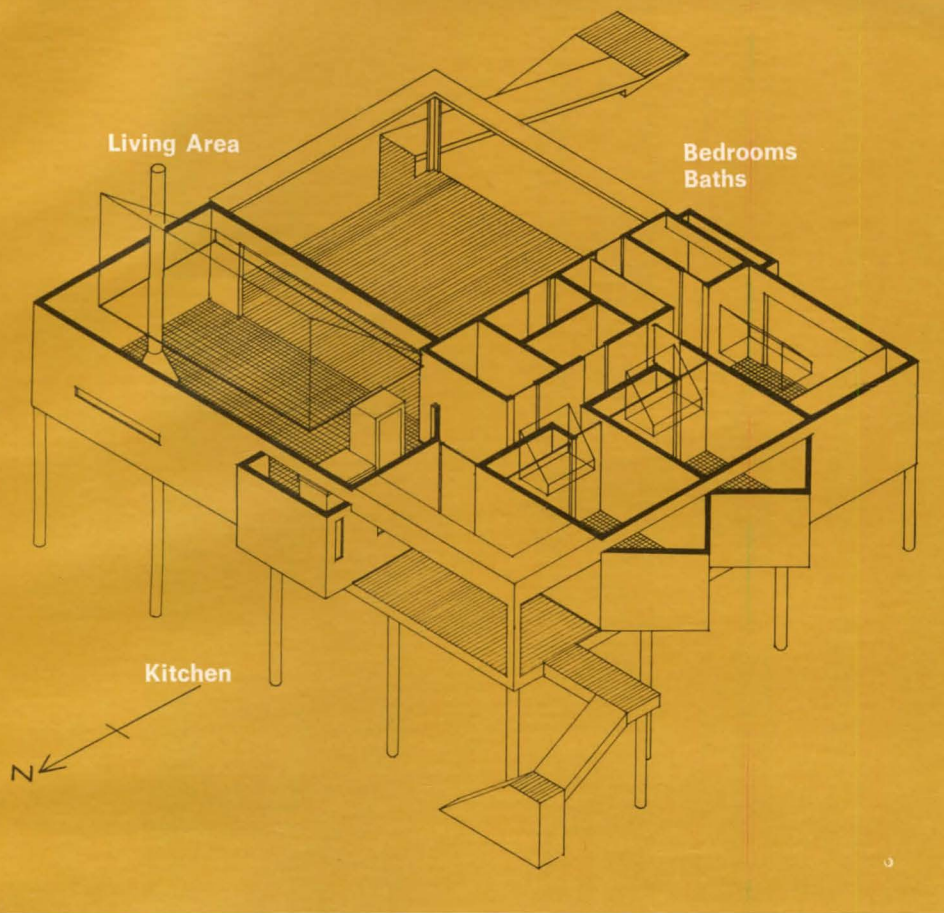
Second Beach House, Sagaponack, L. I.

Here, Gluck improves on wind control, views, and volumetric articulation. The clients for this house wanted every room to have a view of the ocean, and preferably, the entire façade of the house would be glass. Deck space was also important. Gluck raised the house above the level of the dunes and slanted the bedrooms out to the side, skillfully providing views for each while avoiding an enormous "picture window" façade. Each room has cross-ventilation with low windows opening to the south (on the beach side), and high clerestory windows facing north. A mechanical core runs through the center of the building separating living from bedroom quarters. The structure is supported on telephone poles braced with cross ties, and the main deck is situated so that it is sheltered from the prevailing winds. Wooden panels, sliding on garage door tracks, can be used to protect the living room window or be moved around to the sides of the deck to provide additional privacy and protection. Materials and finishes are inexpensive: Texture 1-11 plywood covers the interior walls, beams are stained dark brown, railings are made out of plumbing pipes and joints. Cost: \$26,000.



Bedroom window (left) looks out on beach; clerestory (top) helps air circulation and brings in northern light.



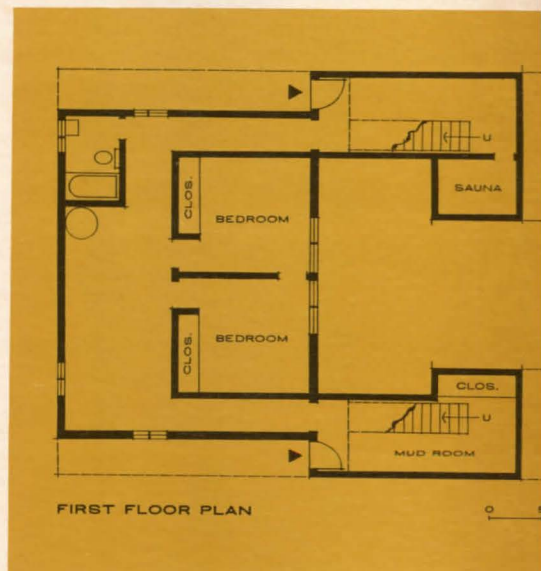
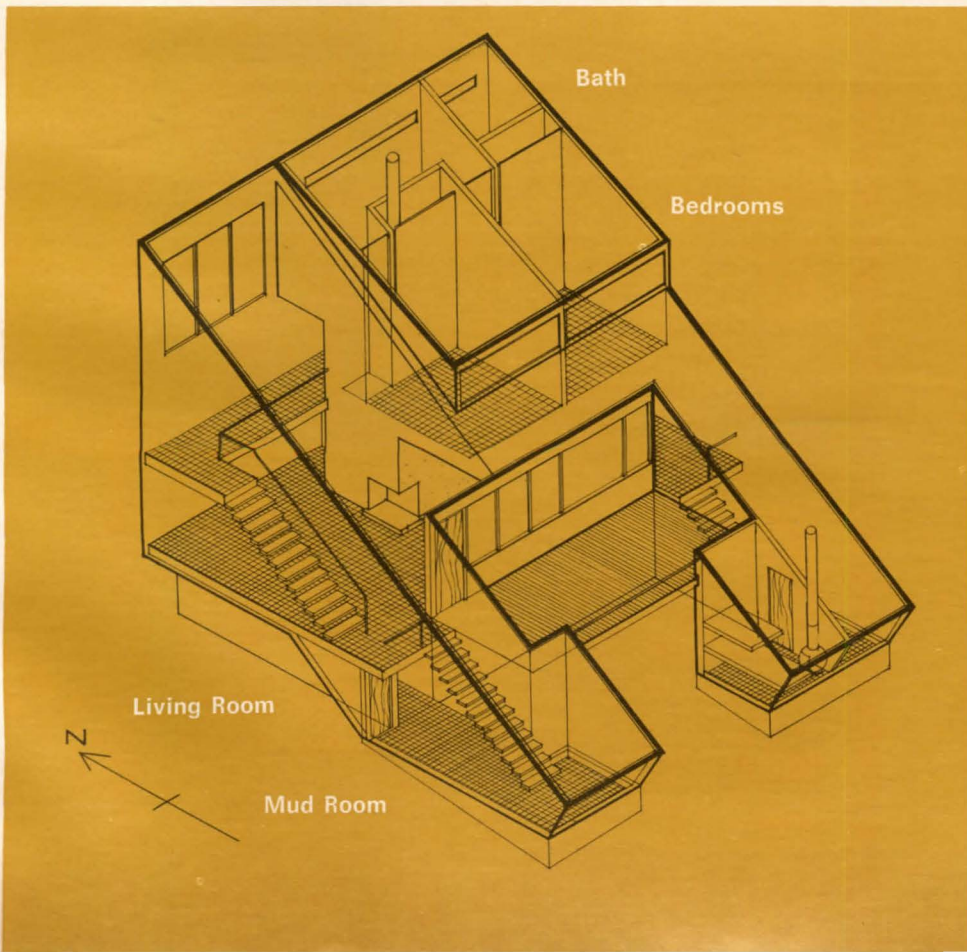


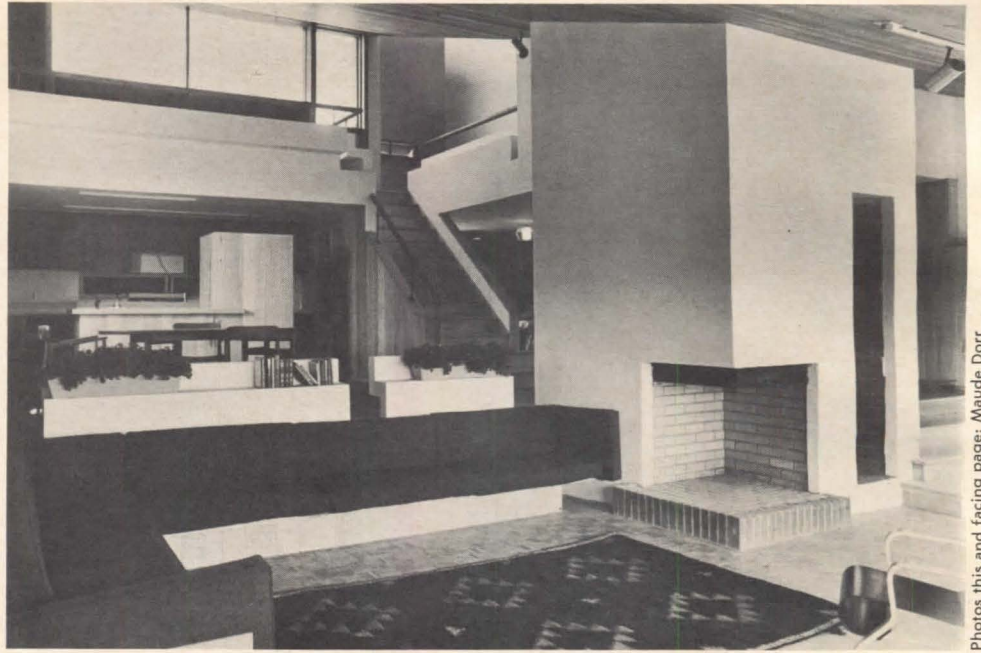
Fireplace, designed by Gluck, has movable hood counterweighted by plumber's pipes filled with lead — or window weights. It can be raised to get it out of the way, adjusted for suitable draw, or lowered to extinguish the flames. Inexpensively manufactured by a local sheet metal firm, total costs came to \$150. Gluck hopes to mass-produce it.



Leisure House, Happy Adventure, Newfoundland

Happy Adventure, Newfoundland, 60 miles from Gander, has been burbling for months about its first piece of modern architecture — a house designed by Gluck for Daniel J. Fraad, president of Allied Maintenance (the company that sweeps up around the world — from JFK to Orly airports). There is absolutely nothing to do in Newfoundland, and Fraad's house is not a ski house or a beach house: It is a do-nothing house — a place to sit, contemplate the view, and relax. At its most active, it is a small museum to house Fraad's collection of contemporary paintings and sculpture. Besides ample wall space, the client also specified a full basement, "mud room" (for cleaning off boots, etc.), a Sauna bath, and four bedrooms. The architect fit the house snugly into the hillside and wrapped the structure around a central deck to provide a sheltered *outdoor space overlooking* the water. Since the house was to be built by a man who could not read, the architect drew up the structure in isometric form instead of making regular working drawings. One of the few structural problems involved the foundation, which had to rest on a rocky ledge susceptible to freezing, expansion, and flaking. To solve the problem, Gluck placed the house on a ring of steel beams, so that if one side tilts, the whole house goes with it. Major materials are local; inside is finished with pine boards, exterior with horizontal bevelled siding. Cost: \$7000 (Construction wages in Newfoundland are \$1 an hour.)

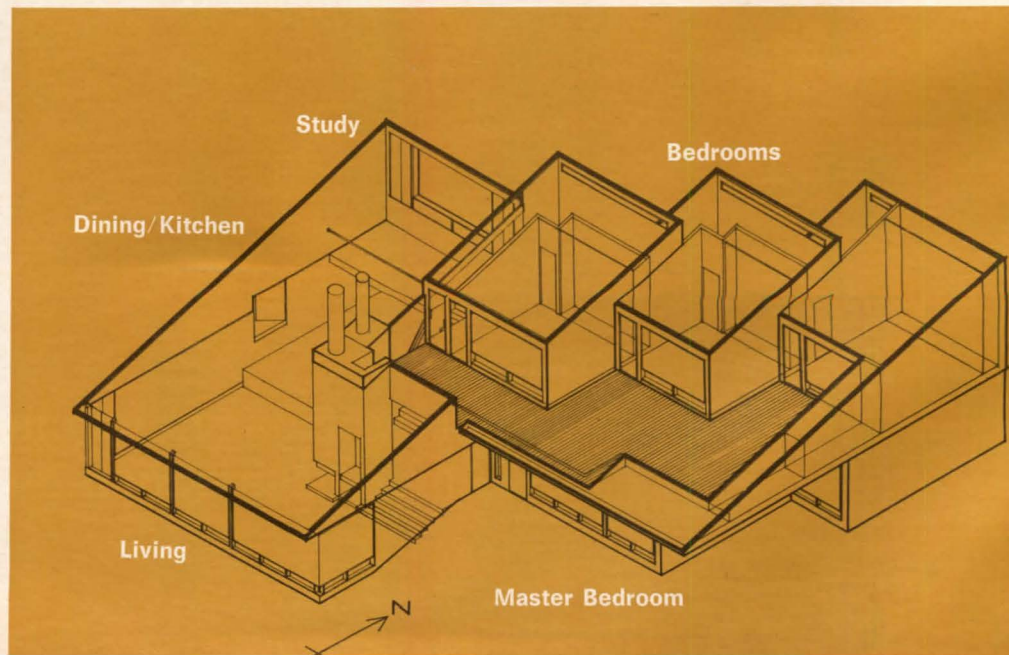
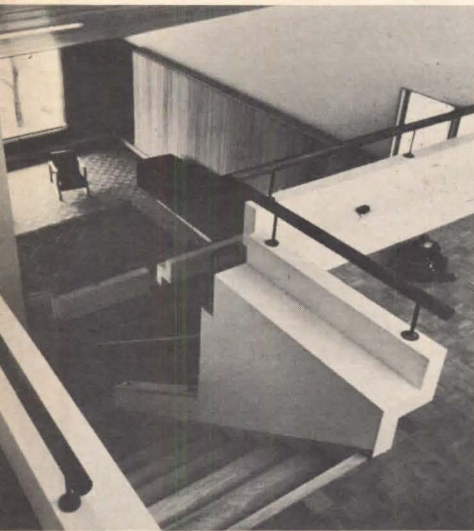


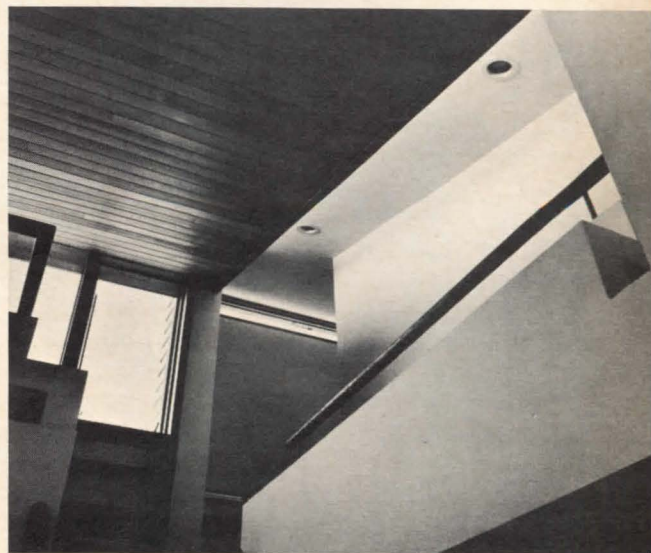
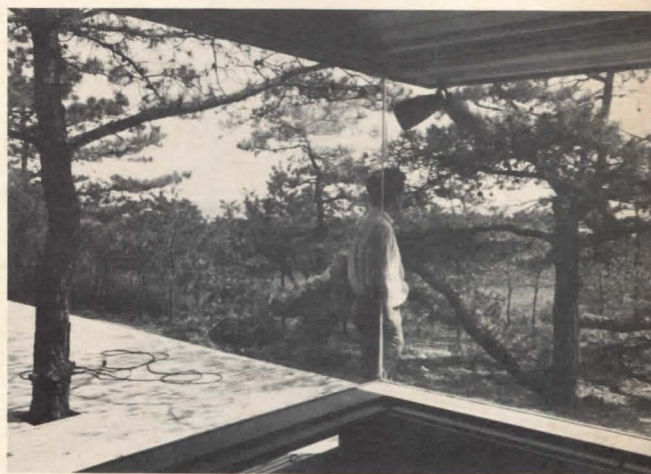
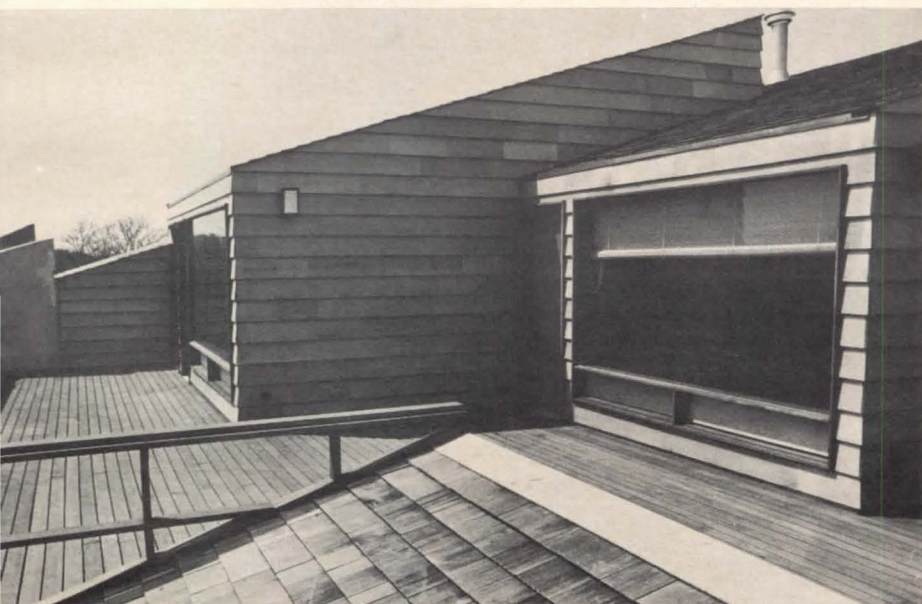
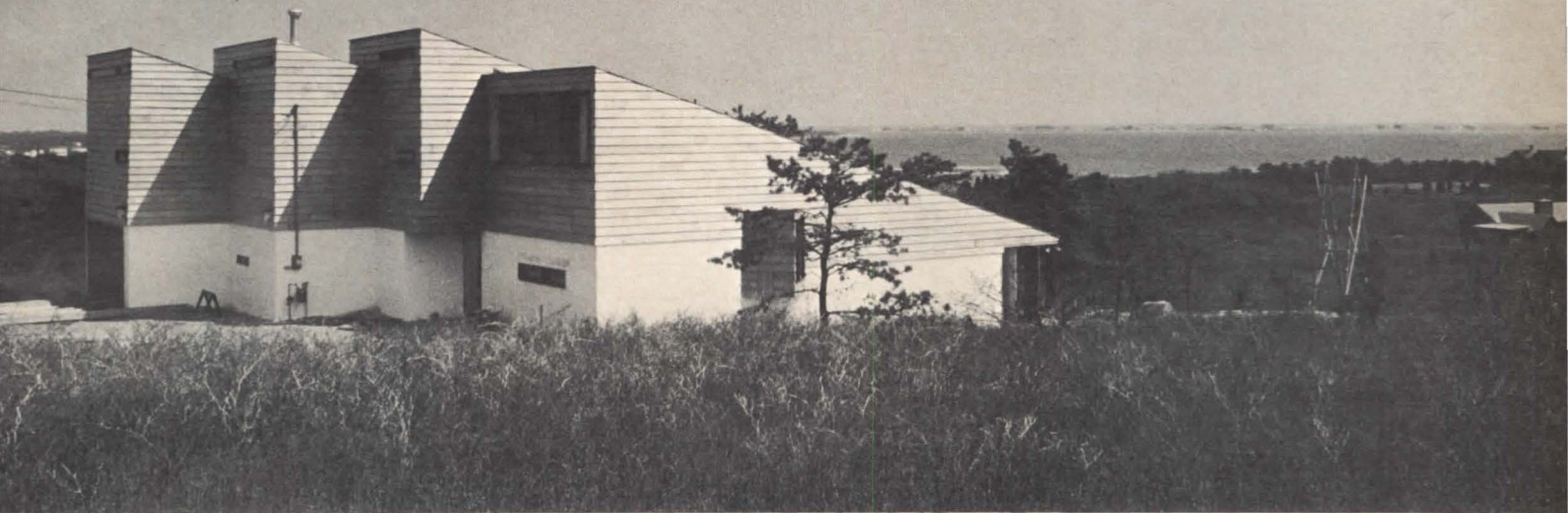


Photos this and facing page: Maude Dorr

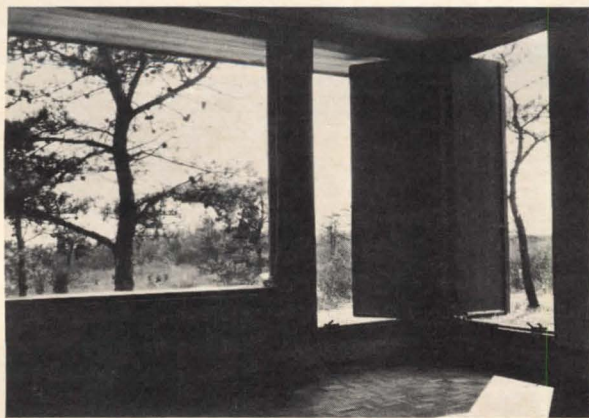
House, Southampton, L. I.

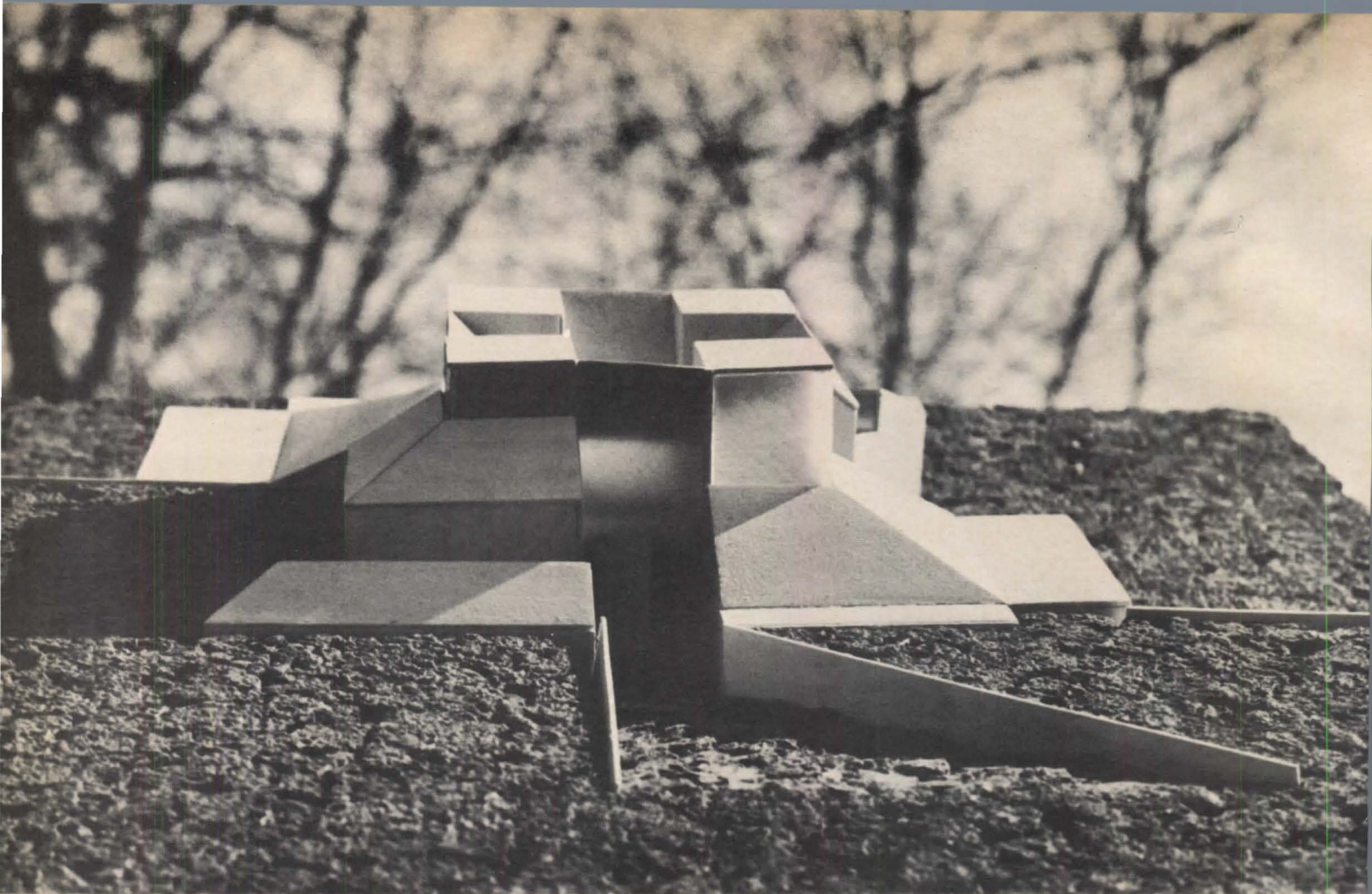
This permanent residence is the most complex of Gluck's finished designs, and the most sophisticated in its arrangement of spaces. Privacy, which is again stressed by placing the bedrooms in a wing separate from the living room area, is reinforced by staggering the rooms so that there are individual sheltered spaces on the adjacent deck and in the corridor. The client, who wanted a large living room and a kitchen adjoining the dining room, got one huge space terraced up the hill, with living, dining-kitchen, and study areas on different levels. Since the owner is in the lumber business, he also wanted his house to be a showcase for his materials; the floors are finished in teak, and the walls partially covered with Obecke mahogany. The house slopes down the hill with the site overlooking Shinnecock Bay, and is positioned so that the corner living-room window takes advantage of one spectacular craggy pine. All the glass windows in the house are fixed and the space is ventilated with movable wooden shutters in screen casings. Air will flow naturally from the bottom of the living room, up past the kitchen, and out the openings at the top. Cost: Approximately \$50,000 for 3500 sq ft.





All glass in house is fixed; wood shutters below or to the side of windows open out for ventilation.

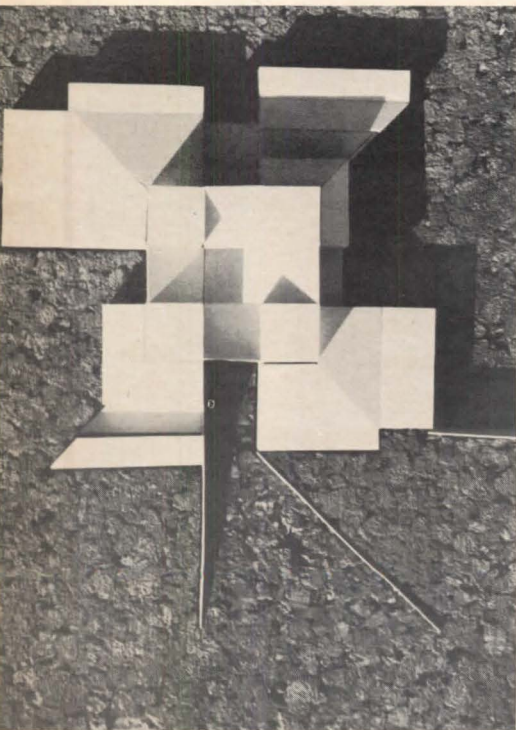


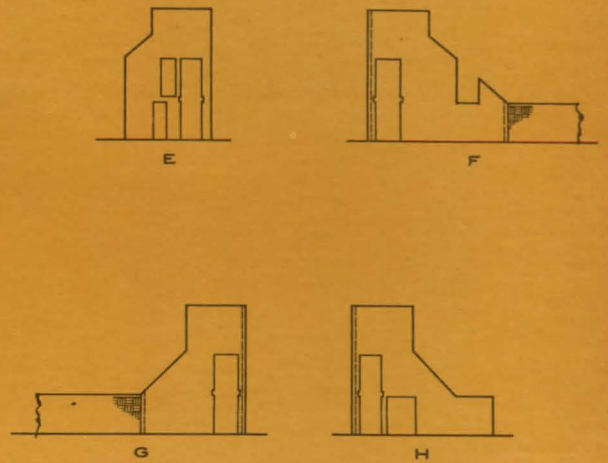
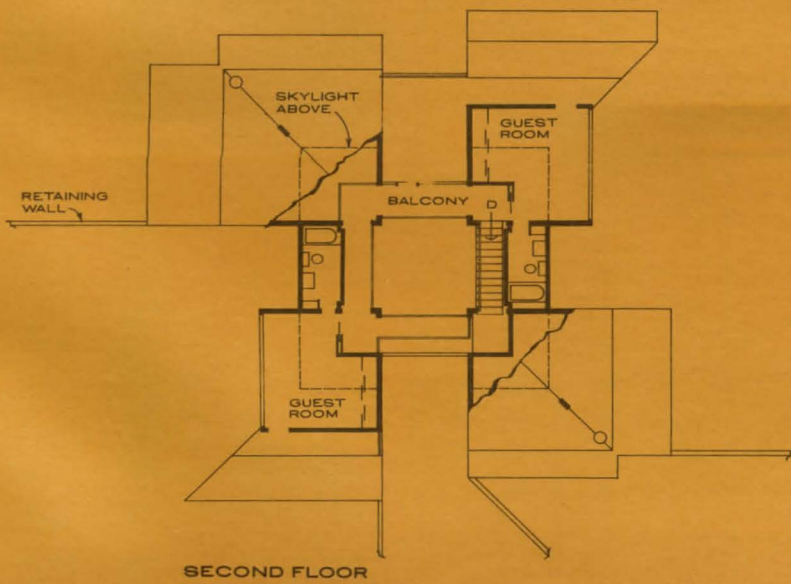
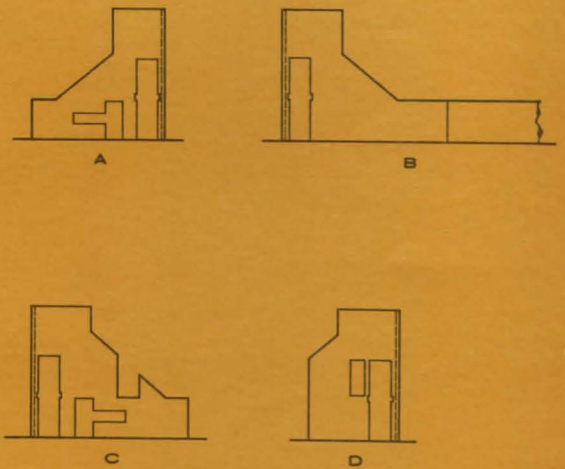
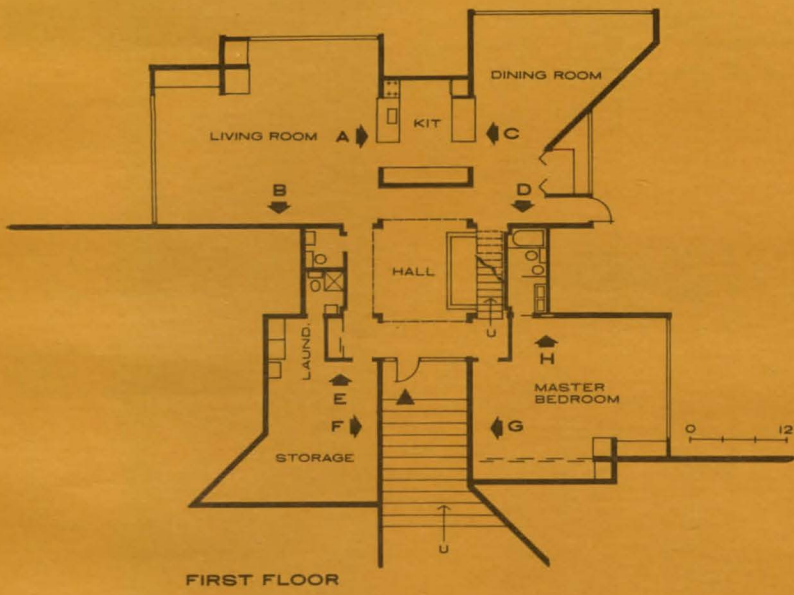
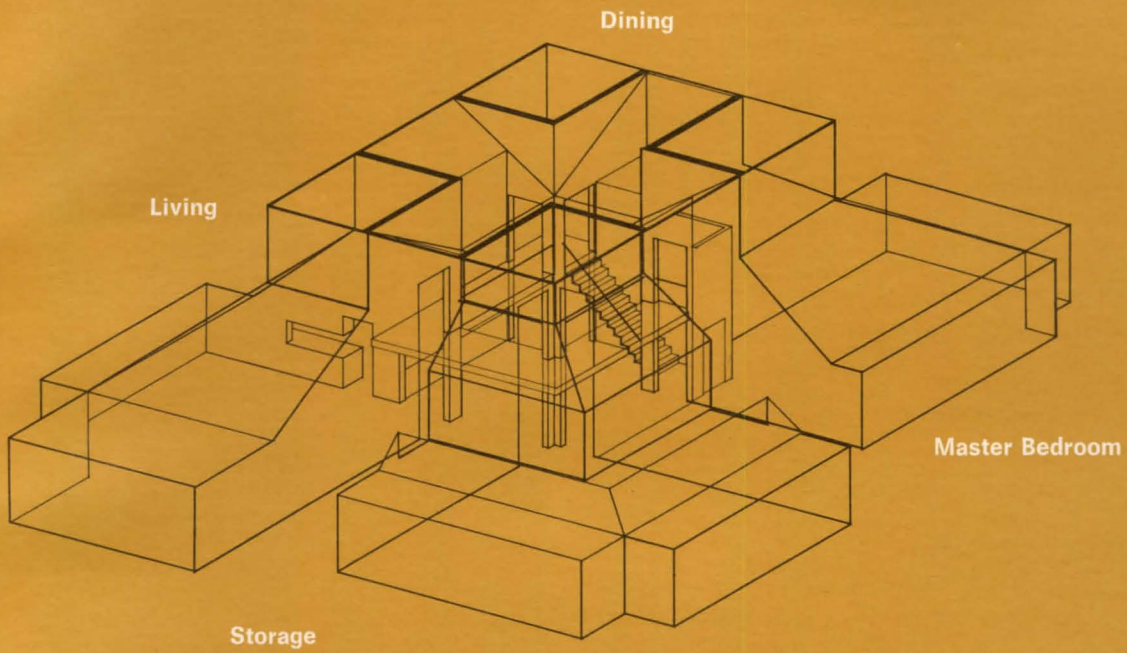


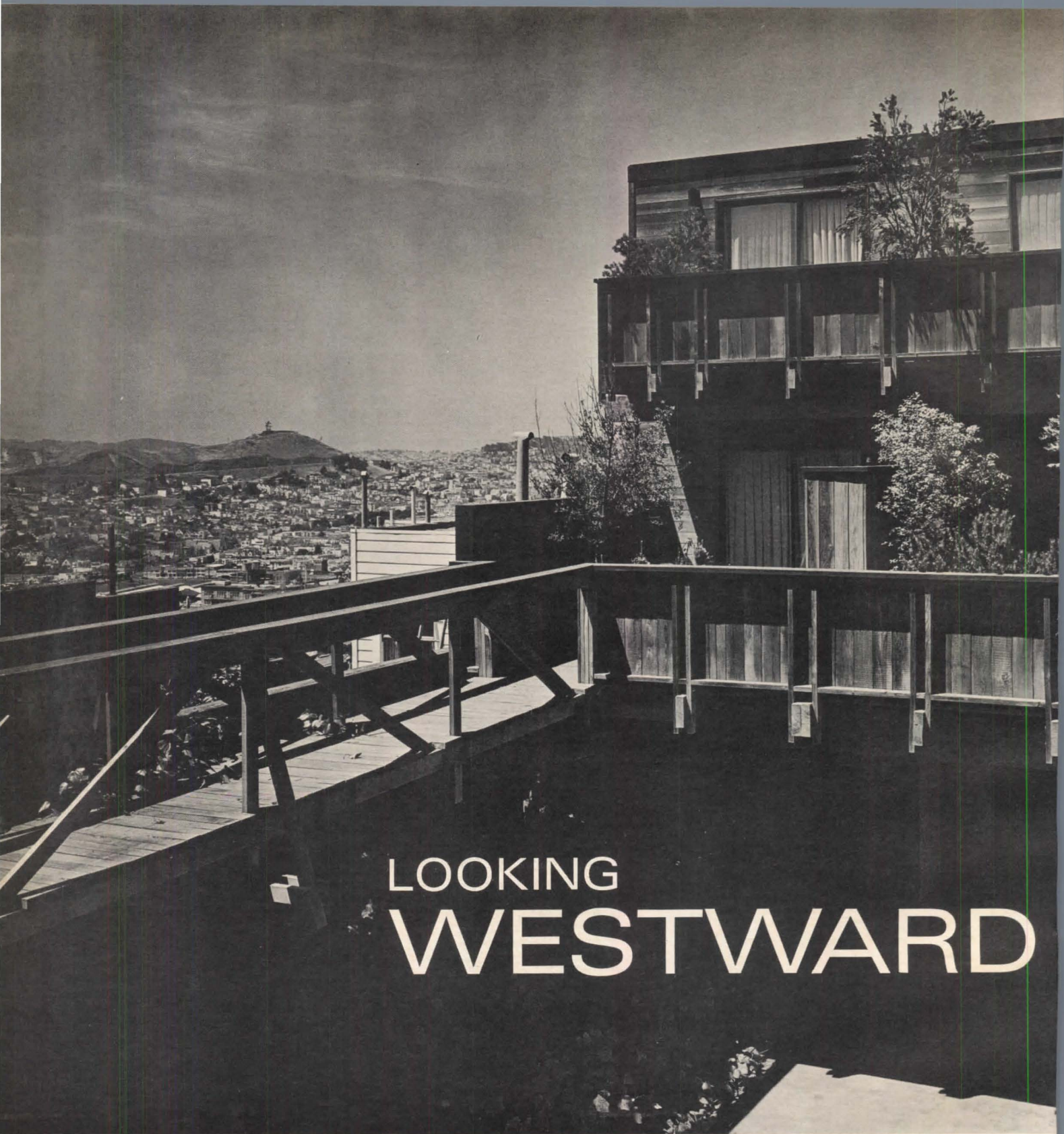
Model House, Armonk, N.Y.

As luck would have it, the client decided not to build the last of these Gluck houses, which is the most interesting of the five designs. The house, which was to be situated in the middle of the woods in Armonk, N.Y., is shaped like a pinwheel. The numerous projections and indentations of the exterior circumference were designed to carve out different outdoor spaces in a fairly homogenous landscape. Since the thick woods would keep out a great deal of sunlight, the center of the structure reaches up like an enormous funnel, bouncing daylight into the rooms at the four corners and into center of the house. Again, the geometry of the plan grows out of requirements for privacy. The main rooms are isolated from one another, with central pivot point holding them loosely together and providing a common circulation area. This central court was to have a small garden.

"There are many different kinds of spaces and places in this house," comments Gluck, "—ledges and roofs to walk on, on the outside; corners and different levels of rooms on the interior. Perhaps someone someday, will build it."







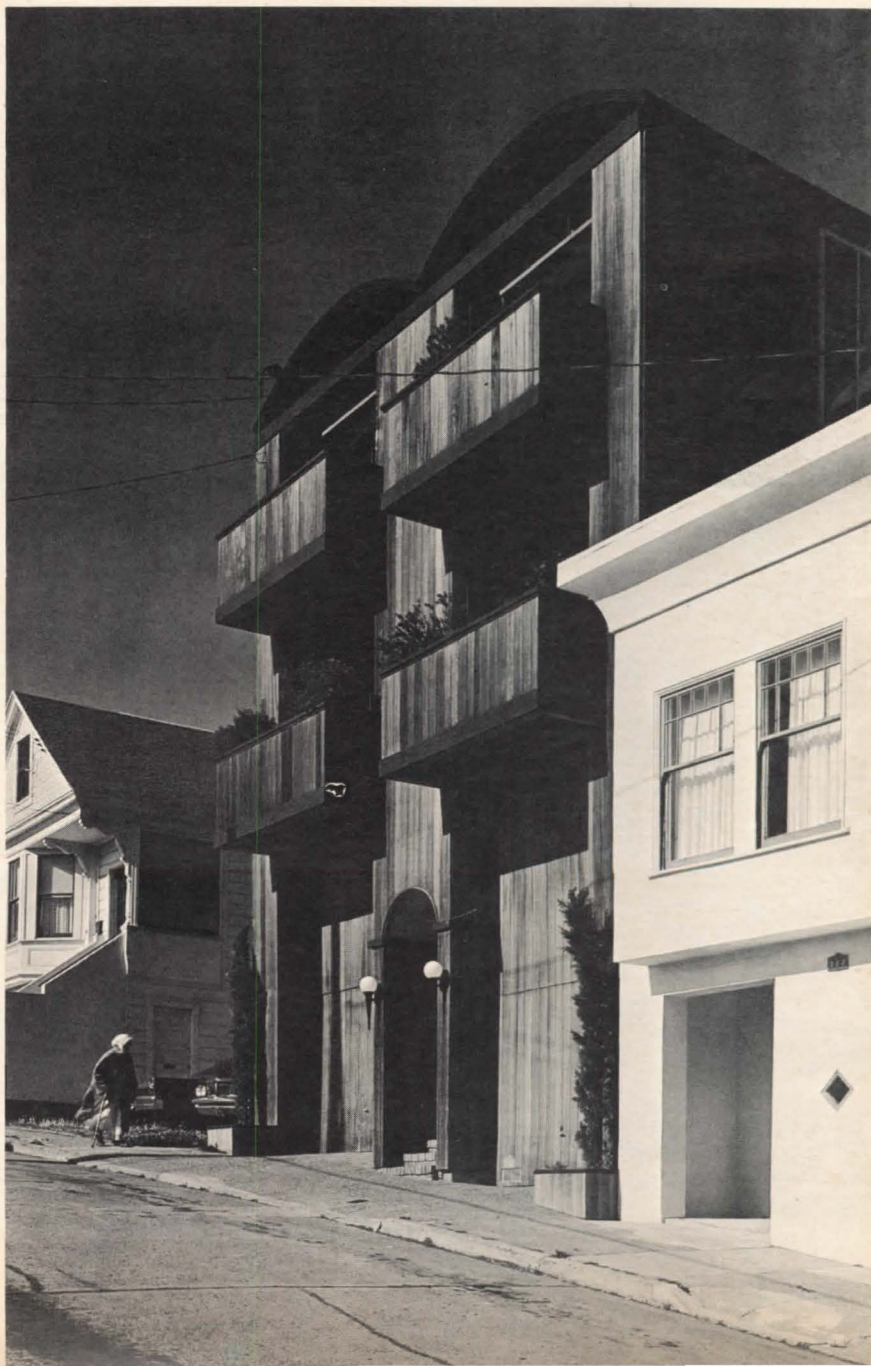
LOOKING WESTWARD

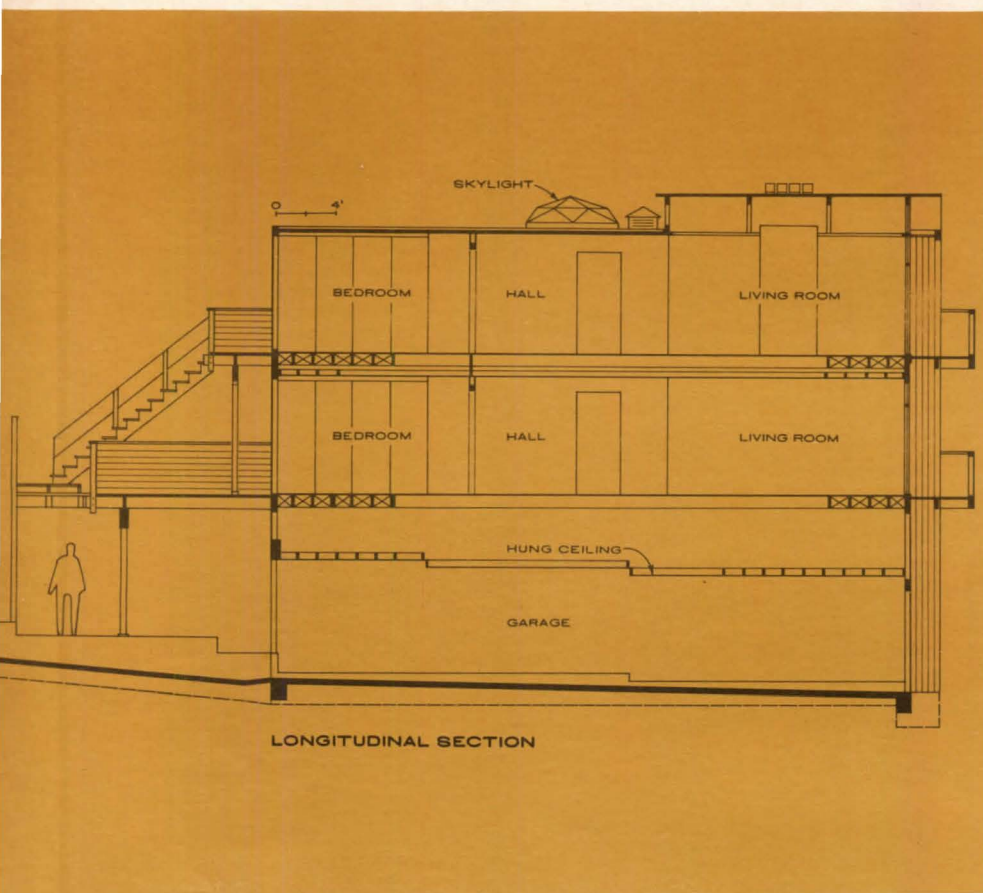
975 CAROLINA STREET, San Francisco, California. **Architect:** Jonathan Bulkley & Associates. **Site:** Interior city lot, 25' x 100', sloping upward sharply at rear. Near top of a hill in neighborhood of low residential structures. **Program:** Design a four-unit apartment building with limited budget, providing on-site parking. Capitalize on sweeping westward views and provide all apartments with exterior living facilities. **Structural System:** Standard wood frame with roof vaults on top floor. **Mechanical System:** Electric heating. **Major Materials:** Redwood on exterior treated with bleaching oil to speed weathering process. Interior is 1/4" mahogany plywood, carpeting in all units, used brick for lobby floor. **Cost:** \$44,000; about \$15 per sq ft. Site was \$6500. **Photography:** Joshua Freiwald.

Over the hills in the tight-knit residential blocks south and east of downtown San Francisco, dotted in among the decayed or restored Victorian houses and the later stucco tributes to a Spanish history, are any number of modest apartment buildings that carry on the perennially popular wood, shingle, balcony, terrace themes



of the "Bay Area Style." One of the current young practitioners of this idiom is Jonathan Bulkley, whose four-unit apartment building on Potrero Hill commands a wide-angle view of Twin Peaks and San Francisco to the west. Until expected new construction takes place next door, it also looks south. In a city where visi-





LONGITUDINAL SECTION

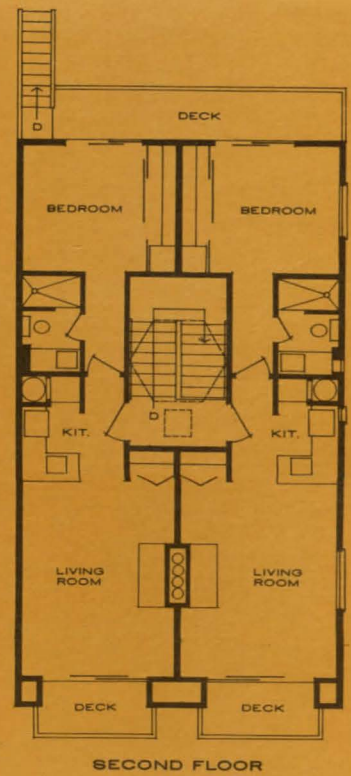
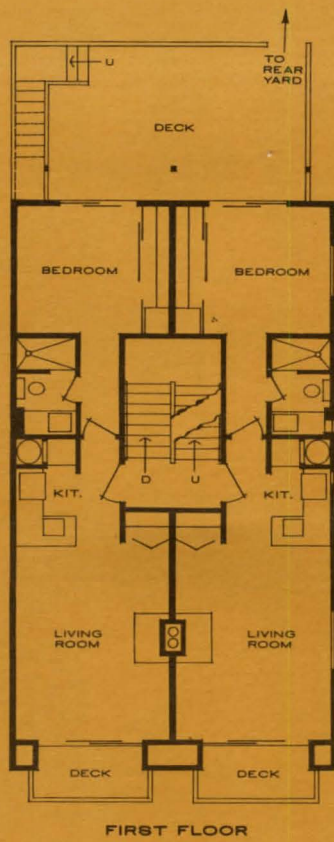
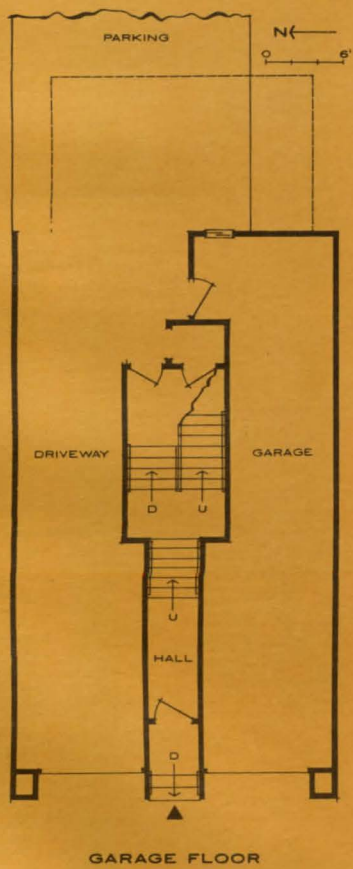
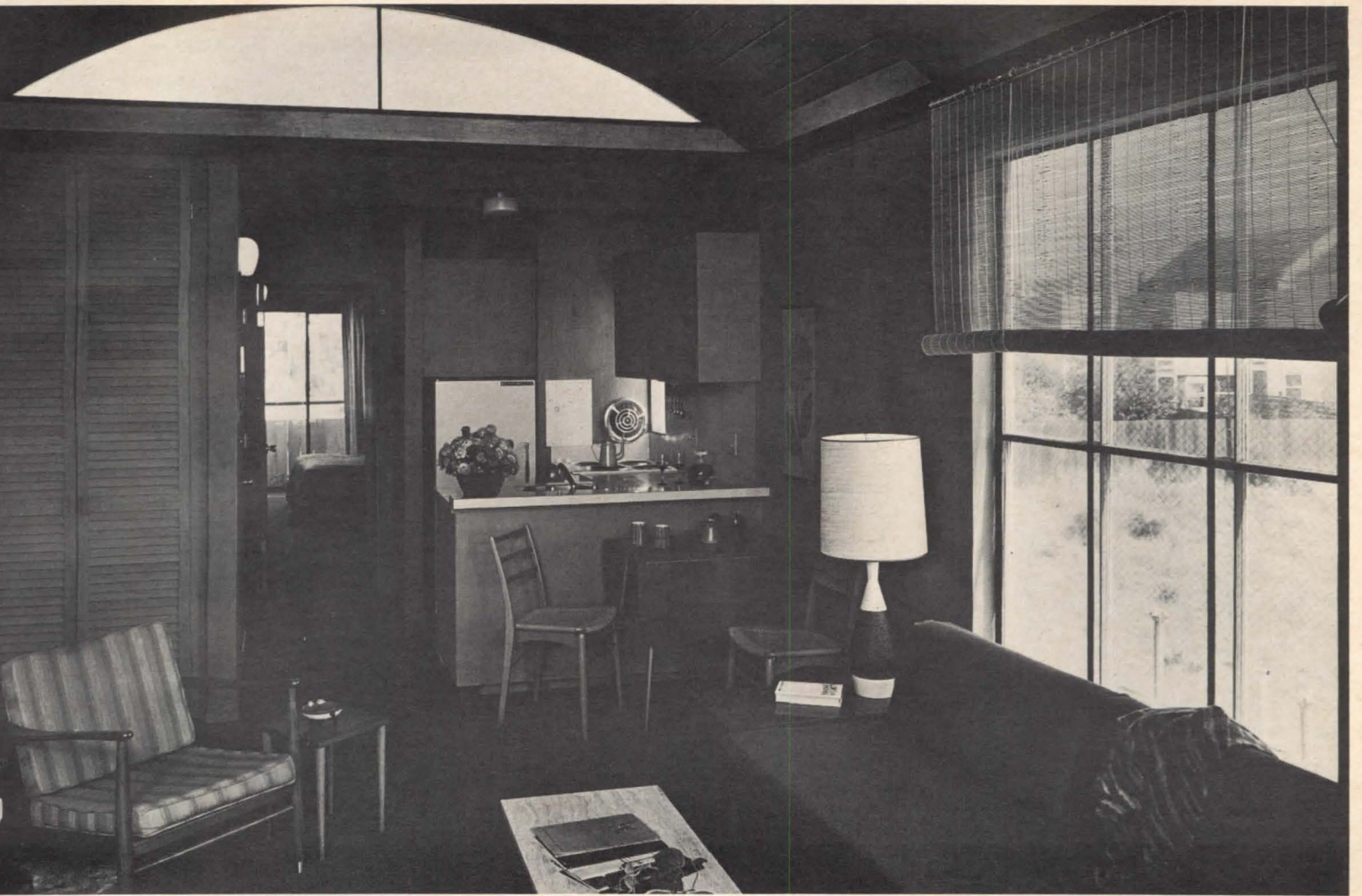


tors head directly for the windows or the terrace to compare the resident's view with their own, Bulkley has pointed the front balcony of each apartment toward Twin Peaks, and also bridged the car-park beneath the building to a little cliff-hanging yard in the back where tenants can look at the view again with their own house in the foreground.

The apartments are compact little "floor-throughs," two to a floor on either side of a walk-up stair and public hall, this space crowned by a skylight. Living rooms open onto the balconies on the street side, bedrooms onto terraces facing the garden at the rear. A stair incorporated in the rear balconies is the fire escape, and the wood truss bridge to the garden is also a fire exit. In addition to increasing the size of the living rooms and giving access to the western view, the front balconies cut off the view from below into the apartments themselves. Second-floor tenants are blessed with a barrel-vaulted living room ceiling clerestoried at either end to admit lots of light. Free-standing fireplaces make the prospect of a hot blaze and a cold glass on a foggy day alluring.

The architect states that interior wall finish is 1/4-in. mahogany plywood, "which is attractive and durable but is a bad sound conductor." He says that he would use it over gypsumboard if doing the project again. Natural materials with a light stain were used throughout the building. With the emphasis on wood, some brick, carpeting, and generous planting, Bulkley says there "is a great deal of texture" in such a small building. Planting scheduled by his office included half-a-dozen trees and ivy in the rear yard and cypresses in boxes on the street side. Tenants have completed the job with potted bushes, trees, and vines on all the exterior levels.

The architect notes the building has been a success from a financial standpoint and that other residents in the neighborhood like it. Since the units are small, they had to be planned to make all the space count, and Bulkley says they appeal to single people "or neat couples." Why not? It's a neat building.



"THE SHAKING MINARETS OF INDIA"

Dear Editor: This is to inquire, if you would be interested in photographs and a write up on the Shaking Minarets of India?

This unique feat of architecture is in the shape of twin towers. For over 500 years now, the minarets have been swaying to the extreme wonder of people. With their swaying wonder they have swayed into supremacy of the Wonders of the World. Till now no reasonable explanation has been put forth to explain the cause of the swaying of these minarets. Can the progressive architect of today solve this mystery?

Kindly let me know if you accept black and white snaps and idea of the rates of payment would also be welcome.

Cordially yours,
GIRI RAJ KAPOOR

Dear Mr. Kapoor: We will be delighted to see black and white snaps of the shimmering towers.

Our curiosity is aroused. We eagerly anticipate the receipt of your material.

Sincerely,
THE EDITOR

Dear Editor: Thank you for your prompt and encouraging response. I wish your rates were also as encouraging. May I request you kindly reconsider the rates offered. The rarity of the feature deserves far better rates. Incidentally, my palm itches, which is a sure sign of forthcoming monetary benefit. I wonder if it will be from you? Your reply would confirm



Photos: Giri Raj Kapoor



my superstition or shake it. I am enthused to begin.

Sincerely yours,
GIRI RAJ KAPOOR

Dear Mr. Kapoor: We are enthused by your enthusiasm. However, I am afraid that our rates are much firmer than the minarets and we cannot pay until publication. These are conditions that are as mysterious to us as is the structural system of your towers.

Sincerely,
THE EDITOR

Dear Editor: Enclosed are six sample prints of the Shaking Minarets and a write up for your kind perusal and favorable consideration. The Shaking Minarets of India are 70-ft high and comprise of two identical towers, a few paces apart. Each minaret has three stories. Each story is segregated by richly carved balcony. The minarets themselves are elaborately and aesthetically carved.

In India, there is a superabundance of ancient monuments of interest and rarity. Architecturally, they are feats of wonders. Some are well known, quite a few have remained comparatively unknown. A few of these unknown and less frequented monuments are peerless. Likes of these cannot be found elsewhere. One of these which should be placed amongst the rare wonders of the world is the Shaking Minarets of India. Till now, this unique monument has not received the publicity it deserves. They may be reason

for this rarity of architecture being unknown among the masses.

The uniqueness of the Twin Minarets lies in the fact that only one man can push the 70-ft tower and set it to vibrate. Not only does the minaret, which is pushed, vibrate, but other tower also vibrates simultaneously.

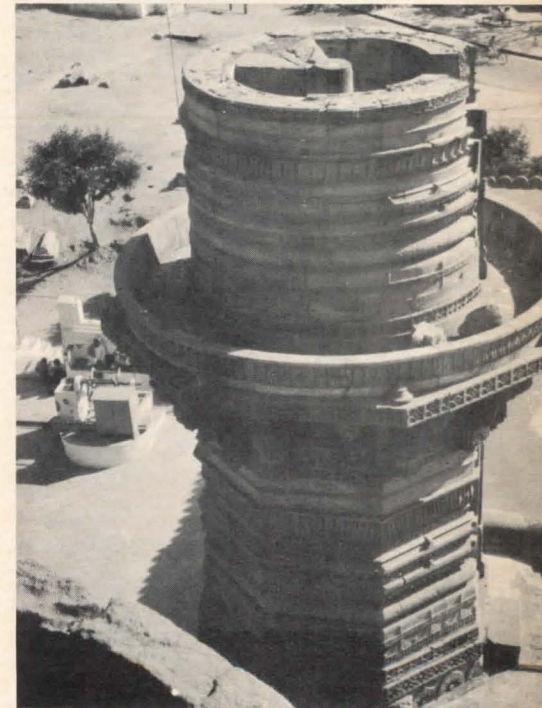
The Shaking Minarets are indeed a challenge to the ace-architect of the atomic age. They have been set to vibrate innumerable times a day for the past 500 years or so, but they are still intact on their foundations and none has been able to unravel the quaint feature of the shaking, as yet.

A few European experts tried to probe into the secrets of the minarets. Their delving into the mystery only resulted into dismantling one of the stories of another pair of shaking minarets. Their experimentation confirmed the unique feature of the minarets but they could not offer an explanation for this quaintness on the part of the minarets, leave aside rebuilding the top story.

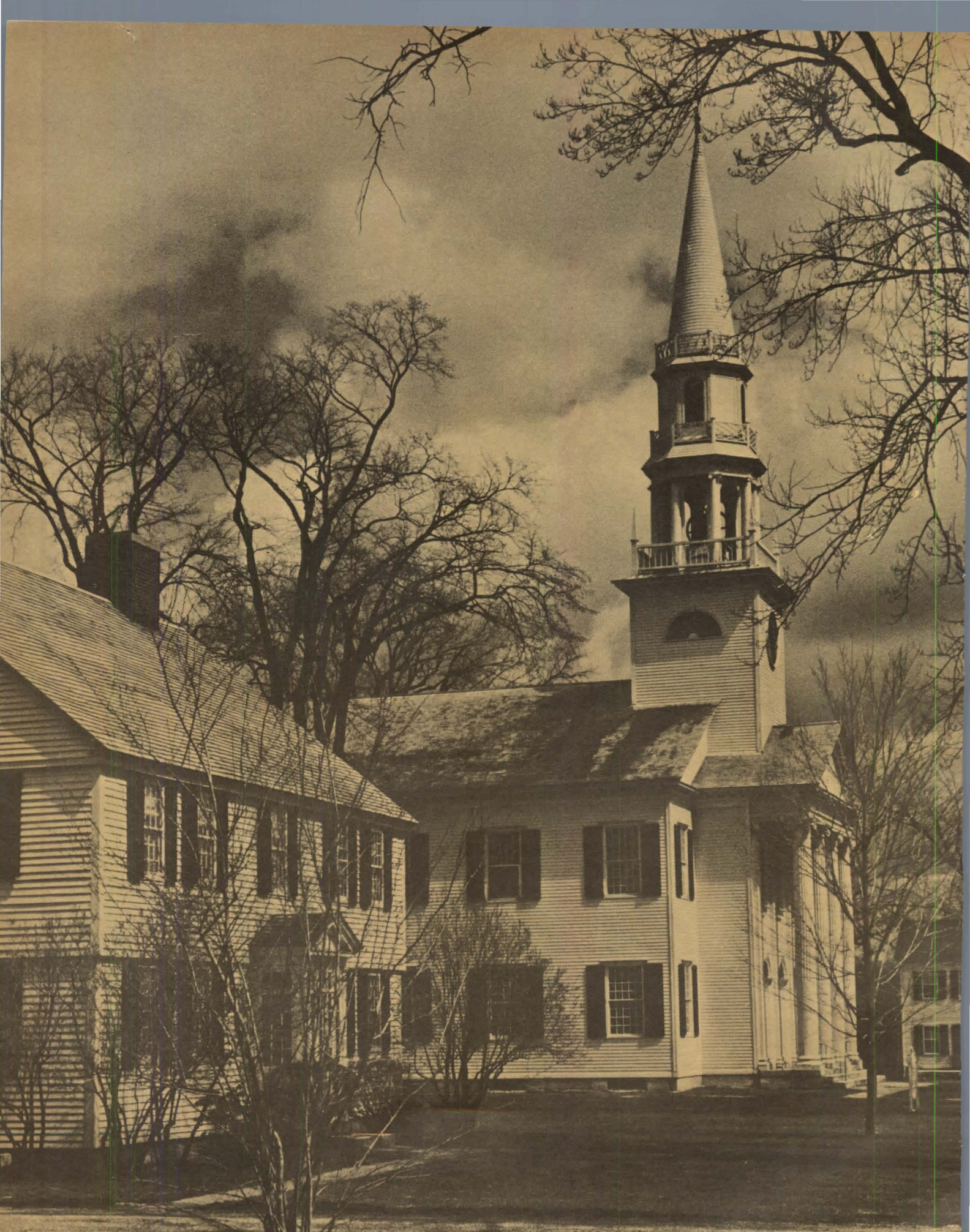
In my previous letter, I had requested an advance of \$100. Considering that you are agreeable to use my feature on the Shaking Minarets, I would appreciate an advance of \$20. I am sure it could be easily arranged.

Yours sincerely,
GIRI RAJ KAPOOR

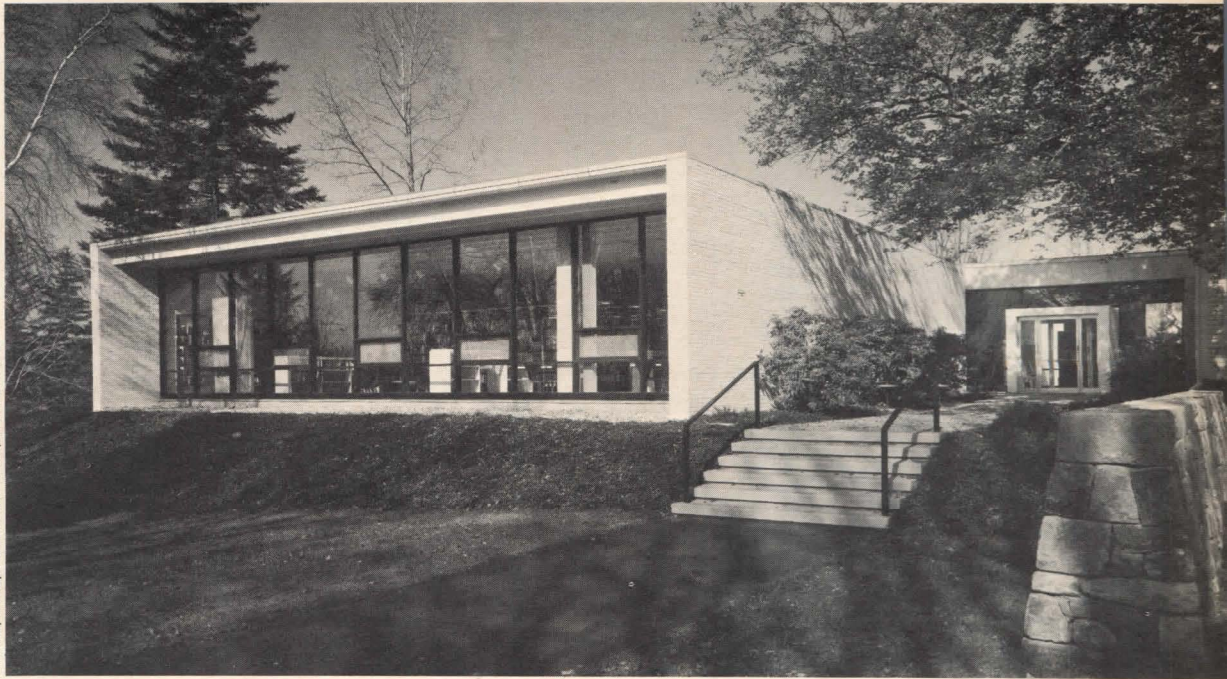
Dear Mr. Kapoor: Advance on the way.
Sincerely,
THE EDITOR



"The minaret was dismantled by envious experts to delve into the secrets of the shaking minarets. Their attempts to unveil the mystery proved futile. They could not reconstruct what they had dismantled." — Giri Raj Kapoor



COLONIAL TOWN LINKS



Litchfield, Connecticut. Town Line. Incorporated 1719. Reportedly the handsomest Colonial town in New England. Population circa 7000. Also reported to have a collection of recent modern buildings by Breuer, Johansen, Noyes, Barnes, and Neutra. How do they fit in?

White spire visible above trees of open country. Cluster of old houses — one gray shingled salt box, one of white clapboards dated 1796. Row of carpenter gingerbread porches, also white. Fir trees hanging over stone cemetery wall. Up hill.

Town Center. A green under old elms — somewhat loosely defined. Perfect white Colonial church; fine white Colonial houses; 1812 jail, brick color; gray granite and white trimmed 19th-Century courthouse — axially sited at end of street; red brick early 20th-Century shops and stores; Historical Society — an 1880's building with carved portico corner entrance — the former library.

No modern buildings in view.

North Street and South Street leading off the green are both extraordinarily wide — by all accounts, because, in Colonial days, they grazed cattle there at the protected center of the hilltop town. Now, substantial, proudly elegant old houses line the streets, set far back behind double rows of elms on each side.

Sinclair Lewis once said, "The only street handsomer than South Street Litchfield is North Street Litchfield." Even townfolk vary that order; it makes little difference.

Behind one of the old South Street houses, dated 1799, what appears at first as a white brick garden wall turns out to be a new town library designed by Eliot Noyes. The new building, linked to the old, produces the physical juncture of Litchfield's two eras of architecture (above).

Noyes' library exterior is a modest and self-effacing architectural scheme in that it turns away from the street and acts like a blank wall. In this, it exhibits a laudable integrity toward the town's program.

The question naturally springs to mind: What makes for such enlightened planning? With the best record on preserving its character, what makes Litchfield decide to add modern buildings of distinction? Is it the work of a commis-

UP WITH THE 20th CENTURY

sion, Is the driving force an individual?

Actually, before the construction of the new library, Litchfield's two centuries of architectural distinction were really two separate and distinct stories. The new was not intermixed with the old, but separated and hidden from view.

Off North Street and behind the grand houses, the first houses by Breuer and Johansen were built. The other new houses, including ones by Barnes and Neutra, and the schools by Breuer and Johansen, are sited out of the town center.

"I'm so glad you built this awful house where no one in Litchfield can see it," one visitor said of the first modern house there 17 years ago; now, it seems, feelings have changed.

But this separation of ancient and modern was not achieved solely by intent. The fact is that the center has been preserved largely because it was already so built up that no other buildings could be added to it. Also, the vast land mass of open country available for new construction made isolated sites possible for the new wave of 20th-Century building.

In addition, the preservation of Litchfield's center has now been assured by design, since the Connecticut legislature designated it as a Historic Area and since the Litchfield Historical Commission can control the appearance of all new buildings there.

It may be surprising that none of the advocates of modern architecture is on the Historical Commission. "I think there might be this admixture," one of the town authorities answers, "but I don't think you put them formally on the commission."

"Litchfield acted early in having a historical commission," says planner Robert Donald. "Partly this was a by-product of the unwillingness of the other part of the town to accept zoning controls." The real problem in Litchfield remains how to protect the open land mass.

"If a town is lucky," says Dr. C.H. Huvelle, the first chairman of the Planning Commission, "it gets zoning shortly after it needs it. If it is unlucky, it takes longer."

In the early 50's, some of the citizens became aware of Litchfield's need for zoning regulations when the open land appeared threatened by suburban sprawl. The burgesses of the Borough of Litchfield — the historical center — passed by-laws in 1954 banning the addition of commercial structures and signs

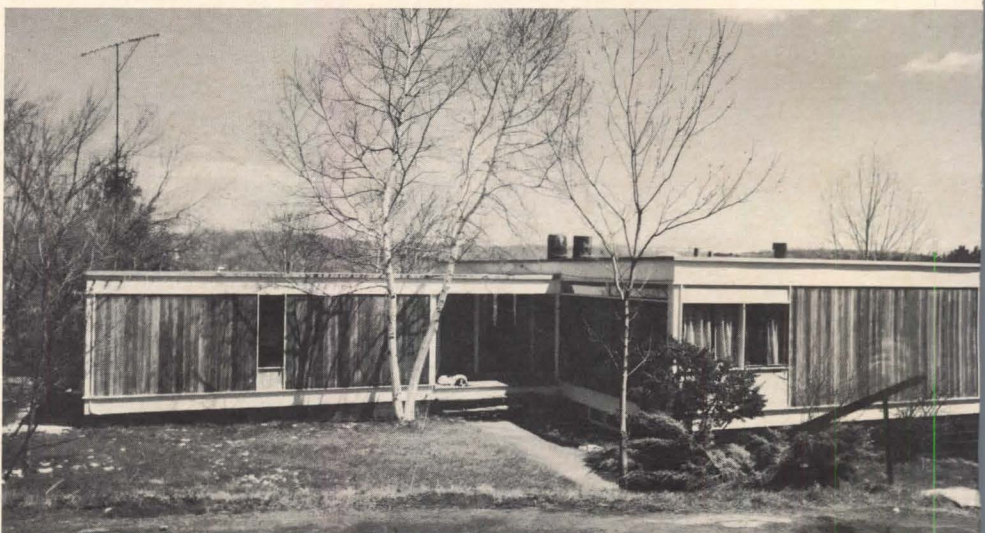
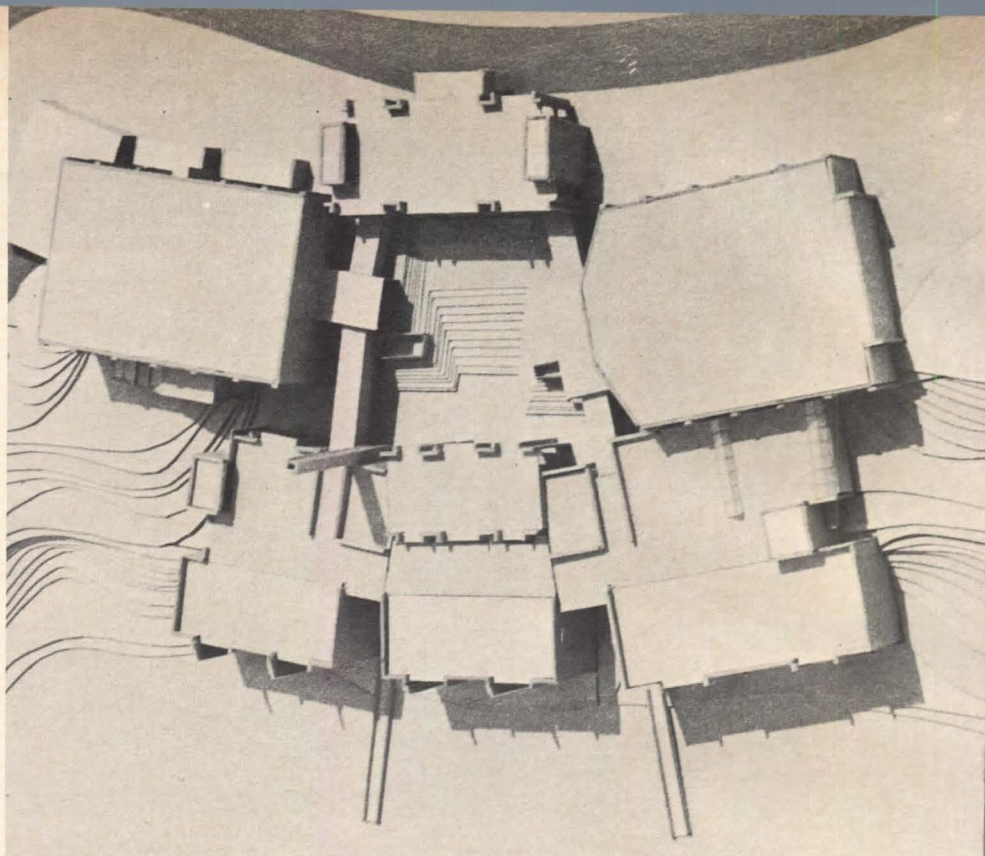


Photo: H. C. Scherr-Thoss

and requiring application before subdivision of large tracts could be made. But it took 10 years before an advisory council's recommendations for a development plan were implemented, in 1964, by the creation of a planning commission for the town.

Now, a 20-year development plan, which was commissioned partly with Federal funds, is anticipated in the fall of 1967 from Brown, Donald & Donald, planners.

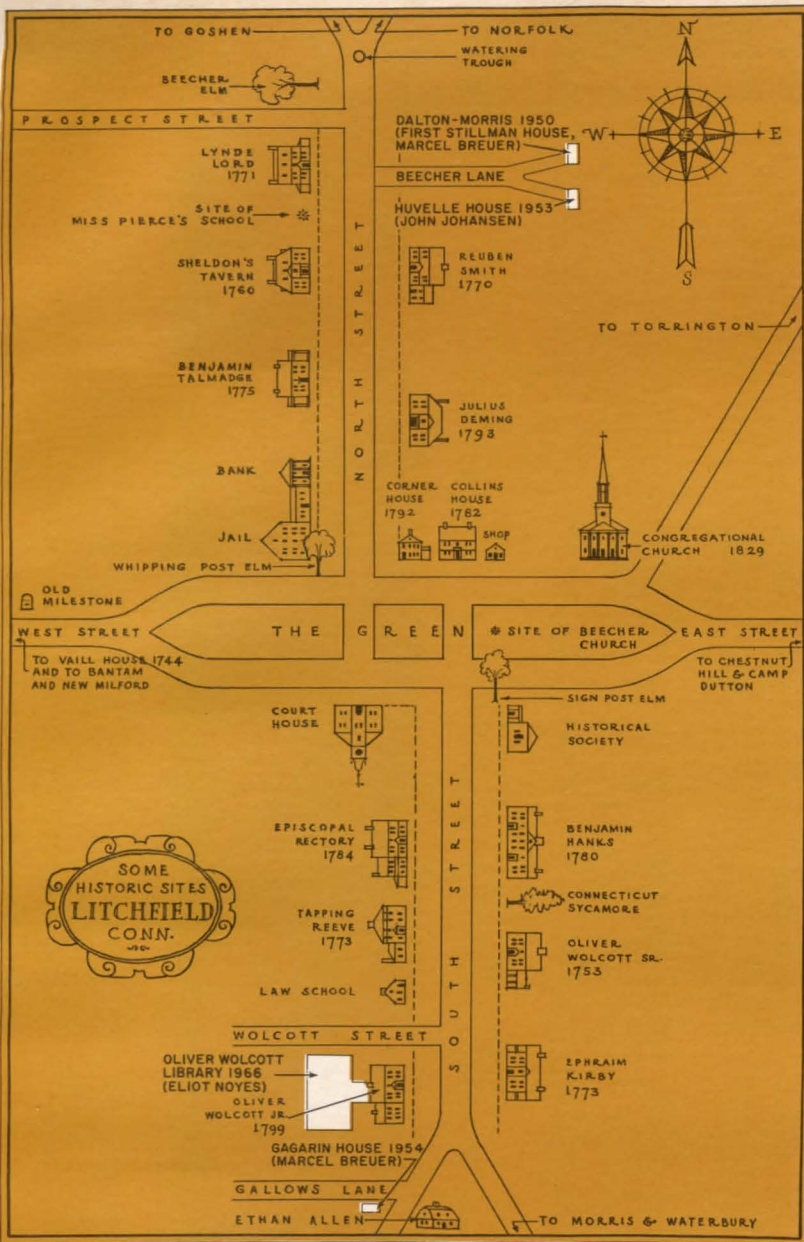
"This is a significant step," Dr. Huvelle points out. "The first problem is to get a community to recognize that planning is important and to get it to finance a plan — even with Government aid. After that, half the battle is won."

"Somewhere, somebody starts something, and then it spreads," Marcel Breuer says of what has happened at

Litchfield. "The process is a matter of personal initiative."

Who the people in the community are who provided personal initiative is fairly generally agreed. Rufus Stillman and his wife built the first modern house in the area 17 years ago when they commissioned Breuer. Andrew Gagarin and his wife also built a Breuer house, and Gagarin is on the board of the Connecticut Junior Republic, which commissioned Breuer to do several dormitory buildings. In addition, *Gagarin has built several office and factory buildings by Breuer for the nearby Torrington Manufacturing Company, of which he is president. Dr. C.H. Huvelle and his wife built a house by John Johansen. And Mrs. Gagarin is on the library board, which commissioned the new building by Eliot Noyes.*

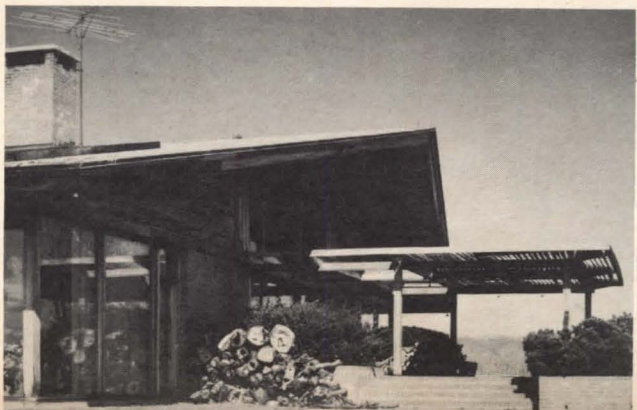
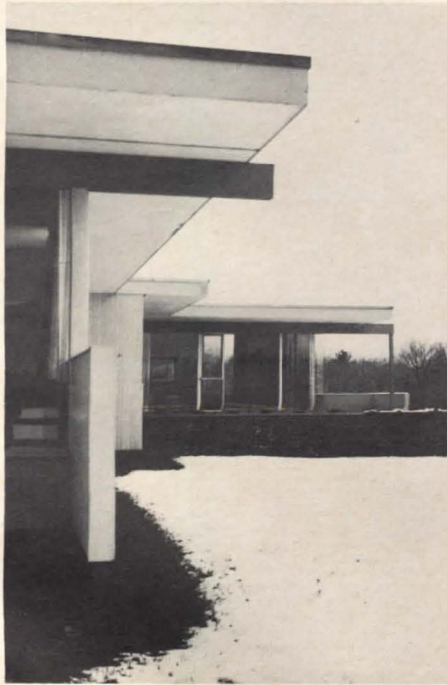
When they were choosing an architect,



John Johansen's work in Litchfield includes a new junior high school, now in progress (model photo, facing page, top) adjoining Breuer's earlier high school out of the town center. His house for Dr. and Mrs. Huvelle (facing page, middle) is adjacent to Breuer's first house for the Stillmans. The school, Johansen says, "is a happy rural hillside school. It isn't really in the old New England style, but I would like to feel that it is not in opposition to the things that are down in the town. You can be in the character of a place without being in imitation of it."

The school will have a courtyard that will serve as a community auditorium—an extra amenity. It will be constructed of concrete block with a "slush finish" of jointing that "squoshes out" to conceal the block and create "a crude but marvelous texture."

"A platform house" by Edward Barnes (below, right) has stone walls enclosing the house and its garden "so that everything maintainable is on the platform, and everything else is open country." There is also a house by Richard Neutra (below, left) and one by Edward Stone (bottom).



All photos this page: H. C. Scherr-Thoss



ELIOT NOYES

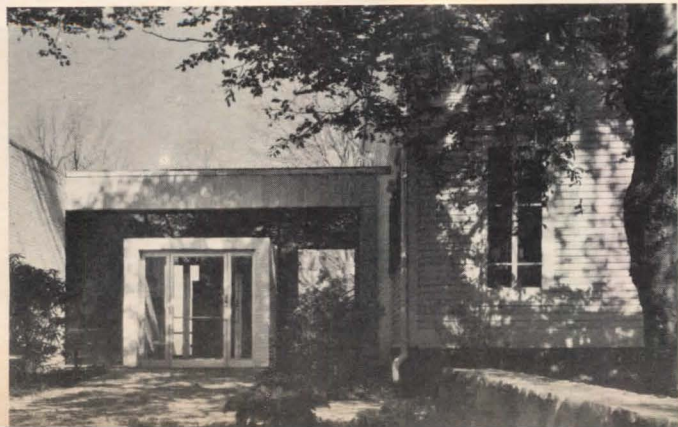
Litchfield's "1799 House" (right of photo above), which was recently given to the borough to use as a library, had no potential as an efficient modern library, Eliot Noyes felt. "So the program became one of building a new one, but the town was leery of how to add a modern building in the town center," Noyes says. The old building had a big wing on the back that had been added later, and it was removed. The new wing that Noyes designed looks as though only a white brick wall for a garden had been added behind the old house. "Actually, it is a big building when seen from the air," he comments. The scheme provides the required new facility without damaging the architecture of the original house to which it is attached—and without disturbing the general quiet and consistency of the old street of Colonial buildings.

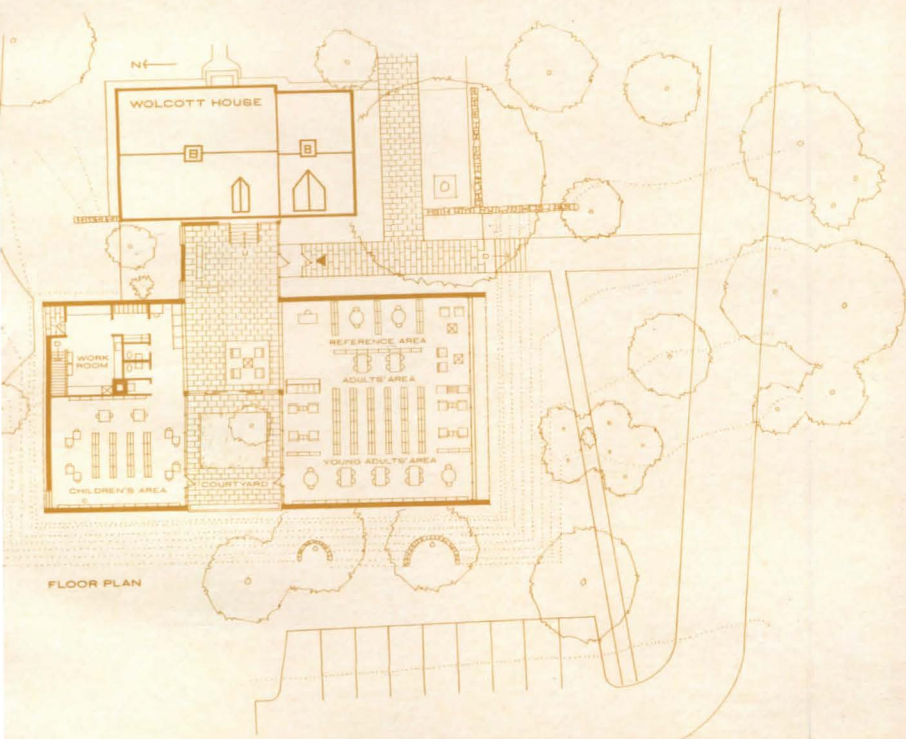
Inside, the library is a well-equipped, modern facility, revealing Noyes' precise, machine-age atmosphere. Glass side walls open onto the neighborhood; both the reading room and children's area look into a small courtyard.

Structurally, bearing brick masonry walls and a precast frame support precast double tees, which form an exposed structural ceiling. Lighting in reading areas is provided by adjustable downlights on exposed tracks; shielded fluorescent tubes are integrated into the grid of stacks. Floor finishes are natural flagstone and carpeting.



Photo: H. C. Scherr-Thoss





MARCEL BREUER

Marcel Breuer's work in Litchfield is among the first and the most recent of the modern work there. It includes three houses and three schools—an impressively high number of contributions to a small town. Of the houses, the earliest was for Rufus Stillman and family in 1950 (4); it was the pioneer of Litchfield's new architectural era. Next came a house for Andrew Gagarin and family in 1954 (5). Most recent is the second house for the Stillmans (1966) designed by Breuer and Herbert Beckhard (1, 2).

All the houses are "laboratories of ideas," where Breuer's office can continue to experiment with the textured wall, with sun and shade, and with detailing. The new Stillman house shows a playing with solid and void, a refined sliding window detail, and the use of stucco overhanging a stone base—as the wood understructure of stucco normally does.

Two of the schools, built in 1953 in collaboration with O'Connor & Kilham, show the sculptural tugging at the International box that was going on at the time. The third school—several dormitory buildings for the Connecticut Junior Republic (3)—shows Breuer's uncompromising intermixture of modern with neo-Colonial. "The school boards somehow got the idea," Herbert Beckhard happily remembers, "that modern architecture was an economical route for them to take."



Photo (and below): John T. Hill

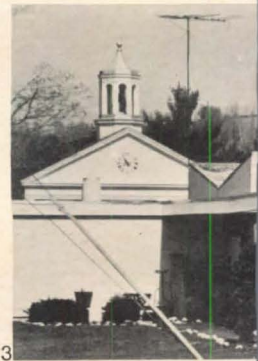


Photo (and below): Ben Schnall





Photo: C. Ray Smith



other members of the library board also had perceptive notions: One said, "Well, we already have one building by so-and-so in town. Why don't we try Noyes this time?"

"It is a matter of somebody getting other people interested," Rufus Stillman says. "I guess the reason that a town like New Canaan takes the opposite tack is that it is probably more heterogenous. Here, two or five people can have more impact."

"It all comes down to persuasion, selling, and power," Dr. Huvelle concurs. "There are ways and ways."

The architects who have worked in Litchfield are more definite in zeroing in on a single force behind the modern movement there. "Every time anybody in Litchfield wanted a house built," Noyes reports, "Rufus Stillman was always in the middle of it, pushing for a good modern architect, stirring it in a delightful way."

John Johansen adds, "Stillman is an enthusiast who does more with less money by persuasion and cajoling. If he is chairman of a building committee, he takes a responsible position on what the community should have. He is fair to his committee and fair to his architects. But he gives an architect a real hard time—even to his friends who are architects."

"Rufus has proved the point," Noyes agrees, "that you can work with the best people and make it come out inexpensively."

When asked how he went about all this, Stillman denied being a single force in the community. "I wish it were a great romantic story, but I think it is just a matter of doing it. Who can tell who is responsible for something—the guy who sparks an idea or the guy who pushes to get it done? In Litchfield, the work has been done by a group of people.

"Those of us here who are interested in architecture have several guidelines we agree on," Stillman continues. "First, we make the statement that if you are going to build, you build in your own time. Then, we have decided not to go to a specialist in any kind of building. Architects who specialize, we feel, somehow superimpose old theories on new solutions. I think, and others agree, that it is more interesting to take a man who has never built a school before, because he has to restudy the whole situation and starts out with a fresh piece of paper. He begins by throwing his whole intel-

lectual approach behind the problem."

In the beginning, Stillman confesses, he did not know whom to go to. "But I started to find out, and I ran into Breuer, who, I think, is such a great man. I still may not know whom to go to: I am no architecture critic. But time will tell."

Not everything is architecturally utopian in Litchfield, however. Even Rufus Stillman admits that "you win some and then you lose some." Within the last decade, the telephone company has built a 1940 Colonial building for equipment near the center of town, and (strangely enough, nobody ever mentions it) a semi-Colonial white ranch house sits directly across South Street from Noyes' new library.

The next round to be fought in Litchfield is the visible intermixing in the town center of the old and the uncompromisingly new. Noyes' library is a juncture of the two, but it shies away from a front view of the street.

Johansen says, "The kind of continuity seen in Litchfield is not happening in all communities. Litchfield seems to have picked up in a good exciting way what was left off in the early period. There may be a great disparity in architectural expression, but it is better to be alive and rich in all periods than to be consistent."

Herbert Beckhard, Breuer's partner, adds, "It would take an awfully good architect to build a modern house on South Street that stayed within the atmosphere of the street. Not everybody could do it."

"I hope that if ever someone does have to cope with it," Edward Barnes continues, "it would be done with some sensitivity. What one must respect is the street line, the wall line, the spacing of the buildings, and the color of the buildings. Style and materials are so minor compared to the volumes and the massing and the density. By respecting those elements," Barnes concludes, "a modern architect could work on South Street without messing it up. You could go from one thing to the next without feeling that it had spoiled the continuity."

But the question is, will the Historical Commission, which can now control the appearance of the center, cling to the status quo to the degree of permitting only stagnant Williamsburg-Colonial reconstructions? Or will they permit the Borough of Litchfield to grow with a proud legacy of the 20th-Century as well? — CRS



experiments





n environment

For 26 days last summer, a group of architectural students, architects, and dancers learned to feel their bodies in tension and space, to experience the sensual effects of a wild Pacific shore, a crowded urban plaza, a kinetic light happening, a pulsing rock-and-roll environment, the life and half-life of a major city street, and the intimate hidden life of an upland meadow and a dense redwood forest. They built their own "city" on the shore of the ocean and recreated the impact and atmosphere of a metropolis in a multimedia presentation. Dan-



cers became architects and architects became dancers. They became more intimately aware of immediate and generalized experiences of all sorts of environments, from that of a solitary person attuned to the high drone of insects in a country field to the shrill activity and subtle crowded danger of the nighttime city.

All of these things happened during a summer workshop given by landscape architect Lawrence Halprin and his dancer wife Ann that dealt with problems of perceiving the environment. The series of events, open to practicing professionals and graduate students and seniors in architecture, landscape architecture, and planning (Mrs. Halprin registered her dancers separately), operated under the appropriate title of "Experiments in Environment," for the intent was to provide not the usual academic collation of classroom lectures, slide shows of Philadelphia's renewal program, and two-hour seminars, but to "explore a new range of experience in avant-garde environmental arts." Halprin wrote in his announcement that almost all experiments would be in the field—at Sea Ranch on the coast, in the Mount Tamalpais chaparral and meadows, in the cities of the Bay Area. These landscapes and areas would be "evaluated through more intuitive modes of perception including kinesthetics, body participation, and other exploratory techniques of perception." Although the architects and dancers did not work together for the full four weeks, they had enough common meetings and confronted enough common problems to gain a sophisticated knowledge of (for the architects) how the freeing of the body and its movements can lead to heightened spatial awareness, and (for the dancers) how activities and objects other than their own movements and bodies can take place in an environment. The sciences and arts of architecture, ecology, music, cinematography, graphics, choreography, and lighting were all invoked and utilized to intensify the sense of environmental awareness that was the aim of the workshop. Besides the Halprins, other "instructors" participating included architect and educator Charles Moore, geographer Richard Reynolds, lighting specialist Patrick Hickey, cinematographer Joe Erath, graphic designer Barbara Stauffacher, composer Morton Subotnick, and dancer Norma Leistiko and other members of the

Ann Halprin Workshop staff. There were also frequent social gatherings.

Find the Right Process

Halprin believes that the whole struggle in the creation of meaningful urban design is to find the right process of bringing together all the seemingly disparate elements and experiences that make up an urban composition. The idea of imposing a preconceived form on the city is nonsense, he believes. "Chandigarh and Brasilia were the last gasp of that, I hope, and you see what bad cities they are," he says. The summer workshop represented an attempt to find out about the search for this process through experiencing and recreating various environments and their elements. There was much emphasis on movement as a generator of form, on the isolation of the parts of the process of experience (sight, movement, hearing, touch, smell, etc.), and on the intuitive reaction to design and planning problems. At one session during the workshop, Halprin gave the architects the formal problem of replanning the Sea Ranch (MAY 1966 P/A). This was the worst session in the whole four weeks, he points out, because it was the only time the group had to work toward a "product," and to fulfill an anticipated result. The architects, who had been loosening up and learning to react directly to their surroundings, tightened up and became "students" again when confronted with this classroom problem. In any future series, Halprin will simply line out the parameters of the experiment and let the group go without stern boundaries and without trying to forecast the outcome of the event.

"Hard to Make Contact"

In the first week of the workshop, the group was exposed to the various elements it would be working with in the experiments: ecology of city and country, Halprin's system of motation (pp. 126-133, JULY 1965 P/A), dance and movement, light, and field trips in urban and rural areas.

Halprin's notes about the first dance session of the architects state: "Apparently very hard for them to make this close a physical contact. None of the guys will allow themselves to be really *led*. They are using every device to avoid plain contact—wiggling, jumping, etc." But Ann Halprin and Norma Leistiko,

Photos: Paul Ryan



"The architect
the difference



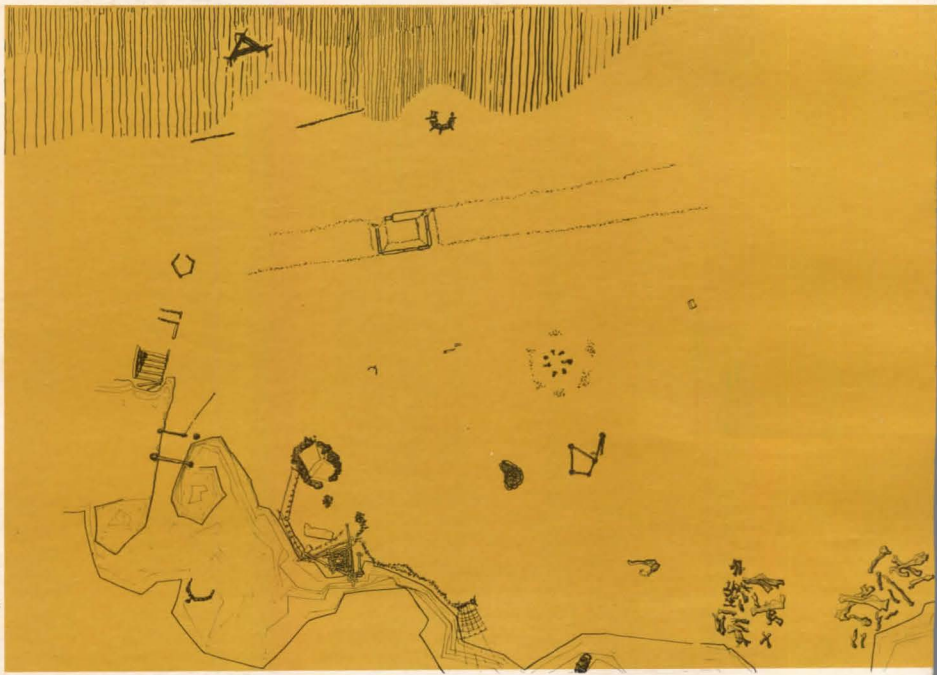
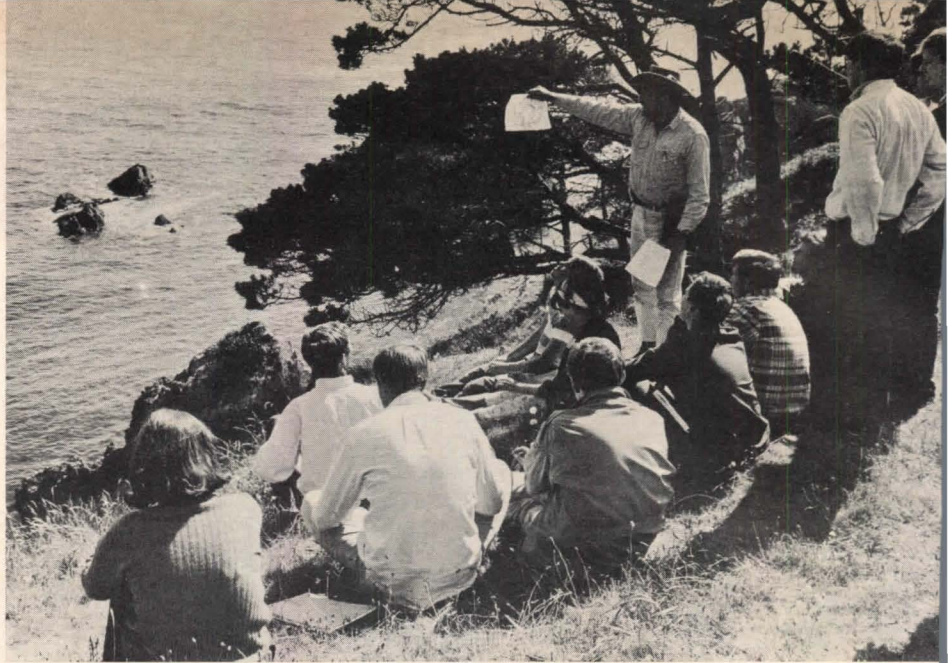
loosened up and soon you couldn't tell
between them and the dancers."

using skeletal charts to explain the body structure and movement exercises to show how the body can become free, got the architects to shed their self-consciousness. "After the first awkwardness," Halprin says, "the architects loosened up and soon you couldn't tell the difference between them and the dancers." Later in the workshop, a young architect, asked to invent movements and direct his colleagues in a "choreographic" sequence, shouted, "Gosh, it feels like I'm God!" Ann Halprin, in *Dance Magazine*, reported that the architects "used their own bodies as human cantilevers to build groups which choreographers might hesitate to create, but which, thanks to their knowledge of architecture transferred to dance, were anatomically safe and sound."

Close Your Eyes to Open Them

The process of heightening the senses of the workshop participants took place in the streets of San Francisco, in the groves and on the slopes of Mount Tamalpais, and on the shores and cliffs of Sea Ranch. After an initial walk round the area around Halprin's office below Russian Hill, teams of three were formed in which two would lead the third member blindfolded and he would call out sounds and sensations received during the walk. The city has a "background" noise of traffic rumble penetrated by different sounds such as horns, voices, close-by cars and trucks, etc. In the country, the sense perception walk was preceded by, and concurrent with, a rule of silence, so that no accustomed means of communication could interfere with sensory concentration. Sounds, smells, textures, colors, shapes become sharpened and more meaningful. Looks or touches shared with members of the group became charged with more than usual significance. "We understood the reasons . . . the *why* for us," said a girl dancer.

Halprin says that the group discovered that different kinds of areas (woods, fields, shore) gave different kinds of motion, and that some gave different kinds of sensory experiences. His own notes show a sketch of shoreline trees with the comment: "Strange combination. Strong straight pines, black, with high, piercing hum." This series of experiences, intensifying the senses by expanding and contracting them, was thought of great value



"A real 'city'—one with a gate, a main plaza, a temple, a tower, a stage structure in the water, and houses."



in the subsequent experiments with urban form and composition.

The Events

Concurrently with the examinations of movement, sensory happenings, and investigations of ecology and motation, a series of events took place in which the dancers and architects, separately or in combination, created atmospheres and occasions. One was based around light, an existing scaffold structure, and great lengths of wrapping paper. As dancers "told stories" through movement, architects gradually created an environment using lighting and the long strips of paper. Ann Halprin called it a beautiful thing, "fantastic and dreamlike." In an event at Halprin's hillside house, the group experimented with gravity as the motivating force. Lights plummeting down to the dance deck on wires, bodies swinging through the air and hung on great nets, drums of water released over the nude bodies of girls being pulled up a plastic-covered slope on ropes all created what Halprin calls a "fantastically beautiful event."

For fun, one evening, the participants went to the Fillmore Auditorium, one of the current hippie shrines for music and dancing in San Francisco. They got up in the balcony, painted each other all over in wild designs, and slid down ropes into the gyrating crowd below. Unfortunately, photographer Paul Ryan was so carried away with the scene that he joined them, leaving no pictorial record of the show.

Driftwood City

One of the most notable experiments in creating an urban scene came about when Halprin and Moore indicated a stretch of beach near Sea Ranch and told architects and dancers to erect their own structures there from the driftwood, stones, sand, earth, seaweed, and flotsam on the site. The only instructions were the center and bounds of the site and that there was to be no communication between workers. All were amazed when, after a day's work, it developed that the group had somehow wound up with a real "city"—one with a gate, a main plaza, a temple, a tower, a stage structure in the water, and houses. While each structure reflected the aims and personalities of those who worked on it (a couple in love did a little house just large enough to contain both of them, a retir-

ing young architect did a private cave dwelling and a more extroverted one did a tower on the hill, and a team of dancers did a performance platform at the water's edge), the whole composition could be read as a community. The next day, each of the group drew in his contribution on a large, over-all drawing, which, though this was done free-hand, later proved correct within a foot on actual measure of the site. This project was done halfway through the four-week workshop, and Halprin says that the dancers were freer, the architects still being too much worried about how things looked and intellectualizing their structures too much. One of the architects, in a discussion after building Driftwood Village, called it "action architecture through movement, not from cubism."

Union Square

One day, the whole group spent the daylight hours in Union Square at the heart of downtown San Francisco. They did not speak to one another, but listened, looked, took notes, became aware of all the activities of this extremely urban space at various times of day. Each participant wrote a letter to another member of the group during this silent time and mailed it afterward. At the stroke of three, the forty-odd participants rose from wherever they were in the square, converged on its center, and either released balloons or gave them away. Just the moving of that number of people in one direction acted as a magnet to everyone else in the square at that time, and they all followed, too. The notes of one of the group read, in part, when listening, "Old men picking up garbage can tops to look inside; sounds of conversations; crackling newspaper; cable car clanging; beep-beep of automobiles; hum of traffic; sparrows chirping; foot-falls of leather soles though mostly quiet; generator working in the street; automobile; motorcycle; click of high heels; laughter and chatter of young Chinese boys; whistle for a dog"—then, when observing—"So many people wearing glasses; old men in straw fedoras meandering; middle-aged ladies in tight girdles hard to walk; upper-middle-class tourists, the men in blue jackets and cameras and the ladies walking ahead in white summer suits pointing; a beautiful Japanese girl in such high heels she can hardly stand on them; the man on the bench next door has not stopped talking

to his lady since they came half an hour ago—mostly business; a young girl with long brown hair reading a copy of the *Chronicle*; a young Filipino-appearing sailor walking diagonally across the square with his mother and sister; three young Negro boys across the square cackling loudly; the young girl threw her paper into the garbage can but let the top down carefully so that it did not bang."

The next day, much of the group did a replan of the square all on one great



sheet of paper, in silence. Another group also did a replan, but not in silence. This proved to be the least successful of the two, and Halprin reports that members of the second group were disappointed that they had not chosen to be in the silent plan group. Both groups, however, found out more about what a place like Union Square does in a city, and what people do in a place like Union Square.

Market Street

The final major experiment of the workshop was centered around Market Street, the wide thoroughfare that slices diagonally through downtown San Francisco, separating the main business district from the more run-down area south of Market. The street changes character from an upper-class business precinct near Montgomery Street and the Palace Hotel, to a procession of nudie movies,

bars, liquor stores, and pornography dispensaries further west, to a reviving area out close to the Civic Center. The architects lived on this street for a week, observing and experiencing it at all hours of the day and night. They looked at it as though they had never seen a city street before—Woolworth's became a museum instead of a store, for example. They had experiences the architect does not usually encounter: being accosted by homosexuals, set upon by hoods, getting into trouble with the police for suspicious behavior ("hanging around and looking like that"). Using every sense capability they had been sharpening for three weeks, they looked at the city, they smelled it, they felt it, they photographed it, drew it, took notes on it, recorded its sounds, ate in it, drank in it, got wet in it, dried out in it, had good, bad, amusing, exciting, and alarming adventures.

After this no doubt indelible experience, the architects gathered together their filmed and taped and drawn impressions of Market Street by day and night and recreated the whole thing in a multimedia, multiscreen presentation in the basement of Halprin's studio on Montgomery Street. Ann Halprin called the recreation an "absolutely choreographic" experience, even though it had no dance per se, and had all been created by architects. People who saw it have said it was one of the most powerful impressions of urban happenings they have ever seen. Halprin himself says, "There isn't anything they don't know about cities by now as a result of this — though it wasn't consciously planned that way."

A Year Later

It has now been a year since "Experiments in Environment" took place. That the experience has not dulled with the passage of time is shown by P/A's contact with many of the designers who took part in the workshop. "I will never again have any trouble finding approaches to a design, and I am sure that I'll never have a dull moment in my life because I am left so hungry to explore so many things," says architect Rob Randall Eifler. Landscape architect Wayne Bannister writes, "We learned there is a functional part of design but that the solution to functional problems can also be creative. In school, you are allowed a certain amount of freedom, but still there is a



"Become aware of all the activities of this extremely urban space."

grade. In an office, it is economics or someone who has more authority. In the workshop, there were no grades or criticism, but a direction."

Particular experiences stick in the minds of participants. Nick Peckham remembers during the Market Street experiment a lesson in how to deal with people: let them talk; don't lead them. He and Robert Holden, camera in hand and concealed tape recorder at the ready, came across the Gipsy Jokers, a Hell's Angels-type motorcycle crowd, lounging around on their own turf. Taking Peckham and Holden for plainclothesmen garnering evidence for the fuzz, the Jokers were at first hostile. By just letting them talk, the architects let them decide they were newspapermen, and the Jokers soon were posing and cavorting for the camera in great ebullience.

Holden feels that the workshop experience taught him that one's first responsibility is to one's own senses. Through the full utilization of these, one can create spaces that will evoke the reactions of others. Ideally, he thinks, a designer should create a space where peo-

ple can respond to their own stimuli rather than those imposed by the designer, but this is admittedly very difficult of achievement.

Peckham noted he had taken structure at Berkeley and at Penn, but had not really realized what it was about until actually exposed to the direct sensory openness of "experiencing something like a tree." He thinks that designers must "get away from materials and finishes and those things you're concerned with in New York."

Elpidio Rocha, who later helped stage the environmental experiment described on p. 174, commented: "There was nothing of a practical nature that could be applied to an architectural office, nothing that would make more money. Instead, there was a personal experience that will have practical implications in what I do, what I think about design, and what I will teach. I expect to have some of my students do something like this, with alterations that will suit their media—painting, for example. Perhaps if I were a painter, I would not have needed just this experience."

"The reason I applied to the workshop," writes Peter Van Dine, "was to have a chance to be exposed to an entirely new approach—for me—to architecture. Christopher Alexander, McLuhan, Michael Harrington, E.T. Hall and others have been a strong influence on my thinking toward both a social response and a rational approach to architecture. Working with Halprin was a great experience in that it added a totally new dimension of art (painting, sculpture, and music), motion, and response. It put the human as an individual back in the spaces of architecture. I came away with a new tool and a new outlook, and new stimuli that have been an influence on my attitudes and responses to design since."

"As an architect, my imagination was freed from thinking in terms of static pictures and I was encouraged instead to invent in terms of motion and ever-changing stimulations to all the senses, especially *emotional* sensitivity and the kinetic sense," says Eifler. "By releasing my mind from concentrating on the design of material objects, I developed an objective, tangible way of designing events, experiences, and activities at almost any scale or degree of interlacing, in order to satisfy not only groups of human desires at a particular point in time, but the range of human needs including, for example, the need for desires to change and new ones to be satis-

fied in order for people to continue stimulating themselves."

Merrill Pasco says that, "Of common significance seems the extent to which we all were enticed or goaded into extensions of our individual postures and attitudes toward design processes. The context in which this was effected—a fusillade of three-hour involvement-games within a rich spectrum of sensory media—was remarkably successful, but mere contact among each other and with the dancers, in this deluge of exposure, rates a close second. In mosaic, the effect upon myself appears as a trenchant clarification of the rudimentary role of sensory perceptions with respect to both subjective and objective approaches to design."

"At the first meeting of our workshop," Allen W. Johnson recalls, "Halprin told us he would not lecture to us but let us set our own pace. He would assign us a general line of action and let our personality come through—this was like music choreography—in which a person is given a block of time in which to improvise within the total number. He held to his promise, but one statement near the end of the workshop (during a movement through Market Street) was as good as a theme for the entire session. He said, 'Circulation and movement are the most important things you will ever do.' . . . We became aware of a world that is truly in motion—every molecule.

We learned the difference between the viewpoint of the person involved (moving through the environment) and that of the person watching from a distance (the designer)."

Few of the participants would change the set-up of Experiments in Environment if they had the chance. Eifler suggests "only that a second workshop again be an entirely new first-time adventure for both the Halprins and the students." "The only addition or change I could offer," says Bannister, "is that part of the course could be devoted to the social problems we face in the environment. The class was restricted to physical environment but the same creative approach could be beneficial in solving problems in the social environment." Van Dine thinks that the only change should be that "it could be longer, with more people and disciplines to be exposed to." And Johnson gives a unique accolade in saying that "the only thing I would recommend is that they charge more money."

A dozen young designers emerged from the experiences in the West permanently changed people. This text and these pictures probably cannot hope to duplicate what they did and what they felt. But it was an irrevocable experience, one of which Johnson says "I suppose it is a bit like trying to explain the taste of the fine wine Larry was fond of treating us to." — JTB



SCHUSS ARCHITECTURE

Old-timers remember when skiing used to be a casual but Spartan sport. The meager ranks were confined to passionate aficionados and dedicated bums in baggy pants; ski areas were opened up by enthusiastic sportsmen operating on a shoestring; accommodations consisted of converted (or not so converted) barns and farmhouses strung along the country road, and the only facilities at the mountain proper might be a warming hut or base lodge. Since World War II, however, skiing has boomed. Old army surplus clothes gradually gave way to stretch pants, snow bunnies, and space suits. Rough and tumble accommodations were superseded by motels, hotels, and new vacation houses. Today, skiing is a big, bouncing business; its present population is estimated at 2 million, with a 15 per cent increase every year. Parking lines at the slopes have grown longer and longer, and tow lines are tediously slow. It is clear that the day of casual planning and shoestring operations is over. Congestion may threaten to bring the sport to a standstill, and haphazard housing developments may well ruin the very quality of landscape the city sports enthusiasts rush out to see. The very scope of the business lends itself to more comprehensive planning. More and more developers are finding it practical and expedient to build on a large scale, and a master plan allows them to assign relative values to property; they also find that potential buyers will pay more for a piece of land if there is an over-all plan to assure that the development will maintain a high quality. As a result, more and more architects are becoming involved in ski resort planning and the problems of cold weather construction.

The architects of the three projects presented on the following pages highlight three different approaches to the ski resort. The first, Bruce Graham, an East Coast architect, finds his solution in the European pedestrian village concentrated at the base of the mountain. This solves the problem of getting from the remote farmhouse or motel to the slope proper, and eliminates the long lines of cars flanking the approach road. This is a popular solution, borrowed from Europe, and first applied at Vail, California. Mackinlay, a West Coast architect, takes a fresh and frank look at tailoring the mountain to the day-tripper trade and the automobile, and emerges with an unusual linear highway pattern. Finally, Richard Stein offers some thoughts on prefabricated ski house design.

All of the architects agree that one of the greatest misconceptions in ski architecture is the pitched roof. Pitched roofs may be picturesque, but they are not practical; they encourage leakage and eave damage. Explains Mackinlay, "If the slope is great — 12 in 12, for example — accumulated snow and ice can move off in a great rush, carrying away vent pipes, gutters, and even stripping away the edge of the roof itself. If the slope is normal — say, 4 in 1 — the warmth from the inside of the structure will melt the snow over the heated portions of the building down to the unheated overhang, where the water freezes again, forming an ice dam. Gradually, a lake of water behind it builds up a static head sufficient to force the water back through the shingles and into the building. After a time, the weight of the snow behind the dam will force it off, often carrying parts of the overhang with it." Although there are some methods of heating the eaves, all three architects agree that the simplest procedure is the flat roof, with the water drained off through pipes in the heated portion of the building. Snow accumulation on the top actually helps insulate the building. "Any roof with 3 ft of snow on top," points out Mackinlay, "will remain at a temperature of 32F in spite of a drop in temperature outside."

In all three presentations, it is clear that the architect has had to become involved in problems that have not traditionally been his. He has had to learn some mountain and weather lore, borrow from mining architecture, and plunge again into that persistent bugbear: prefabricated housing.

Pedestrian Center — European Style

By Bruce Graham, a New York architect, who uses Haystack Mountain, a resort in Wilmington, Vermont, to exemplify the European concept of the "concentrate village" plan.

Selecting a mountain suitable for a new area is generally the province of the expert, but occasionally the architect also becomes involved. A preliminary study usually includes an analysis of the terrain, snowfall, exposures, access, wind conditions, population proximity, and land acquisition problems.

In the East, a minimum of 60 in. of snow per year is needed, with an average snowfall of about 100 in. If the temperature and humidity averages fall within certain ranges, snow-making techniques can be relied upon.

Wind conditions are important, and local residents should be consulted, since many areas that may have high snowfall levels can be scoured clean by local wind patterns.

Sun exposures are also critical. South-facing slopes melt too quickly; due-north-facing slopes on steep mountains are often shadowy and cheerless. North-west slopes are often wind-scoured, and the northeasterly and eastern slopes are generally the most desirable, with adequate sunshine and wind protection.

Due to the precarious economics of a single-season resort, a developer will generally try to pick a site that can be used for recreation in the summer as well as winter. Much of the terrain suitable for ski area development is under the jurisdiction of the national and state park systems. Normally, they are willing to lease lands to developers, since the new facilities will serve the public and attract more people to the park system. However, where other ski resorts have just been started in a particular area, they will restrict new developments to protect the existing ones.

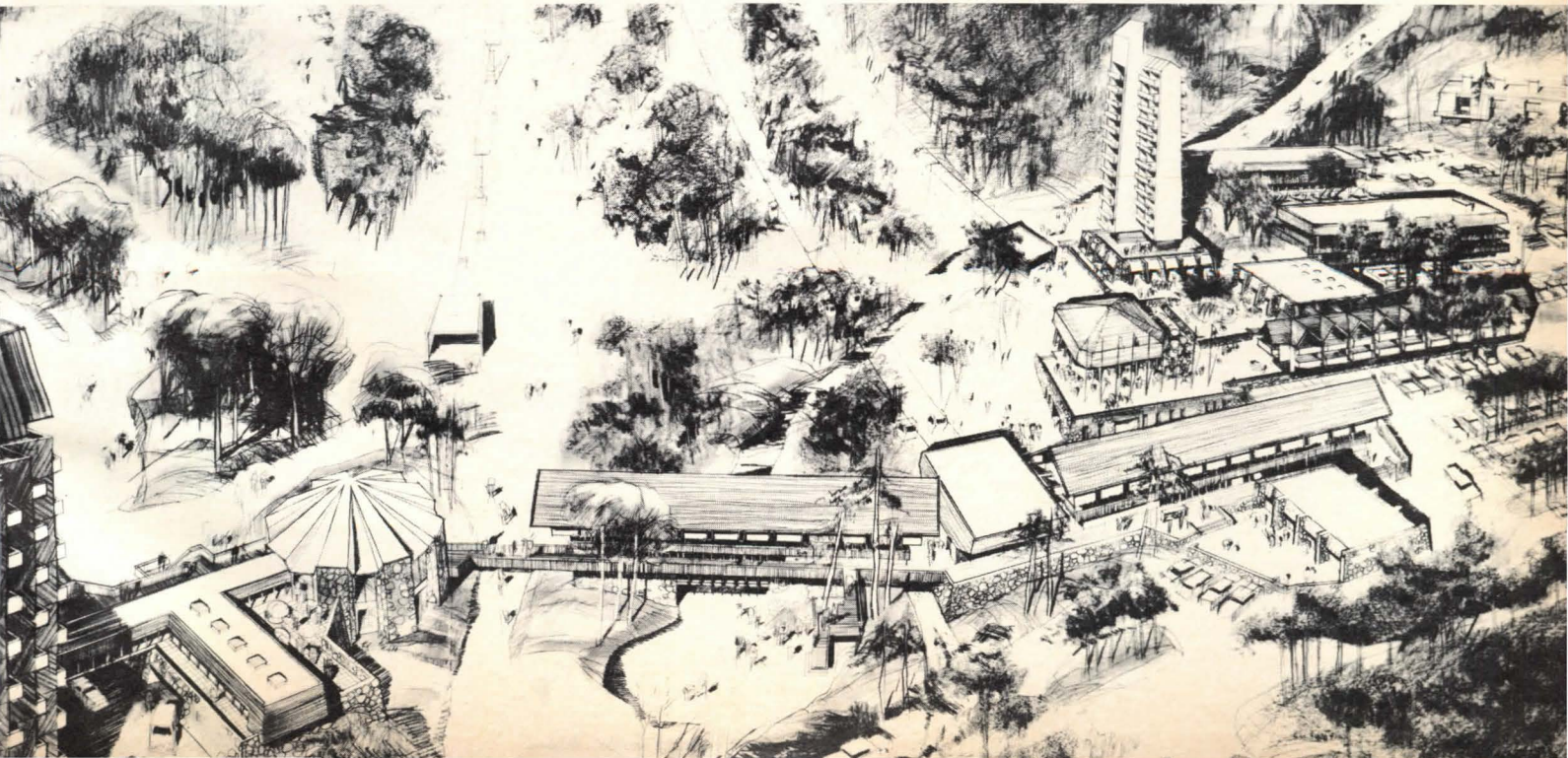
Once the mountain has been selected and the land purchased, ski trail and lift



Photos, Haystack Village: Mark Neuhof

Haystack village straddles a mountain stream: Hotel accommodations are located on either side and a concentrated shopping complex is situated on the right. A restaurant, built over the stream, overlooks a skating pond.

Rendering: Bruce Graham





Haystack Mountain Base Lodge

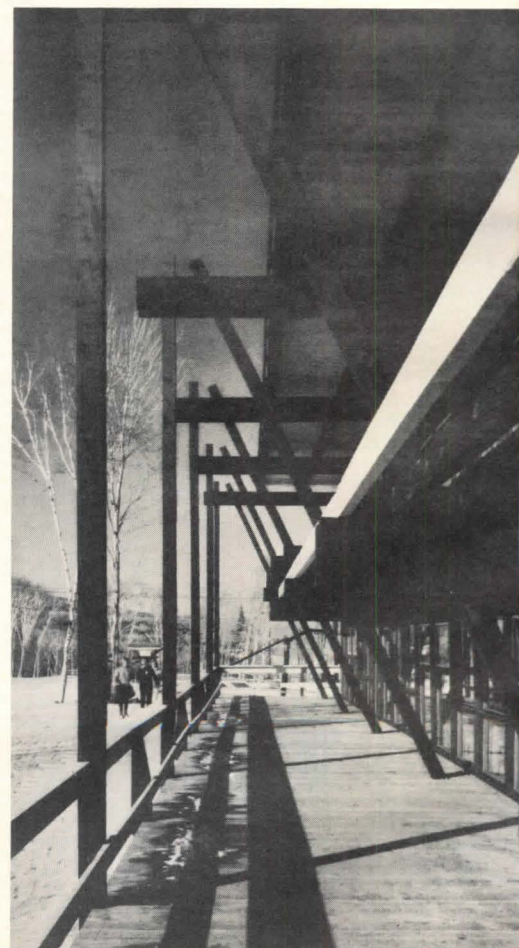
configurations are the next order of planning. Again, this is usually done by an expert in the field, but it is desirable that an architect/planner be consulted, since the location of trails and lifts will determine, in large part, the position of the base and summit lodges.

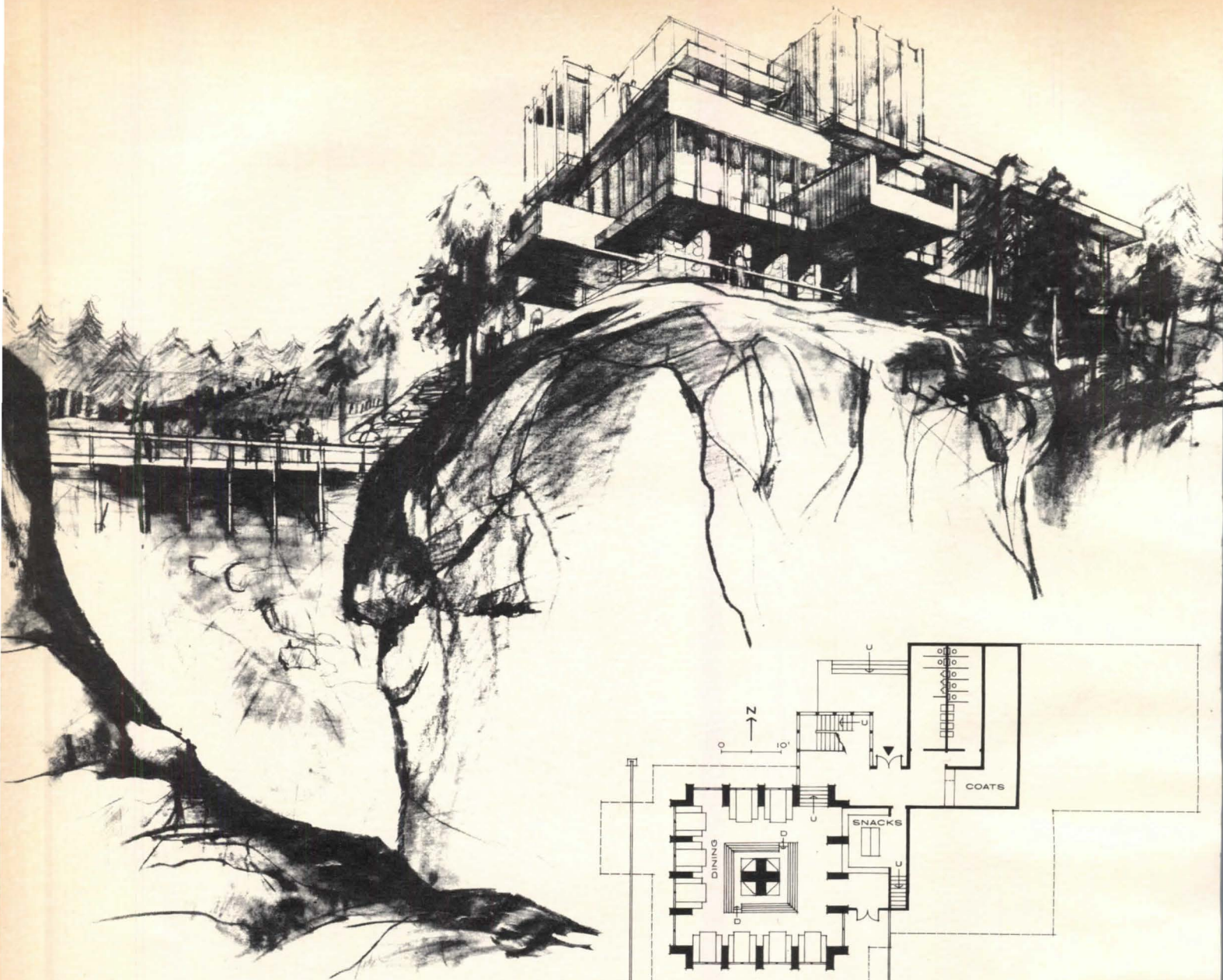
Haystack Village reverts to the tightly clustered plan of the European ski towns. The terrain at Haystack consists of a broad plateau of gently sloping land (5 to 10 per cent) bisected by the approach road and a mountain stream. A 12-acre tract of gently sloping land lies in the northwest quadrant of the plateau. We selected this as the most desirable site for the village center for several reasons: It is at the base of the main mountain; future gondola and a second lift both start at this point; several trails converge on the spot and the terrain was suitable for building. Moreover, the site was bordered by an attractive mountain stream. The central portion of the village will be a court and plaza that opens to the mountain on the southeast. Shops, stores, snack bars, restaurants, cocktail bars, hotels, and casino will be clustered around the space. One hotel will span the brook and connect the village center with another multi-

story hotel and more commercial facilities on the south side of the stream. A restaurant and bar will be slung beneath the hotel and overlook the skating rink and stream. A condominium apartment tower rises above a platform containing stores at the western end of the court.

Service traffic and facilities are generally kept below the plaza. This partial basement helps adjust the buildings to the change in grade and will also accommodate the utilities, maintenance, storage, and repair facilities, ski school, nursery, sauna, and so on.

Since the major view from the village will be toward the mountain and to the south, adequate parking can be provided for the village to the north and east. Due to the sloping nature of the land, most of the parking will be out of sight. An interesting factor in calculating space for winter parking is that about 30 per cent extra space must be provided for snow removal; as the season progresses, more and more snow is piled up at the periphery, gradually encroaching on the parking lot proper. Since motels contribute little to the atmosphere of a pedestrian village, they are removed from the center; housing, ski lodges, and rental apartment units are the next per-





imeter of development.

At the western end of the plateau is a base lodge and a beginners' ski area, with parking located in a horseshoe-shaped swale to the south. The raised center of the horseshoe has been set aside for possible commercial development in the future. The two areas — beginners' slopes and main village — will be connected by a horizontal chair lift.

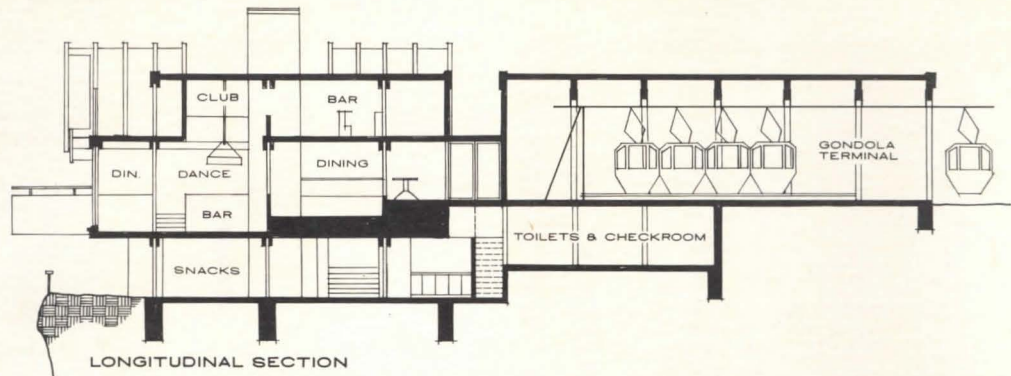
The base lodge is really a capsule form of the village, with numerous commercial and public facilities. Ample circulation space is provided to take care of the crowds (2000-4000 people) who will use the building between noon and 2 P.M. The ski shop is located in full view of the main entrance, both for convenience and for impulse-sales stimulation. Ski repair and rental shops have interior and

exterior entrances (for people on skis). Medical facilities are kept out of sight, and staff offices have restricted access.

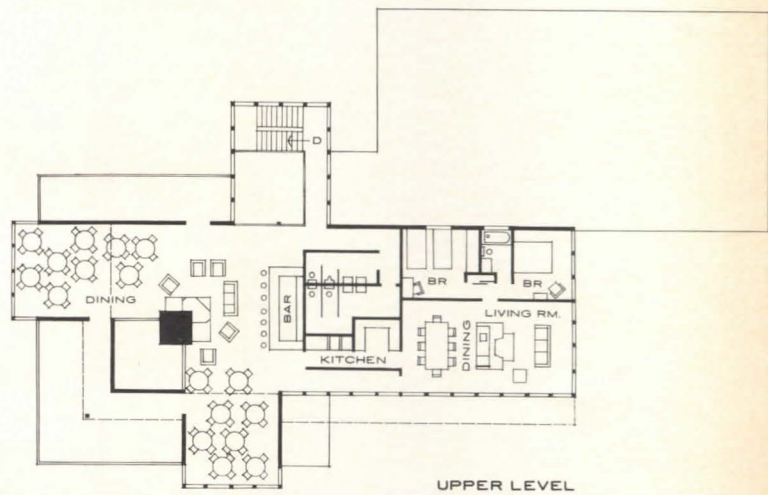
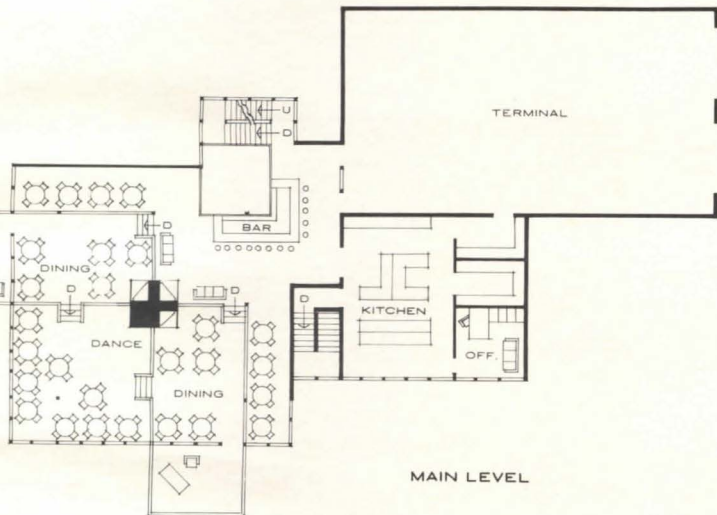
In general, the architecture throughout the project will be sensible, colorful, and friendly without resorting to Swiss Picturesque. The materials selected are natural: rough-sawn wood, wood shakes and shingles, common brick, fieldstone, and rough-textured concrete.

The Haystack Summit Lodge, to be located on a spectacular cliff overlooking a mountaintop lake, is a fairly elaborate entertainment center, containing a bar, restaurant, discotheque, and a private club at the top level that looks down onto a two-story dance space. Diners and drinkers also get a view of gondola arrivals and departures at the second-story level.



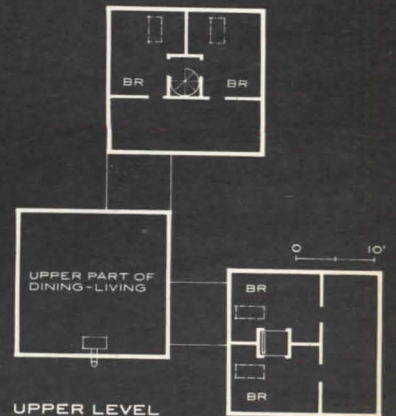
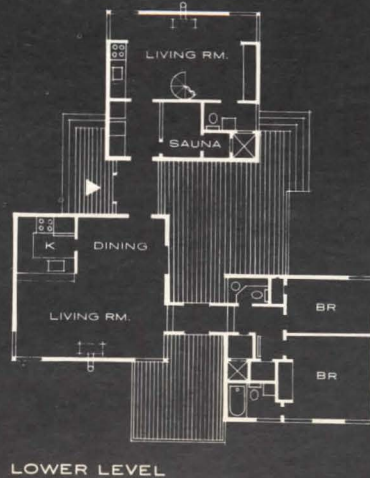


Haystack Summit Lodge



Modular Ski House

Graham's ski house is made up of 20-ft-square sheds linked together by passageways and terraces.



Linear Plan— California Style

By Ian Mackinlay, a California architect, who discusses some of the problems of designing for the day-tripper trade, for the automobile, and deep snow.

Contrary to a myth popular in the Eastern U.S., all Western ski resorts are not devoted to the week-at-a-time, month-at-a-time skier. Like the East, California has its weekend syndrome, and most Sierra resorts are close enough to the Central Valley and the San Francisco Bay area cities to encourage one-day visitors. Day lodges are very popular, practical, and often economically preferable to hotels, since, on weekdays, business is about one-tenth the weekend volume. For long vacations, skiers generally prefer the ski communities of Aspen, Alta, or Squaw Valley.

The linear highway development at Boreal Ridge, Nevada County, Calif., was expressly designed to handle the one-day trade. Its location on the summit of the Sierra, on the transcontinental expressway from San Francisco to Reno, makes it one of the easiest resorts in California to reach by car. In recent years, California skiing has been taken over by the family unit. Husband piles wife and kids into the station wagon and takes to the mountains for a combination of snow, play, instruction, and schuss booming. The new family resorts must have some slopes steep enough for father, some gentle enough for mother, and plenty of play space for the kids. Ideally, no one can get lost easily, or hurt, and all trails lead back to the family car.

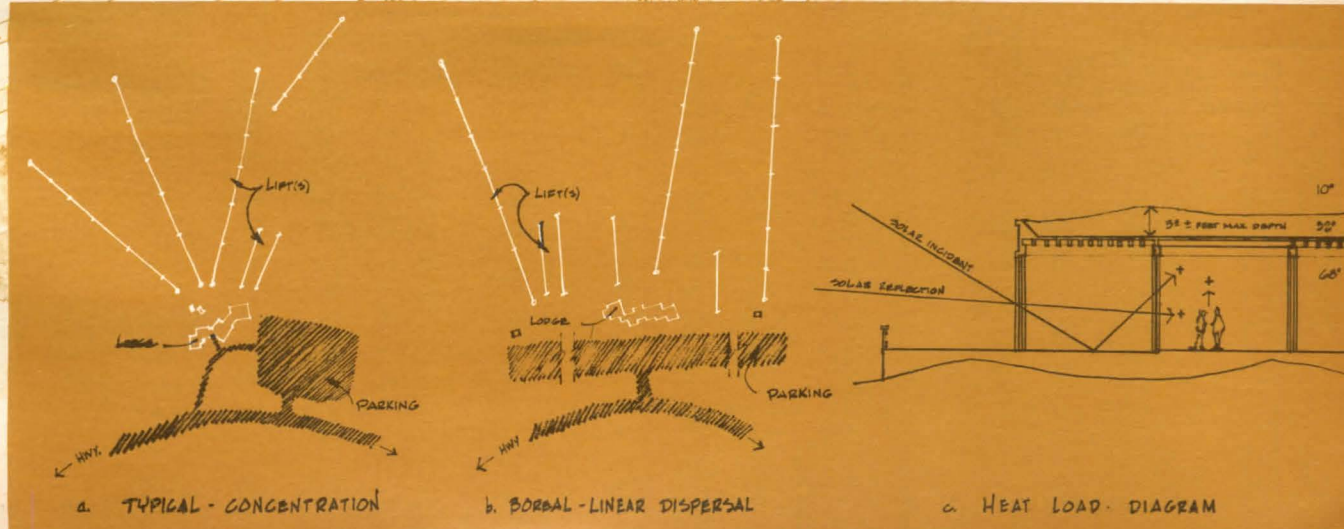
The centralized ski villages of Europe and newer ones in the U.S. tend to concentrate crowds instead of dispersing them, and isolate the center from the automobile in order to create pleasant, pedestrian/ski environments. Boreal, located at an altitude of 7200 ft, with heavy snows, and much in demand for day-tripper skiing, could not be planned along those lines. Proximity to the highway had obvious advantages to the automotive public, and easily plowed parking strips were essential. By changing the circulation system from a central to a linear pattern (very similar to Saarinen's change in airport design from TWA to Dulles), we made an asset out of the fact





Photos, Boreal Ridge: Jeremy Bragstad

Boreal Ridge Lodge and Site Plan



a. TYPICAL - CONCENTRATION

b. BORAL - LINEAR DISPERSAL

c. HEAT LOAD DIAGRAM

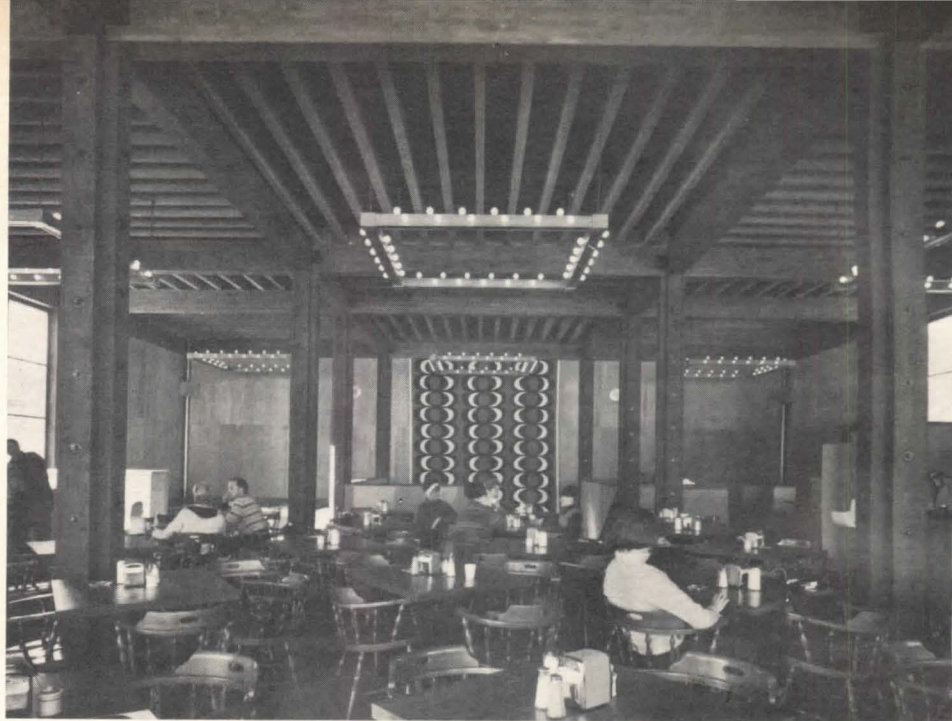
that the ski area abutted Interstate 80. A large linear parking lot that is parallel to both the highway and ski slope became the heart of the resort. All lifts, present and future, originate from it. On crowded days, ski tickets can be purchased at several locations along the base of the slope, permitting skiers to go from their cars to the nearest lift, then to the top, and ski back to other lifts or the lodge. Instead of a fan-shaped pattern of lifts, the resort takes on a vertical design. Unlike many resorts where trees are simply stripped away to provide broad, open slopes, or where trees are retained and narrow trails defined, Boreal is designed with a series of vistas. As the skier descends from the top of the hill, he is led through corridors from one enclosed area to another, each with several alternate routes suggesting themselves.

The lodge itself is designed for very heavy snow loads. Unlike most parts of the East, California has heavy snowfalls and relatively high temperatures even in midwinter. This is due to the great storms that periodically sweep out of the Gulf of Alaska and dump as much as 5 ft of snow at a time; snow on the ground can drift 40 ft deep.

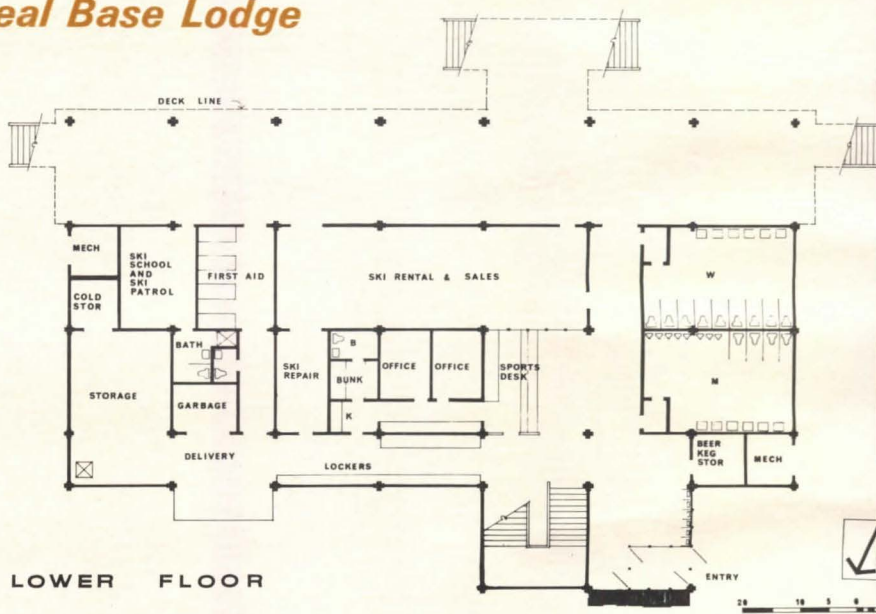
Most Sierra resorts are located relatively high up on the mountain, due to peculiar weather conditions: It sometimes rains at altitudes as high as 6000 ft; and snow can fall at altitudes as low as 2000 ft. Locating the resorts above the 6000-ft mark assures favorable weather conditions, but also demands rugged structural systems capable of supporting great accumulations of snow.

At Boreal Lodge, we used a system first perfected by Philip Diedesheimer, the mining engineer of the Comstock Lode at Virginia City, Nevada. The building is based on modular 18-ft square bays structured for maximum strength against the snow from above and from the side. The system of construction lends itself readily to interchangeability and expansion in any direction. Traditionally styled, sloped roofed lodges are difficult to expand gracefully and produce awkward jigsaw patterns and heavy concentrations of snow. At Boreal, at least four stages of lodge growth are contemplated, which may proceed in any direction—to the back, side, or on top—since the modular system affords great variety of alternatives.

Although flat roofs are generally considered unsuitable for winter locations,



Boreal Base Lodge

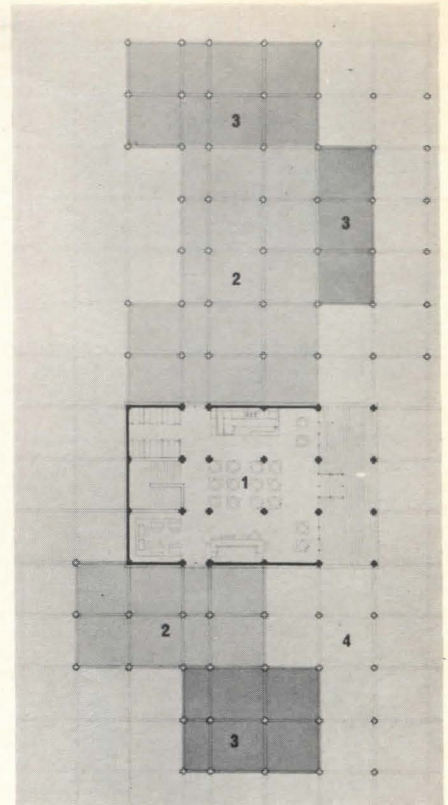
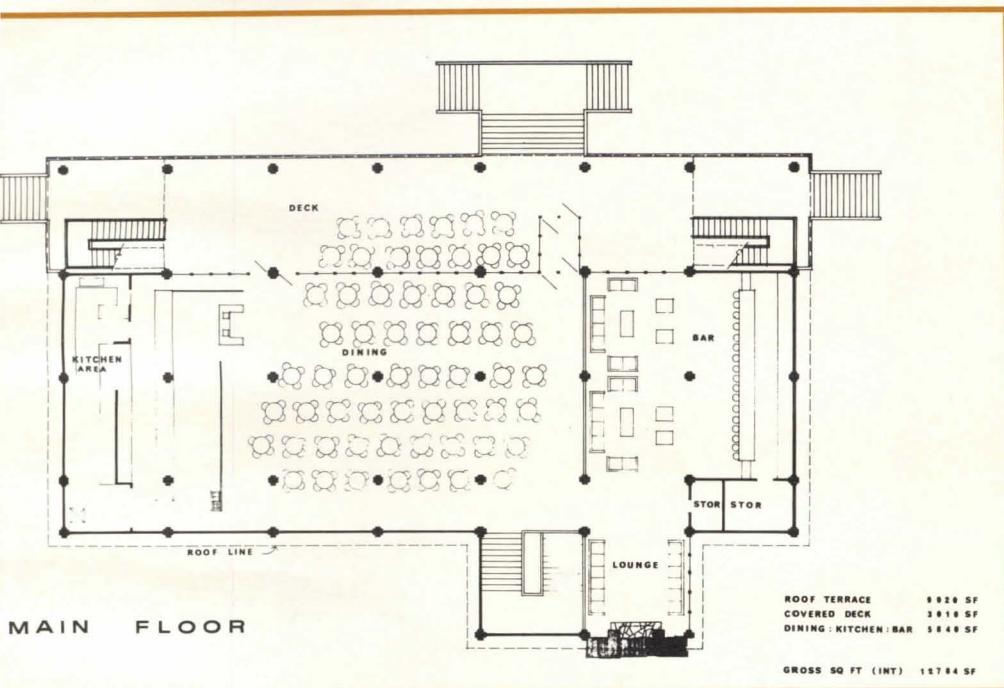


they are actually quite practical. Snow never accumulates very much on the rooftops, because of the high winds. A 2'-6"-high parapet on the lodge roof keeps the accumulation to a level of 3 to 5 ft, which is the desirable height for insulation. Regardless of how cold it is, the temperature of the roof of a heated building with 3 ft of snow on top will be 32 F; a good blanket of snow on top actually helps retain heat and saves fuel.

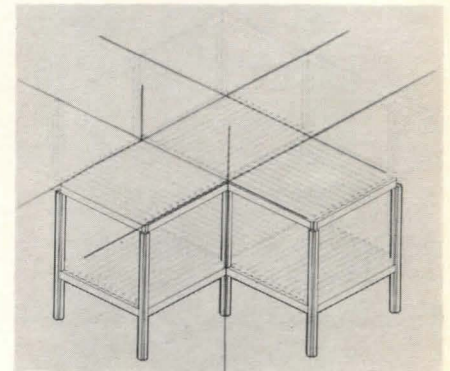
A flat roof also permits you to use it as a sundeck. Eventually, at Boreal Lodge, a radiant heated slab (similar to the main level decks) will be applied over the existing roofing and the snow depth will be controlled by melting. In midwinter, snow will be allowed to accumulate for insulating value, and, in

spring, when the deck will be most useful for sunbathing and overflow crowds, the heat can be turned on and the snow blanket removed.

The aesthetic character of the lodge stems directly from the modular structural system. Both beams and columns are of heavy timber construction with rough-sawn surfacing. The columns are large laminated timbers held together with bolts and malleable iron washers. The mineshaft character speaks eloquently of the Old West and is somehow both modern and old-fashioned. The soaring quality of the second floor (14 ft to the bottom of the beams) prevents the massive timberwork from being oppressive, and the general openness of the design encourages family participation



Modular construction system (below) permits several expansion stages (above): (1) existing building, (2) phase two, (3) phase three, and (4) allows for potential extension.



by all age groups. The floor is entirely carpeted to absorb the clatter of boots, and this, together with the rough-sawn wood, affords sufficient acoustical absorption to make conversation possible even when the lodge is crowded. The interior feels pleasantly "lived in," even on weekdays when few people are there, and is warm and inviting even on the coldest days.

Physical warmth, however, is not enough in snow country; the climate of a successful resort is also determined by visual warmth. Michael Bull, a San Francisco artist, was retained to design the fascia on the exterior and over the bar and food service areas; his sparkle of color draws the chilled skier off the cold slopes like a magnet. Color is also made a feature of

the lifts and the signs. Much warmer and more intense colors can be used in snow country than would seem appropriate down below, since the intense mountain light and the reflection from the snow will wash out and mute pastel shades. Due to warm midday temperatures and the solar build-up from the large south-facing windows, ventilation is more of a problem at Boreal than heating; and a great deal of outside fresh air is required at midday for indoor comfort. A careful study was made of radiant heating versus forced air, and forced air was found to be the only system sufficiently flexible to handle the widely varying requirements of early morning, midday, and late evening. Despite the large amounts of glass on the south face of the building,

the heating requirements are surprisingly low and the heating bill is modest due to the insulating properties of the snow and the efficient use of solar radiation. The lodge is heated with an oil-fired boiler that generates the hot water used for the snow melting on the outside decks and entrance walks and tempers the great quantities of outside air required for the lodge when it is full of people.

In May 1967, the AIA gave Boreal an Honor Award with the following comment: "A delightful statement of a ski lodge without resorting to the vernacular of the Swiss chalet." Sturdy detailing, and good graphics give it gaiety within the discipline of a direct, simple solution."



Bauhaus and Modulehaus

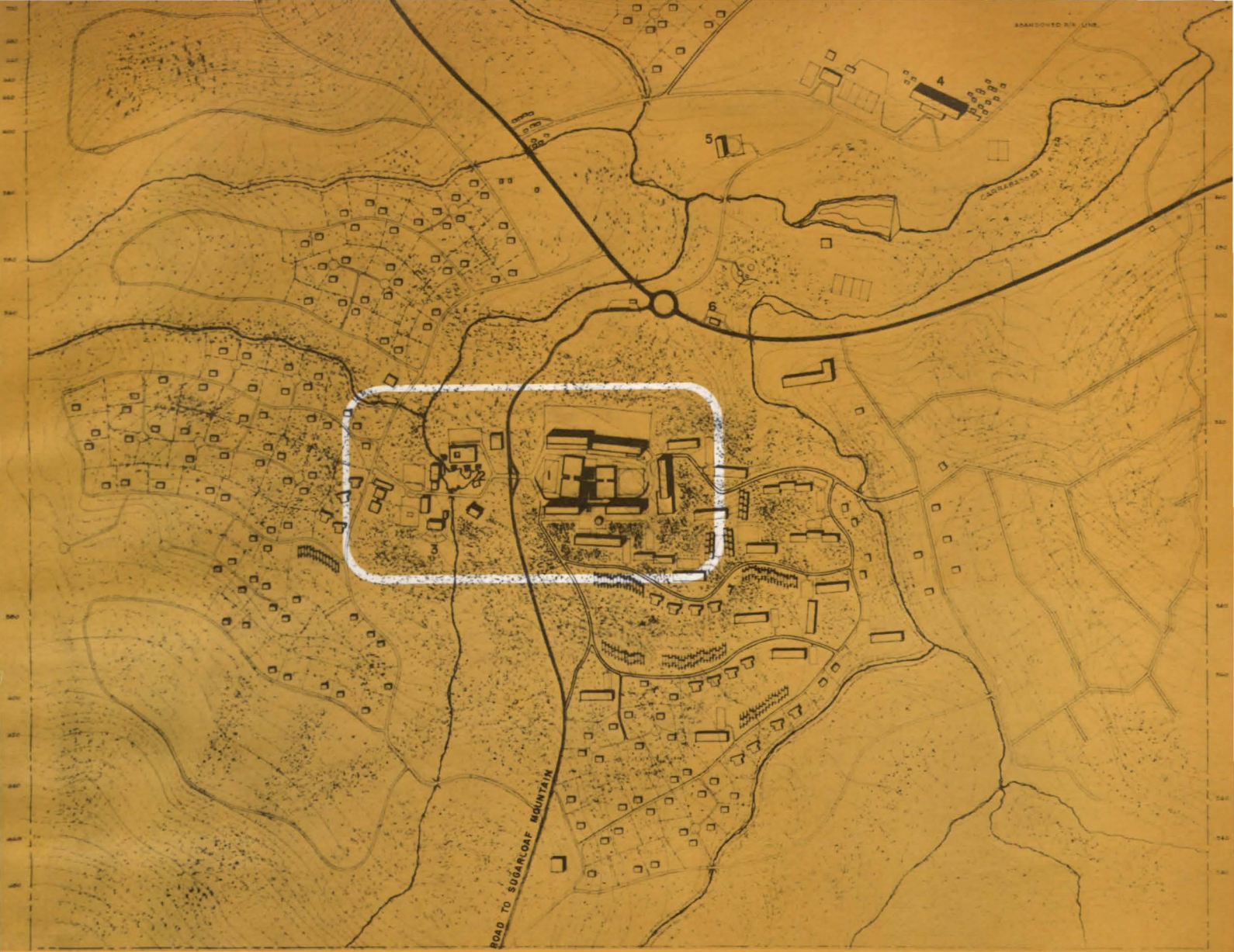
The slow, rather painful development of Sugarloaf Village in northern Vermont is a classic case of the ski boom gradually forcing more remote and reticent developers to resort to master planning. In 1960, a dozen Maine businessmen—insurance salesmen, entrepreneurs, and ski enthusiasts—purchased 100 acres of land less than a mile away from the Sugarloaf mountain ski area. They reasoned that the property could not help but go up in value: The ski population was increasing, nearby Rangle Lake was a good summer resort, and the area was well known for fall hunting. The nearest town, Kingfield, with a population of 6000, was roughly 12 miles away, and did not offer any immediate attraction to a resort crowd. The businessmen planned to develop the area gradually

into a ski village, beginning by selling off house lots and using the profits to develop public facilities: hotels, restaurants, bars, and so on.

It was not until late 1962, however, that the group engaged an architect, Richard Stein, to plan the community. His initial report made them think in much larger terms than anticipated. Stein outlined a bold, extensive development that would put Sugarloaf on the map of major resorts. It is his contention that the area can support one large establishment, and that the owners should proceed while the opportunity is at hand. Bigelow Mountain, another ski resort that is 20 miles away, is the only other candidate for a major center and shows signs of putting up an active advertising campaign to lure vacationers to the other

side of the mountain.

So far, little of the preliminary plan has been implemented, but the architect and the master plan have had subtle effects. Potential buyers have been known to agree to much higher prices for land than they originally anticipated paying, simply because the entire community had architectural control and direction. Land divisions on the first group of house lots have also been revised. Houses in the first plan were positioned in an even grid over the landscape, without much consideration of the irregular terrain. They were not far enough away to give real privacy or close enough to be really cohesive. The roads were too steep and ran along the top and bottom of two rows of lots instead of between them, servicing both sides. Stein made several field surveys,



Sugarloaf Village: Site Plan



and, according to on-the-spot data, shrank the sizes of the lots on the steep slopes, and gave the houses on flat land slightly more space. The roads were more efficiently rerouted between lots.

In planning the village proper, it was Stein's intention to capture some of the quality of the European villages "where one great hotel sits right alongside the other. The excitement of a ski resort comes from a concentration of people and facilities—from a choice of bars, restaurants, hotels." Sugarloaf Village

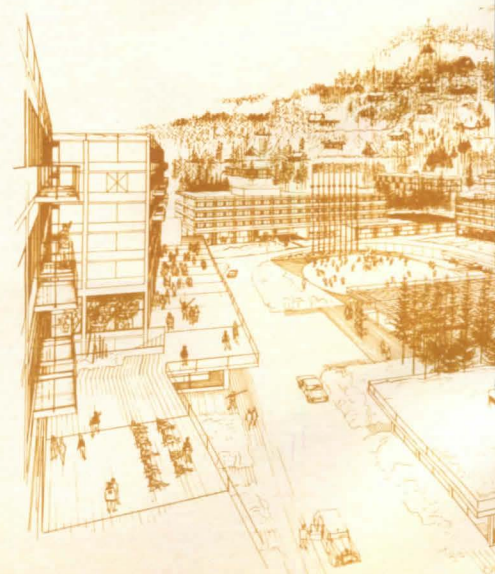
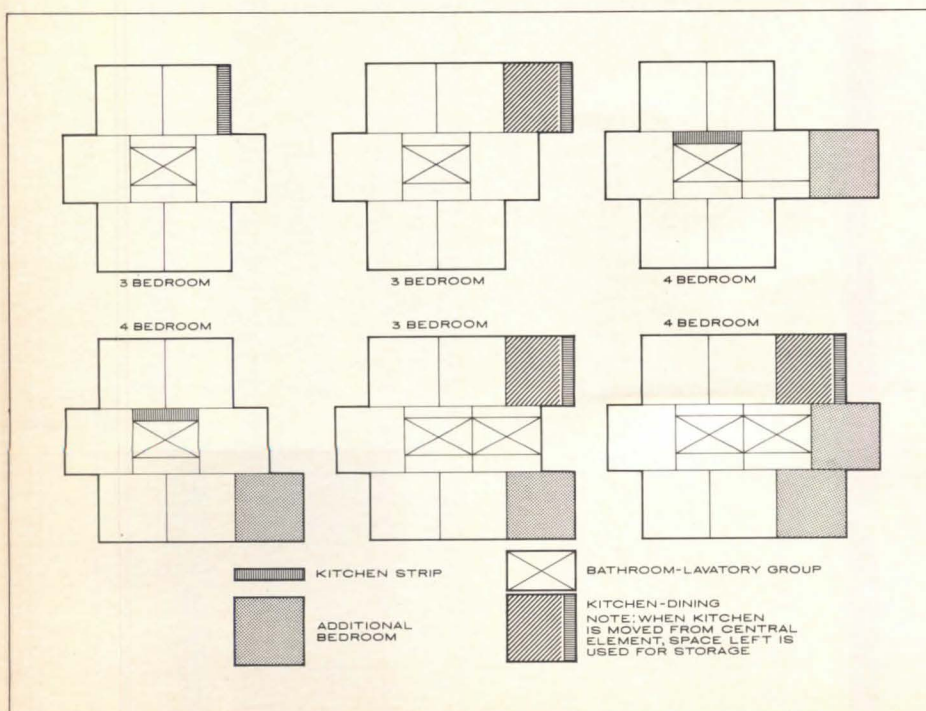
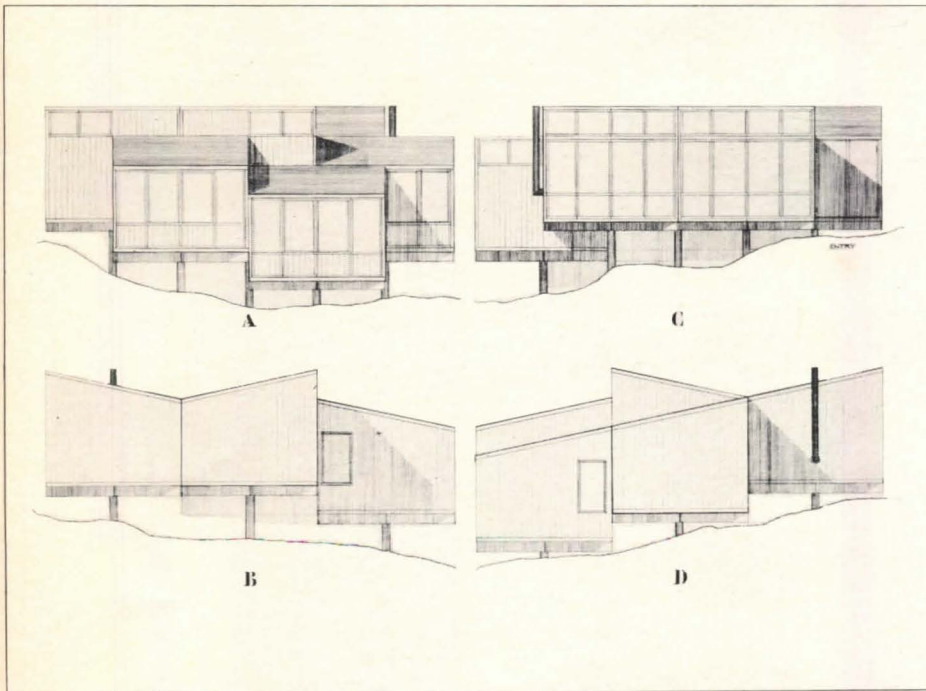
was designed as a compact town centered around an open plaza and ice-skating rink. The architecture is frankly modern, and although some architects protest that glass and steel is out of place in timberland, Stein maintains that fire-proof construction and materials are necessary for the four- and five-story structures projected in the village center.

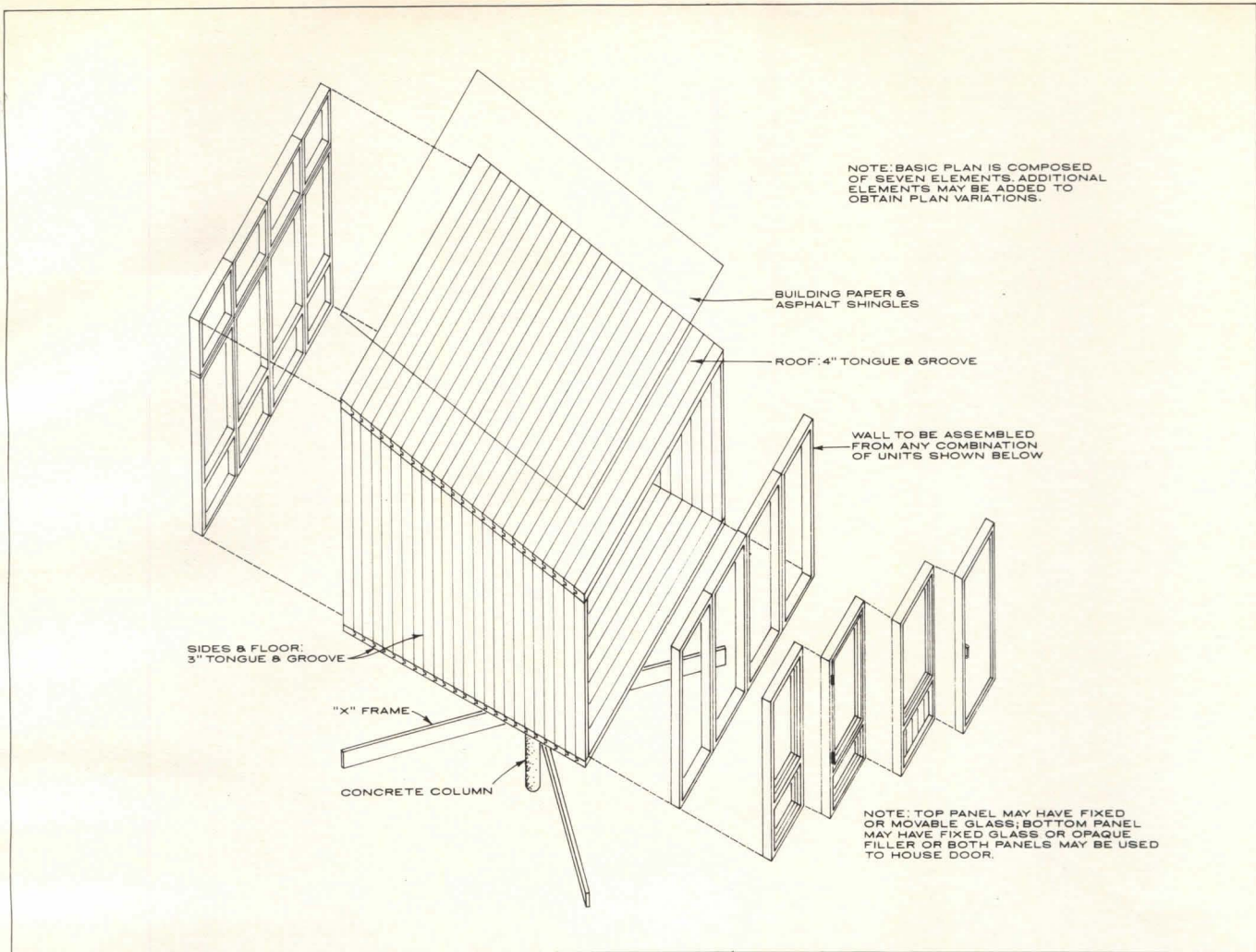
Whether the center will be built according to plan or not is still debatable, although the land is being cleared this summer for some type of development.

More immediately plausible are Stein's plans for a modular, prefabricated ski house, based on New England shed architecture. Working drawings are presently under way for a pilot project that will be custom-built this summer.

The house is a flexible system, consisting of shed units that can be assembled in a variety of way according to the needs of the owner. A modest ski house might start with a core unit, containing bath and kitchen facilities, and one additional shed serving as living room/bedroom. Units can be added at will and finished with windows or walls as required. The entire structure is based on a 3-ft module, which is the standard door opening, window size, and also the standard drop permitted between units. The modular scheme is conceived so that a house not only responds to the changing needs of the owner, but also to the irregularities of the steep mountain slopes.

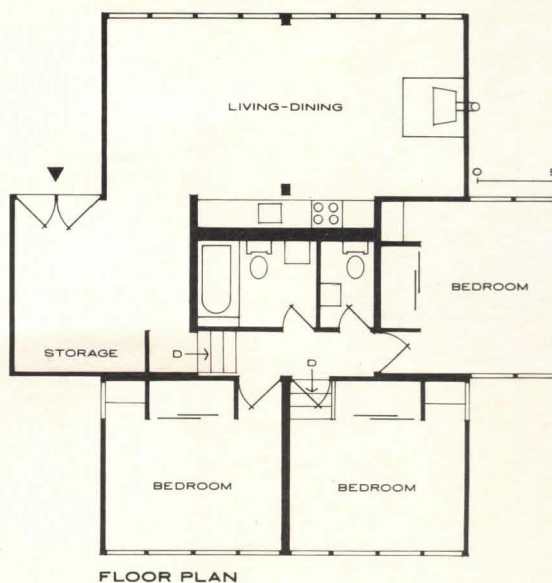
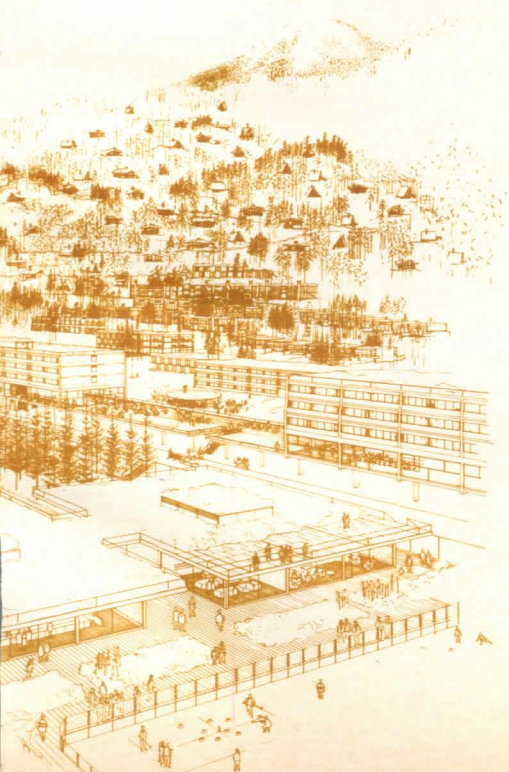
Even though prefabricated, the system would produce an architecture having a great deal of volumetric variety. Each owner and site would demand a different assemblage, and some of the more superficial styling common to ski resorts—Tyrolean shutters and carved balconies—could be avoided. The modular system would fit in with traditional New England architecture, in which the main house gradually sprouts sheds as owner-families grow in size and wealth.





Modular Ski Houses

Modular ski house by Richard Stein can be partially prefabricated in the shop. Client can select a wide variety of combinations according to his needs and the site.



SLIP-FORMING SPEEDS HIGH-

The structural and acoustic requirements of a tall apartment building, coupled with repetitive floor plans, made slip-forming the logical choice for low-bidding contractor.

Over the past five or six years, architects King & Lewis, of Detroit, Mich., have been involved in the design of high-rise apartment buildings and hotels. Both building types have certain features in common: repetitive floor plans, interior partitions that define individual dwelling units and are unlikely to be relocated during the life of the building, and a pressing need for acoustic privacy between adjacent units. Taken together, these requirements have convinced the architects that a framing system embodying bearing walls is the most appropriate for this type of building: Relatively heavy loadbearing walls can handle shearing forces and thus resist lateral wind and seismic loads; they can take vertical gravity loads, thereby eliminating the need for separate columns; and, if they occur between apartments or hotel suites, they can provide a dense acoustic barrier that would otherwise have to be provided at extra cost.

During the preliminary planning of a 300-unit, 26-story apartment building for Ann Arbor, Mich., it occurred to the designers that slip-forming might well be the most economical way to construct a matrix of cast-in-place, concrete bearing walls. The structural consultant, Raymond C. Reese Associates, of Toledo, which was called in at the earliest stage of design, agreed. Together, they laid out a structural frame that would lend itself to slip-forming.

But slip-forming of building frames is comparatively new, and the number of local general contractors willing to bid

on such a scheme was an unknown quantity. The designers did not want to restrict the competitive bidding on the project, so they prepared their bidding documents on the basis of a conventional fixed-form, reinforced concrete frame, allowing bidders to submit an alternate price for slip-forming if they wished. When the bids were opened, it was found that the two lowest bidders had based their prices on slip-forming, a fact that confirmed the designers' original assumption.

The successful general contractor, R. E. Daily & Co., Southfield, Mich., selected his subcontractors from among those with the most experience in slip-forming. Because some mechanical and electrical components would be embedded in the slip-formed walls, the coordination of these trades with the work of the general contractor would be essential.

The contracting team—general contractor and his subs—visited similar but smaller slip-formed projects before preparing comprehensive shop drawings of the slip-forming equipment.

The building is to be slip-formed from top to bottom without change in section. The contractor believed that wood-faced forms would not last throughout the entire construction cycle, so he elected to line the form with stainless steel, reasoning that extra cost of the liner would be less than the cost of rebuilding the form during construction. Moreover, the inconvenience of rebuilding the form would defeat one of slip-forming's compelling advantages—speed of construction.

Slip-forming began below grade at the foundation level, which turned out to be an important advantage to the contractor. During the first few feet of construction, a defect known as shingling appeared. (Shingling occurs when the plasticity of the concrete mix is not properly matched to the rate of rise of the form.) While constructing the under-

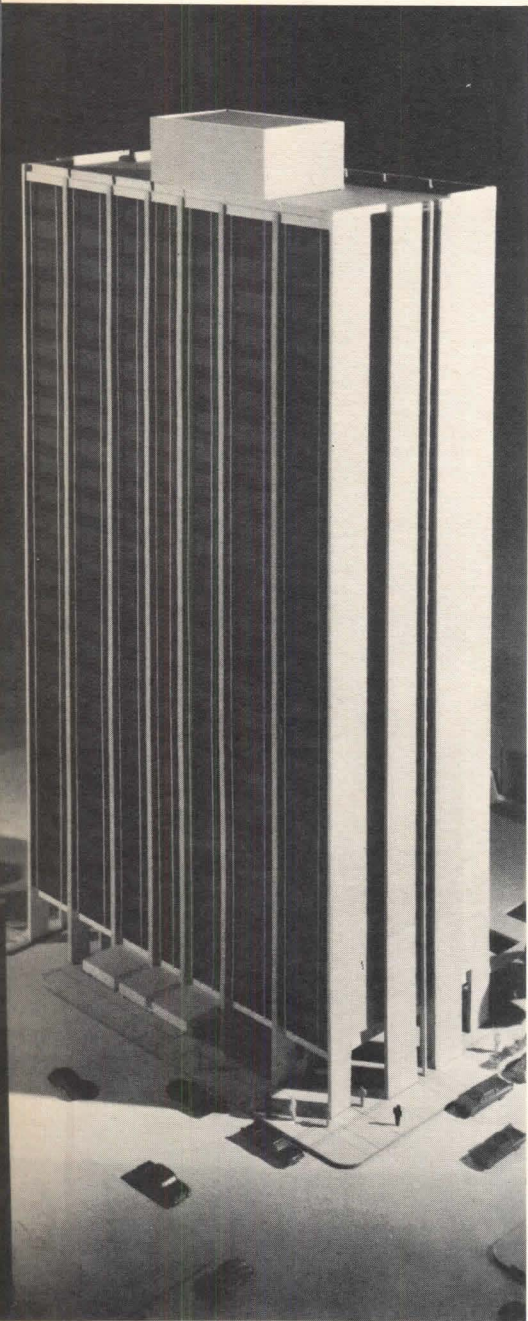
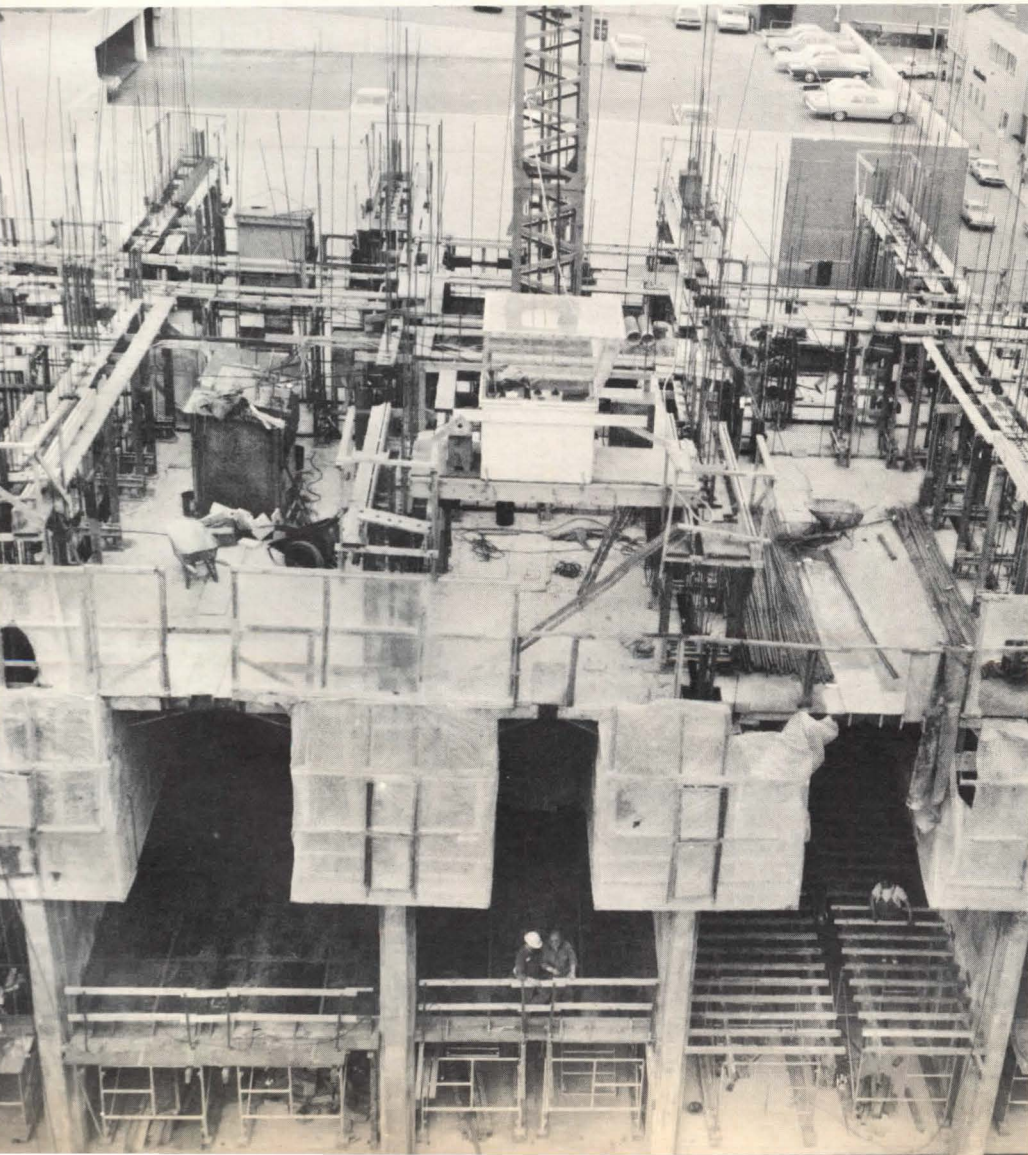
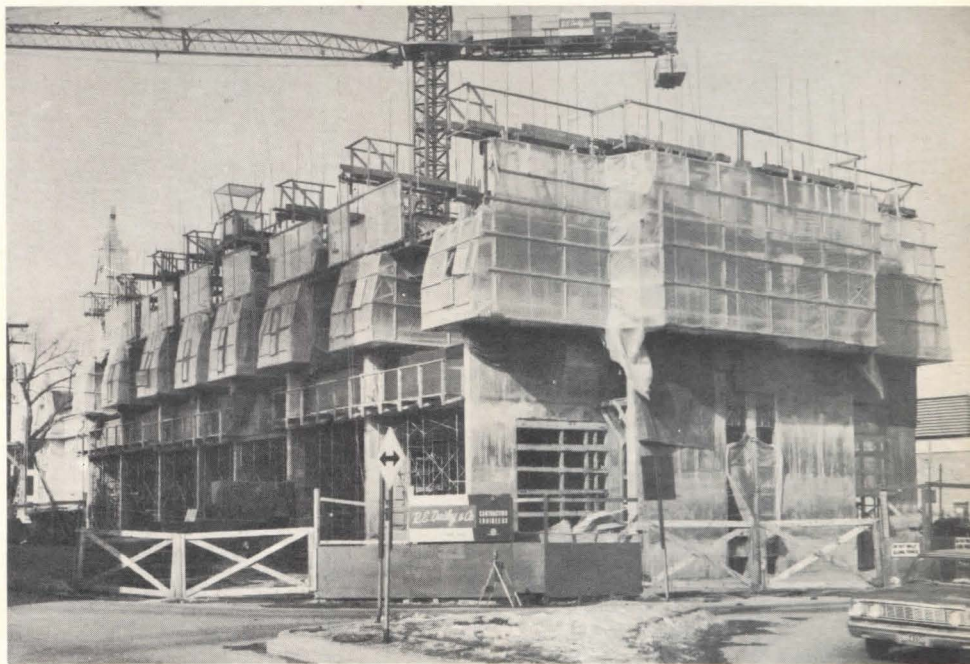


Photo: Balhazar Korab

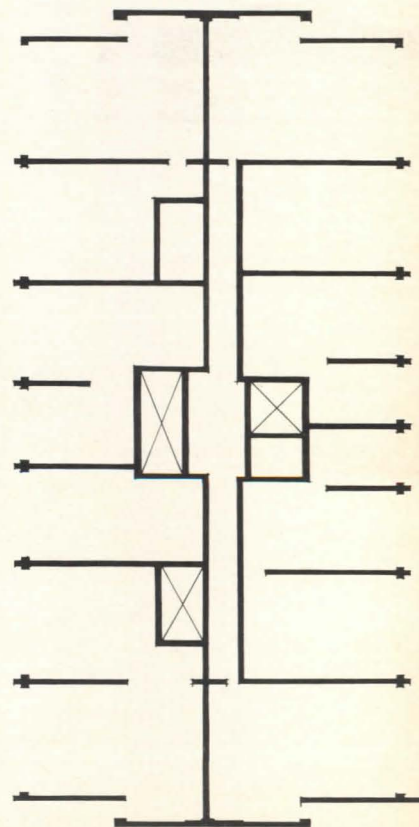
RISE CONSTRUCTION

ground portion of the building, the contractor and designers had ample time to adjust the concrete mix and the method of wedging the forms, thereby eliminating the unsightly shingling.

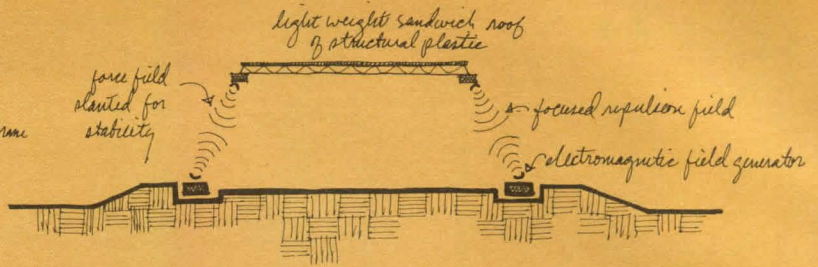
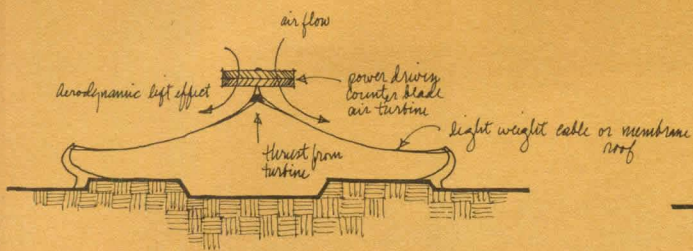
The concrete surfaces that are to be exposed were to have been sandblasted, but early test panels showed that segregation of heavy aggregate resulted in an unacceptable variation in color. "Instead," says project architect Harry S. King, "we are considering a bushhammered finish. If I were doing the job again," he adds, "I would incorporate vertical striations in the formwork for exposed surfaces to mask minor color variations."



A rising slip form (left) casts the spine and ribs (below) for a 26-story apartment tower. Form rises in 1-in. increments at the rate of one story per week (above). The contractor casts the floor slabs in place, working about three floors below the rising slip form.

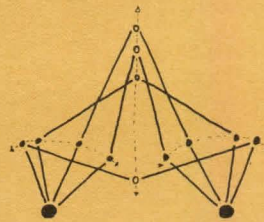
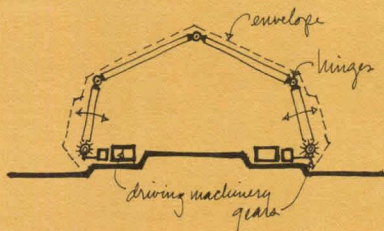


"Supportless" Structures ??

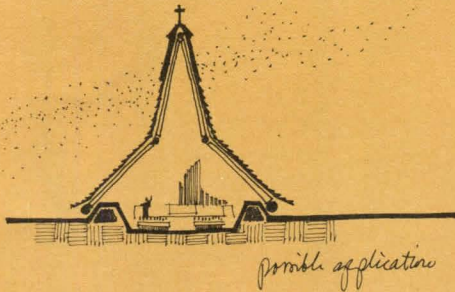
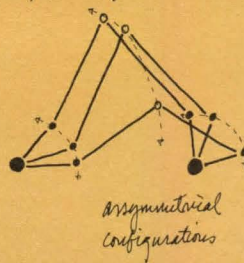


KINETIC STRUCTURES

Deformable Structures



Similar principle could be used to modify plan-form.



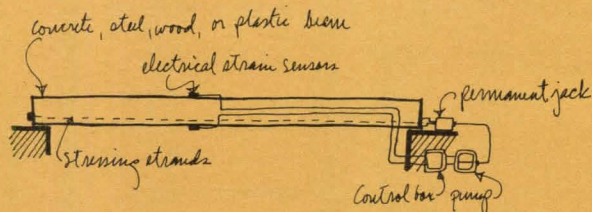
Professor Zuk believes that time and motion are factors too long overlooked in architectural design. His sketches, reproduced here, suggest areas of research that could lead to structures able to shrink and swell, or even move to a new location.

By William Zuk, professor in charge of structural engineering, School of Architecture, University of Virginia.

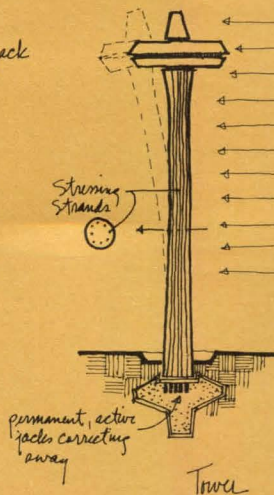
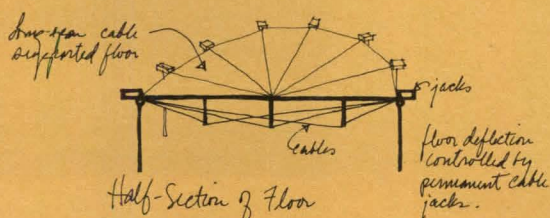
Traditionally, architecture has been conceived of as enduring construction, fixed on the land, and actually becoming an extension of it. The word conjures up images of the timeless monuments of ancient Egypt, of the temples of Greece and Rome, and of the medieval cathedrals of Europe. Such classical examples identify architecture with solid, static permanence. These noble structures indeed did exemplify the cultural achievement reached by men in their time; they were produced by funneling the talent and wealth of an age into such undertakings, providing national symbols of excellence.

But the image of our age is dynamic, not static. Our national goals are reflected in such projects as the supersonic aircraft, missiles from space travel, and the proliferation of highways and automobiles for travel here — in short, progress, motion, change. So it seems inevitable that the cast of architecture will also change for passive to active. An unmistakable sign pointing in this direction is the decreasing useful lifetime of structures. Forces of change demanded by new needs, new economies, and new populations result in buildings

Zero Deflection Structures



Principle: when sensor notes strain due to deflection, jack is automatically activated, restoring beam to desired deformation.



that are remodeled or scrapped and rebuilt at an ever-increasing pace. Few buildings are erected today that do not need some provision for flexibility of use incorporated into them.

Thus, it is not illogical to predict that architecture of the future will become truly kinetic, with roofs, walls, and floors being in actual motion or at least capable of instant motion at the press of a button. (Paradoxically, one may predict that, through the dynamics of machinery, structures may become truly static with deflections and vibrations eliminated by sensor-actuated pumps and motors.)

Even now, designers incorporate moving elements in contemporary building structures.

- Retractable stadium roofs
- Revolving restaurants
- Moving ramps and sidewalks

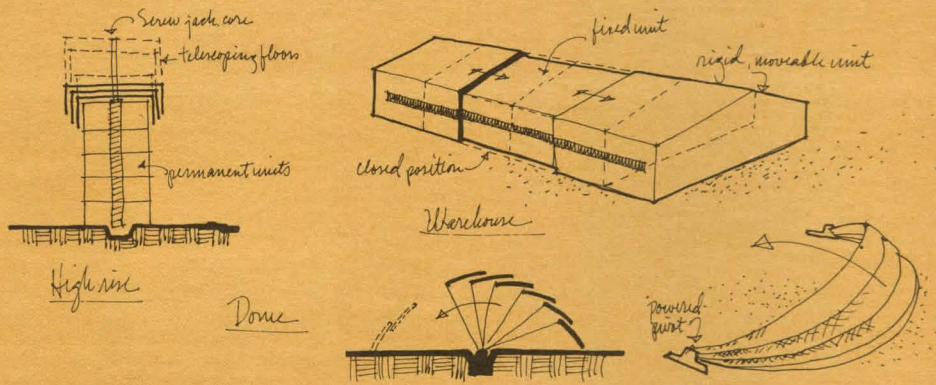
Both existing buildings and engineering proposals that are well within the capability of current technology now embody moving machines to stabilize and stiffen structures.

- Inflatable pneumatic structures held in shape by a continuous supply of pumped air.
- A building on Mexico City's unstable soil is held level by permanently installed, continuously operating hydraulic jacks.
- A Westinghouse research laboratory in Baltimore where live-load deflections are resisted by a system of dashpots and springs.
- A high-rise building for Milwaukee, for which structural engineer Lev Zetlin has proposed installing jack-operated vertical cables at the perimeter to hold the structure plumb under variable wind loads.

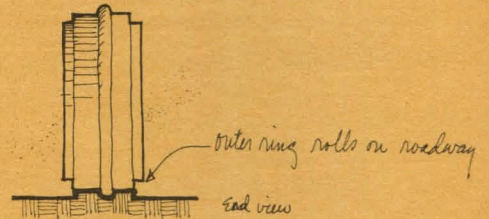
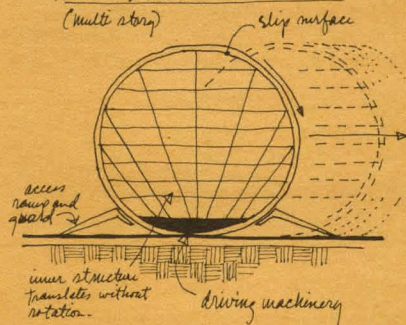
There must be areas of basic research in architecture not infringed on by immediate applicability or quick pay-off. The study of such structures capable of responding to the fourth dimension of time is certainly one such basic area.

If one is willing to conceive the potentials of architectural kineticism as a basic research problem, to explore a wholly new expression in architecture through structural kinetics, the field is virgin territory, bold and exciting. Structure can become a living machine, permitting architecture to break out of its static bond and become more versatile, more adaptable, better controlled, enabling it to meet changing needs under changing conditions.

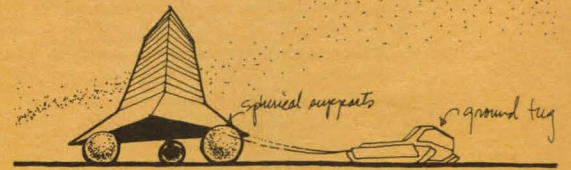
Expandable and Retractable Structures



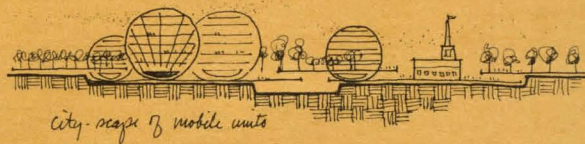
Mobile Structures (Multi story)



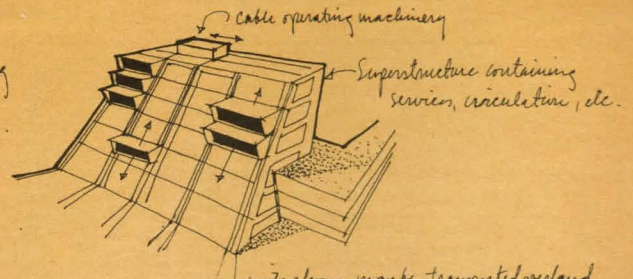
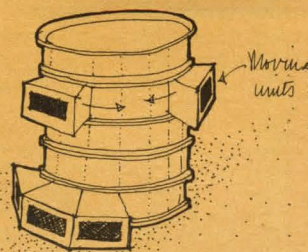
Mobile buildings create flexibility of spaces between structures. Offers potentials for "moving" cities as a possible solution to rapid urban changes.



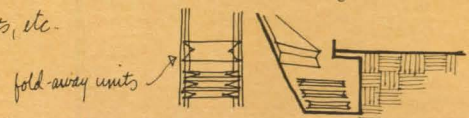
City plan using track-grid buildings using spherical supports may be moved in several directions.



Displacable Structures



Shareable units for hospitals, laboratories, apartments, etc.



SPUN PLASTIC SHAPES A SCHOOL

The client's enthusiasm for a recently developed method for constructing plastic domes lead its architects to a novel and economical school design.

The playful cluster of bubbles that make up this school for young and gifted pupils owes its unusual form entirely to the fairly recent emergence of an imaginative method of dome building known as spiral generation. It is what it is, almost in spite of its designers' wishes.

The directors of the school, which is the Roper City and Country School, in Bloomfield Hills, Mich., had learned from the Dow Chemical Company, of nearby Midland, Mich., that the firm had developed a process for constructing roof domes of expanded polystyrene that was both fast and economical. Both of these features appealed strongly to them and they proceeded with the selection of architects with the preconceived notion that the new addition to their school plant would be so built.

Glen Paulsen & Associates, Bloomfield Hills, who, with Caudill, Rowlett, Scott, Houston, Tex., as consultants, got the commission, were frankly skeptical. The school, which was to be a self-contained plant for youngsters from preschool age through the lower elementary grades, was to include a wide variety of spaces. Besides the usual classrooms and administrative offices, the program called for a library, a music room, a kitchen, a research room, and one rather large general assembly area.

After estimating the floor area necessary to accommodate these needs, the architects realized that a dome of immense size would be needed, a bulb that would have little to recommend it aesthetically. Moreover, such a structure would not only be difficult to subdivide appropriately but would waste a good deal of cubage in the large volume of space above head level.

Accordingly, they recommended a study that would take a closer look at the individual spaces actually called for by the program. The client agreed, but clung to the plastic dome as a requirement. With only minor modifications to the program, a complex of eight smaller, interconnected domes evolved.

The domes will be thin shells of expanded polystyrene, a material familiar in construction as thermal insulation but not used structurally until the development of the spiral generation process.

In this process, strips of the plastic material, rectangular in cross-section, are bent to conform to a circular foundation ring and fastened to it. (Because it is a thermoplastic material, the abutting ends of adjacent strips may be welded together by first softening the end of one strip against a heated plate.)

Successive layers of plastic are built up by heat welding strip after strip, one above the other, until the dome begins to rise. The key to the process is a rotating boom anchored at the center of the spherical surface. It swings around and around, carrying with it both the heat-welding equipment needed to join the strips and an operator who feeds strips of plastic to the welding head.

As the outer end of the rotating boom rises, it describes ever-diminishing circles in the horizontal plane, and because the length of the boom remains constant, the surface it develops is perfectly spherical.

The domes thus formed have no openings, but cut-outs for windows and doors will be made easily, since the material is readily cut with conventional tools.

The architects will finish the inside of the domes with plaster applied to a wire mesh reinforcement; on the outside, they will apply cement plaster similarly reinforced. A liquid-applied roof membrane will waterproof the exterior.

The designers have overcome their early reservations: peripheral spaces too low for head clearance have become storage areas that would have been needed anyway; the circular structures that interconnect the domes accommodate washrooms, coatrooms and utility closets quite neatly; and, best of all, the preliminary estimates indicated that the shell of the school should cost about \$13 per sq ft as compared with typical school costs in that area of \$17 per sq ft. (Figures do not include site development, furniture or fixtures.)

The Dow Chemical Co., which was a consultant to the designers, has built a number of domes by this process, including covers for water treatment tanks, and, the most natural application of all, a planetarium. The construction process is proven.

All the domes built to date have been spherical, but Dow sees no reason why it cannot develop a variable-length boom able to generate nonspherical surfaces of revolution.

THE PROCESS: A welding unit attached to the end of a rotating boom (left) includes an electrically heated knife blade that slides along beneath a strip of expanded polystyrene, bonding it to the strip below. Also hung at the boom's end is a platform for the operator who feeds successive strips of plastic to the welding head as the boom revolves (center). As the boom rises (right) it describes a circular arc in the vertical plane. This motion, coupled with the boom's horizontal rotation, generates a spherical surface.

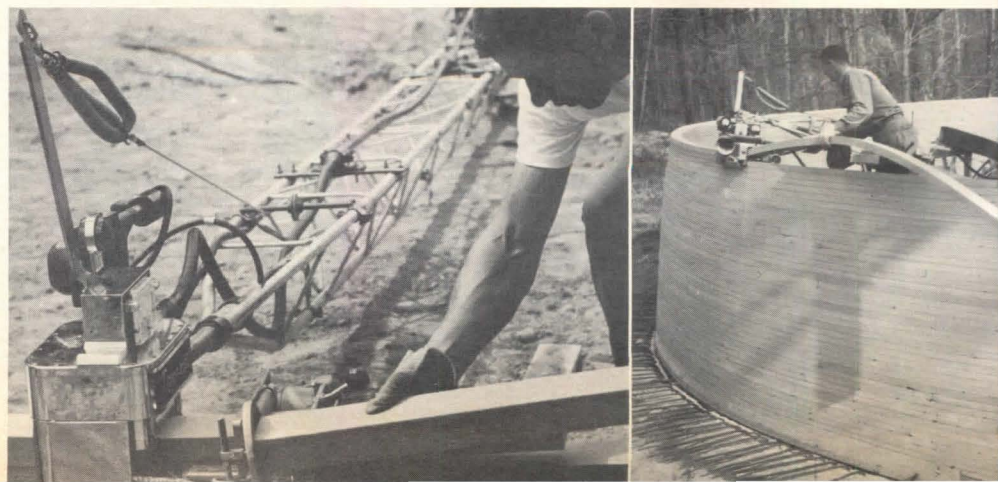
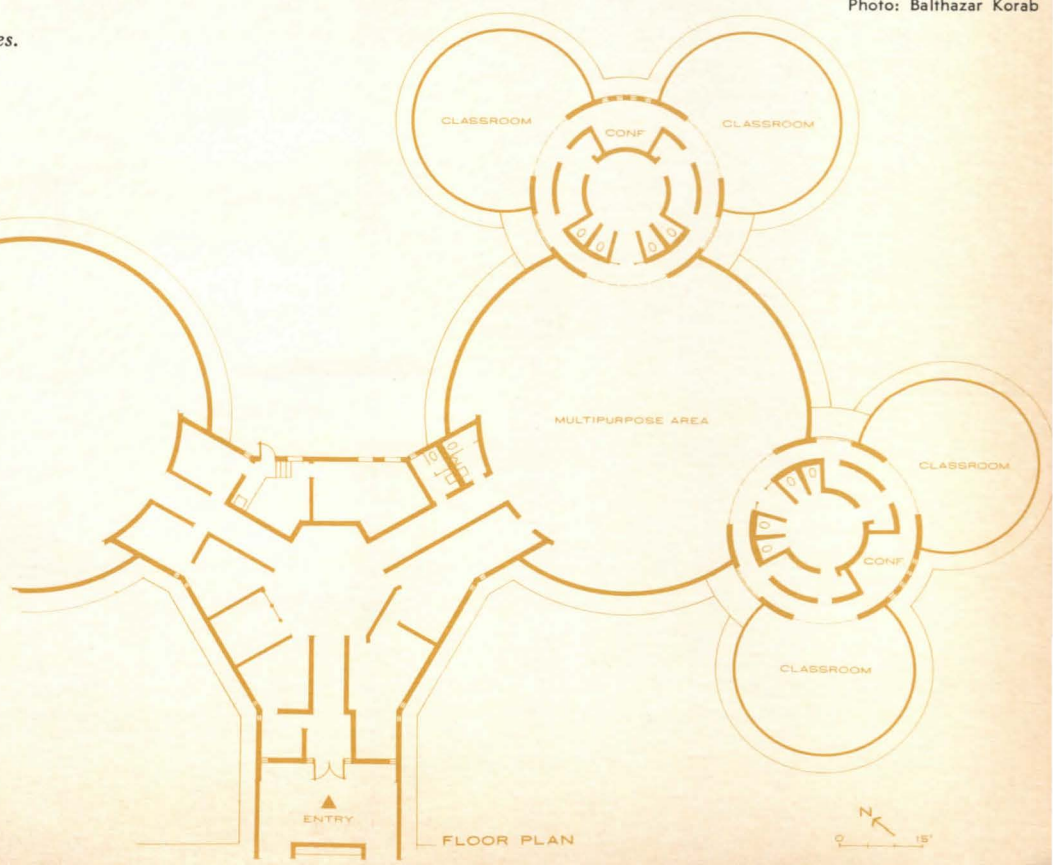
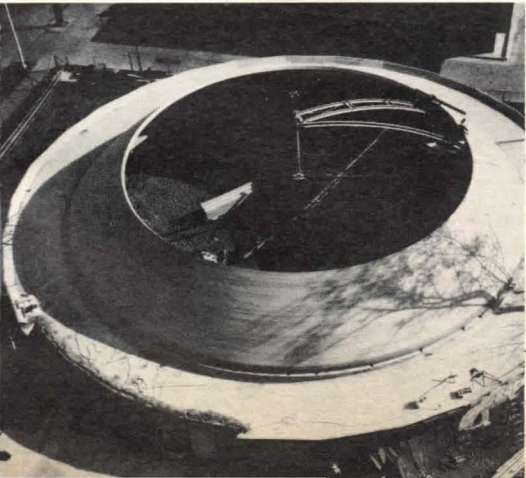
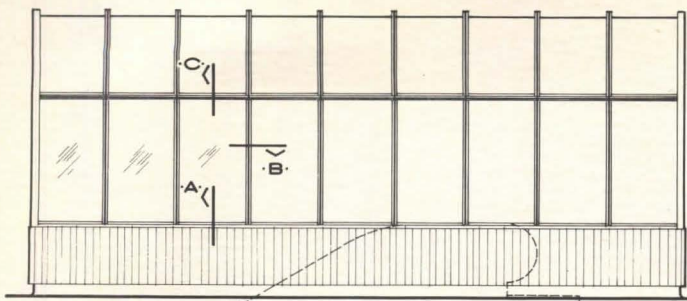




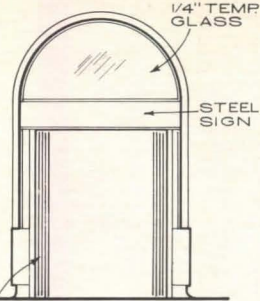
Photo: Balthazar Korab

Circular turrets link smaller classroom domes to larger domes enclosing multipurpose academic spaces. Triangular center element accommodates administrative functions.





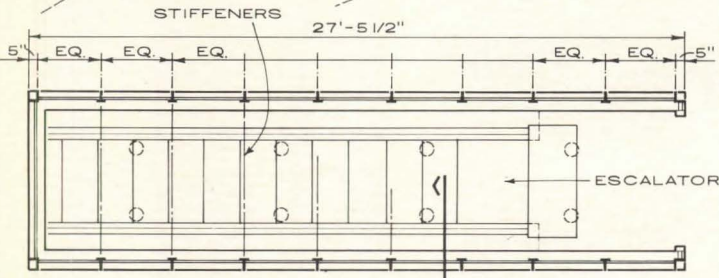
SIDEWALK ELEVATION



FRONT ELEVATION

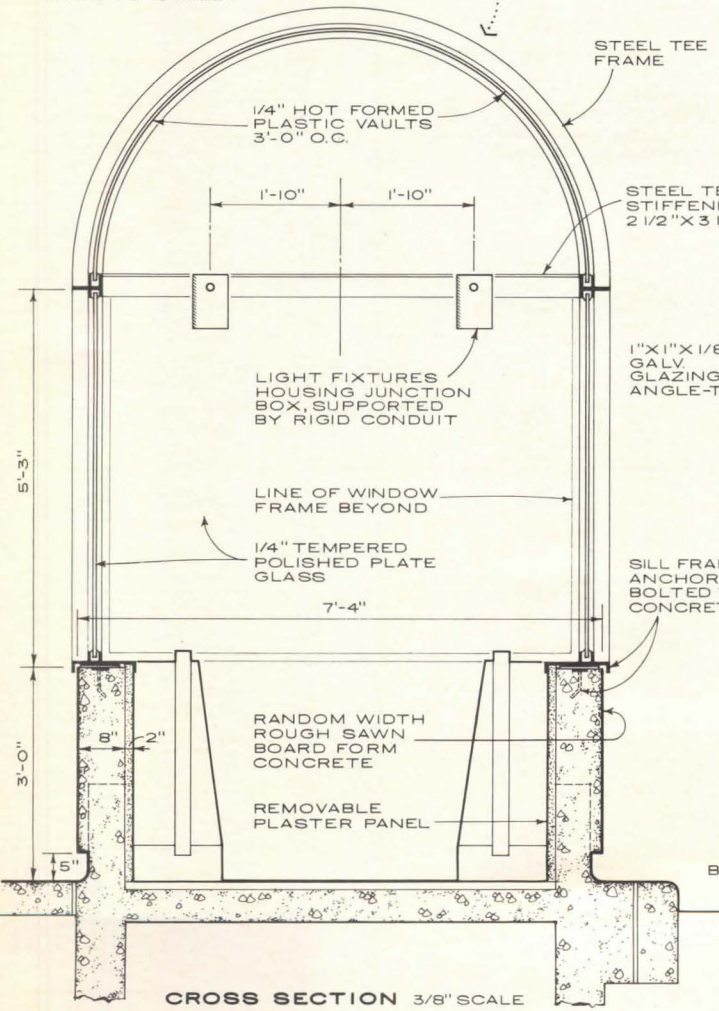


Photo: Bennett Jones

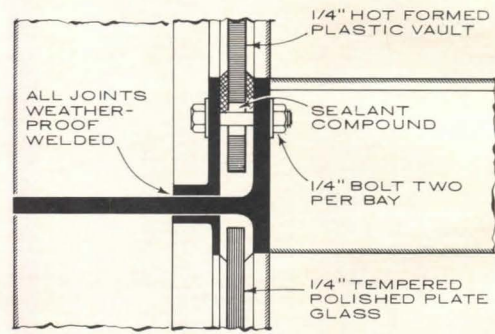


PLAN 1/8" SCALE

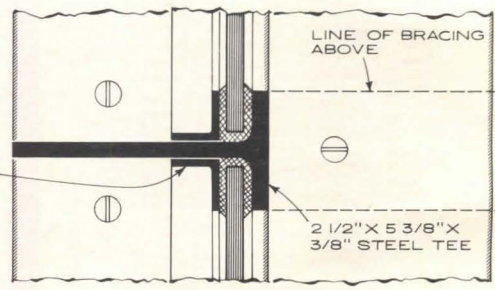
"ALL STEEL GALVANIZED AND EPOXY PAINTED"



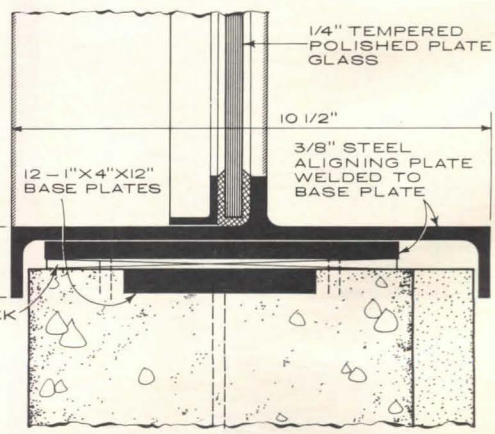
CROSS SECTION 3/8" SCALE



VERTICAL SECTION DETAIL AT C-C



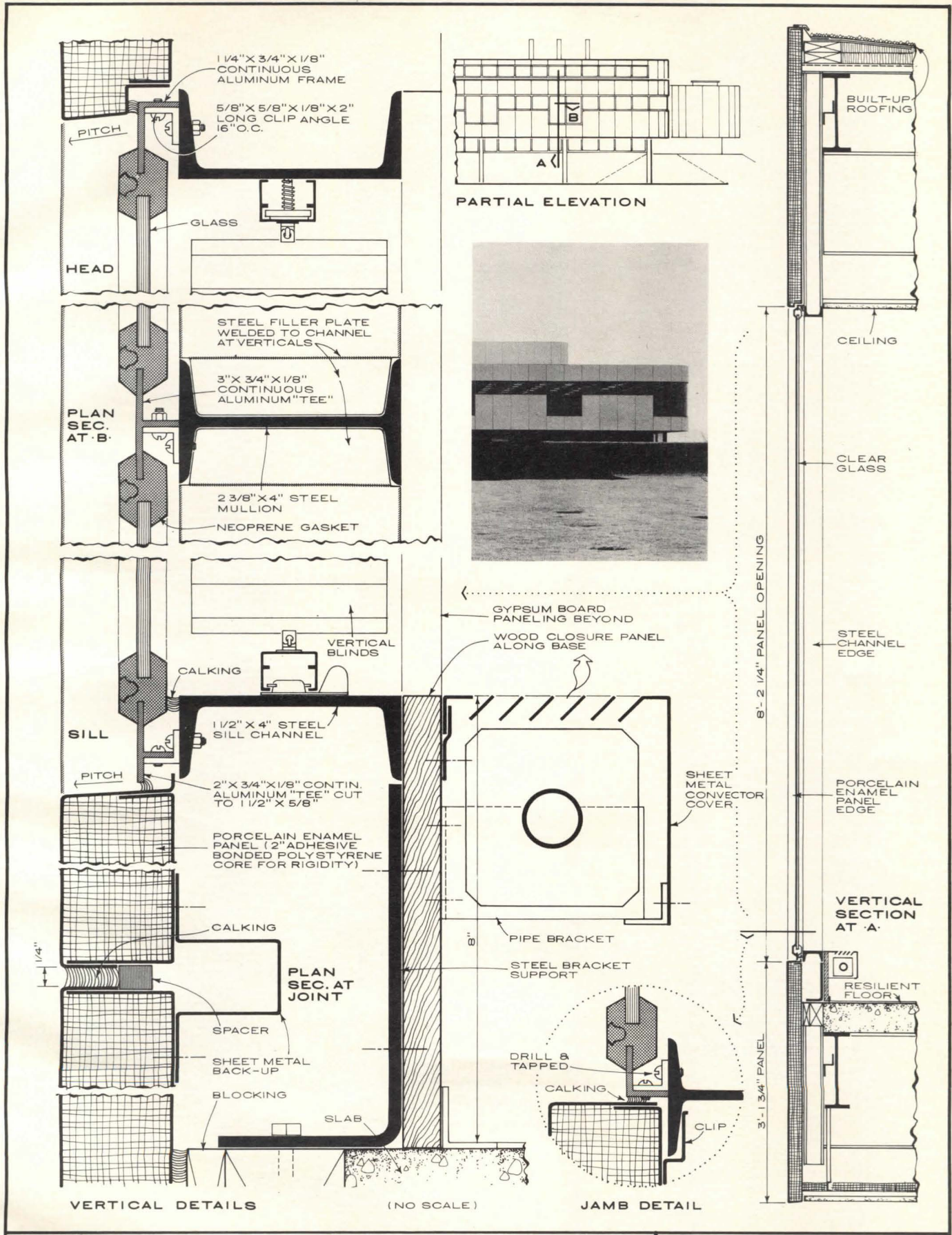
PLAN SECTION DETAIL AT B-B



SILL DETAIL AT A-A 3" SCALE

BOSTON CENTRAL SQUARE STATION: Boston, Mass.
CAMBRIDGE SEVEN ASSOCIATES: Architects

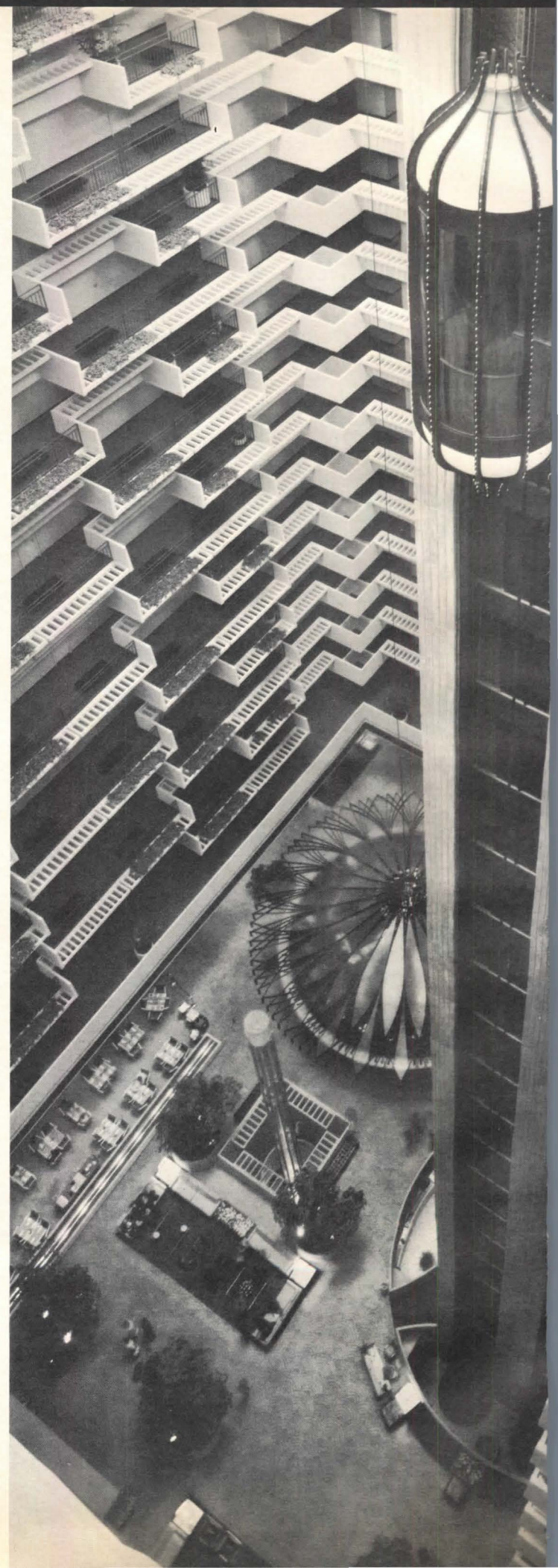
SELECTED DETAIL
ESCALATOR HEADHOUSE ENCLOSURE

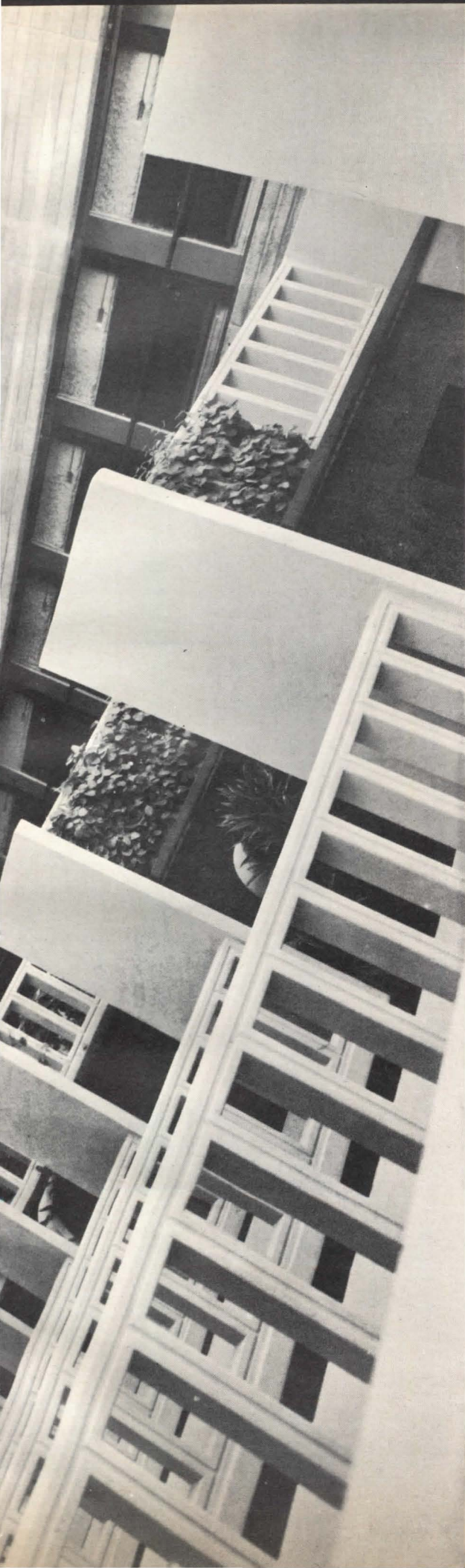


ESTÉE LAUDER INC.: Huntington, L.I., N.Y.
 DAVIS, BRODY & ASSOCIATES: Architects
 RICHARD DATTNER, Project Architect

SELECTED DETAIL
 WALL SECTION

THE RISE OF ATLANTA

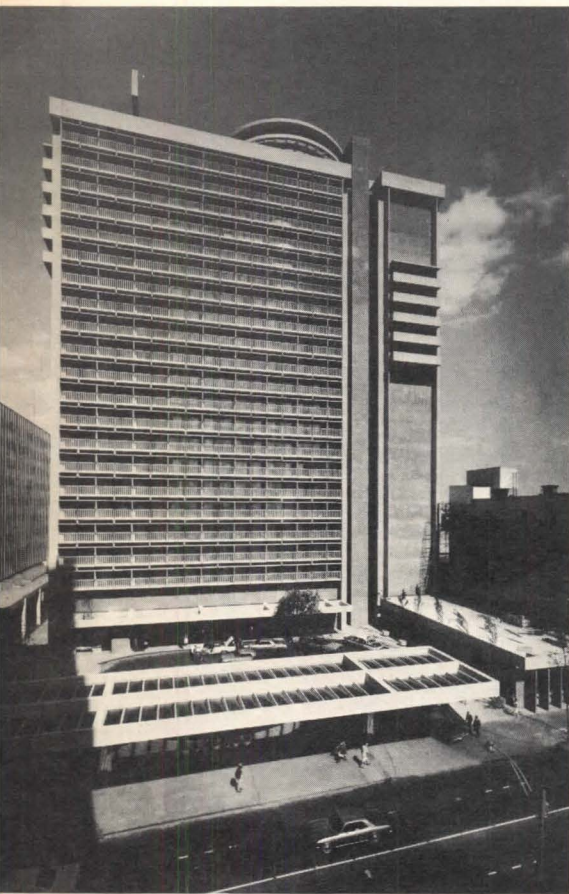




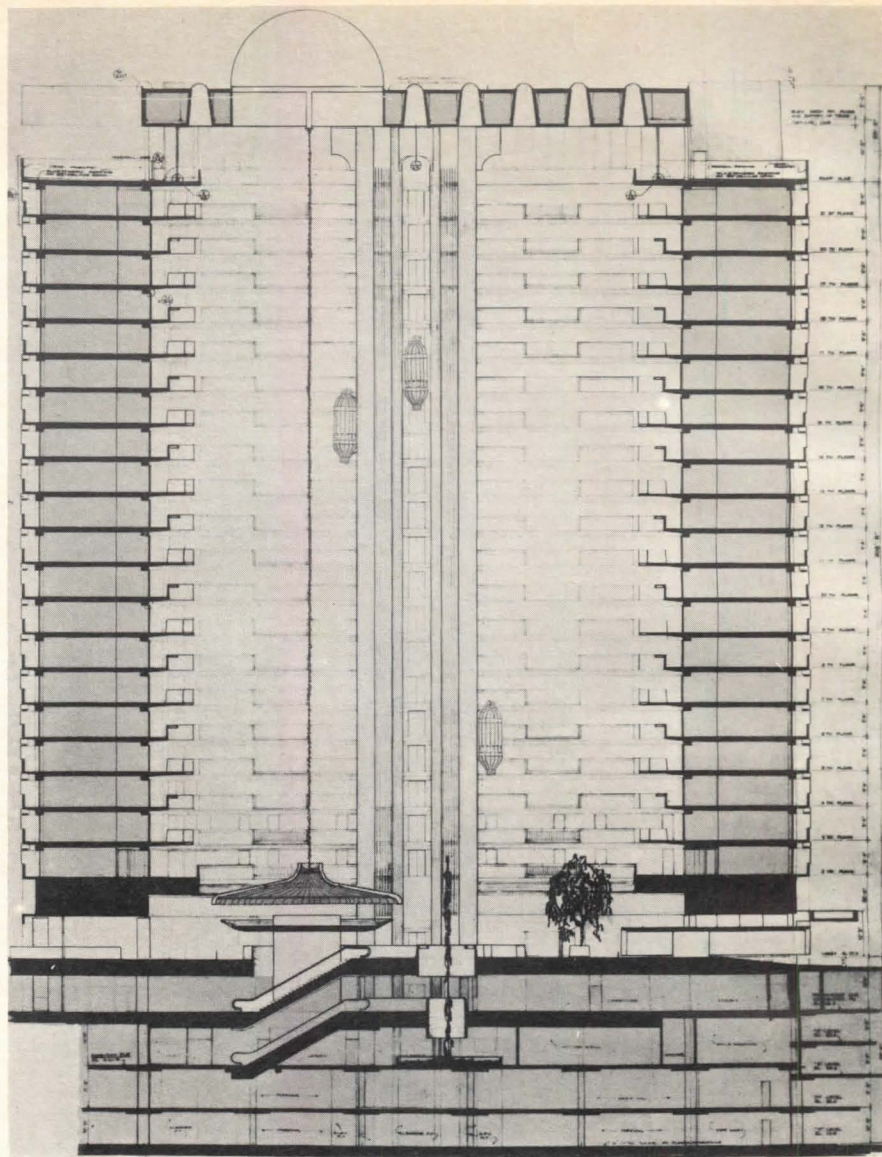
The American hotel scene, so long moribund under the purple plastic hand of Miami designers and the assembly line monotony of the big chains, has finally erupted in an excitement that recalls the great days of the New York Plaza, the San Francisco Palace, and the Brown Palace in Denver.

The new Regency Hyatt House by Edwards & Portman on Atlanta's Peachtree Street looks, on the exterior, like a subdued and sophisticated concrete structure, somewhat in the manner of Pei's Denver Hilton, the most recent (1960) notable hotel to be built in the U.S. But inside! Wow! The architects have let out all the stops and given us what has to be the largest and most exhilarating lobby space since the set for the 1932 film of "Grand Hotel."

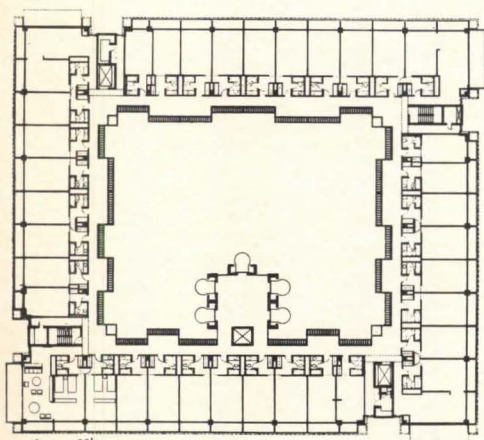
Like that set, the Atlanta hotel is planned around a roof-high lobby; in this case the space soars up 21 floors to a skylight. Open balconies ring the interior court at each level, acting as corridors for the one-room-deep periphery of the tower (tenants also have balconies looking over Atlanta). White concrete, red carpeting, and green plants growing over and down the balconies create a Rudolphian composition that is vibrant without



Photos: Alexandre Georges



Longitudinal Section Looking South



Typical Floor Plan

being gaudy. A touch we could do without, but do not positively deplore, is the "Parasol Cocktail Lounge," a kind of costume-jewelry drinking pavilion hung from the roof on a cable. It smacks a bit too much of Florida for the splendidly mature design of the rest of the space. Another lively concept, but this one a lot of fun, is the expression of the six elevators as lighted plexiglass capsules rising and descending along one wall of the lobby. There is also the obligatory revolving restaurant, 75 ft above the roof, but that need be of no concern to people enjoying the great interiors.

The Regency Hyatt House has 800 rooms and cost in the neighborhood of \$18,000,000. It is across the street from the Atlanta Merchandise Mart (also by Edwards & Portman) in what will be called Peachtree Center when more build-

ings are added. When the Merchandise Mart was built, we had reservations about the design future of the Portman firm, suspecting that the business of building and development and investments might take over and cause the firm to produce dull, safe, monumental commercial architecture like some of our other large architectural firms. We are happy that this is evidently not to be the case. The preliminary designs for San Francisco's Embarcadero Center (p. 56, MARCH 1967 P/A), whatever hypertension they may cause in some local design circles, are imaginative and audacious. And now, down on Peachtree Street in Portman's home town, there is that terrific interior court. We guess we can stop worrying about Edwards & Portman design for the time being and go on to something else. — JTB

BASSETTI BRICKS



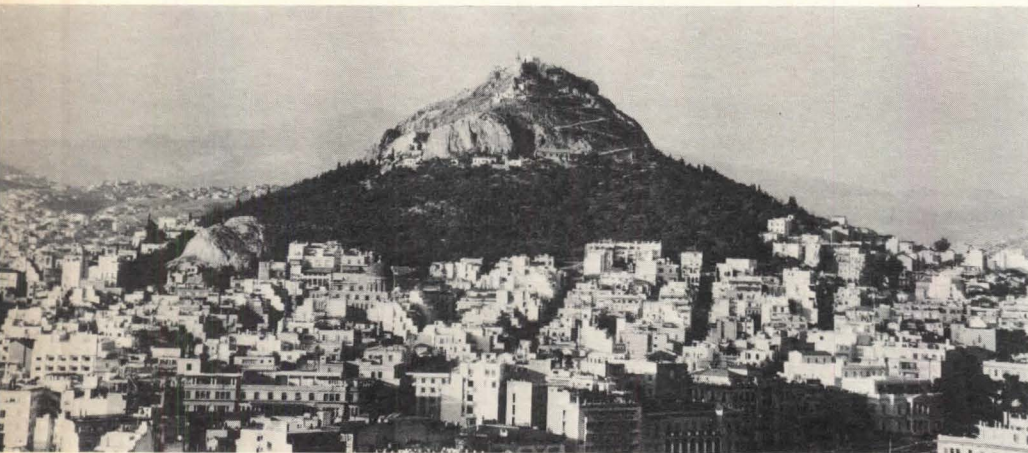
When Fred Bassetti & Company was designing a dormitory complex for Central Washington State College in Ellensburg, Washington, a sum of \$10,000 that was to have been used for related art works did not materialize. Since Bassetti is a great believer in the inclusion of art and crafts in his designs, this was a serious business, but one that was suddenly resolved when he was talking to a sales representative one day.

The salesman was from a local Seattle brick company, and Bassetti asked him if he could supply a few green (unfired) bricks for the staff to experiment with. This was done, and, according to Bassetti, "during coffee break, several of us made use of knives, nails, beer-can openers, thumbs, and fingernails and produced the most spontaneous, unthought-out designs and sayings possible." These were fired and examined, and the results were pronounced promising. Subsequently, the architects went to the brick plant and turned out 200 designs in an afternoon. These were fired and sent to the dormitory site, where about half of them eventually found their way into the completed project. Placement was deliberately casual, so that the students can come upon these aesthetic graffiti unexpectedly. "We hope they will be a source of surprise and delight over the years to students who think 'Art' is just for serious occasions." Not all the pieces are just for fun, however. The student who comes across a brick saying "November 22, 1963. As it was for he / so a day is reserved for thee" is bound to have a thoughtful moment, particularly if he is an English literature major.

The bricks were such a success that Mutual Materials Company, which made them, had architects Bassetti and John Anderson and sculptors Norman Warsinske and Rich Beyer create other designs. Today, architects in the Northwest who confront the no-money-for-art problem have a solution near at hand. There is no reason architects in other parts of the country can't hot-foot it down to their neighborhood brickyard and do the same thing.

Photos: Hugh N. Straford

ATHENIAN AMPHITHEATER



Before the current take-over by the present-day Spartans in Greece, the Greek Tourism Organization held a competition for the design of a master development for Lycabettus Hill, which rises in Athens across town from the Acropolis.

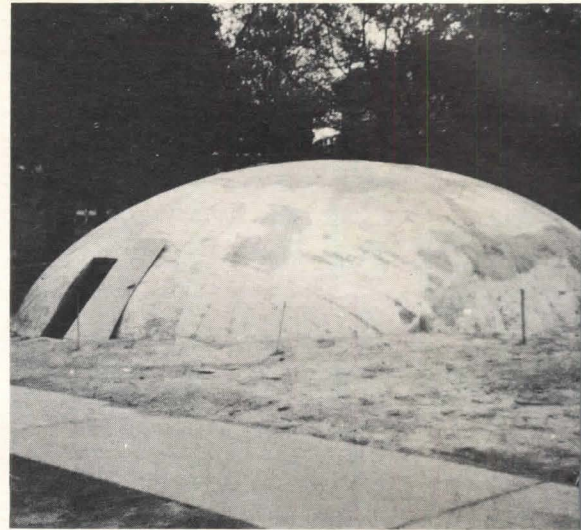
The Hill, while not as significant in Athenian history as the eminence that is crowned by the Parthenon, is nevertheless a notable feature in the cityscape, being topped by a chapel continually visited by the faithful. Urban dwellings cluster around its base, and its flanks are threaded by pedestrian pathways and a motor road. At one time, a quarry was operative part way up its south face, the one facing downtown Athens.

The winners of the competition, architects L. Calyvitis and G. Leonardos, have utilized this abandoned quarry as the site of a new version of that classic Greek form, the amphitheater. Because they wanted to face the audience toward the spectacular view of the city, and also because they decided to use the natural current of air blowing from the stage toward the audience for ventilation and sound-transmission purposes, the architects did not use the existing bowl form of the quarry, but instead proposed a reinforced concrete structure to sit inside the cavity it creates.

A parking area has been tucked into the hill so that it will be invisible to the audience and from below. Other facilities on the site will be a kindergarten, pavilions serving snacks, and playgrounds. The area is reached by an existing funicular railway as well as by foot and automobile.

If Greece can survive her present unhappiness and endure what might be called, in the words of Sophocles, "a remedy too strong for the disease," perhaps the plans for this cultural center can go ahead and tourists will be able to look forward to seeing the great Greek plays acted before the background of Athens itself.

DR. DANTE'S DOME



With the prestigious sponsorship of Columbia University's Schools of Architecture and Civil Engineering, Dr. Dante Bini arrived in the U.S. to demonstrate the construction of a Binishell—a thin-shell concrete dome that needs no formwork other than a pair of inflatable, balloon-like membranes. Bini, who was graduated from the University of Florence with a doctoral degree in architecture, developed his dome building process in Italy and has completed domes from 30 to 90 ft in diameter there. These have been used to enclose a variety of spaces, among them barns, offices, and multifamily housing. According to Bini, construction cost is about one-half that of conventional structures, and elapsed construction time as little as one-tenth.

The demonstration began with a briefing at which Dr. Mario G. Salvadori, Chairman of the Columbia Division of Architectural Technology, explained the preparatory work that had already been done. A circular foundation slab, 50 ft in diameter, had been poured, into which the contractor had embedded two 8-in.-diameter air lines connected to low-pressure, low-velocity blowers. Over the slab, a circular membrane of neoprene synthetic rubber had been stretched taut and fastened to bat-

tens at the perimeter. On top of the membrane lay a special reinforcing mesh of loosely connected helical coils.

The remaining work—placing the concrete, laying another thinner neoprene membrane atop the concrete and inflating the sandwich until the peak was about 13 ft above grade—was expected to take about one hour. Actually, it took three hours, the delay being due in part to the language barrier separating the Italian and local construction workers.

The concrete arrived at the site in two mixer trucks. It was a special mix with rather more fine aggregate than usual and an additive to retard the set; otherwise, it was much like 3000-psi concrete used for conventional construction. The workers took considerable pains to level the concrete carefully, and, as they went on to stretch the top membrane into position, they were continually busy troweling away the footprints they left in the still-plastic concrete underfoot.

When air began to flow underneath the concrete, its upward movement was slow, almost imperceptible. The air pressure used was just enough to overcome the dead weight of the concrete—about 25 psf. When the dome



Left to right, above: Underground air lines, 8 in. in diameter, that inflated the elastic form. Shallow defects characterize exterior surface. Diamond saw cuts concrete and steel reinforcement. Rectangular access door that will be enlarged and formed into an arch.

had reached its full height, Dr. Bini backed off the air pressure — enough to hold the structure in position — and that phase of the demonstration was over.

Two days later, workers had cut a rectangular door in the side of the dome and stripped away the inner and outer membranes. What emerged was well-formed concrete dome. It displayed a number of fissured defects, some deep enough to require patching, but structurally the dome appeared entirely adequate.

Just how adequate the structure is will be the subject of a series of tests that Columbia's Dr. Charles W. Thurston, associate professor of architecture, will conduct shortly. By loading the shell with sandbags, and measuring deflections with strategically placed strain gages, Thurston will determine what live load the shell can sustain.

The process is not limited to shells that are circular in plan. Bini envisions square and rectangular bases that can interlock at the corners, thus enclosing a fairly large floor plan without requiring an excessively high dome.

After the demonstration shell at Columbia, the first structure plan for U.S. is a playground enclosure at Reston, Va. — DRWT

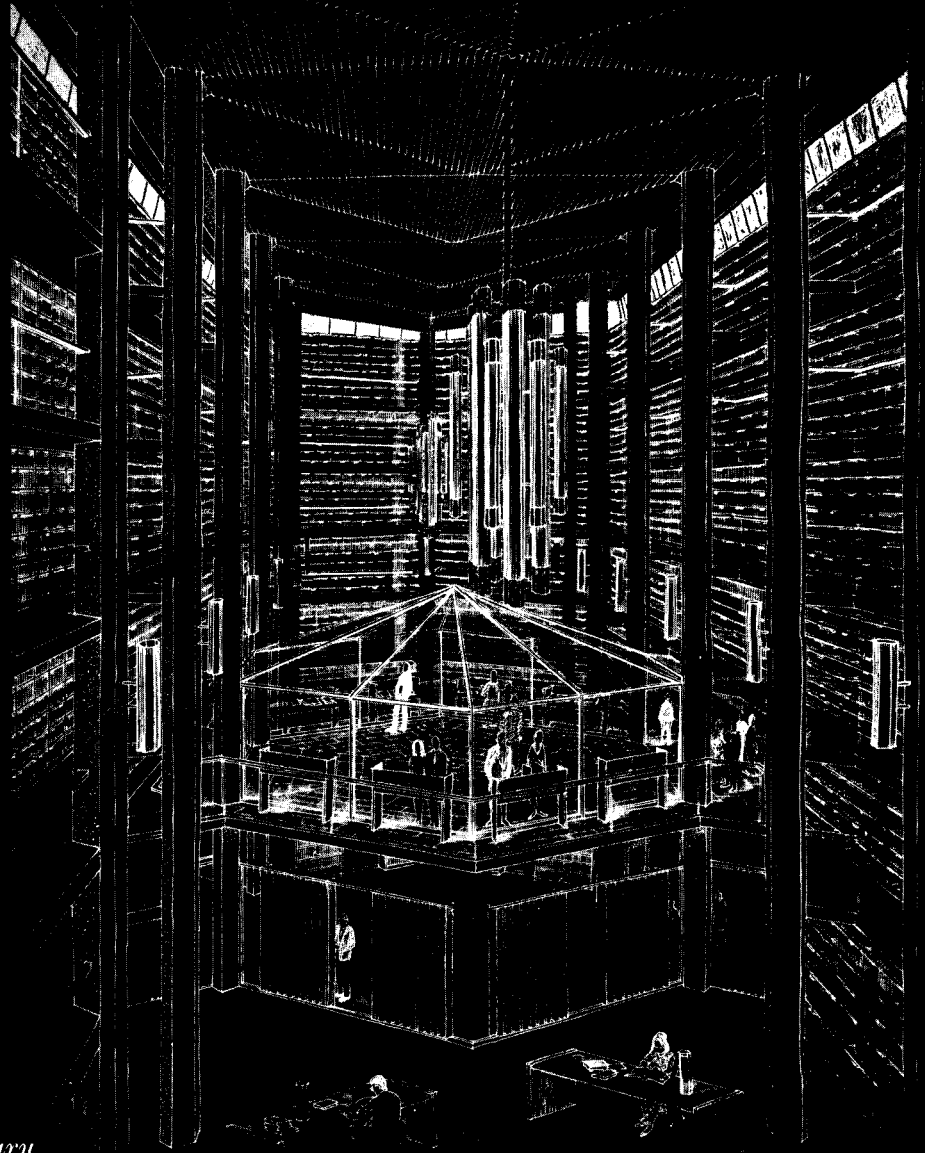


Photos: David Tevordale



Typical Carrel

Rare Book Library

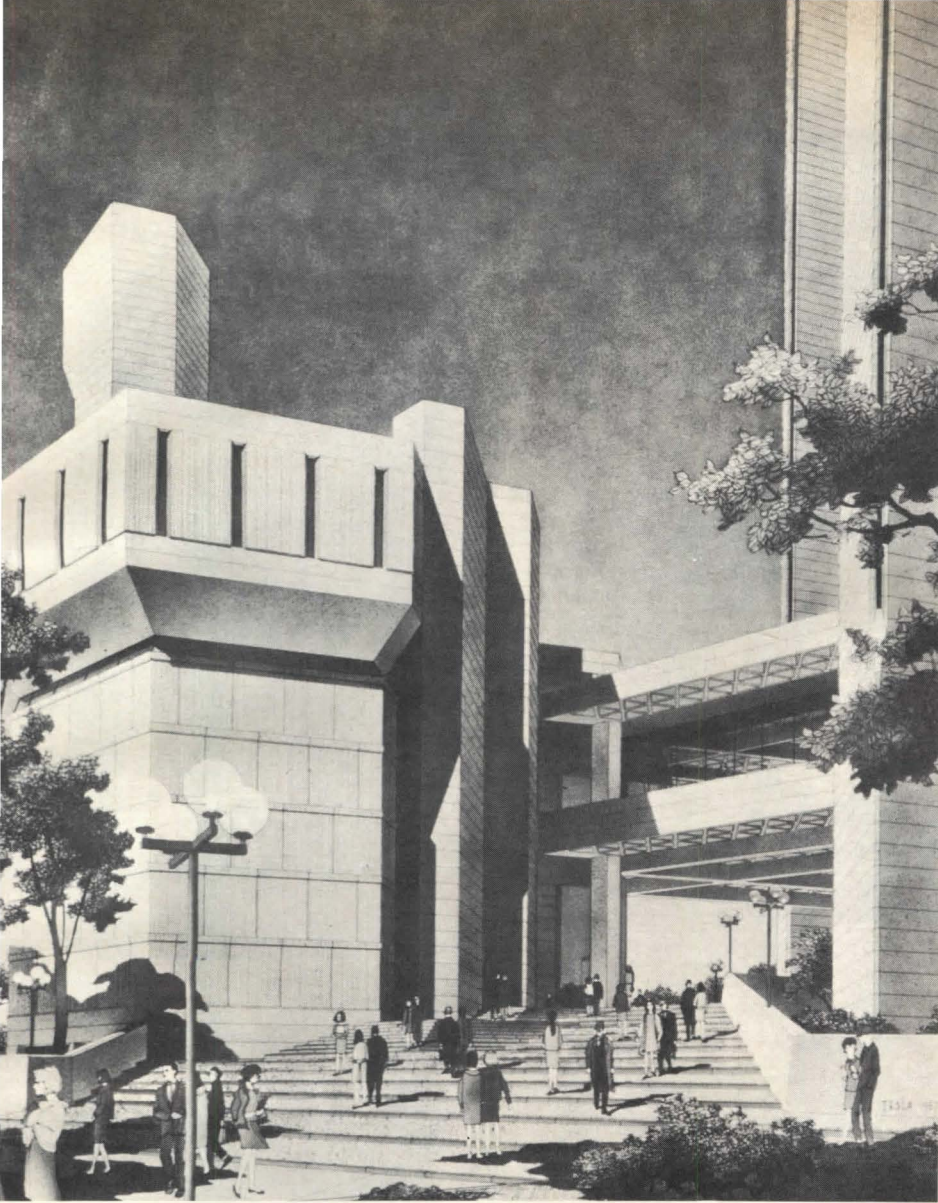


TRIANGULAR ARTICULATION



Stack Floor

View From Reading Mezzanine



sequently, has become the proposed Humanities and Social Sciences Research Library and School of Library Science, by Toronto architects Mathers & Haldenby, with Warner, Burns, Toan & Lunde as design consultants. The library is in the process of building itself up to 4,500,000 volumes, which will make it, according to Toan, among the five largest in North America. This collection will be housed in a strong triangular building with two wings containing the Rare Books Library and the School of Library Science. With all the "public" reading and reference areas on the lower levels, plus a floor for provincial services a level below entrance grade, the library will have three floors of technical services for the library and provincial services (bibliographical and research services for the Province), five floors of book stacks and graduate study carrels, and tempor-

IN TORONTO

One of the major problems facing Canadian colleges and universities these days is a student drain to the south. Many promising young people — and some faculty members as well — are crossing over to the schools in the United States. An answer to the problem is obviously the creation of better environments for learning in Canada, and it is one that the Province of Ontario is pursuing with much vigor. In addition to building two constituent colleges within Metropolitan Toronto — John Andrew's Scarborough College is one of them — the main University of Toronto is set to undergo major architectural and pedagogical sprucing up.

One of the major assets of any university are its libraries, of course. Danforth W. Toan of the New York firm of Warner, Burns, Toan & Lunde, which has a number of noted libraries to its credit, says that, "If you have a good library, the university president's problems with his faculty are largely solved; if you don't, forget it." That libraries have a great impact on students goes without saying. Most university libraries are open 80-90 hours a week, according to Toan, to serve the insatiable appetite of the young for knowledge.

A big boost to the revitalization of the University of Toronto, con-

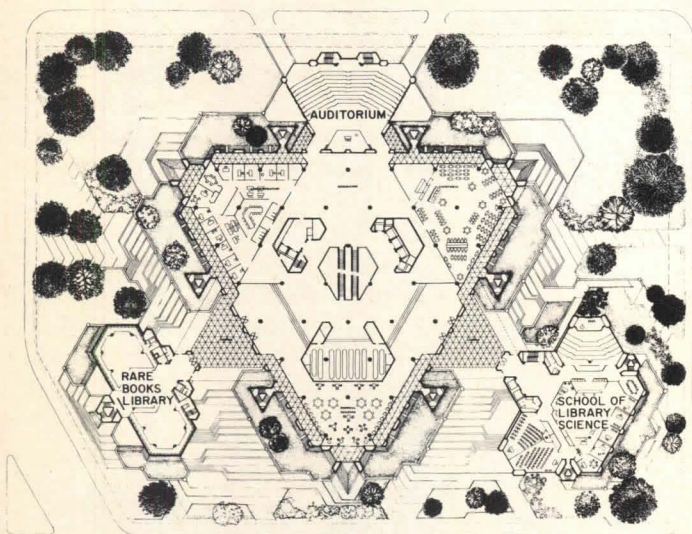


ary office space at the top of the structure. There will be a basement covering the site for future book storage.

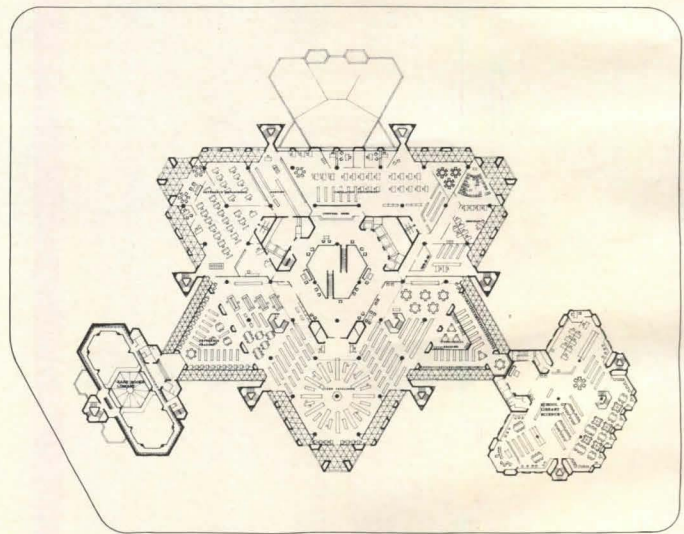
Toan points out that the necessity of providing 950 closed carrels in the stack area made the design of the library tower something of a perimeter problem, since carrel space at the

perimeter became more than that needed for the book collection. The solution was paired carrels ringing the big open space of the stacks, expressed as elements on the exterior and occurring in a sequence of three carrel floors to two stack floors, so that a maximum number of students has access to a maximum number of books (see section). The stack floors are further supplied with free-standing carrels for ready reference (as opposed to the permanent nature of the closed carrels) in the center of the floor, and three large study and conference areas at each angle of the building. These latter can be assigned to different disciplines as permanent library "headquarters" for collections and seminars as well as research activities.

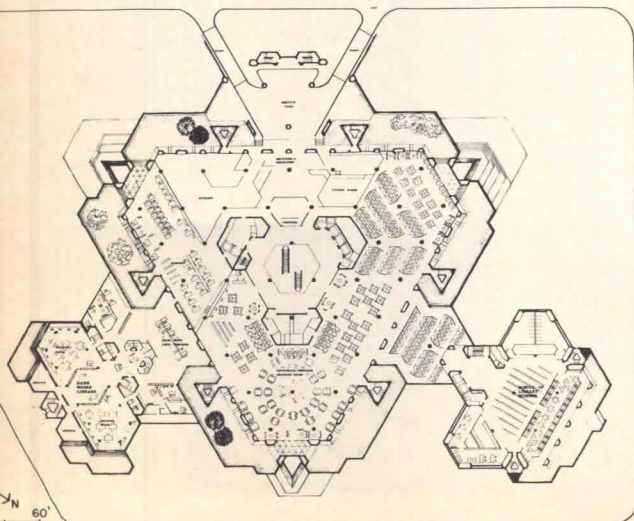
The Rare Books Library provides an interesting contrast with SOM's



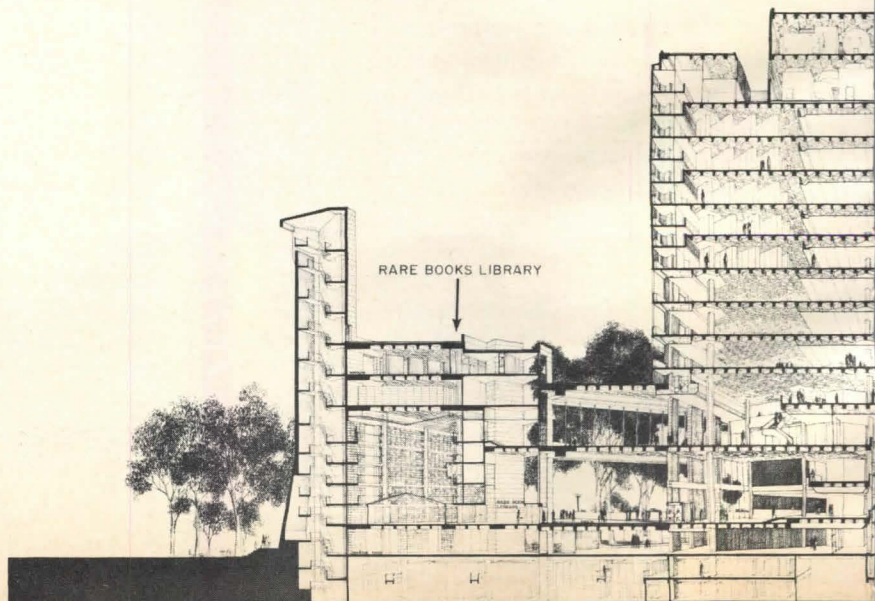
Entrance Plaza Floor



Main Reading Floor



Provincial Services Floor



famous Beinecke Library at Yale. The Toronto version looks as though it is designed for use, not as a forbidding repository. Toan says that, instead of enclosing the books and letting the people wander about, as at Yale, they are enclosing the visitor and giving the space to the books and scholars. That makes sense.

The exterior of the library will echo the forms of the activities it is enclosing. The Rare Books Library, School of Library Science, and an auditorium will appear as large connected and semiconnected elements. The structural frame of the tower will be evident around the levels holding the general reading and reference areas, with more glazing here than in other parts of the building. Windows will mark the outside offices of the technical services floors,

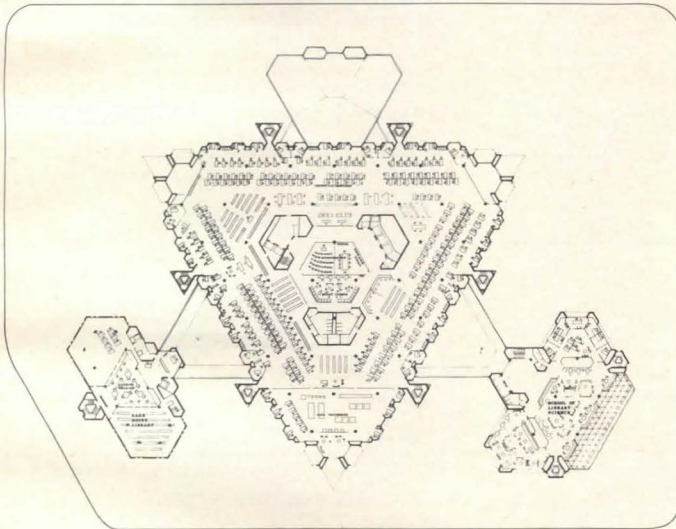
and, as noted, the forms of the carrels will be articulated on the stack floors. Six stair towers will provide separate triangular forms, two to a side, rising up the structure.

Cast-in-place concrete will be used, according to the structural engineer C. D. Carruthers & Wallace Consultants Ltd., for "economy, ease of construction for the triangular and hexagonal shapes which are typical throughout the project, resistance to fire, appearance of the exposed surfaces, and uniform floor thickness." A warm-hued aggregate will be used on the exterior. On the heavily loaded stack floors, structural steel cores will be used in the reinforced concrete columns to provide strength without increasing dimensions. Mechanical engineer is H. H. Angus & Associates, Ltd.

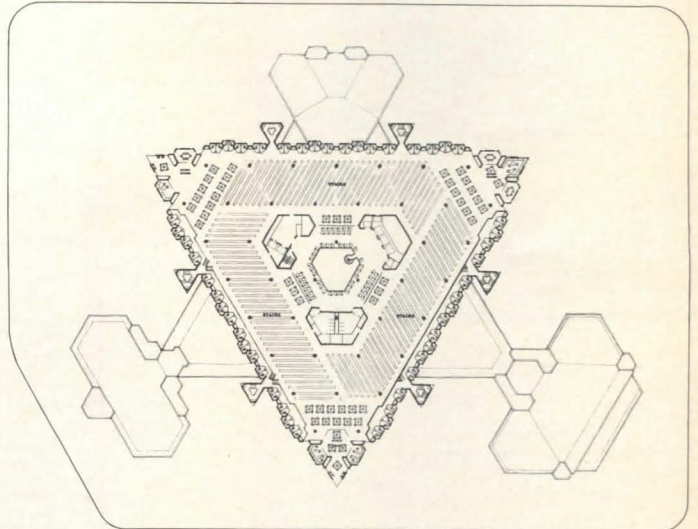
Asked about the future of infor-

mation retrieval and various information media and systems in libraries, Toan commented that he does not foresee them replacing books for 50 or 60 years at least, particularly in humanities research. As the collection grows in this building, there will probably be increased use of computers for various jobs, and a decline in the staff, which is presently quite large. But he thinks that the building will last its life serving a useful purpose for research.

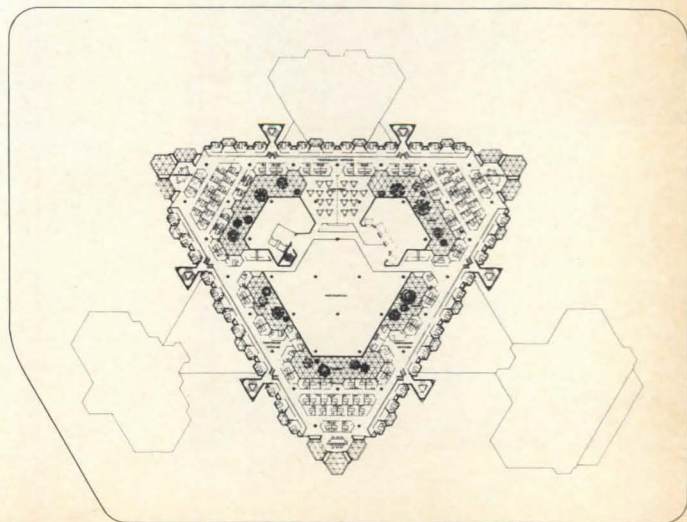
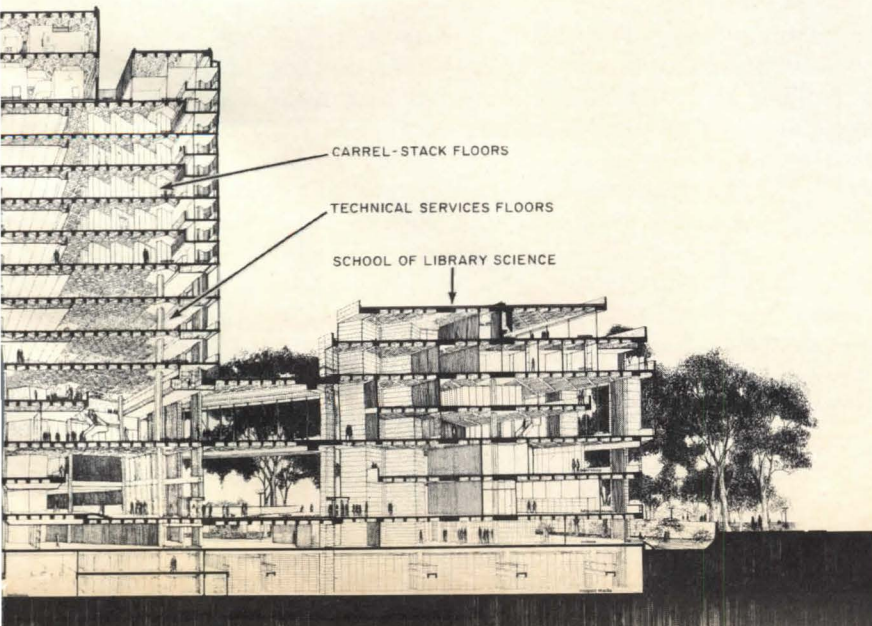
Toan feels that the University of Toronto President, Graduate Studies Dean, and Chief Librarian are among the boldest library clients his firm has worked with. This boldness has paid off in a design with guts and courage. It ought to get those kids back across the border and to their books.



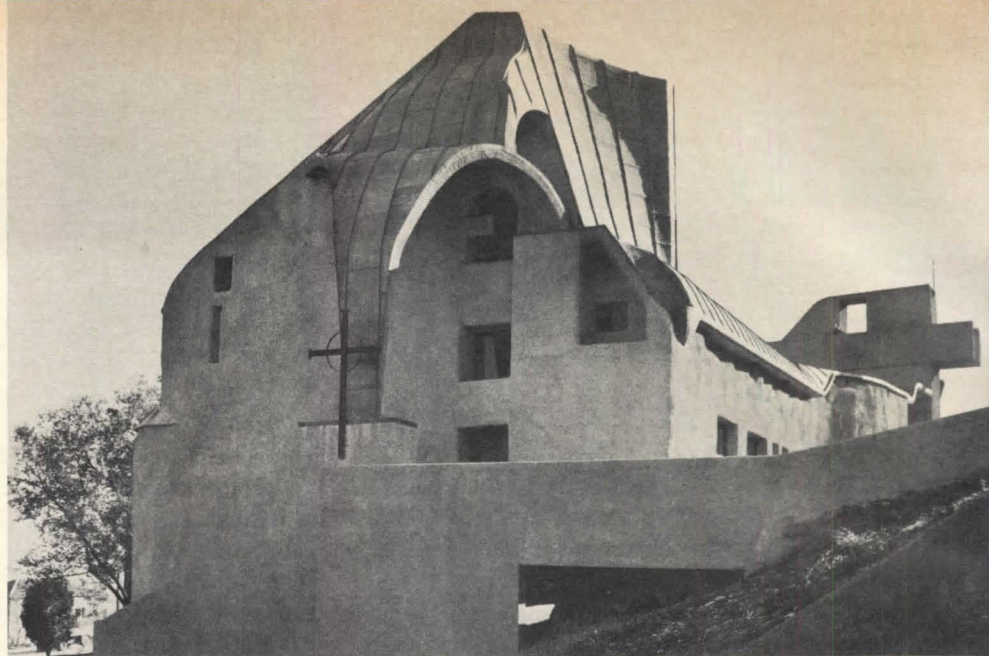
Typical Technical Services Floor



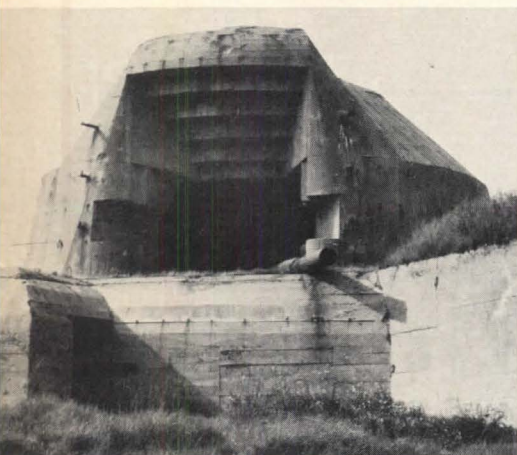
Typical Stack Floor



Penthouse Floor



CATHOLIC FORM



World War II German bunker

Photo: Courtesy, "Architecture Principe"



Goetheanum

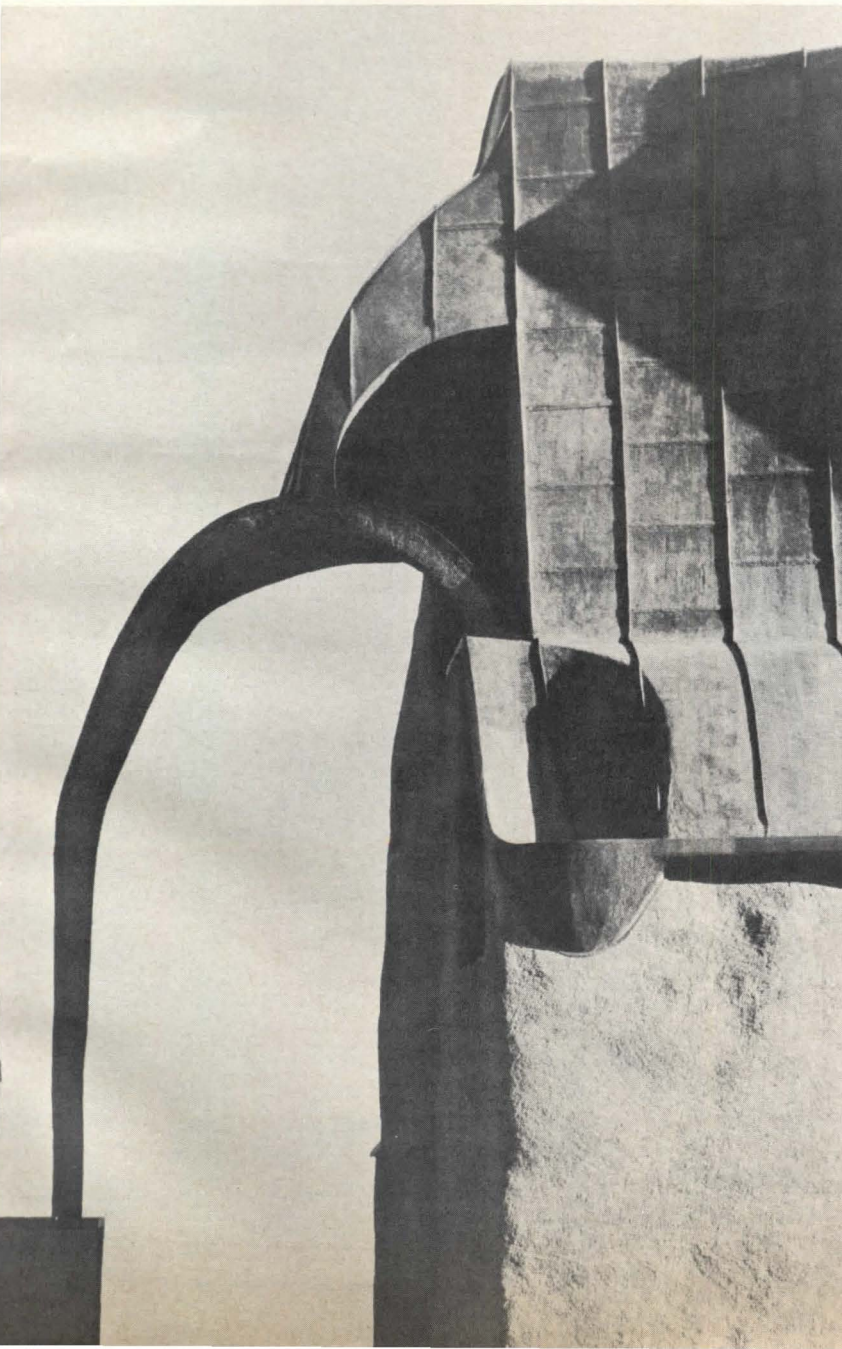
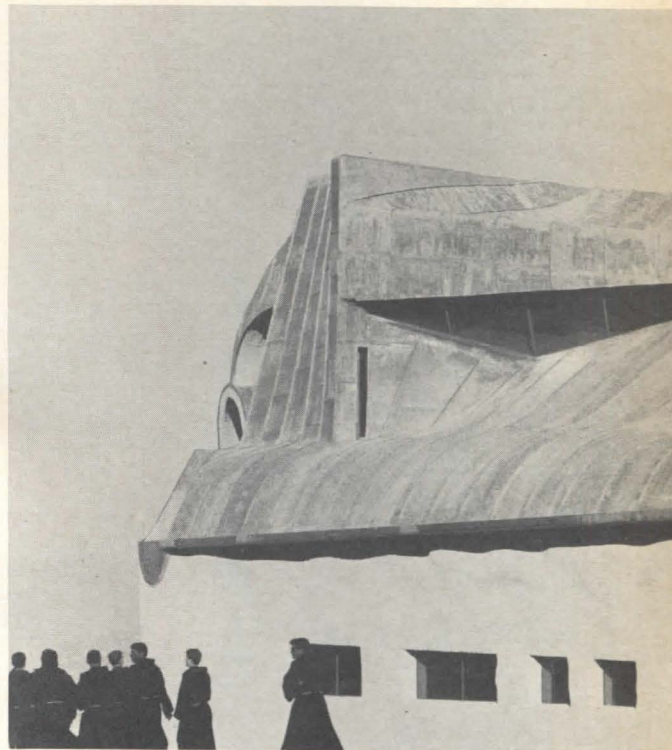
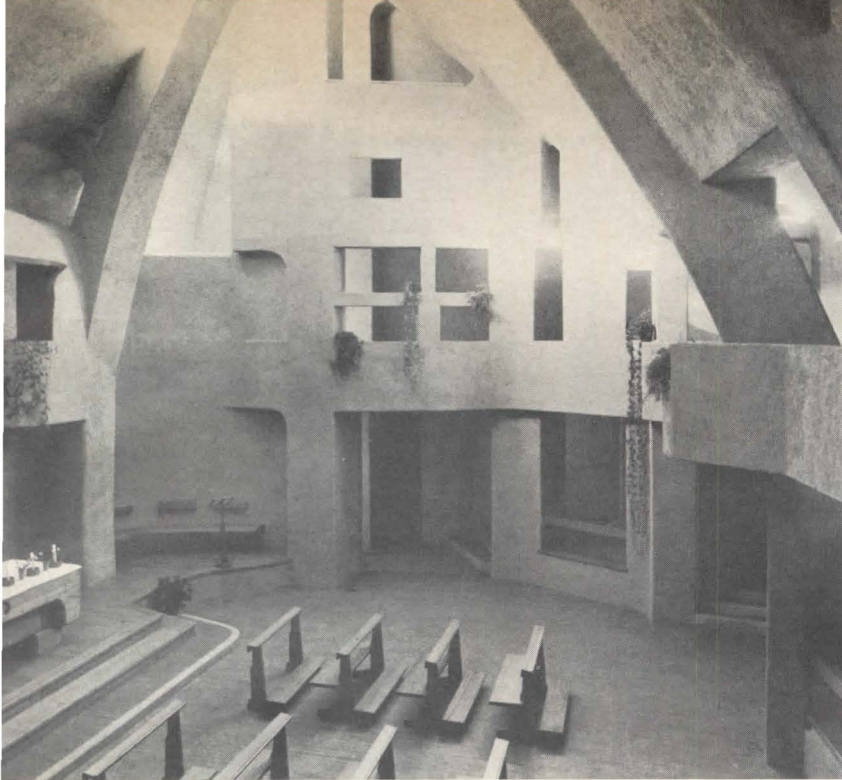
Photo: Clemens Kalischer

When architect Giovanni Michelucci decided to let the liturgical activity determine the form of his new Roman Catholic church at Borgo San Marino, we wonder whether he foresaw that the resulting structure would bear strong resemblances to as disparate buildings as Rudolf Steiner's Goetheanum at Dornach (pp. 146-153, SEPTEMBER 1965 P/A) and the concrete bunkers erected by Germany before and during World War II (not to mention a soupcon of Mendelsohn and Gaudí). In Michelucci's words, the elements that form his church — the roof levels and shapes, the gutter line along the street, the block of the bell tower — "are the natural consequence of the concern to give a continuity, both formal as well as psychological, to the interior of the space where the community assembles." That the church naturally evokes comparisons is indicated by the architect himself, who says it somehow reminds him of the Byzantine Church of San Vitale in Ravenna. Others will see suggestions of Le Corbusier in the fenestration and the handling of the concrete, not to mention Michelucci's own emphasis on commanding forms and eloquent interiors in such previous works as the Church of the Super-Highway of the Sun of a couple of years ago.

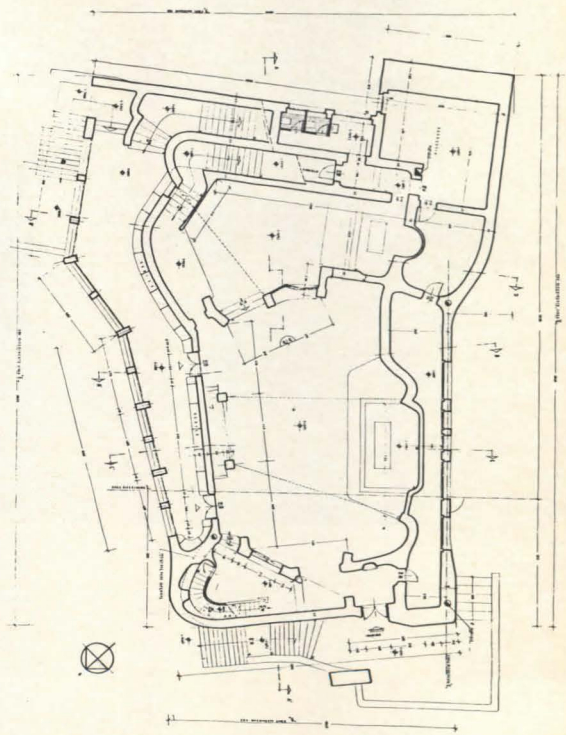
In plan, the San Marino church contains the same liquid strength it does in form. The spaces seem to flow

in, out, and around the big central nave area. In accordance with present-day liturgy, the sanctuary and altar have been advanced into the nave space and exposed on three sides. Entry into the worship area can be made from several points rather than in the unidirectional, awe-inspiring manner of earlier times.

San Marino is the name of the main city of the Republic of San Marino, the tiny (23-sq-mile) principality in the Appenines near the Adriatic coast. The city is on Mount Titano, and its church is sited between the business center above and the residential section below. The contour of the land, and the rounded, overlapping quality of the roofs of older buildings in San Marino, are echoed by the imposing form of Michelucci's church. It is obviously an important building in such a diminutive country, and we do not suppose that many San Marinians (if that is what they are called) are much given to reflections on Rudolf Steiner or Nazi bunkers. It probably just goes to prove that there is a catholicity of forms, particularly using material such as reinforced concrete, that allows the philosophical academy and the frontier fortresses to the north to be recalled — at least by architects and architectural writers — by the church in the little country to the south. — JTB



Photos, except as noted: Carlo de Benedetti





One hundred sixty students at the Kansas City Art Institute squeezed, shook, and pushed fresh wet concrete through 300 ft of canvas tubing last summer, till the lifeless cylinder of fabric became a long, fully-packed, wriggly snake. Then they ran it up a ladder, down the other side, through a rubber tire, along the ground, into a hole and out again, and wrapped it around their own enthusiastic bodies. When the concrete dried, props and people were removed, and what remained





Photos: Roy Maloney

was a crazy shape run wild all over the lot, a lot of sore hands, and the undeniable feeling that 160 fleshy creatures had gotten thoroughly mixed up in concrete.

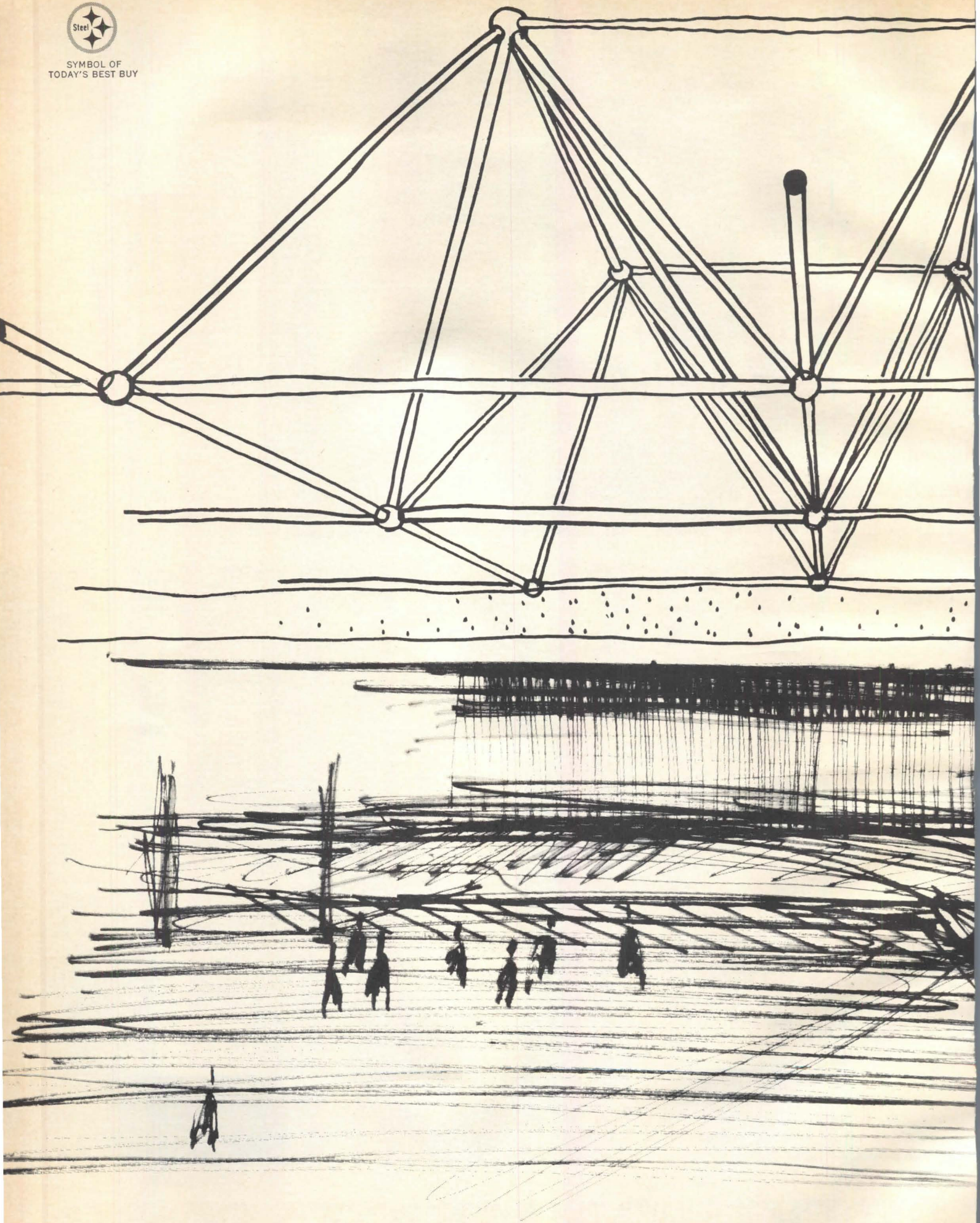
The environmental experiment was staged by a member of the Institute staff, David Dunlap, a painter-sculptor whose work with fellow students at Yale appeared on p. 147 of the NOVEMBER 1965 P/A. Also on the staff — and not surprising — is Elpidio Rocha, an architect who attended Halprin's summer session, "Experiments in Environment" (pp. 130-137). Much of the same tack on teaching exhibited in California is reappearing in Kansas City. The Institute's Foundations Department is a first-year course designed to broaden the student's idea of what art is all about; break down the barriers between sculpture, painting, and architecture; make a leap from the confines of the studio to the world, and expand from oil-and-canvas to a wealth of modern materials. Although the program is still experimental, it seems well on the way to shaking up preconceived concepts of the refined, fine arts. — MD



ENVIRONMENT



SYMBOL OF
TODAY'S BEST BUY

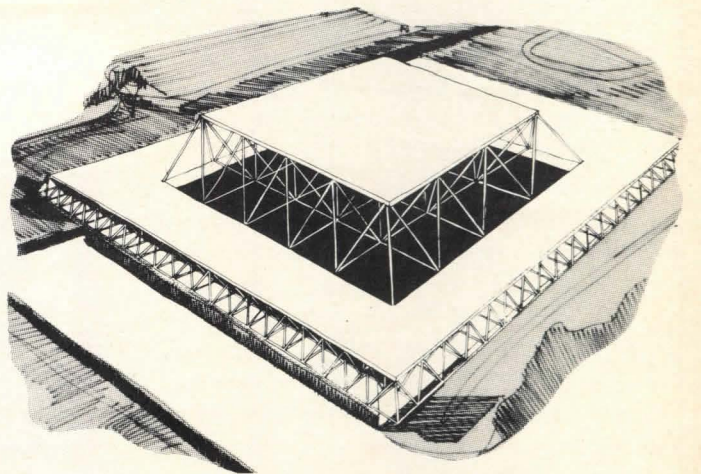
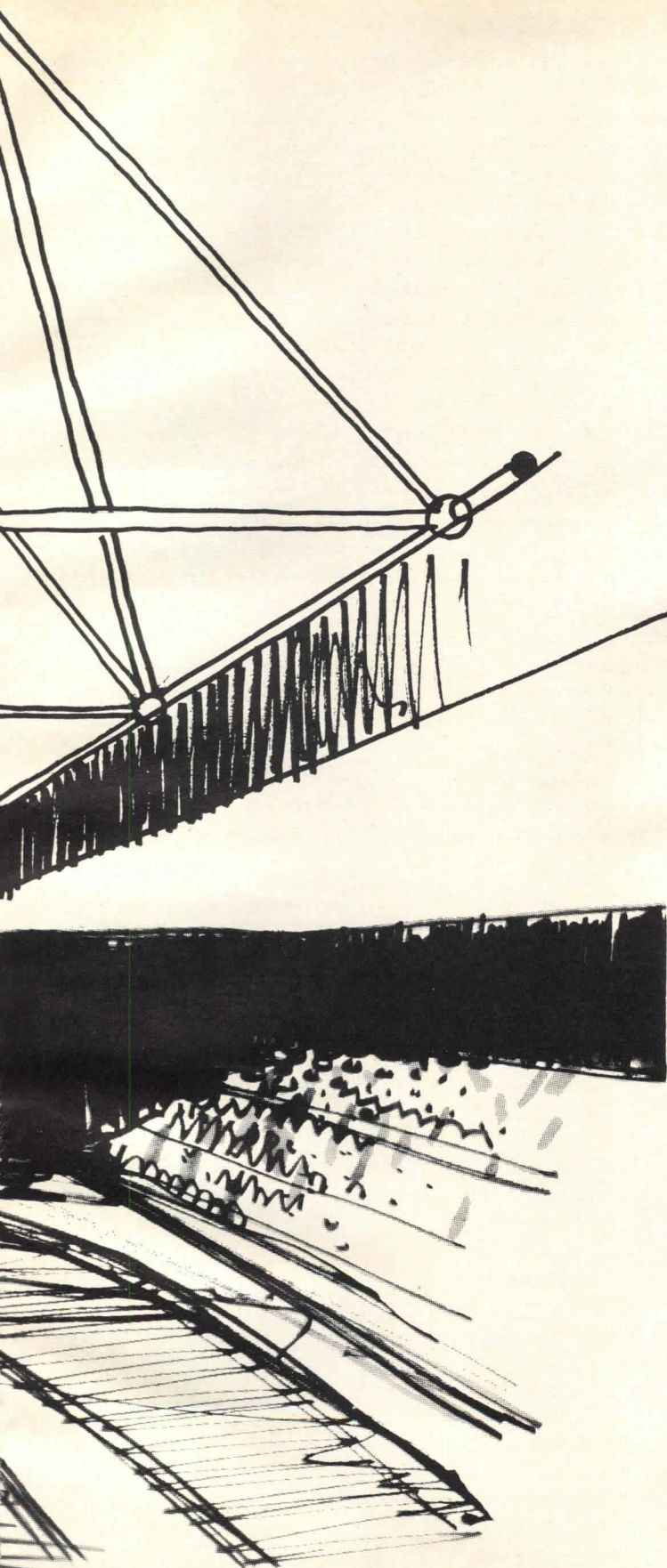


Column-free sports viewing. Here's an idea that works — with J&L A-36 pipe.

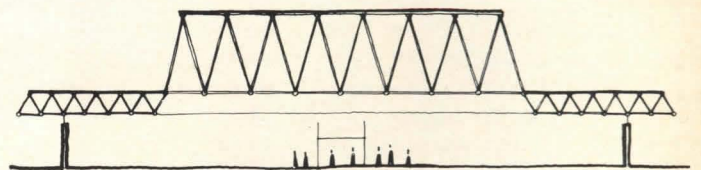
Now steel pipe is practical for use in space frames to cover all-season sports arenas or similar structures where a column-free interior is the prime requirement. Developed by Jones & Laughlin, A-36 steel pipe was designed specifically for construction use. It's strong, easy to work with, and costs less than other structural metals.

A-36 pipe meets the chemical composition and mechanical property requirements of ASTM A-36 and has good weldability. Its high rigidity gives better resistance to torsion. Its strength — 36,000 psi minimum yield and 58,000 psi minimum tensile — permits the use of higher unit stresses for more economical design. Yet this higher strength costs no more than A-120 or A-53 pipe.

This new product from J&L is ideal for many other types of structures: domes, bridges, towers, support columns, industrial and commercial buildings. Send for a copy of our A-36 Construction Pipe Catalog or see it in Sweet's Architectural and Industrial Construction Files for 1967.



A roof that doesn't get in the way. Besides giving viewers an unobstructed view of the action, this space frame uses high strength A-36 pipe as triangular supports to provide safe and even load distribution. A major portion of the monitor roof load is delivered to its perimeter. Here the load is carried by the lower, more compact space frame (which can be cantilevered over outside walks as weather protection).



The sports fan's dream. If a spectator doesn't see that "play of the game" in this field house, it's his own fault. Use of A-36 pipe in the roof design provides for a conceivable uninterrupted span of up to 1000 feet. And if it's an "outdoor" sport being played, participants will like "what they're used to" — a natural grass playing field. Access for natural light combined with proper ventilation make it possible.

Jones & Laughlin Steel Corporation
3 Gateway Center, Pittsburgh, Pennsylvania 15230



TANK STORES HOT WATER —AND LOW-COST ENERGY

BY WM. J. MCGUINNESS
Domestic hot-water generator draws on lower-cost, off-peak electric power. McGuinness is a practicing engineer in New York City.

Electric energy converted to heat energy in a hot-water storage tank is saving money on electric bills; savings up to 20 per cent are possible.

The device responsible for the savings is a newly developed electric hot-water generator, working in conjunction with a Permissive Load Control (PLC) system (see p. 192, MARCH 1967 P/A). The unit supplies domestic hot water without increasing a building's peak demand for electric current.

An electric utility company is most comfortable when it can supply the kilowatt-hours required by a customer at a reasonably steady rate throughout the period of consumption. When this kind of operation is possible, the utility can select moderate sizes for service conductors, transformers, and auxiliary distribution equipment.

If, however, the same energy is consumed irregularly, with periodic, short-term surges in demand, a much larger utility service must be installed. The

utility bills the consumer for this with what is known as a demand charge.

The importance of reducing this extra charge is especially significant in buildings that use electricity for all energy requirements, including heating, cooling, lighting, elevators, cooking, domestic hot water, and sometimes snow melting and the heating of swimming pools.

In buildings with high residential occupancies such as motels, hotels, and nursing homes, the electrical demand for domestic hot water is often 30 to 50 per cent of the total demand. Power demands for purposes other than hot water have a tendency to average out. Hot water, on the other hand, is often in demand for only an hour or so of maximum use. Obviously, it could be a cause for high demand charges.

The new electric hot-water generator is a two-compartment tank with heating elements in each section. (The schematic diagram represents a typical unit.) The heaters are subject to the control of individual thermostats in each section and to the Permissive Load Control system.

For the purpose of controlling the building's total electrical demand, electric loads are divided into two classes: straight-through loads that cannot be interrupted (heating, cooling, lighting, cooking, and elevators); and disconnectable loads that can be cut off whenever total building demand exceeds a preset maximum (hot-water heating, swimming-pool heating, deep freeze and snow-melting equipment, for example).

The disconnectable loads are ranked as to priority: the heating elements in the leaving section of the hot-water generator first, those in the entering section next, followed by the swimming-pool heaters, the deep freeze and the snow-melting apparatus, in that order.

The hot-water generator receives no power if the demand of the straight-through, uninterrupted loads exceeds the PLC setpoint. When the straight-through demand slacks off, the PLC unit will allow power to flow first to the heaters in the leaving compartment of the hot-water generator, if the temperature of the water there is below 140F, and next to the heaters in the entering section, if the temperature is under 150F. After the power requirements of the hot-water generator are met, the PLC system will allow operation of lower priority loads.

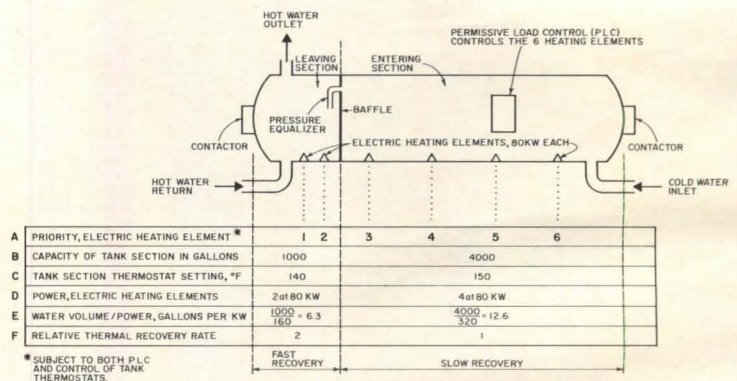
The large mass of slightly overheated water in the well-insulated entering section is a thermal reservoir that can keep hot water in adequate supply for 3 or 4 hrs without using any electrical energy. During the long build-up period when hot water is not being used, elements 1 and 2 (see diagram)

will not operate if the small-section tank thermostat is not calling for heat. The elements 3 through 6, however, will take advantage of every drop in building demand to store energy in the entering tank.

The ratio of volume to power in the leaving tank is half the value of that in the entering tank. The high heating capacity and the programmed priority of the elements in the leaving section together provide a fast-recovery supply system.

The deep freeze and the swimming-pool heater can be off for long periods because they are thermally very stable and slow to change in temperature. Their thermal stability is now matched by the domestic hot-water electric tank-generator.

Information about the tank and about PLC were furnished by the Climate Control Division of the Singer Company, Auburn, N.Y., developers and manufacturers of both devices.





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DOW CORNING

TRAINING SPECIFICA- TIONS WRITERS

contributes to the increasing number of suits brought against architects for errors and omissions.

Specifications are one of the primary contract documents produced by an architect. Their contents include not only a description of materials, workmanship, fabrication, and installation intended to assure an architect that his drawings will achieve the desired design, but also the legal considerations inherent in the general and supplementary conditions and the additional nonlegal and non-technical provisions set forth in Division 1—General Requirements of the Uniform System.

Unless the specifications are prepared by individuals properly schooled and proficient in this art, the consequences can be disastrous. Unfortunately, the AIA, CSI, and collegiate schools of architecture have neglected this vital educational area, and have failed to initiate programs to develop new specifications writers.

The demands for new construction are spiraling upward. Additional schools of architecture are being created to meet this exigency, but too little attention has been paid to the need for establishing basic programs in the art of specifications writing.

Programs and seminars designed primarily to update the knowledge of practicing specifications writers do exist. These programs have been sponsored by some universities through courses at schools of continuing professional education. However, there remains a lack of initiative where programs directed to the new generation of specifications writers are concerned—primarily due to the absence of an appropriate curriculum designed to teach basic principles of specifications writing.

Recognizing these problems, the New York Chapter of the Construction Specifications In-

stitute, in conjunction with New York University's School of Continuing Professional Studies, is planning a course, the first session of which is designed to teach the basic elements of specifications writing. The 15-week course will be held one evening a week at 2 hours a session. To qualify, minimum standards have been set for admittance. (The reason for setting standards for admission is that specifications writing is a highly technical and important function in an architect's office and the preparation of this document should be entrusted only to individuals with a background in architecture, engineering or construction.) Candidates will be required to have either a degree in architecture or engineering, or several years experience as a job captain or inspector in the field.

The curriculum established by the Education Committee of the N.Y. Chapter of C.S.I. will be taught by qualified members of the chapter. The course content is concerned with the elements or principles of specifications writing as follows:

1. Introduction to specification writing:
 - a. The function of specifications.
 - b. Their relationship to the project.
2. Relationship of specifications to drawings:
 - a. What goes where.
 - b. Items better shown on drawings.
 - c. Items better described in specifications.
3. Organization of specifications:
 - a. Uniform system, the CSI format.
 - b. Value of a standard format.
4. The technical section:
 - a. Definition of concept.
 - b. Broadscope and narrow-scope sections.
5. Arrangement of the technical section:
 - a. Physical format and style.
 - b. Arrangement and order of information.
6. Types of specifications:
 - a. Descriptive.
 - b. Performance.
 - c. Proprietary.
 - d. Reference.

7. Specifying materials:
 - a. "Or equal" clauses.
 - b. Base bid.
 - c. Bidder choice.
 - d. Product approval standards.
8. Sources and evaluation of information:
 - a. Textbooks.
 - b. Materials standards, ASTM and Federal specifications.
 - c. Trade association standards.
 - d. Manufacturers' literature.
 - e. Evaluation and reliability of sources.
9. Specification writing procedures:
 - a. Outline specifications.
 - b. Research.
 - c. Use of "guide" specifications.
 - d. Order of writing.
 - e. Addenda.
10. Specification language.
11. Specifications writing techniques:
 - a. Scope of work.
 - b. Work of other sections.
 - c. Duplication and repetition.
12. Bidding requirements:
 - a. Invitation to bid.
 - b. Instructions to bidder.
 - c. Bid form.
13. General conditions.
14. General requirements:
 - a. CSI format—Division 1 sections.
15. Bonds, guarantees, and warranties.

A subsequent course, to be taught in the spring of 1968, will concentrate on an appraisal of materials and equipment.

BY HAROLD J. ROSEN

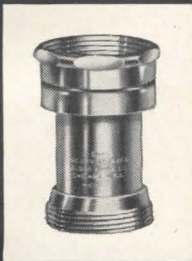
One chapter of the Construction Specifications Institute joins with a local university to teach specifications writing. Rosen is Chief Specifications Writer for Skidmore, Owings & Merrill, New York City.

One major problem confronting practicing architects is the insufficient supply of trained specifications writers. This lack of competent technicians in a highly specialized and essential area of architecture probably

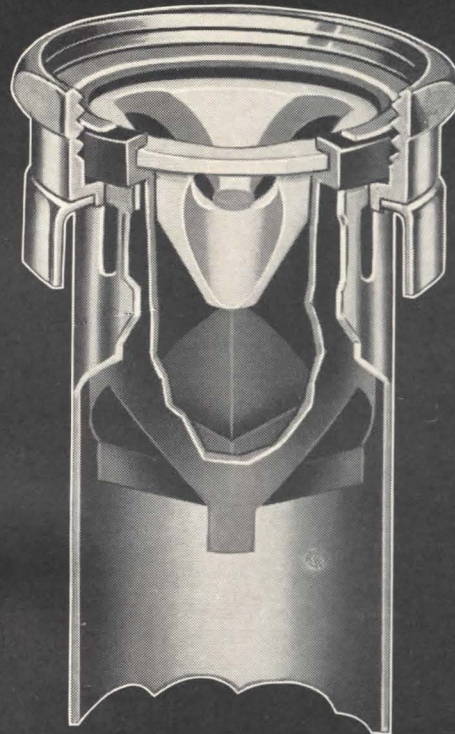


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ROYAL Flush Valve
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The V-500-AA and V-500-A are identical, except that the V-500-AA is constructed with an integral outlet. This eliminates one coupling connection and saves installation time. The V-500-AA is furnished with a 3/4", 1", 1 1/4" or 1 1/2" diameter outlet.



V-500-A
Vacuum Breaker



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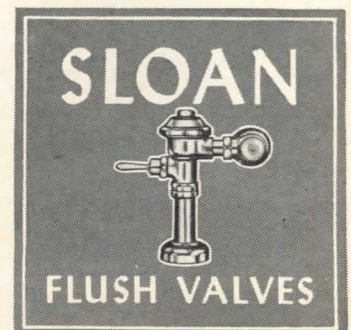
Under normal conditions the V-500-AA is open to the atmosphere at all times. When a vacuum occurs in the supply line, (1) the one-piece rubber sleeve is instantly drawn against the water ports of the center insert, thus preventing back-flow. Simultaneously, (2)

atmospheric pressure is admitted to the interior through a series of air ports, to prevent any possible vacuum effect on the fixture. Thus the V-500-AA is on guard constantly to protect against back-siphonage, should vacuum conditions occur.

Like the millions of nationally approved Sloan vacuum breakers now in service, the new Model V-500-AA and V-500-A Vacuum Breakers conform to all municipal Plumbing Codes, as well as to U.S. Government specifications.

This is but one of the many innovations recently adopted to further improve the quality, quietness, dependability, ease of installation, low maintenance costs and smart appearance of Sloan Flush Valves. For the Flush Valve of Tomorrow—Today—be sure to specify and insist on SLOAN!

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THE ARBITER: COURTS OR ENGINEERS?

BY BERNARD TOMSON
AND NORMAN COPLAN

P/A's legal team explores a recent dispute that led to a significant decision from the Appellate Court of New York setting limits on engineers' authority to construe contracts.

Construction contracts often provide that an architect or engineer shall determine any question or dispute that may arise involving the contractor's work. The scope of such a provision and the application of architects' or engineers' determinations to subcontractors is dependent upon the precise wording of the prime contract, the subcontract, and the rule of law of the applicable jurisdiction. In a recent decision (*Joseph Davis, Inc. v. Merritt-Chapman & Scott Corp.*, 276 N.Y.S. 2d 479), a New York court was called upon to review a determination of an engineer that involved the meaning and interpretation of the construction contract and that, in essence, denied the claim of a subcontractor.

In this case, the litigation arose out of a contract between

the general contractor and the Power Authority of the State of New York for the construction of a power plant, and a subcontract between the general contractor and a subcontractor who was to perform the piping system mechanical work. The dispute involved the question whether the owner was to supply, at his own cost, the supporting material for embedded pipe work, and pay the subcontractor for the installation of supports in accordance with a unit price schedule, or whether the cost of this material and work was included in the bid price of the subcontractor and was to be borne by him.

The specifications of the general construction contract relating to the scope of the work provided:

"The work covered by this portion of the specifications includes the installation of all piping materials including pipe . . . valves, fittings, flexible metallic hoses, pipe hangars, and supports . . . which are required to provide complete piping systems. . . . The Authority will furnish all materials except welding rod and cinch anchors for wall brackets which shall be furnished by the Contractor."

The specifications further provided:

"The Contractor shall install the piping systems in the power plant in a thorough and workmanlike manner in accordance with the drawings and bills of material to be furnished him and as directed by the Engineer."

The subcontractor claimed approximately \$365,000 for the installation of the pipe supports for embedded pipe and \$126,000 for material and fabrication of the supports. The general contractor had presented these claims to the consulting engineers representing the Power Authority of the State of New York. These engineers ruled that the Power Authority was only bound to furnish material

when piping was permanently mounted on hangars and supports, but that, where piping was to be embedded in concrete, all operations were to be performed by the contractor at the cost included in the bid price.

The general contractor deemed this decision as final and conclusive upon him under Article 23 of the general construction contract, which provided the following:

"In case of any ambiguity in the plans, specifications or maps, or between any of them, the matter shall be immediately submitted to the Authority, which shall adjust the same, and its decision in relation thereto will be final and conclusive upon the parties."

The general contractor advised the subcontractor that, under the decision of the owner's engineers, he would have to bear the cost for the materials and installation of the work in question, and that, pursuant to the terms of the subcontract, the decision of said engineers was binding and conclusive upon the subcontractor. The subcontract provided as follows.

"Any findings, agreement, determination or decision which may be made as between Contractor and the Owner shall be binding upon the parties hereto, and in any dispute or question arising between the parties hereto, shall be determinative of the same insofar as and to the extent that said finding, agreement, determination or decision concerns the same matter or matters in dispute or in question between the parties hereto."

The subcontractor challenged the application of the engineers' decision to him. The Supreme Court of New York found that Article 23 of the general construction contract was applicable to the dispute in question and the decision of the engineers was binding and conclu-

sive upon the subcontractor under the provisions of the subcontract above quoted. On appeal, however, this decision was reversed, the Appellate Court holding that Article 23 had no application, since the specifications were not ambiguous and the engineers did not have the authority to determine the legal meaning of a contract. The Court said:

"If a contract provides that the decision or determination of an engineer shall be final and binding, such finality attaches, in the absence of fraud, bad faith or palpable mistake equivalent to bad faith, only to those determinations involving quantity or quality of material, classification or amount of work performed, or a calculation as to a final estimate; where the expertise of the engineer is important and essential. In short, the resolution of factual disputes is the prerogative of the engineers. Absent any question of construction of the contract, the engineers' determination could not be challenged. They do not, however, have the power to construe the contract. . . . The legal meaning of the contract is always the responsibility of the court and not of the engineers."

This decision appears to be inconsistent with holdings throughout the United States that arbiters have the power to interpret contracts. If appealed, we will make a further report.

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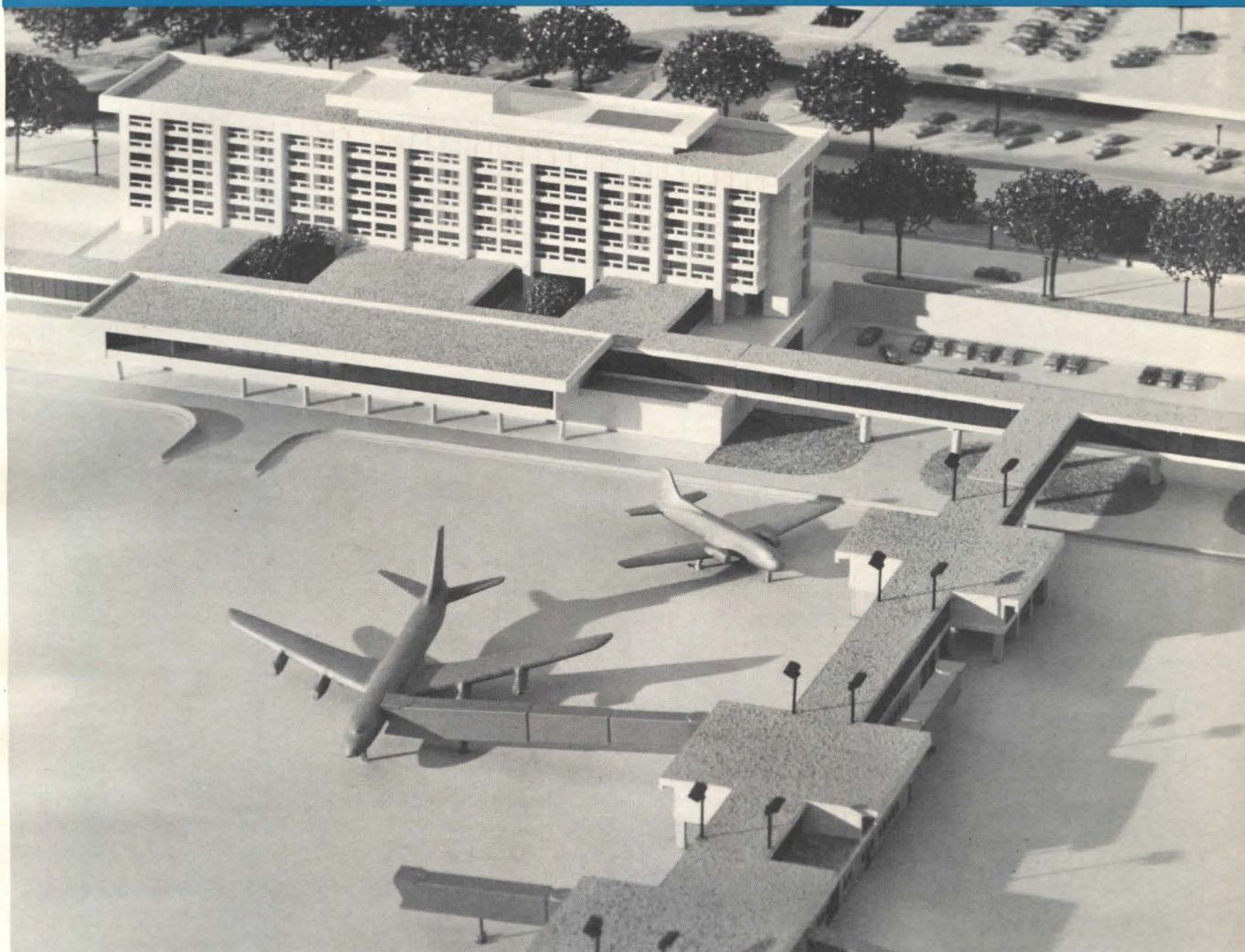


PHOTO BY LENS-ART

Q: How did this hotel, located 1000 feet from an airport runway, silence the noise of the jets.

A: With Amerada ACOUSTA-PANE® 40

This rendering shows how close jets come to the Metropolitan Hotel at the Detroit airport. 500 windows of glare reducing Acousta-Pane 40 (1/2 inch), provide peace and quiet for hotel guests. Owner: Wayne County Road Commission. Architects: Smith, Hinchman & Grylls Associates, Inc. Glazing by West Detroit Glass Company.

For additional information on Acousta-Pane 40 write for Case History No. 401.

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HOW TO SEE CITIES

30 pounds, is almost 12 by 18 in. (and 7 in. deep), and first appeared in 1572–1617. The other weighs 18 ounces, is 6 by 9½ in. and was copyrighted in 1962. *Civitates Orbis Terrarum*, the first book, has in the aggregate 546 beautifully made, double-spread engravings reproduced in facsimile, six of them duplicated in color. *A Communications Theory of Urban Growth* has no plates; in fact, it is merely an offset printing of a typed manuscript.

But there are striking similarities as well. Despite the enormous difference in price, both publishers will probably count themselves lucky if they sell a couple of thousand copies apiece. And the most important likeness is that both books are really about the same thing: how to see cities. From the different conceptual lens offered by each, one derives an understanding of how cities grow and change. Both books are highly significant works in the study of urbanization.

Civitates was a product of the Renaissance in northern Europe, which corresponded with the years of exploration and travel. The North produced three great cartographical achievements in the 16th-Century. The first uniform modern atlas was published in Antwerp, the first marine atlas was printed in Leyden, and the first uniform collection of plans and views of cities — the *Civitates* — issued from Cologne. The instigator of *Civitates* seems to have been Georg Braun, a priest who got the backing of the Cologne city council. His first volume was edited largely with the help of Frans Hogenberg of Antwerp, an engraver. It had a Latin text, but its popularity led to German and French translations. The inclusion of particular cities in the first volume was fortuitously dependent on the availability of views. But Braun wrote away for, and soon began to receive,

maps and drawings from distant artists. Five more volumes appeared as contributions burgeoned. Ultimately, there were drawings and engravings by scores of people, and probably editorial work was done by as many. Pieter Brueghel sent in a drawing of the Strait of Messina. The most devoted and accomplished contributor was Joris Hoefnagel, originally of Antwerp, who covered Europe like a *Life* photographer.

The comparison with modern photojournalism is apt. Not only was wide travel a requirement for the busy mapmakers, but what they tried to portray was the anecdotal essence of each place. This was possible since few of the hundreds of views they made were pure plans. Many were bird's-eye perspectives and oblique views, and the most plentiful were direct eye-level elevations — actual ones, or hypothetically constructed. In an age when the most important buildings were inevitably the tallest, these side views of towns were cartographically orthodox and also surprisingly informative. Best of all, they allowed the artist to extend the view into an elaborate foreground. Within a decorated frame that had cartouches for titles and legends, the views usually showed a bit of natural scenery appropriate to the vicinity, as well as figures in local costume. *Civitates* editorial policy called for making a real effort in representation. The bottoms and sides of the plates are full of tiny scenes of wine-making, slate cutting, pitched battles (for fortified cities), even, in barbaric Hungary, horrible crucifixions and impalements at the outskirts of town. *Civitates Orbis Terrarum* lets us see not only life in Europe (and elsewhere) in the 16th Century, but the whole magic of growth and change. In *The Anatomy of Melancholy* of 1621, Robert Burton suggested a “good prospect” to ease mel-

ancholy, and recommended perusing “those books of cities put out by Braunus and Hogenbergius.” The passage of centuries has made the good prospects better. To see them, one is not only transported easily by the books over long and difficult distances; one is now also carried back through time. More than that, it is oddly satisfying to look at a city that one knows, and to see many of its elements when they were clear and strong — the early main roads, the hills, the valleys before they were swallowed up. In half the views, the reasons for the settlements' original occurrences are still clear. It is like suddenly finding a photograph of an ancestor. The relationship seems distant and yet strangely close. This transformation and translation is the magic I mean, having something to do with a sense of continuity that is necessary to people — the knowledge that some things have a longer than mortal existence. This knowledge can be sought in nature and art, but cities, as the greatest works of man, probably provide the deepest assurance that it is true. This sense of the past is probably a very interesting psychological phenomenon, and it must account for the aptness of feelings expressed by preservationist forces in cities now. It makes me think what an inadequate word nostalgia is.

In *Civitates*, one sees views of cities that should have grown large, but did not, like Toledo, Malines, Chartres; and the cities that grew large but should not have, like Bonn. There are the marvellous sights of Prague, Nuremberg, Rothenberg, Sitten, Siena, Tivoli, Bergen, Brno, Dortmund. It appears that 350 years ago, German towns — Freising, Ratisbon, Nordlingen — were as visually expressive in their own way as the Italian hill towns we

Continued on page 188

BY NATHAN SILVER

CIVITATES ORBIS TERRARUM. (*The Towns of the World.*) Edited in 1572–1617 by Georg Braun and Frans Hogenberg. Introduction by R.A. Dkelton. The World Publishing Company, 2231 W. 110 St., Cleveland, Ohio. 1966. 3 vols. Illus. \$195.00. A COMMUNICATIONS THEORY OF URBAN GROWTH. By Richard L. Meier. M.I.T. Press, 50 Ames St., Cambridge, Mass., 1962. 184 pp., \$4.50. The reviewer is an American architect presently on the faculty of the School of Architecture, Cambridge University, England. He is an architectural correspondent for The New Statesman and has written *Lost New York*, a book to be published this fall.

These books present a contrast in almost every gross measure. One, a three-volume version of a six-volume work, weighs over



Builder and Applicator NEWS

Part of a series of product-use bulletins published by Mobay to keep suppliers and applicators in the building industry informed on new developments in urethane materials for commercial and residential construction

B/AN-10

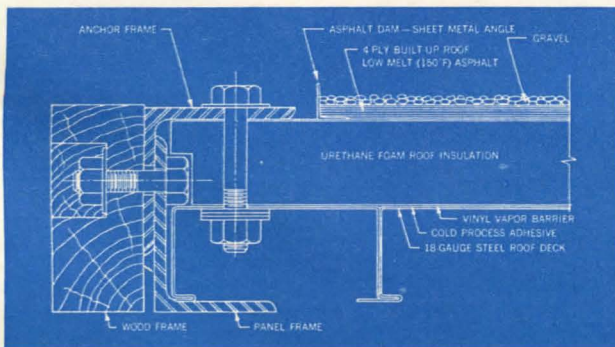
PENN STATE IBR REPORTS EFFECT OF TEMPERATURE CHANGES ON ROOF CONSTRUCTION USING RIGID URETHANE FOAM INSULATION

Dimensional stability — the degree to which a material retains its original shape and size under changing conditions of temperature and other environmental factors — is an important point of information for the architect or builder, particularly when slab or panel-type materials are being considered.

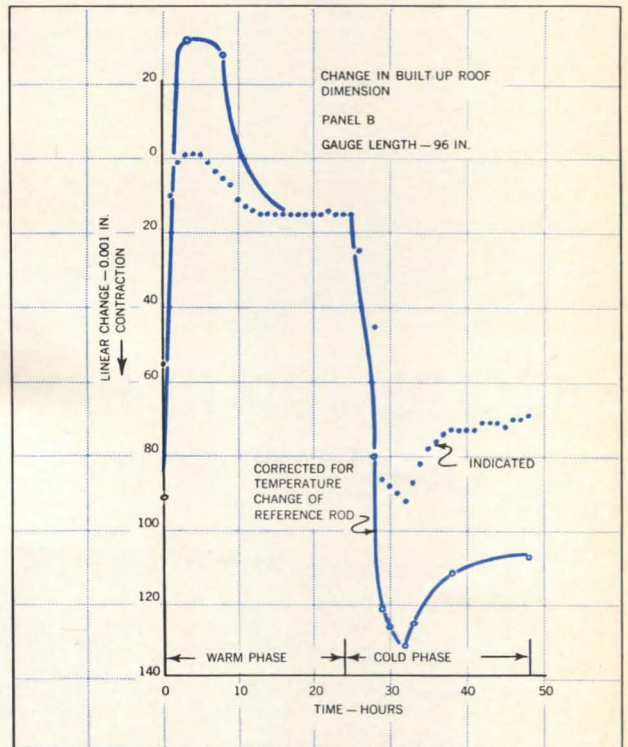
Questions of how to adhere or fasten such materials to the substrate, and decisions concerning the caulking and sealing of the joints, all hinge upon this question of stresses and pressures caused by expansions and contractions of the material.

The effect of changes in temperature on rigid urethane foam slab-type roof insulation was recently studied by the College of Engineering, Institute for Building Research, at Pennsylvania State University, for Apache Foam Products, of Belvidere, Illinois.

Two identical 5' x 9' roof panels were used, consisting of 18-gauge steel roof deck, vinyl vapor barrier and Apache foam, all bonded with a cold process adhesive and surfaced with a 4-ply, low-melt asphalt built-up roof membrane and gravel. The panels were placed in a climatometer (an insulated room equipped for the precise control of temperature changes) and exposed to alternating hot and cold cycles between -30°F and 180°F on the deck while air under the panels was held at a constant 75°F. A series of transducers were used to indicate linear changes and thermocouples were used to measure temperature variations in 24 locations. The temperature cycles were



Cross section of built-up roof used in study to obtain bonding stress data on rigid urethane foam slab construction.



During heating cycle, maximum increase in panel length was 0.024"; maximum decrease in cold phase was 0.040".

designed to expose the roof and insulation to extremes of temperature in short periods to accelerate any effect such temperatures might have on the insulation.

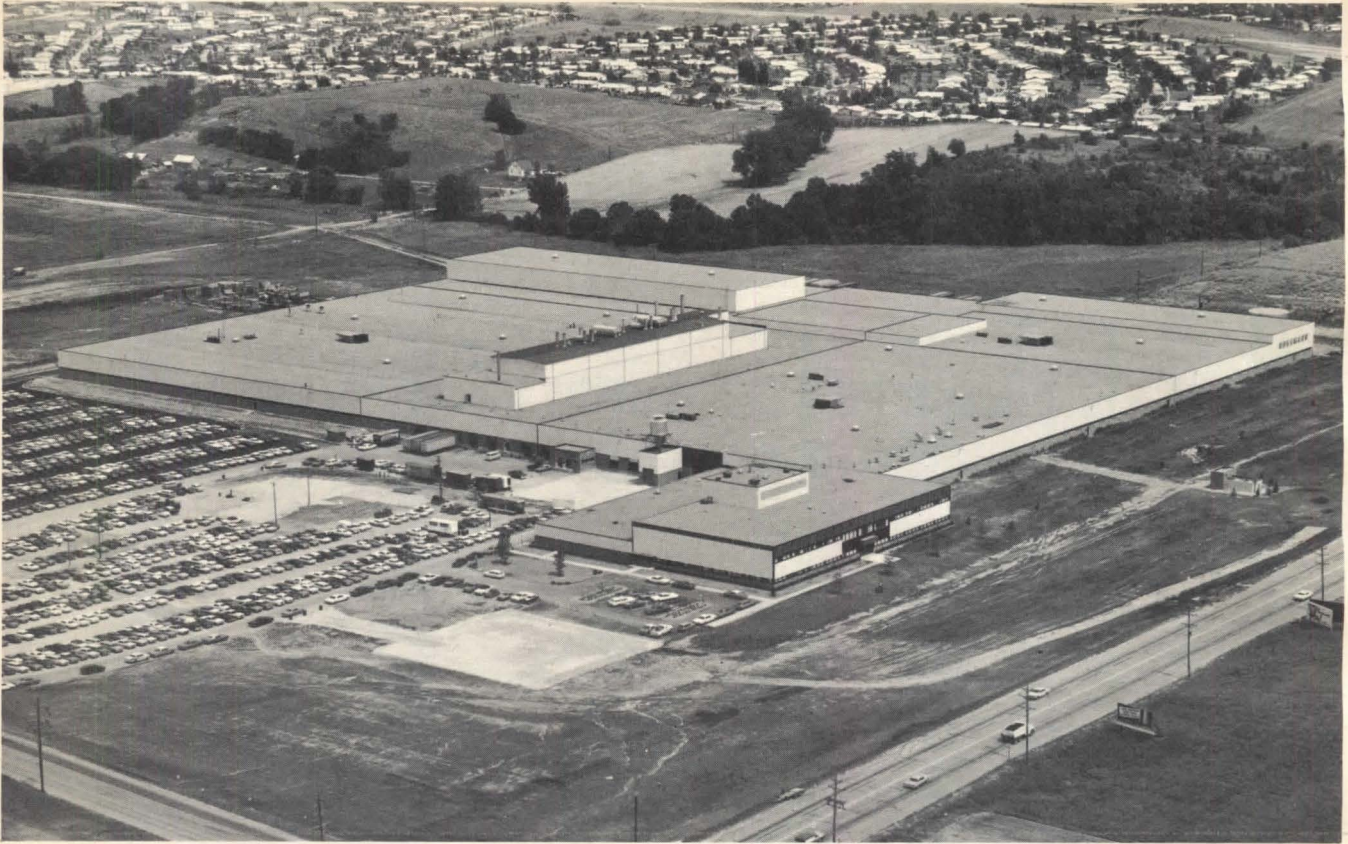
After 10 cycles, the roof was purposely stripped off with considerable effort. Separation was between the urethane foam core and upper asphalt saturated felt skin, indicating that the roofing was still firmly bonded to the insulation and the insulation was still well adhered to the vapor barrier. All joints of the foam insulation were as snug as when first installed and no apparent change in the urethane foam's condition was noted.

This is another example of the type of scientific analysis undertaken by fabricators and suppliers of urethane foam products for the construction industry. Copies of the complete Penn State report are available from Apache Foam Products Company, Belvidere, Illinois.

For additional information on the use of urethane foam in other insulation and construction jobs, write on your letterhead to:

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This is the new home of Hussmann Refrigeration, Inc., Division of Pet Incorporated, the world's largest manufacturer of food store equipment—coolers, shelving, check-outs and refrigeration machinery.

The new plant and office, biggest in the industry, covers more than 800,000 square feet—almost 22 acres—on a 75-acre site that includes parking space for 2,000 automobiles.

To obtain maximum economy in the roof and floor spans of the structure, which is a quarter mile on each side, the builder used Laclede Straight Chord Steel Joists, both standard and composite types. Reduced construction time resulted from the easy handling and placement of the joists.

Austin Co. of Des Plaines, Ill., engineered the big project in suburban St. Louis. Kroeger Erection Co. was the contractor, Haven Busch the structural steel engineer, and Stupp Bros. Bridge and Iron Co. the supply-erection coordinator.

6738



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The ceiling panels in the above grocery store entrance, for example, provide sufficient warmth in critical areas such as this. The office installation, a conventional T-Bar job, puts heat where it's most efficient without costly, space-wasting ductwork other systems require.

Want more facts about the efficiency and economy of 3M Electric Heating Panels? Write: Dept. EEE-77, 3M Co. Bldg. 216, St. Paul, Minn. 55119.

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Continued from page 184

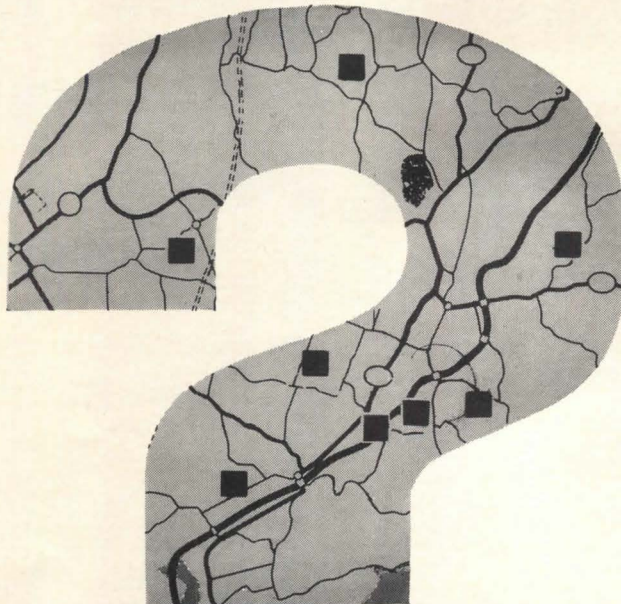
can still see today. Again and again, the *trouble of building* is clear. The earthworks and towers and moats of Cassel, Frankfurt, Kempe, and Ratzeburg were the refined products of back-breaking effort. Star-shaped fortifications were obviously "in" at the end of the 16th Century, but Buda has a walled circular keep on one side of the Danube, connected by a bridge of boats to Pest within a square of walls, a combination in beautiful Louis Kahnian geometry. There is the virtually unchanged view of Florence, and never-never views of Jerusalem, Moscow, and

Vilna. The pictures all tend to make one feel, despite logical doubt, that urban geographers can indeed read the secrets of life from maps of the earth.

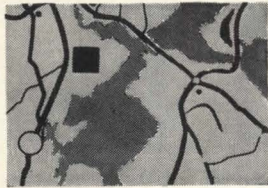
A few practical notes on *Civitates*: First, \$195 is quite a bundle. Undoubtedly, the facsimile views and the inserted folding plates made production costs very high. Yet the accompanying modern editorial work and scholarly apparatus is flimsy, especially since other costs were small — for instance, all material was naturally long out of copyright. As I said earlier, the Latin text was translated into French and German in the old days. Since many

\$5 books are translated today, it was stingy of the present publishers not to prepare an English text for the first time. If the Latin notes on the towns were relevant enough to reproduce, page after page making up half the work, they deserve to be read. This facsimile Latin presentation is pedantic, not scholarly. How many cartographers, urban geographers, planners and architects still are taught Latin? For whom else is the new edition intended? Second, all the views were reproduced from one set in the University Library of Amsterdam, a comparatively late edition. Some of the very badly worn plates — Seville, Zahara, Granada, Acquapendente — should have been taken from earlier copies of *Civitates* in archives elsewhere. Third, R.A. Skelton, the Superintendent of the Map Room at the British Museum, contributes a useful introduction with some indexes, but there is no sequential pagination of the entire work, no key maps, no gazetteer of locations, and no glossary translating Latin place names into common modern ones (by painful back-referencing, Mons Regius is revealed as Koenigsberg, but it is in fact now called Kaliningrad).

Given the desire, the grants from foundations, and so on, would a modern *Civitates Orbis Terrarum* be possible? It could be done, and done well (I'm thinking of that German oblique view map of mid-Manhattan), but the information to be derived would be far less significant than in the past. With conference rooms replacing meeting halls and telephones replacing market squares, an understanding of city form now calls for a much more profound insight than the purely visual. That is the message, in brief, of *A Communications Theory of Urban Growth*. Richard L. Meier's monograph sets forth experiments in social science that should be immensely productive if they are ever intelligently carried out. Meier's interest in communications began when he noted that the theoretical ideas and general concepts lying behind automation seemed more significant to the future than the disruption of labor that politicians were worrying about. Of course, there are many ways of "seeing" cities besides looking at them; they can be viewed as economic configurations (Jane Jacobs recently spoke in London defending this way in particular), or as ecological, geographical, or political structures, among others. The only excuse for preferring one neospecialist model to another, and the only plea Meier offers in defense of communications, is to get greater rewards and more powerful explanations.



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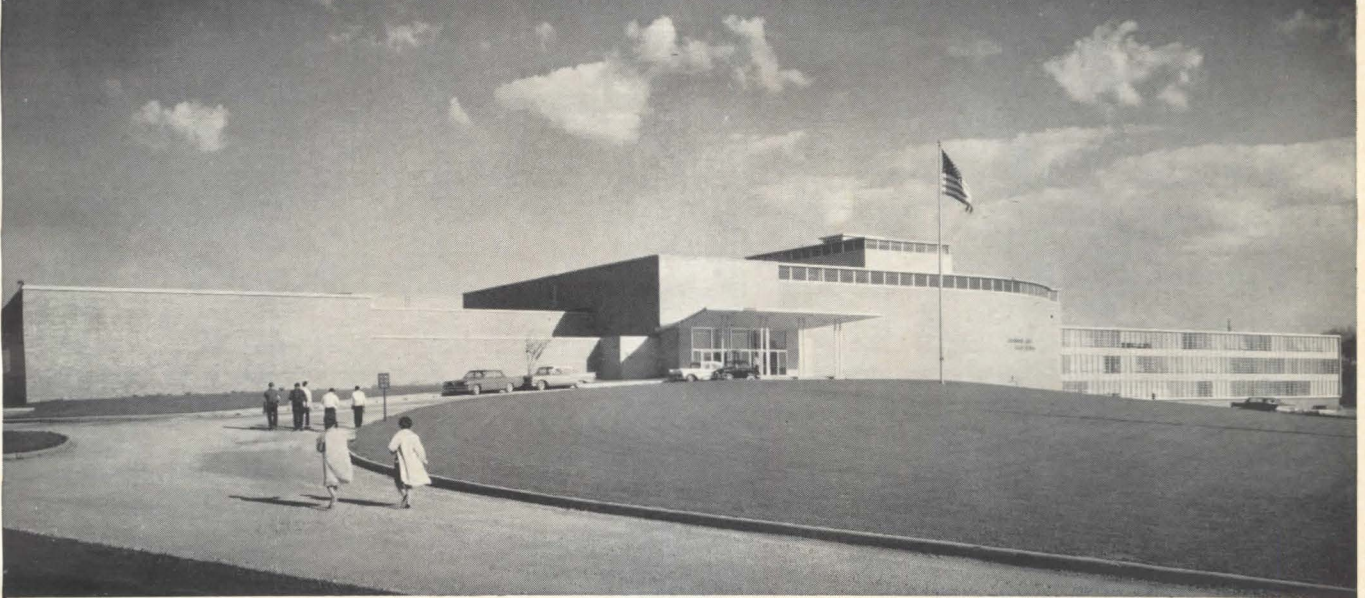
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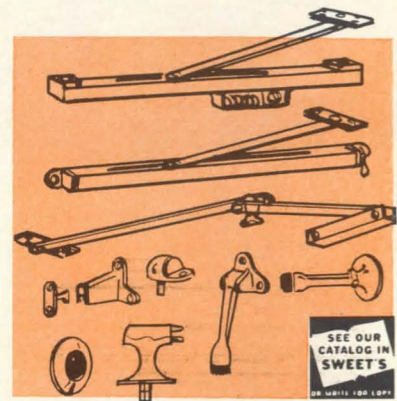
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Continued from page 188

The communications theory in the book is somewhat familiar, but it is, in bulk, newly applied to urban studies. It links numbers of "transactions" to cultural growth, for example. An outline of Meier's thoughts deserves long exposition, and I will forebear trying to summarize it. The substance of his book is certainly pretty dry. However, I believe it is a seminal work on how to see cities — a sleeper that sneaked past us five years ago. It is ironic that the Joint Center for Urban Studies is also publisher for Kevin Lynch, the image boy whom Meier by implication most successfully confounds.

Urban Retrospection

BY PETER COLLINS

THE HISTORIAN AND THE CITY. Edited by Oscar Handlin and John Burchard. The M.I.T. Press, 50 Ames St., Cambridge, Mass., 02142, 1966. 299 pp., \$2.95. The reviewer is Professor of Architecture at McGill University, Montreal, Canada.

Symposia are ideal media for the exchange of scholarly opinions because the governing bodies of universities and foundations have not yet realized that "symposium" is simply the Greek word for "a drinking party." Admittedly, this symposium shows

only slight evidence of the stimulating influence of alcohol, though the affluence of printer's inkhol is evident in M.I.T.'s well-produced paperback text. The editing is a bit fuddled, for the origins of Philadelphia are described 120 pages after the description of the city's development in the 19th century, whilst on page 71, the assertion "Professor Brogan has cited . . ." seems clearly nonsensical, since Professor Brogan's paper does not appear until page 146. However, these lapses are evidently due to a rearrangement of the original sequence, and it must be admitted that the published sequence is ideal, *provided it is read in reverse.*

Literary "stylists" doubtless favor an arrangement whereby a book becomes more and more absorbing as it reaches its end. But there must be many who, like Soames Forsyte's great-uncle James and myself, happily display their senility by gobbling the most succulent morsels first, so that satiety results only when the most unappetizing parts remain. Anyway, I strongly recommend readers of *The Historian and the City* to start with the final chapter; and the fact that the editor himself has contributed this chapter, rather than a preface, suggests that he himself would secretly approve such advice.

Let us begin, then, by considering "Part VII: Conclusion," written by John Burchard in his most brilliant mood. The aim of the symposium was, he states, to confront those who teach city planning, or the history of city planning, with other kinds of historians — economists, political scientists, and philosophers — in the hope of determining how the history of cities can most profitably be studied in relation to the actual problems of urban design. The result, as he frankly observes, was futile; only the most callous and credulous reader will find logic in his prophecy that the next symposium on the subject will prove more helpful. This conclusion is almost an insult to the eminent and distinguished contributors to the volume under review.

The futility resulted mainly from the fact that "there was no real effort to define what we were talking about, either history or the city. The definition of the latter was of course the more slippery." However, there is no reason to assume that the failure to produce viable definitions was due either to the oversight or the incompetence of the participants. Dean Burchard might usefully have added that the main danger in studying cities historically is precisely that the scholar is irresistibly led to escape from considering what a city is by elaborating on what



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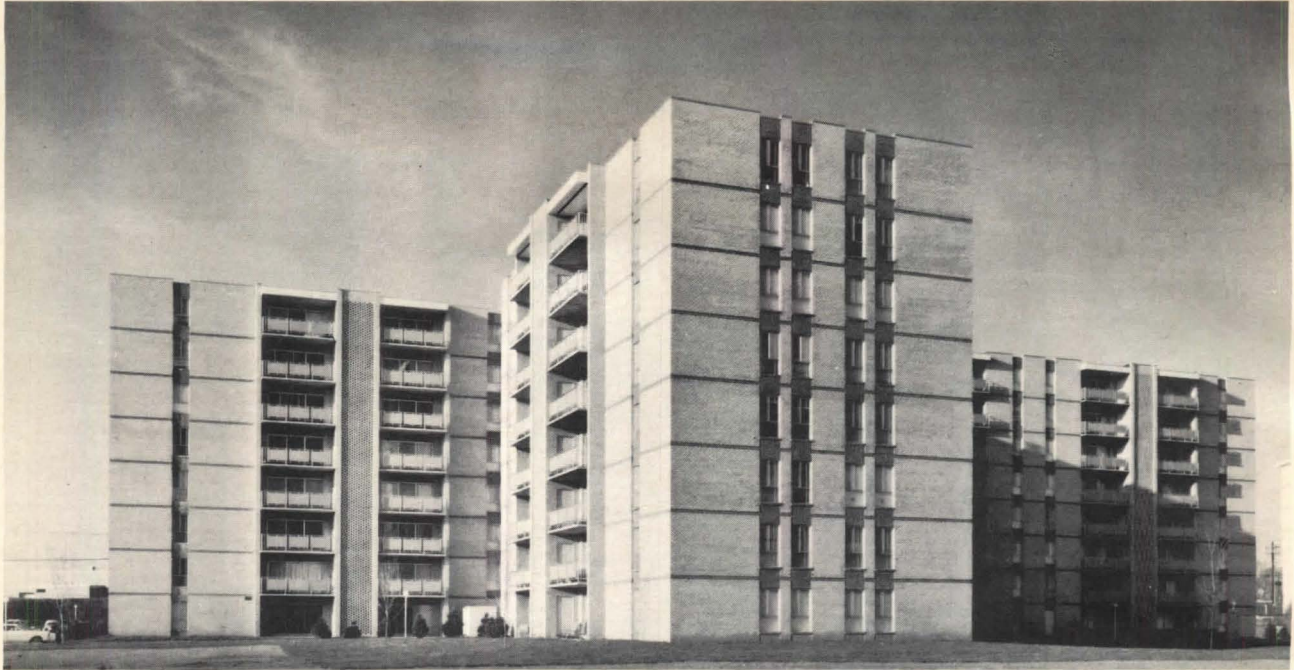
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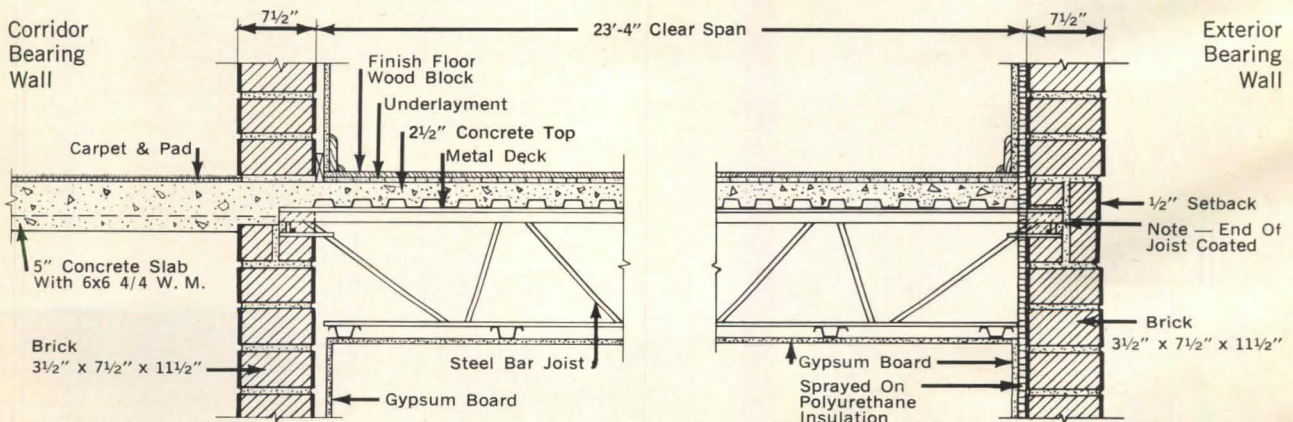
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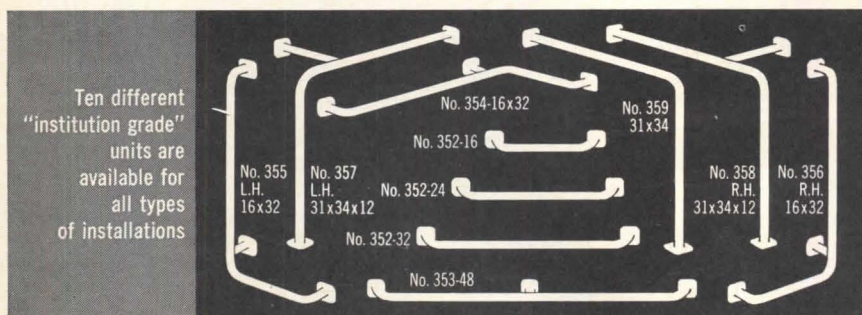


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Continued from page 194

it was in the past. His own favorite definition of a city as "the congeries which multiply the opportunity to exercise choice" seems excellent; but, as he himself points out, the most important discrepancy between the attitudes of the various speakers revolved around the problem as to whether every city is unique, or whether, on the contrary, all cities have enough common characteristics to permit the notion of "the city" to be studied in abstract concepts.

This discrepancy was never resolved. Indeed, none of the speakers whose ideas are published seems to have even grappled with the dilemma during the symposium. Those who discussed cities abstractly talked a good deal about "parameterization," but were singularly reticent about the precise character of the parameters they envisaged. Those who concentrated on individual cities only became eloquent when describing economic developments during the Middle Ages or the Renaissance, whilst the occasional desperate endeavors of economists and social historians to introduce architecture into the argument often lacked conviction.

"Another question that went largely unasked," writes Dean Burchard, "was whether the study of urban history had any utility." He noted that Henry Millon had asserted that the historian was under no obligation to find a utilitarian value for history, and admitted himself that he saw "no reason why the life of a city may not be as good a thing to start from as anything else in the examination even of young ladies." This latter argument is extremely cogent, as I can verify after conducting a summer course on the History of Paris for Smith College. But, clearly, the purpose of the symposium at M.I.T. was not to discover what teachers of urban history can learn about their female students, but what the students themselves can learn about the present and future states of a city by studying its history; for there seems little point in having the symposium at all if it is already taken for granted that all knowledge is useful.

However, the participants in the symposium had the right to assume, for the sake of argument, that if the history of cities is of practical use, there must be some ways of studying it that are superior to others; and, in this respect, the best part of *The Historian and the City* is the penultimate section in which Sir John Summerson, in a characteristically explicit and lucid paper, demonstrates that Mumford's superficial approach does more harm than good, for, as he emphasizes, it is essential to study the history of cities in minute detail after having obtained all the available

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evidence relating to the social, psychological, economic, and technological forces by which they were formed. Nevertheless, Sir John Summerson would probably be the first to admit the validity of Mr. Warner's complaint regarding the inaccessibility of so many of the documents necessary for a complete assessment of even the smallest urban units, and the unmanageability of the mass of documents that are accessible for the larger units.

Perhaps the clue to the whole problem is to be found in Christopher Tunnard's paper, where he makes a firm distinction between "city planning" and "urban design." He seems to suggest that historical studies are only really relevant to the small groups of buildings that form the nuclei of larger urban agglomerations. Here, as he points out, qualitative measurements of the constituents of environmental appropriateness can be studied accurately and comparatively. It thus seems likely that the professional planning consultant, faced with the problem of advising administrators and financiers on future expansion, must rely more on studies of current economic, sociological, and psychological forces, rather than on the history of such forces; and that the history of cities is only useful to future planners in so far as it deals with the evolution of architectural forms, and the formulation of architectural ideals, made manifest when groups of buildings were designed by a single architect, or organized by a concerted team.

Restoration for Everyone

BY EDWARD K. CARPENTER
THE RESTORATION MANUAL. By *Orin M. Bullock, Jr.* Silvermine Publishers, Inc., Comstock Hill, Norwalk, Conn., 1966. Illus., \$8.50. The reviewer is an Associate Editor of P/A.

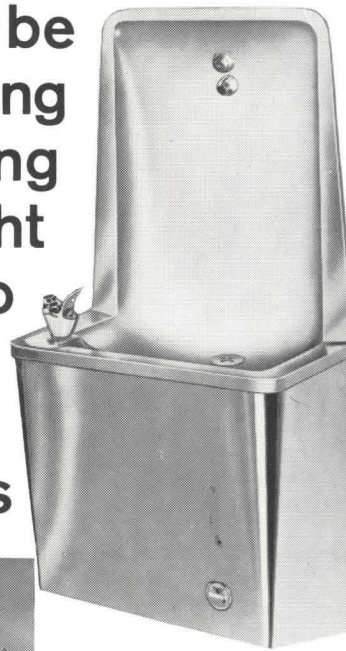
This amazingly comprehensive introduction to architectural restoration work grew out of a decision by the AIA Committee on Historic Buildings. They had long had such a project in mind, and in the spring of 1961 appointed a subcommittee to find and encourage an author. Orin Bullock was a good find. His experience with restoration goes back to 1929, when he was one of the original staff of architects who planned the restoration of Colonial Williamsburg in Virginia. He reports on the techniques of architectural detection that go into restoration, some of which he devised.

But it should be pointed out right away that *The Restoration Manual* is more than just a textbook for potential restorationists. There is something in it for anyone

Continued on page 216

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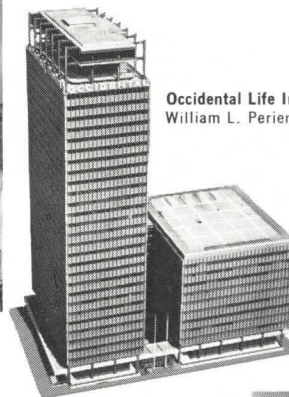
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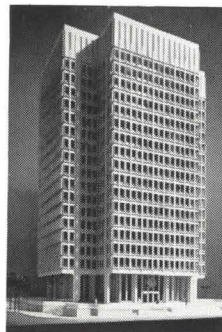
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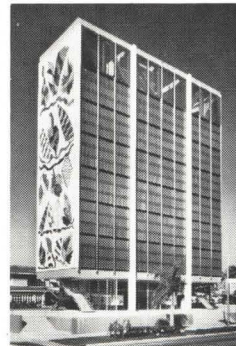
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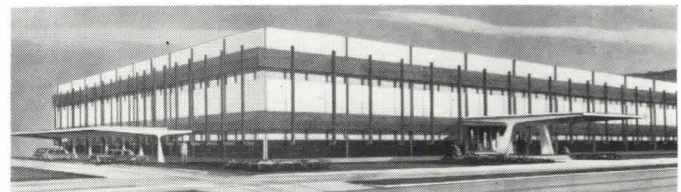
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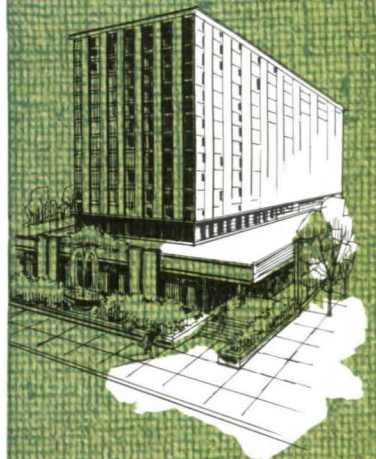
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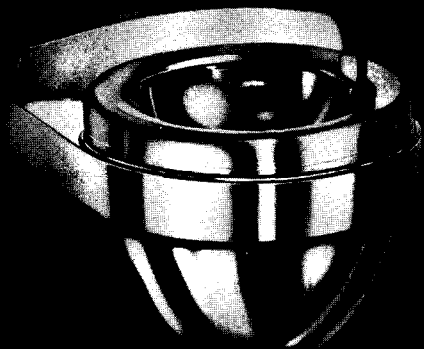
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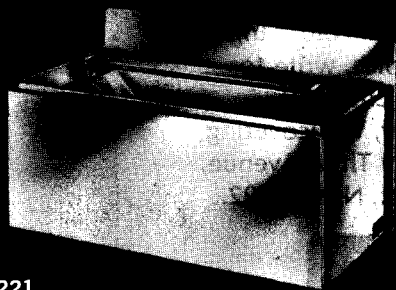




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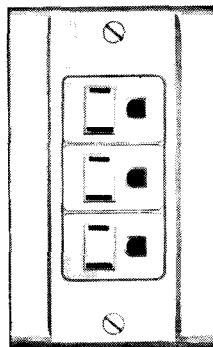
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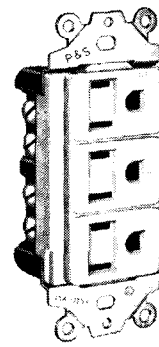
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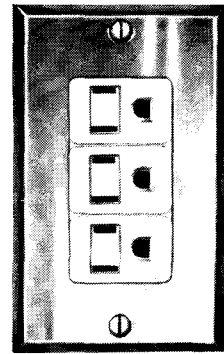
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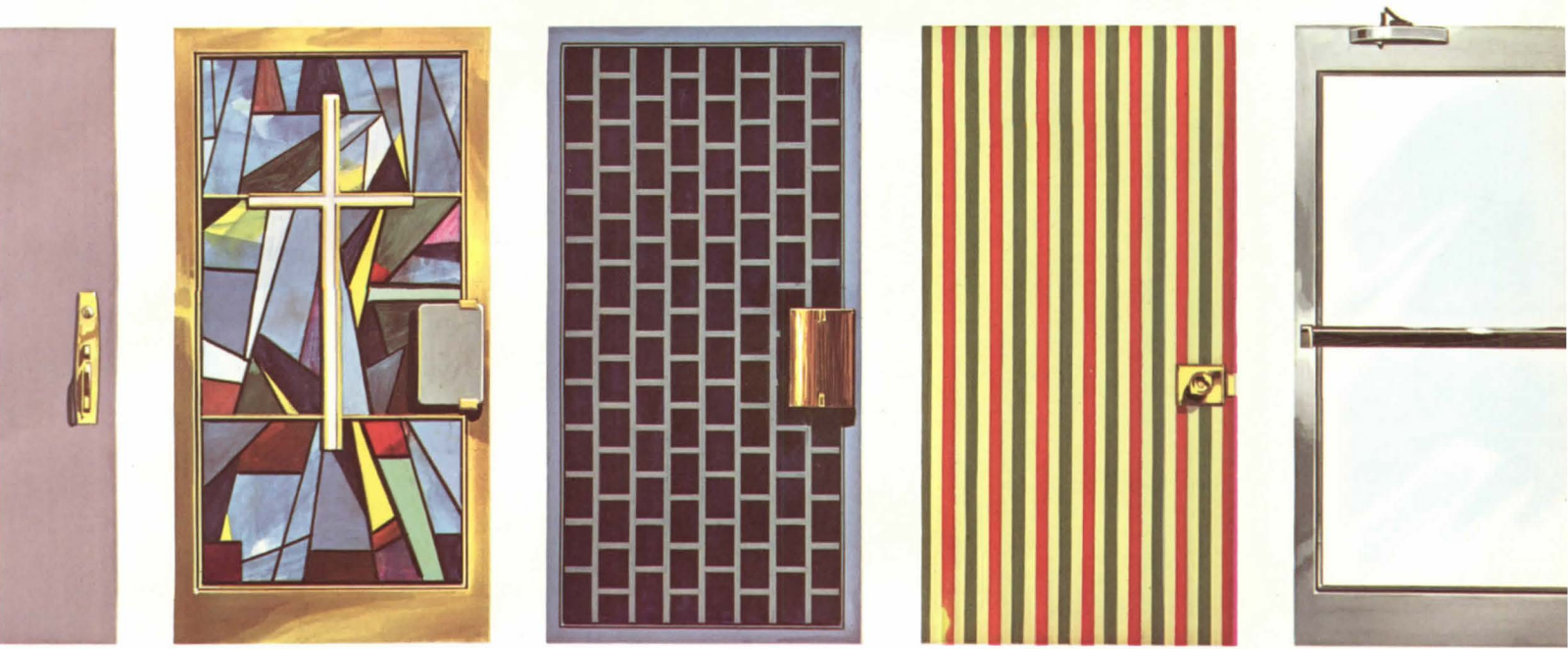


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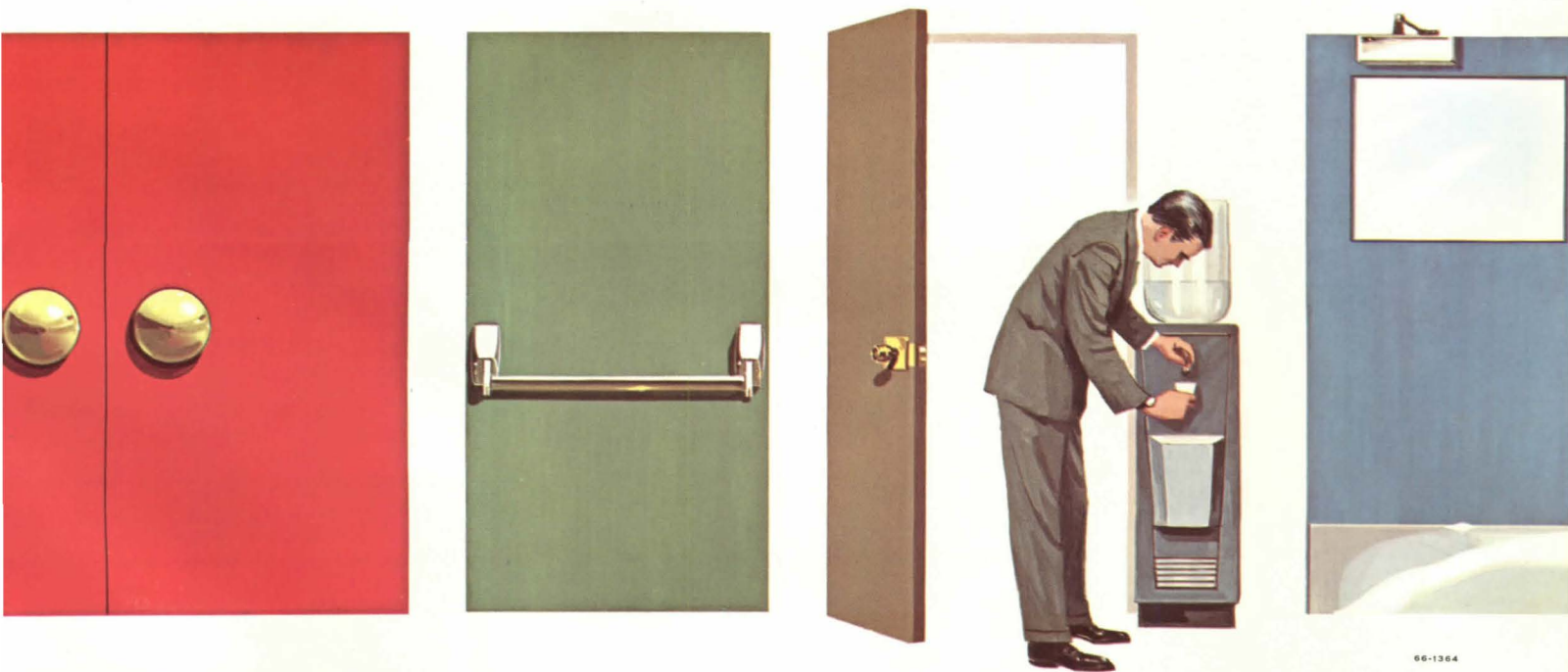
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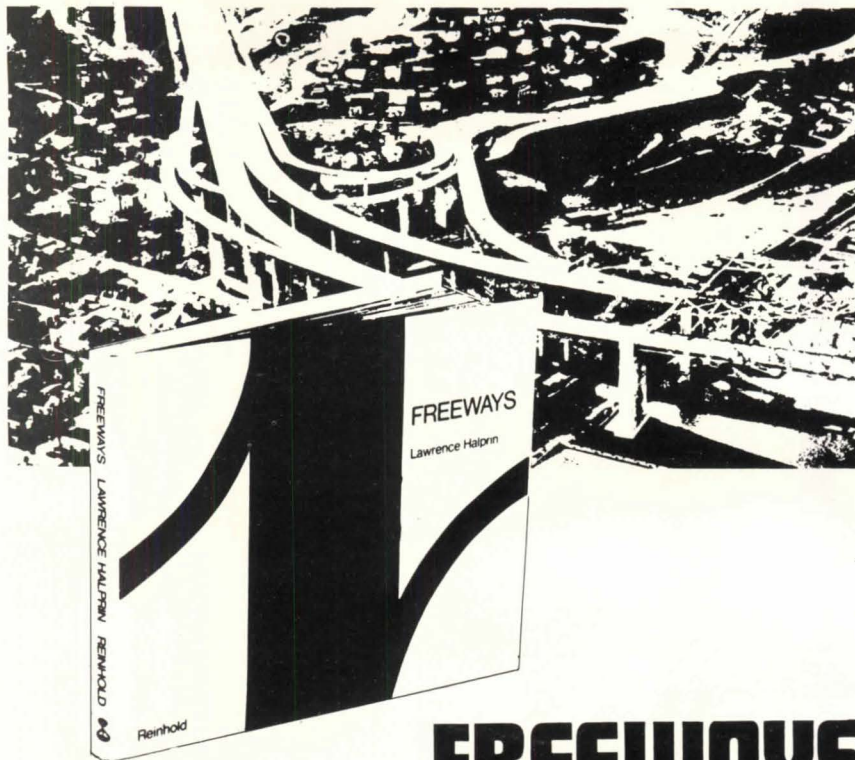


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"We tend to slide into cities today as if the encounter was not worthy of great theater."

"This city of the future need not imply any diminution of the amenities of urban living—if only we can recognize its potentials as well as its problems."

ABOUT THE AUTHOR: In recent years Lawrence Halprin and his staff have been involved in projects ranging from the design of freeways and rapid transit to university campus growth . . . several new cities designed from scratch (in California, Hawaii and Arizona) . . . civic redevelopment (Minneapolis, Akron, Kansas City, San Francisco) . . . and land development, urban plazas, parks and housing. A landscape architect who specializes in environmental planning, he was trained at Cornell, the University of Wisconsin, and Harvard, and in the office of Thomas Church. He opened his own office in San Francisco in 1949.

How can we make our cities more livable and more exciting? How can we provide for not only air, space and light, but emotional fulfillment as well? Lawrence Halprin examines these questions that are vital to all who live in and help design the components of cities — and comes up with answers that will inspire, enlighten, and even shock.

Cities, said the *Washington Star*, should be made available to every architect in the country. *Architectural Forum* called it one of the brightest examples of books about the potentials of urban design. In this wide-ranging book, Halprin discusses streets, street materials, street furniture, light, shopping, waterfronts, the skyline and the views from rooftops, the employment of trees, plantings, sculpture and water — even the "choreography" of movement in a city. He is concerned with the patterns of paving blocks — the sculptural qualities of playground climbers — advertising signs and benches and kiosks that enhance design. Without going into technicalities of zoning or "land use," he explores the ways that cities can be made esthetically more appealing and more fun.

"An eloquent plea not to throw away the potential of U.S. cities."—*Interiors*

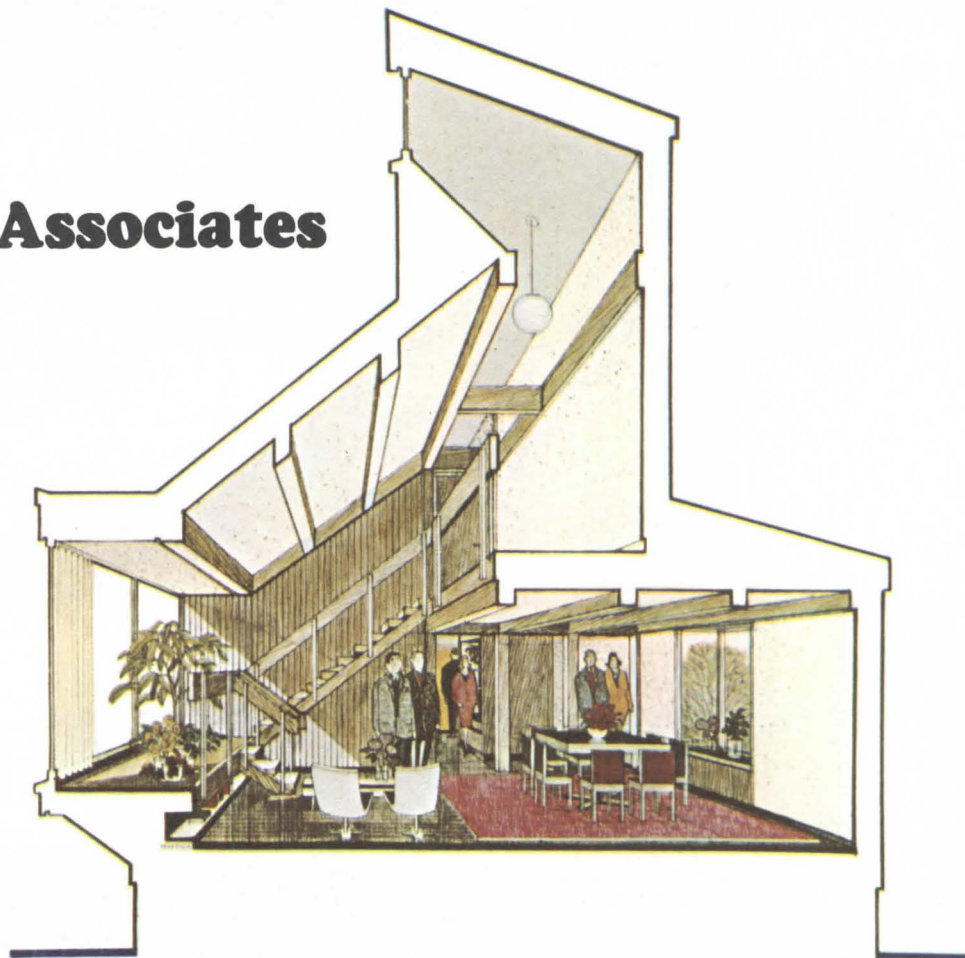
"A masterful abstraction, via the camera, of the excitement a city can afford."—*Journal of Housing*

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It was a project commissioned by the 1967 Cleveland Home and Flower Show and Cleveland Chapter of AIA to demonstrate how old homes in urban localities can be remodeled to attract new middle class residents as older persons depart.

A group of six homes on the near west side of Cleveland was selected—a neighborhood developed long before the automobile was

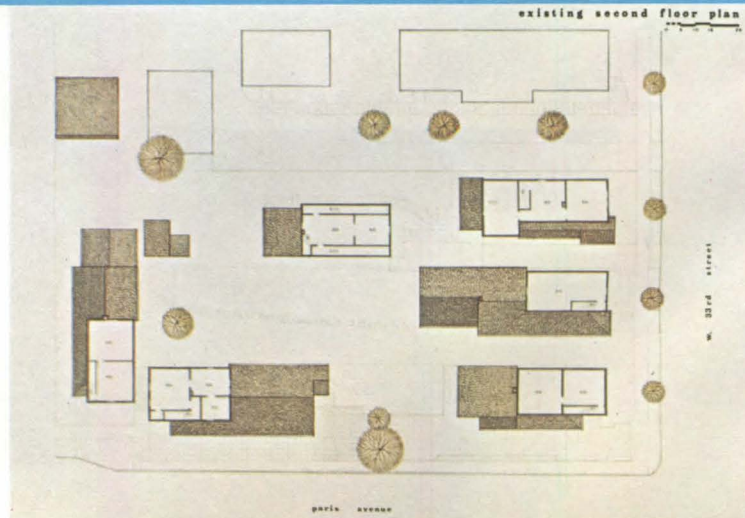
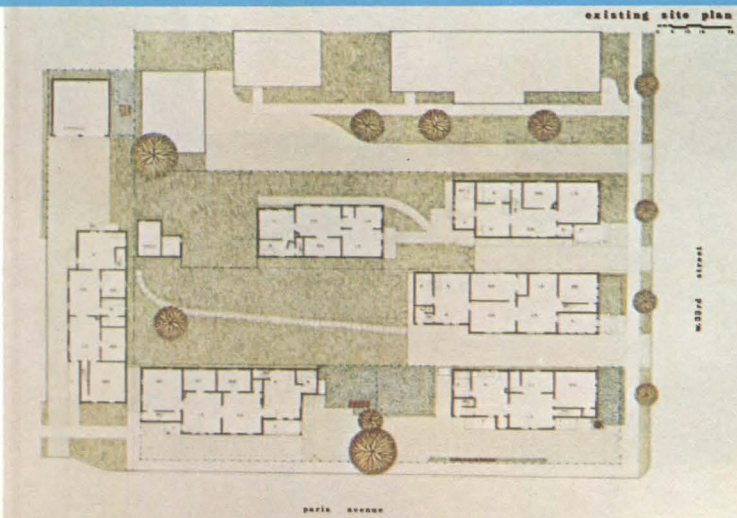
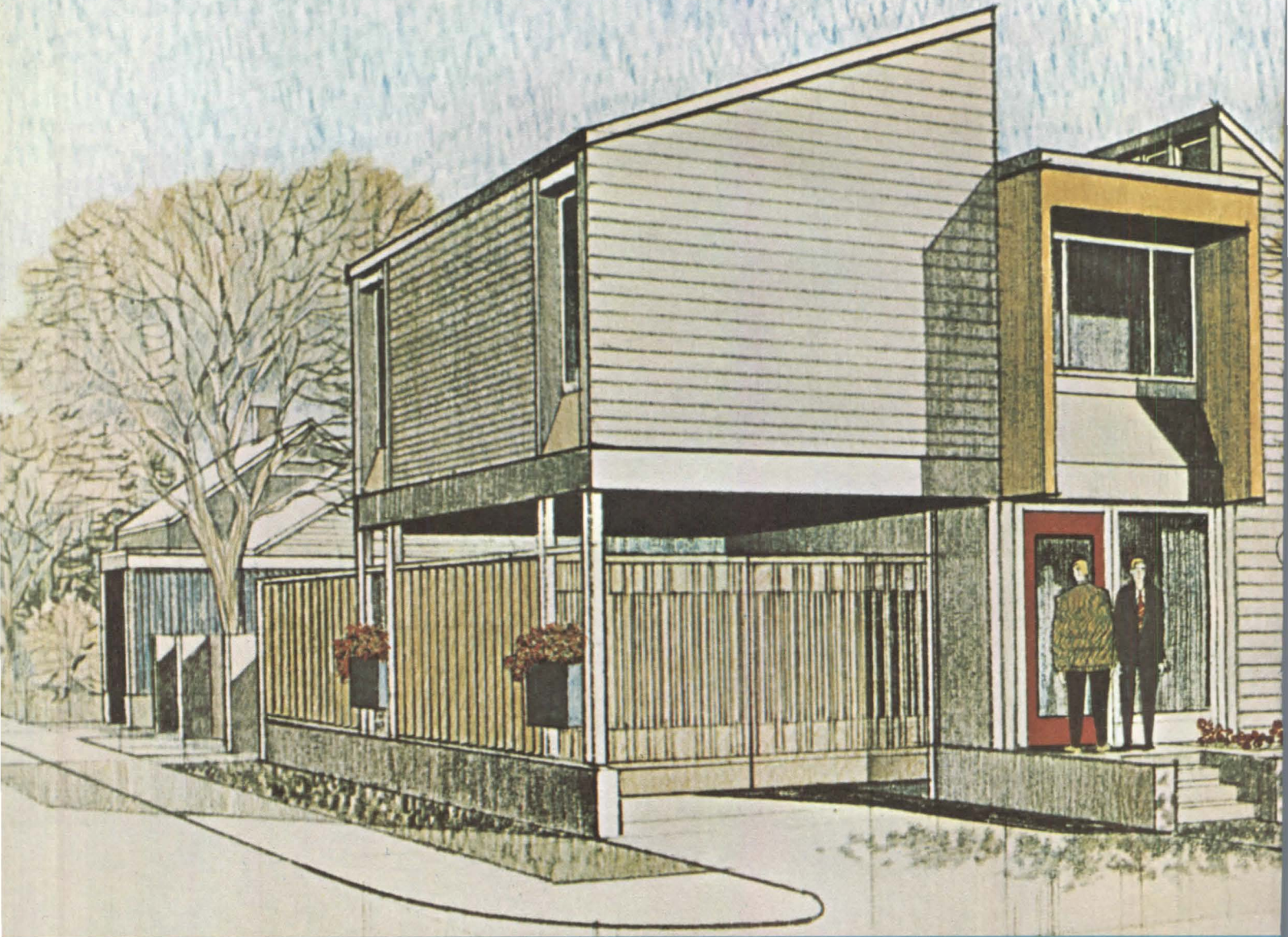




invented. But the aged houses were well maintained and worthy of renovation.

Three full-scale walk-through homes, plus three two-story facades of the homes as they would be remodeled, were constructed in the Cleveland Public Auditorium.

Norman Perttula, Director of Design for Dalton · Dalton Associates, Cleveland, revised the homes externally so that they surround a commons, facing in to each other as well as out to the street, because of



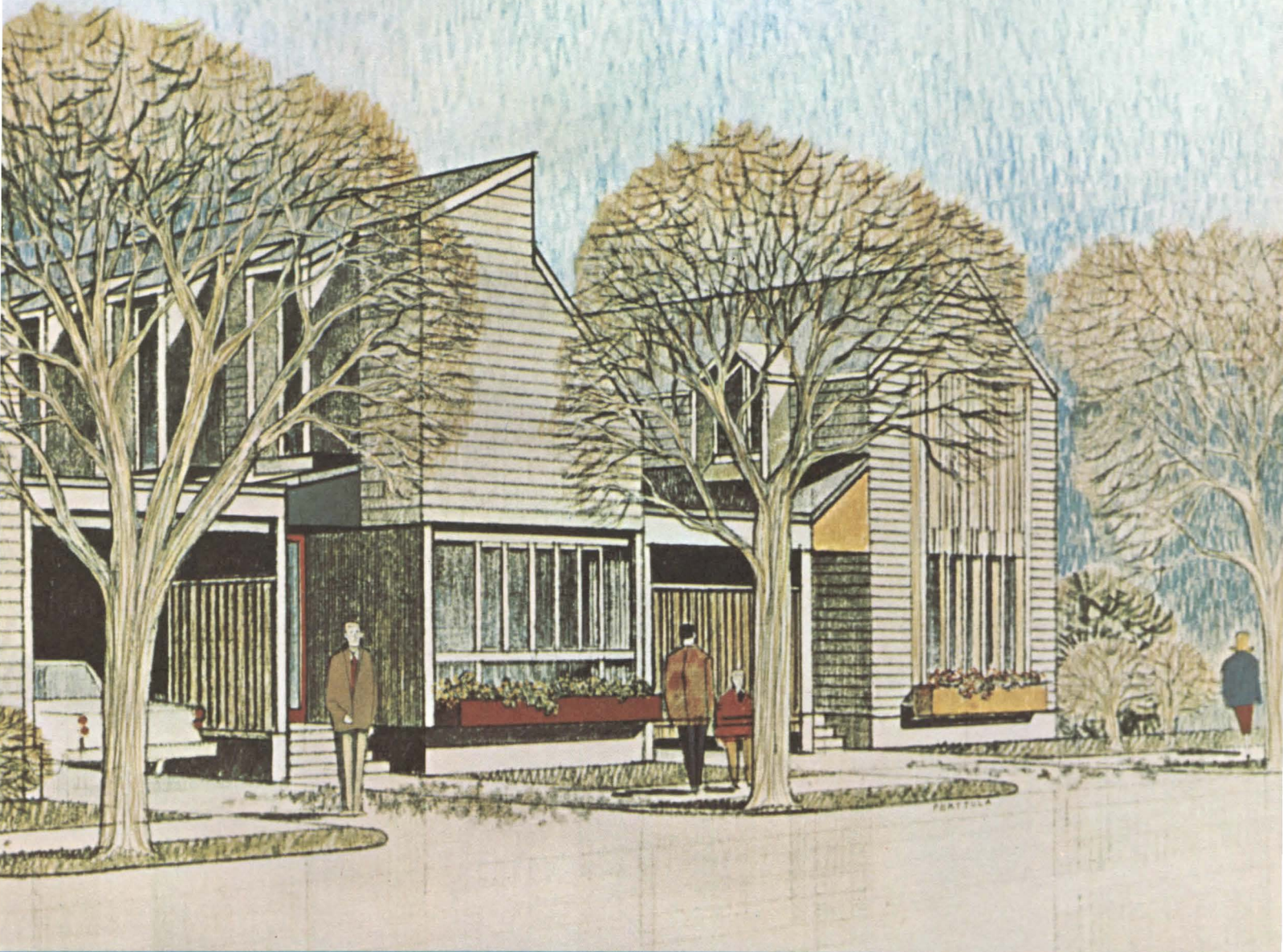
commercial and industrial zoning in the area.

Carpports and garden or patio space were provided in place of concrete driveways to provide more privacy for each home. Wherever possible, existing walls were kept, but the interiors were rearranged for pleasanter family living and to provide traffic patterns more compatible with today's mode of living. Glass was used generously to merge the rooms with the park-like commons and to make homes more contemporary. Thermopane[®] insulating glass or polished plate glass in large window

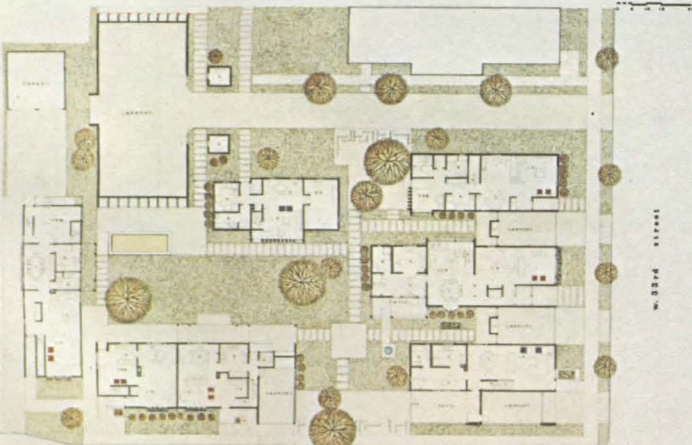
areas. Tempered plate glass in sliding patio doors. And single- or double-strength window glass in second-story or third-floor windows.

One of the walk-throughs had a dropped roof with a clerestory to provide more light in the home. This dwelling was redesigned to have four bedrooms instead of three.

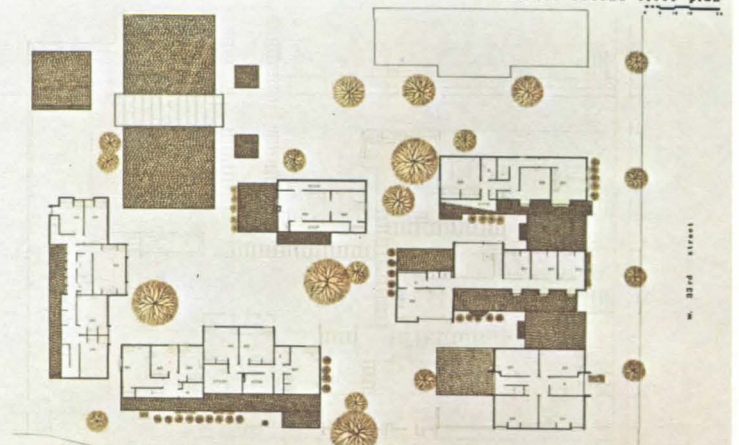
Another home, featuring a two-story beamed ceiling and an upstairs balcony, had three dormitory-style bedrooms and a spacious master bedroom.

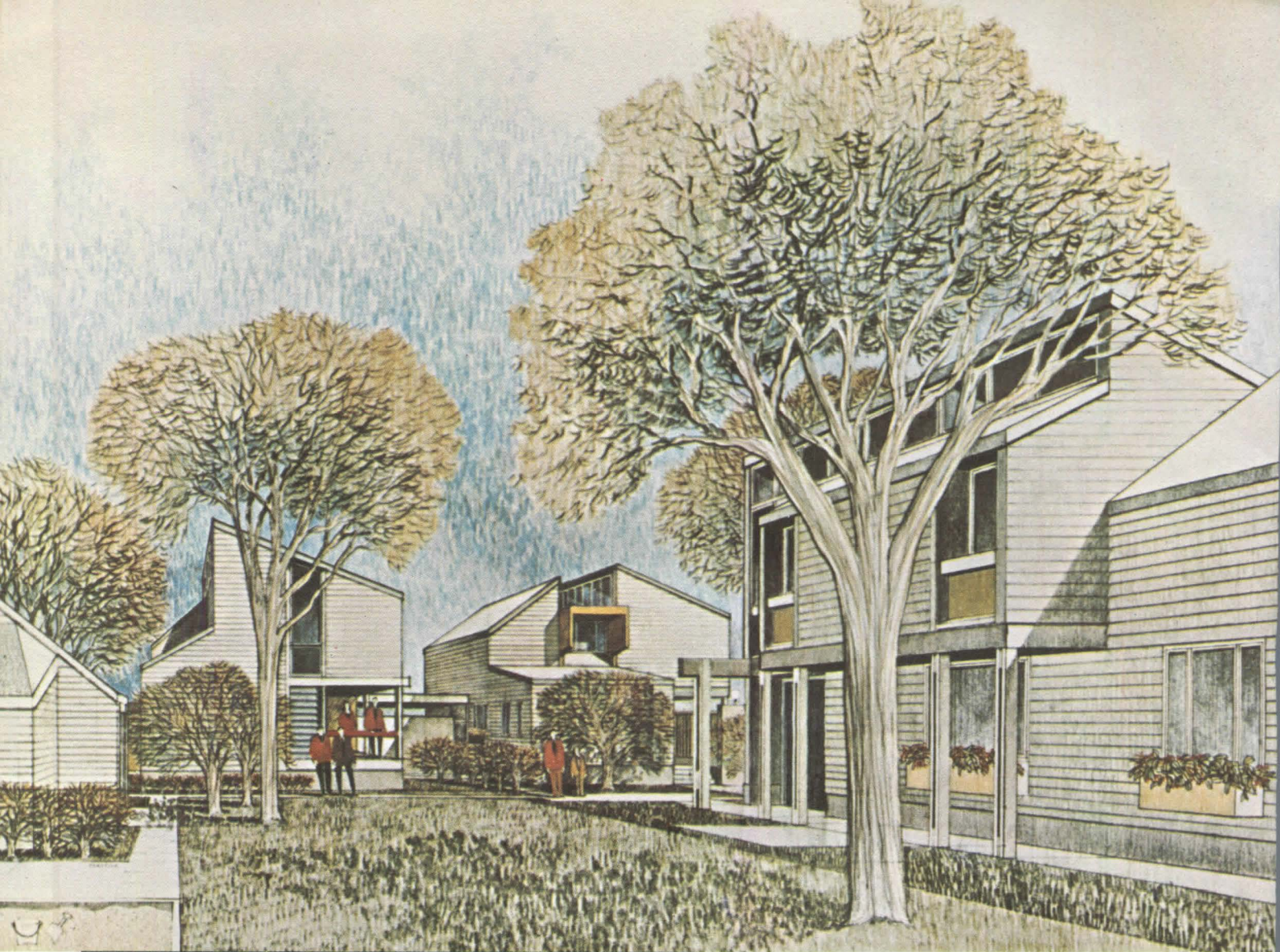


revised site plan



revised second floor plan





The third walk-through was a duplex remodeled from a single-family dwelling. Each suite featured three bedrooms.

In all cases, Mr. Perttula introduced more daylight and air simply by enlarging existing windows, adding patio sliding doors and sometimes a clerestory.

It all demonstrates the vast potential ordinary structures have for rebirth and extended usefulness. L·O·F makes a particular kind of glass for every purpose in Open World design. Refer to Sweet's Architectural File or call your L·O·F Glass Distributor listed under "Glass" in the Yellow Pages. Or write to Libbey·Owens·Ford Glass Company, 811 Madison Avenue, Toledo, Ohio 43624.

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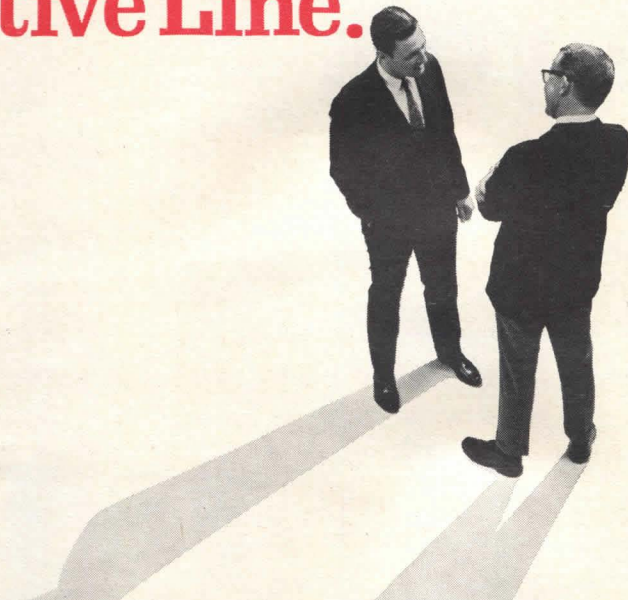
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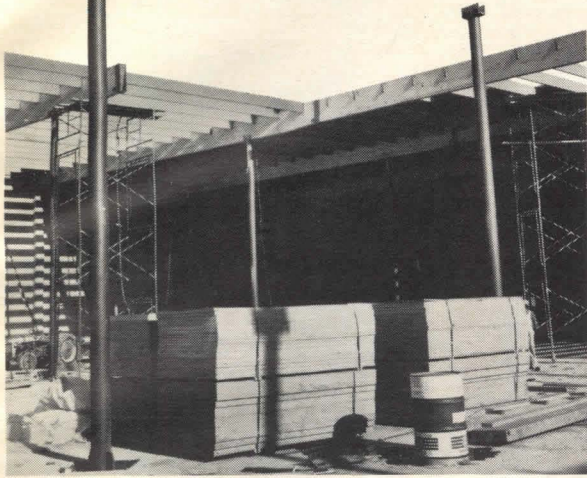
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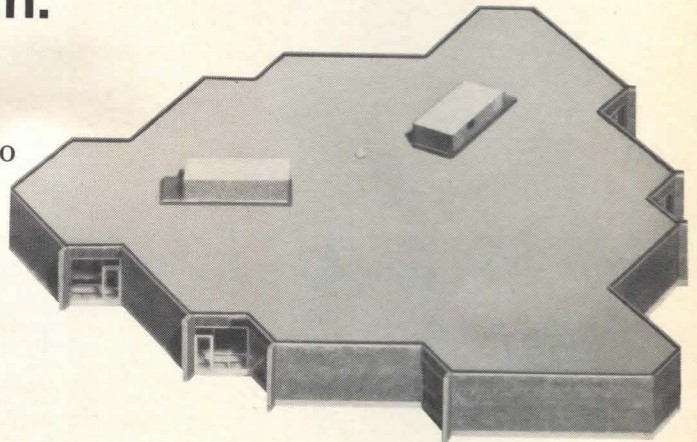
2. Client B wanted a roof that cost less than steel.



Switch to plywood from steel saved Owens-Illinois about \$21,000 at this Waco, Texas warehouse. Contractor says he's convinced it's the least costly roof system he's ever used. And San Francisco architect John Sardis says plywood's diaphragm strength solves the earthquake design problem, too.

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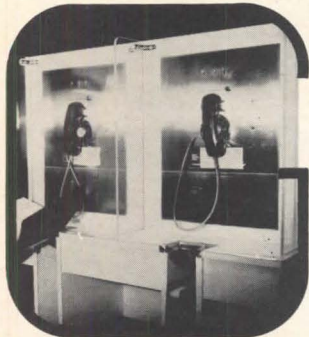
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Continued from page 203
with an eye for architecture. In Bullock's descriptions of the types of saw marks found on shingles, or siding, or flooring, and in photos of types of bricks and nails, anyone can pick up the kind of knowledge that heightens appreciation of older structures.

There is, of course, plenty for the professional, too. Chapters on archeology and historical research outline in some detail the stones to turn in painstakingly compiling the record of a building's structural history. The book's most insistent message is the need for careful scholarship in making and maintaining detailed notes, in both writing and drawings, of what a structure once was and how it has evolved.

A secondary message is really a warning: Beware of today's craftsmen. In the mid-20th Century, the term craftsman carries an interior non sequitur, and Bullock points out that any restoration work must be done with patience and constant vigilance to see that workmen do and re-do the job until it is correct. Nor is it just the workmanship that must be watched. The smallest detail, if allowed to stray from veracity, can botch a restoration. And, in this connection, Bullock maintains: "No single detail is more likely to damage an otherwise excellent job than the use of hardware which is wrong for the place or period."

For true aficionados, there are chapters on specifications and maintenance; an appendix gives, in some detail, instructions on the use of photogrammetry, preparation of measured drawings, and the restoration of masonry.

It will come as no surprise to anyone who dips into this handsomely illustrated volume, that Orin Bullock restores houses for pleasure as well as for profit. He lives in an 1888 restored house on Bolton Hill in Baltimore.

NOTICES

New Partners, Associates

WILLIAM A. GOULD & ASSOCIATES, Architects and City Planners, Cleveland, Ohio, announce that HARRY J. ROBERTS, WILLIAM H. WIECHELMAN, JR., and HARRY A. HENSHAW have been named associates in the firm.

KEENE/MACRAE ASSOCIATES, INC., Architects and Engineers, Elkhart, Ind. has named RICHARD PAUL MILLER a partner. LAWRIE & GREEN, Architects, Harrisburg, Pa. announce the partnership of J. HARLAN LUCAS.

CLINTON MARR, Architect, Riverside, Calif., has named LEE TRACY and RICHARD P. FRICK associates.

Continued on page 228

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Probably no comparable architectural element has been so widely utilized in significant contemporary design as the traditional mansard concept. This is, of course, a striking example of the manner in which "we make out of the very old the very new" (to borrow a descriptive phrase which the late Frank Lloyd Wright once applied to Terne itself). And wherever mansard fascia is employed, the unique functional characteristics of Follansbee Terne, along with its notable affinity for both color and form, are available at relatively moderate cost.

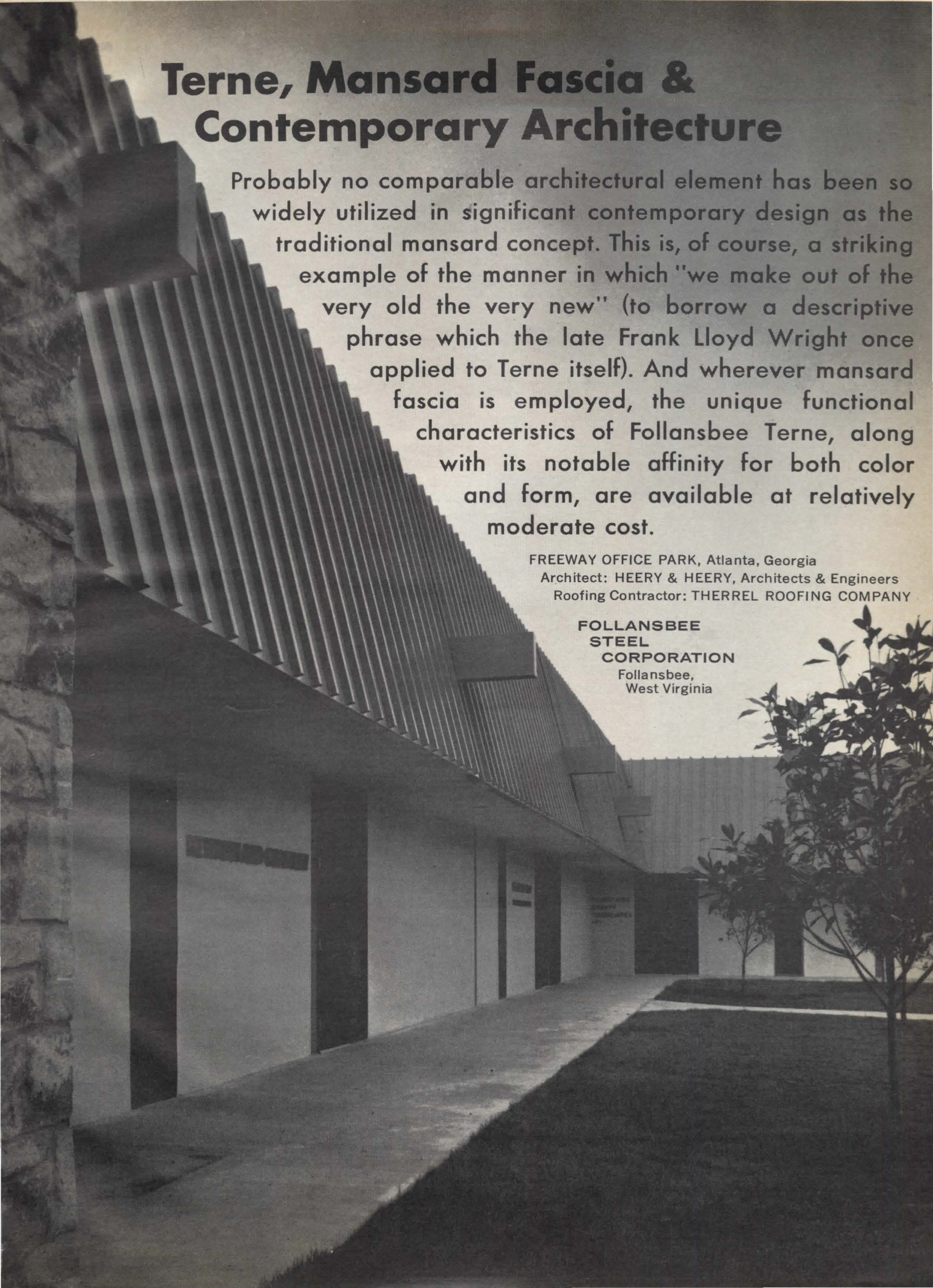
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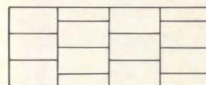
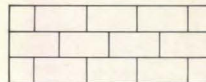
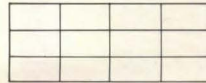
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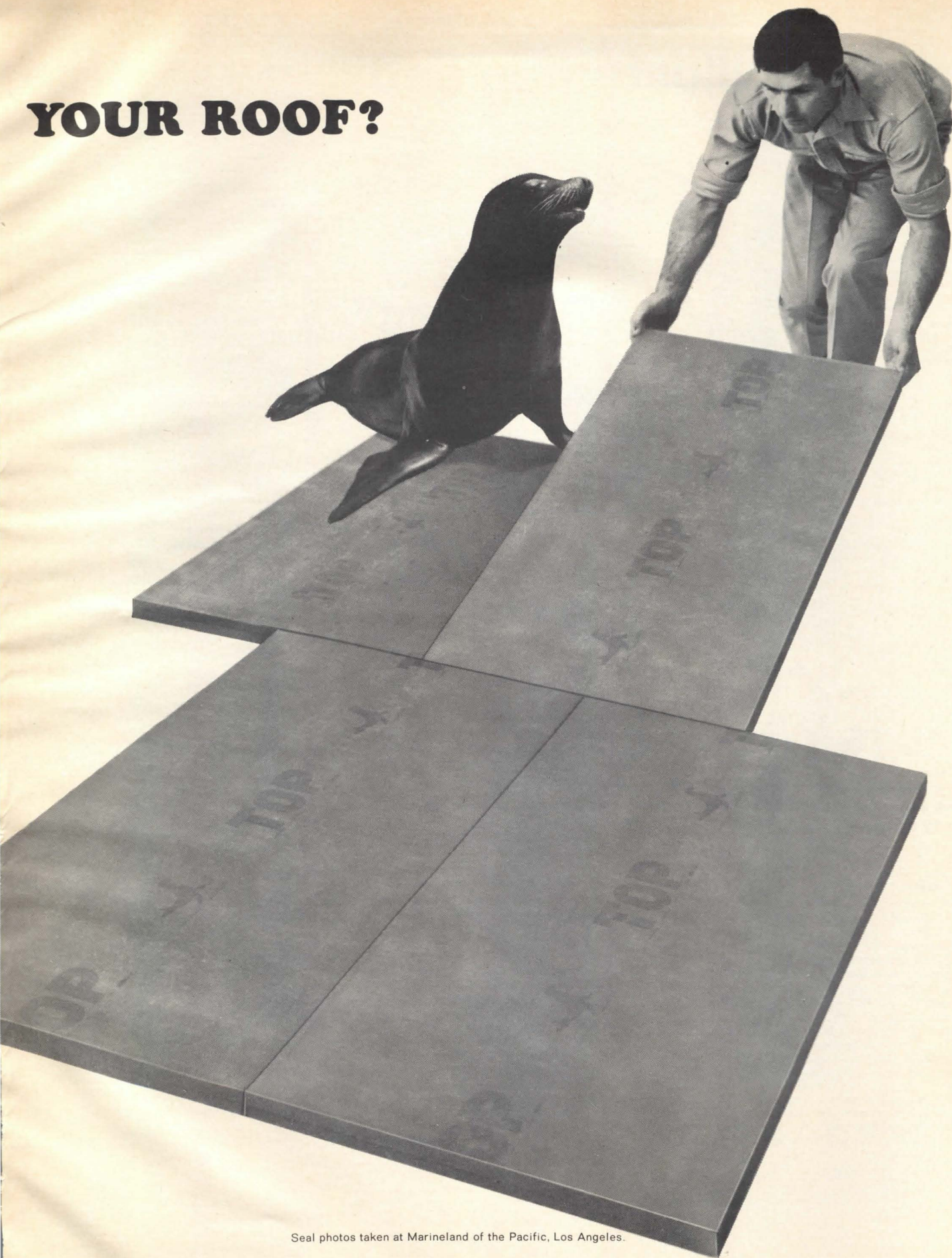


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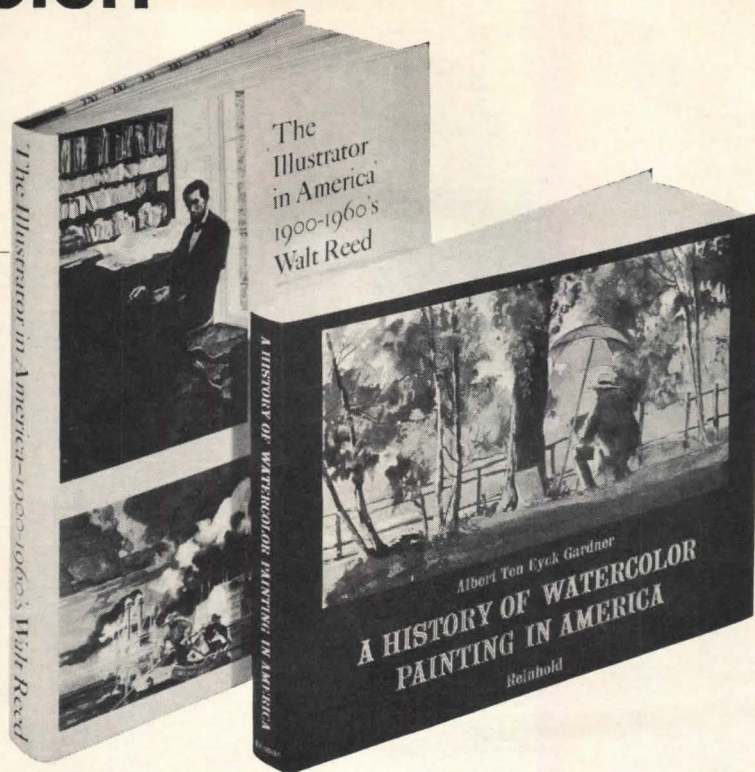
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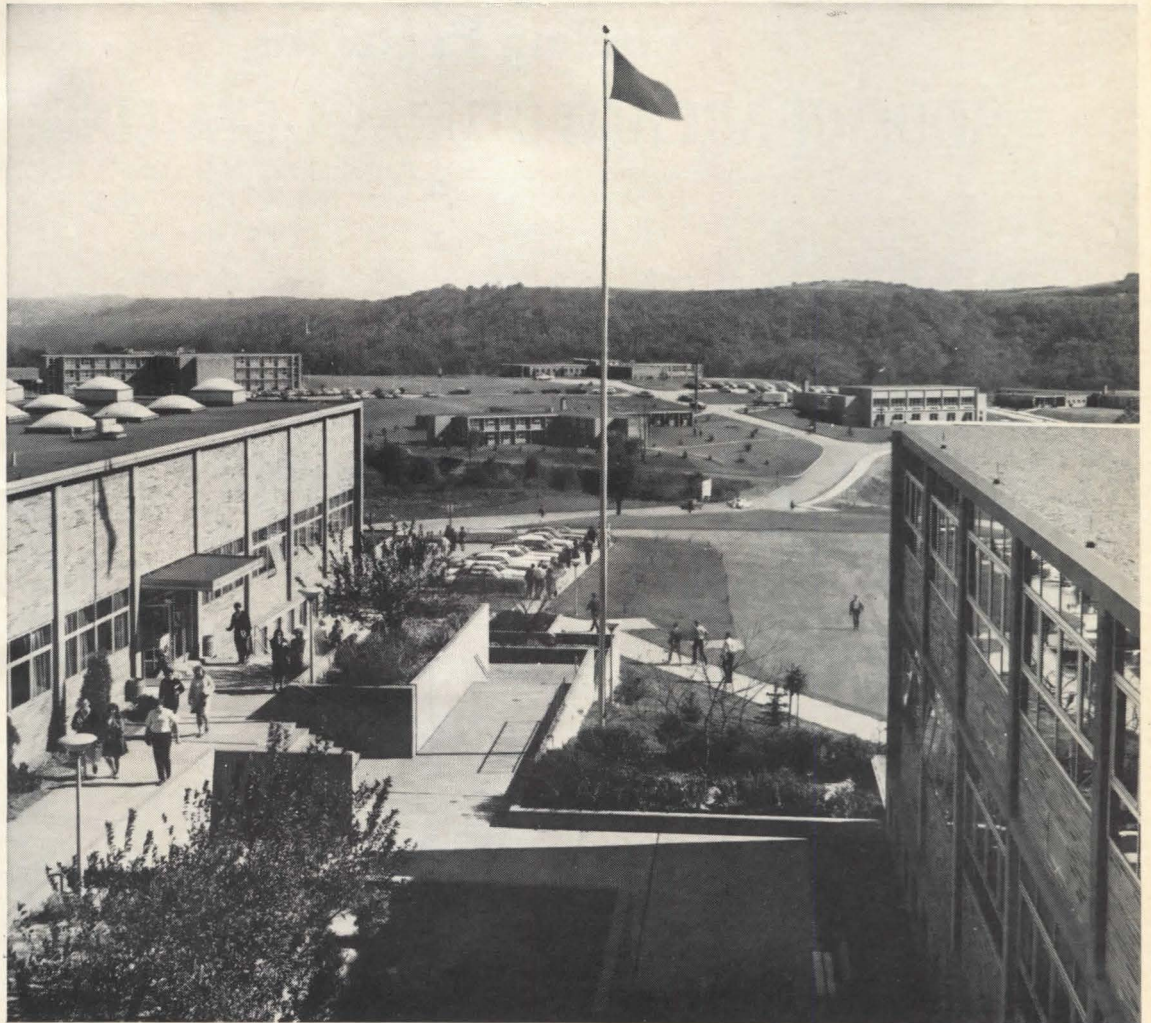
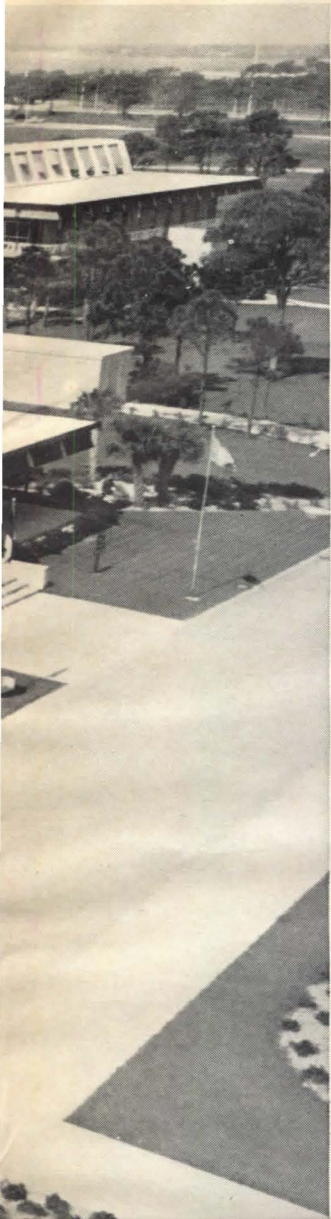
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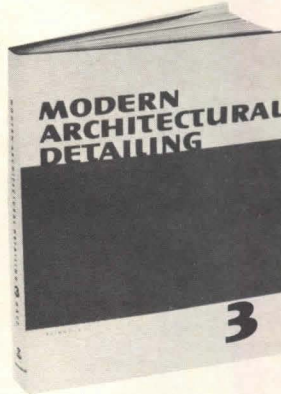
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Section two, *Unity of Detail*, deals exhaustively with seven building projects that are notable for their excellent design: A church and a hotel in Germany; Office blocks in Holland and Switzerland; An English University; A Swiss School; and the Italian Institute for Export Trade.

Section three, *Details of Interiors and Fittings*, considers wall decoration and provides examples of various types of wood paneling, concrete reliefs, and internal surfaces which have been treated with plastic, fiber, and quartz. The pages illustrating the Teichert "Printer" process are especially interesting. The remainder of this section covers exhibition details of the Swiss country exhibition of 1964.

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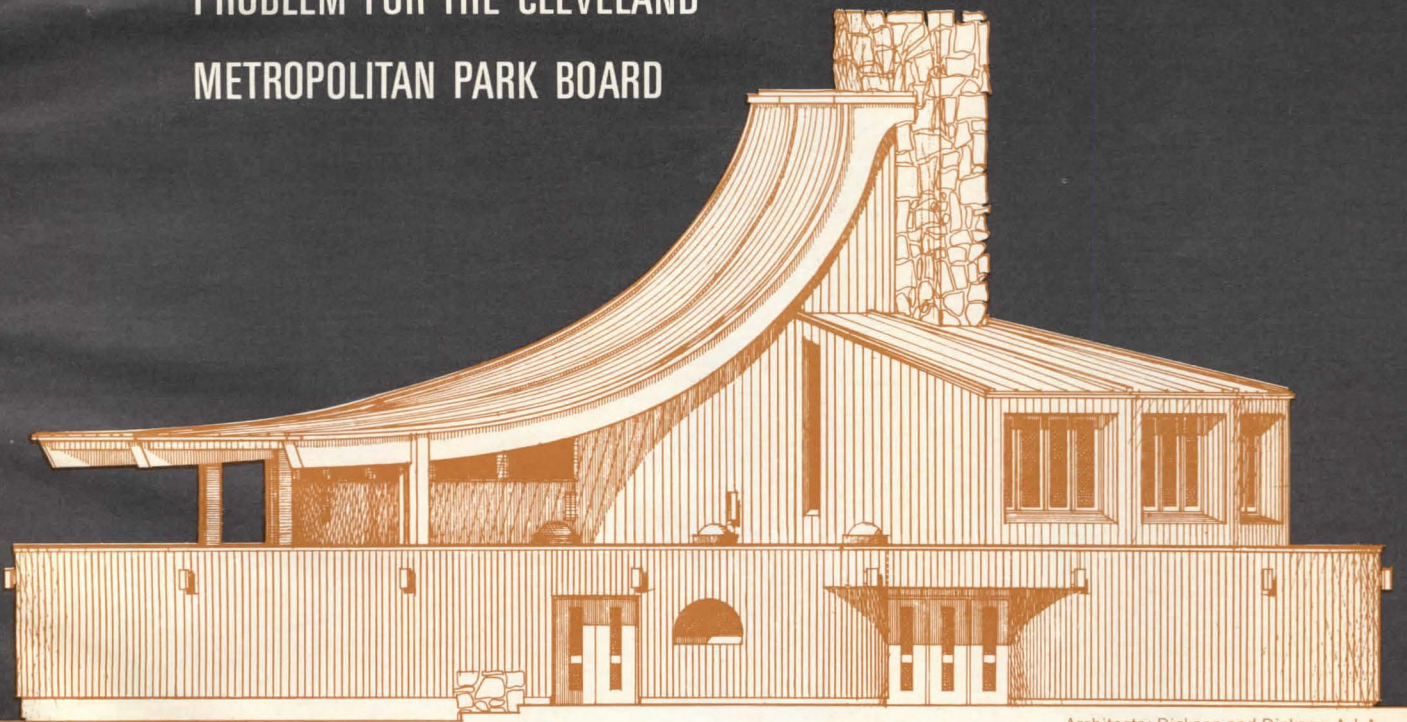
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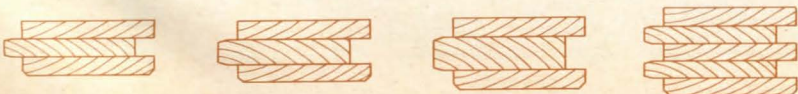
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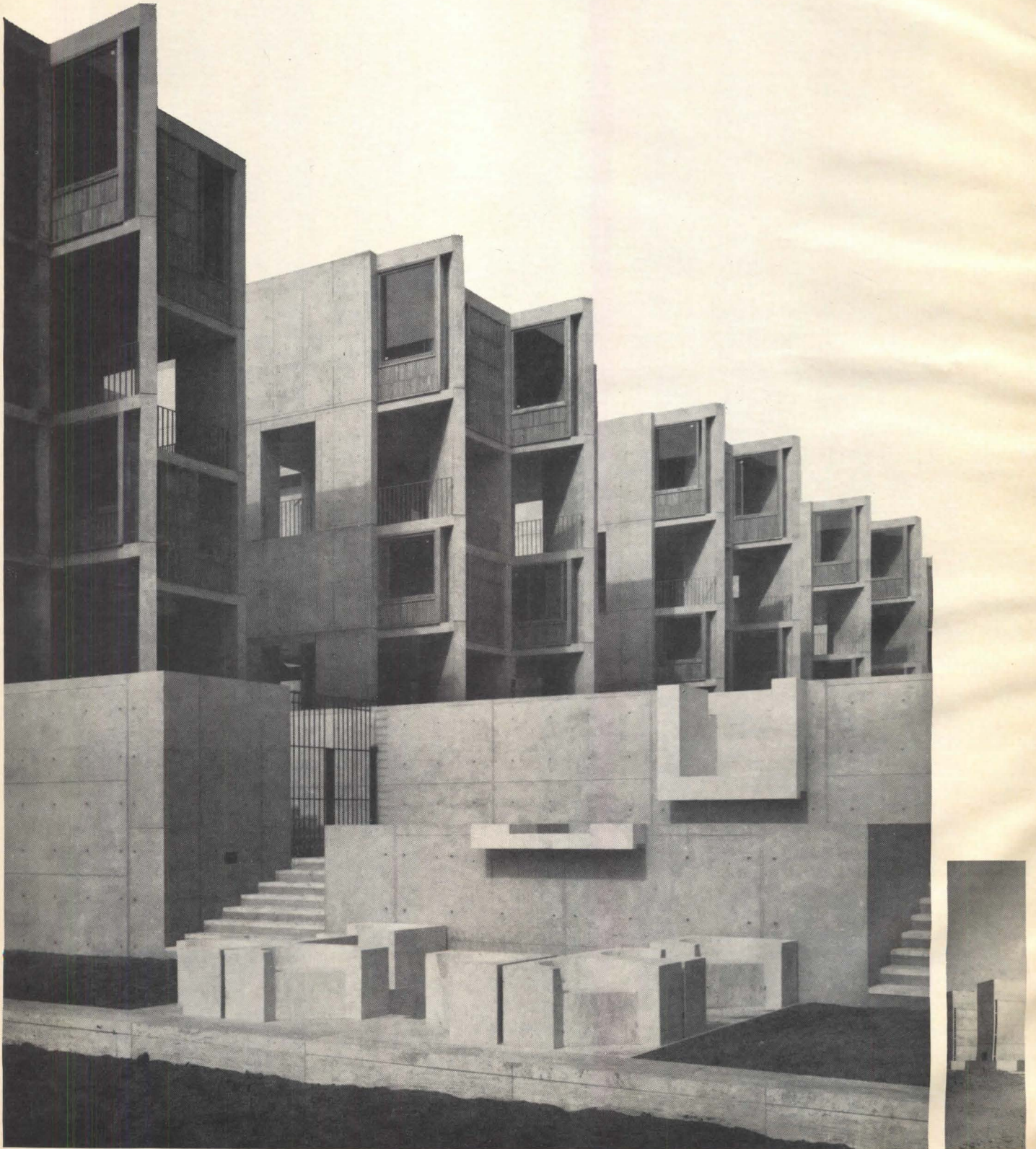
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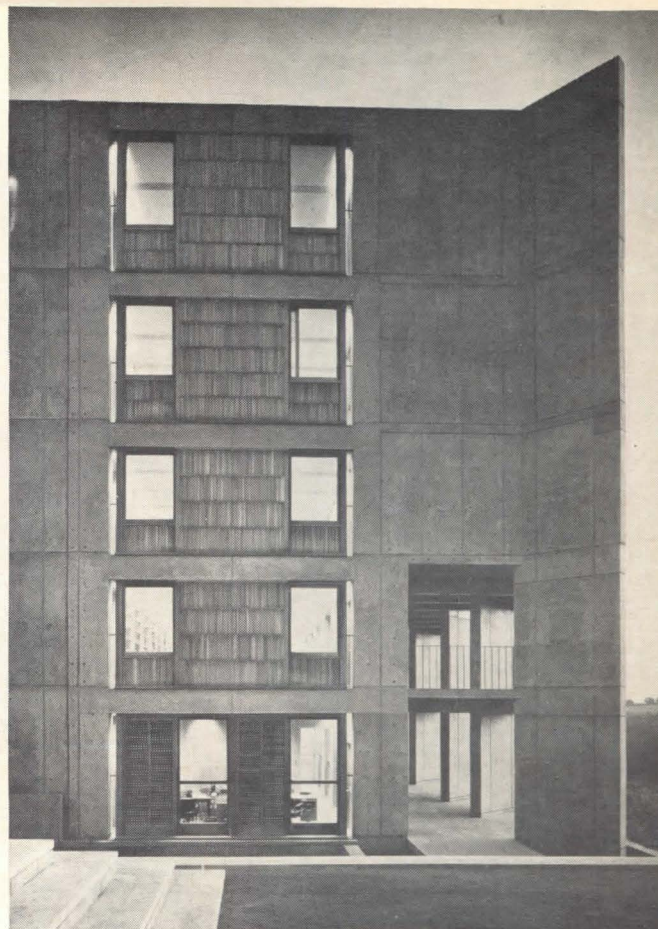
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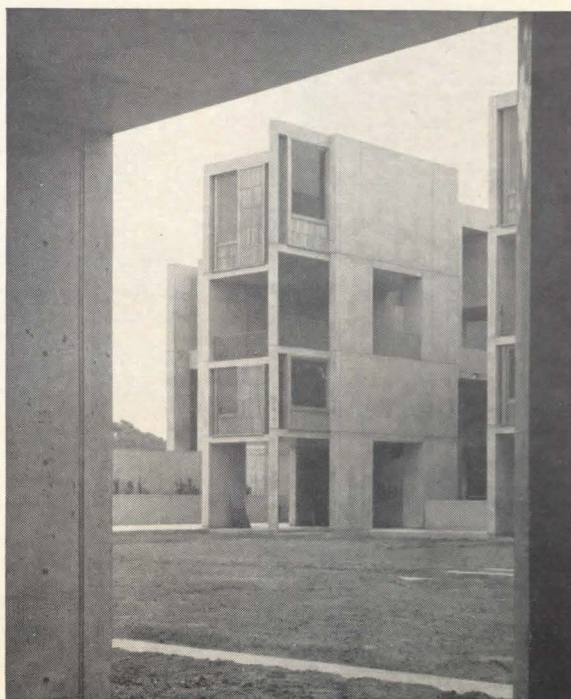
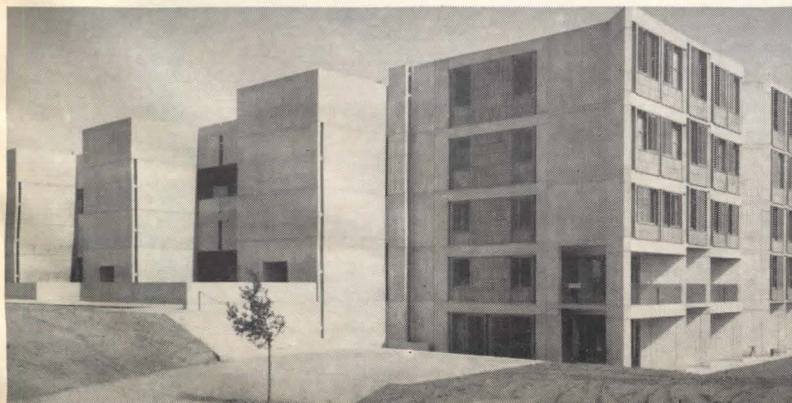
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Salk Institute for Biological Studies, La Jolla, California. Architect: Louis I. Kahn; Structural Consultant: Dr. August E. Komendant; General Contractor: George A. Fuller Co., Los Angeles; POZZOLITH Ready Mixed Concrete: San Diego Consolidated Rock Products.

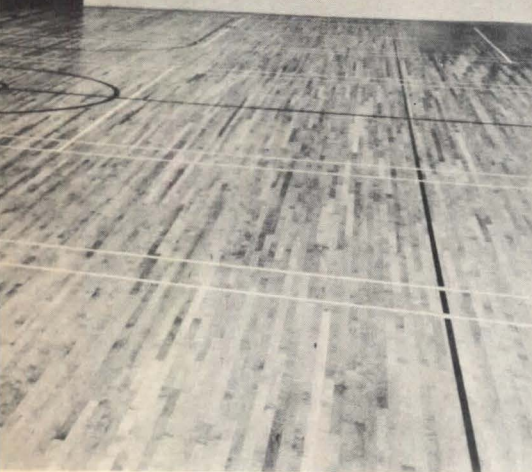


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228 Book Reviews

Continued from page 216

SCHAUDER & MARTIN, Architects, Toledo, Ohio, announce that ROBERT FESSLER has become an associate in the firm.

Elections, Appointments

B.H. BACKLUND & ASSOCIATES, INC., Omaha, Nebr. announce the election of RALPH H. TAYLOR to vice-president for architecture.

DANIEL, MANN, JOHNSON & MENDENHALL, Architects, Planners, and Engineers, Los Angeles, Calif., have made SAMUEL B. NELSON a vice-president.

VICTOR GRUEN ASSOCIATES, Architects, Los Angeles, Calif., announce that PETER KOLTNOW has joined the firm as project director.

ISD INCORPORATED, Interior Designers, Chicago, Ill., has made JOHN A. DZIUBA and LESLIE KICHIN vice-presidents.

ALBERT KAHN ASSOCIATED ARCHITECTS & ENGINEERS, Detroit, Mich., have elected EDGAR E. PARKS and JAY S. PETTITT, JR., vice-presidents.

LOCKWOOD GREENE ENGINEERS, INC., New York, N.Y. announce the election of RICHARD L. LONG, ROBERT B. LINCOLN, THOMAS A. FRIDY, JR., and JOHN M. EVANS to the board of directors.

JOHN B. PARKIN ASSOCIATES, Architects and Engineers, Los Angeles, Calif., have appointed LLOYD S. LAITY vice-president in charge of design.

SAMTON ASSOCIATES, Architects, New York, N.Y., announce that W. WILSON JONES and DANIEL BRESLAW have become associates in the firm, and that PETER SAMTON has become a consultant with the firm of GRUZEN & PARTNERS. He will remain in charge of residential work for Samton Associates.

MILTON M. SCHWARTZ & ASSOCIATES, Chicago, Ill., have named NEIL P. FRANKEL vice-president and director of design.

Name Changes

CONKLIN & ROSSANT, Architects, New York, N.Y., upon the resignation of JULIAN H. WHITTLESEY. Formerly, WHITTLESEY, CONKLIN & ROSSANT.

GRUZEN & PARTNERS, Architects, Planners, Engineers, New York, N.Y., upon the admission of six new partners: ROLLAND D. THOMPSON, RICHARD F. ROSENTHAL, PETER SAMTON, NORVAL WHITE, JULIAN H. WHITTLESEY, and WILLIAM D. WILSON. Formerly, KELLY & GRUZEN.

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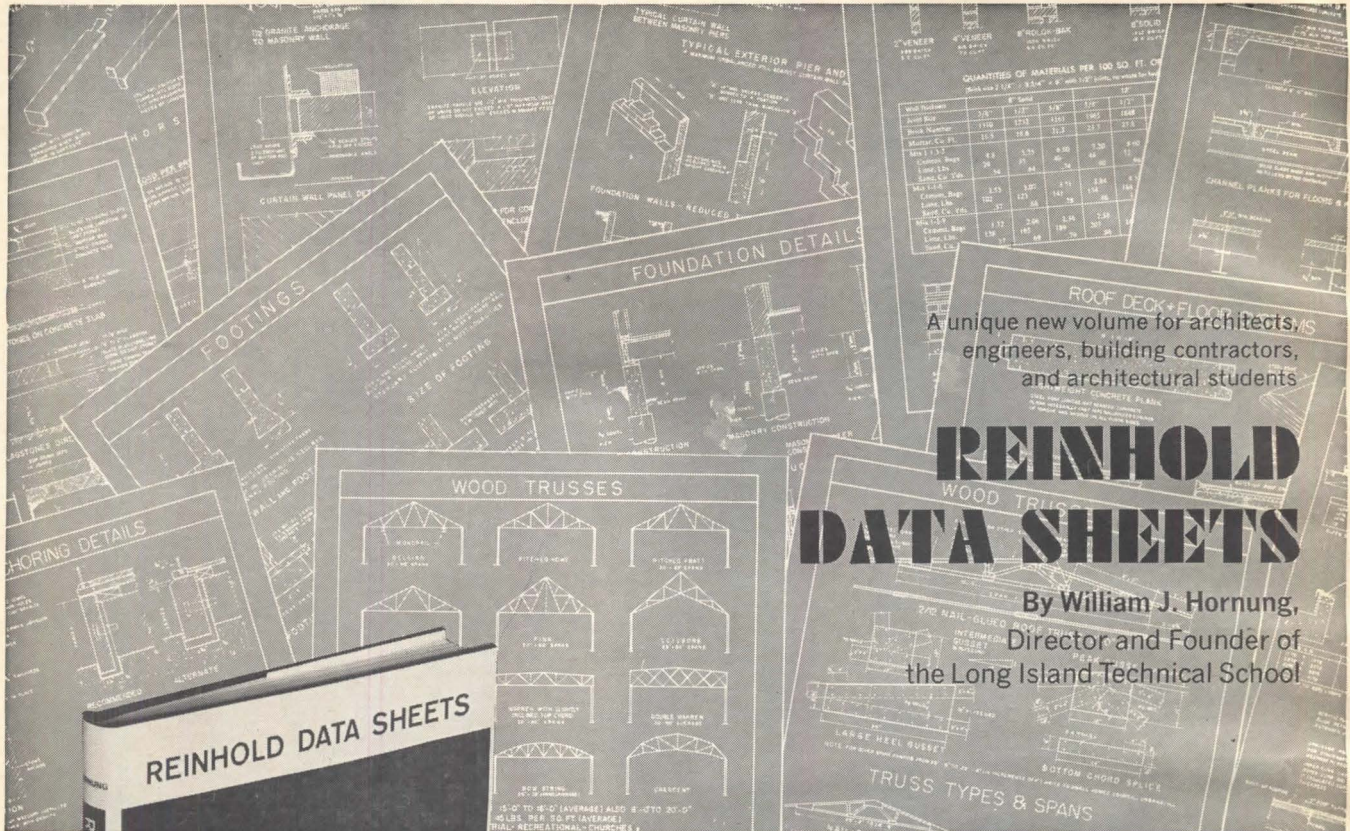


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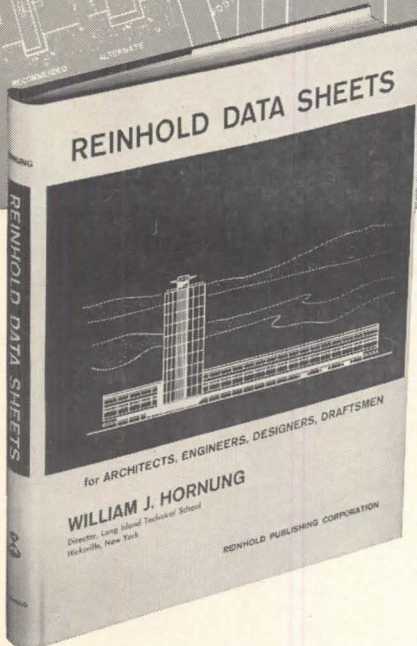
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The arrangement of the subject matter is distinguished by the fact that where materials in a certain construction system have been shown in detail, the methods of estimating quantities of these materials have been included. Questions and answers pertaining to mechanical and electrical equipment of buildings have been added for the benefit of those preparing for the Registered Architect's examination.

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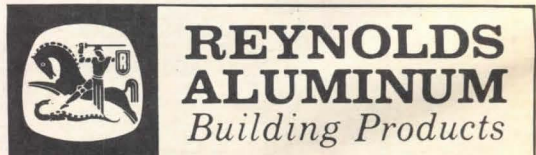
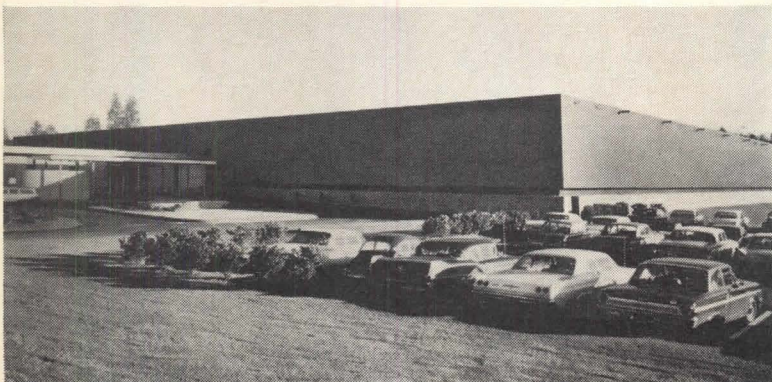
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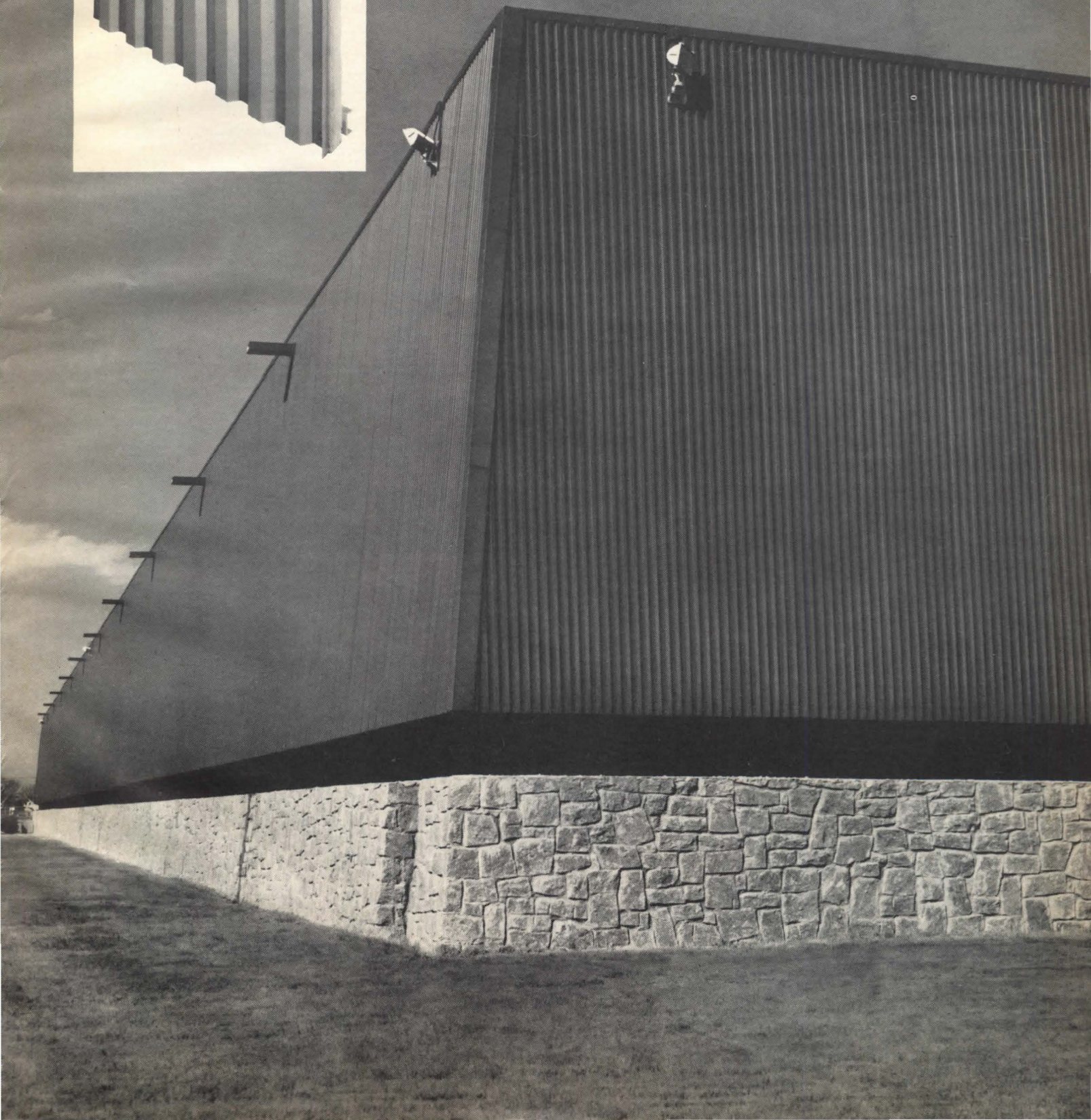
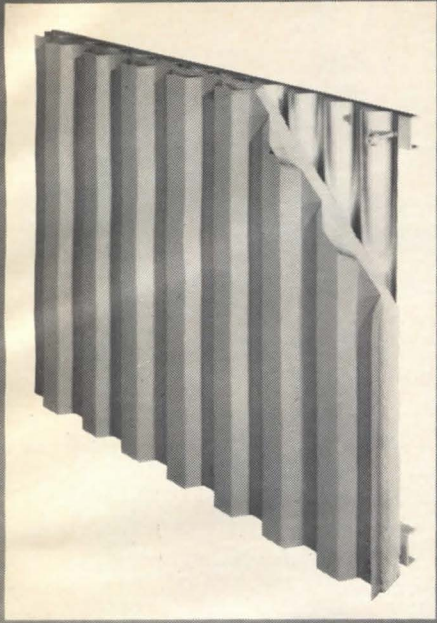
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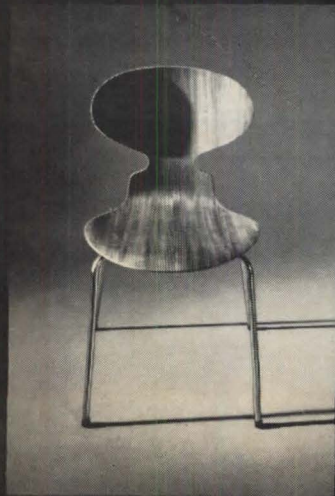
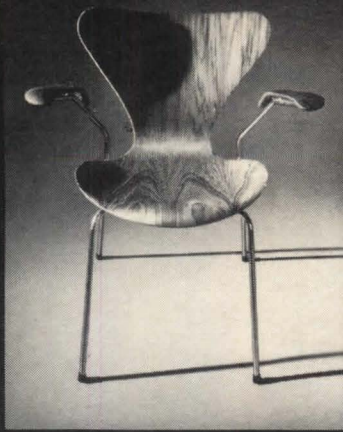




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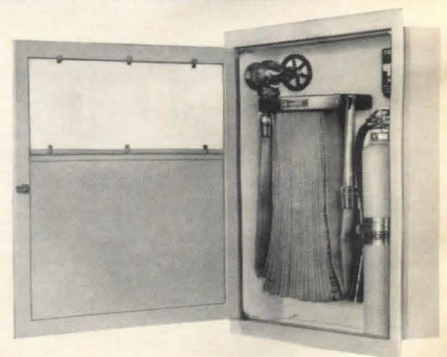
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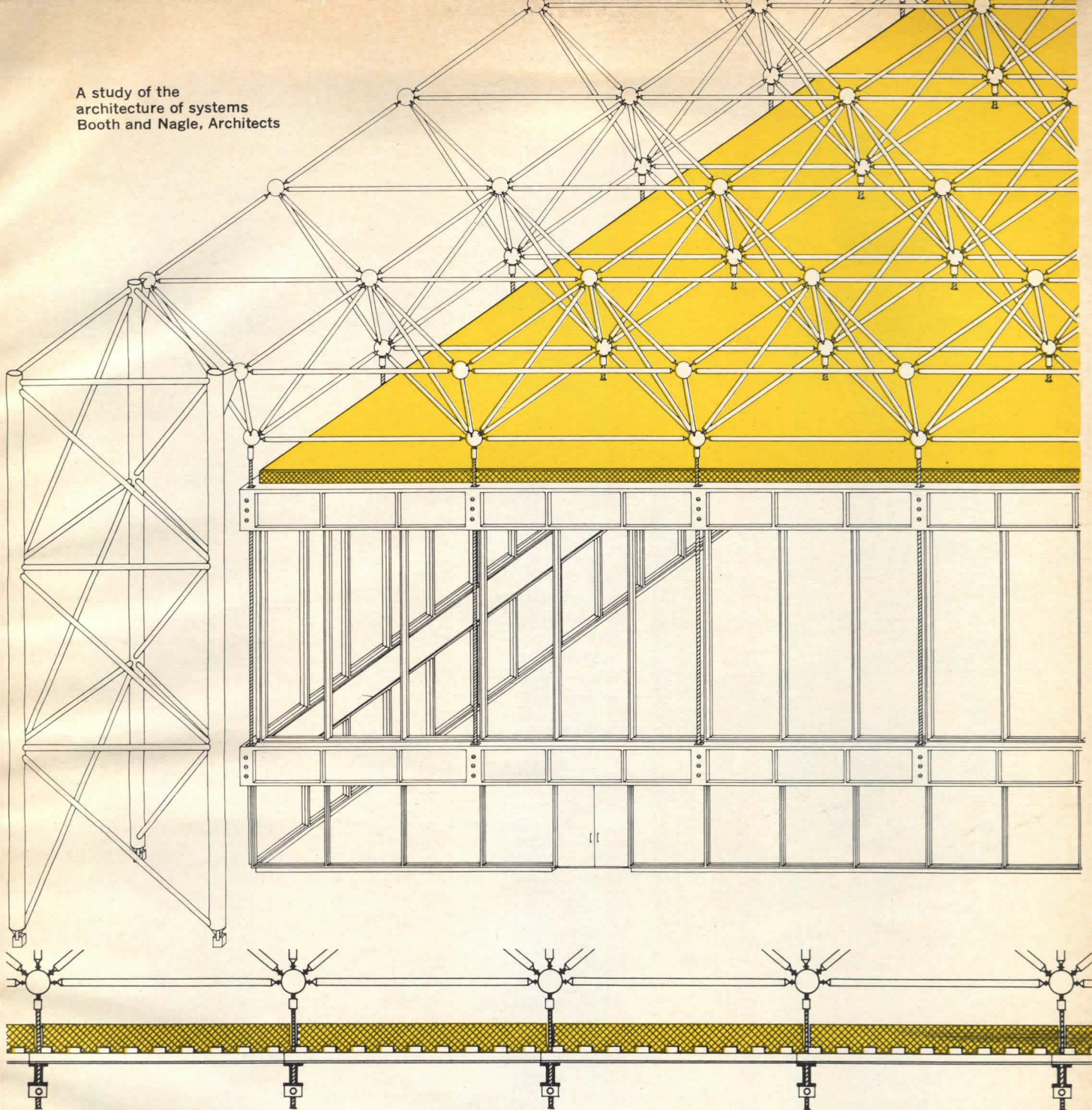
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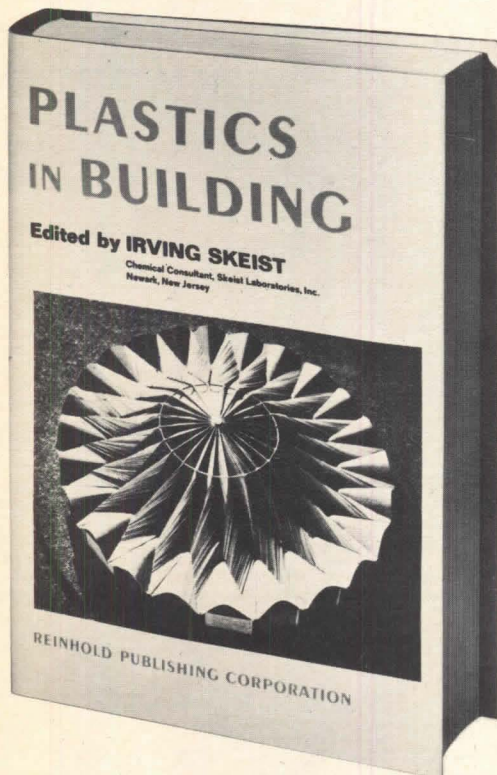
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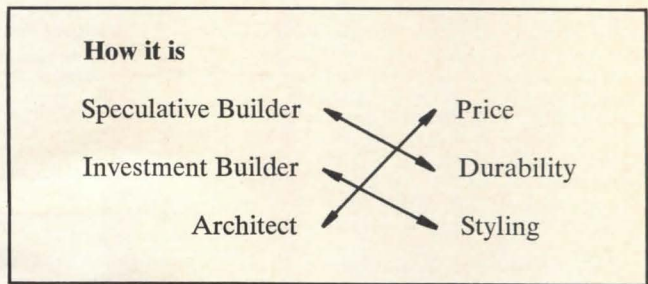
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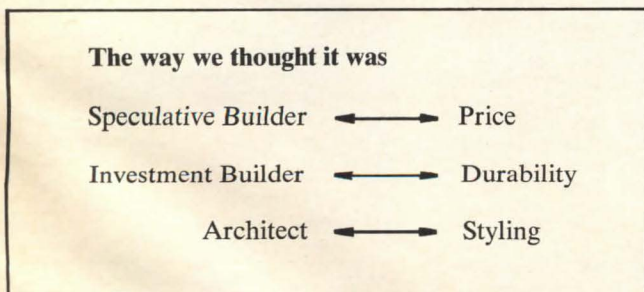
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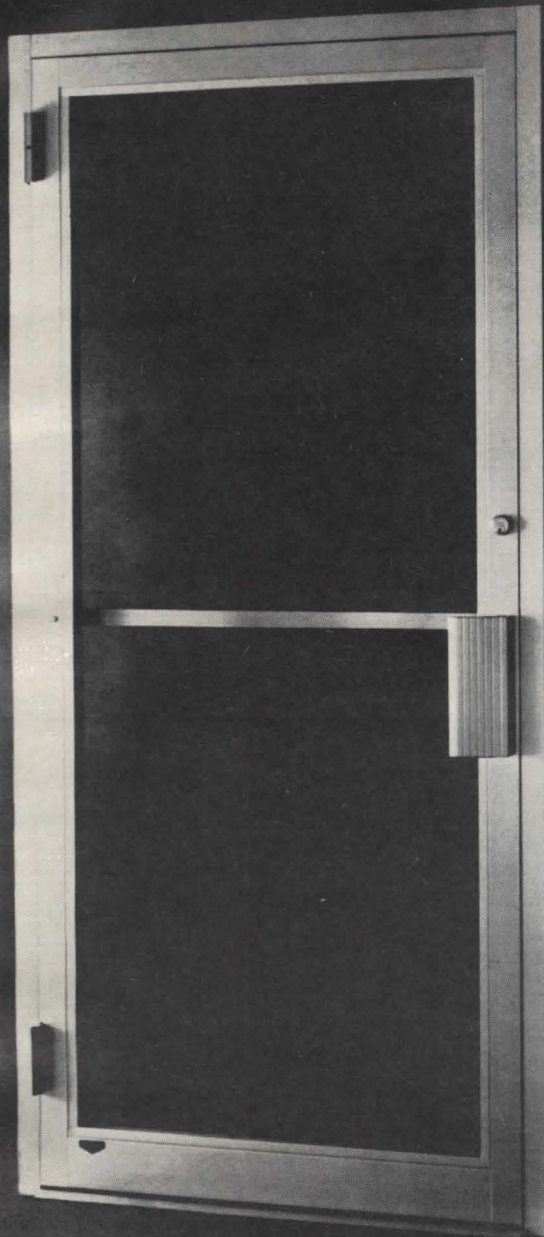
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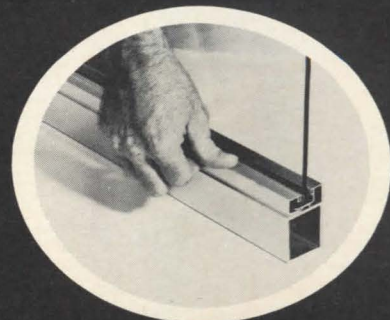
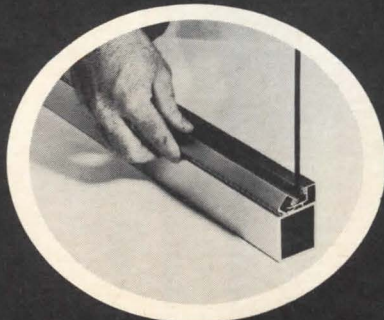


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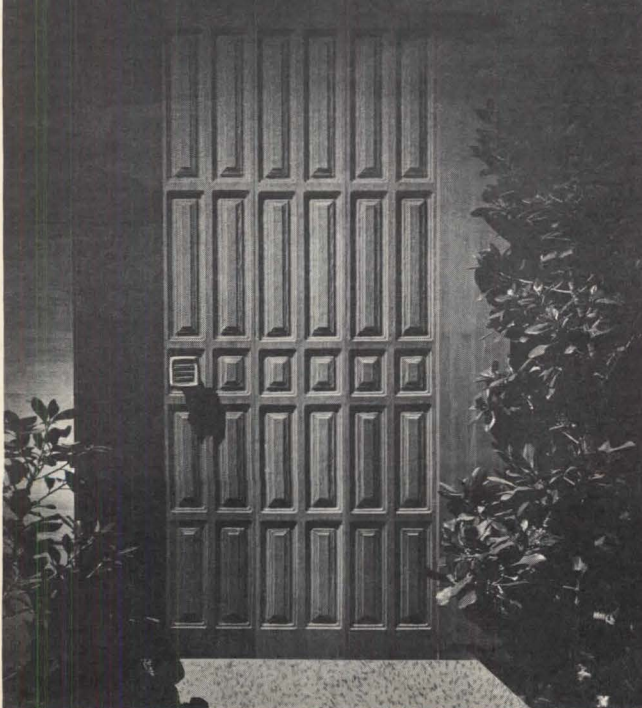
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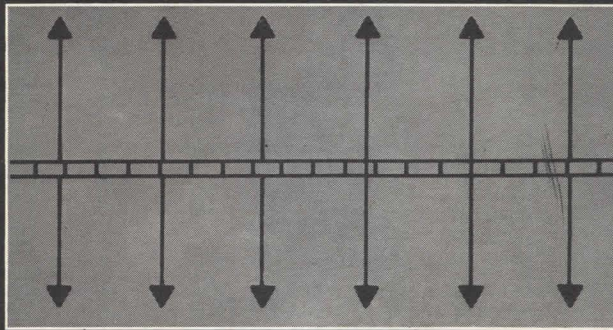
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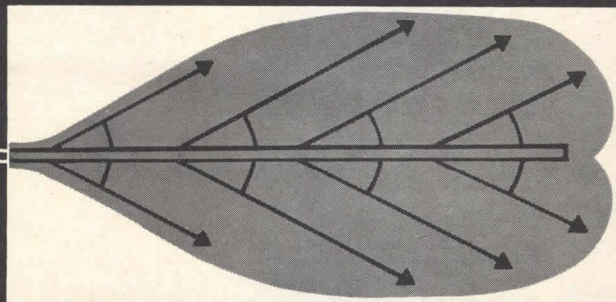


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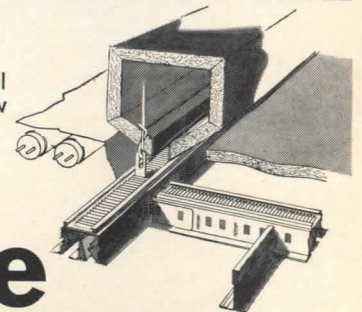
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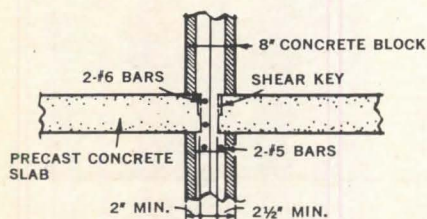
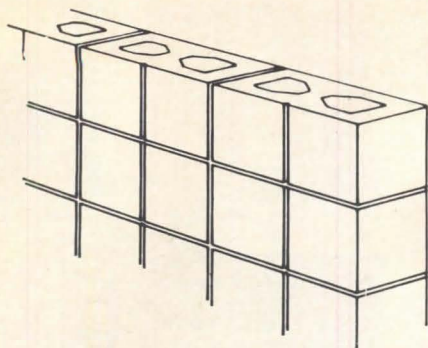
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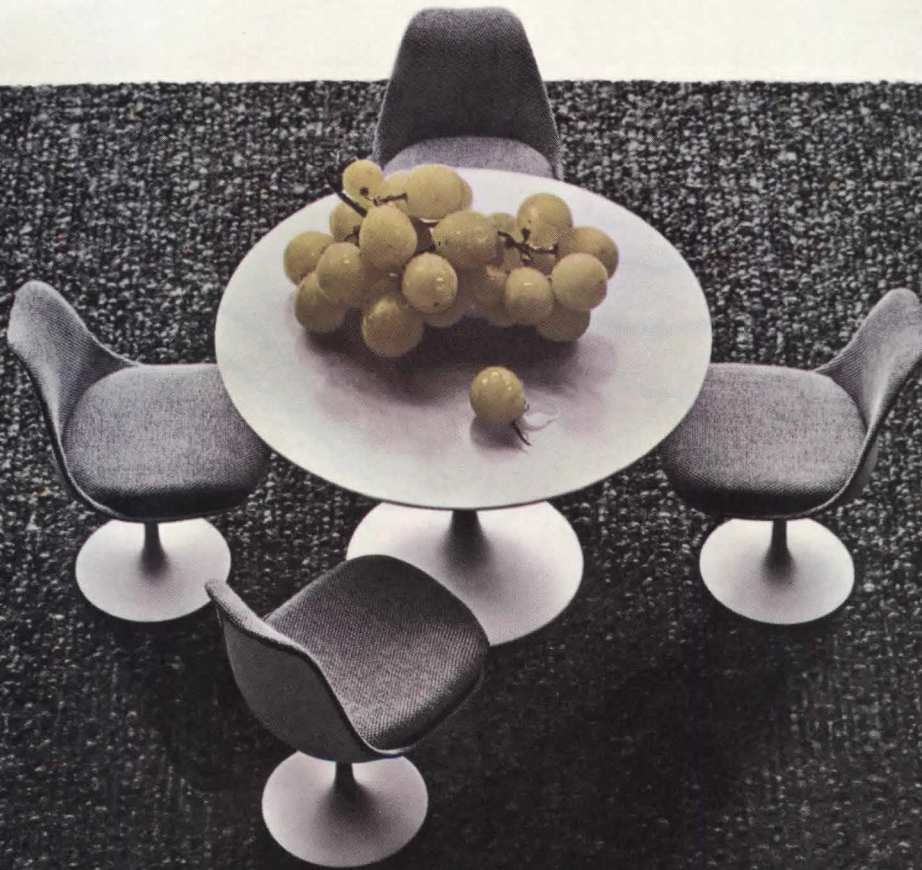
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