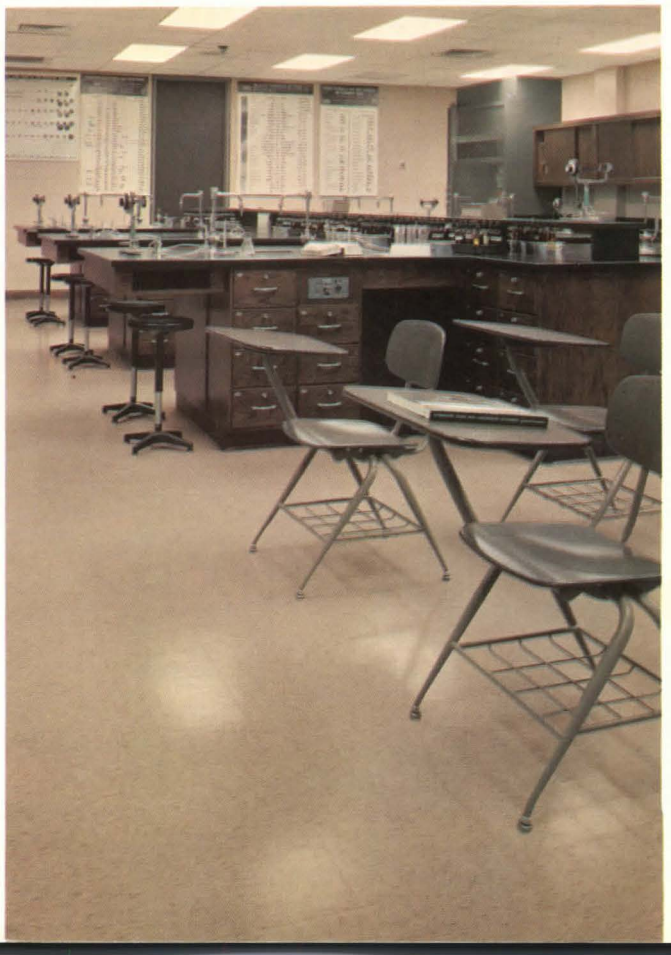
PROGRESSIVE ARCHITECTURE *December 1968*

A Reinhold Publication



Armstrong offers the widest variety of resilient floors. The best is the one that suits your design.

Evanston Township High School, Evanston, Illinois. **Architect:** The Perkins & Will Partnership, Chicago, Illinois. **General Contractor:** George Sollit Construction Company, Chicago, Illinois. **Flooring Contractor:** Johnson Floors, Berwyn, Illinois.

For the Evanston Township High School, the best floor is Imperial Modern Excelon Tile.

Evanston Township High School is a multischool.

To the students, it means having all the resources of a large school while getting the personal attention of a small school.

To the staff, it's the concept of four schools in one—each with its own administrative and academic faculty but all sharing nonacademic facilities.

To the community, it was the spending of nearly $14,500,000 for new and remodeled buildings.

The architects knew that, kids being kids, they'd leave their mark on the 200,000 square feet of corridor and classroom floors. So in addition to a budget-priced material that looks good at all times, they wanted a floor that conceals scuffs for a long time.

Their specification: Armstrong's 3/32" gauge, 12" x 12" Imperial Modern Excelon (vinyl-asbestos) Tile.

By using the same pattern throughout the four schools, they achieved a oneness in design. Also, the tight-mottled graining of Imperial Modern has its practical side—hiding the heel marks of an expected enrollment of 6,000 students.

Imperial Modern Excelon looks expensive, but it isn't. In fact, is has the same low price as Armstrong Standard through-grained Excelon. Through-grained? That's just another way of saying the pattern goes all the way through each tile to last as long as the floor itself.

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THIS MONTH IN P/A

Progressive Architecture ® *December 1968*

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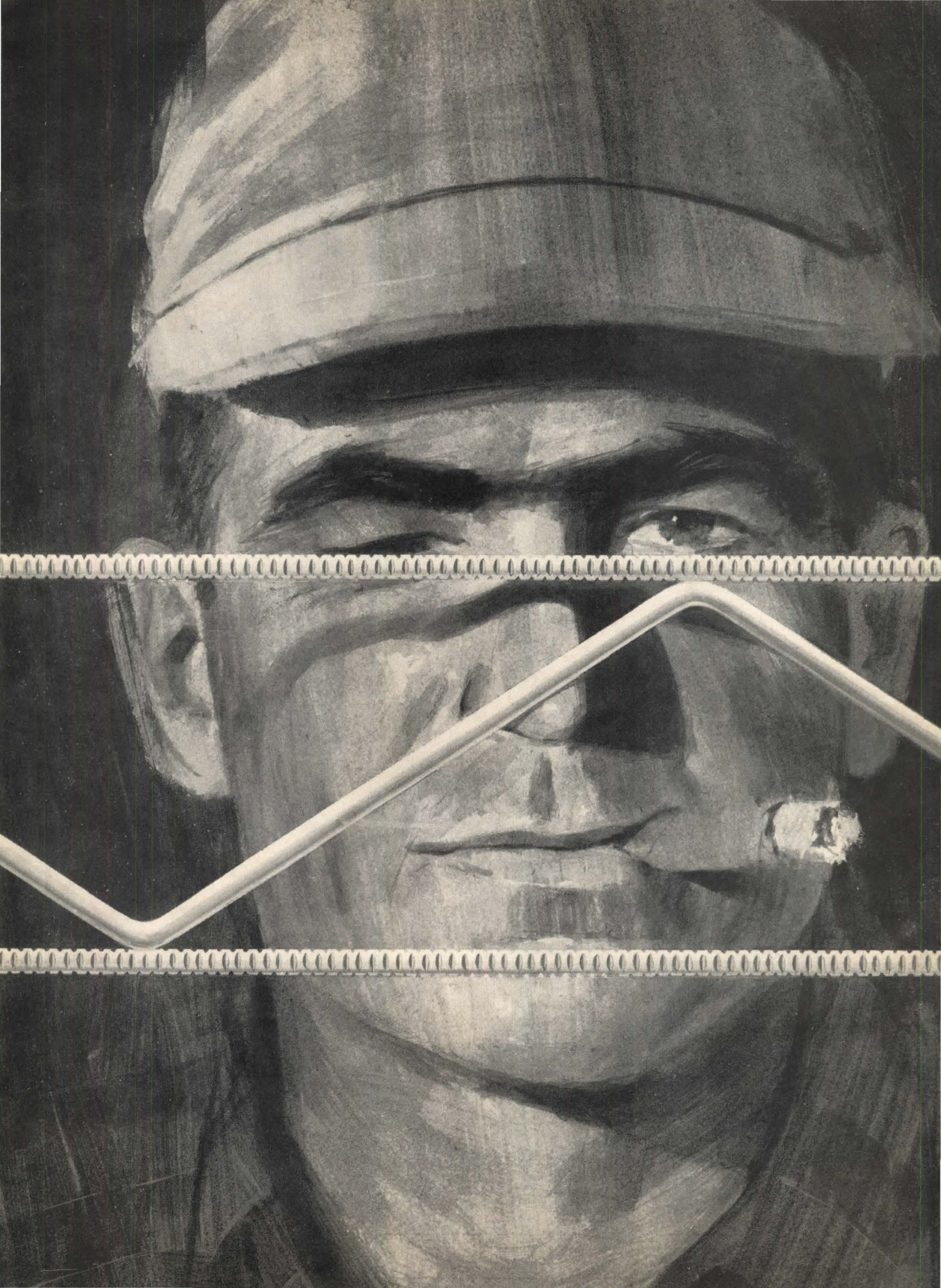

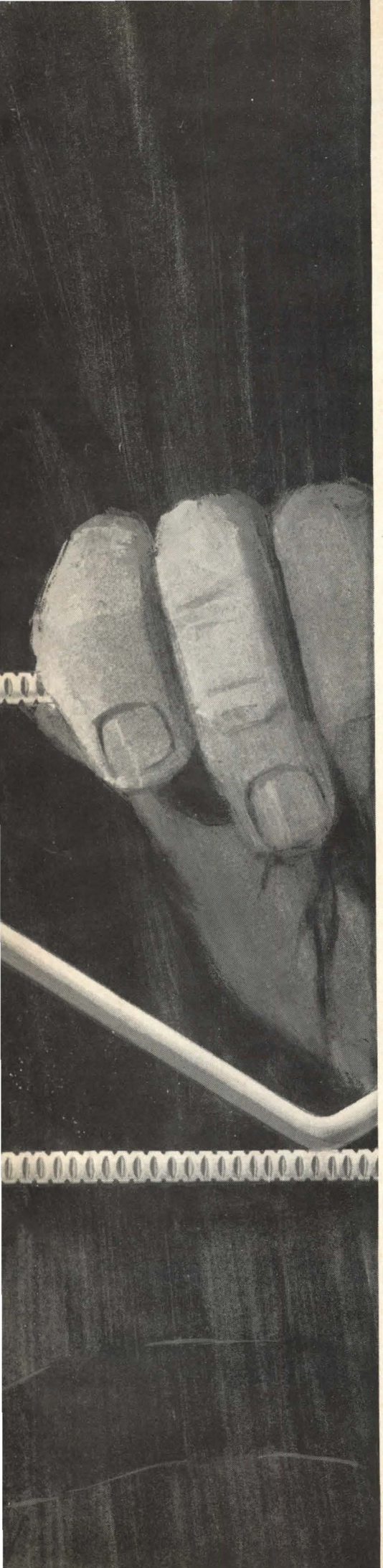

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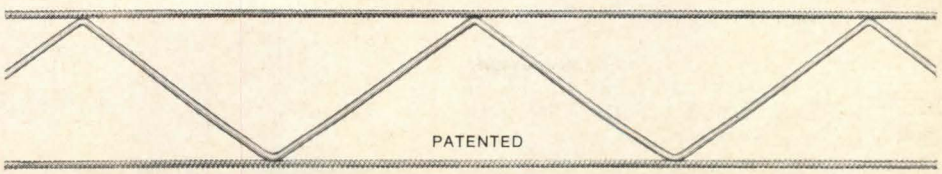

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VIEWS

Reactions to October Issue

Dear Editor: Your October issue was superb.

JAMES FOLLENSBEE
Chicago, Ill.

Growing Superficial

Dear Editor: I have read the October issue and congratulate you on a fascinating collection of visual material. Let us pray that such an explosion of virtuosity will be capable of generating its own theoretical and methodological base and not pass away as just another style. I refer to such efforts in this direction as Robert Venturi's and Denise Scott-Brown's study of The Las Vegas phenomenon at Yale or my own work in perception at New Mexico. To quote Venturi: "Without it, supergraphics soon grows superficial."

THOMAS R. VREELAND, JR.
Head, Architecture Program
University of California
Los Angeles, Calif.

short and sweet

dear editor: form follows funk.

craig hodgetts
new york, n.y.

Groovy

Dear Editor: The synthetic environment of the OCTOBER 1968 P/A was a groove. We have given David Sellers the prize for "best paint job" in his luminous gold sink. More awards to be announced.

DOUG MICHELS
San Francisco, Calif.

The Acid Test

Dear Editor: Projecting the dome of the Guggenheim Museum in C. Ray Smith's apartment demonstrates the space-expanding effects of spiral ramps and circular skylight?

Congratulations, C. Ray Smith; you have passed the acid test.

RODNEY PEASE
San Francisco, Calif.

Supercongratulations

Dear Editor: You can't really be serious in the OCTOBER 1968 P/A. You can't be serious about the statement, "the complexities and juxtaposed contradictions of our visual world should be fair terms for our design vocabulary"; or about the statement, "Supermannerism is probably as important as Le Corbusier was to modern architecture"; or about the "educators" who stress that "logic or reason does not function as a working principle"; or about a man who says "Architecture is the progression of valid fads"; or about the validity of dislocation, confusion, and distortion as design tools; or about riding Weese's "capsule toward the top of the gantry and blast-off"; or about attempting to relate these "aesthetic investigations" to an awakened social concern and awareness; or, finally, about the possibility of Supermannerism being "a catalytic transition to the long awaited, plasti-sized, synthetic age of man in cosmic superspace," whatever that means.

You can't really be serious, can you, really?

It is great fun not having to deal with real problems, but is all this game playing worthy of publication? The effect you are having upon immature professionals is bad enough, but the obvious influence you are having upon students is horrifying. What will the students of today have to contribute tomorrow? Will they follow the Venturis and the Hardys and produce equally ludicrous design solutions, or will they remain socially aware and concerned and maybe produce something meaningful to somebody? Lasting principles and the answers to real questions are not going to come from games and shallow exercises. Supercongratulations, P/A, for fostering and perpetuating the superficial — in that you are seriously effective.

BRUCE R. WADE
Detroit, Mich.

The P/A Ghetto

Dear Editor: In your October issue, I read your amazing explanation of why you just can't help being the "Yale Alumni Gazette." Maybe you have an Establishment-type communications problem that is just the inverse of the ghetto dweller's communications problem: that is, you seem to find it as impossible to break out of the Establishment as he does to break in.

PAUL FISHER
San Francisco, Calif.

Godflyism

Dear Editor: If your journalistic objective is godflyism *(sic)* you are to be commended on the October issue. While I am annoyed at being baited, and doubly annoyed at rising to the bait, I find I must do so. I know our students read your stuff.

I remember that a young member of our faculty, at a cocktail party, commented to Charles Moore, whose own supermannered New Haven quarters had just been published, that he would have to work doubly hard to undo its influence on his students; to which Moore replied that it wasn't meant to be taken that seriously.

Continued on page 16

CAN YOU PASS THIS INSULATION QUIZ?

1. Which insulating material has the best *k* factor (.11 at 70°F)?
☐ URETHANE ☐ STYRENE ☐ GLASS FIBER

2. Which insulating material can be sprayed-on and foamed in place?
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3. Which insulating material is self bonding?
☐ URETHANE ☐ STYRENE ☐ GLASS FIBER

4. Which insulating material has been endorsed by the U. S. Bureau of Mines because of its fire-resistant properties? ☐ URETHANE ☐ STYRENE ☐ GLASS FIBER

5. Which insulating material can be shipped to the job site as a liquid, and foamed in place to save shipping and fabricating costs?
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6. Which insulating material is so effective home refrigerator makers can increase cubic capacity by 50% with no increase in external size?
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7. Which insulating material can provide complete sealability—no gaps, air leaks or voids?
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8. Which insulating material has such high strength it is being used as a self-supporting structural material in building? ☐ URETHANE ☐ STYRENE ☐ GLASS FIBER

9. Which insulating material offers a choice of slab stock, pre-fab panels or foam-in-place methods? ☐ URETHANE ☐ STYRENE ☐ GLASS FIBER

10. Which insulating material can you get the facts on from Mobay—and should, before you take another step? ☐ URETHANE ☐ STYRENE ☐ GLASS FIBER

(Answers to questions 1 through 10: Urethane Foam)

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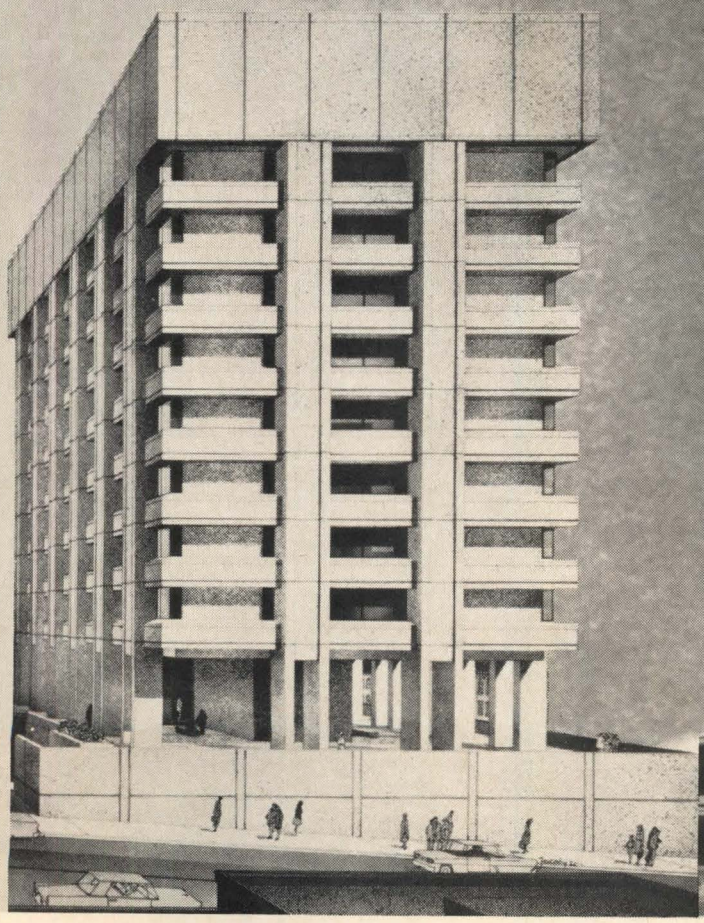
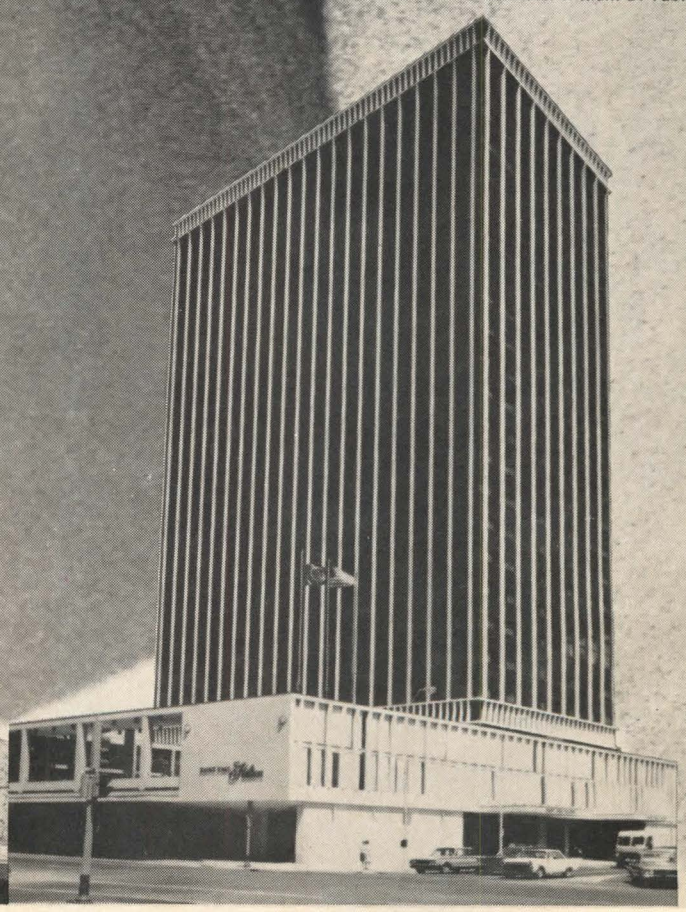


The Saint Paul Hilton Hotel, St. Paul, Minnesota: 22 stories, 500 rooms. Approximately 1500 tons of Grade 60 steel reinforcing bars. Architect: William B. Tabler.



the beautiful world of reinforced concrete is rising everywhere you look

From the Golden Gate to Martha's Vineyard there's a new beauty in the eye of the beholder. It's the expanding world of reinforced concrete architecture. Growing taller, shapelier, more appealing every year.

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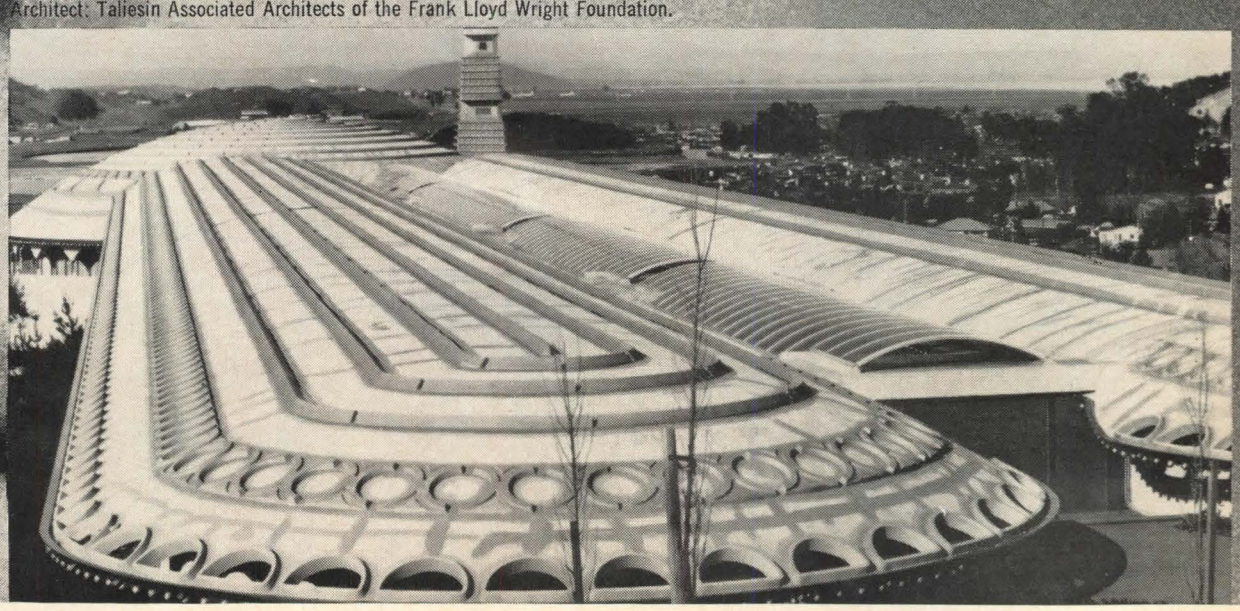
Looking down on the roof of the Administration Building, Government Center of Marin County, California. The Center, when completed, will be a complex of reinforced concrete buildings built into a hillside and designed as part of the rolling terrain. Reinforcing steel used in the roof and other poured-in-place sections of the Administration Building comes to 850 tons.
Designed by Frank Lloyd Wright.
Architect: Taliesin Associated Architects of the Frank Lloyd Wright Foundation.



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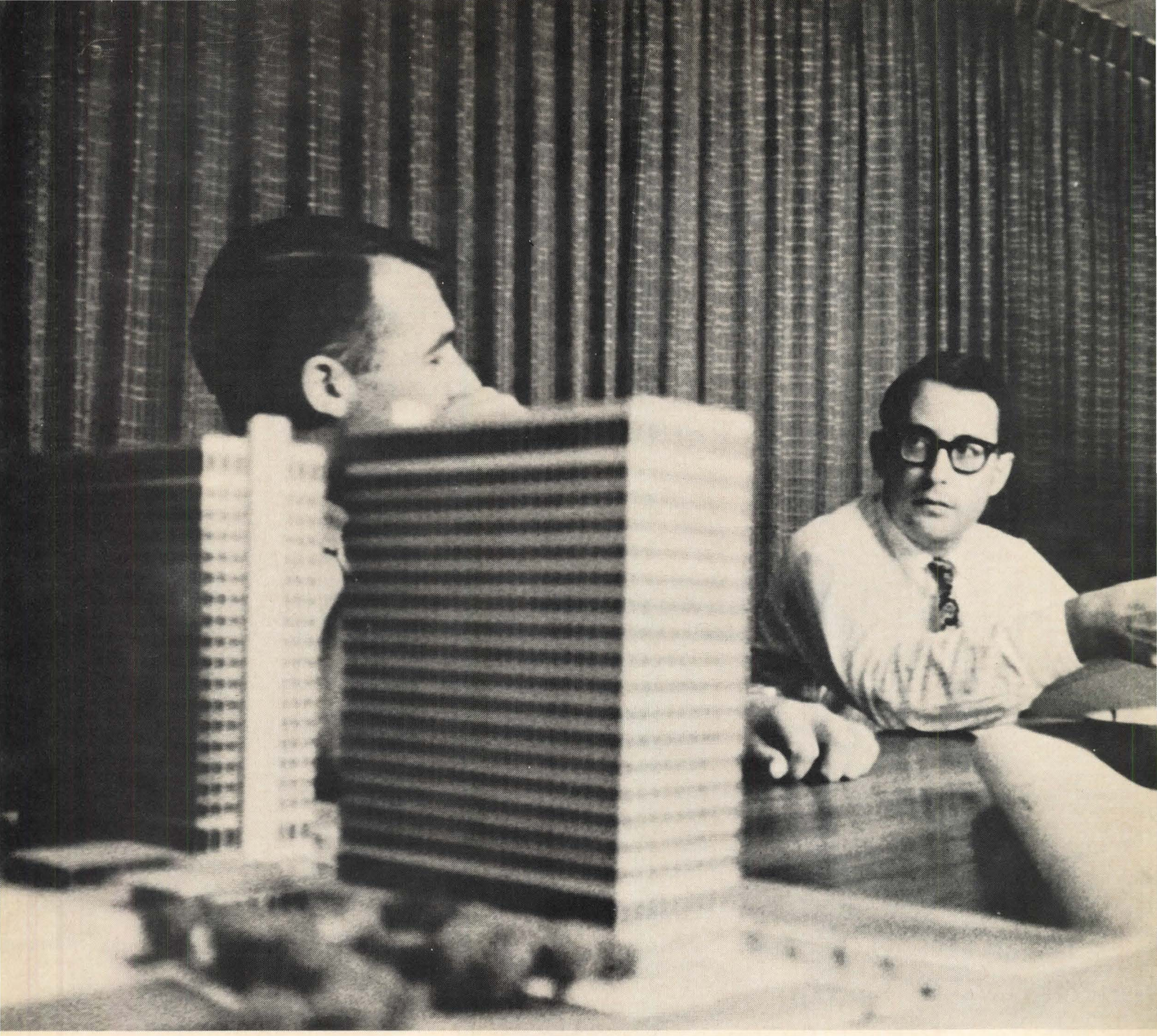
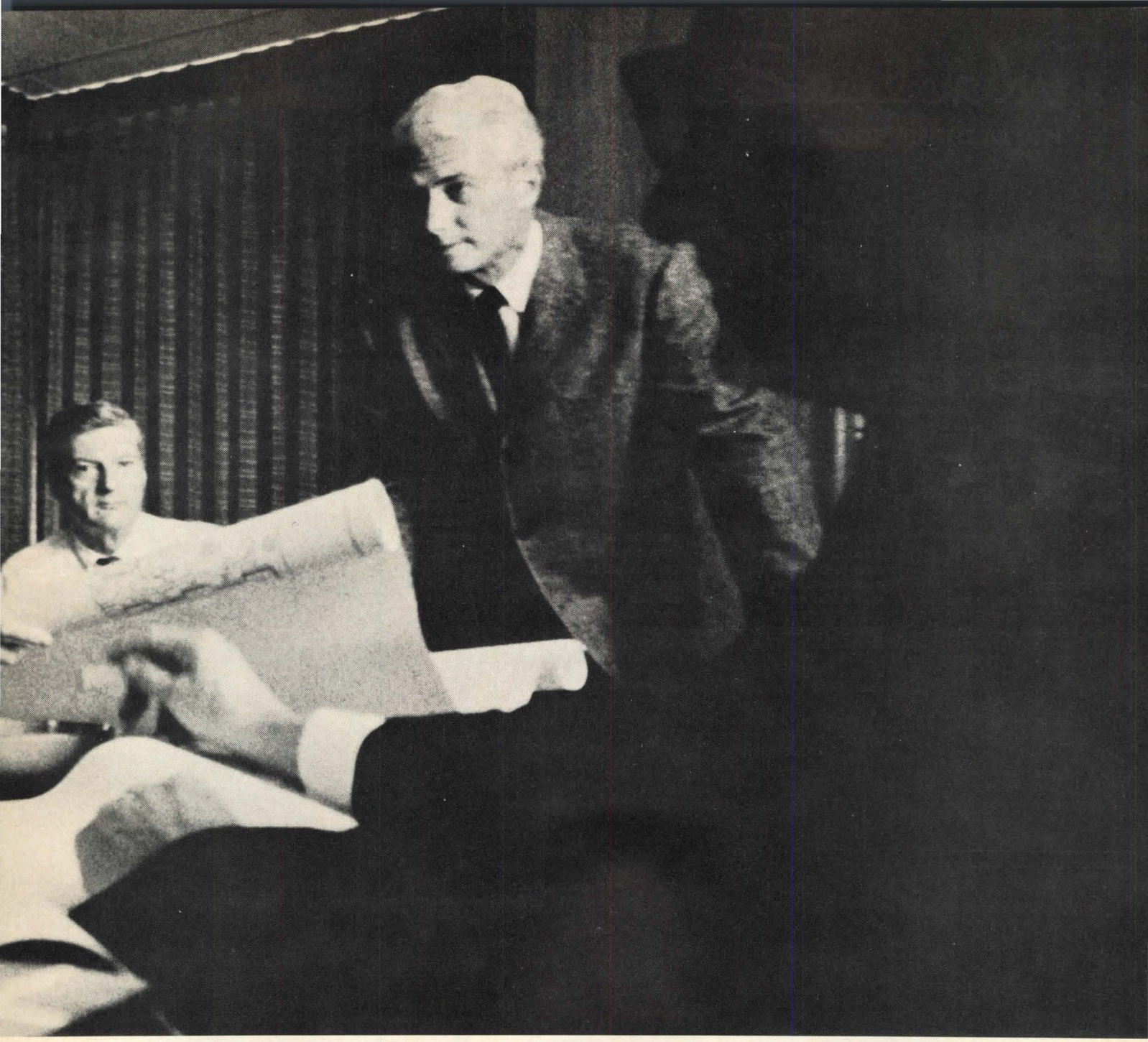


What are you going to do about the roof?



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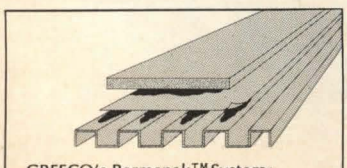

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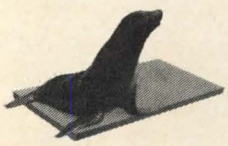

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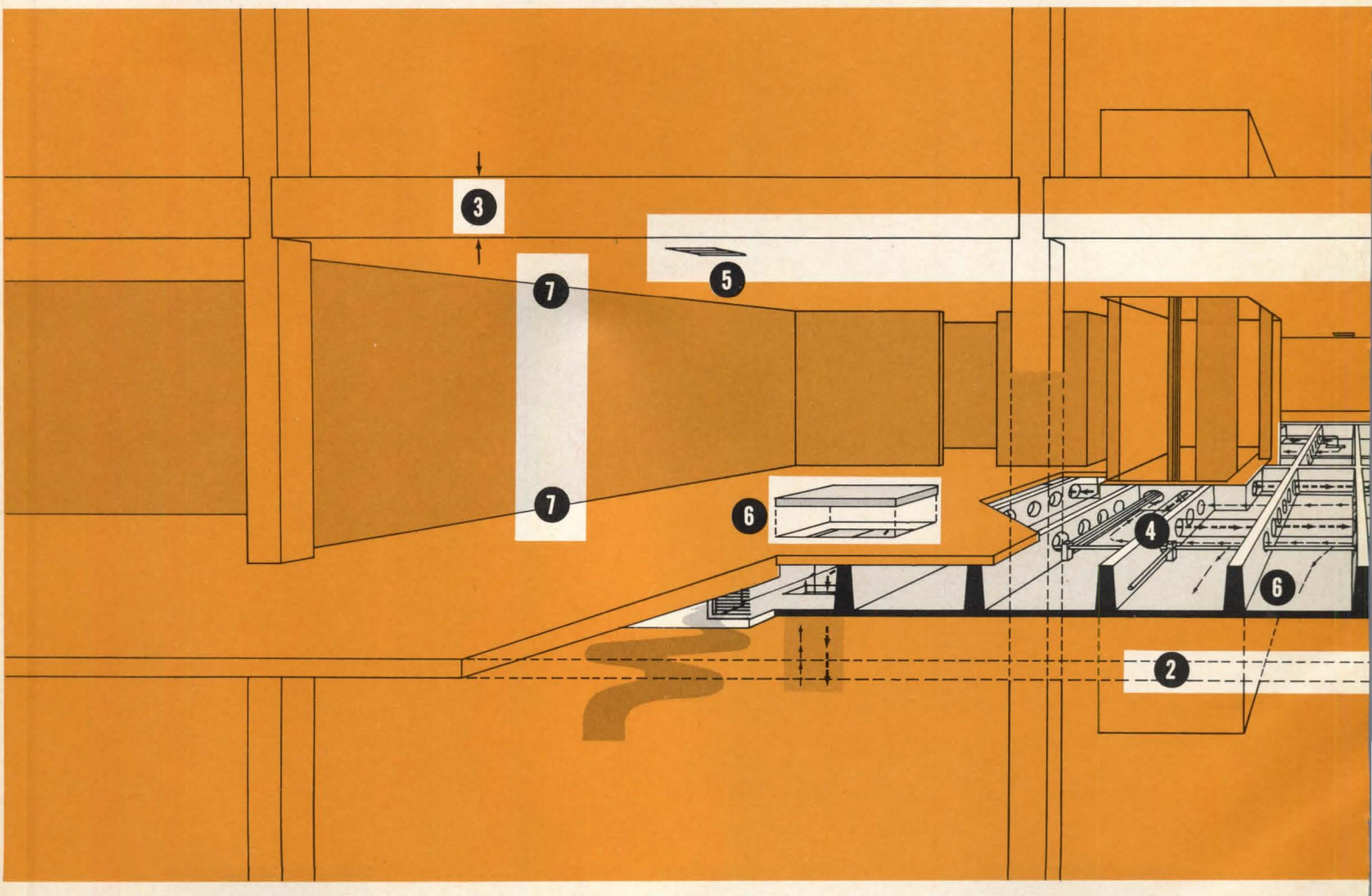
Triposite



1 Spanning members, columns, shear walls and stairs are precast.

2 Beams, composite acting floor slabs and shear wall connections are cast-in-place, tying all members into a monolithic structure.

3 Total depth of the floor/ceiling system is reduced. No suspended ceiling. No topping slab needed as surface leveling.

4 All mechanical and electrical work is done in the floor. Avoids expensive overhead work and hangers. No forming or temporary scaffolding is required.

Cooperation between precast plant and HVAC, electrical, mechanical and communications contractors result in substantial savings. 5 Grills can be easily cast into spanning members. By casting grills in exterior beams, plenum can be used for fresh air supply and exhaust. Depressions for bathrooms can be made without restricting span length.

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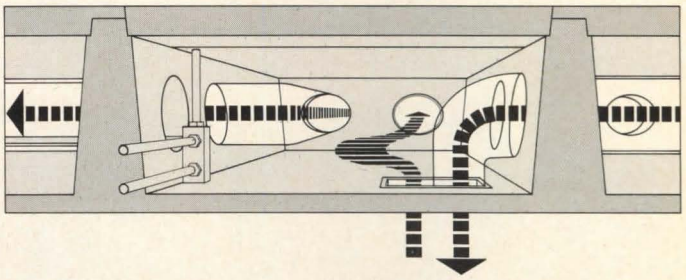
A composite system of (A) structure, (B) HVAC and (C) partition is the key to Tri|posite, hence the name.



The open horizontal zone makes compatibility possible. The zone can accommodate other subsystems such as plumbing, electrical and communications.

The credentials of Tri|posite are impressive.

Hellmuth, Obata and Kassabaum, St. Louis, were consultants for the detailed design work for the system. It is the structural system to be used for URBS (University Residential Building System) by the University of California.

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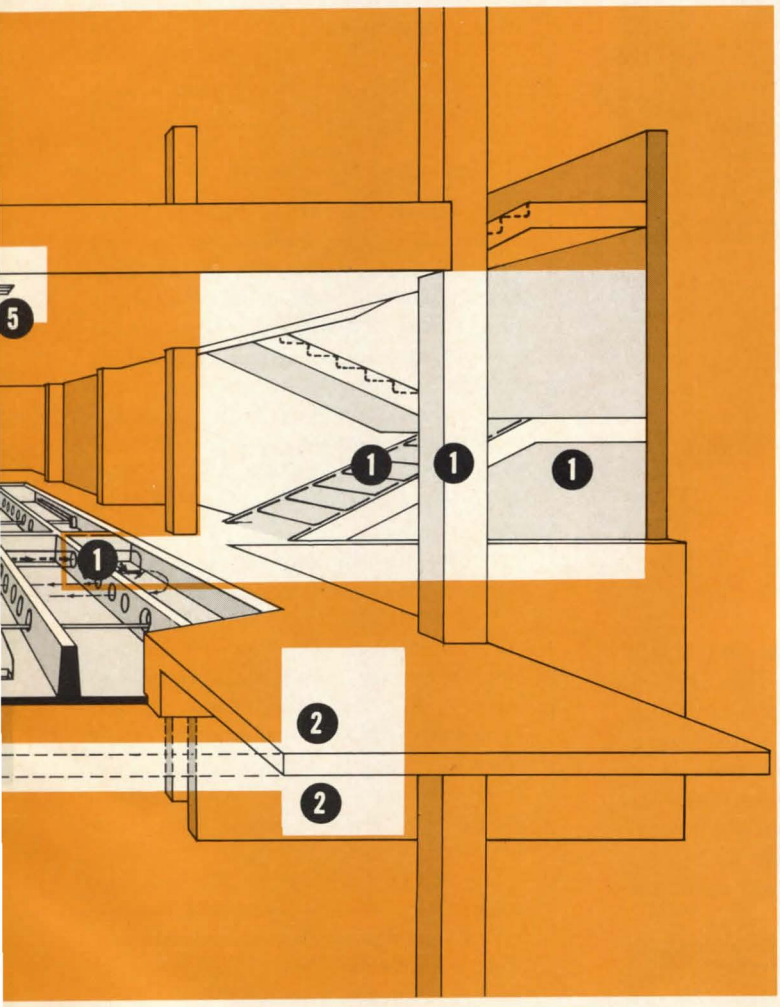


6 **Open horizontal zone for HVAC, mechanical, electrical and communication services. Plenum is inside structural spanning system. Bottom and stems are precast. Top is cast-in-place and acts as compression member and diaphragm. Precast slabs over plenum sections for service access.**

7 **Partitions are fastened to concrete top and bottom. Fire-rated demountable partitions attach directly to structure. No complicated detailing as with suspended ceilings to provide acoustic barrier.**

Continued from page 6

You have entitled the issue "Revolution in Interior Design." I would be inclined to prefer, in this instance, the old term "Interior Decoration," but, more importantly, to insist on the nice distinction that decoration is not architecture.

This issue is about decoration. It is indeed decorative, a visual delight. But when the editorial commentary begins to involve consideration of social responsibility, the put-on begins to taste sour. And when the concluding section of the lead article concerns itself with "architectural curriculum," the pretentiousness of decoration taking itself seriously exceeds the limits of my tolerance.

I don't know if our school was "polled" regarding the influence of what you term "Supermannerism." But were I to speak for myself, I would disavow what your term so aptly describes. Preoccupation with the appearances of things is an architectural aberration.

PAUL MALO
Assistant Professor, School of Architecture
Syracuse University
Syracuse, N.Y.

A Legitimate Movement

Dear Editor: The article on the M.I.T. mezzanines in the October issue pointed out that there is conclusively an anti-Establishment move afoot in the architecture schools. But there was little on the positive thoughts of the movement, which includes: the new set of priorities among the students; buildings for people rather than structural, mechanical, or aesthetic systems; the big idea school of architects; or buildings designed to be published in trade magazines.

It also failed to point out the work being done here and at New Haven — probably other places, too — to rethink the classical concepts of the way people live, and the way they bathe, sleep, eat, dress, learn, work, and the way people live and use the city, and the meaning of the urban place. An example is the program Chuck Moore instituted in New Haven, in which the first six weeks of design were spent studying the act of bathing.

It is this basic rethinking that is generating much of the new form. This, coupled with a basic desire to experiment with new living patterns and use of space, has done much to make the movement legitimate.

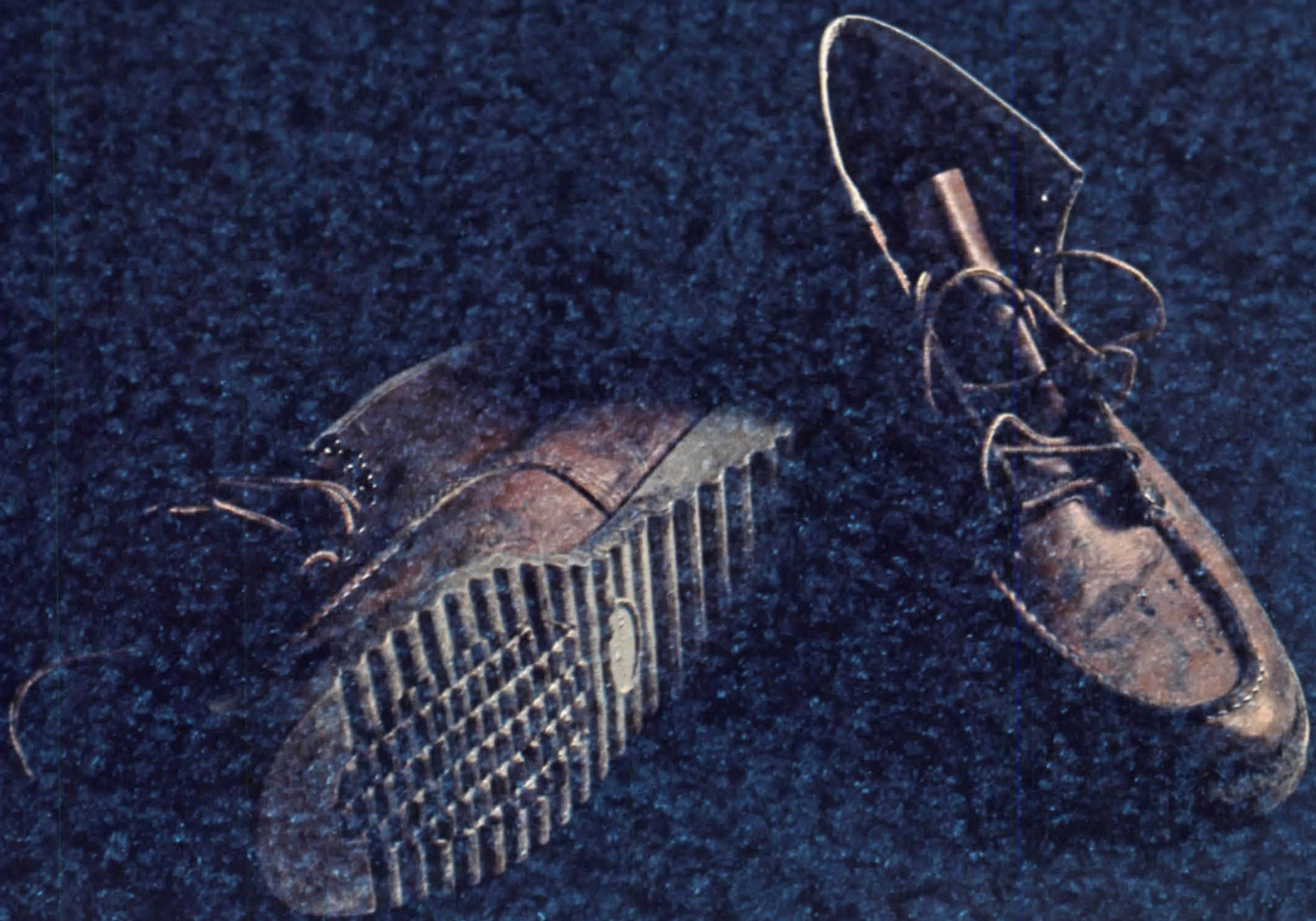
JERRY WOOD
Boston, Mass.

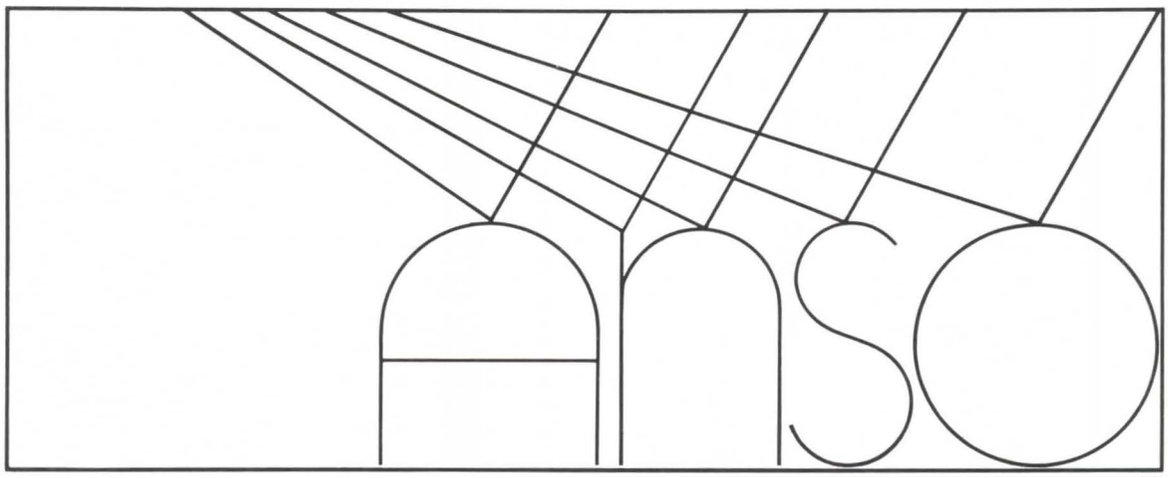
Shocking to Expose Electricity

Dear Editor: Congratulations on your October issue. It has brought into focus the important design trends of the day. I say "of the day" because, in all creative fields

Continued on page 24

Allied Chemical announces the carpet fiber that makes dirt seem to disappear.





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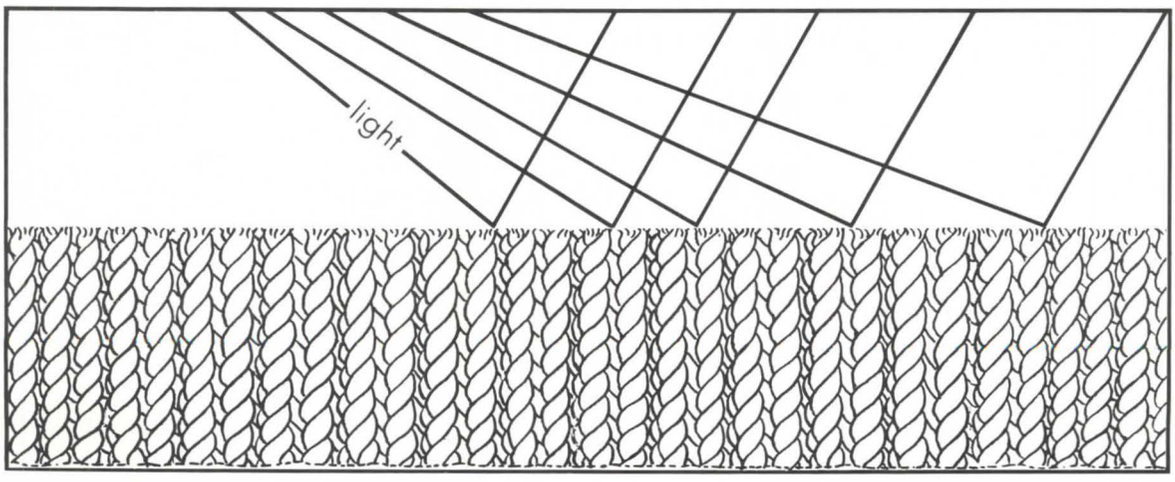
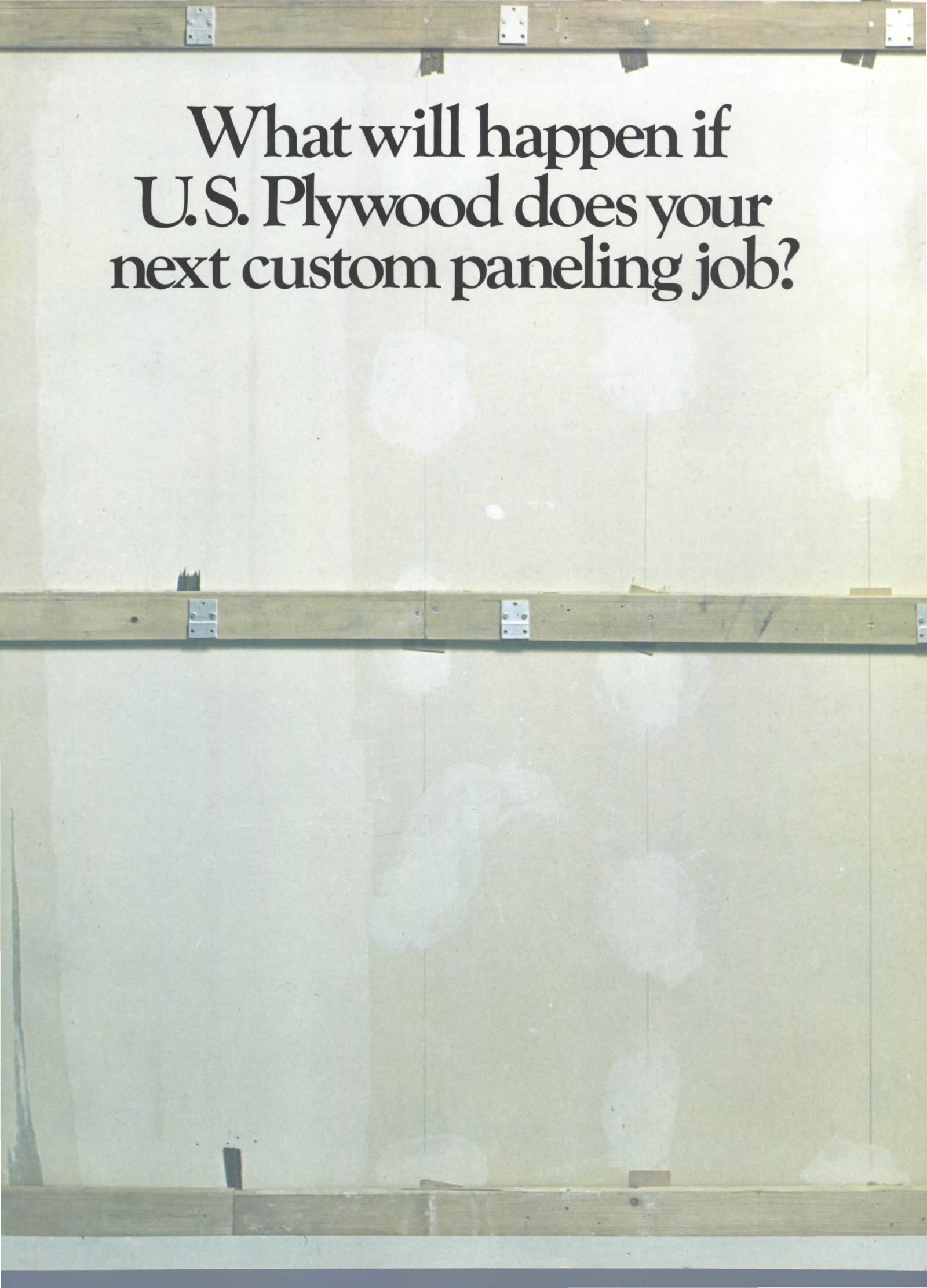
Allied Chemical





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Since you'll be dealing with one source of supply and responsibility, you can count on beautifully finished parts — ready for immediate job-site assembly and installation through your millwork supplier. You won't find a more practical and economical solution to your paneling problems than that offered by our complete prefabrication service.

Weldwood® Custom Paneling

We face-match all wood veneers to your specification. To accomplish various effects, we use different cutting methods — plain slicing, rotary cutting, quarter slicing. Samples can be made available for inspection.

To permit flexibility in wall design, we also manufacture random-matched Weldwood paneling.

Weldwood Finishes

After a finish is approved, you are assured of getting the same finish on the job. Of course, allowances must be made for natural variations in grain and color.

You have a choice of three dry-film finishes:

Vigilar®: a polyvinyl fluoride exterior grade film which provides opaque color for doors and interior panels. It offers superior stain and abrasion resistance and is almost totally unaffected by extreme heat, sunlight or cold. It is also impervious to most acids, solvents and staining substances. An ideal surfacing for commercial, institutional and residential buildings. Available in 11 colors.

Permagard®: a thermoplastic polyester clear interior film finish designed to retain the natural color of wood or toned to enhance it. Highly abrasive and stain resistant. Excellent for cabinet doors, walls and flush doors. Easily cleaned with a damp cloth.

Permacolor®: a slightly embossed interior film finish of a two-ply laminate of polyvinyl fluoride film and a plasticized polyvinyl chloride film. One of the most durable factory-applied dry-film finishes available for doors, partition or wall panels. Impervious to most acids, solvents and staining substances. Permacolor is available in 28 colors.

You also have a choice of a broad selection of wet finishes: *Univar®* (clear or toned), *Unicol®* (solid color), *Unicote®* (exterior clear varnish) and custom oils and paints. Sealing or priming also available.

Weldwood Panel Cores and Faces

A complete selection of core materials is available in a variety of overall panel thicknesses and face treatments. It includes the following:

Novoply®cores: a 3-ply particleboard panel of balanced sandwich construction. An excellent and versatile core material. Panel thicknesses: 3/8", 7/16", 1/2", 1", 1 1/8", 1 1/4", 1 3/4".

Veneer cores: panels with fir or hardwood veneer cores. Panel thicknesses: fir — 3/8", 1/2", 3/4"; hardwood — 1/4", 3/4", 1".

Basswood lumber cores: blocks of basswood lumber electronically edge-glued. Panel thicknesses: 1/2" to 3".

Mineral cores: have the lowest flame spreading rating (15 — if species density is 36.9 or less) of any wood-faced paneling. Panel thicknesses: 1/4", 3/4", 1".

Weldwood Machined Panels

We offer these standard machining details for 3/4" panels:

Miters: any degree, with or without spline. *Square edges:* cleanly machined edge, with or without spline or edge banding. *Edge rabbets:* any size. *Tongue and groove. V.* at edge or elsewhere (Bevel). *Dado:* flat bottom or other. *Miter and shoulder.*

Other machine details and dimensions on special order.

Weldwood Doors — Algoma Grade

U.S. Plywood specializes in filling complete wood door schedules; doors of almost any size and for specific requirements, including U.L. labeled fire doors, sound control doors, lead-lined X-ray- and static-shielded doors, hollow-core doors. Factory machined and finished to your specifications, Weldwood doors are ready to fill any opening.

A wide variety of cores is available, including lumber, mineral, Novoply.

We pre-engineer, premachine and prefinish doors with any wood species, colorful films, plastic laminate or resin-fiber overlays for job-site painting. Also reinforcement of heavy duty hardware.

Finishes? U.S. Plywood factory applies three durable dry-film finishes in clear or opaque colors. For *interior* doors: Permagard and Permacolor. For *interior* and *exterior* doors: Vigilar. (See descriptions above for each of these finishes.)

For most design requirements there is a Weldwood door combining function and long, dependable service.

Before final design and specification, consult with your Architects' Service Representative at your nearest branch office of U.S. Plywood. Since some constructions are better suited than others to particular applications, we can frequently suggest changes that lower costs or improve performance.

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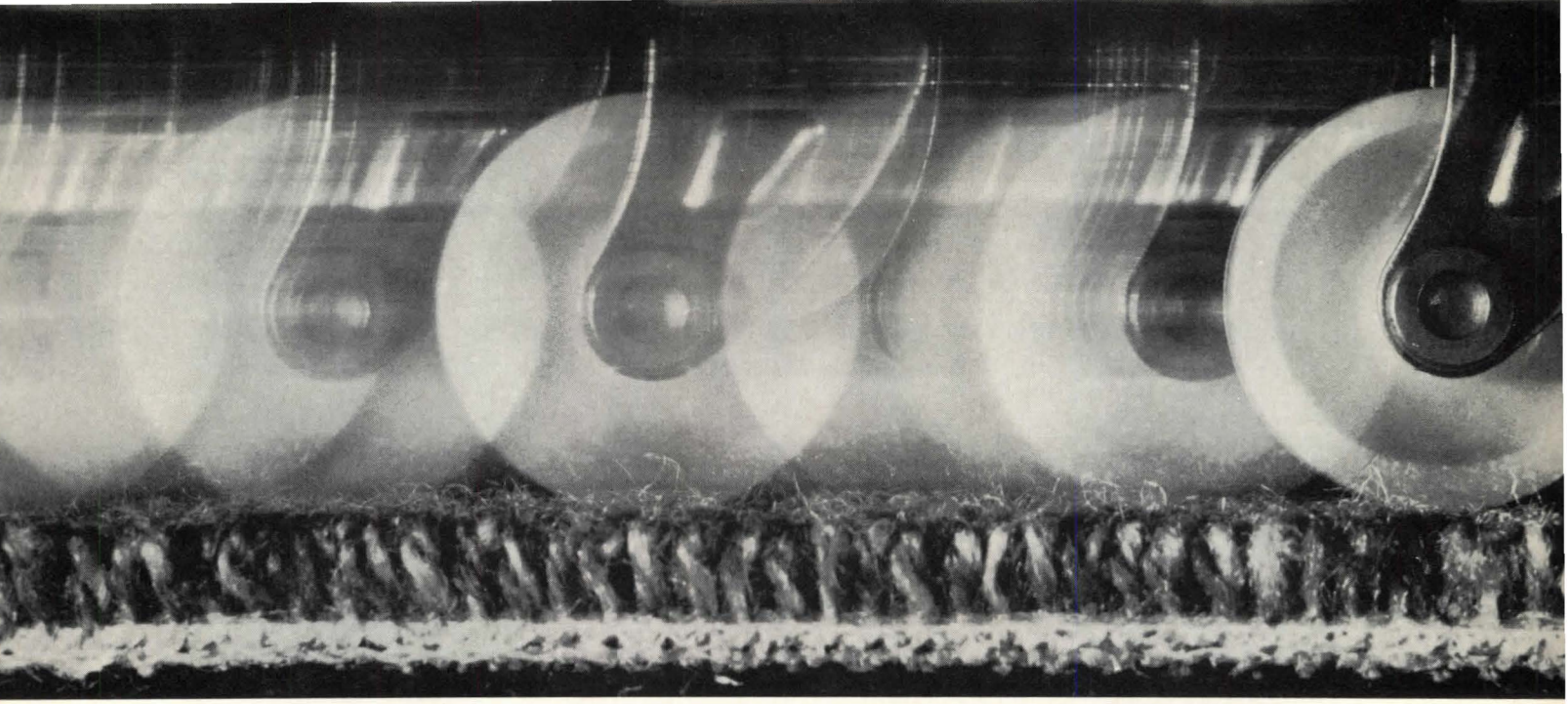
This veneer is Plain Sliced White Ash, balance and center matched, factory finished.



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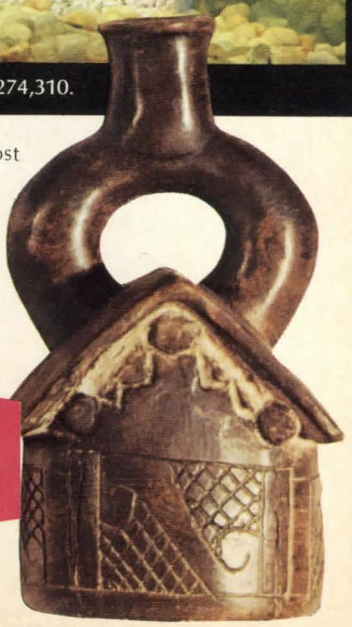

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Continued from page 16

of any period, mediocrity rubs elbows with real contributions of genius (or near-genius) in the permissive time following a revolution, counterrevolution or any other breakthrough in established values. But soon the natural process of selection takes place and relegates most of what has been happening to the backrooms of history.

I really wanted to write about the section on lighting, or, as you called it, the "kinetic electric environment." It seems to me that you confuse "lighting" with "light decorating." It has always been an important distinction. Whenever the two are combined, it takes a lot of ability, taste, and self-control to avoid creating an uncomfortable environment. The "age of the nude bulb" is a catchy phrase, but the exposed source has never ceased being an important design element. The current attempts by some designers to scrap all that we have learned about visual perception, glare discomfort, brightness ratio, and so on, stems from blissful ignorance and not from new discoveries. When a lamp becomes an object to look at and not to see by, it should not blind the beholder to everything else in the room. Scandinavians have always known it, and the Italians generally ignore it — just look at any exhibit from these two areas.

Another thing: Nowhere in the article did I find the distinction being made between lighting for entertainment and lighting for living. What may be stimulating and exciting in "short" doses will be disastrous for any length of time. And certainly the former has much less to do with architecture than the latter.

One more point: There is something dehumanizing and defeatist in all that exposed electrical hardware, that visual brutality being promoted for its shock value. Beauty can be static, kinetic, or dynamic, but it takes a fakir to enjoy sitting on a bed of nails.

JULES G. HORTON
New York, N.Y.

The Economics of Racism

Dear Editor: Without trying to discuss the political philosophy as to whether it is proper to call every white citizen a racist, I find it a distortion of an obvious fact that "if development is not controlled by Harlemites, it will lead to an increase in land costs and rents and thus not serve *(sic)* the people of Harlem" as claimed by ARCH.

It is absurd to believe that the land value anywhere in this country is determined by the color of the owner's skin rather than by the law of supply and demand. I consider this statement unfounded and racist in attitude. I would appreciate it if you would see whether problems of Harlem can be discussed and presented in a factual manner, as appropriate for a technical publication.

WERNER H. GUMPERTZ
Simpson Gumpertz & Heger, Inc.
Consulting Engineers
Cambridge, Mass.

[What the article pointed out was a simple matter of economics: that when richer businesses, usually owned by whites, enter poor urban neighborhoods, usually black, despite the often well-intentioned aspirations of the individuals concerned, the poor are driven out by the economics involved. To describe the process is not to suggest that every white citizen is a racist. — ED.]

CORRECTIONS:

■ Pietro Belluschi was design consultant on the *Oregon Graduate* Center by Portland, Wolff, Zimmer, Gunsul, Frasca, Ritter (pp. 156–157, SEPTEMBER 1968 P/A).

■ The following credits were omitted for the One Astor Plaza project illustrated on p. 112 of the SEPTEMBER 1968 P/A: Ranger Farrell & Associates, Acoustical Consultants; W.A. DiGiacomo Associates, Mechanical Engineers; Leichtman, Quinn & Lincer, Structural Engineers.

The nicest thing about our Architectural Airtred is that it doesn't look commercial.

Most commercial floors look just that: sterile, dull, commercial.

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It's also quiet, comfortable and warm because it has just the right thickness of foam interlayer that absorbs noise, cushions underfoot and insulates from cold. And Nubby can easily be installed above, below or on grade.

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GAF Floor Products


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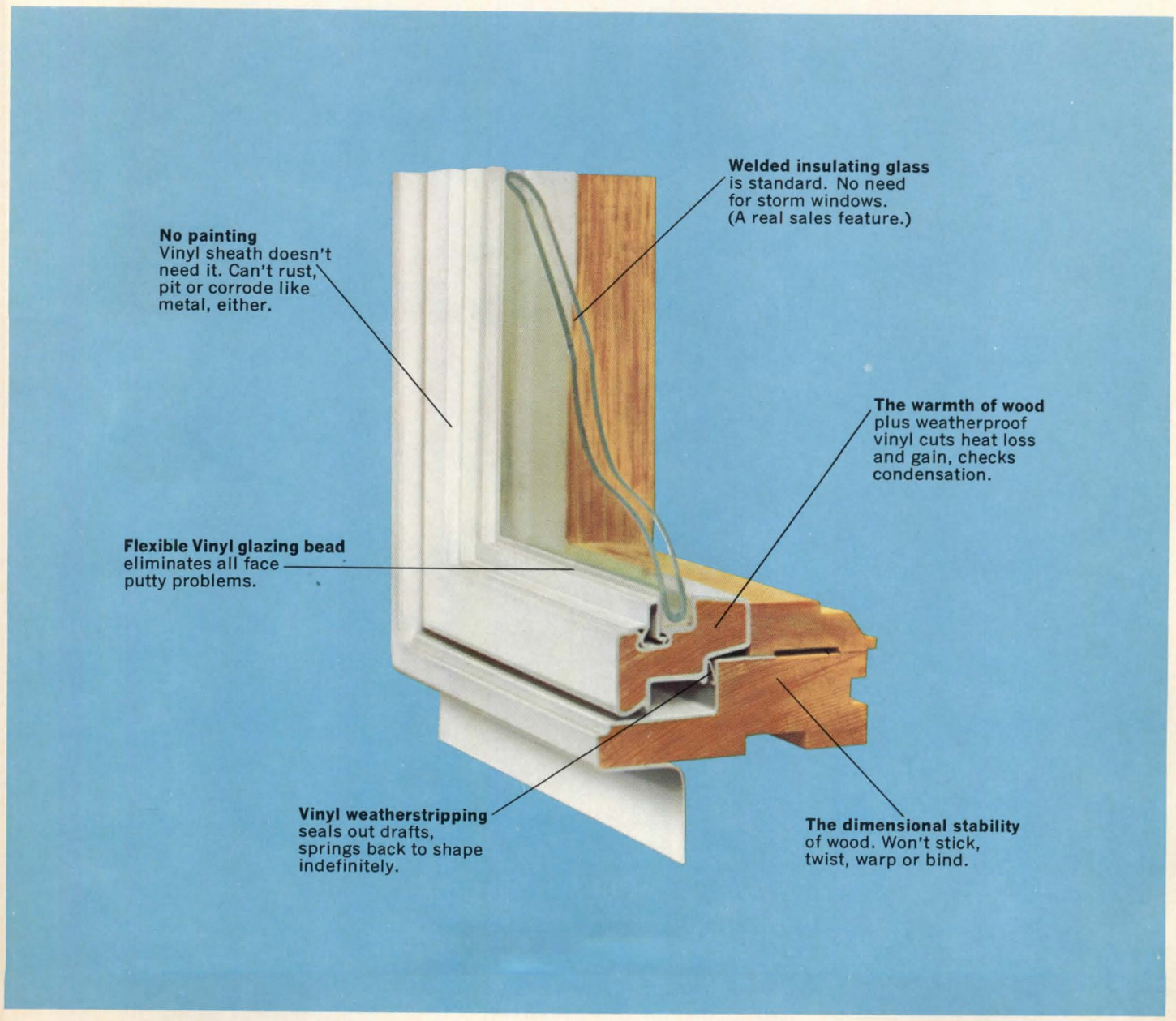

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Emma Norton Methodist Girls' Residence, St. Paul. Difficult elevation could make window maintenance a nightmare, but there's little or no maintenance with Perma-Shield. They've been performance proved on thousands of residential and commercial jobs like this one—exposed to every climate over the last 9 years.
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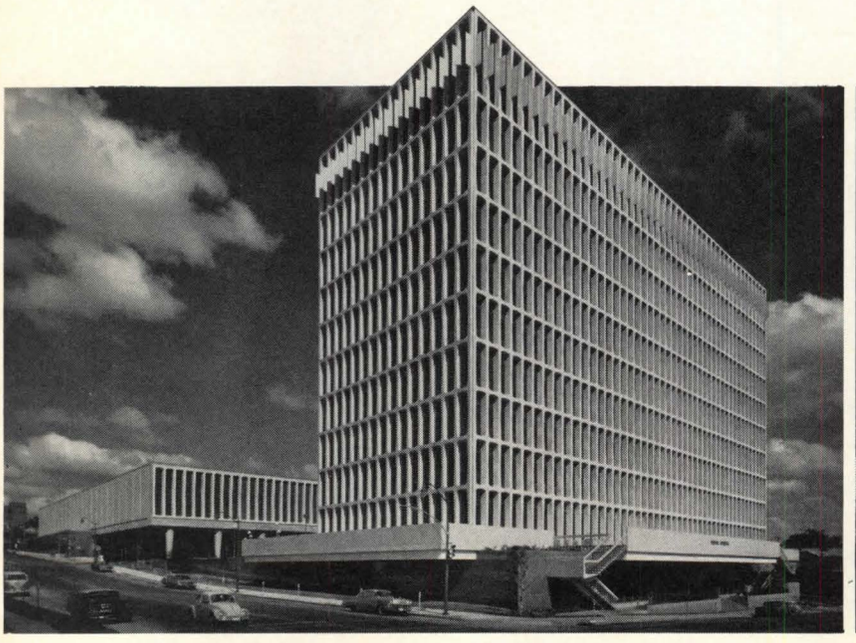
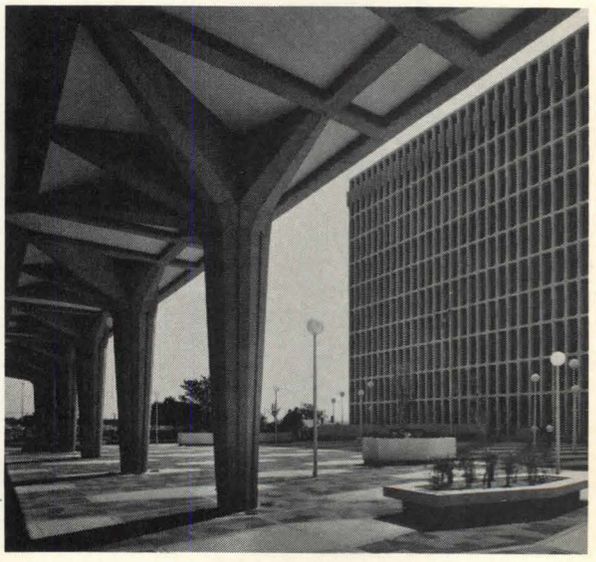
(center) U. S. Post Office and Federal Office Buildings, Austin, Texas, combine a low, broad building to accommodate postal work areas, a high-rise office structure, and a connecting plaza that gives unity and spaciousness to the complex.

Architect and Engineer: Page, Southerland, Page and Brooks & Barr. General Contractor: Warrior Construction Co. Pre-cast Components: Texas Quarries, Inc. POZZOLITH Ready-mix Concrete: Traverse Materials Co.

(left) The plaza connecting the two structures is surfaced with pre-cast slate-covered panels. Pre-cast wall panels for both buildings feature exposed quartz aggregate.

(right) Bush-hammered concrete "trees" support one end of the rectangular post office "box" — the other rests on a base of polished native granite.





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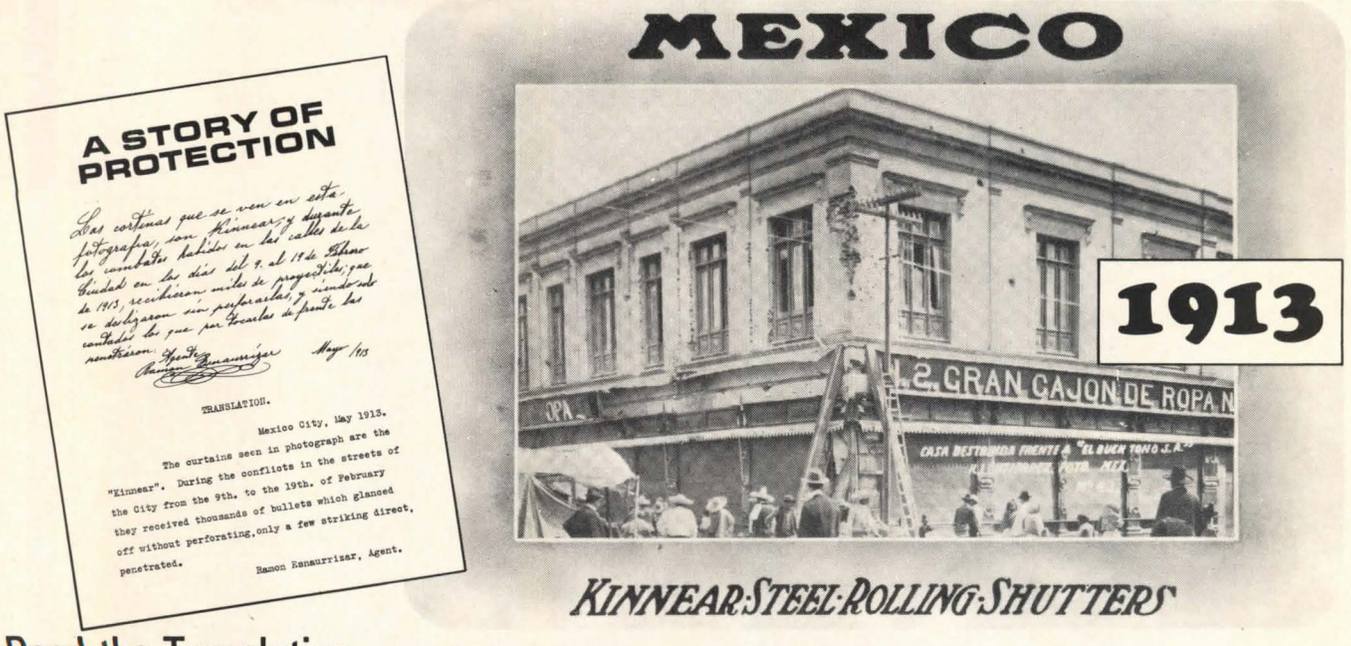
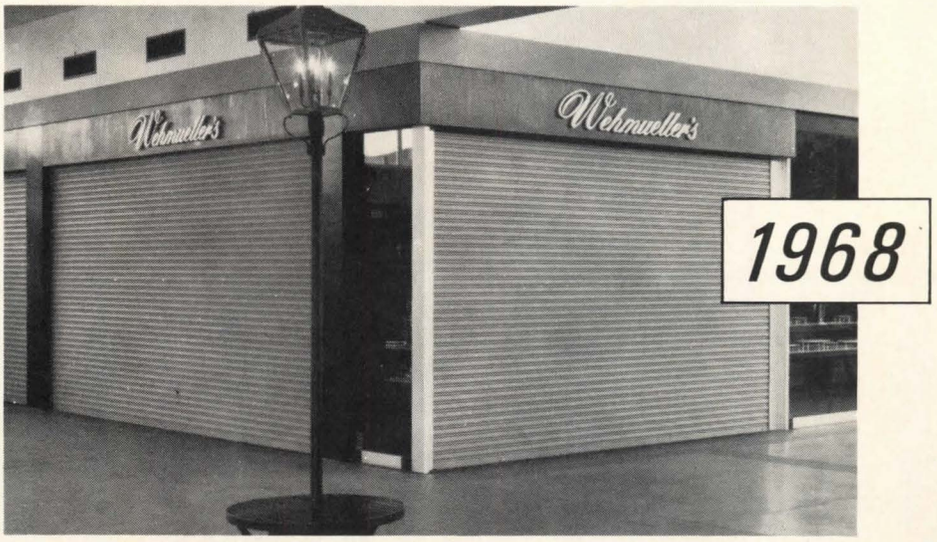


Read the Translation of what user reported from Mexico in 1913

The curtains seen in photograph are the "Kinnear." During the conflicts in the streets of the City from the 9th to the 19th of February, they received thousands of bullets which glanced off without perforating, only a few striking direct, penetrated.

Ramon Esnaurrizer, Agent



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This is true because the fundamental design of the Kinnear Rolling Door is so strong and rugged—practically impenetrable to all the hazards of all the outside forces a door might encounter. In addition to the basic strength of steel, the deflection or resilience of the interlocking slat curtain effectively resists "breaking and entering" tools. A persuasive barricade to trespassers! To resist corrosion and the ravages of the elements, Kinnear Doors are given a triple protective coating—Kinnear paint bond, hot zinc coated (1.25 oz. per ASTM Standards) and field primed. They're also fire resistant. Add to these longer-life protective features the method of steel channel installation and the space-saving, rapid-acting coiling operation, **plus** "registered" life extension backed up by service and parts depots from coast to coast. It is readily understandable why Kinnear Rolling Doors have been the preferred closure for safeguarding commercial and industrial doorways, windows and corridors for more than 70 years.

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LAKE POINT TOWER, Chicago, Illinois/Architect: Schipporeit-Heinrich/ General Contractor: Crane Construction Co./Glazing Sub-Contractor: National-Hamilton, Div. of Bienenfeld Glass Corp. 1" Polarpane glazing manufactured by Polarpane Corporation

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Glaverbel Bronze drawn sheet glass is magnificent in appearance, practical in application. Like other Glaverbel window glass, it has greater surface regularity, fewer defects. But even more—it *controls the sun,* by filtering solar light and heat! Prevents eyestrain, subdues reflected light; temperature control systems work more efficiently, more economically, the year round. And Glaverbel Bronze provides unusually attractive decorative effects for *interiors* as well!

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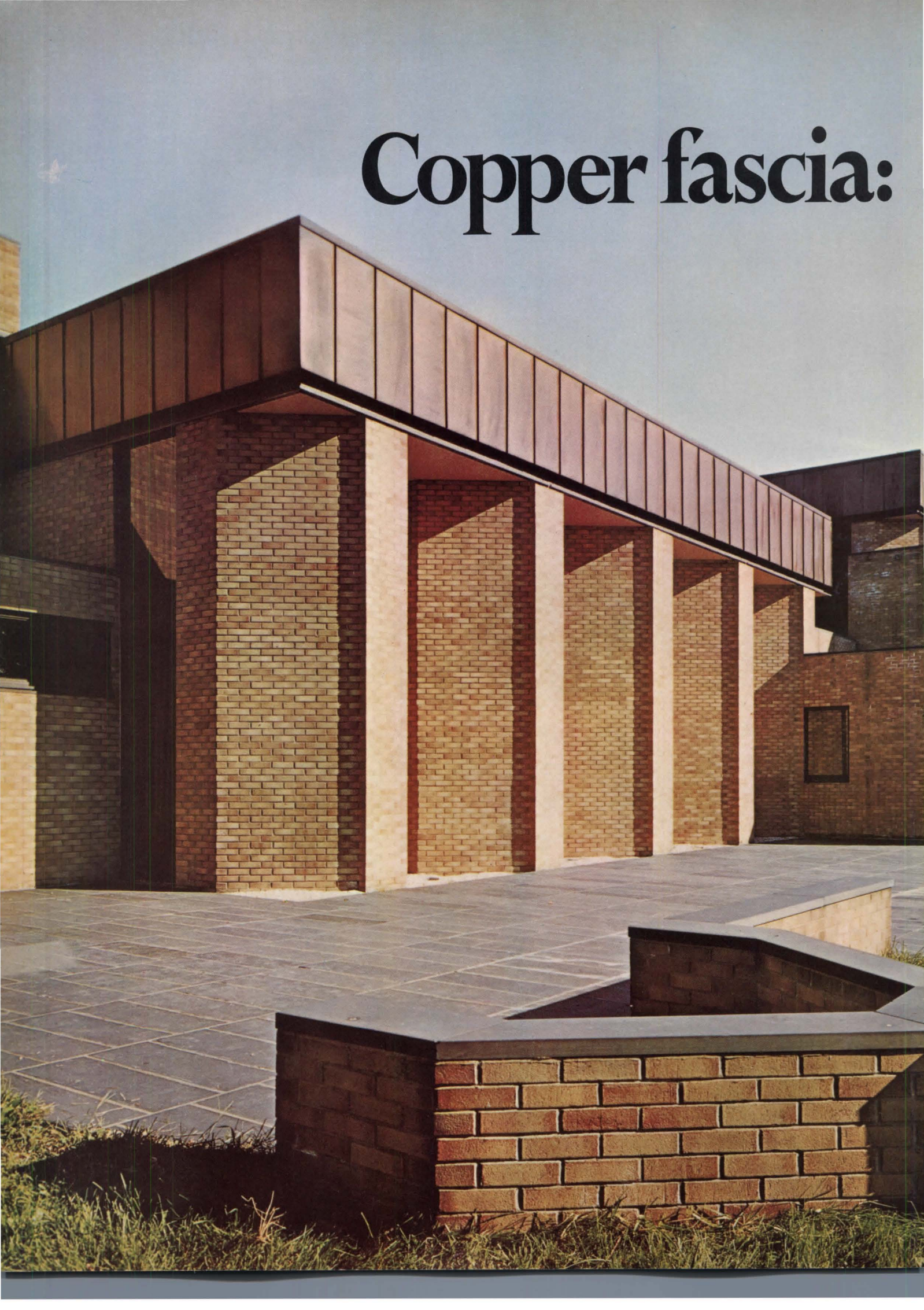
See Sweet's Architectural File 4a/GL

Copper fascia:



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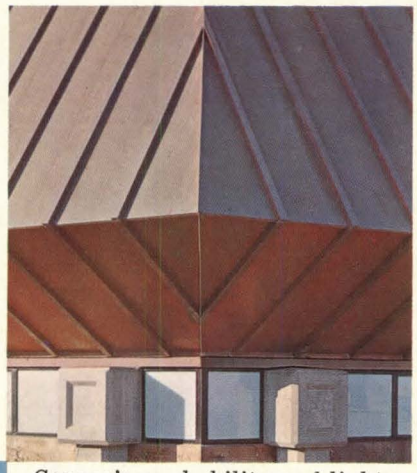
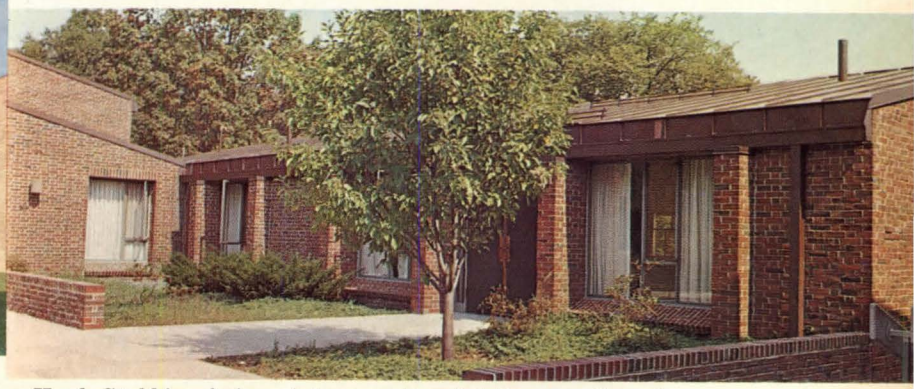


Copper's workability and light weight, plus its affinity for redwood, commended it to Callister, Payne and Rosse for both roof and fascia on the University of California's Field House at Santa Cruz.

The functional and highly decorative band which terminates Agudath Sholom Synagogue (left and above) in Stamford, Conn., is an excellent example of a typical copper fascia. Architects: Davis, Brody & Associates.



Hugh Stubbins & Associates counterpoint the smooth, uniform surface of copper roof and fascia against the rugged texture of brick on the Dana Hall School's Senior Residence, Wellesley, Massachusetts.

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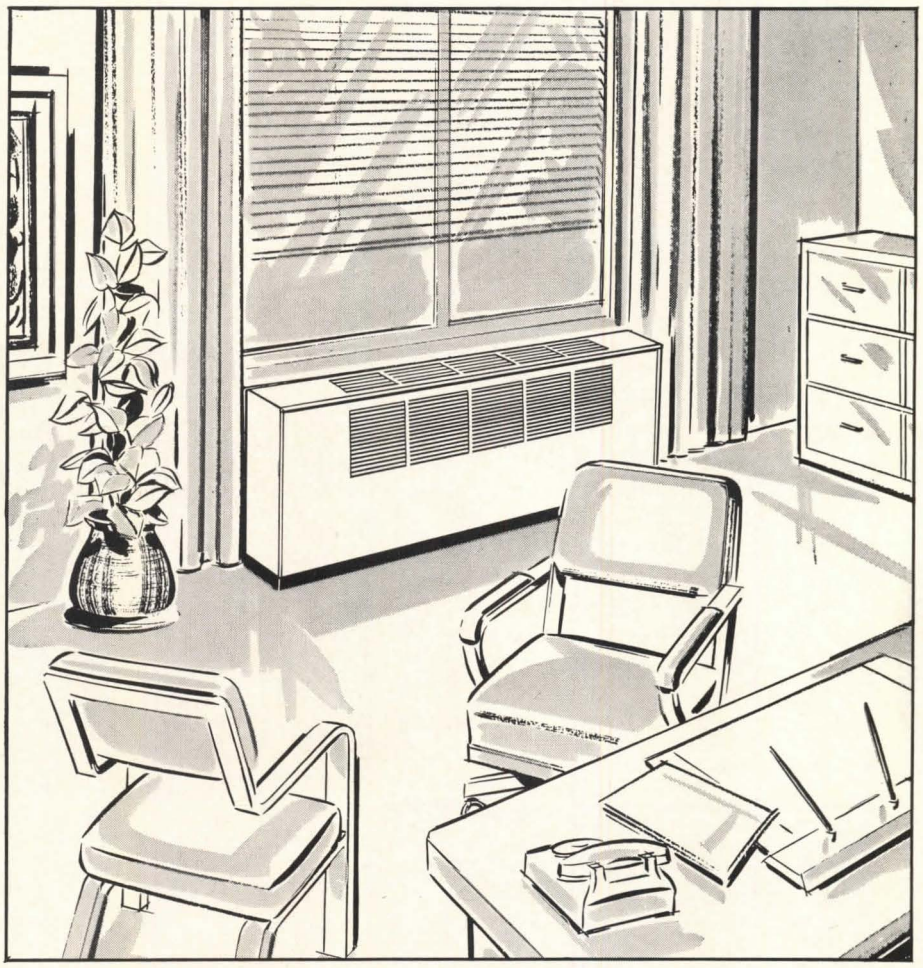

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P/A NEWS REPORT

Progressive Architecture's Monthly Digest of Buildings, Projects, People and Products *December 1968*

WHOSE FAULT WILL IT BE?

SAN FRANCISCO, CALIF. *"They tell me the fault line runs right through here. So that may be; that may be. What's gonna happen is gonna happen to me."* So sings Mama Cass, and with her release of "California Earthquake" on the Dunhill label, an attitude that may produce more harm than the natural phenomenon behind it has passed into song. Earthquakes, like bad breath, were a taboo subject in California for years after the giant disastrous quake of 1906. "A discussion of earthquakes was as welcome in San Francisco as a discussion of the plague," writes structural engineer Karl V. Steinbrugge; "consequently, funds for earthquake research could not be obtained. The press mentioned 'the earthquake' as little as possible." This fall, Steinbrugge published an 80-page survey pinpointing the alarming vulnerability of many Bay Area structures to earthquakes. His paper comes at a time when a major shock along either the San Andreas or the Hayward faults is thought by many geologists to be long overdue, and people are now talking about it. But no one seems to be doing anything about it. *"They say it's gonna happen; it's gonna happen at last. That's the way it appears."*

"Atlantis will rise. Sunset Boulevard will fall. Where the beach used to be will be nothing at all."

Steinbrugge mentions housing projects built on shifty alluvial soil in sections of the fault zones. The Bay Area Rapid Transit District tunnel is being constructed through the Hayward fault zone in the East Bay, and, as he points out, "a significant portion of the buildings in the Bay Area are not earthquake resistive," largely because most Bay Area cities did not enact strong earthquake bracing laws until around 1950.

Steinbrugge offers four main proposals to correct the misuse of land and the ill-controlled building practices in earthquake prone areas:

(1) Don't build buildings such as apartment houses and public buildings along major earthquake faults.

(2) Either remove or reinforce parapets and ornamentation that are likely to fall during a quake. These unanchored trimmings can greatly endanger persons both inside and outside a structure when it is shaken violently.

(3) Establish systems of safety zoning that account for geologic hazards: poor ground, landslides, and faulting. The zones of greatest danger could be used for sites of parks, golf courses, or roads.

(4) Start to determine economic and social reactions to the future science of earthquake prediction.

"Hopefully," he concludes, "all construction will eventually be highly earthquake resistive. Then an earthquake could be an exciting experience, unsettling perhaps, but not necessarily hazardous."

TRANSIT AT THE POLLS

WASHINGTON, D.C. Three major U.S. communities voted on bond issues for rapid transit systems on Nov. 5. And only one, the Metropolitan Transit Authority of Washington, D.C., came home a winner. Perhaps significantly, the Washington, D.C., vote was the most complicated of them all. It needed the approval of voters in five communities in Virginia and Maryland. And it got it. Now the communities can issue bonds, when they feel conditions are right, to support their share of the 97-mile, three-track electric train system. The Federal Government will put up $2 for every $1 put up by the communities, for a total of $1,670,000,000.

Bond issues on the ballots in Atlanta and Los Angeles failed. As everyone knows, the freeway systems in both those cities carry commuters at a snail's pace during evening and morning rush hours. But that, evidently, is the way residents in those metropolises like to get around — by car.

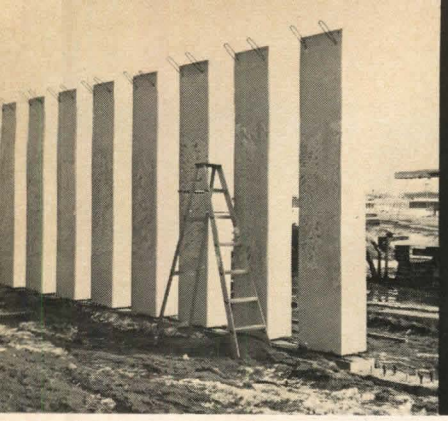
In the Washington area, they like cars too. But there is something attractively appealing about the thought of those brisk overland and underground air-conditioned trains discharging passengers at 86 air-conditioned stations. A prototype station, which will be in operation together with the first segment of the system in downtown Washington by 1974, was recently approved by the Washington Fine Arts Commission. Harry Weese & Associates are consulting architects for the Metro system. DeLeuw-Cather are structural engineers.

PEI TO PLAN FOR COLUMBIA UNIVERSITY

NEW YORK, N.Y. Early last month, Columbia University, whose real estate plans in the Morningside Heights neighborhood of Harlem have been the cause of dissension both on and off campus, announced the retention of I.M. Pei to develop the university's first master plan since the original version was presented in 1894 by McKim, Mead & White. The plan will be comprehensive, attempting to deal with all of Columbia's needs for the next two or three decades.

One provision of the contract with Pei encountered considerable resistance from the school's Board of Trustees: the stipulation that community, students, and faculty all be given a voice in the planning process. Despite trustees' objections to "delegation of responsibility," an arrangement was approved that calls for the establishment of task forces, under the architect's supervision, to work specifically with the three groups. In any case, it is difficult to understand why the stipulation should be a pill too bitter for the trustees to swallow, since they retain all authority to approve or reject the final plan. Columbia's troubles with its neighbors are far from unique; they are, rather, typical of large and expanding institutions in crowded urban communities. Its approach to the situation is worth the attention of planners in all major cities.

According to John D. Telfer, Assistant Vice-President for Physical Planning (see p. 41), there are presently very few construction projects of such urgency that they must go ahead before the master plan is developed, and those that must be begun within the next year will occupy already owned campus land. However, one very delicate question involving the possibility of immediate construction will also come in for consideration as part of the master plan: the controversial gymnasium in Morningside Park. It was already there last spring when protests resulted in a request by Mayor Lindsay that Columbia halt construction. Although Pei will be asked to review the project and the possibilities of finding another site, the Board of Trustees will continue to seek community approval for the present location. The trouble is that the university already has an estimated $3–5 million sunk in the project, with fabricated steel sitting on New Jersey docks waiting to cross the river. A recent proposal to develop the park site with recreational facilities for the community, prepared for the West Harlem Community Organization, which represents the neighborhood adjacent to the park, by the Architects Renewal Committee in Harlem, received scant attention in the Columbia offices, and it seems likely that the university will press for completion of the gym on existing foundations. Nevertheless, according to Telfer, if West Harlem's objection is too strong, the gym's program will be broken up and moved to scattered sites further from the undergraduate school's main campus. Related to the gymnasium issue is another that was made much of last spring by students and faculty at Columbia's School



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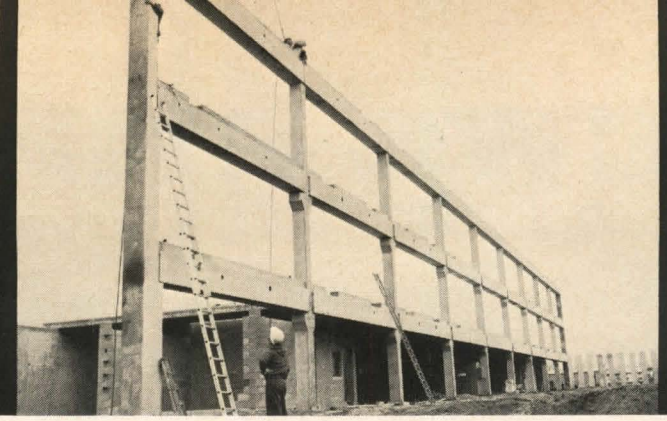

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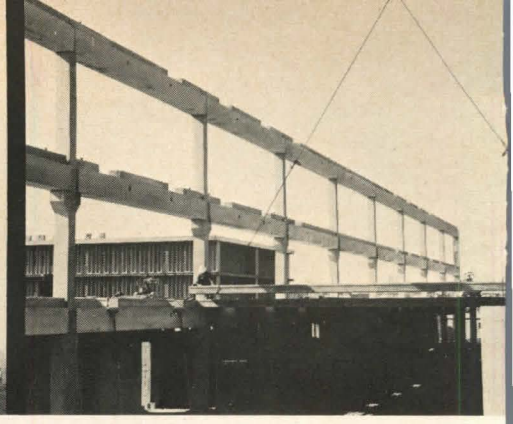


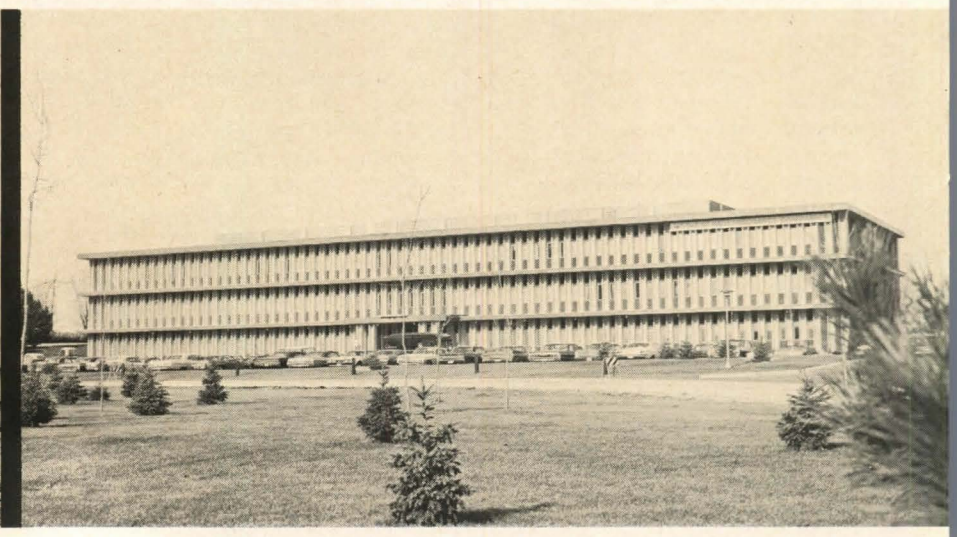
April 10, 1968

April 21, 1968

April 27, 1968

May 3, 1968

May 10, 1968



May 22, 1968

Spancrete cuts construction time from 9 to 5 months

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■ Construction proceeded right through 20-below-zero weather. Spancrete was stockpiled at the factory and shipped to the job site, where it was quickly and easily erected, eliminating expensive and risky forming and curing of concrete during freezing winter weather.

■ The Spancrete planks provided an immediate work deck. No scaffolding was necessary, making it possible for other trades to finish their work sooner.

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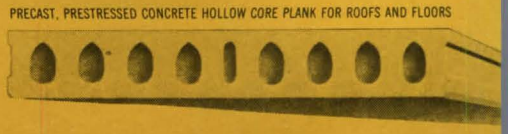


of Architecture — the issue of faculty involvement in physical planning for the university. With some of the country's best designers (Aldo Giurgola, for example) on its faculty, ought not the university to take advantage of their professional judgment by including them or a representative on a design review panel? Columbia argues that, if faculty members are to devote themselves in a satisfactory manner to their teaching duties, they cannot afford to become involved in administrative decisions, which require full-time attention, and so no provision has been made for their inclusion in the review process. It may be unreasonable, however, to suppose that at least one member of the architectural faculty (the head of the department, say) could not serve on such a panel without neglecting his students.

Completion of the new master plan is expected to take from 12 to 18 months.

PERSONALITIES

When Columbia University announced last month the retention of I.M. Pei to prepare a master plan, it made clear its intention to include both students and community representatives in the planning process. The man primarily responsible for this change in the university's policy is **John D. Telfer,** Assistant Vice-President for Physical Planning.

Both Telfer and the administrative position he fills are new to Columbia. A tall, rangy man in his early forties, with plenty of Midwestern charm, Telfer was appointed to the position in April, just before the outbreak of the campus riots, and arrived on campus July 1. His arrival coincided with an emotion-charged turning-point in the school's history, *and his* position perhaps symbolizes that turning point.

Part of his agreement with the university was the assurance that he *would have* a free hand to go out into the community and coordinate Columbia's expansion with the needs of the people who live around it and are affected by its plans. This involvement represents a new approach for Columbia, which over the years has developed an almost total dichotomy of interests between town and gown "That gray stone wall has to go," says Telfer, gesturing toward the barrier that separates the university from Broadway. Sitting in his office on the second floor of McKim's Lowe Library, he keeps the blinds drawn to avoid a view of the Uris School of Business Administration next door, and gazes instead at a drawing of the University of Michigan as it was in 1903.

With a background in architecture and planning, he holds a bachelor of architecture degree and a master's degree in city planning from the University of Michigan. Telfer came to Columbia from the University of Michigan, where he was university planner. While serving in Ann Arbor, he was also active in planning outside the groves of academe. He has been a member of the Washtenew County, Mich., Metropolitan Planning Commission, and has served as chairman of the City Planning Commission of Ypsilanti, Mich. It will probably be this experience that will make him particularly suited to direct Columbia's future physical planning.

Telfer gives the impression that he would like to see Columbia spread out into and become a part of the community, much as the University of Michigan has. The difficulty may be, however, that in Ann Arbor, the university *is* the community; Columbia cannot claim the same distinction . . .

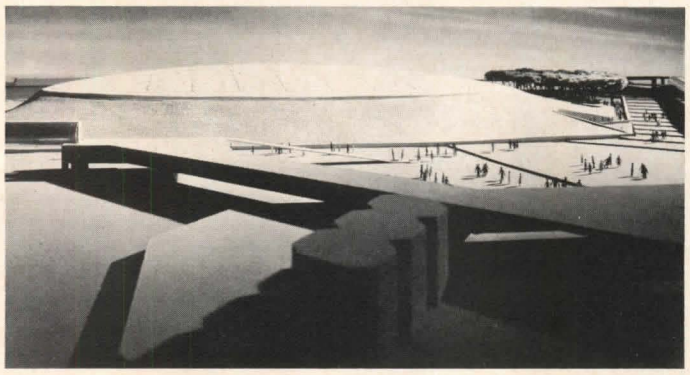
George J. Hasslein, dean of the School of Architecture at California State Polytechnic College, has been appointed to the 11-member Committee on Environmental Design and Urban Studies of the California State Coordinating Council for Higher Educaton. The committee's purpose is to study potential needs within the state for programs in city

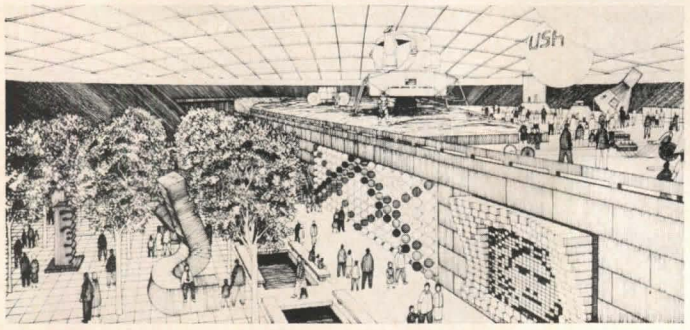
and regional planning, architecture, and landscape architecture and to report these needs to the state . . . **Darrel D. Rippeteau,** partner in the firm of Sargent, Webster, Crenshaw & Folley of Syracuse, N.Y., is the new president of the New York State Association of Architects.

ARCHITECTURAL SONGS?

PITTSBURGH, PA. "Ladies beware of an architect with blueprints under his arm. Unless you hanker to be betrayed like Nellie of Meadow Farm" goes the song. For $5.50, you can find out what happened to poor Nell and Hyacinth Harry and Lorenzo Il Magnifico and Walter and Mies and Corbu. "Walter and Mies and Corbu still cause a lot of to-do." Tunes and lyrics are the work of Robert Schmertz, long a fixture, with his banjo, of the Pittsburgh Architectural Club. Now, for its seventieth anniversary, the club has reissued Schmertz's record, "Ladies Beware of an Architect: Songs for Architects and Their Girl Friends." Copies are available from the Pittsburgh Architectural Club, 246 Third Avenue, Pittsburgh, Pa. 15222.

U.S. PAVILION FOR EXPO 70: VERSION II





OSAKA, JAPAN. Redesigned after a severe budget cutback, the U.S. Pavilion at Expo 70 may well have profited from the change. As designed by Davis, Brody, Chermayeff, Geismar, de Harak Associates under the direction of the U.S. Information Agency, the pavilion has quiet strength, simplicity and daring. It will have the first air-supported cable roof structure ever built. Rising above an earth berm, the ellipse of the slightly domed roof gives the structure the appearance of the Yale Bowl filled with slowly rising white yeast. The roof will be 462′ x 270′, and is claimed to be the lightest roof of this span ever put up, weighing less than 1½ psf.

The roof consists of a translucent glass-fiber fabric skin tensioned between a rectangular grid of high-strength steel cables that are anchored to a floating concrete ring. Four air compressers will keep the roof taut 20′ above the concrete ring, forming a large, clear-span, translucent, hollow dome that, by day, will permit sunlight to pass through into the enclosed parklike environment below. By night, it will glow with light from within. Inside the pavilion, ground-level excavations will make possible almost five stories of exhibit space. In all, there will be almost 100,000 sq ft of exhibition space, more than twice that enclosed by the U.S. dome at Expo 67.

RAPID REHABILITATION RUNS INTO BUREAUCRATIC ROADBLOCKS

NEW YORK, N.Y. They called it instant rehabilitation. Actually, it took a few minutes less than 48 hours. And that was after more than a year of product development and test runs. At the end of that time (a year and 48 hours), they had a refurbished 15-unit tenement on New York's lower East Side (see p. 46, JULY 1967 P/A). The idea was that residents of the building could be moved to a hotel for a couple of days while their building was being worked over, then move back into bright, clean apartments. At the time, in April 1967, Conrad Engineers, the West Coast firm that did the rehabilitation (with the aid of a $1 million HUD grant), estimated the rehabilitation cost at approximately $11,000 per unit, about half the cost of new construction. Now, a year-and-a-half later, the Institute of Public Administration, the nonprofit organization that conducted the experiment with HUD funds, says that the program was too costly to be feasible. In juggling numbers, the Institute says the process cost $45 per usable square foot, or about $22,000 per unit — twice the original estimate and significantly more than comparable new construction, which today, in New York, may run as high as $30 per sq ft.

The report notes that the year-long experimentation boosted the cost estimate, as did the overtime pay necessitated by working around the clock, as well as the purchase of small lots of materials for the one-shot job. Boosters of this type of rapid rehabilitation are now thinking in terms of projects taking from two to four weeks. This would get rid of the inefficiencies of round-the-clock work and presumably allow time to take prefabricated bathrooms and kitchens in through the entrance to the building rather than dropping them by crane through the roof. Use of the crane proved needlessly expensive, according to some observers. By doing the work over a three-week period, officials feel the cost could be brought down to $24 per sq ft or less for one building. Of course, as the number of buildings rehabilitated increased, so would the cost efficiencies. Ideally, a contractor would work with an endless chain of buildings, rehabilitating them in, say, groups of threes until all the buildings in a city were refurbished. By then, presumably it would be time to start again.

Another factor that boosted costs was the need for subcontractors, who were unable to give firm contracts on unfamiliar techniques, to operate on a cost plus basis. As these techniques become better established, firmer contracts can be established, and at least one source close to the experiments says that straight cost contracts are now feasible.

The Frederick W. Richmond Foundation in New York is planning to underwrite rapid rehabilitation of 13 buildings in Harlem. In June 1967, the Federal Government said it was ready to give the go-ahead to the project, which would try to correct some of the mistakes of the lower East Side project. But a year-and-a-half after saying they were ready, city and Federal agencies have still not given permission.

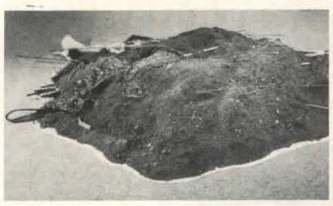
Rapid rehabilitation is one of the few experiments so far that can keep neighborhoods intact. If this is a valid aim, and many believe it is, then the wisdom that came from one brief experiment should surely be given a chance to prove itself.

CALENDAR

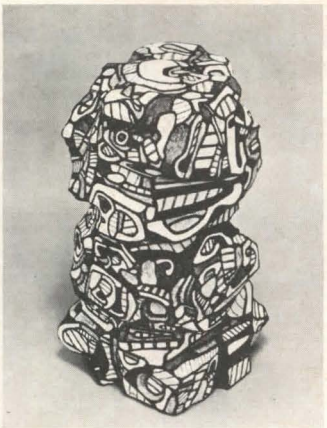
Representatives of the American Congress on Surveying and Mapping, The American Institute of Architects, the American Society of Civil Engineers, and the National Society of Professional Engineers, comprising a Joint Committee on Employment Practices, will hold a conference on **"Alternatives to Unionization: An Examination of Modern Employment Practices."** The conference is scheduled to take place in St. Louis, Mo. on December 6. Write: Thomas R. Hollen-

Continued on page 44

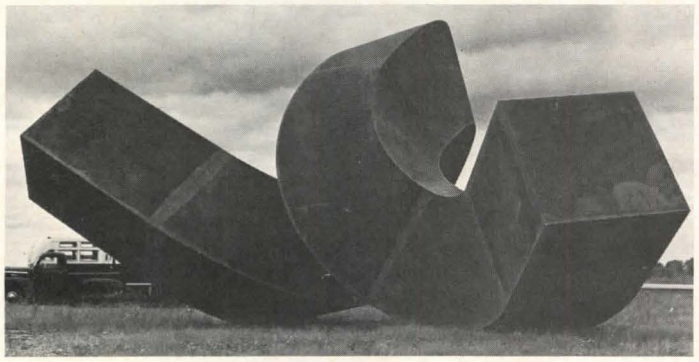
TUNE IN, TURN ON, PUT ON: ART 1968



Robert Morris's "Earthwork, 1968" is the title of the mound of earth, peat, steel, aluminum, copper, brass, zinc, felt, grease, and brick that covered a large area of the carpet at the Dwan Gallery in New York last October. Also on view were Walter De Maria's "Painting, 1968," a deep yellow mural inscribed, "The Color Men Choose When They Attack The Earth" and photos of the same artist's installation "Pure Dirt" at the Heiner Friedrich Gallery in Munich.

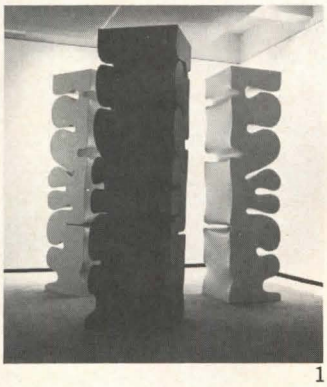


Earlier this fall, an exhibit of works by Jean Dubuffet had a turn at MOMA. It included several of the artist's new works, such as this 10' construction in cast polyester resin and vinyl paint entitled "La Tour I."



Some 6340 lb of black-painted weathering steel have been turned by sculptor Clement Meadmore into a "Curl" that now lies helplessly in the midst of a plaza in front of Uris Hall (like so many of the school's newer buildings, no architectural delight) at Columbia University.

The most breath-taking exhibition of traditional art in Manhattan this fall was far and away "The Great Age of Frescoes" at the Metropolitan Museum of Art. The show — in a discreetly evocative mounting of white, stretch-fabric arches — included 70 frescoes, many accompanied by their underdrawings, from religious and ducal buildings in and around Florence executed between the 13th and 16th Centuries. It was a powerful reminder of the time when art and architecture were firmly united — the progenitor of today's Supergraphics, someone said. Shown here is a fresco detail (1527) by Jacopo Pontorno. Also shown were many wall panels, a complete tabernacle, ceiling bands, friezes, and a giant, touchingly human tryptich of the Last Supper.



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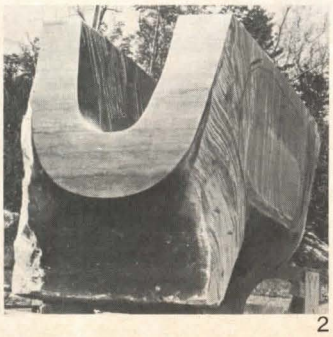
*Towering sculptures of painted canvas **(1)** dominated a corner of the Howard Wise Gallery in New York in October. The artist, Minoru Niizuma, works primarily with stone, as he did this summer at the International Sculptors' Symposium, and produces remarkable polished surfaces **(2)**.*



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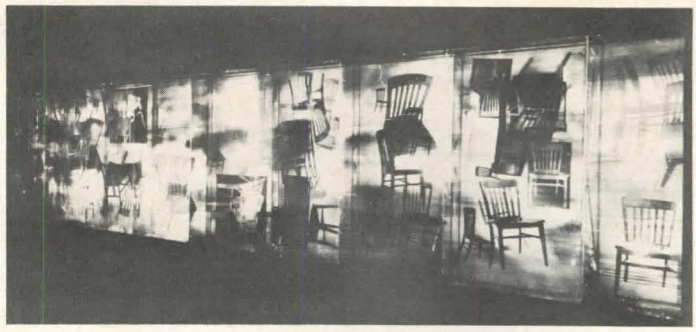


Robert Rauschenberg has a wall-sized piece of turned-on art called "soundings" on exhibit through February at the Museum of Modern Art. Lamps installed between panels light up in response to sound, illuminating silk-screened images of chairs behind silvered panels. The day we saw it, a group of hippy teen-agers kept the art turned on by enthusiastically talking to it while a two-year old gleefully stamped his foot.

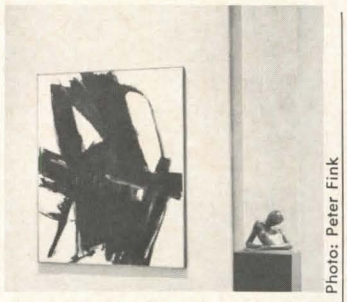
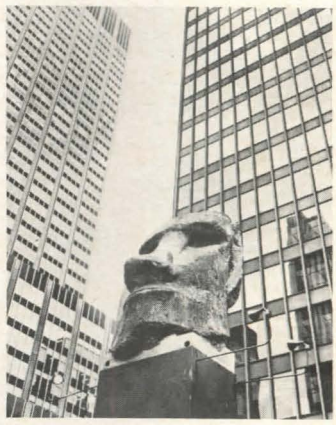
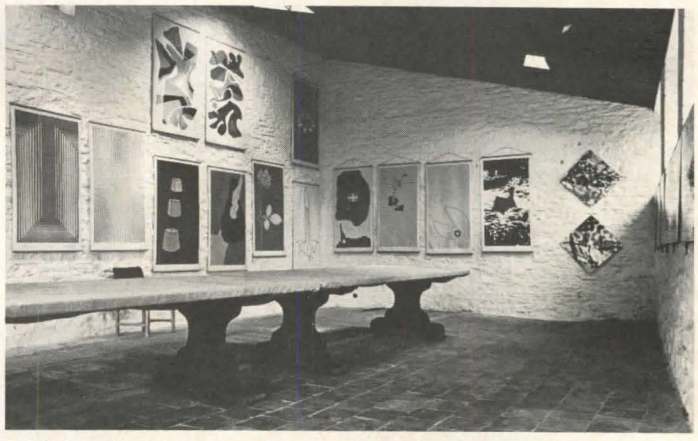


Photo: Peter Fink

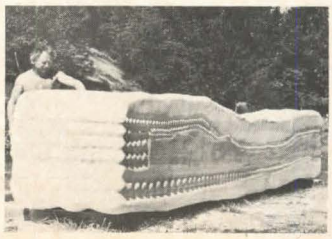
"Merce C." by Franz Kline was on display this fall at the National Collection of Fine Arts in Washington, D.C. (see p. 48.) It is typical of Kline's more recent work — large, bold, almost violent, full of sudden contrast. Also this fall, a large retrospective of Kline's work hung in the Whitney Museum in New York in one of the best art shows of the season. The Whitney's marvelously flexible spaces were arranged to show Kline's early representational oils and water colors in small spaces, his early abstract experiments in intimate spaces, and his later explosive, almost urban abstract work in large, airy open spaces.



Sternly gazing forth from a 12' pedestal directly in the middle of the Seagram Building's plaza last month was an 8', 5-ton stone head from Easter Island. Although the stated purpose of its exhibition was to call attention to an Easter Island restoration program directed by the International Fund for Monuments, the head looked for all the world as though it had been created specifically for the 1968 Presidential campaign.



Brightly-colored banner scrolls — a new application of silk-screen printing — could be seen last month at Etchings International, a New York gallery that specializes in contract work for architects and interior designers. The banners are printed in editions of 75 each and are designed by English artists for The Canonberry Banner Company, Ltd.



Marble sculpture by Karl Prantl of Austria was one of the works produced during this country's first International Sculptor's Symposium held late this summer in Proctor, Vt. The National Endowment for the Arts and the Vermont Council on the arts sponsored the symposium and the Vermont Marble Company put 227 tons of marble at the disposal of 10 sculptors.

bach, AIA, 1735 New York Avenue, N.W., Washington, D.C. 20006 . . . **The International Conference on Shear, Torsion, and Bond in Reinforced and Prestressed Concrete** will convene January 14–17 at the PSG College of Technology, Coimbatore, India. The conference is sponsored by the PSG College of Technology, University of Madras, and the Structural Engineering Research Center of the Council of Scientific and Industrial Research of the government of India. Address inquiries to: Dr. V. Ramakrishnan, Organizing Secretary, Head, Department of Civil Engineering, PSG College of Technology, Coimbatore 4, India . . . The **Winter Meeting of the National Society of Professional Engineers** will be held January 15–18 at the Stardust Hotel, Las Vegas, Nev. The Society's address is 2029 K St., N.W., Washington, D.C. 20006 . . . A 13-day **Seminar Tour of Mexican Architecture and Interior Design** will be conducted by T. H. Hewitt in cooperation with the Sociedad Arquitectos Mexicanos this February. T. H. Hewitt, P.O. Box 2292, San Francisco, Calif. 94126.

URBANE FACADE TO HELP COMPLETE THE METROPOLITAN

Photo: Ezra Stoller

NEW YORK, N.Y. In 1970, the Metropolitan Museum of Art celebrates its one-hundredth birthday. By then, if plans move according to schedule, it will have completed construction of its front façade. Designed by Richard Morris Hunt in 1894, the central portion of the front façade still has a temporary wooden vestibule at the main entrance and piles of stone above the front portico that were meant to be carved into trophies. Both the stone piles and the temporary vestibule will disappear. In a design by Kevin Roche John Dinkeloo & Associates, an air curtain will replace the vestibule, and spreading beneath it will be a wide, three-tiered pyramid of steps, bringing the front staircase into scale with the museum's extended 1000′ façade. In 1907, McKim Meade & White added the two flanking wings, giving the museum a much greater capacity. Now that visitors flood the museum at the rate of 6,500,000 a year, the old steps are not only out of scale but also out of touch with reality. To make way for the new staircase, the curved automobile drive at the main entrance will be taken out and replaced by dual auto-pedestrian entrances, at the north near the Costume Institute and at 81st Street to the south.

Implicit in Kevin Roche's design is a stronger relationship between the museum and Fifth Avenue, which it faces, than with Central Park in which it is sited. "The façade, facing the avenue, is first a piece of architecture, and then, most specifically, an urban façade," he says. In front of the museum, flanking the central portion, will be two fountain-pools, whose 122′-long walls of water will mask

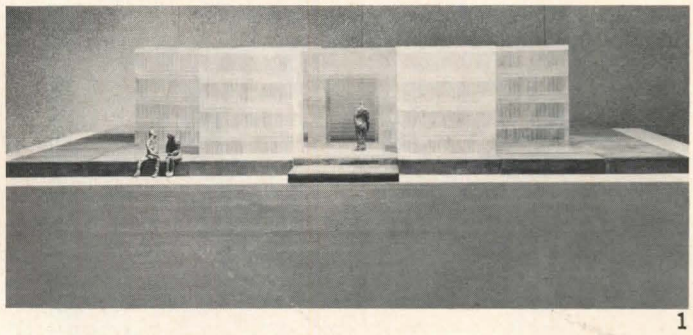
Photo: Metropolitan Museum of Art

the lower portion of the wings, which extend from the center. Beyond the fountains at either end will be planting areas.

Completion of the façade is expected to cost $1,600,000; more than $1 million comes from an anonymous donor.

Roche Dinkeloo & Associates are working on an over-all expansion plan for the museum, and the front façade completion is the first phase. It is a treatment that maintains the character of the institution and of that section of the city. Museum Director Thomas P. F. Hoving, for one, commends it: "The solution is one of pleasing elegance, of a simplicity that makes for excellence in architecture."

MONUMENTS TO PONDER



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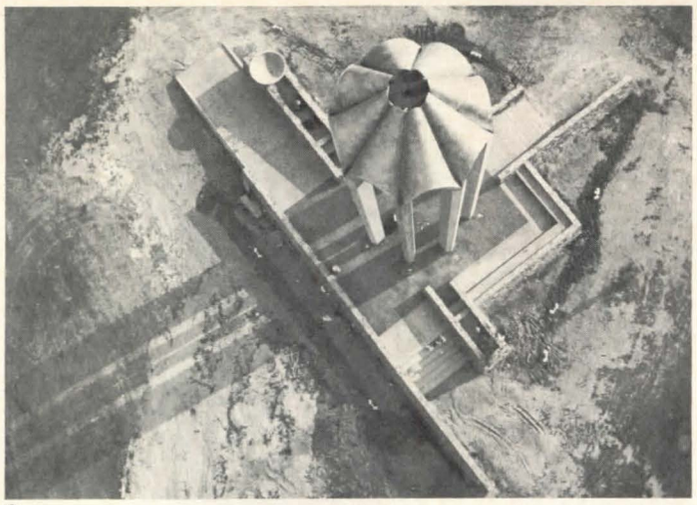
Webster's defines a monument as "a structure . . . erected or maintained in memory of the dead or to preserve the remembrance of a person, event, etc." The difficulty in designing a monument is in producing a structure that conveys the essence of the person or event being memorialized. And a monument must be impressive enough, at least, to stimulate the viewer's interest in its purpose.

The making of monuments is a very delicate affair, one that, if not handled successfully, produces some of the most meaningless architecture in existence.

In his design for the Monument (still in model form) to the Six Million Jewish Martyrs **(1),** which is to be sited at the tip of Manhattan Island, in Battery Park, Louis I. Kahn has relied for impressiveness, not surprisingly, on a group of great geometrical masses 10′ square and 11′ high. Six piers of solid glass blocks that interlock without the use of mortar surround a central pier, which, alone among the seven, contains a small chapel. When completed the monument's glass will catch reflections from passing ships, the sky, and water in the harbor. The model was on view last month at the Museum of Modern Art in New York.

The Armenian Martyrs' Memorial Monument **(2),** recently completed in Bicknell Park, Montebello, Calif., ap-

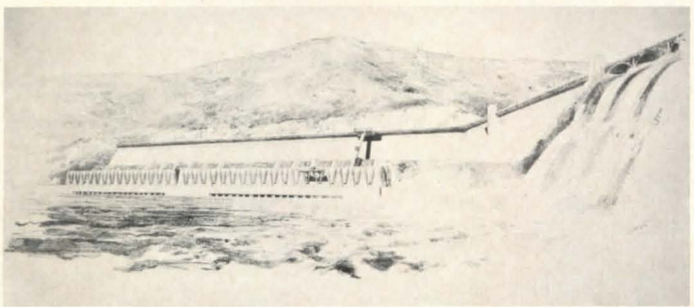


2

pears to be less successful as a memorial. What it does seem to be is an unnecessary, if pleasant, addition to the park, whose visitors are unlikely to react with appropriate thoughts on the "men of all nations who have fallen victim to crimes against humanity" to whom the memorial is dedicated.

The structure, designed by H. Hrant Agbabian & Associates, consists of eight precast concrete bent columns that blend into arches and support semiconical dome sections. The memorial stands on a raised, brick-paved platform enclosed by masonry walls with cantilevered concrete seats for visitors.

DAM DESIGN BY BREUER



GRAND COULEE, WASH. Dams are architecture. Or at least, they can be. Marcel Breuer & Associates' plans for Grand Coulee Dam prove the point.

In March, the U.S. Bureau of Reclamation asked the Breuer firm "to provide architectural design features — with particular attention to color, form, surface, choice of materials and lighting" for the dam (see p. 66, APRIL 1968 P/A). Grand Coulee is indeed a giant structure, one about to become the world's largest power producer.

The firm was asked to produce architectural design concepts for the 200′ forebay dam, which is an extension of the existing structure; a new powerhouse, which will be 20 stories high and take in an area the size of four city blocks, visitor facilities and other features. The third powerhouse eventually will house 12 generating units, each rated at 600,000 kw.

Features of the Breuer concept, which may still be modified before construction, include an inclined elevator, a glass-enclosed cab moving up and down the face of the dam's 475′-high penstocks. The elevator will stop midway along the incline to give visitors access to a platform cantilevered out of the rock cliff supporting the forebay dam, where a cross-over bridge spanning the transformer deck will lead to the powerplant. Visitors will enter the generator hall of the powerplant at a level above that of the bridge crane, and will be able to cross the gallery at this level to a balcony from which they may view the powerplants, the spillway, and the Columbia River itself. At the bottom of the inclined elevator shaft, visitors may walk to the turning shaft areas of the huge turbines.

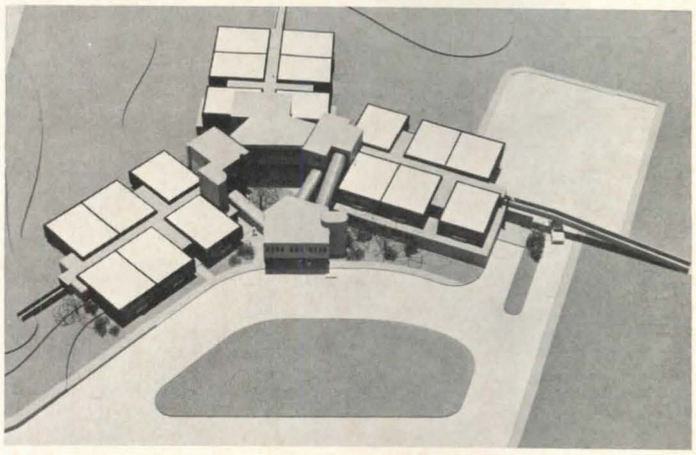
Visitor arrangements are to be completely separated from operating personnel.

"We believe," commented Reclamation Commissioner Floyd E. Dominy, "that thousands of visitors . . . will discover its great beauty as well as be moved by the dam's staggering physical dimensions. . . ."

Concrete, the principal component of the structure, will be featured in the construction, to give strong vertical lines to the powerplant structure.

A second architectural contract — for development of a coordinated master environmental and recreational plan for the entire Grand Coulee area — has been awarded to Kenneth W. Brooks of Spokane, Wash.

THE CLASSROOM IS A METAL BOX



COLUMBUS, IND. The architectural showcase that is Columbus, Indiana, will gain another exhibit with the completion in 1969 of the L. Francis Smith Elementary School, designed by John M. Johansen of New Cannan, Conn.

In model form, the school building comprises three expandable classroom wings staggered both vertically and horizontally. Beneath each in fixed concrete bases, are supporting facilities such as dining rooms and kitchen, mechanical rooms, and kindergarten rooms. Wings are linked by a covered central core, which contains a play yard, as well as administrative offices and a library. In moving through the core from one wing to another, pupils will pass through ramped halls, which are actually self-supporting corrugated metal tubes, lined inside with carpet. Each wing will have six classrooms and serve two grade levels. First and second grades are in one wing, for example, third and fourth grades in another. These classrooms are light metal boxes set into the concrete of the base. Smaller metal boxes contain toilets and storerooms. Each wing can be expanded by merely adding more of the metal classrooms. Running up and into each wing from ground-level bicycle stands are long ramped walkways.

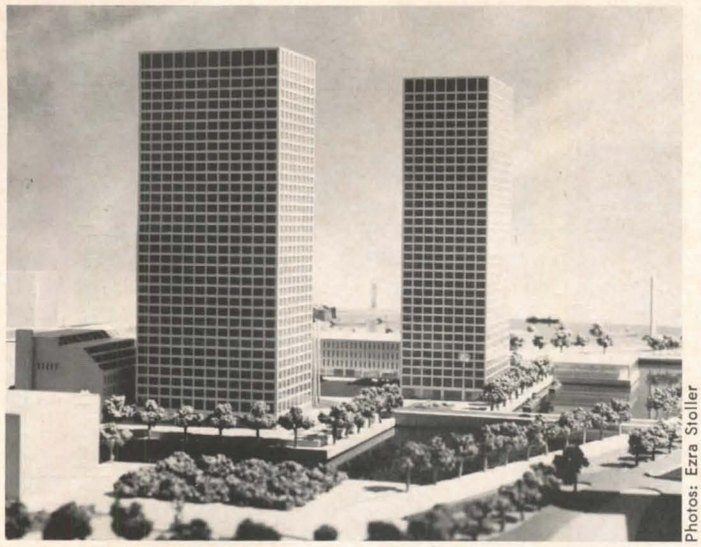
The 50,000 sq ft of space will cost $1,200,000.

WORLD TRADE CENTER ON A EUROPEAN SCALE

ROTTERDAM, THE NETHERLANDS. Even before the fad for cultural centers has run its course, one for world trade centers may be developing. Scheduled to open in 1972, the same year as the twin-towered New York World Trade Center, is one in Rotterdam.

Like its New York counterpart, it will have twin towers, 35 stories each instead of 110, and, like the Yamasaki-Emery Roth designed New York structure, it will have two low, flanking buildings grouped with the towers around a central plaza.

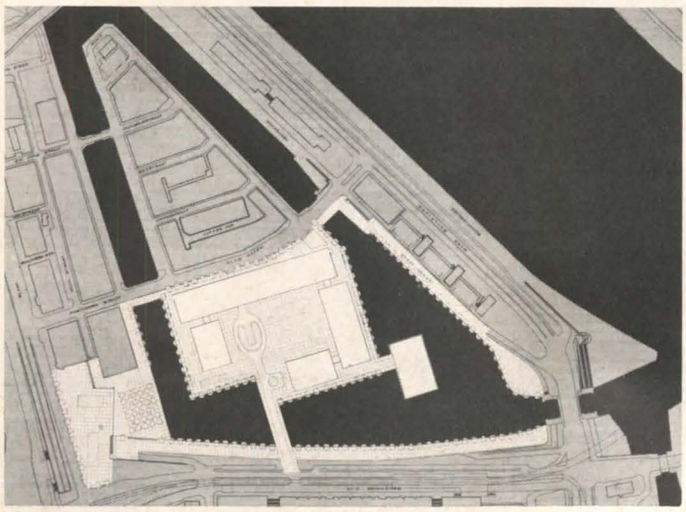
Rotterdam is an ideal spot for a world trade center. For one thing, it is the world's busiest port (141,400,000 tons of cargo in 1967), and for another it is located at the hub of a network of rail, water, highway and pipeline traffic flowing to and from the major cities of Europe. The $60 mil-

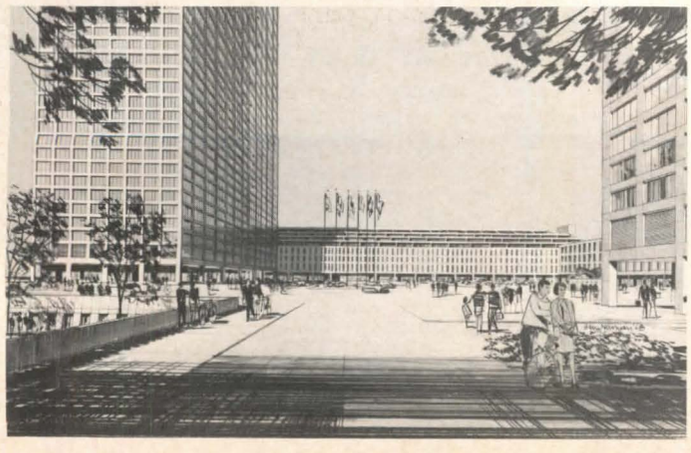


Photos: Ezra Stoller

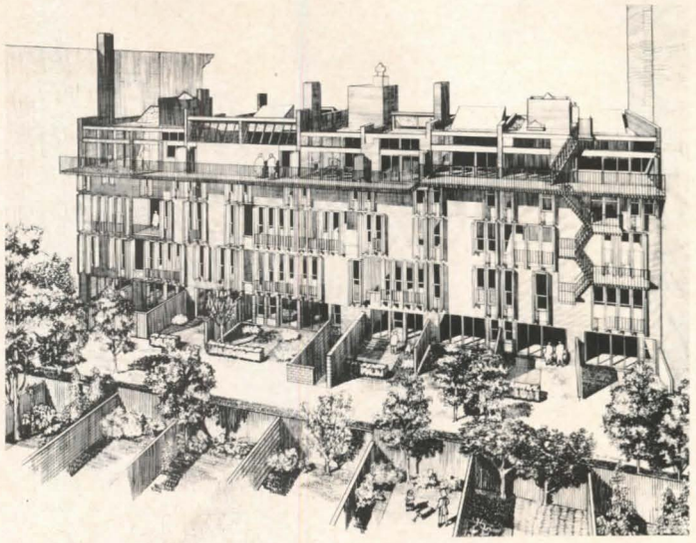
lion center will hold offices for exporters and importers and "other foreign trade oriented businesses," and it will have more than 280,000 sq ft of rentable exhibition and display space out of a total of 1,230,000 sq ft. Also included will be a 300-room hotel and an office pavilion.

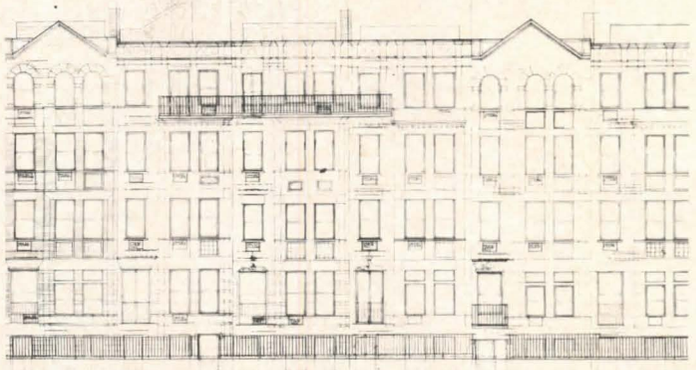
But if both locus and focus of the center are European, its design is distinctly American. The work of the Chicago office of Skidmore, Owings & Merrill (William Dunlap and Bruce Graham, partners-in-charge), the center buildings are the crisp, rectilinear, curtain walled structures that characterize much of SOM's work. Nicely sited at one end of an artificially created island in a backwater of the Rotterdam harbor, the center will be connected to the city on the west by a two-level bridge (pedestrians below, autos and bicycles on top), and below grade will be parking on two levels for 200 cars. The upper level of the roadway will continue through the site, tying in with roadways to the east.





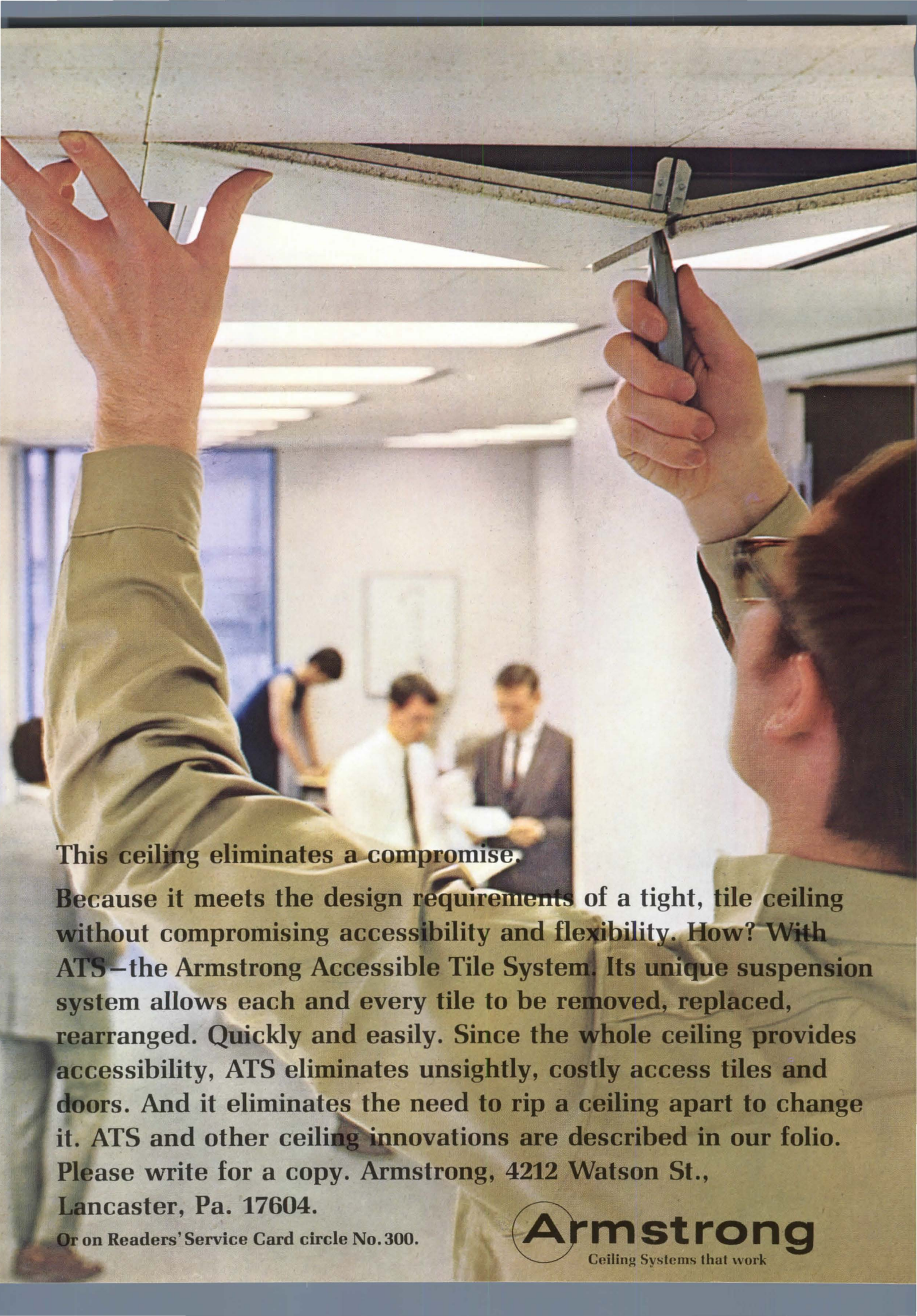
WHATEVER HAPPENED TO THE LITTLE OLD NEW YORK BROWNSTONE?





NEW YORK, N.Y. Nine brownstone buildings on Manhattan's Upper West Side, all dating from the 1880's and 1890's, have been saved from demolition by a group of area residents known as the Little Old New York Citizen's Committee. It took 18 months for the citizen's group to convince the city to alter the buildings' designation from demolition to rehabilitation, but, once convinced, city and Federal agencies provided the tax abatements and loan insurance in the hope that other groups will be encouraged to undertake similar projects. Under the city's plan for the Upper West Side Urban Renewal Area, the buildings (located between Central Park West and Columbus Avenue on 94th Street) were to be cleared away for a 10-story apartment building that would have effectively barred light and air from neighboring residences. Although other brownstones in the neighborhood are scheduled for rehabilitation, these nine were considered too small and therefore too expensive to bother with. But the citizen's committee, wishing to preserve the neighborhood pattern of low-rise residences on the streets and high-rise apartments on the north-south avenues, not only protested, but came up with a plan that would make rehabilitation both feasible and attractive to government agencies involved.

Having formed a cooperative corporation, assembled tenants to fill the apartments, and acquired enough money to purchase the land from the city, the citizens retained architects Edelman & Salzman to redesign the buildings from the inside out. To begin with, the architects removed all front stoops (traditionally a characteristic of the New York brownstone) and created three entrances to serve all nine buildings. Party walls between buildings were removed, and apartments custom-designed to suit the future tenants were, in some cases, extended into adjoining buildings. Connecting hallways were provided at the first, second, and third floors. In the rear of the structures, additions were designed to bring all nine buildings out to a line 53′ from the façades. When built, the structures had varying depths to avoid encroach-



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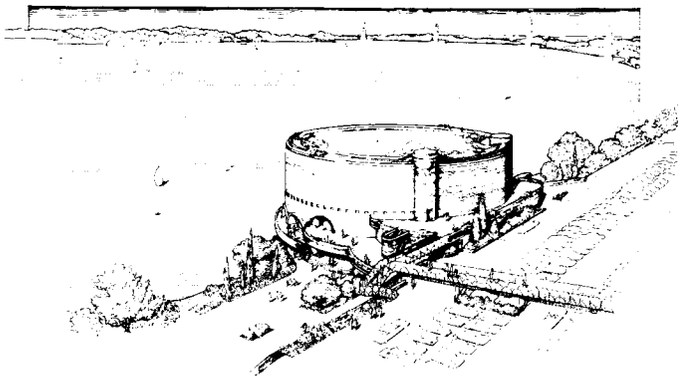
ing on Apthorpe Lane, an old path that ran diagonally across the block. New exterior walls in the rear will look better than the façades of many modern dwellings, and a large backyard will be created for use by all tenants. Common facilities including a darkroom, meeting room, and so on, are provided in the basement. Apartments, custom-designed for tenants, will vary in size, shape, and price. Several duplexes are placed on the lower and upper two stories; those on the lower floors have private gardens, those on the top stories have their own garden balconies. No two apartments are alike. All apartments, however, will have a fireplace (some two), hardwood floors, air conditioners, and electric hot-water heaters.

Considering the various amenities requested by cooperators, down payments and carrying charges have been kept fairly low for the New York market. Down payments range from $2725 (for a one-bedroom apartment) to $10,900 (for a five-bedroom apartment), and carrying charges will run from $120 to $360.

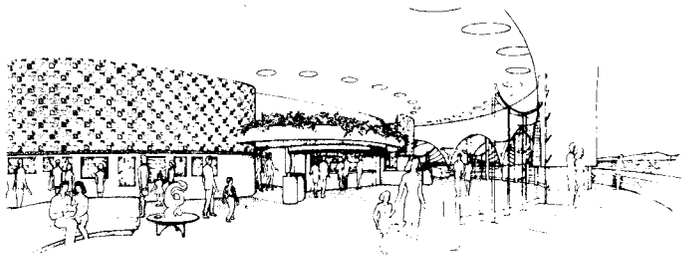
Prices will be kept down by the city's agreement to grant a 20-year tax abatement on the property. For the first nine years, there will be no real estate taxes; thereafter, for two years, the cooperators will pay taxes on the 1967–68 assessed value of the property. Legislation pending before the City Council is expected to grant additional tax benefits from the twelfth to the twentieth year. In addition, the corporation was able to obtain FHA insurance of the mortgage loan.

DRUM ALONG MONONA



MADISON, WIS. The only thing wrong with the site for the Madison Civic Auditorium, overlooking beautiful Lake Monona, just two blocks from the Wisconsin State Capitol, is that it is cut off from the capitol and the city by the double barrier of expressway and railroad. Designed by Taliesin Associates as the first structure in the long-delayed Frank Lloyd Wright plan to give Madison a civic center (see p. 66, MAY, 1968 P/A), the auditorium solves its site problem largely by ignoring it and concentrating on what the site does have to offer, the way a political speaker might ignore a heckler. A pedestrian bridge will lead across tracks and highway to the auditorium, and a parking platform for 360 cars will cover the portion of the highway directly in front of the auditorium.

Getting there will probably not be half the fun, but, once there, a visitor will have grand vistas of the lake — from the Grand Foyer out through deeply recessed arches, from the landscaped parking deck, and, eventually, after a future construction stage, from an esplanade along the lakeshore. As presently envisioned (bids will be let in February), the building will resemble a large drum, faced with "soft golden brick." It will have a maximum seating capacity of 2331, which can be varied, together with the acoustics, to accommodate performances of such disparate events as grand opera and chamber music. With its terraces, balconies, and curved brick façade, it is designed to be a physical part of future structures planned for the site: a state theater, a convention center, and an art gallery. Eventually, the entire lakeside area, known as the Monona Basin Project, will put at least this area of Madison back in touch with the lakefront.



William Wesley Peters is chief architect for the project; Dr. Vern O. Knudsen of Los Angeles is acoustic consultant; and George C. Izenour & Associates of New Haven are theater consultants.

CLASSIC GROUND FOR AMERICAN ART

WASHINGTON, D.C. "Study your country's taste and requirements, and make classic ground *here* for your art." This was the advice to American artists offered early in the last century by architect Robert Mills, whose massive neoclassic Patent Office Building has recently become the nation's first Federal museum of American art. Last spring, the 122-year-old National Collection of Fine Arts moved out of the corner it shared with stuffed mammals in the Smithsonian Institution's Natural History Museum on Constitution Avenue and into the north wing of the old Patent Office Building at 8th and G Streets, N.W., in downtown Washington. And, just last month, the historically oriented National Portrait Gallery moved in to occupy the south wing.

Washington's newest museum is a two-square-block structure of solid sandstone, granite, brick, and marble, whose plan is that of a great quadrangle surrounding a large open court where two 150-year-old elms will eventually shade sculpture. Designed in the 1830's and completed in 1867, the Patent Office (see p. 50) was built, like *all Mills' buildings* (others include the Washington Monument and the Treasury Building), to last for centuries, and it has survived the vicissitudes of national politics and history almost miraculously well.

Having withstood use as barracks for the Rhode Island militia during the Civil War, and then as a hospital and morgue where Clara Barton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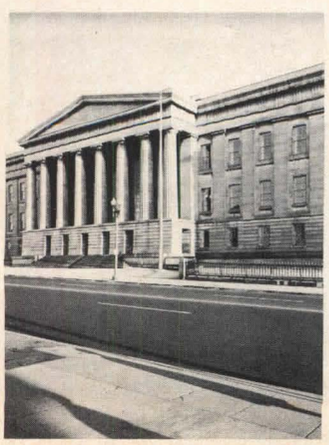
ministered to the wounded, the building was partially gutted by fire in 1877; it was rebuilt in the following decade under the supervision of architects William Elliot and Edward Clark. But the greatest threats to the structure occurred after the Patent Office moved out in 1921 and the Civil Service Commission moved in.

In 1958, it was doomed to demolition to make way for a black-top parking lot. Somehow, this fate was avoided, and, in 1958, the building was turned over to the Smithsonian. When renovation began, there were great corridors 17′ wide and 17′ high to be turned into gallery space by removing the partitions that had created myriad small Federal offices. There was an eighth-of-an-inch of G.I. Green paint to be removed from granite columns, architraves, and solid brick barrel vaults. And after the General Services Administration, which administers all Federal construction, had finished with its part in the restoration and conversion job, most of its work had to be undone by the museum staff under the direction of David Winfield Scott, director of the collections, and Bayard Underwood, the museum's architectural consultant. By the time Underwood was retained, his job consisted mainly, as he puts it, "in saving some of the basic architecture of about one half of the building." Major changes during the construction stages included removal of one elevator shaft and one mechanical duct shaft which, if built as shown, would have ruined two grand stairways and the Lincoln Gallery. To restore the Granite Gallery on the first floor, it was necessary to remove nonloadbearing brick partitions that ran through half of an entire wing. The entrance (formerly the rear of the building) was made into an impressive space by chopping out the second floor and creating a two-story entrance lobby. Lighting was completely revised, with the help of W.M.C. Lam, consultant, after monstrous GSA-designed, all-purpose fixtures had been hung from ceilings throughout the building.



Now, the granite-columned Lincoln Gallery, so named for its use as the promenade for Lincoln's second inaugural ball, houses a three-century survey of American art; the Granite Gallery contains works by 20th-Century sculptors Alexander Calder, Alexander Archipenko, and Theodore Roszak, among others. In addition to the 16 galleries, the National Collection of Fine Arts has three public lounges, administrative offices, storage space, workshops for framing and display departments, a large library (whose ceiling is three stories high), a conservation laboratory, a photographic studio, and assembly halls. Most of these facilities are shared with the Portrait Gallery, whose director is Charles Nagel.

Of the $6 million spent on renovation over the last 10 years, no great sum was available for interior furnishings. These are consequently installed sparingly, but with excellent taste. Furniture designed by Eero Saarinen and Warren Platner is used in rest areas, Scandinavian Design chairs for assembly halls, Laverne "Philharmonic" gallery benches in exhibit spaces.

All in all, the conversion from Federal office building to art museum has turned out quite successfully. The provision of a home for the Government's collections of American art, together with the restoration of Washington's original Corcoran Gallery, may be a sign that, at last, the Federal Government is willing to pay some attention — and money — for its art and architecture.

CORRECTION

The modular maintenance hangar shown on p. 88, OCTOBER 1968 P/A was designed by architects Conklin & Rossant of New York. Zetlin, DeSimone, Chaplin & Associates were structural engineers.

WASHINGTON/ FINANCIAL NEWS

by E. E. HALMOS, JR.

Model Cities Move Slowly — One Federal program that will continue, regardless of the impending change in Administration, is the Housing and Urban Development department's Model Cities program.

This will happen despite cries from outgoing HUD heads that the program wasn't adequately funded. And continued work will bring HUD heavily into the matter of construction safety, despite the failure of all attempts to pass a national construction safety bill in 1968.

But architects and builders will have to recognize that the program is a long, slow affair. The distance between designation of an area as a Model City and actual design of buildings — to say nothing of actual brick and mortar — is likely to be a long one.

As of mid-October, for example, HUD had "selected" 125 "cities" for planning grants; they will share between them a total of about $12 million available for such work in the current fiscal year.

The term "cities" is deceptive: Actually, "selections" included several counties (Florida's Dade, Maryland's Prince George's), such municipal oddities as the Gila River Indian Community in Arizona; relatively tiny communities with populations as small as 5000; segments of major cities, such as Central and East Harlem, South Bronx, and Central Brooklyn in New York; and on up to major cities like Minneapolis, Oakland, Calif., Washington, D.C., and others.

The grants themselves are aimed at seeking solutions to problems that have nothing directly to do with construction. Typical, perhaps, is a $178,000 grant to Tucson, Ariz., which is trying to develop plans for an 8-square-mile area in its western sector, where a 21,026-person population includes 37% with family incomes below $3000 annually and a high unemployment rate; 48% of housing is rated as substandard. Major goal of the planning will be "to relate the development of the model neighborhood to the surrounding area, alleviate physical blight, in order to attract more privately built housing."

Similar conditions are noted in all the other "cities" selected for grants: large areas of substandard housing, low family incomes, high unemployment rates, poor health records.

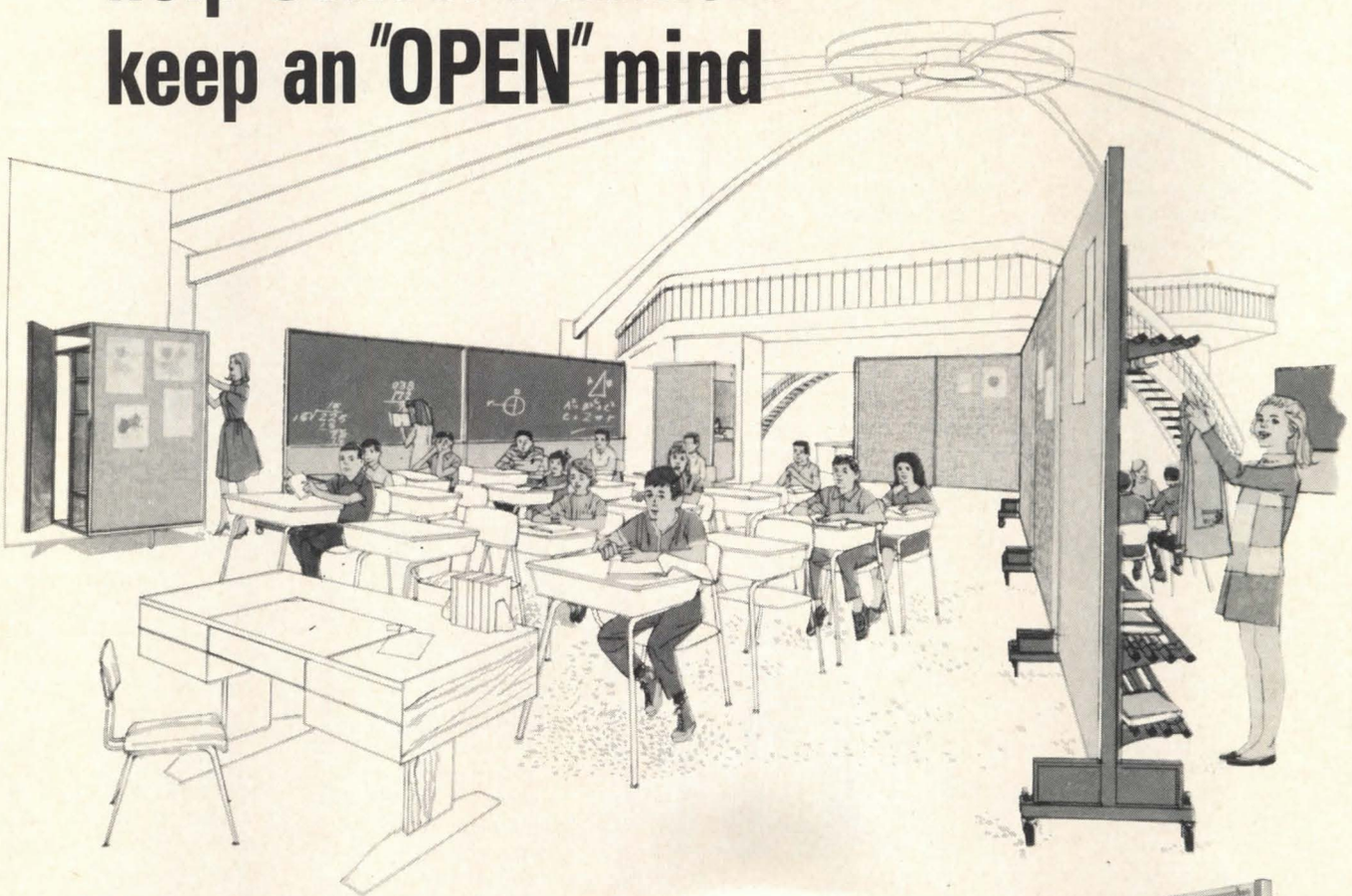
Planning, in most cases, will take a year from date of initial selection; then the plans evolved must be approved by HUD; following approval, the communities will be eligible to receive "supplemental" grants, as well as other Federal moneys, to carry out actual implementation.

There's an interesting sidelight for the construction industry in general: HUD has said that, since one objective of these programs is to employ as many slum-area dwellers as possible it will have to get into the problem of construction safety with both feet, "to protect unskilled workmen from the hazards of the building work." This could mean that, despite Congress' failure to approve any nationwide safety program or authority, HUD will try to impose its own rules, anyway.

Highways May Have Bumpy Road — Congress imposed a couple of really stinging defeats on the Johnson Administration, as it closed up shop for the year. And the outgoing group of officials countered with a move of their own that could even bring the entire Federal aid highway program to a dismal halt.

Key losses on the Administration side were proposals permitting construction employers and unions to form joint committees to promote certain products and methods; to establish an "Airport Trust Fund" (financed by an added tax on airline tickets) to finance airport improvement programs; and, most surprisingly, a "Water Quality Improvement Act" that would have substantially raised Federal payment for pollution control works, permitted local communities to finance the projects with a guarantee of "installment" payments of Federal grants over a period of years, regulated pollution from ships in inland or coastal waters. This latter bill foundered on the House's insistence that offshore oil-drilling rigs be exempted from tight pollution-control regulation.

Vogel-Peterson RDF's help School Planners keep an "OPEN" mind



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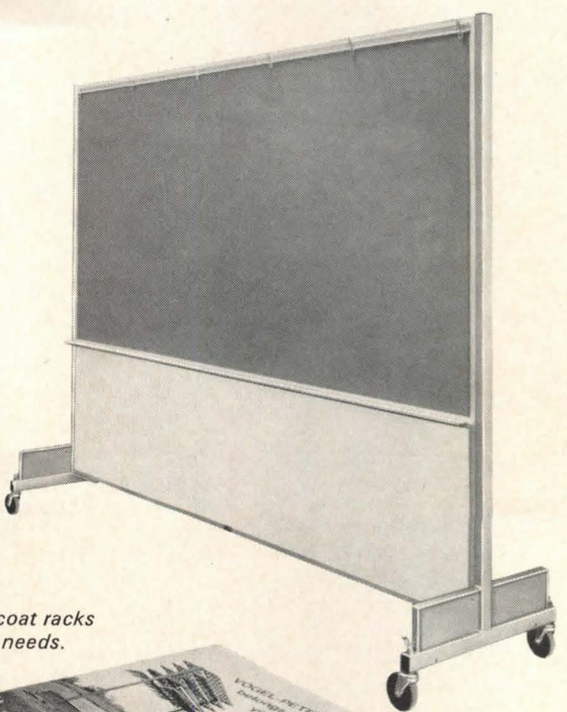

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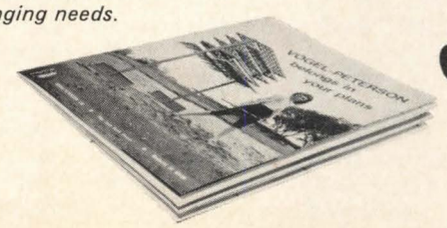

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CONSTRUCTION

Sealing masonry joints. Silicone Sealant 1300, specifically developed as a concrete and masonry sealer, is said to yield maximum adhesion without need of a primer, and may be applied simply with a hand calking gun. The material is claimed to resist sunlight, ozone, and moisture, and will retain a pliable consistency from temperatures of −60 F to +250 F. This consistency is said to facilitate year-'round application. General Electric Co., Silicone Products Dept., Waterford, N.Y. 12188.
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Facing brick. Kiln-fired clay brick in ½″ thickness is said to be easily applied to a scratch coat with mortar. Footings are said to be unnecessary. Straight and corner bricks are available in three types: Antique; 'Used' (70% red, 20% white, 10% black); and ½″ Face Brick. Monterey Clay Brick Corp., 1000 Towne Ave., Los Angeles, Calif. 90021.
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DOORS/WINDOWS

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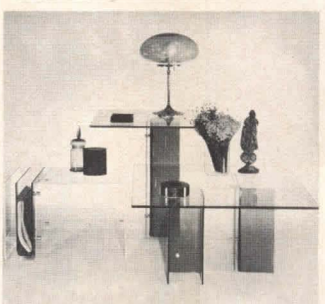
FINISHES PROTECTORS

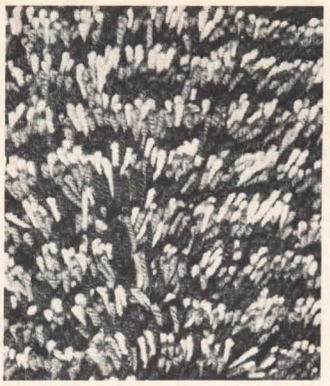
Topping the weather. A weatherproofing material for balconies, patios, and poolside areas, Weather Topping may be trowel-applied to either concrete or exterior plywood. Said to cure in 24 hours, the topping will resist temperatures from −60 F to 350 F; in addition, it is claimed to resist the effects of sun and moisture. Available in neutral, gray, red, or green, the topping is recommended for light traffic areas. General Electric Co., Silicone Products Dept., Waterford, N.Y. 12188.
Circle 104, Readers' Service Card

FURNISHINGS

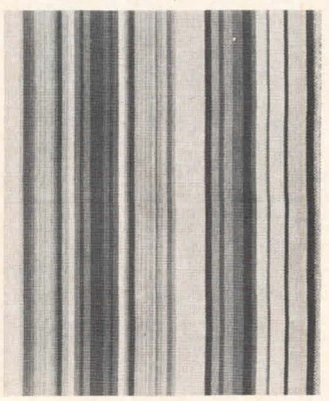


Semi-see-through tables. Tables designed by Kenneth Brozen range in size, shape, and use from coffee and end to occasional tables and magazine holders. Brozen selected a dusky bronze tone as well as a clear acrylic sheet to use with chrome hardware. The larger pieces of the collection have polished glass tops; the small magazine tables are continuous "ribbons" of acrylic. Called "Highlight" because of the bronze tone, the collection combines well with wood interiors. Raymor, distributed by Richards, Morgenthau & Co., Inc., 225 Fifth Ave., New York, N.Y. 10010.
Circle 105, Readers' Service Card

Custom carpets in shag. Long, shaggy pile Designer Series rugs and carpets now have a "corn row" effect, achieved by combining up to three colors of the designer's choice. The "corn row" effect is available in the Coquin, Fabrique, and Brigette textures, all of Acrilan acrylic pile. The carpeting

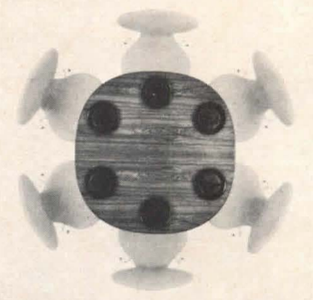


may be seamless up to a 25′ width. Philadelphia Carpet Co., 295 Fifth Ave., New York, N.Y. 10016.
Circle 106, Readers' Service Card

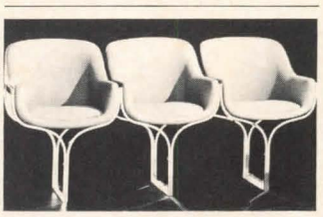


A stripe is a stripe is a . . . The Embassy 54″ width vertical stripe fabric is blended of wool, nylon, and viscose yarns with a light acrylic backing. The heavy texture of the fabric balances the striped pattern, which is further muted by color progressions within the pattern. Six colorways are offered, and the ten predominating colors are also available as solid colors in a companion fabric. F. Schumacher & Co., 58 W. 40th St., New York, N.Y. 10022.
Circle 107, Readers' Service Card

In my garden. "Hyacinth," one of 22 textile designs from the Marimekko collection, is described as a "bold, opulent floral print." As are all of the designs, "Hyacinth" is best suited for large-scale applications. Available in four colorways (black/white; greens; browns; lavenders), the pattern is silk screened on 100% heavy cotton. Available through Design Research. Isabell Scott Fabrics, 979 Third Ave., New York, N.Y. 10022.
Circle 108, Readers' Service Card



Perimeter advantage. The supercircle table designed by Piet Hein is said to seat more people more comfortably than would be possible at either a strictly circular or square table. The steel span leg support, which joins at the floor and spreads under the table, may be assembled without tools. The tabletop is available in teak, rosewood, oak or standard painted colors, with a diam of either 39½″ or 45½″. Table heights: 28½″ and 18¾″. Fritz Hansen Inc., 979 Third Ave., New York, N.Y. 10022.
Circle 109, Readers' Service Card



Receptive seating. Designed especially for business and professional reception areas, the System 900 seating series gets both its styling and support from a polished chrome base. Two chair styles are featured: one with a shaped arm rest; the other with its sides on a diagonal from back to seat. Madison Furniture Industries, Canton, Miss. 39046.
Circle 110, Readers' Service Card

LIGHTING

Exposure-proof lighting. Featuring "totally-enclosed" construction, the 97 Line lighting

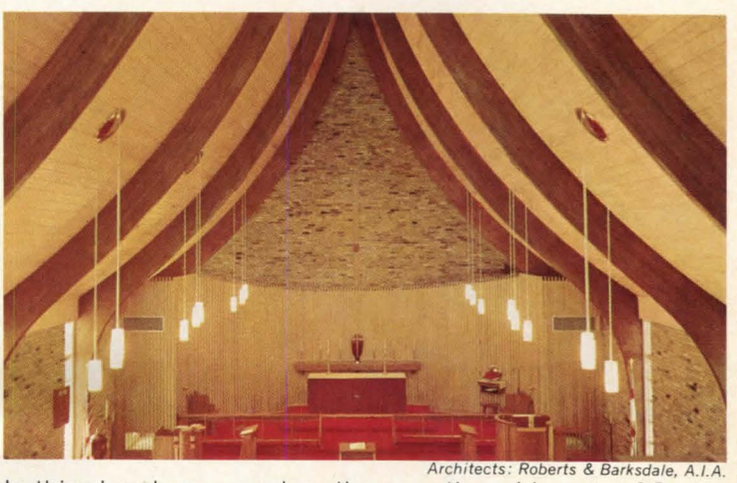
Freedom to plan imaginatively . . . with versatile Southern Pine

Architects: Desmond Miremont & Associates, Inc., A.I.A.

The modern applications of Southern Pine laminated beams, decking, siding and paneling open new dimensions for design creativity. Here, in this striking library foyer one immediately senses a promise of tranquility and permanence. The inspiring sweep of maximum spans achieved by the high stress value of Southern Pine affords unique and economical planning latitude.

Architects : Marshall M. Burton & Associates

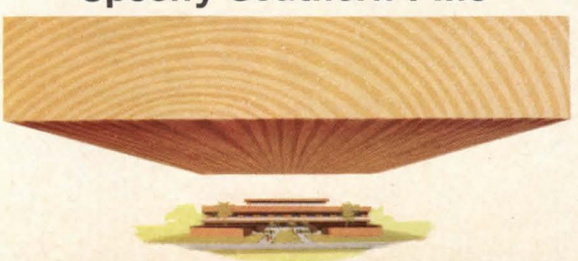
Pre-shrunk to *full* American Lumber Standard sizes, Southern Pine provides stability and precision essential to engineered construction, as in this country club. Standard grades can be utilized for cantilevered and continuous members without special grading.



Architects: Roberts & Barksdale, A.I.A.

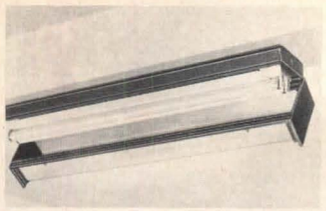
In this church, you see how the warmth and beauty of Southern Pine create a truly spiritual feeling in contemporary setting. Its enduring qualities provide economy for today's modern construction programs, with extremely low maintenance cost assured through the years.

Specify Southern Pine

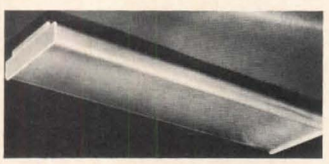


From the member mills of the Southern Pine Association, P. O. Box 52468, New Orleans, La. 70150

On Readers' Service Card, Circle No. 403



fixture is designed for wet locations, such as around swimming pools, and in labs, subways, and garages. Constructed of aluminum, the housing can accommodate thru-wiring for installation of continuous fixture runs. Unit has optional mounting brackets for pendant, ceiling, wall, corner and slope mounting. McPhilben Lighting, 270 Long Island Expressway, Melville, N.Y. 11746.
Circle 111, Readers' Service Card



Let there be low brightness light. A low brightness fluorescent luminaire for direct lighting of interiors, the Vicar may be surface- or pendant-mounted. Two styles are offered: one houses two lamps and is 12″ wide; the other houses four lamps and is 18″ wide. Both styles use 40-w rapid-start lamps, and come in 4′ and 8′ tandem lengths. Various refracter construction materials are available. Westinghouse Lighting Div., Interior Lighting Dept., Vicksburg, Miss. 39180.
Circle 112, Readers' Service Card

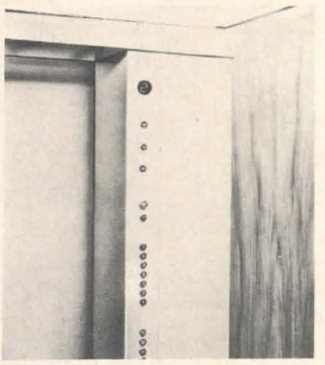
OFFICE EQUIPMENT

Message units retrieve data. Libraphone is claimed to be the first piece of data retrieval equipment to utilize the public telephone system; it is a telephone hook-up that attaches to an ordinary microfilm reader-printer. The Libraphone was designed for use with a prepackaged information system: a complete microfilm library of data is provided to subscribers; in addition, the machine has a direct connection to the nearest central information center for special services. Specialized Business Services, Inc., 620 Trolley Blvd., Rochester, N.Y. 14606.
Circle 113, Readers' Service Card

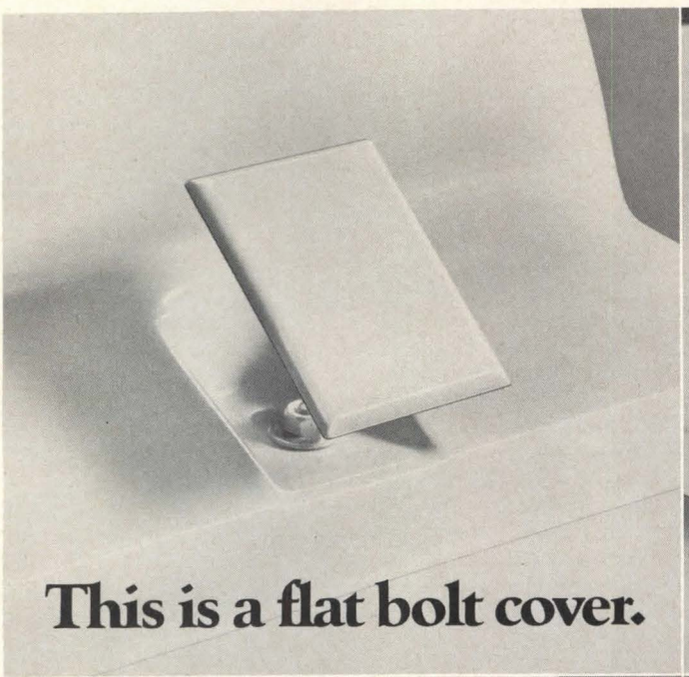
SANITATION PLUMBING

Flood control valve. Designed to operate under city water pressure rather than by electricity (thus unhampered by power failure), the StormGuard valve is said to prevent sewer back-ups from flooding basements. Valve is automatic, with a reported force of 25 times that of normal city water pressure; when the valve closes, it triggers a remote monitor warning system. Cherne StormGuard Inc., Hopkins, Minn. 55343.
Circle 114, Readers' Service Card

SPECIAL EQUIPMENT



Elevating design. The trend to shiny, uncluttered interiors has reached elevators in the form of an operating column with integral control buttons and signal equipment. The unit also includes digital readouts, indicating floor numbers. This single unit design eliminates the need for a separate faceplate. Otis Elevator Co., 260 Eleventh Ave., New York, N.Y. 10001.
Circle 115, Readers' Service Card



This is a flat bolt cover.

It's easy to install.

It's easy to clean.

It will stay put.

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From a design standpoint, you can't top the Eljer toilet with its patented flat bolt cover. But there's more to the story. Because it takes less time to install, it reduces your total project costs. And it keeps saving money for your client because it reduces maintenance time in cleaning, since dirt and bacteria won't collect around the cover as they do around other bolt caps.

Specify and design washrooms with Eljer floor-mounted toilets that have flat bolt covers. For more, call your Eljer representative or write Eljer, Dept. PA8, P.O. Box 836, Pittsburgh, Pa. 15230.

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MFRS' DATA

ACOUSTICS

Sound control. Omnidirectional fissures are said to give Spintone 360 acoustical ceiling panels a randomly flecked appearance. Designed for use in exposed grid systems, the panels are constructed of mineral wool fibers; a standard white finish is said to resist stains, and diffuse light without reducing its fire-resistance or acoustical properties. ASTM test methods, results; attenuation and noise reduction ratings; sizes; installation methods. Brochure. 4 pages. Johns Manville, 22 E. 40th St., New York, N.Y. 10016.
Circle 200, Readers' Service Card

AIR/TEMPERATURE

Diffusing industrial air. Low-cost diffusers, constructed entirely of aluminum, may be installed in new or existing duct work. Having a built-in volume control and air-seal gasket, the three diffuser models are designed for exposed-duct and suspended egg crate ceiling applications. These Industrial Air Valves provide for many air changes per hour. Brochure contains drawings, dimensions, performance charts and characteristics. 8 pages. Pyle-National Multi-Vent Div., 1334 N. Kostner Ave., Chicago, Ill. 60651.
Circle 201, Readers' Service Card

In hot water. This line of electric commercial water heaters has a tank capacity range of 66, 82, 100, and 120 gals., with kw ratings of from 6 kw through 45 kw. For use in commercial and industrial areas, heaters can be used singly, or in multiple manifolds to form a free-standing system, or in conjunction with a storage tank as a circulating tank heater. UL- and ASME-approved. Drawings, dimensional chart, recovery rate charts, sample specs. File sheet for each of 4 Atlas models. Republic Heater Co., Inc., 6600 E. 15 Mile Rd., Warren, Mich. 48092.
Circle 202, Readers' Service Card

Gas fired heat. A complete line of gas make-up air heaters and steam/hot water models featuring "draw through" design, are said to insure uniform air passage and distribution. Contents include diagrams, cutaways, performance data table, accessory selection tables, dimensions, and specs for roof-mounted and ceiling-suspended models. Catalog. 14 pages. Modine Mfg. Co., 1500 DeKoven Ave., Racine, Wis. 53401.
Circle 203, Readers' Service Card

CONSTRUCTION

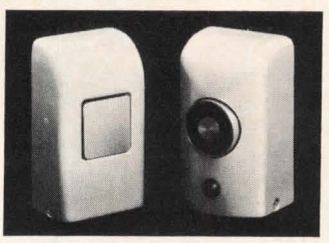
Siliceous rock insulation. Perlite, a form of natural glass, reportedly contains countless air cells, which are said to account for its light weight and excellent thermal insulation properties. In aggregate form, combined with portland cement, it is said to produce a lightweight concrete for use as roof and floor fill, structural roof decking, and in curtain wall systems and insulation applications. Data includes: physical and spec properties; density selection guide; thickness and load charts; design data; application details. Catalog. 20 pages. Perlite Institute Inc., 45 W. 45th St., New York, N.Y. 10036.
Circle 204, Readers' Service Card

DOORS/WINDOWS

Special doors. Four flexible rubber doors that can be pushed open by carts and other equipment are described in a brochure. The doors, $1\frac{13}{16}$" thick, feature cushioned nosing, heavy-duty transparent window panels, and self-closing apparatus. Illustrations, sections, and brief descriptions. 4 pages. Stic-Klip Manufacturing Co., Inc., 60 Regent St., Cambridge, Mass. 02140.
Circle 205, Readers' Service Card

How to swing. Easy Swing doors feature "fingertouch" opening. and a safe time delay closing. All doors are available in a variety of construction materials and opening sizes; they are said to be ideal in any application where visual, temperature, or sound barriers are required. Included are drawings, dimensions, construction and installation details, parts diagrams, jamb details, and general specs. File/folder. 36 pages. Eliason Easy Swing Door Div., P.O. Box 2128, Kalamazoo, Mich. 49003.
Circle 206, Readers' Service Card

ELECTRICAL EQUIPMENT

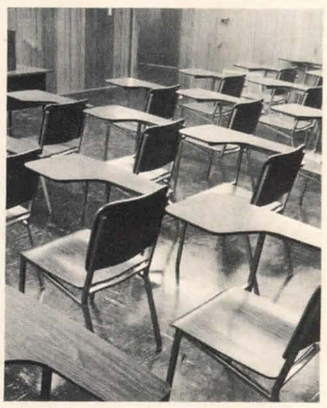


Sensitive door control. Electromagnetic system devices for door controls may be adapted to any type of sensor, or may be controlled by push-button for manual operation. The Challenger 1440 door stop and holder is said to provide instant closing of fire and security doors in schools, hospitals, and other public buildings. Each door requires a separate unit, but all may be controlled from a single source. Dimensions, schematics, installation details for wall, floor, and door units. File. 4 pages. Challenger Lock & Hardware Div., Eaton Yale & Towne Inc., 2349 W. La-Palma Ave., Anaheim, Calif. 92803.
Circle 207, Readers' Service Card

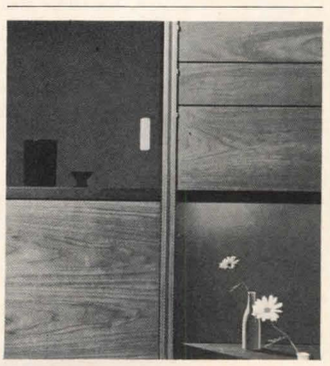
FINISHES PROTECTORS

Opaque oil stain. For use on exterior horizontal or vertical siding, Cabot's Ranch House Hues are said to produce best results on porous lumber, and to be especially suited to rough-sawn wood surfaces. Data contains color samples, intermixing formulas for interior applications, covering capacity information, and application specs. Folder. 5 pages. Samuel Cabot Inc., 246 Summer St., Boston, Mass. 02210.
Circle 208, Readers' Service Card

FURNISHINGS



Seat of wisdom. Classroom comfort is offered in the Seminar seating series, said to be proportioned for the young adult. Series consists of: seminar and pedestal chairs, with or without tablet (or folding tablet) arm and book rack; instructor's chair; pedestal table, of varying widths and lengths. Data includes drawings, details, dimensions, options, construction and finish information, general specs. Brochure: 4 pages; general specs; 6 pages. Peabody Seating Co., Inc., N. Manchester, Ind. 46962.
Circle 209, Readers' Service Card



Component cabinetry. Henry Kann designed the Omni Plus storage, work surface, display and organizer systems. Both his design and the manufacturer's precise engineering result in cabinetry systems that are highly attractive, and are claimed to enhance function as well as material savings. Component modules, and

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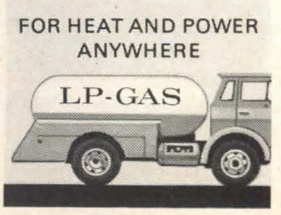


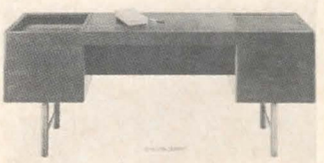
On Readers' Service Card, Circle No. 371

ganging and stacking enclosures are claimed to provide unlimited combinations of closures and open areas that may be dis- and re-assembled. Specifier selects frontal components and stack arrangements; manufacturer supplies corresponding frame and track requirements. Brochure: 17 pages; also spec and price booklet. OMNI/Aluminum Extrusions Inc., Charlotte, Mich. 48813.

Circle 210, Readers' Service Card

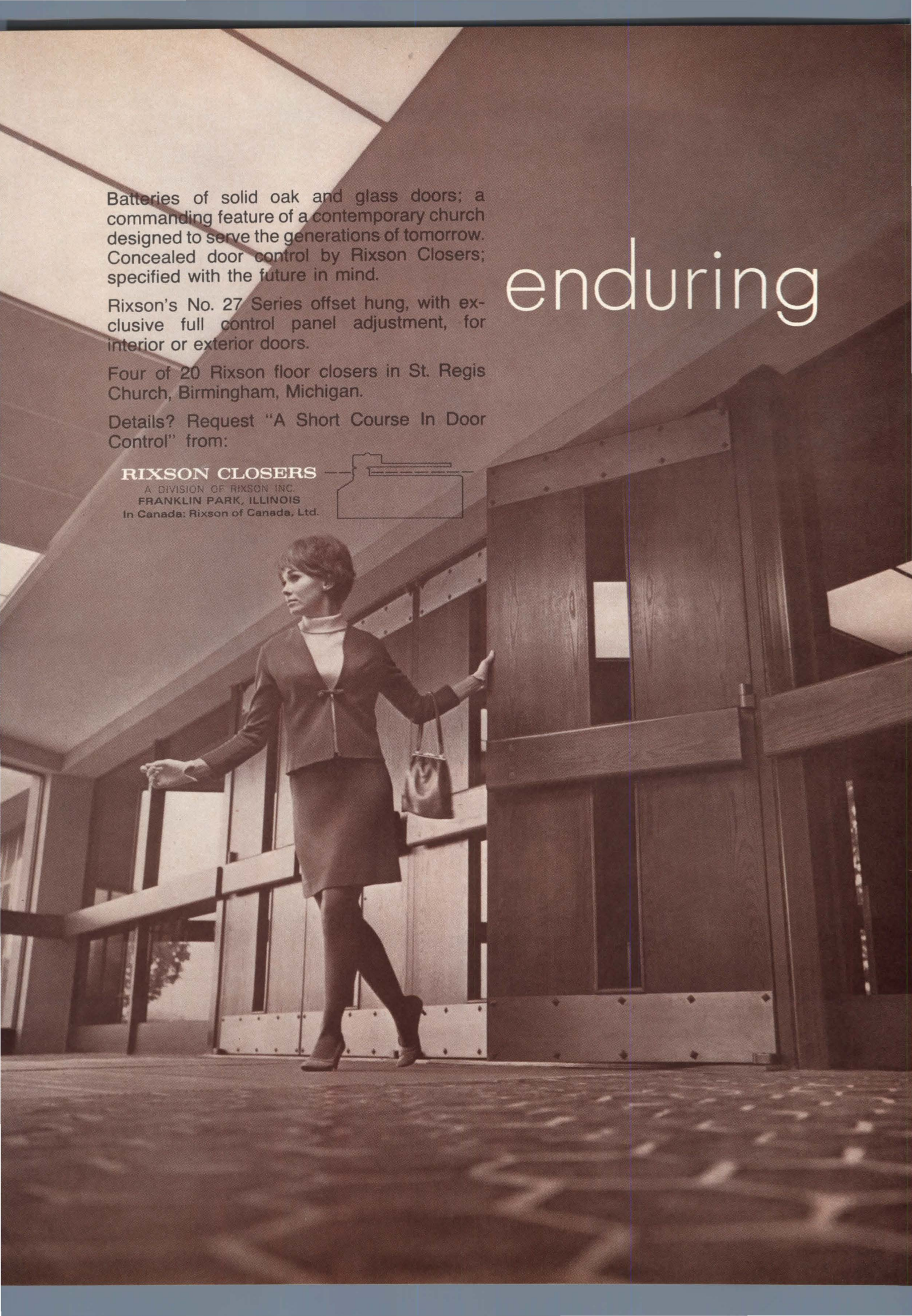
Contour chairs. Designed by Robin Day for residential, institutional, public, and educational use, this chair series is constructed of one-piece molded polypropylene, with leg bases of mirror chrome steel tubing. Basic chair seat has various mounting options, as well as multiple seating uses. Available in six colors, the chair surface is said to have a fabric-like finish. Drawings, dimensions, photos, and specs. Catalog. 17 pages. John Stuart International, Inc., 205 E. 58th St., New York, N.Y. 10022.

Circle 211, Readers' Service Card



28 by 1. Twenty-eight executive area contract furnishings designed by Kipp Stewart are cataloged; furnishings include executive and secretarial desks, conference room table and chairs, end tables and a coffee table. Illustration of a "Series 5" cabinet with kneehole and with filing recessed in the top also shows hexagonal shaped steel legs; stretchers; and a choice of

On Readers' Service Card, Circle No. 378


enduring
Batteries of solid oak and glass doors; a commanding feature of a contemporary church designed to serve the generations of tomorrow. Concealed door control by Rixson Closers; specified with the future in mind.
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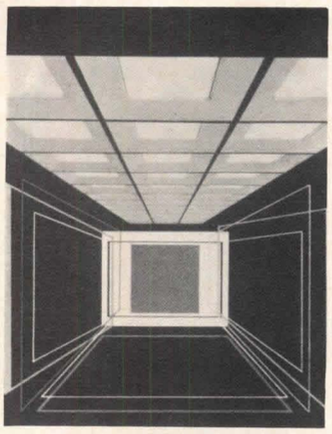
three finishes ranging from a dark brown to amber. Directional Contract Furniture Corp., 979 Third Ave., New York, N.Y. 10022.
Circle 212, Readers' Service Card

LIGHTING



Ceiling Dynamics. Booklet introduces new Compac ceiling system, which provides illumination, ventilation, and has high sound-absorption (NRC) and attenuation (STC) ratings, as well as a handsome ceiling design. Schematics illustrate air supply, return, and heat-transfer connections. Includes charts and performance data; modifications; variations. 16 pages. Day Brite Lighting, Emerson Electric Co., 5411 Bullwer Ave., St. Louis, Mo. 63147.
Circle 213, Readers' Service Card

Profiles in lighting. Contemporary table, standing, and wall lamps in Contract Group No. 234 are suitable for use in hospital, motel, school, and office interiors. Line also features swing arm table and wall lamps, reflector lamps. All models are available in a variety of finishes and shade materials. Drawings, dimensions, installation details. Catalog. 28 pages, also (net) price sheet. Nessen Lamps, Inc., 3200 Jerome Ave., Bronx, N.Y. 10468.
Circle 214, Readers' Service Card

Recess arrangements. "Wide Lite" recessed lighting systems for mercury vapor lamp fixtures are said to have specially designed mounting equipment adaptable to any type of ceiling. The system boasts a host of luminaire capacities and reflector combinations. Installation drawings, construction, frame, and panel descriptions,

new look in indoor lighting efficiency, from Wide-Lite

lamp life data. Brochure. 8 pages. Wide Lite Corp., 4114 Gulf Freeway, Houston, Tex.
Circle 215, Readers' Service Card

ROOFING

Reinforced gypsum-concrete. Revised standard, when strictly adhered to, is claimed to result in permanent, safe roof deck. Contains: definitions; materials; water ratio; allowable stresses; design; installation procedures; mixing operations for varying weather conditions; spec suggestions. Booklet. 6 pages. Gypsum Assoc., 201 No. Wells, Chicago, Ill. 60606.
Circle 216, Readers' Service Card

SANITATION PLUMBING

Rain drains and strainers. Wide range of roof drains accommodates variations in roof design as well as rain removal needs. Also catalogued are optional features for drainage control and modified installations. Includes description, schematics, dimensions, and capacity data. Catalog. 12 pages. Blake Div. of Hoffman Specialty Mfg. Corp., 1700 W. 10th St., Indianapolis, Ind. 46222.
Circle 217, Readers' Service Card

Water, water everywhere. Electric drinking fountains and water coolers for industrial and office use are available wall-mounted or free-standing. Bulletin contains illustrations, dimensions, capacity and cooling data; specs. 4 pages. Halsey W. Taylor Co., Warren, Ohio.
Circle 218, Readers' Service Card

PROGRESSIVE ARCHITECTURE
NEWS REPORT

REINHOLD PUBLISHING CORP.
430 Park Avenue, New York, N.Y. 10022

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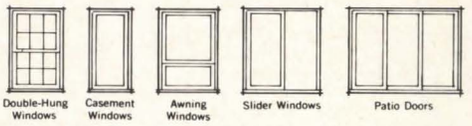

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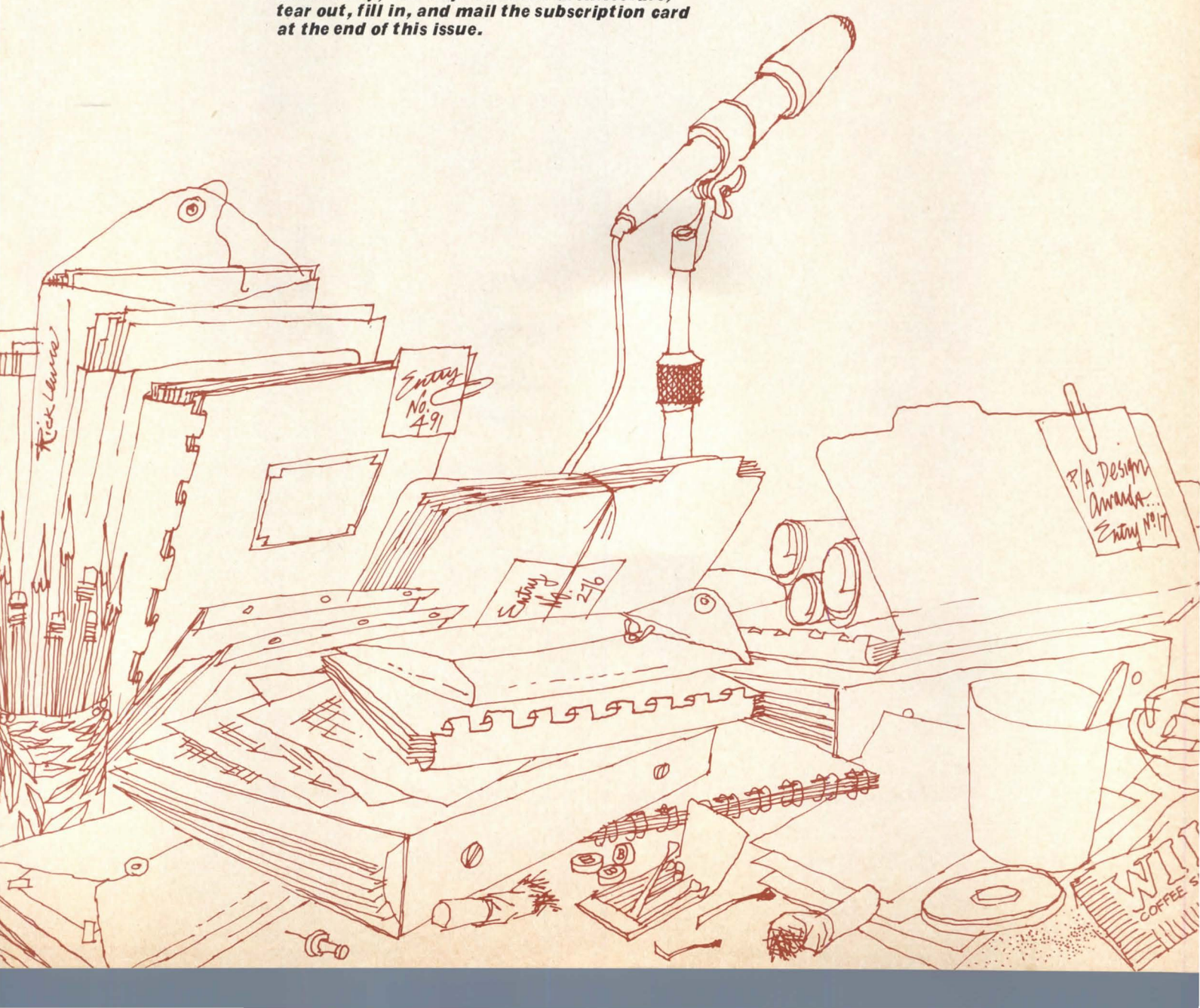
Builder and Developer: W. Sheaf Construction Co.
Architect: Urban and Calabretta

NEXT MONTH IN P/A

Winners of the 16th Annual P/A Design Awards Program selected by Henry N. Cobb, Lewis Davis, R. M. Gensert, Roger Montgomery, and Cesar Pelli.

If you are interested in pace-setting design and planning developments, this issue is imperative reading. If you're not, you're not.

To receive the January Design Awards P/A and 11 more issues packed with ideas, excitement, controversy, and ways to better architecture, tear out, fill in, and mail the subscription card at the end of this issue.



Bright idea

Beautiful way to cut building costs: Bradley Washfountains!

Bradley Washfountains come in a wide variety of attractive colors and compositions. But the real beauty of Washfountains is the money they save. For example, Washfountains serve up to 8 people with one set of plumbing connections, cutting installation costs as much as 80%. They use less space than ordinary fixtures (up to 25% less). They reduce water consumption 45-80%. And they cut maintenance costs, too. Wherever you specify Washfountains—offices, schools, plants, institutions, public and commercial buildings of all types—you secure a handsome saving! See your Bradley representative. And write today for complete information. Bradley Washfountain Co., **9141** Fountain Boulevard, Menomonee Falls, Wisconsin 53051.

from Bradley!

BRADLEY

On Readers' Service Card, Circle No. 329

...and the first patient hasn't even arrived.

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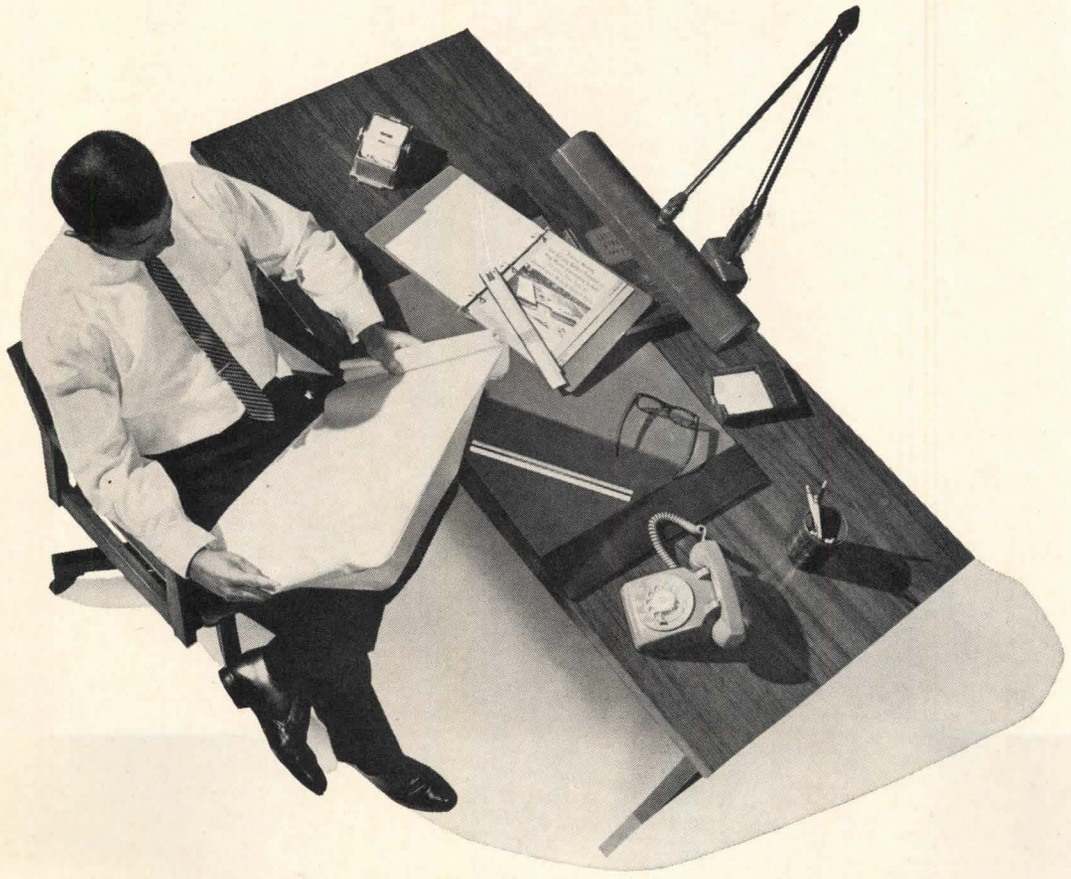

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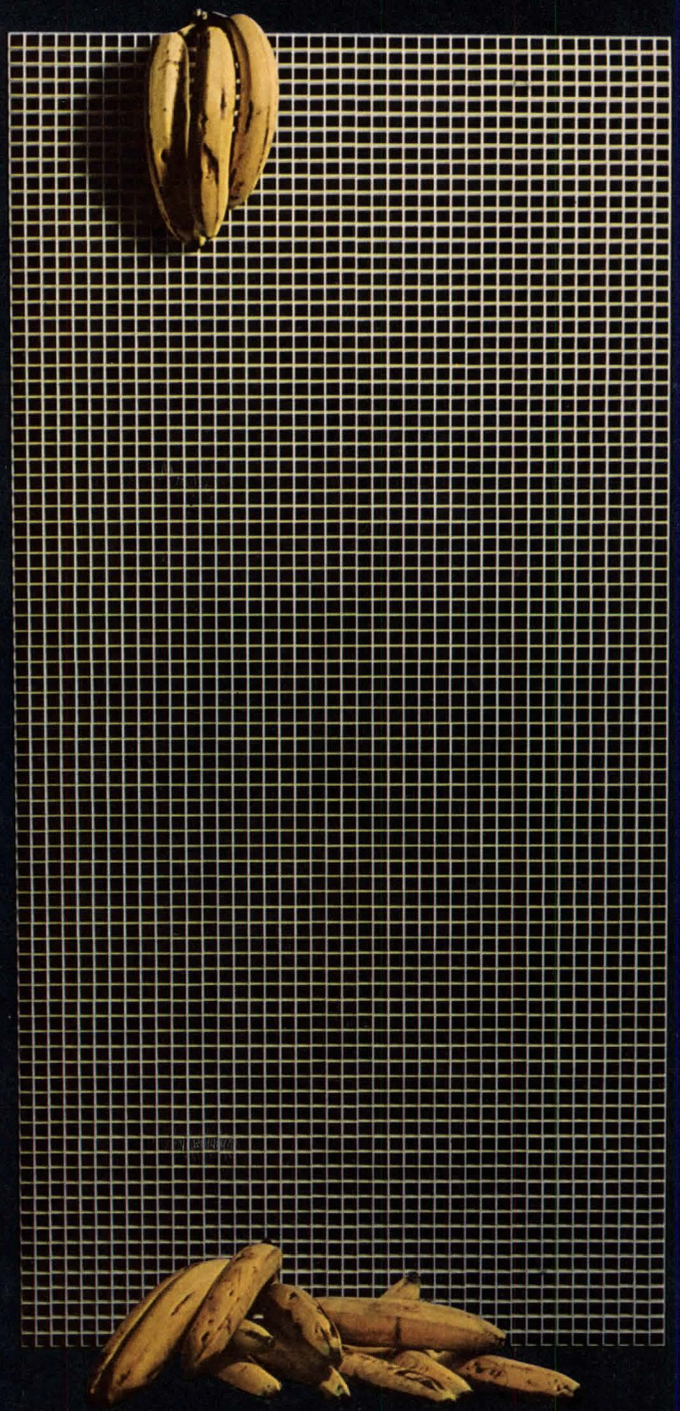

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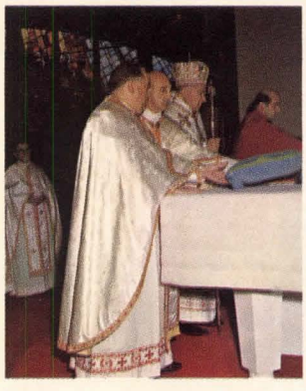

Over the centuries churches have been built with the community's most precious commodities, the labor and sacrificies of the parishioners. The beauty and utility that is seen in church architecture reflects this deep commitment. St. Thomas the Apostle remains true to this historical concept. J. Edward Luders, designer of the Rahway church and one of the participating architects for the New York World's Fair Vatican Pavillion noted that St. Thomas is in harmony with Byzantine architectural tradition while serving the utilitarian needs of the parish as they are interpreted by Father Mihalik, pastor of the church.

The interior of the church, with its three massive stained glass windows pictorially telling the story of St. Thomas the Apostle, is a structural understatement that dramatizes the sanctuary area with its free standing altar uniting the celebrants and the congregation.

The dedication ceremonies on October 6th were a celebration of the faith that had sustained the humble since the parish was founded in 1912. Leading them in the liturgy of the colorful Byzantine Rite was the Most Reverend Stephen J. Kocisko, assisted by priests from many neighboring Catholic parishes. For Father Mihalik this was a triumph of prayer and courage through which the parishioners took a collapsing parish and nurtured it back to health. In the modern community the church stands as a tribute to the faith that had bound together the oppressed and alien of all lands.

When Harrison Willar, Jr., the interior decorator representing "1770 Design Techniques Company" first discovered Heugatile, other carpeting had already been installed in St. Thomas'. In a short time it had begun to show signs of wear. Mr. Willar, aware that the formal church dedication date had been set for October 6th, boldly recommended a test installation of Heugatile, starting with the small entrance area shown top right. This area was covered with Heugafelt, one of three Heugatile products. The warmth, durability and the obvious increase in acoustical values soon resulted in the decision to install Heugatile throughout the church. In addition to the existing Heugafelt, all the main corridors and the entire church floor were to be covered with Heugaflor. Because of its brilliant red, luxurious Heugalaine, a rare virgin wool product, was selected for the altar.

Since all the Heugatile products, Heugafelt, Heugaflor and Heugalaine are installed without adhesives, the entire installation was made in several days by only two men easily meeting the deadline for the church dedication date.

Although this is the first major church installation in America, Heugatiles have, for many years, given beauty and service to churches on the Continent.

Top — *Down every aisle, under every pew goes Heugatile . . . the silencer. Heugatile builds a sound barrier to reduce extraneous noises that often shatter the contemplation so important to churches, schools and libraries.*

Middle — *Red and beige Heugatile carpet squares are easily cut and set tight against the floor beam and around a heating vent. This dramatically shows how Heugatile can speed up the installation process because Heugatile eliminates tacking, sewing, underpadding and adhesives. No waxing, scrubbing or polishing and Heugatile can be vacuumed and shampooed in place, will not shift or curl. Heugatile reduces the bulky installers kit to . . . a knife!*

Bottom — *Radiant red Heugalaine carpet squares are quickly and snugly installed on the altar as seen, left. Again loose-laid without adhesives, a seamless wall-to-wall effect is achieved on the altar crowning the St. Thomas installation as seen completed top left. Notice how soft Heugalaine is easily molded to the round edges of the altar stage.*

Like all Heugatile, Heugalaine carpet squares can be interchanged before traffic paths have a chance to develop.

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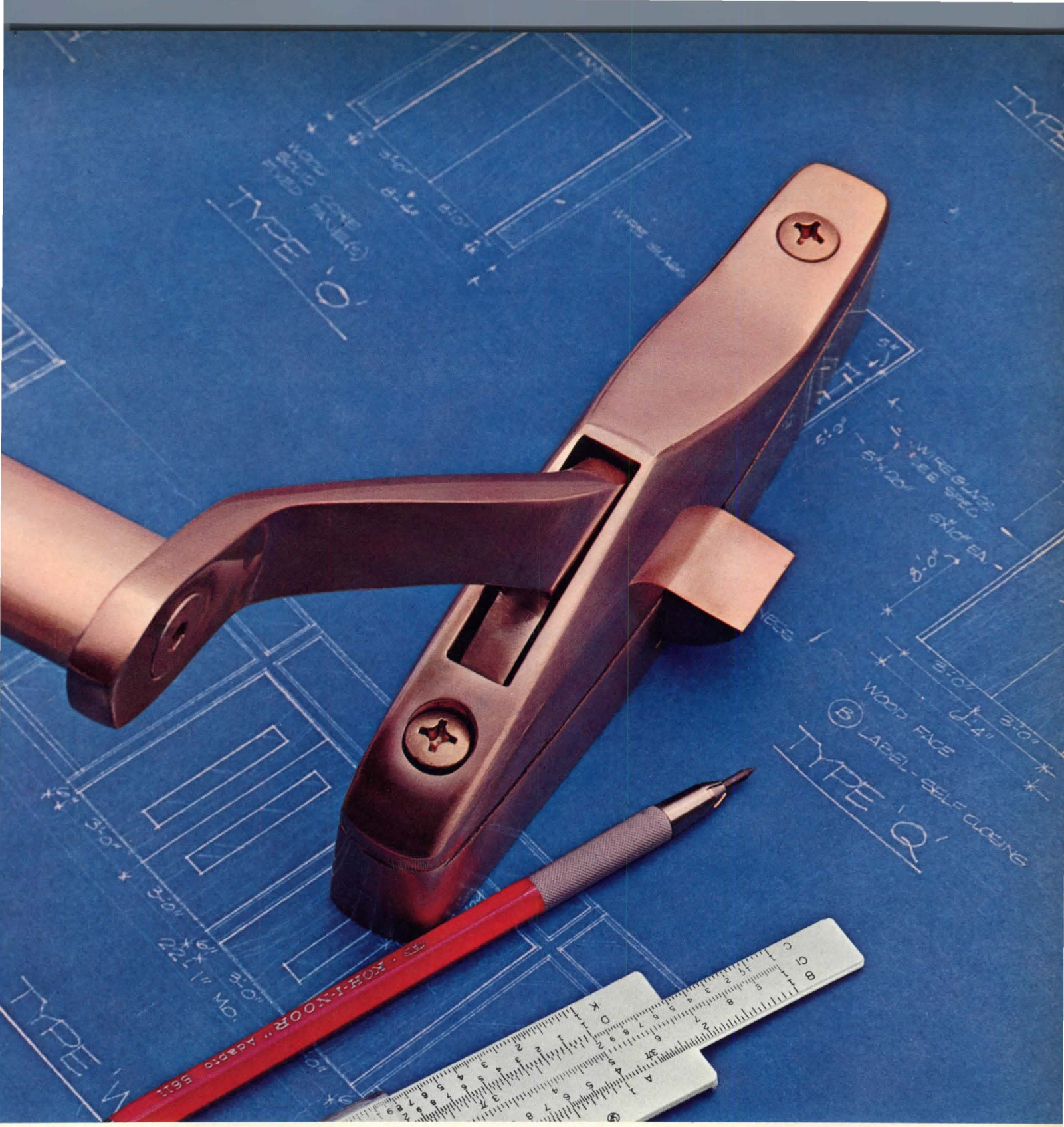

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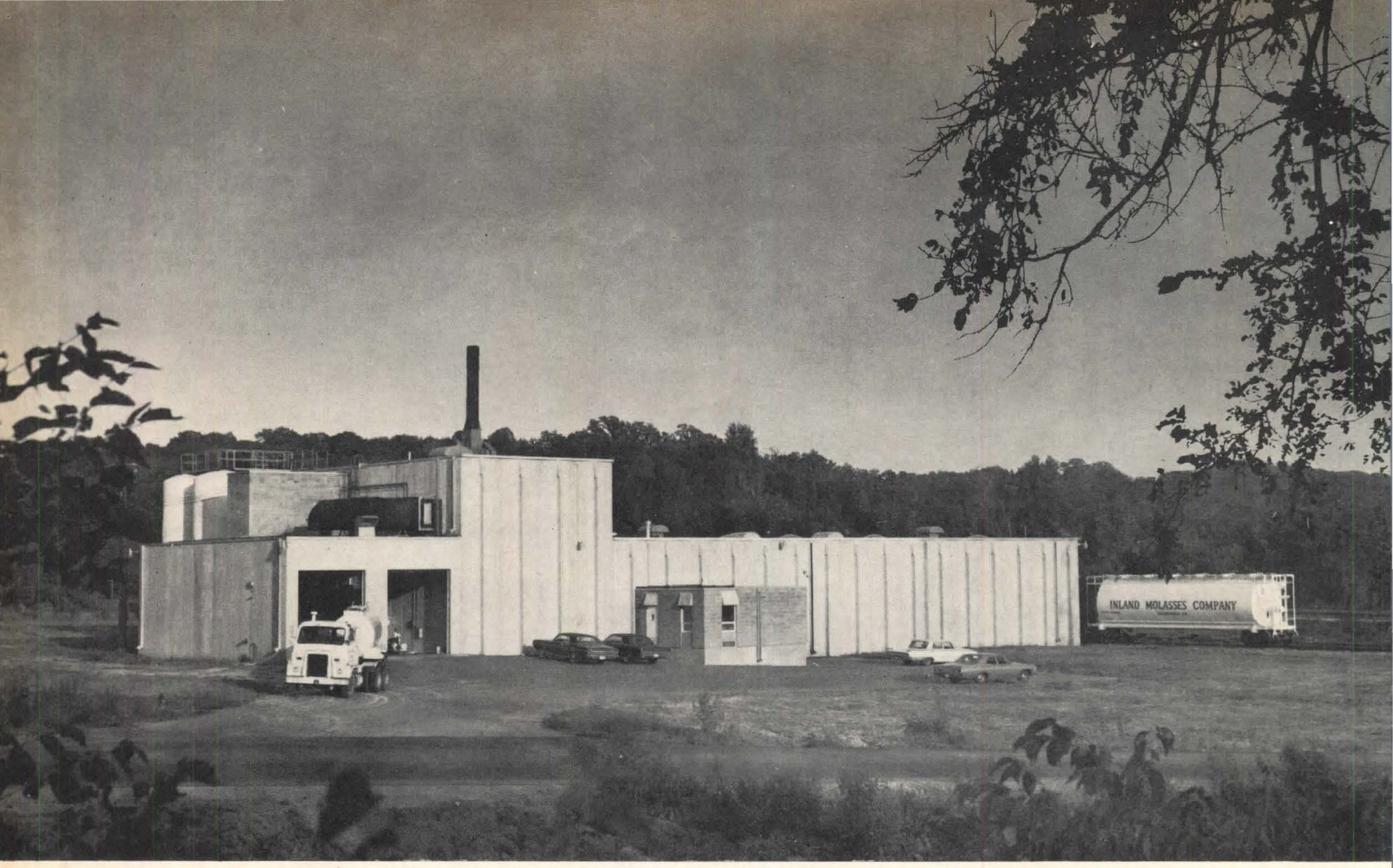

Processing Plant for the Inland Molasses Company
Architect and Structural Engineer:
Donald P. McGinn, Sioux City, Iowa
General Contractor:
Magnall Construction Company, Peosta, Iowa
Prestressed Concrete Supplier:
C. W. Shirey Company, Waterloo, Iowa

Inland Molasses Company's new processing plant... a showcase of prestressed concrete's versatility

Several types of pre-tensioned prestressed concrete elements were integrated in the design of the Inland Molasses Company's new processing plant in Dubuque, Iowa.

The most prominent are prestressed single tees. Forty-four 8′-wide, 18″-deep single tees, ranging from 24′ to 39′ in length, were positioned upright to form load-bearing exterior walls. Inside the plant clear-span work bays 62′ wide are roofed by twenty-four 8′-wide, 28″-deep single tees.

Nearly 2200 sq. ft. of prestressed hollow-core slabs were also used as roof members. These slabs measured from 20′ to a little over 31′ in length.

This showcase of prestressed concrete goes on. Sixty-one light weight wall panels, 11′ and 27′ long, and forty-four filler panels were used. In addition, two prestressed concrete beams support loads in the structure. One beam is 60′ long and 4′ deep; the other is 32′ long and 4½′ deep.

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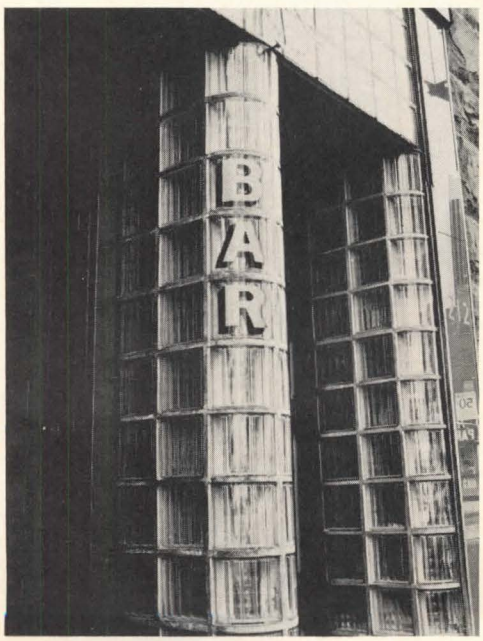

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"Without the least fear of being apocalyptic it can be moderately stated that unless the United States transforms the quantity and quality of its housing in the next 20 years the society will tear itself apart."

MICHAEL HARRINGTON

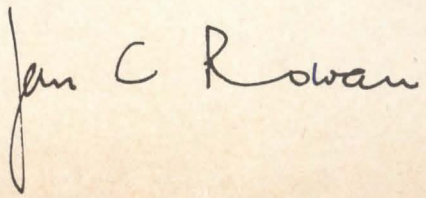
The power struggle is continuing on all fronts. In the area of architecture, the most telling battle is taking place in the schools. One by one, due to the pressure of students and younger faculty members, the schools of architecture are changing their curriculums. Under bitterest attack is the traditional "studio" system of design classes. At the Harvard Graduate School of Design, for instance, where an Urban Field Service was established last fall, a report states: "As part of their professional education, students are required to devote a considerable amount of time to 'problem-solving' learning situations. In most planning and architecture departments, this has traditionally taken the form of 'studio,' where students work on problems which simulate the kinds of situations which they will be faced with as professionals. In recent years, with the growth of America's urban crisis and increasing dissatisfaction among the young, planning and architectural education — in particular its central institution, the studio — has come under increasing criticism, criticism based ultimately on the role of the professions and their practitioners. . . . Architects and planners must become more deeply and passionately involved with the real issues that are tearing our cities and our society apart, and in order to do so they must learn first-hand what these problems are like and how to work with the people whose lives they are affecting and who should be making basic decisions about the changes that are to take place."

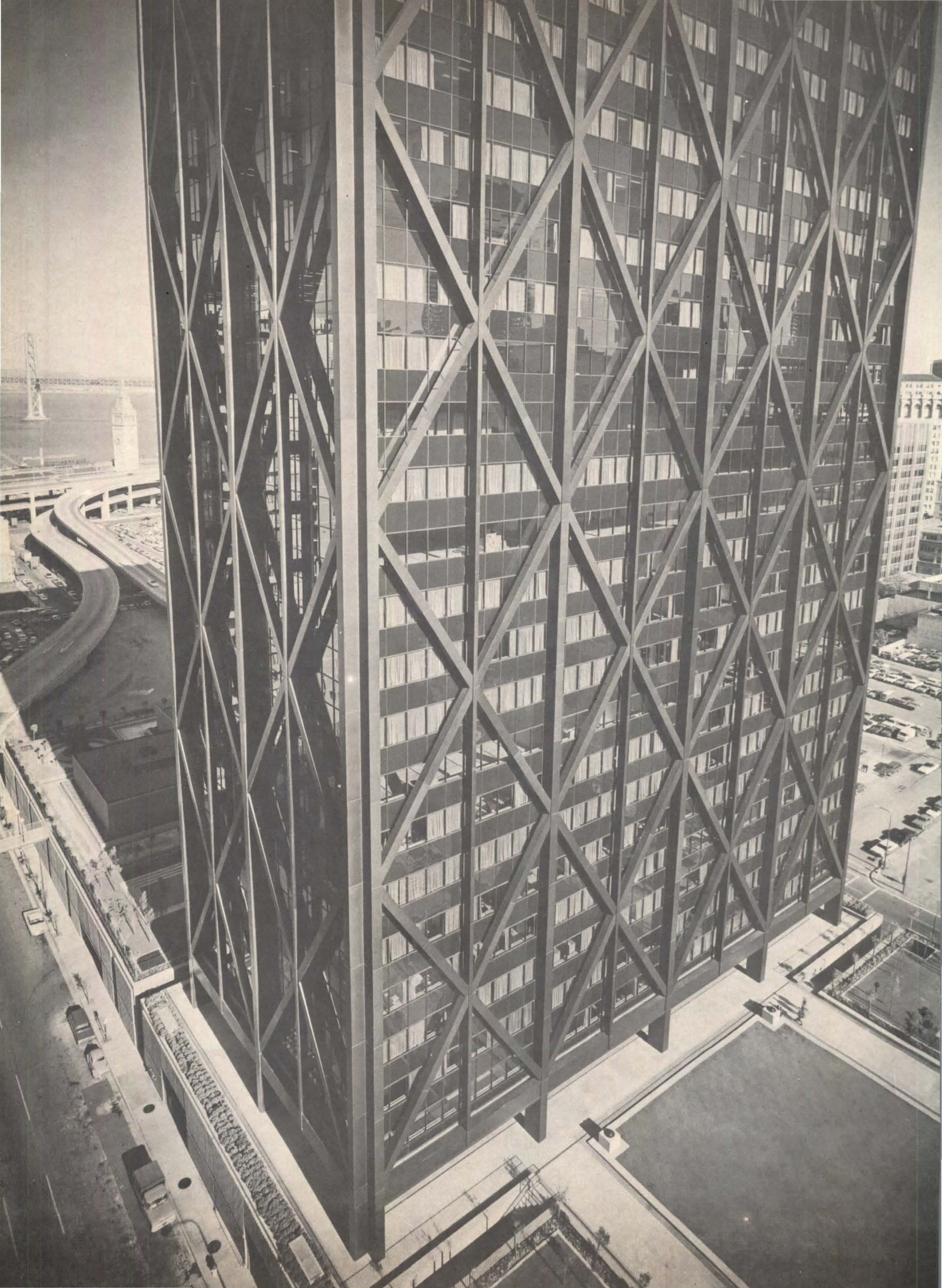
And at Columbia University, to take another example, a new system is being tried this semester. Called "platform" method of teaching, it accepts the fact that design problems should not only deal with current social problems but that they should also reflect the interest of the students rather than be superimposed from above by the faculty. Under the new system, students and/or faculty make proposals for subjects to be studied. Students are then free to join, as members of a team, a problem that is of interest to them. This shift in teaching method was made possible by last spring's student strike at Columbia. (Incidentally, the architecture students "liberated" their building during the strike.)

The attack on the studio system reflects the over-all problems of education today. A good summary of this problem is contained in a rather convincing report entitled "Who Rules Columbia?" published by the North American Congress on Latin America: "Columbia University is set up not to service the needs of its own constituency — faculty and students — but rather to service outside interests, which, by controlling Columbia finances, effectively control its policy. These outside interests, represented on the Board of Trustees, have organized the university as a 'factory' designed to produce the skilled technicians and management personnel which the U. S. industrial and defense apparatus needs. The millions channeled into the university coffers by the agents of these interests are, for them, essentially an investment in people which, like any investment, is expected to yield certain returns. . . . This control by non-indigenous and non-academic interests is the crucial issue behind the student rebellion. The student contention that the trustees represent illegitimate power is based on a concept fundamental to democracy: that the authority of the rulers is legitimate only insofar as it represents the ruled."

Another interesting view of the sudent rebellion was made recently in *Trans-Action* magazine by Jerome H. Skolnick, head of the Task Force on Violent Aspects of Demonstrations and Protest of the President's Commission on the Causes and Prevention of Violence: "The student generation is not a generation of 'romantics,' a charge often hurled at them. The older generation that waves the flag, that sees America as a country of manifest destiny saving the world for democracy — they are the romantics. The younger generation is by contrast a generation of realists who are not willing to kill and be killed unless the cause is unmistakably honorable. In this perspective, the issue today is not what is wrong with the younger generation in trying to overturn established institutions, but what is wrong with the older generations in trying to conduct business as usual."

When the present younger generation takes over the power, as inevitably it must, business indeed will not be as usual. Nor will architecture. ■





SOM's exploration of exposed diagonal bracing in its new Alcoa Building results in a powerfully tendoned structure.

SEISMIC SCULPTURE

Exposed diagonal bracing, located entirely outside the building, is the most unusual feature of the Alcoa Building. It and the continuous vertical tension members joining the diagonals are set clear of the curtain wall. The tension members act as a support for the spandrel beams midway between the main columns. They carry a portion of the floor loads, reducing the weight of the steel frame.

The diagonal bracing system came about as a combined effort between SOM designers, who wanted a building whose appearance expressed a strong structural involvement, and SOM structural engineers, who were after a structurally economic system to resist earthquakes. The result was a marriage of design and structure. Seismic bracing, usually concealed, was brought forward and exposed as the dominant feature of the building.

The structural system does not fit into any of the listed categories in the San Francisco building code: It could not be defined either as a shear wall or moment-resisting frame. Instead of proceeding empirically on code-based assumptions, the architect used a computer analysis that disclosed the ability of the frame to withstand seismic forces greater than code requirements.

The building's structural system combines the advantages of the truss, which is relatively stiff and cuts down on side sway and vibration, and the moment-resisting frame, which is relatively flexible and capable of absorbing major earthquake forces.

One disadvantage the architects encountered was the complicated detailing required, compared with that in a pure moment-resisting frame. However, the total steel tonnage used was not in excess of that required for a standard steel building frame of comparable size with concealed seismic bracing.

The moment-resisting frames behind the seismic bracing are of welded A36 steel and are designed to resist 25 per cent of the seismic force. Columns are rolled and built-up welded sections. The exterior frames are welded, moment-resistant, with diagonals on all four sides of the building designed to withstand the entire seismic force. Diagonals are square in cross-section, built up from four plates and welded. All columns extend to the foundation below the podium, but diagonal bracing stops at the second-floor level. Below the plaza, columns are embedded in 1'-8" concrete walls.

Foundations are step-tapered piles set into predrilled holes. Piles extend to bedrock, about 140 ft below grade. The 566 piles each carry 200 tons. Due to the presence of ground water, the 12-in. basement slab was designed for hydrostatic pressure. Floor construction is 2½-in. concrete on metal decks supported by floor joists 6'-4" o.c., in turn supported by beams of A441 steel spanning 50'-0". Cladding is, of course, aluminum. Color of cross-bracing cladding was selected to relate as closely as possible to the curtain wall for a molded surface of low contrast. Thus, what one sees is not the actual structure, of course, but a kind of "sculpture" of the structure, a picture of it once removed, so to speak. And it is impressive in those terms. Budget was strict, preventing the architects from detailing the façade as meticulously as they would have preferred. This fact they term a "normal architectural regret."

The Alcoa Building rises 24 stories above the plaza with 400,000 sq ft of flexible, column-free office space giving sweeping, protected views of bay and city. The plaza and building entrance lobby are reached by stairways and escalators up through the podium from the street below. Low buildings rest on the elevated plaza. The plaza edges, courts, and connective spaces are enlivened with paving, benches, fountains, trees, and notable sculptures.

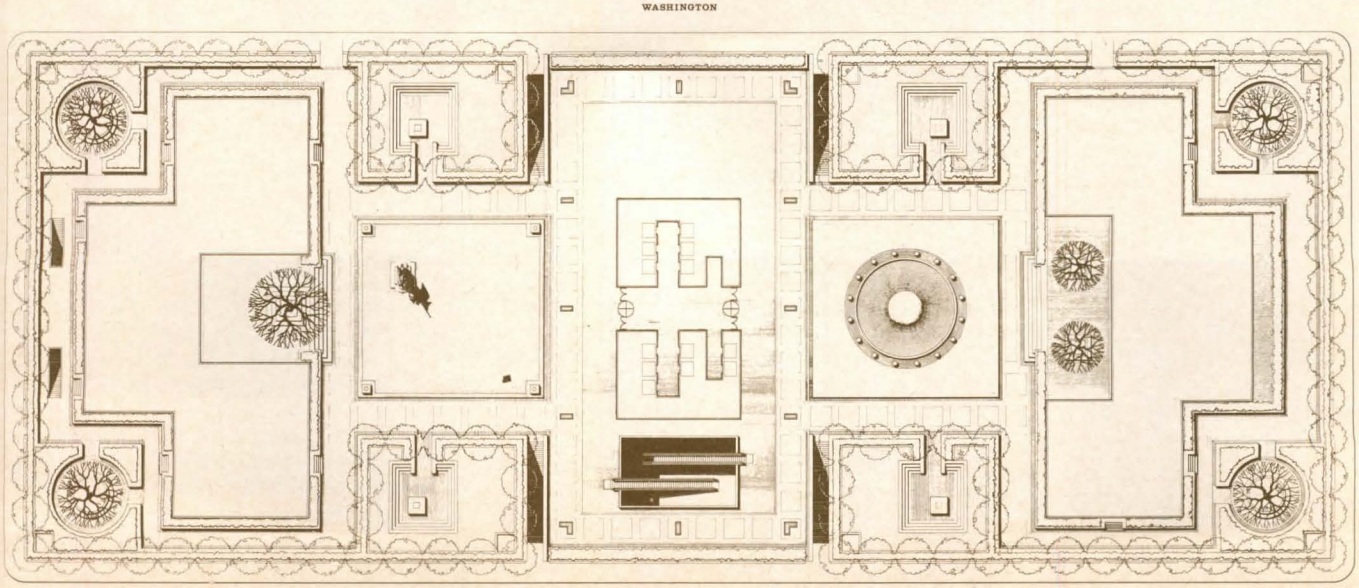
The building is sited at the southern edge of the original Golden Gateway Redevelopment Area, with high-rise apartments and low-rise townhouses on the other podiums to the north. It will soon be joined by the new (but separately developed) Embarcadero Center to the south. Its location, orientation and height were determined by the original Golden Gateway scheme (pp. 78–81, APRIL 1960 P/A; p. 68, NOVEMBER 1960 P/A).

The public garage beneath the plaza accommodates 1300 cars and was designed by Wurster, Bernardi & Emmons, Inc. The developed areas and restaurant structure on top of the garage forming the plaza and the "front door" to the tower were designed through collaboration between the two architectural offices.

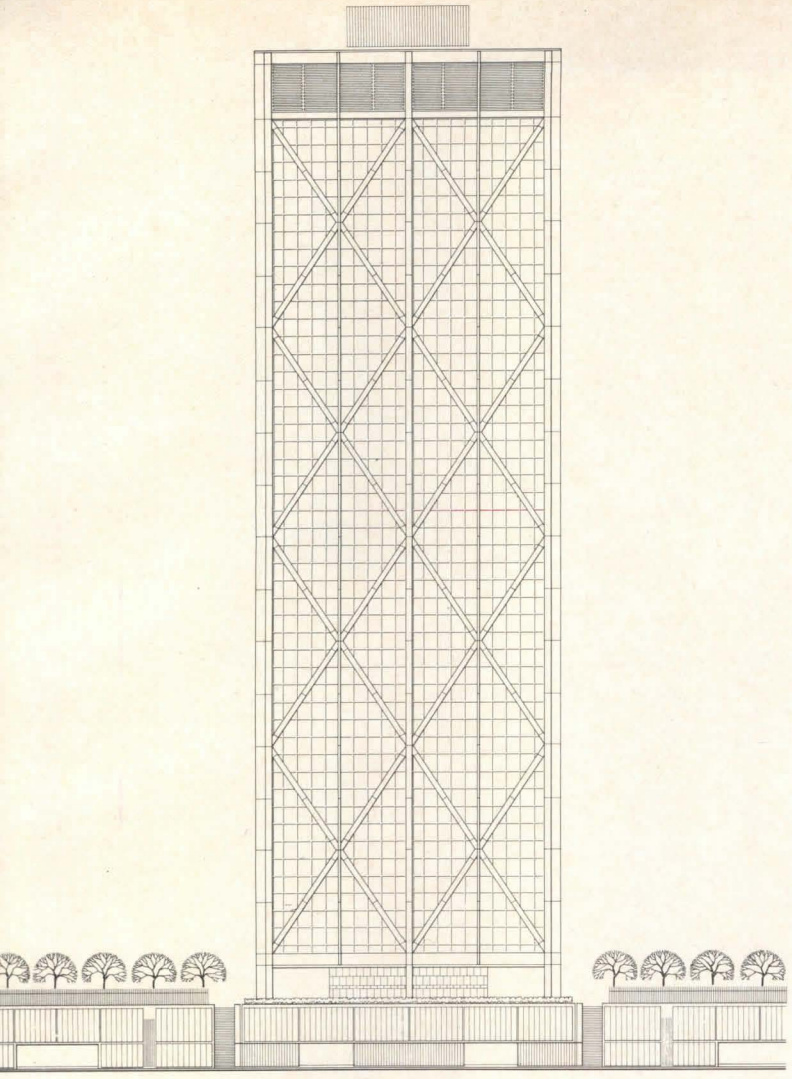
Alcoa Building and Its Surroundings

The stated intention of the architects was to obtain a strong, dominant image, avoiding confusion with the adjacent residential apartment towers. The differences between the two types of structures was accentuated by SOM's desire to get the large apartment towers down to domestic scale, yet relate the scale of the Alcoa Building to the adjacent kinetic complex of the Embarcadero freeway and ramps. They further sought to relate the structure to its surroundings

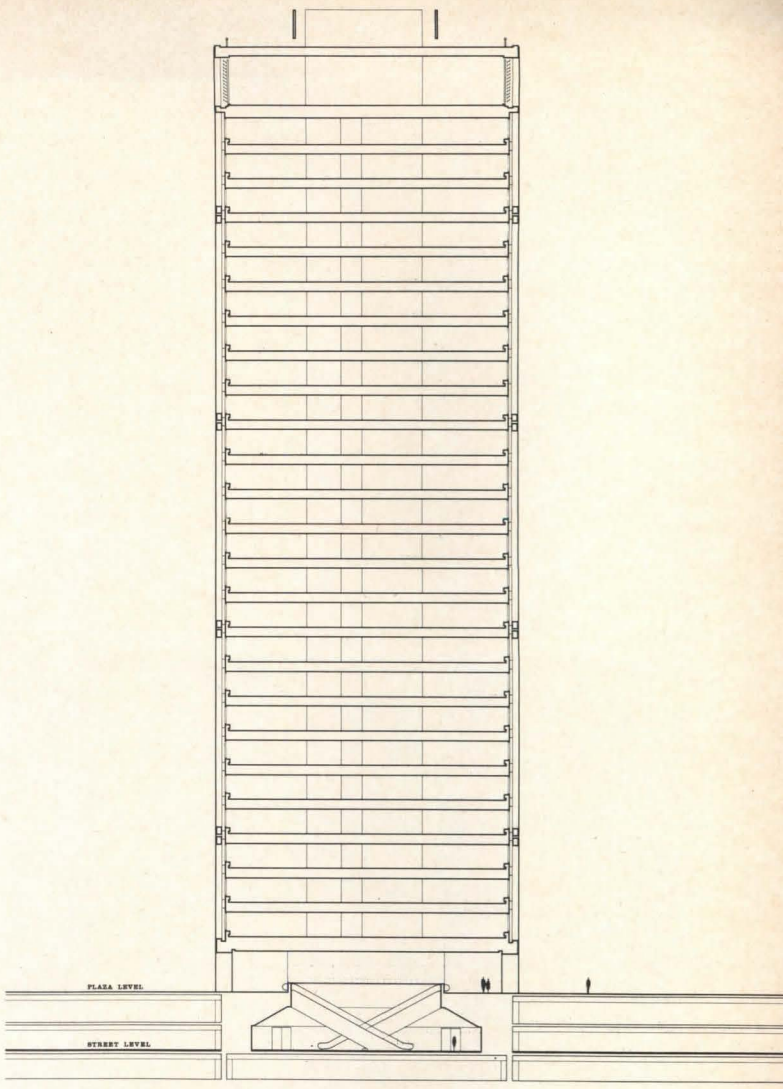
ALCOA BUILDING *(Golden Gateway Office Building), San Francisco, Calif.* ***Architect:*** *Skidmore, Owings & Merrill.* ***Site:*** *#1 Maritime Plaza, Golden Gateway Center (a 20-acre redevelopment project adjacent to the Embarcadero Center).* ***Program:*** *Provide an office building to compete in the quality rental market.* ***Structural System:*** *Steel frame (see text).* ***Mechanical System:*** *Air-conditioning perimeter high-velocity system, interior zone all heat air system; chilled water generator and steam boiler; low pressure steam fueled by natural gas.* ***Major Materials:*** *Exterior: aluminum cladding, brown-tinted glass, brick plaza paving. Interior: plaster-finished walls, gypsumboard partitions.* ***Consultants:*** *Bolt, Beranek & Newman, Inc., acoustical.* ***Cost:*** *$15,200,000; $25 per sq ft.* ***Photography*** *(except as noted): Morley Baer.*



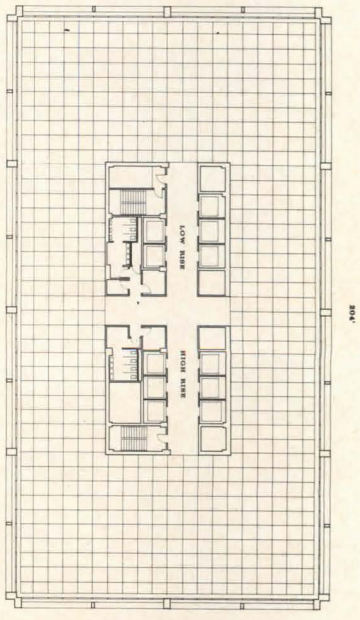
PLAN · PLAZA LEVEL



TOWER ELEVATION



TOWER SECTION



TYPICAL TOWER PLAN

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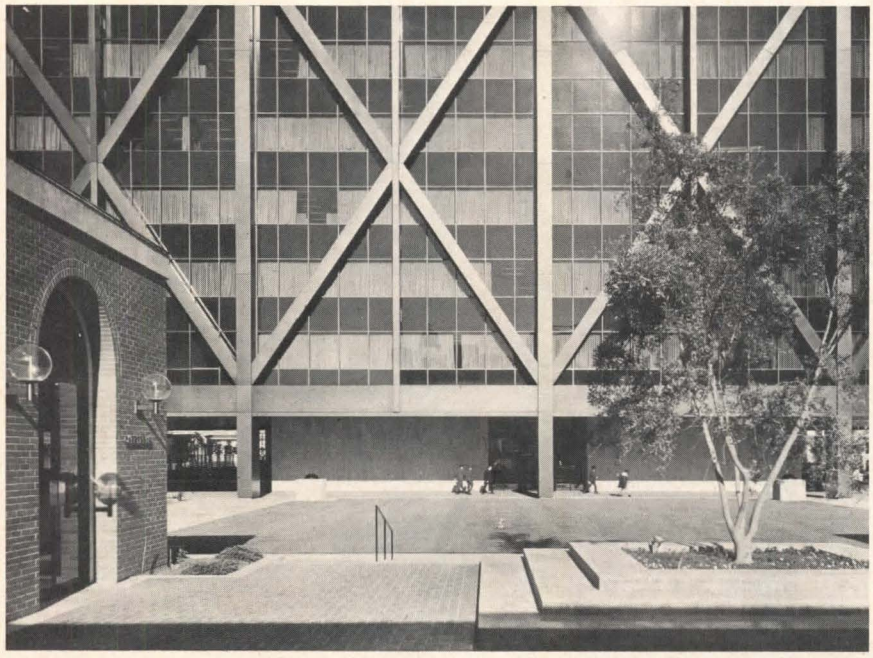


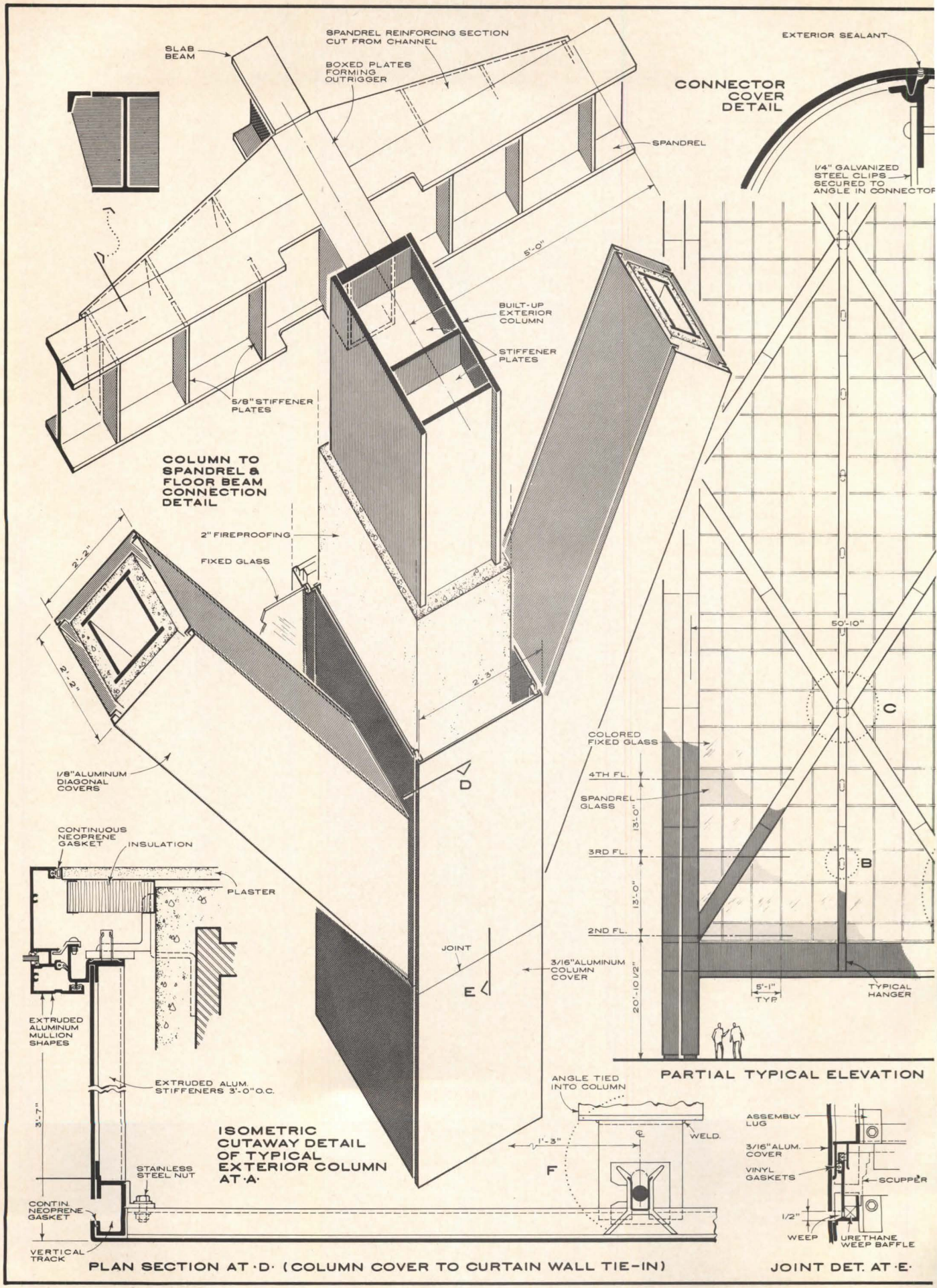
with the exposed seismic structural bracing, whose analogies are to the bay bridges and ships' rigging along the waterfront.

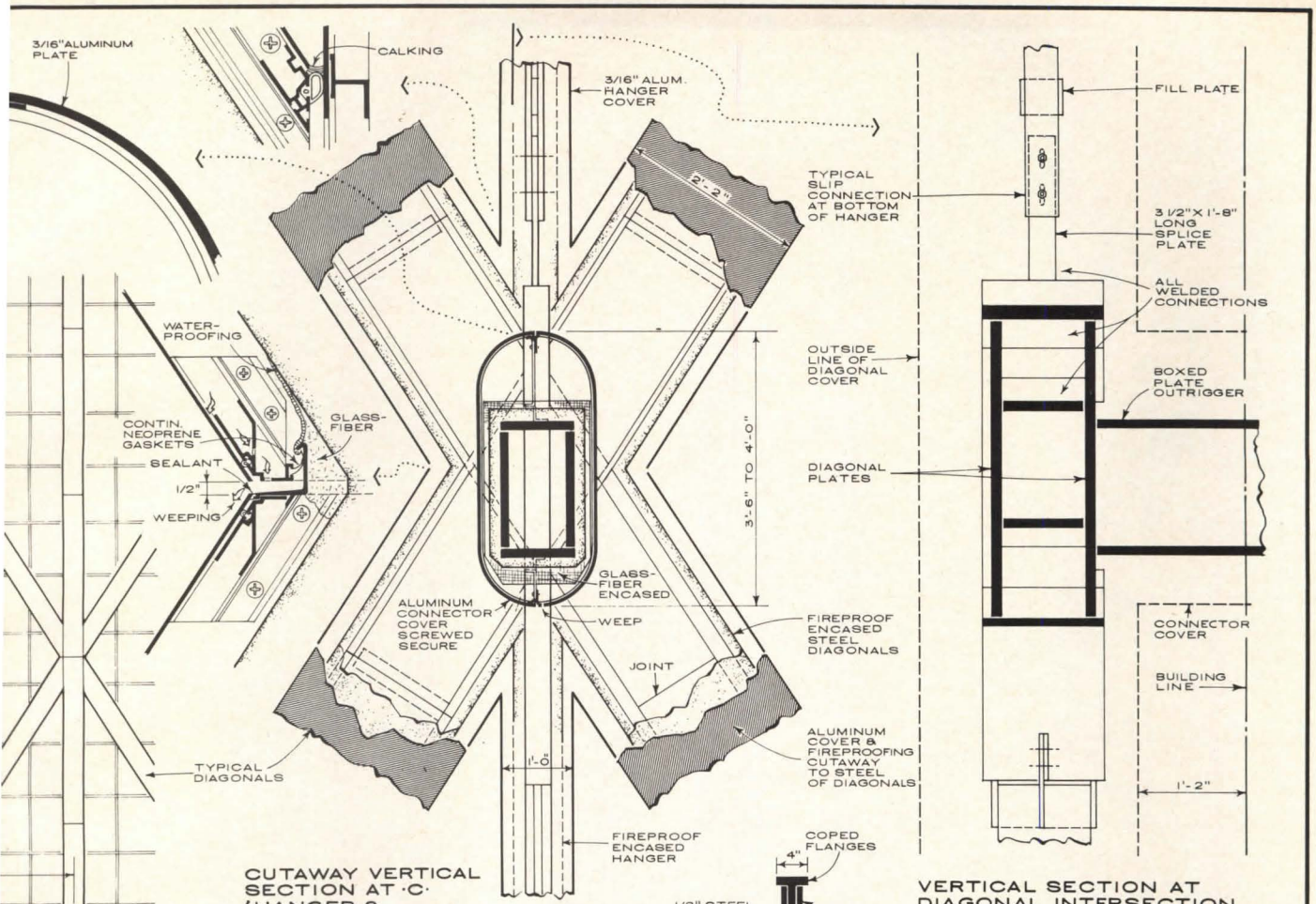
There is little doubt about the scale of the Alcoa Building. It is not another high-rise honeycomb that confuses the scale of the man and the bee. The monumental bracing is spread-eagled in determination against potential seismic upheavals, knitted, knuckle interlocked with knuckle, with the tendons of the tension members. Behind this bold skeleton is a light skin filigree of mullions and spandrels. When you look at the building from the plaza (an important qualification), you know what it does and what you do and how big the building is and how big you are in comparison.

Despite the visual strength of the building itself, one tends to have a reservation about having a tall tower occur "up in the air" in that way. One feels a need to read it all the way to the ground, and the podium treatment makes this impossible. SOM worked on the podium and plaza with Wurster, Bernardi & Emmons, trying to bring about a sympathetic sequence of relationships, but came short of success. The low restaurant building at the other end of the plaza is just a little too romantic, the gardens just a bit too formal and uninviting, and the tower visually that much different from the podium for the viewer to accept them all as one composition.

As for its compatibility with the rest of the Golden Gateway development, the Alcoa Building stands quite apart as the only office tower in the complex and the only building with a serene design integrity of its own in a hodgepodge of Hansel-and-Gretel townhouses and superficially façaded apartment buildings perched atop Girard-colored podiums. Consequently, it appears somewhat aloof from the rest of the complex, rather surprised to be found in such company, like Adolphe Menjou at a Kiwanis picnic. — FW, JTB

Wide-angled views of Russian and Telegraph Hills and Golden Gate from SOM partner E. C. Bassett's office (above) are dramatically slashed by the diagonals of the structural truss.


SLAB BEAM
SPANDREL REINFORCING SECTION CUT FROM CHANNEL
BOXED PLATES FORMING OUTRIGGER
SPANDREL
5'-0"
BUILT-UP EXTERIOR COLUMN
STIFFENER PLATES
5/8" STIFFENER PLATES
COLUMN TO SPANDREL & FLOOR BEAM CONNECTION DETAIL
2" FIREPROOFING
FIXED GLASS
2'-2"
2'-2"
2'-3"
1/8" ALUMINUM DIAGONAL COVERS
D
CONTINUOUS NEOPRENE GASKET
INSULATION
PLASTER
EXTRUDED ALUMINUM MULLION SHAPES
EXTRUDED ALUM. STIFFENERS 3'-0" O.C.
3'-7"
STAINLESS STEEL NUT
CONTIN. NEOPRENE GASKET
VERTICAL TRACK
ISOMETRIC CUTAWAY DETAIL OF TYPICAL EXTERIOR COLUMN AT·A·
JOINT
E
3/16" ALUMINUM COLUMN COVER
ANGLE TIED INTO COLUMN
WELD.
1'-3"
F
PLAN SECTION AT·D· (COLUMN COVER TO CURTAIN WALL TIE-IN)
EXTERIOR SEALANT
CONNECTOR COVER DETAIL
1/4" GALVANIZED STEEL CLIPS SECURED TO ANGLE IN CONNECTOR
50'-10"
C
COLORED FIXED GLASS
4TH FL.
SPANDREL GLASS
13'-0"
3RD FL.
13'-0"
2ND FL.
20'-10 1/2"
B
5'-1" TYP.
TYPICAL HANGER
PARTIAL TYPICAL ELEVATION
ASSEMBLY LUG
3/16" ALUM. COVER
VINYL GASKETS
SCUPPER
1/2"
WEEP
URETHANE WEEP BAFFLE
JOINT DET. AT·E·



CUTAWAY VERTICAL SECTION AT ·C· (HANGER & OUTRIGGER TO DIAGONAL INTERSECTION)
VIEW LOOKING AWAY FROM BUILDING

NOTE: STRUCTURAL DETAILS VARY AT DIFFERENT FLOORS, FACE & SIDES OF BUILDING. THOSE SHOWN ARE MOST COMMON.

SNAP-ON COLUMN COVER DETAIL AT ·F·

CUTAWAY VERTICAL SECTION AT ·B· (BEAM TO HANGER CONNECTION)

ALCOA BUILDING: San Francisco, California
SKIDMORE, OWINGS & MERRILL: Architects

SELECTED DETAIL
EXTERIOR FRAMING

THE NEW CHURCH ARCHITECTURE: THE PASSING OF THE SACRED SPACE

The six churches shown here reflect the controversies and reorientation going on in many denominations — matters that a contemporary architect, designing a place for Christian worship, must learn to understand.

As the church as an institution changes, the plan and appearance of the church edifice can eventually be expected to change as well. The reforms, realized and proposed, that have made the Catholic Church a subject of interest to all Christians in recent years have counterparts — and precedents, for that matter — in other reforms in the Episcopal and in some Protestant churches. The apparent novelty of some of these reforms is often a matter of appearance alone, since the more radical reformers are attempting to recapture something in the early Christian church that the later, more institutionalized church lost, as well as to find ways of getting through to skeptical, worldly modern man.

Of course, it is the "progressive" clergyman, liturgist, or architect, the man who has something new to say, who is most often heard. The speeches at liturgical conferences and the articles in periodicals like *Faith and Form* or *Liturgy* call for an intellectually fresh, world-oriented approach to the church and its architectural expression that is not reflected in the run of plans still being produced. The ordinary congregation still gets something that "looks like a church," sometimes affectedly humble, sometimes histrionic, sometimes good and genuine as far as it goes, but not really new in its essence, which is the plan. Most often, there is nothing that ventures beyond the letter of current liturgical requirements. In contemplating possible trends in church design and their ideological foundations, it has to be remembered that the "progressive" churchman, even though his ideas may ultimately win out, is speaking for only one element in his church, whether it be Catholic or otherwise.

One further note: the word "church," as used here, means the actual space for worship and other sacraments, as enclosed and furnished, disregarding all other spaces in the building complex.

The Houseless God

The key to the most telling innovations in the emerging church architecture, the permissive condition on which everything else depends, is the abandonment of the more or less literal belief, carelessly held over the centuries, that the church edifice is the "House of God." In the Temple of Jerusalem, only a priest could survive in the Holy of Holies, which was a kind of divine high-voltage chamber: even here, though, there was no belief that God lived *only* in the Temple. In his prayer of consecration, Solomon said, "Behold, heaven and the highest heaven cannot contain thee — how much less this house which I have built!" Implicitly, God was everywhere, but in certain places more than in others; and this attitude came to be that of organized Christianity. The Christian church, after its acquisition of buildings specifically for worship purposes, came to assume that the sanctuaries of these places could also have the current turned on, so to speak, by a formula of consecration. The assumption that the worship space had a particular sanctity, that God was there more than elsewhere in the world, was never very consistently held; and yet, for various reasons, a Christian has almost always felt that in entering a church he was entering a very special place, with its own etiquette, or even an embassy from the beyond with extraterritorial powers.

In consequence, it became axiomatic at some point — perhaps as late as the "ecclesiological" movement of the 1840's — that the church might be used for the various sacraments only. "Profane," non-sacramental activities of an approved nature might take place in halls, offices, classrooms attached to the church, but not, if only for reasons of decorum, in the church itself.

In place of the old implicit and explicit dichotomy between the sacred and the profane, the consecrated church and the unhallowed world, Catholic, Episcopal, and other theologians are coming to insist that the world as a whole is sacred, and that the Kingdom of God is already established all over the earth, despite the presence of large and conspicuous pockets of rebellion.

In place of the House of God, modern theologians propose the concept of the House of God's People. The true church is not a building, but the assembly of Christians gathered for worship. The shift is from the idea of a sacred space to the Judaic idea of what might be called a sacred quorum. Ten adult male Jews are enough for a congregation, and this congregation may worship anywhere.

If the synagogue is a convenient place for worship, and if its appearance inspires devotion, still it is only a *shul*, a school, and the rabbi is not a priest, but a teacher. Only the Torah is sacred. A saying of Christ's (Matthew 18:20) provides a Christian precedent for the sacred quorum: "When two or three are gathered together in my name, there am I in the midst of them."

A purposefully designed House of God's People, then, may be more appropriate, more inspiring, but is no more sacred, than the places where, in the absence of a church, religious services have been held in the past: a battlefield, a smoking room on an ocean liner. Once this is realized, its space becomes available for "secular" activities consistent with Christian faith and practice, if and when desirable. J. G. Davies, an Anglican, has produced a book, *The Secular Use of Church Buildings*, which shows that in the past the church building was used for the overnight lodging of travelers, fund-raising ale parties, theatricals, and the hiring of servants. It is sometimes useful, as we shall see, to give the church space this versatility; of six churches shown later in this article, four have multipurpose worship spaces.

Victory Without Triumph

Disappearing, too, is what some Catholics have come to call "triumphalism." This is the insistence on expressing the power and the glory of the church. For the Catholic, the most obvious manifestation of triumphalism is that of the absolute authority of the priest over the layman, and of the various levels of the hierarchy over one another. Architecturally, the monumental church, the steeple or the dome above the roofs, the chancel soaring above the rood screen, have been its expression. The parish church might be small and humble, much remodeled and full of eccentricities, familiar and loved, but most churchmen until recently agreed with Anglican architect Ralph Adams Cram that the cathedral at least should first crush the worshipper with awe, then fill him with religious exultation as he approached the chancel. The arts were used to take the worshipper's thoughts away from the world, to create in him the mood desired, and, in periods of bad taste and overelaboration, the church interior could become a nightmare of statues, frescoed vaults, imitation marble, and castrati warbling in the choir loft.

Throughout church history, there have been persons who have wanted to turn away from the professionalism of masses grandly celebrated under soaring vaults to some approximation of the modesty and intimacy of the earliest Christian celebration, a simple ritual meal in a private home. Today, a major effort is being made to do this. The prescriptions of the *Constitution on the Sacred Liturgy* have helped things along by urging that the altar be "truly central," that is, close to the congregation rather than buried in the chancel, and that the celebrant face the congregation. The active participation of the Catholic worshipper and the celebration of the mass in his own language contribute also to a breaking down of barriers between clergy and laity, to a sense of something done in common. Thus far, though, most churches have retained one feature preventing full intimacy — the traditional frontal alignment of seats. A seating arrangement that improves on this is shown in only one of our six plans, that of the Episcopal church at Livermore (p. 100), where a complete I-and-thou relationship among members of the congregation as well as between them and the celebrant is built in, so to speak, through the circular plan. Another way of bringing the members of the congregation together is suggested by a plan type that would put the Liturgy of the Word in what would be, frankly, an auditorium; after this part of the liturgy, the congregation would adjourn informally to a square space around a central altar for the Liturgy of the Eucharist.

Whether home liturgies will become common, no one can say as yet. A complete return to the ritual meal, an actual breaking of bread accompanied by an improvised liturgy, has the attraction of complete spontaneity, of total liberation from formula. Yet church authorities are wary, even when interested, fearing problems of discipline and perhaps fearing, too, that small congregations would become too ingrown. If home liturgies became universal, church architecture, of course, would disappear. The decorative arts would suffice to set the religious mood, either in the home or in some public hall if the faithful gathered en masse from time to time.

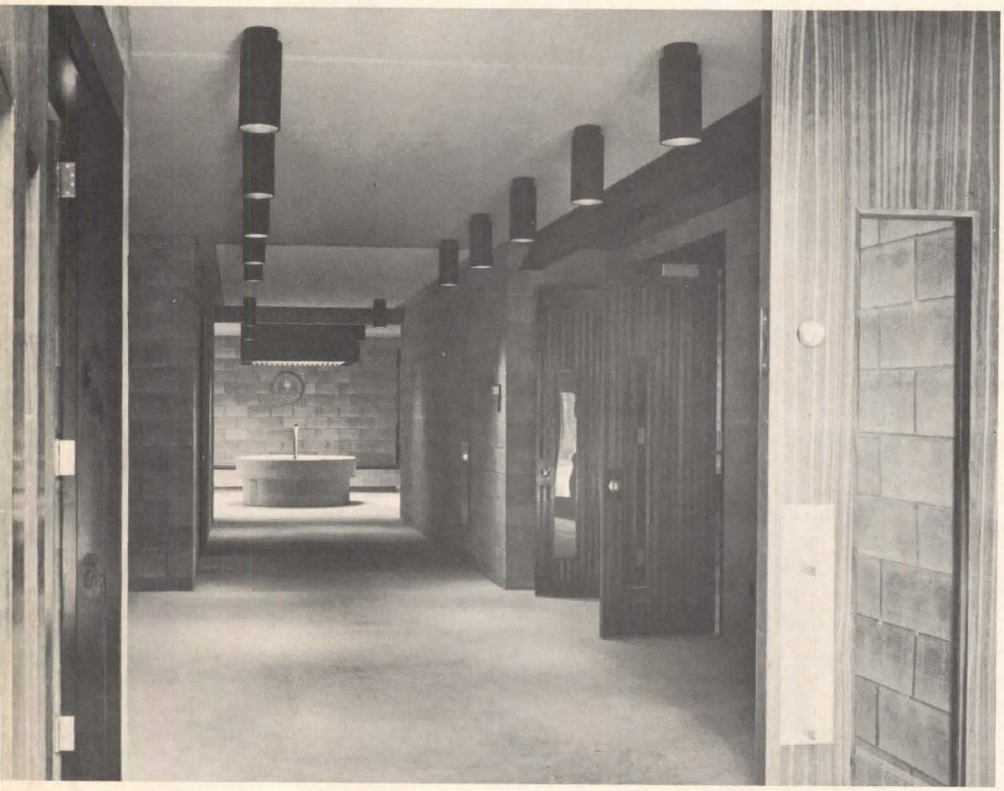
Again, efforts are currently being made in the Catholic Church toward a major reorientation of attitude and purpose. Rather than taking its own faithful away from the world, into its own enclosed places, for a largely passive attendance at mass or for various private devotions, the Catholic Church, like other denominations, is coming to show interest in and a concern for persons of every belief, everywhere, in their everday existences. A few years ago, "heretics" became "separated brethren," and the ending of this separation has since been the active concern of Catholic and non-Catholics. The Catholic center at RPI (p. 94) is used, in this spirit, by other religious groups. In the new town of Columbia, Maryland, an ecumenical center will unite Catholics and a number of Protestant sects — Jews also, perhaps — under the same roof, with shared facilities.

This spirit of tolerance and concern is matched by a new feeling that the church should not only be *in* a neighborhood but also be *of* it. In the past, the congregation's relationship to the needy outside world was one of remote concern at best, with liaison accomplished through missionaries or through charitable donations. The opening of church halls to public meetings or festivities of a well-mannered and approved nature has long been customary, but the all-around invasion of the actual worship space by "secular" neighborhood activities is a recent innovation. Even the Eipscopal Cathedral of St. John the Divine in New York, a triumphal, monumental church to end all triumphal churches, stands in grounds that are being heavily used for recreation purposes. There is no basketball in the nave as yet, but much of the immense crypt and various halls are at the service of the neighborhood. In the presence of our land-hungry cities, in the poor neighborhoods especially, clergy and congregations are coming to feel guilty — and apprehensive — in their awareness of posessing large, tax-free spaces for the use of a few people a few hours a week. There is a persistent image in the minds of the public of affluent, slum-lording church vestries, or smug, exclusive congregations, and demands to tax church property, not unknown in the past, are being raised rather loudly now. To the concern for understanding and helping our fellow man, the fruit of modern intellectual curiosity and humanitarianism, is added then the concern of the church to justify its possessions by making them more generally useful and available.

The Shape of the Church

As has already been noted, what will actually happen to church architecture is anybody's guess. Churches for the denominations that are undergoing ideological change will probably continue to be recognizable as churches, although ecumenism and economy may combine to deprive them of their more ostentatious symbolism, and replace their pews with easily moved chairs. Even the pleadings of certain people for multimedia appeals to modern man, for banners, slide projections, stereophonic sound, that portend a bigger and better (?) baroque, suggest rather that the architect will be asked for big, blank, image-sized walls than for built-in visual lavishness. One possibility, tentatively explored abroad, is the demountable church, a tabernacle that can be "struck" and re-erected, or returned to stock when lack of attendance warrants it. American churchmen seem to be cool to this idea, and some say that a quality of permanence about a church, something rooted to the site, fulfills a need that a prefab shelter with a field altar and hangings cannot: that even in our mobile society, the survival of a permanent cross, planted by those who have now moved on to heaven or to worldly promotion, can be a heart-warming legacy for those who come in their place.

Certainly, architects and artists who are concerned with this new, world-oriented, *engagé* church do not feel their hands tied. They seem to welcome the release from the routine of decades, from having to rebuild the church of 1840 in many guises.



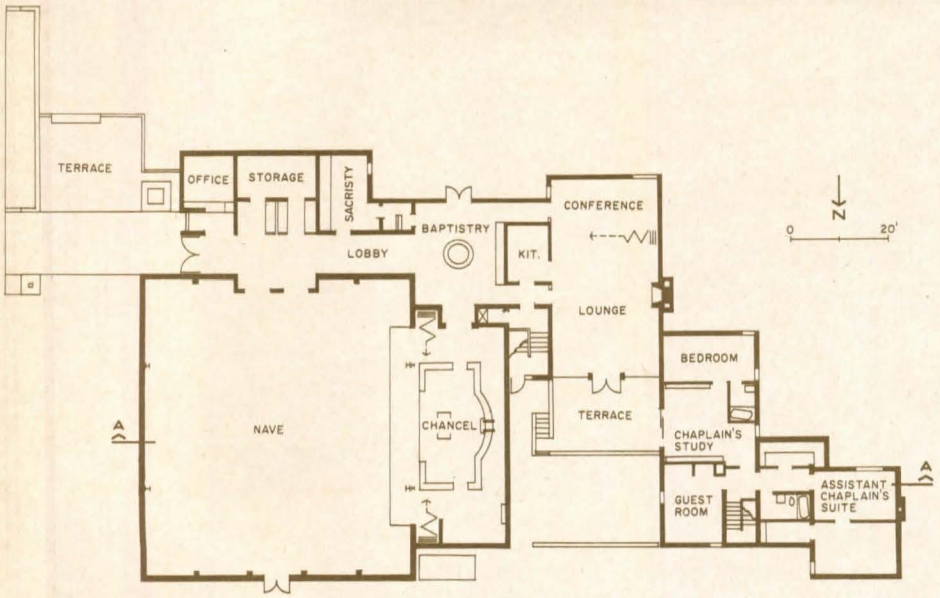
The Secular Nave

Newman Center is an example of advanced, post-Vatican II architecture. Its nave and chancel, creating in combination a solemn place of worship for Rensselaer's Catholic population, can be divided by hanging panels, allowing the chancel to be used for everyday masses and the nave as a meeting place, dance hall, or theater. More radically secularized Catholic architecture can be found — the chancel here is permanently furnished as a place of religious activity, and a font and a rose window remind you constantly that the place you are in is, after all, a church; but the versatility of the nave would have been unthinkable in a permanent Catholic church a few years ago.

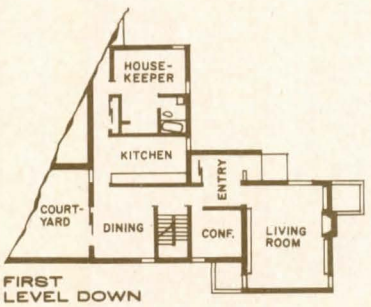
Seen from outside, Newman Center is a combination of gray forms, a little incongruous perhaps in a neighborhood of red brick, but modest in scale and shape. The chapel nave, with its great slopes of terne metal, is the only conspicuous part. On the front, the religious purpose of the buildings is announced in the daytime by the lettering beside the doorway, with its cross/plus sign, and at night by the rather small but vividly colored rose window, backlighted.

At the end of the entrance corridor, in a broadened baptistry area, is a skylighted font. Current Catholic feeling often favors placing the font at the main entrance to the worship space, because it is through baptism that one enters the church in the sense of the company of the faithful. Here, if one's destination is the nave, one does not reach the font, but it announces itself all the same, in a way that is still fairly novel. Its consecrated water, constantly recirculated and filtered, glimmers in the strong overhead light as it pours into the basin from a raised pipe, and makes a gentle splashing. If one is going to the chancel, where ordinary, little-attended masses are held,

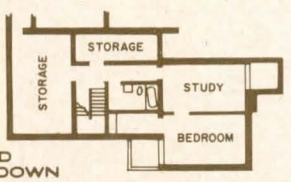
The major interiors of the chapel are windowless at eye level, but natural light comes in from above. The toplighted font (facing page, top) catches the eye of a person entering the building (facing page, center). The chancel (left), here shown with the sliding doors closed, gets light from two raised windows and a strip of skylight. The nave (top and above), here shown with a temporary stage, has two strips of clerestory lighting.



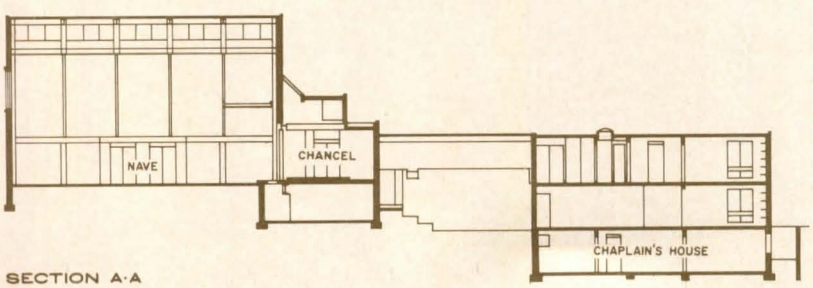
GROUND FLOOR



FIRST LEVEL DOWN



SECOND LEVEL DOWN



SECTION A-A

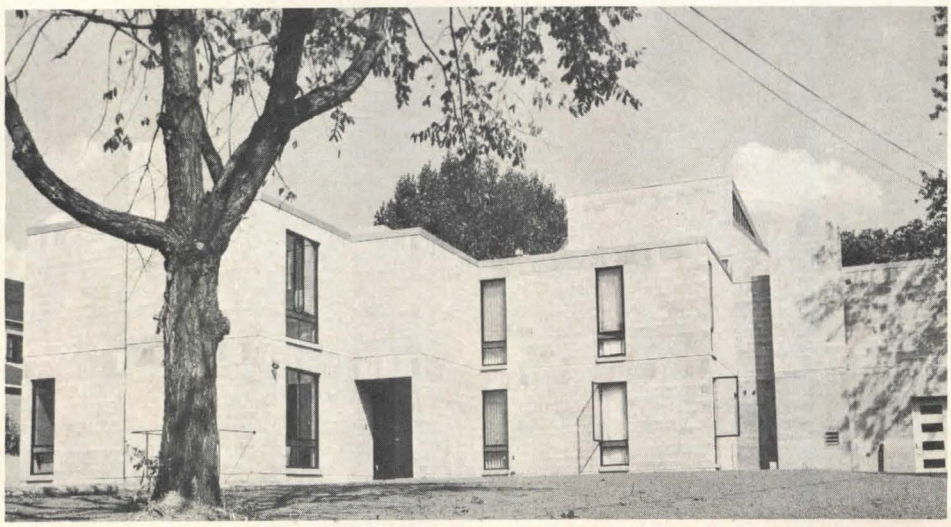
RENSSELAER NEWMAN FOUNDATION CHAPEL AND CULTURAL CENTER, *Rensselaer Polytechnic Institute, Troy, N.Y.* ***Architects:*** *Levatich & Miller.* ***Site:*** *A fairly open area of sloping ground in a half-academic, half-residential neighborhood.* ***Program:*** *See text.* ***Structural System:*** *Concrete block bearing walls; precast concrete decking slabs; steel framing with natural cedar decking over major worship area.* ***Costs:*** *(building only): $320,000 budgeted; $350,000 bid; $25.35/sq ft.* ***Consultants:*** *Raymond DiPasquale, structural; Harold Friedman Associates, mechanical; Rev. Thomas W. Phelan, liturgical.* ***Photography:*** *Albert Tabackman.*

one does pass the font, which is on axis with the priest's position.

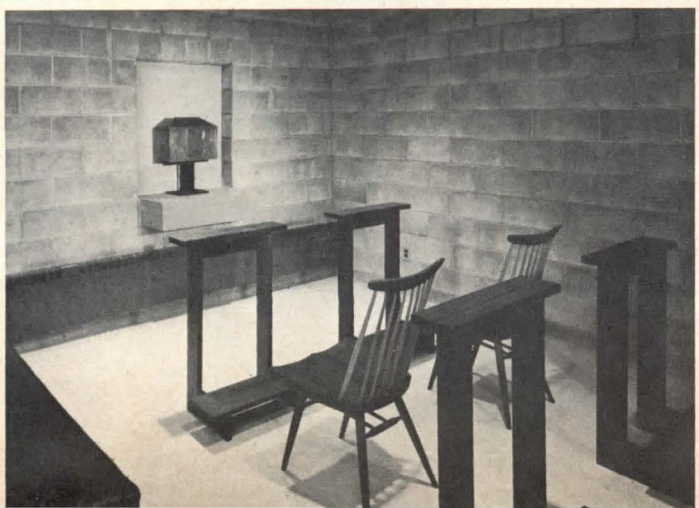
The nave is a plainly finished space, handsome but neutral, nearly square in plan, of black steelwork, exposed gray concrete block and unpainted wooden decking. Aside from the woodwork, it has only two touches of color. One is the rose window at the back, a swirling pattern of vivid reds, yellows, and blues. the other is the red soffit of a canopy that extends the width of the "proscenium" between the tall nave space and the much lower chancel. This canopy holds downlighting for the thrust stage that is sometimes set up in this area. Adjustable battens hung crosswise from the roof make other theatrical lighting possible; a stage or platform can be set up anywhere in the nave and can be provided with whatever kind of lighting it requires. The ordinary nave lighting is set well up by the monitor: high-power incandescent lamps, set in cylinders, as pairs of independently-working units.

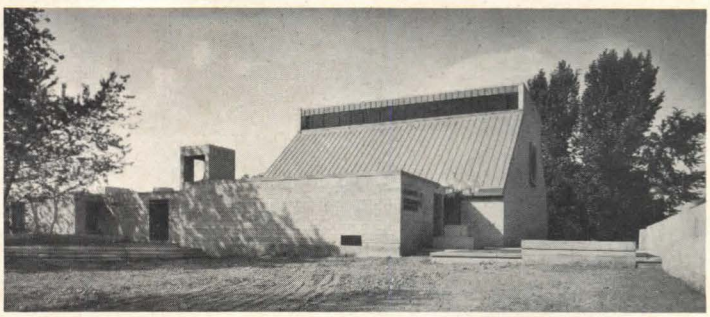
The chancel is a relatively low, broad, shallow space, plainly finished and lighted by clerestory windows and a broad skylight. It is permanently furnished, with a low, masonry bench surrounding the area of celebration. On occasions when few people come to mass, they sit around the priest, with the nave shut off by the sliding panels. On weddings and other occasions, the wedding party can stand behind the priest. The slight suggestion of an apse at the center allows ample space for this, and also gives mild emphasis to the major axis of the chapel. Incidentally, the chancel has been used for Protestant and Jewish worship; the cross by the celebrant's seat is a processional one, and can be removed. To one side is a small area for private meditation and for adoration of the Sacrament, which is kept in a small tabernacle on a shallow ledge.

The social rooms and the chaplain's house are plainly finished, with unpainted concrete-block and plain white plaster walls, and roughly textured ceilings of prestressed concrete decking. The chaplain has furnished many of the rooms with furniture by George Nakashima.



Exposed concrete block is used inside and out. On the exteriors, the terne metal roof of the chapel (above and below) and the terne metal copings of the chaplain's house (left) contrast with the texture of the masonry while having much the same shade of gray. Inside, delicately made furniture by George Nakashima lightens the effect, as in the worship area in front of the tabernacle (left, bottom).



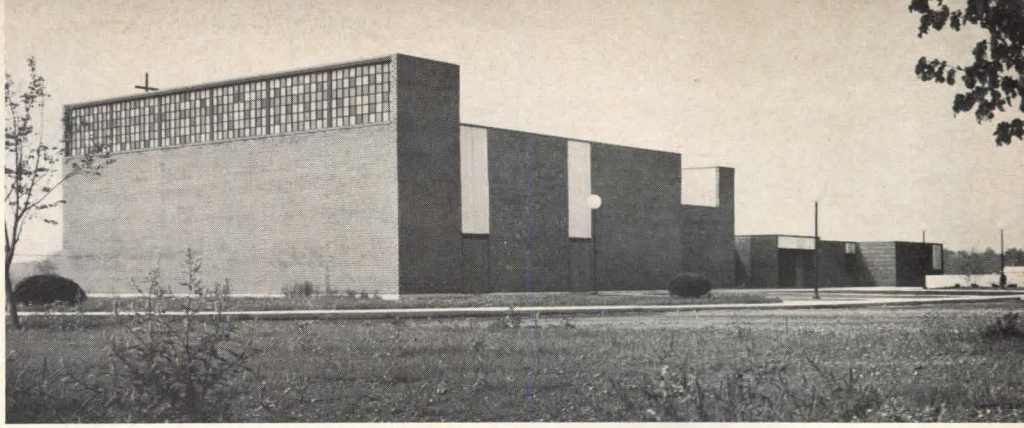


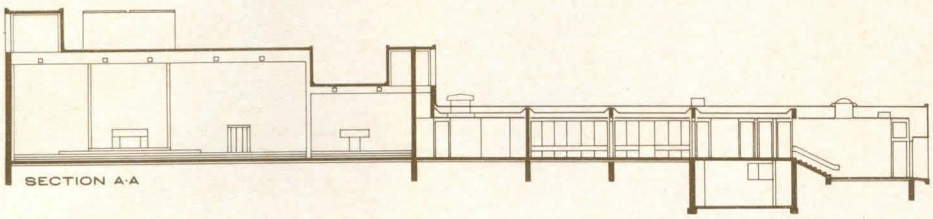
Chancel for the New Liturgy

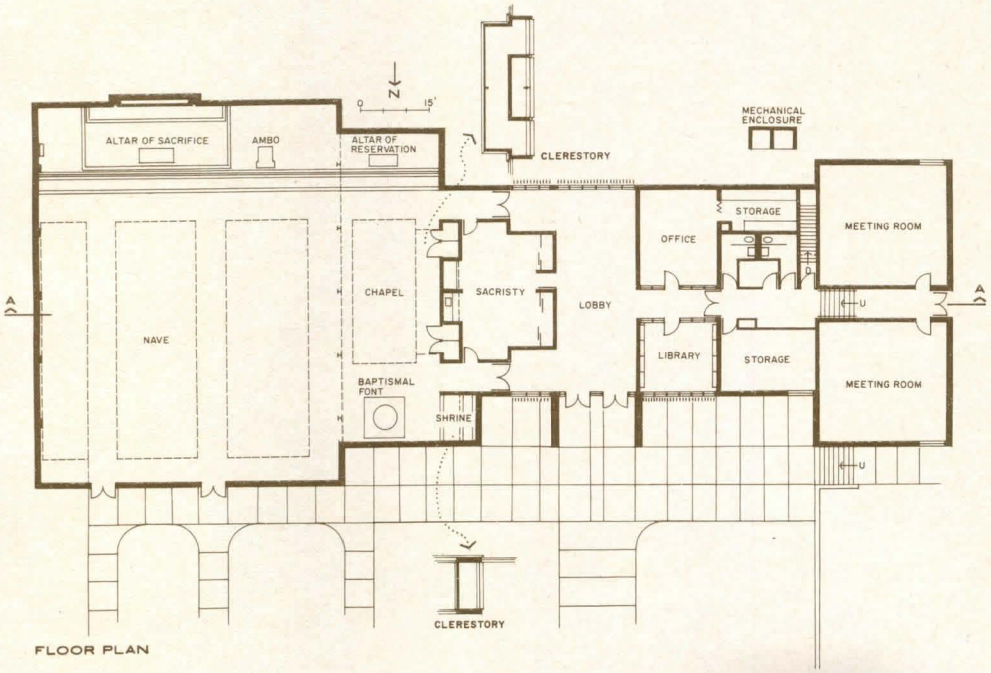
Holy Spirit is another example of the new Catholic architecture. A parish church in this case, it has a somewhat narrower range of uses — worship and religious instruction, essentially — than that of Newman Center.

Attendance at mass at Holy Spirit varies from 15 to 500, depending on the occasion, and two adjacent, undivided spaces are provided to meet this situation. Closest to the entrances is a smaller space, called the chapel, and beyond this, a much broader, longer space, called the nave. The chapel has a rather traditional plan and furnishing, with the Altar of Reservation and the font on its axis, and with permanent pews. It is used most of the week, with the altar as the place of celebration for both the Liturgy of the Word and that of the Eucharist. The font, incidentally, is of the recirculating type, and is placed beside the way into the church most naturally used, thus reflecting current feelings about the symbolism of the font as the way into the Church in a more literal manner than that used at Newman Center (p. 94).

The nave is a multipurpose space; ordinarily arranged for mass in conventional parallel rows, the furniture can be rearranged for classes or removed entirely for festivities. On days of large attendance, the Liturgy of the Word is celebrated from the ambo in this space, which is situated close to but not on the axis of the combined space, while the Liturgy of the Eucharist is celebrated from the Altar of Sacrifice, which is well off to the left. As the chapel, even on days when the combined space is used, is the first area to fill up, this off-center placing seems awkward, but the pastor reports that it works very well, as does the entire

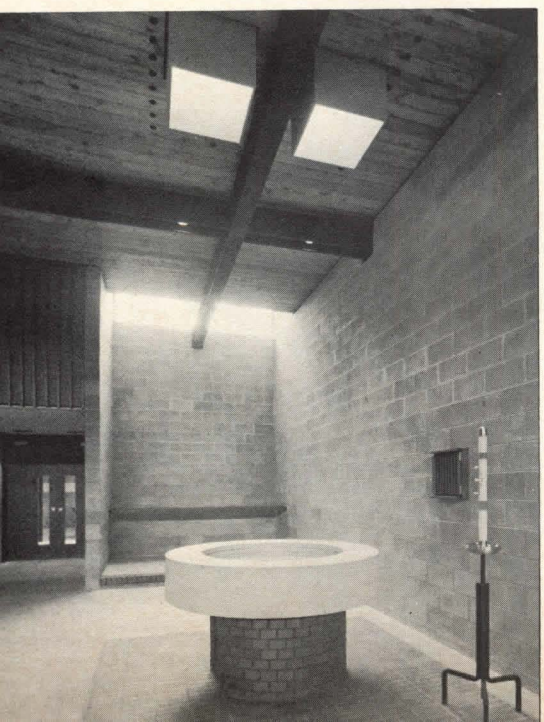






FLOOR PLAN

CHURCH OF THE HOLY SPIRIT, *Penfield, N.Y.* ***Architects:*** *Levatich & Miller.* ***Site:*** *A level area, formerly rural but now being developed as a residential suburb.* ***Program:*** *See text.* ***Structural System:*** *Loadbearing brick-faced cinder block walls, steel-framed roofs.* ***Costs:*** *$297,700 budgeted; $305,000 actual; $21.80/sq ft.* ***Consultants:*** *Raymond DiPasquale, structural; Personius & Wadsworth, mechanical; Rev. Joseph Lynch, liturgical.* ***Photography:*** *Albert Tabackman.*

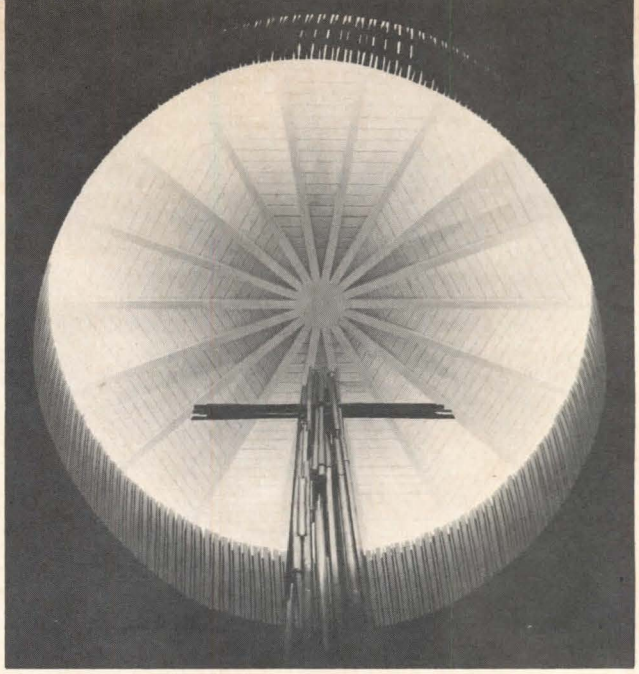


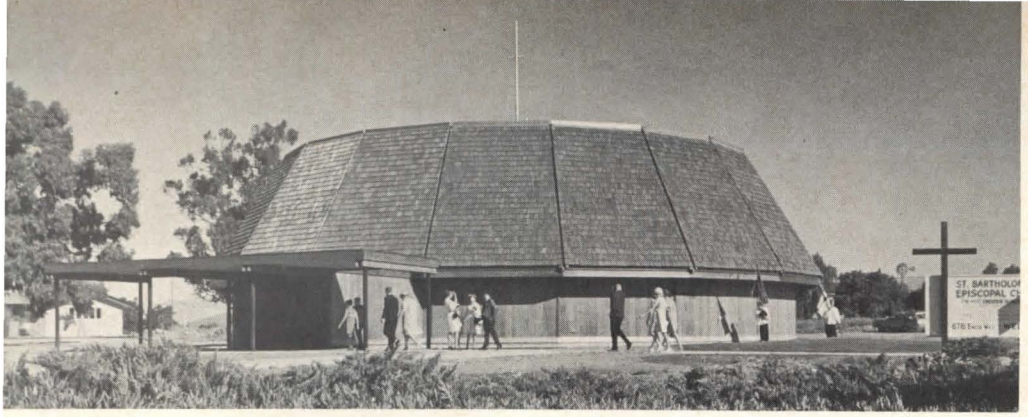
plan. The two altars and the ambo are placed in an extremely broad and shallow chancel running the entire width of the combined spaces. While deep enough to allow for such things as the grouping of a wedding party around the altar, in the presently approved manner, the breadth of the chancel also allows the parishioners to file past the chancel steps for communion in a more orderly way than the conventional, relatively narrow nave and chancel permit.

The architect wanted to create a progression of spaces, from smaller to larger, and one of light intensities from darker to lighter, as one comes further and further into the church. The chapel is lighted from its west side through light scoops, faced externally with cedar boarding, that illuminate the area immediately in front of the confessionals. The nave has a strip of tall east windows, at clerestory level, running its entire length. Thus, in the morning, the nave is flooded with light. Strong artificial lighting is used to emphasize the two focal points of the chapel, the font and the Altar of Sacrifice. Three small spaces off the chapel have natural lighting from above. Two of these are confessionals, borrowing light from the chapel light scoops. To preserve the privacy of confession, the confessionals are provided with doors; the doors are glazed, however, so that both penitent and priest are reminded of the church spaces outside. The third area is called the shrine. Brightly lighted by a light scoop of its own, facing westward, it will eventually house a statue or some work of religious art. All the light scoops use industrial sash, with clear glass of various textures set in patterns.

At present, the church looks austere, even harsh. Holy Spirit is a new parish, and wants to go slowly in matters of symbolic art and decoration. Eventually, the effect inside will be richer than it is now, and the exterior effect, now stark and somewhat off-balance, will be mitigated by the addition of new buildings in a quadrangle to the north, by the enlargement of the nave and the classroom wing, and by planting several rows of trees.

Church in the Round





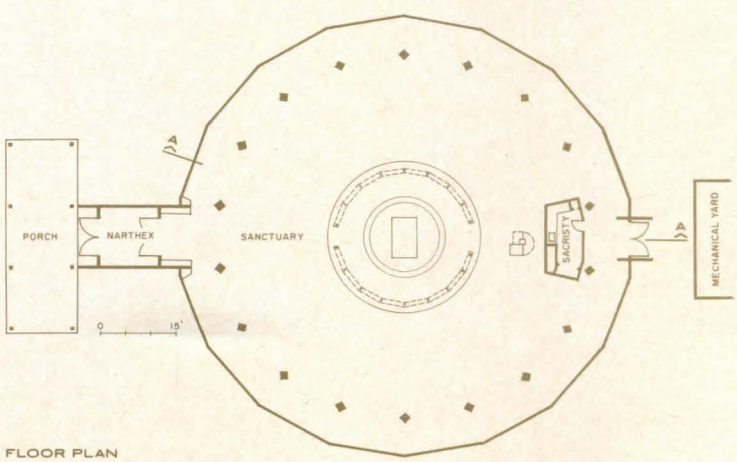
ST. BARTHOLOMEW'S EPISCOPAL CHURCH, *Livermore, Calif.* ***Architects:*** *Mackinlay/Winnacker & Associates.* ***Site:*** *A semirural area in the vicinity of San Francisco.* ***Program:*** *See text.* ***Structural System:*** *Wooden cantilevered roof trusses on wooden posts; resawn redwood plywood walls; hemlock ceiling decking; cedar shakes.* ***Costs:*** *$115,000 budgeted; $116,000 actual; $17.00/sq ft.* ***Consultants:*** *Pregnoff & Matheu, structural; William M. Brobeck & Associates, mechanical; Michael Lacktman, sculptor of hanging cross.* ***Photography:*** *Tom F. Walters.*

The plan of St. Bartholomew's reflects current Episcopal interest in two matters that have also been agitating the Catholic church: liturgical reform and the promotion of a sense of personal participation in the service, and of an "I-and-thou" feeling, among members of the congregation. St. Bartholomew's parish consists mainly of two widely divided age groups: young persons, many of them physicists at a nearby radiation lab, and of old ones, many retired, and naturally differences arose at first over the form of church the parish should have. More fundamentally, there was disagreement over the form of the liturgy, and the first question for architects and parishioners alike was, What will happen in the worship space, and what should we emphasize? After months of discussion, the architects received a mandate to design a church that would create a sense of unity among all the persons involved, clergy, choir, and congregation, and that would emphasize the communion aspect of the liturgy.

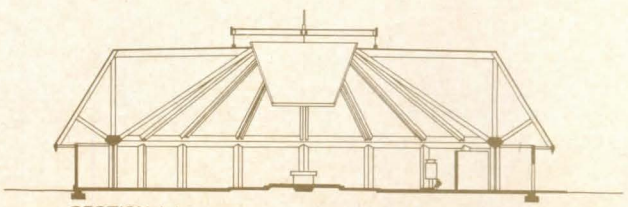
After trying and rejecting as "divisive" the standard cruciform and basilican plans, the architects created a central plan with some horizontal and vertical axiality. They put the altar at the exact center of an 18-sided worship space, surrounding this with a communion rail far enough away to allow the enclosed area to be used for portions of baptismal, wedding, and funeral services as well as for regular Sunday worship. The horizontal axis is created by a single entrance on one side and by the pulpit, with a boothlike sacristy behind it, diametrically opposite. The congregation occupies most of the space around the communion area, with the choir in similar pews nearest the sacristy. Because of this, the priest, as he faces the doorway from behind the altar, has some of his flock out of sight. This obliges him to turn from side to side: an uneasy situation but one that allows a higher good to be attained, that of allowing each person to feel himself part of a united circle, whose psychological force is strong enough to bridge the gaps created by the aisles and the sacristy. This form of geometrical unity, unlike the conventional frontal alignment of parallel pews, allows the members of the congregation to look into the faces of at least some of their fellow-members, increasing the sense of common participation as opposed to mere common attendance. As one parishioner writes, "While I used to be able to see the back of a person's head for a whole service and think nothing more than, 'There's Joe, so what?' it is impossible not to see Joe's face for the whole service and not identify with him recognizing his humanity and individuality, and pondering our mutual relationship."

The vertical axis is provided by the lantern that splashes daylight over the hanging cross and concentrates it on the altar. The architects drew their inspiration from the Arthurian Round Table, but there is a little of the radiation lab about the effect, too, as if some powerful unit were bombarding the altar with grace. Further daylight comes from beyond the walls, up under the eaves of the low, shingled frustum of a roof.

The church, though handsome and tasteful in a slightly countrified way, is simple, with nothing fancy inside or out except for the hanging cross. The liturgy itself, and those who participate in it, are the centers of attention and the ornaments of the church. The architecture, though seeking not to offend, does not seek to capture the attention.



FLOOR PLAN



SECTION A-A

Introverted Church

St. Barnabas is an Episcopalian church of a more conservative cast than St. Bartholomew's. "Triumphalism," that characteristic of the more old-fashioned church architecture now in some disfavor, is still present; this is a church intended to dominate its rather bleak, low-built neighborhood as a "powerful symbol of faith." The triumph, as it happens, is less that of any specific Christian doctrine than that of good taste, realized through humble means. To the gratification of the architect, "a poor parish was able to stand tall" and to do so without any suggestion of meanness.

The plan was conceived as an inward-looking composition of two concentric zones. Four auxiliary spaces, three of the same size, one slightly longer in one direction, form a blunt cross with the worship space at its center; a corridor, surrounding the worship space, projects beyond the re-entering angles of the cross to form four small entrance porches. Each of these porches is enclosed only by a pair of open metal gates, so that the outside climate, usually mild, penetrates the corridor. The diagonal position of the entrances may be a little confusing to the newcomer, as the main entrance to the church proper is on its central axis; the four small doors at the corners of the church space are too small to have a public look.

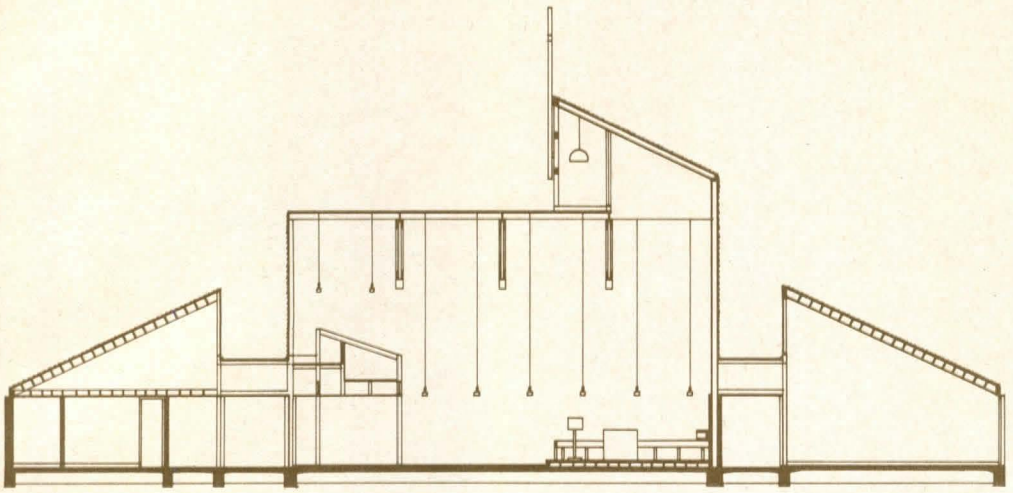
The four wings are given over to the usual offices, and are remarkable only in that their major spaces rise with their sloping roofs to clerestories that face the central church mass. Only one window — in the priest's office — affords any view of the neighborhood, although

French doors, giving on to a recessed porch in the classroom/parish hall wing, give a limited outlook.

The church itself takes its natural light entirely from a spacious, shed-roofed cupola over a "thrust" sanctuary. Pews for the congregation surround this on three sides — a little inorganically, perhaps, since the congregation is divided, rather than united as in St. Bartholomew's, by the actual arrangement. Another point of comparison with St. Bartholomew's is the placing of the choir; instead of being tied in with the congregation as a part of it, the St. Barnabas choir is placed conventionally in a loft at the rear. This was done for ceremonial reasons, since the choir sometimes marches back and forth through the church in procession.

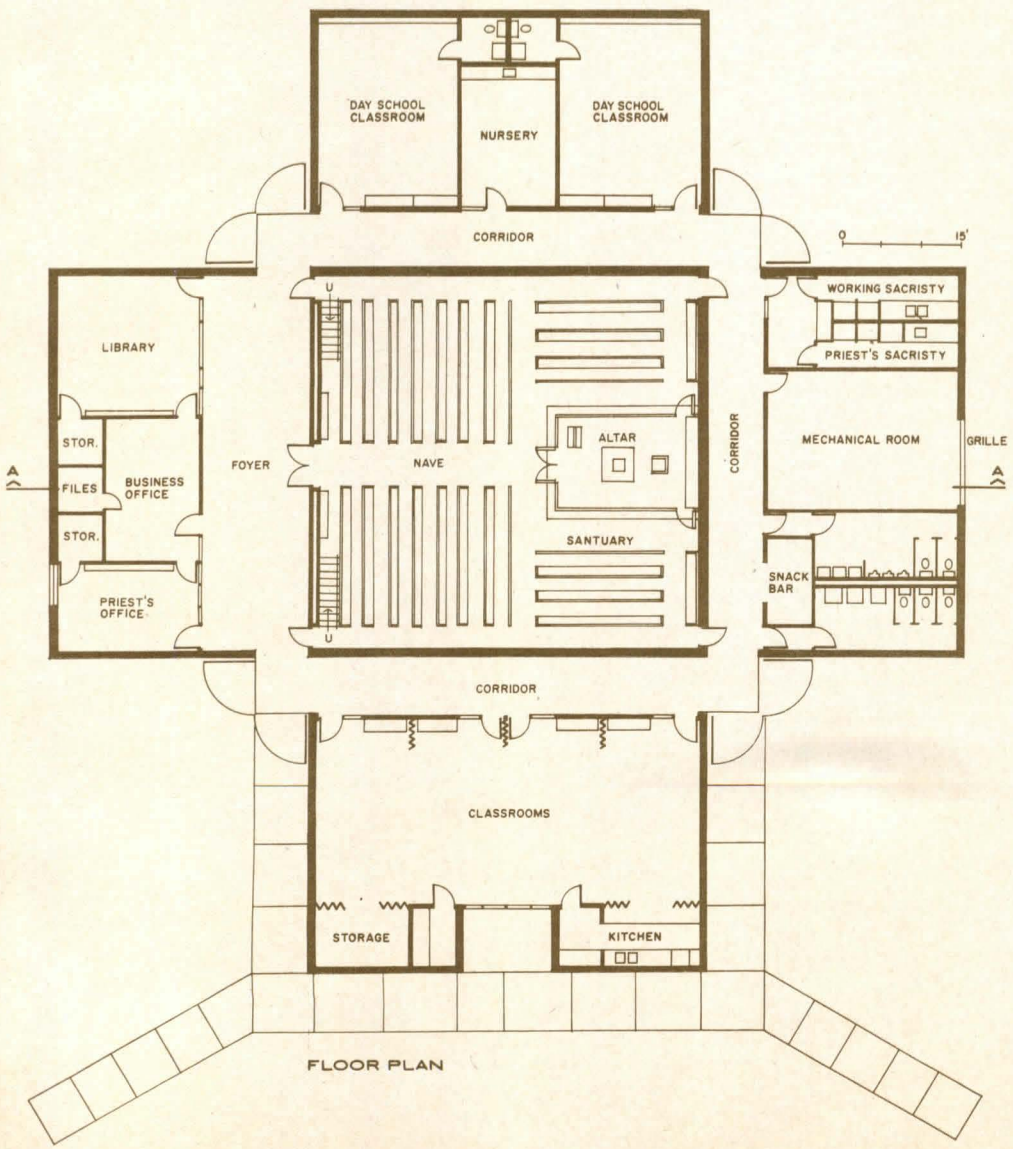
The need for economy in materials resulted in a church interior with a rustic but rather noble simplicity of appearance. This, surely, is what Edward Sövik calls "incarnational" architecture: "real" materials, used in a simple way without a trace of self-conscious gesture, except, perhaps, in the cupola. The exposed studding with its sheathing is neat but barnlike, and the brickwork pattern is highly visible, making a ruthless contrast with the retable and its furnishings. In other words, you are made aware that this is a church that was built out of pieces of material, not merely envisioned.

Photo: Maurice Miller

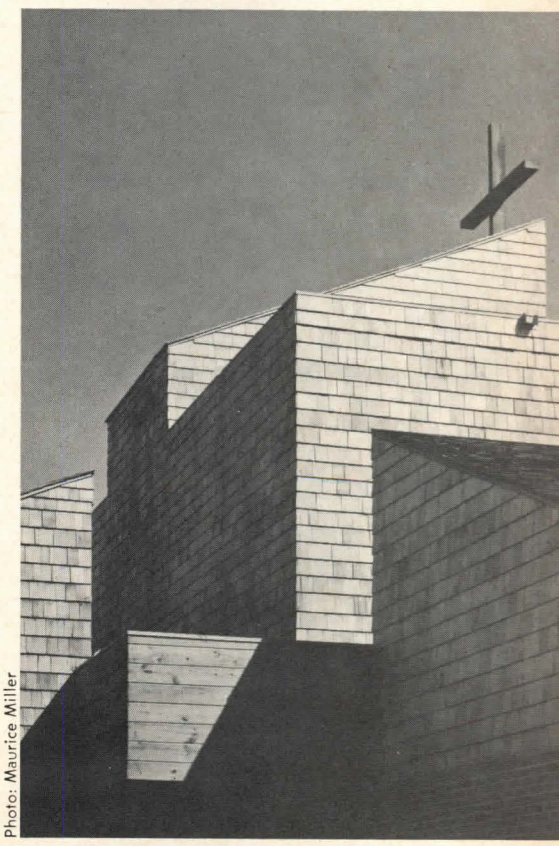


SECTION A-A

ST. BARNABAS EPISCOPAL CHURCH, *Houston, Tex.* ***Architects:*** *William Cannady; Rice Design Associates, Cannady & Wilson, associated.* ***Site:*** *A new, treeless, characterless neighborhood of one-story houses.* ***Program:*** *To "church" and provide other parish facilities for a congregation of 250. No future expansion to be allowed for.* ***Structural System:*** *Frame construction with brick veneer; Southern yellow pine frame and boarding; exposed inside; brown brick; cedar shingles.* ***Cost*** *(including all built-in and fixed furnishings): $130,000 budgeted; $134,000 actual; $13.40/sq ft.* ***Consultants:*** *Nat W. Krahl, structural; Ralph J. Speich & Associates, mechanical.* ***Photography,*** *except as noted: Frederick Lardner.*



FLOOR PLAN



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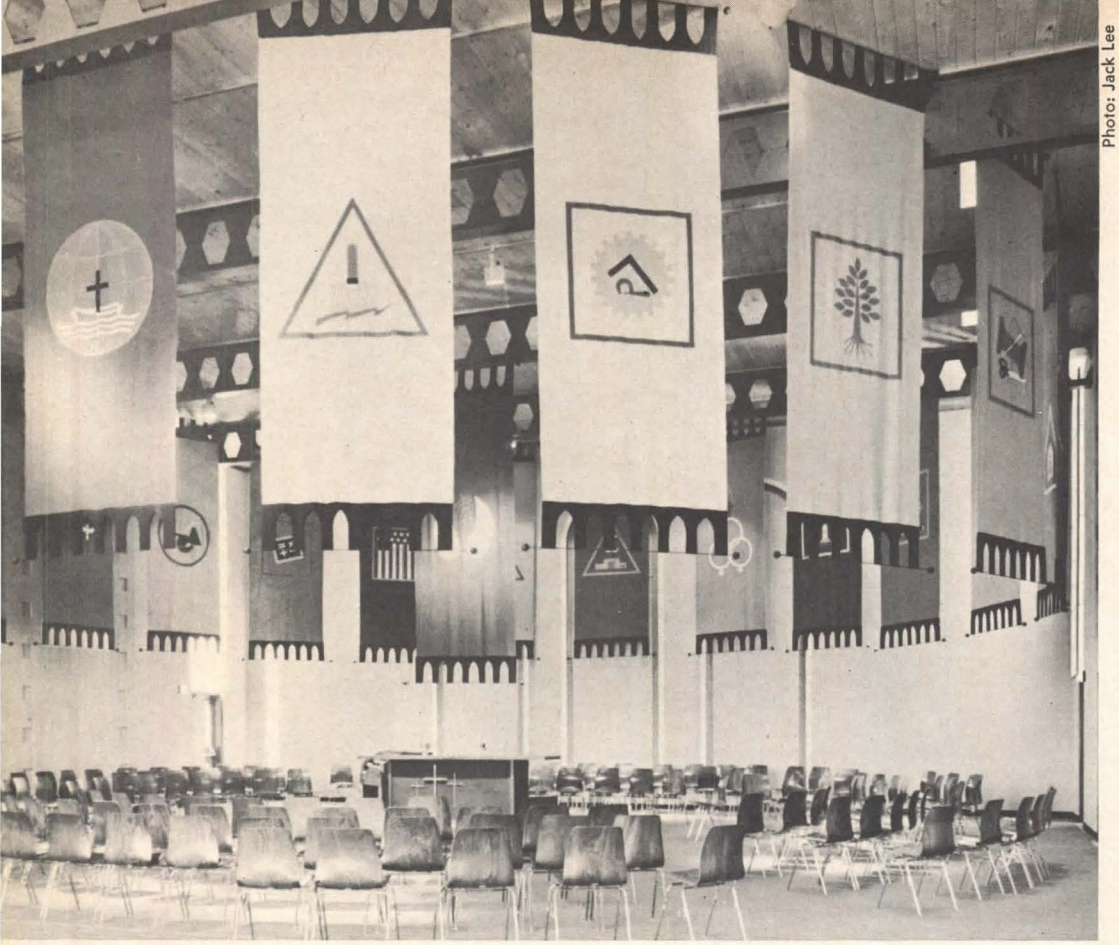
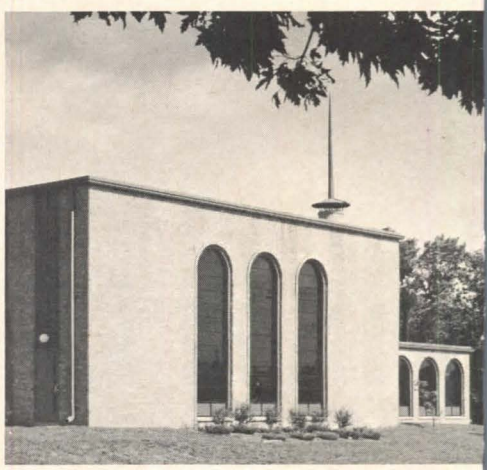


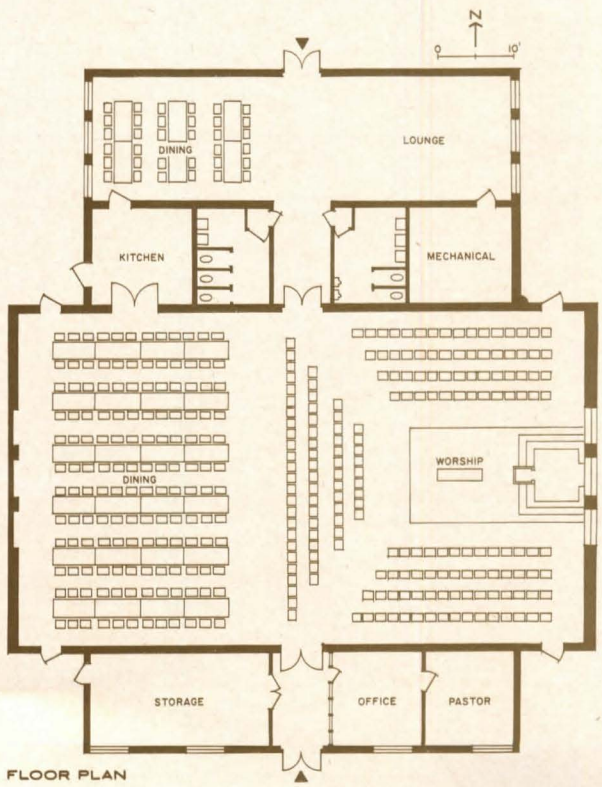
Photo: Jack Lee



Church Landscape

Hope United Presbyterian is a church slightly at odds with itself, but both halves of its personality are agreeable. Outside, it is a simple, massive brick building, quite consciously an ornament to the neighborhood although a dubious note is the cylindrical spire-*cum*-chimney tucked into one corner and rising a few feet above the principal mass. Inside, the effect is totally different from the rich and massively detailed interior for which the textured exterior brickwork and the arches seem to be a preparation. An empty, almost undecorated space, spanned by castellated beams, is all the "architecture" there is. The principal ornamental feature is a trio of blind archways, outlined in paint to enable them to stand up visually to the three matching windows they face. The furniture is light, standard stuff, readily moved, easily stored. To define and adorn the bare, all-purpose space, 28 vividly colored felt banners, designed by a member of the congregation, are hung from the ceiling in various patterns. These have an "office landscape" function; not only do they divide the raw space as required, but they also help to control the acoustics. Screens are used to subdivide the floor space visually, if necessary, and carpeting in 12-ft strips is unrolled as required.

Hope Church is a suggestion of what can be done rather than a definitive solution, even for its own congregation; in time, a "sanctuary" will be erected, and the present worship space used for other things.



FLOOR PLAN

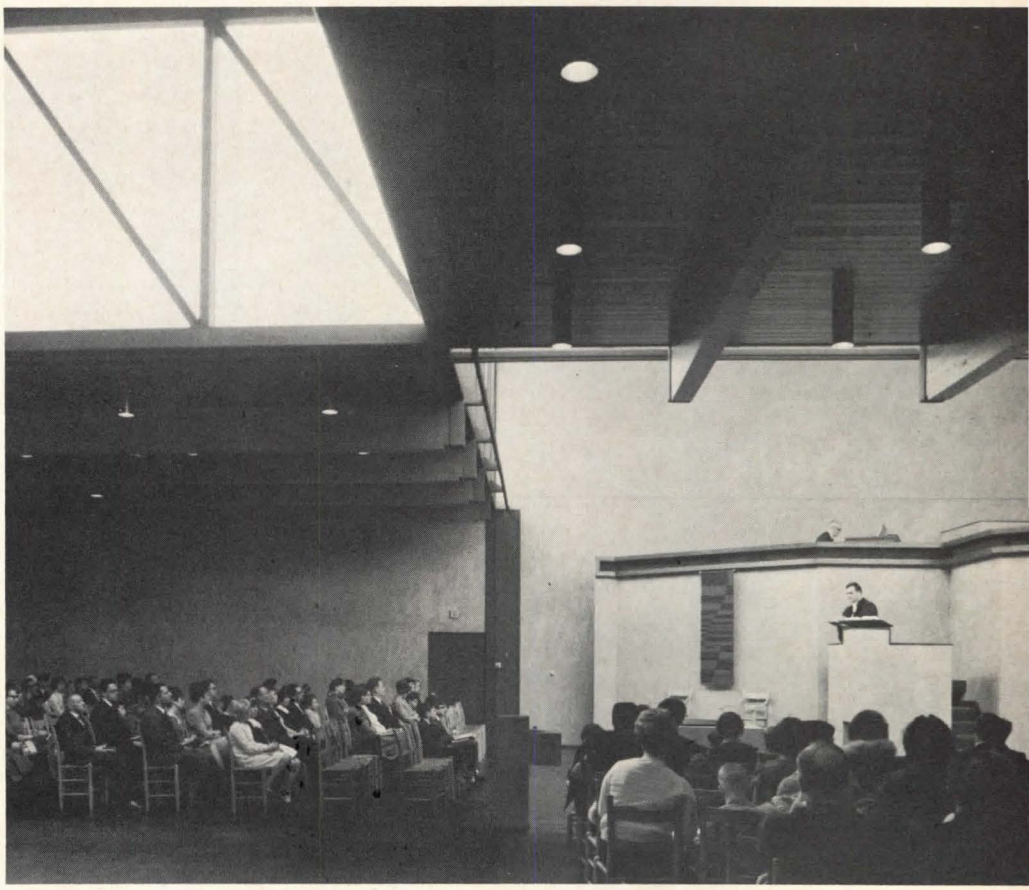
HOPE UNITED PRESBYTERIAN CHURCH, *Creve Coeur (St. Louis), Mo.* ***Architects:*** *Burks & Landberg.* ***Site:*** *A deep, narrow lot in a new residential neighborhood.* ***Program:*** *See text.* ***Costs*** *(except for site development): $120,000 budgeted; $121,000 actual; $16.78/ sq ft.* ***Consultant:*** *Carl Ritchie, banner design.*

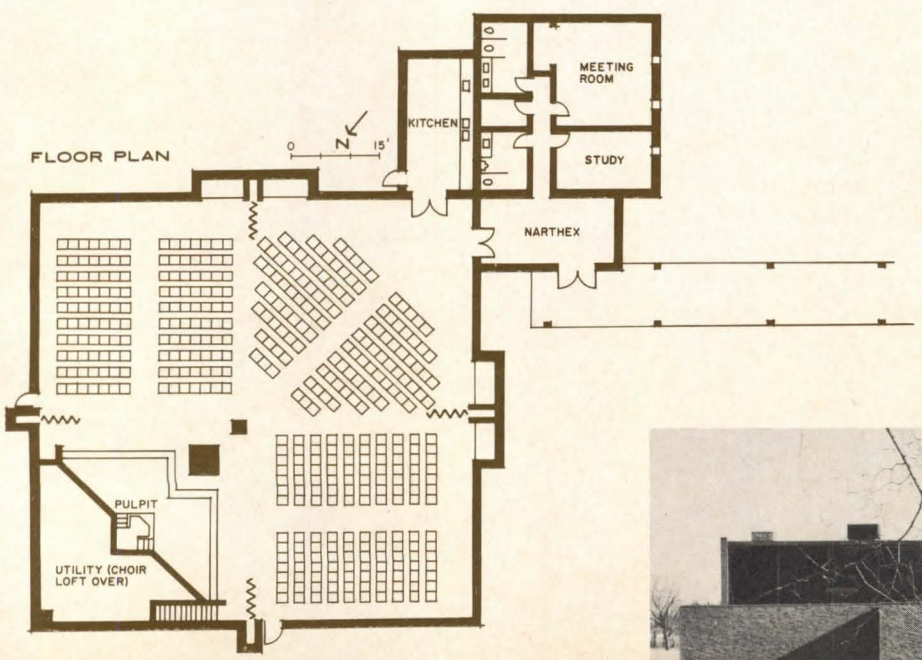
The Four-Square Church

Community Reformed, like Hope Presbyterian, is an example of economical, adaptable space for a Protestant congregation. Basically, the church interior is a large square area that can be divided into smaller squares. Of these, two have clerestory lighting and two have no natural lighting of their own. Folding doors, hanging from overhead tracks, are used to subdivide the spaces. The diagonal is important in the plan. The chancel, with its choir loft, pulpit, communion table, and font, is laid out on a diagonal axis that has the entrances to the church space at its other end. A smaller square plan element, containing lavatories and offices, prolongs this axis.

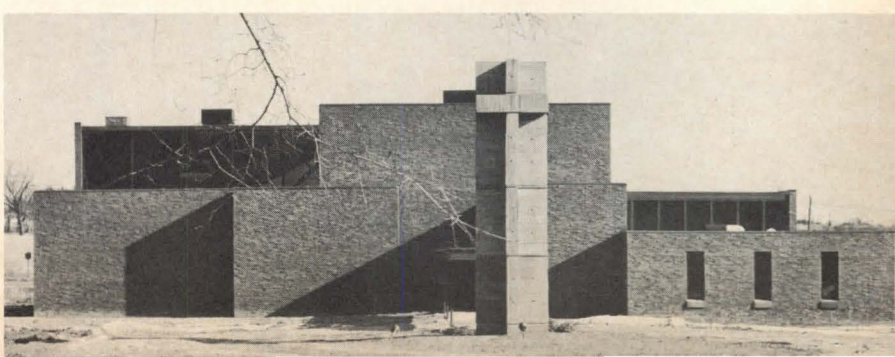
The interior is finished with grayish-brown, roughly troweled stucco with a small amount of dark-stained woodwork. The floors are of natural cleft slate, whose dull black color is echoed in the trusses. The exposed ceiling decking is stained to a medium darkness. The massive underslung wooden roof beams, however, are stained vermilion and counteract the general somberness of the interior. The only art that will be on permanent display are the various pairs of strongly colored banners to be hung on either side of the pulpit. Their colors will reflect the changing seasons of the church calendar.

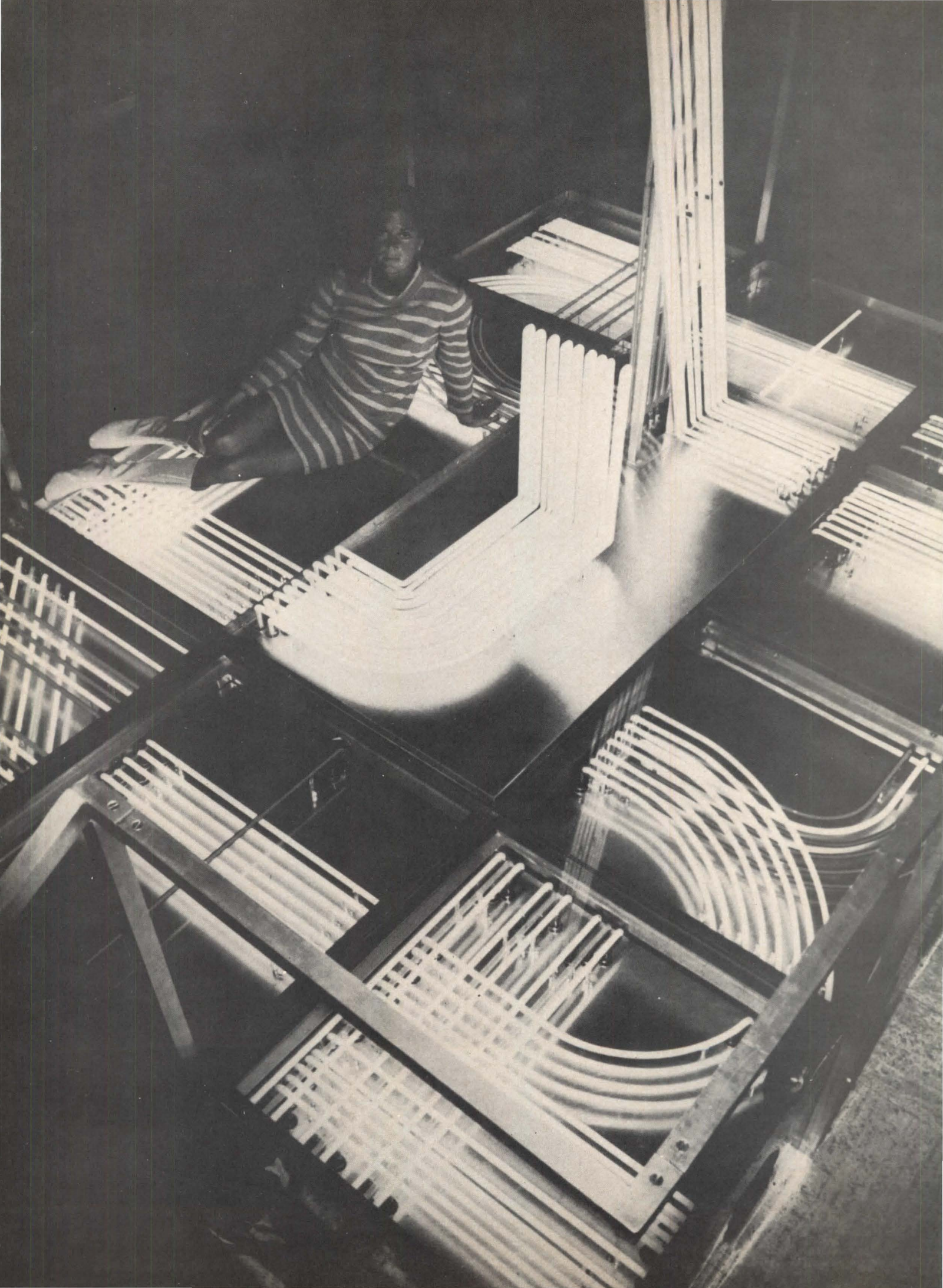
The exterior is basically an envelope for the interior, a cluster of rectilinear forms closed at the bottom, but transparent toward the top. The steel trusses, set behind the tinted clerestory glass a few inches, show through to emphasize the feeling of transparency that the large glazed areas give. To keep the composition from being too stark and factory-like, the architects faced the building with an expensive but vigorously textured hand-made brick from Maine. The concrete cross at the center of the driveway circle is intended to be seen as a cross from all sides. Landscaping has yet to be done.





COMMUNITY REFORMED CHURCH OF COLONIE, *Colonie, N.Y.* ***Architects:*** *Feibes & Schmitt.* ***Site:*** *A level site in a rural area between Troy and Schenectady.* ***Program:*** *See text.* ***Structural System:*** *Tubular steel trusses on steel legs; brick-veneered frame bearing walls.* ***Costs*** *(except for movable furnishings): $151,360 budgeted; $160,401 actual; $21.19/sq ft.* ***Consultants:*** *Sanford Sheber, structural; Robert D. Krouner, heating.* ***Photography:*** *Joe Alper.*





EXCITED GASES

Tubular lamps, both neon and cold cathode, offer exciting architectural applications for building identification, signs, and lighting. P/A explains the difference between the light sources and how they are made.

Neon, the scarlet whore of advertising, is gaining respectability. For years, the word neon was frequently synonymous with garish advertising signs that helped to light our way to what some called God's own junkyard. Then, art discovered neon, and another branch of Pop culture flickered into life. So now that neon sculptures are in galleries and museums, designers can gain confidence in adapting the material for interiors, building identification, and, hopefully, for improving the quality of signs.

Illuminated signs raise varying emotions in observers of a city scene. Critics of the typical highway approaches to U.S. cities decry the commercial, ribbon-type development of gas stations, pizza restaurants, and retail-factory outlets, all of which use illuminated signs to compete for attention. Yet when these critics vacation in Europe, they admire city squares because of the kaleidoscope of closely spaced neon signs. The reason is easy to perceive: Indifferent or even ugly objects gain interest when concentrated in sufficient numbers. One hubcap or one high-rise building may be unnoticed or stick out like a sore thumb, but when bunched together they become exciting. This reasoning applies to illuminated signs that bear no relation in size, color, or shape to one another but, when bunched together in a limited area, can help vitalize a street or square.

With planning, signs perhaps could enhance a city street more than disparate signs do. This theory is unlikely to be tested, however, because sign owners vie for the public's attention, and would not readily agree among themselves on restrictions of location, size, style, or color that were intended to improve the general aesthetics of a street. If the situation did arise for planning a whole street or square for illuminated signs, the planner would have to allow himself a meretricious streak of enthusiasm; otherwise, the result may look neat, orderly, and lamentably sterile.

Declining Mileage

Sculptors creating kinetic art condense the elements of giant-size neon signs that decorate or obliterate the sides of buildings. The sculptures combine form and changing colors in a package small enough to be put into a room, though many works now require a rather large room. The appeal of this type of art is vastly different from the tranquil forms of Henry Moore or Barbara Hepworth, but to many they are authentic expressions of contemporary culture.

Although commercial neon has been around for about 50 years, its use has been declining. Corning Glass Works, the only remaining manufacturer of the glass tubes for neon, says that although it sells thousands of miles of tubing, the demand for its product has fallen off by 5 per cent each year for the last 10 years. This is not surprising, since neon lighting is a handcrafted industry and almost all custom trades lose ground to production lines.

Despite fewer neon signs, the over-all production of illuminated signs has increased, and neon's loss is the plastic industry's gain. Called suitcase signs in the trade, the ubiquitous plastic signs lit from within by fluorescent or incandescent lamps add little pleasure to the landscape, but do put an advertising message out at about one-third the cost of the same sized neon sign.

Tied into the cost factor is the ability to produce a plastic sign in the hundreds by molding large sheets of acrylic with embossed lettering or symbols. Neon lighting cannot be mass produced, since each letter is shaped by the hands of a glass-blower. However, the axiom that you get what you pay for applies to the quality of illumination and the length of life of neon. Its brilliance is much greater than illuminated plastic signs, and it remains clear for much longer, since plastic signs offer a large surface to get dirty, and the plastic allegedly soon shows its age.

On the debit side, if a neon lamp is broken or the gas leaks out, the repair cost runs high because the individual lamp has to be returned to a sign-maker's shop to be repaired or duplicated. Plastic signs occasionally require new fluorescent tubes, but these can be installed by a handyman.

A Brighter Shade of Bright

Neon lamps are used by the sign industry because they emit a bright light without providing much illumination, and they can be easily bent into shapes with sharp angles. Another type of tubular lamp, the cold cathode lamp, can be shaped easily, but it is not acceptable for exposed signs because it gives a high degree of illumination. This makes it useful for architectural lighting applications, which will be discussed later.

These two types of lamps, together

STANDARD SIGN TUBING COLORS

Lit Color	Unlit Color	Tubing Designation	Gas Fill
White	White	3500 White	Argon (blue)
Cool White	"	4500 "	"
Sign White	"	5500 "	"
Day Light (Snow White)	"	6500 "	"
Green	"	Green	"
Turquoise	"	Turquoise	"
Blue	"	Blue	"
Pink	"	Pink	"
Gold	Yellow	Noviol Gold (Noviol glass)	"
Yellow Gold	Yellow	Noviol Yellow Gold (Noviol glass)	"
Deep Red	Deep Red	Bright Ruby Rose (Ruby glass)	"
Gold	Yellow	Clear Gold	"
Lime Green	Yellow	Veep Green	"
Red	Pink	Neo Ruby	"
Deep Blue	Light Blue	Neo Blue	"
Blacklight & Light Blue	White	Blacklight	"
Blacklight	Dark Blue	Blacklight Blue (BLB glass)	"
Orange-red	Clear	— (Clear Glass)	Neon (red)
Amber	White	Green	"
Peach	"	Turquoise	"
Rose	"	Blue	"
Tangerine	Yellow	Clear Gold	"
Mauve	Light Blue	Neo Blue	"

Courtesy, Voltarc Tubes, Inc.

"Walk On Neon" by Stephen Antonakos. Courtesy, Fishbach Gallery.

Photo: Curtis Schreier

with fluorescent lamps, are gas-filled tubes that require electrical energy to excite the gas, which then creates electroluminescence. The difference in the type of illumination between the three depends upon the type of gas and the method and degree of excitation applied.

Neon lamps are filled with neon for a red light, argon for a blue light. Both cold cathode and fluorescent use mercury vapor. Fluorescent lamps excite the gas by passing a current through the electrodes at each end of the lamp. The current heats the electrodes — hence the name hot cathode —and so ionizes the gas. Cold cathode and neon lamps ionize the gas by passing a high voltage arc between the electrodes without heating them.

It is not quite that simple in practice, but for general purposes this explanation will help to differentiate the lamp types. One major difference between the neon and cold cathode lamps is the previously mentioned light output. The illumination from lamps depends upon the milliamp ratings; the higher milliamps provide greater lumens per ft of lamp. A neon tube with 30 milliamps gives about 60 lumens per ft, a 120-milliamp cold cathode lamp gives 270 lumens per ft, and a fluorescent lamp uses 430 milliamps to give 800 lumens per ft.

Also contributing to the economy of fluorescent lamps is the comparatively low voltage required for the ionization process. These lamps operate on between 750 and 850 v, which can easily be stepped up from standard 110-v current with inexpensive ballasts. Cold cathode and neon, however, require voltages up to 15,000 v, depending upon the length of the lamp, and each individual lamp requires transformers that may cost up to $60 apiece.

Blowing the Glass

Sculptors working with neon lamps do not fashion the material with their own hands: They either draw the work or make models with wood dowels and commission a neon sign shop to make it. The reason for this is that an artist may not have glass-blowing skills for fashioning the tubes, or, if he does, he does not have the equipment for filling the tubes with gas.

For commercial work, a sign maker draws each letter or symbol full size on asbestos sheets about the thickness of wrapping paper. A glass blower shapes the tube to this pattern, and fuses glass posts at strategic intervals to support the tubing on the completed signboard. He also fuses an electrode into each end of the lamp, sealing one completely and leaving one open for the entry of gas at a later stage of manufacture.

The industry uses a range of tube diameters between 8 and 10 mm, but most frequently works with 12, 13, or 15 mm diameters. Larger diameters are required for longer lamps, but small diameters are preferred because they can be bent to tighter radiuses, and, more important, they give greater brilliance. This occurs because the gas is under pressure, and, as with water in a garden hose, the smaller diameter creates a faster stream.

Sign makers buy tubes in 4 ft lengths because it is a convenient section for the glassblower to work with. Separate lengths can readily be spliced together by a glassblower, and no attempt is made to size a sign for the convenience or economy of not exceeding 4 ft for each lamp.

The tubes are available in clear glass, colored glass, or phosphor-coated glass, to produce a variety of colors for the red neon or blue argon gases. A drop of mercury is always added to argon lamps to enhance the brilliance of the blue.

Pumping the Gas

Before pumping neon or argon into a lamp tube, the maker removes as much air, water vapor, and impurities from the glass as possible. This is accomplished by putting the open end of the tube onto a vacuum pump while passing 25,000 v through the electrodes. The high voltage raises the temperature of the glass to 400F in order to vaporize some of the impurities. To measure the temperature of the glass, the craftsmen show a scornful disdain of scientific instruments and use a piece of newspaper, which scorches when the glass reaches the required temperature.

During this operation, the tube emits a bright blue light, since the high percentage of nitrogen in the air ionizes in the same way that neon or argon do at much lower voltages. The test for a complete vacuum is the absence of blue light, but, as every schoolboy learns, nature abhors a vacuum, and the lamp can never be fully evacuated.

While the glass is still warm, gas is

let in to the required pressure. Pressure depends only upon the diameter of the tube; the length does not affect it. Finally, the glassblower seals off the tube at the electrode through which the gas entered.

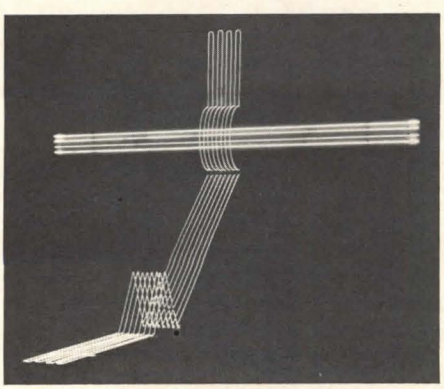
Neon is frequently downgraded (usually by the plastic sign industry) because it leaks. Some neon signmakers deny this, but others take a more realistic view and say it can leak, but seldom does. If there is a leak in a tube's splices, it would show on the vacuum gage while the lamp is being evacuated and pumped with gas. However, after a neon lamp has been installed, wind movement or vibration may open a pin hole in a glass splice that would cause the gas to leak. Once the pressure drops, the lamp will not light. To guard against leaks, signmakers store all finished lamps for at least 24 hours, and then light them to see if pressure has dropped.

Cold Cathode Lamps

The flexibility of neon lamps is also available in cold-cathode lighting, but the latter gives too much light for signs. Its chief application is to replace fluorescent lamps where curved tubes are required, or where the standard 8-ft and 4-ft fluorescents will not fit. The quality of cold cathode light is similar to fluorescent.

The tubes are phosphor-coated, filled with mercury vapor, and sparked by an electric arc similar to neon lamps. Twelve colors of phosphor coating are available. Some manufacturers mass produce 4-ft and 8-ft coated lamps, but most cold cathode lamps are made to order from 8-ft tubes. Longer lengths can be purchased, but few firms are willing to make more than a 12-ft tube, since it is difficult to handle and transport in elevators.

Cold cathode lamps are commonly used in curved coved ceilings. Since the standard tube is 1-in. diameter, it can be bent to any radius down to 1½ in. Fluorescent tubes are 1½-in. diameter, and except for gold-plated budgets are not available for custom shaping. Cold cathode lamps are also suitable for installing under curved handrails or for lighting the underside of roof domes.



"Red Neon From Wall to Floor" by Stephen Antonakos. Courtesy, Fishbach Gallery.

These lamps can be dimmed with a simple dimmer, and they always change intensity evenly. Fluorescent lamps require special dimming ballasts, and often dim unevenly, with one tube shutting off prematurely.

Building codes do not permit neon or cold cathode installations where the public can touch a naked tube. Cold cathode lamps have to be restricted to interiors unless the lamps are protected, because they burn hot and direct rain would fracture the glass.

Untouched by Hand

Since each neon lamp requires its own transformer, space must be allowed to house the electrical equipment. Signmakers build a sheet metal box that serves as a backboard for the sign and also contains the transformers, which can be mounted immediately behind each lamp. The closeness of lamp and transformer is important, since the cable connecting the two is carrying a very high voltage. The cable should be short to prevent power loss, as well as to minimize hazards. A common practice is to slip a glass tube over the cable to insulate it from the sheet metal.

Codes strictly govern materials, workmanship, design and installation of neon signs. Location of neon lamps varies among cities, but in general they must be at least 10 ft above a sidewalk; indoor lamps, unless they are protected, must be out of reach of people. Hence, exposed lamps can be used inside a store window and for a ceiling, but not on walls. If neon lamps are installed on walls, a plastic cover or mesh screen must protect them.

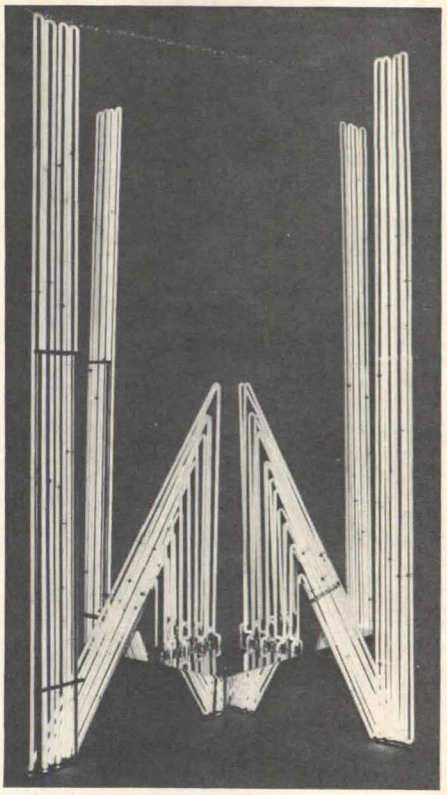
A few years ago, the designers of the Equitable Building and the Time-Life headquarters in New York City feared that the neon identification signs atop these tall structures might be hazardous if birds fractured a tube. To prevent glass falling to the sidewalk, they enclosed each glass tube in a Teflon stocking so that fractured glass would hold together. Theoretically, the stockings are self-cleaning, but in practice they hold dirt; tubes that have been replaced wear new stockings that light brighter than the original lamps.

Radio Turns Them On

Electroluminescent gases can also be excited with high-frequency radio waves instead of an electrical arc. Two manufacturers market equipment using this principle. One, Nu-Tech Inc., makes a portable neon display board to which neon letters can be attached in any position. A radio antenna behind the board excites the neon with high-frequency waves, and there is no direct connection between the lamps and the antenna. The strength of these waves is not large enough to interfere with other electronic equipment such as radios.

So far, this technique has only been applied to panels up to 6 ft long, and they have been straightforward message displays with small letters. No doubt, it could be extended to wall-size panels with free-form lamps that could be moved around to create different murals at the whim of the owner.

The second development, the Etzon tube, is also operated by radio waves but is a quite different form of light. Etzon tubes are flexible lucite pipes containing

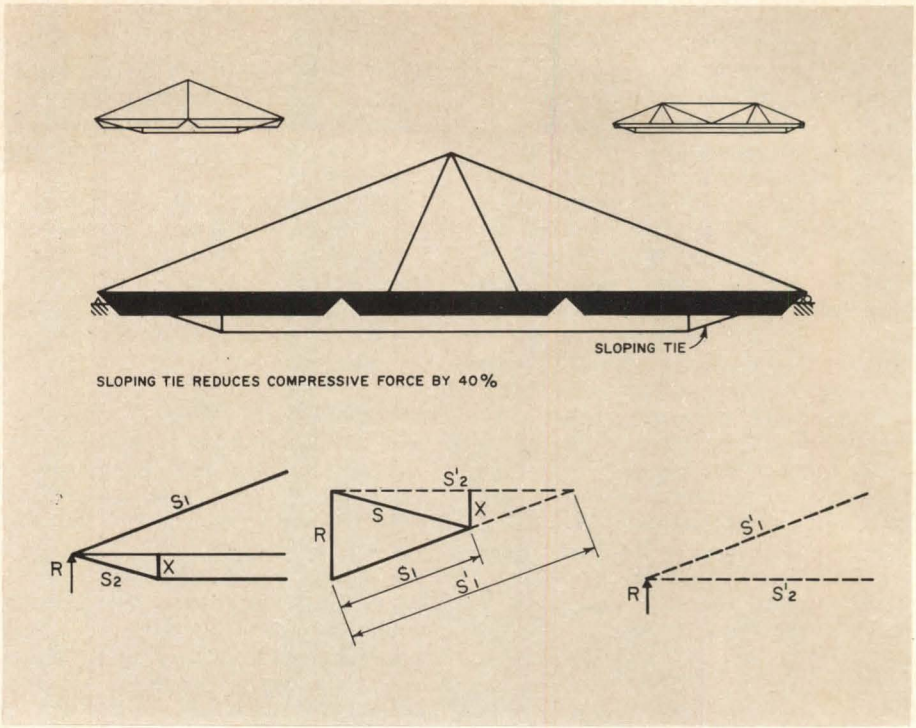


"Orange Verticals" by Stephen Antonakos. Courtesy, Fishbach Gallery.

capsules of fluorescent material activated by a pair of antenna wires extending through the tube. Because it is plastic, the tube can be bent to any shape after the manufacturer has installed the lighting materials.

The capsules of gas are spaced a few inches apart so that they produce an even lighting pattern throughout the tube. They can be ordered in one color or mixed, and with a flashing device in the circuit the lighted capsules appear to be moving through the tube. These lamps are available in 25-ft lengths, which can be joined together to make a 200-ft long lamp. They cost about $4 a ft, and for 200 ft require a generator costing about $250.

New developments such as these help stimulate interest in illuminated signs through the proliferation of kinetic sculpture. Adding new or conventional tube lighting to a badly designed or located sign will not improve it, but well applied illumination can add another dimension of interest to street scenes we cannot avoid looking at.



SLOPING TIE REDUCES COMPRESSIVE FORCE BY 40%

LONG-SPAN ROOF STRUCTURE

By J. Dundr, recently an engineer at the Technology Laboratories, Inc., Austin, Texas, and A.A. Toprac, Professor of Civil Engineering, University of Texas at Austin.

Because long-span roofs place a high initial cost on buildings, owners often reluctantly settle for interior columns that restrict the operating efficiency of industrial plants. An economic solution is possible if long-span roofs are uniformly loaded, but when roofs have to carry concentrated loads from cranes or mezzanines, the additional strengthening of the structure raises the cost considerably.

One roof system that overcomes this economic disadvantage can span between 100 and 400 ft, and it is claimed to be able to carry numerous point loads and still remain comparable in cost with multispan buildings.

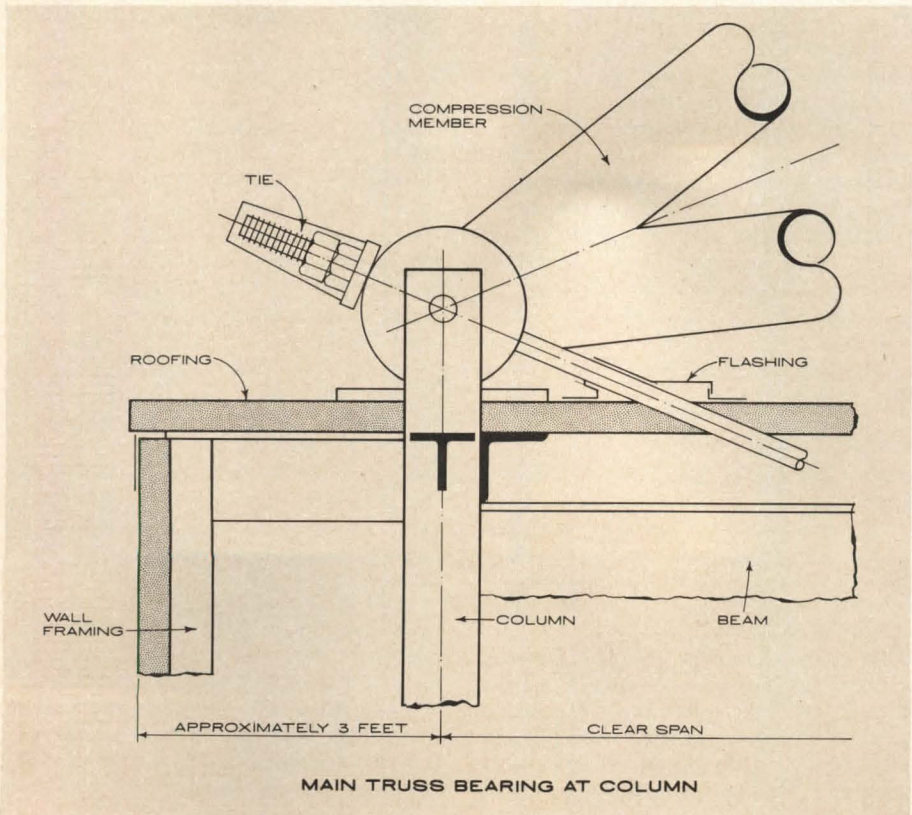
Called Dutop, the patented system resembles a large, pitched roof truss with most of the interior members omitted. The over-all structural system is in fact made up of two separate systems: a primary system composed of a horizontal truss or girder carrying roof loads, and a secondary system comprising a three-hinged truss projecting above the roof. Hangers from the three-hinged truss support the horizontal roof truss at intermediate points.

The design combines the two statically determinate structures so that they can be fabricated as simply as much smaller frameworks. The reason that the Dutop structure can span large distances is that the ties, or hangers, from the secondary system of inclined compression members induce moments in the primary horizontal truss that are opposite in direction to the moments caused by vertical roof loads.

The tie connecting the feet of the inclined members of the secondary system is the significant member of this structural solution. The tie is not horizontal for its full length, and at each end it slopes up to the hinged supports. This configuration reduces the axial compressive force in the long inclined members projecting above the roof.

The example illustrating forces in a compression member with a sloping tie and with a horizontal tie shows that the sloping tie reduces the compressive force by about 40 per cent. This same detail reduces the bending moment in the primary system, and a Dutop frame spanning 360 ft carries the same bending moment as a simple beam of only 80 ft span.

The system can be applied in a wide range of shapes for spans between 100 and 400 ft. The best profile for a particular project would be the one that could be fabricated the most economically. Girders are suitable for primary systems spanning to 240 ft, and trusses would be used for longer spans. The

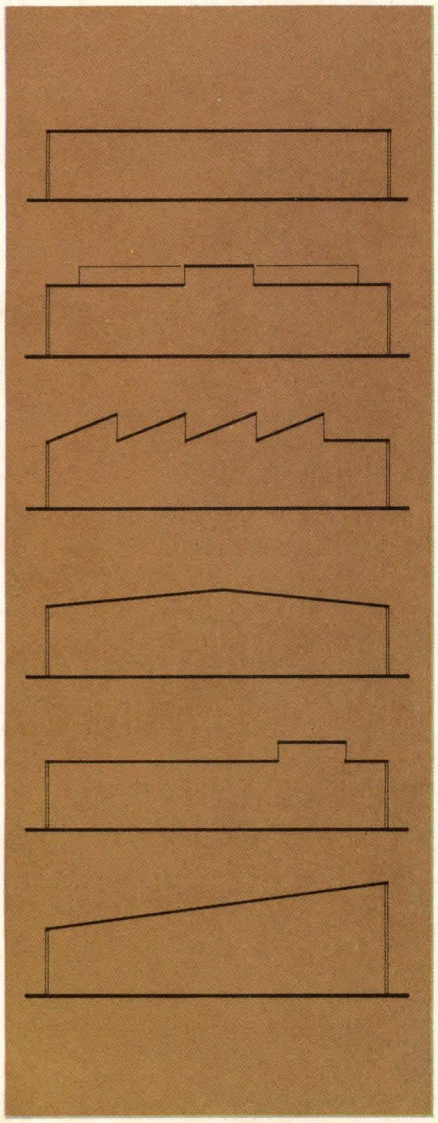


MAIN TRUSS BEARING AT COLUMN

sloping compression members may be wide flange shapes, T-sections, or tubular members. Hangers extending between the two systems are designed as rigid struts to stabilize any compression that may occur in the frame. Another advantage of the roof structure is that it transfers its load into the exterior columns in the same manner as a simple beam.

To assess the effectiveness of the system, a cost study was made to compare it with a conventional multibay structure. The Dutop system was based on a 180-ft span with trusses spaced 80 ft apart, and the conventional roof structure covered the same area with three-span trusses spaced 40 ft apart. Both systems carried 5-ton cranes.

The cost per sq ft of floor for both systems was practically the same. Thus, for the same expenditure, an owner could achieve a completely column-free floor, or have interior columns on a 60′ x 40′ grid. On longer spans, the Dutop costs more than multibay structures, but again the convenience has to be considered. For these longer spans, a Dutop roof is claimed to add only 2 per cent to its construction cost when designed to support a 10-ton crane load.



WAVES SWITCH LIGHT

A survey of some new switching techniques that provide alternatives to conventional manual switches in residential and small commercial applications.

By James Nuckolls, manager of Illumination Design Consulting Services for Bolt, Beranek & Newman, Inc., New York City.

Lighting control devices that are more sophisticated than simple wall switches have been available for years, but the great potential for use in residential and small commercial lighting systems remains unexplored. These new switches are operated by sounds, radio waves, timing devices, photosensitive cells, and ultrasonic waves. Some of these methods serve an additional role, since they can also control burglar alarm signals when intruders enter a house.

Sound-activated switches operate with a timed sound impulse. The usual impulse is a double handclap to prevent confusion with an accidentally made single clap. These switches can easily be installed in new or existing areas because they require no special wiring or concealment. Fixtures to be operated by the sound switch are plugged into a small box receiver that in turn is plugged into a standard power outlet **(1)**. To operate the light, one simply claps hands twice.

Silent Sound Switches

Another type of sound switch is activated by tones that cannot be heard by the human ear. This device also uses a small receiver. However, instead of handclaps, the lights are signalled by a portable battery-powered transmitter that is about half the size of a cigaret package. The switch is activated by pushing a button on the transmitter when it is pointed toward the receiver. This system is based on the same principle as that used in the remote channel selector for a television set.

A similar sound switch may be activated by a high-frequency whistle, like those used for calling dogs **(2)**. The advantages of the whistle are obvious: Its simple design is not prone to malfunction and its power source never needs new batteries. However, a resident of the Waldorf Towers in New York City expressed concern about blowing a dog whistle in the presence of her guests. In such circumstances, consideration must be given to the user's potential "loss of dignity."

In addition to the sound-activated switches, equipment has been developed to send and receive an invisible ultrasonic beam. Movement of a person or object in the range of this compact, self-contained system will activate the switch **(3)**. The circuit can be adjusted to operate "on" for a few seconds or one minute. Fifteen seconds after the circuit completes the on cycle, it automatically resets itself to receive a new signal.

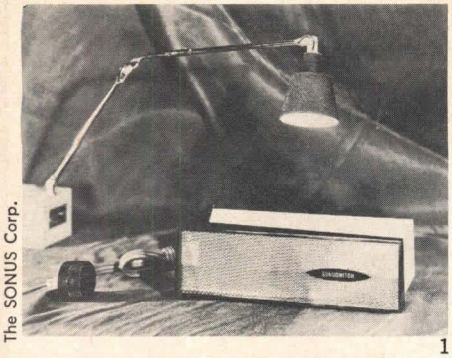
Although it now is primarily used as a burglar device, many interesting effects can be achieved through experimentation. One enterprising California family decided that a protection system installed in the entrance area also could be used to illuminate a nearby hall closet. The system proved to be a convenience to the family and guests as well as a deterrent to would-be intruders.

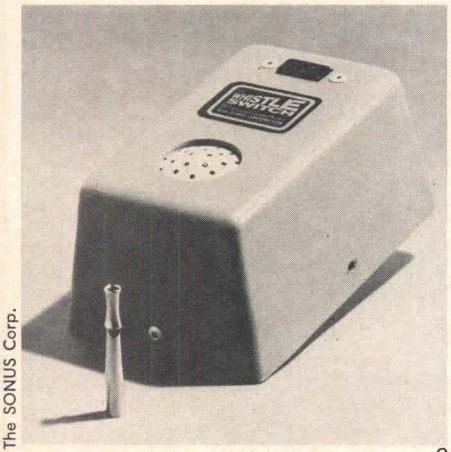
Beaming a Wave

Another protection device sold specifically as a safeguard for swimming pools operates on underwater transmission in a manner similar to the sonar principle used in submarine detection **(4)**. A receiving console located near a standard receptacle inside a house is wired to a sensor placed in the pool. Designed to sound an alarm when an object falls into the water, the system differentiates between other sound patterns such as those produced by overflying aircraft or slamming doors.

More complex applications can be found for another portable device, which sends a control signal from a transmitter through the electrical system of a building to a remote receiver. This plug-in portable switch operates much like a so-called "wireless" intercom unit. The transmitter is plugged into a standard wall outlet in one location and the receiver is connected to a wall outlet in another **(5)**. From a single transmitter station, several lights in a building can be separately switched on and off.

Obviously, switches based on the delicate electronics of sound sensitivity require careful installation to insure against pickup of stray impulses. Unfortunately, one sound can often "sound" like another to the device. A surprised bachelor reported that his handclap


The SONUS Corp.
1



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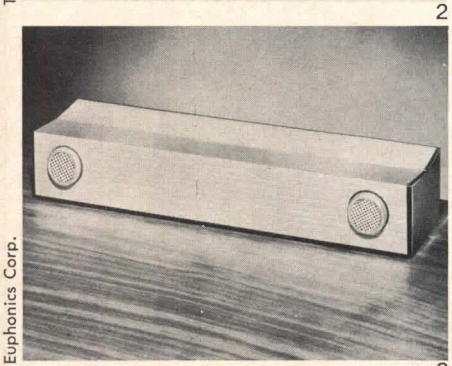
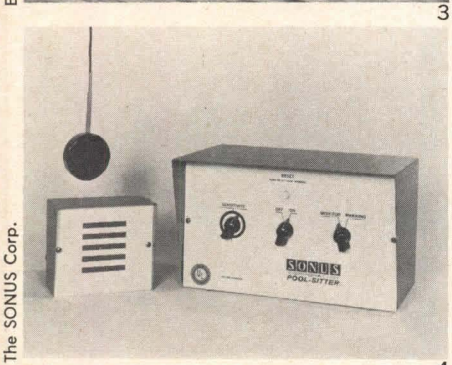

Euphonics Corp.
3



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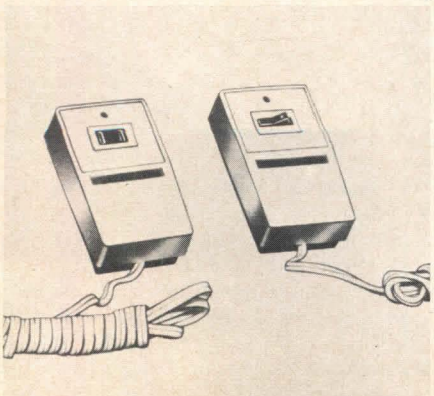

Lafayette Radio
5

switch was activated not only when he placed a cup in its saucer, but also when he jangled keys. A classic case required an exterminator to find and eliminate the false signal; a rat had triggered the ultrasonic beam.

Photoelectric and Timing Devices

One of the most common nonmanual switches that has been used for several years is the photoelectric cell that turns on lights at dusk and turns them off at sunrise. Industrial and commercial applications of this technique are numerous, ranging from city street light control to building security.

The clock-timed switch is also a popular residential lighting control used primarily for convenience or safety, such as starting a clock radio, coffeemaker, or automatically lighting entrances and stairways. In addition to the convenience aspects, the timed switch may be a valuable safety measure. One type of control keeps stairway lights on for several minutes after the switch at the landing has been flipped off.

Commercial applications of the timed switch may be quite complex. One restaurant installed numerous portable switches to create a variety of interior lighting atmospheres. For example, dinner could be served under different illumination than lunch or breakfast.

Low-Voltage Relays

Although switching of standard lighting voltages with low-voltage relays is not a new technique, its features suggest many interesting and hitherto untapped applications. A single light may be controlled from numerous locations, and conversely many lights may be controlled from a single switch location. Heavy wiring is required only for the light fixture. In contrast, switching circuitry involves less dangerous and more flexible low-voltage wiring.

In this permanent system, power is run directly from the branch circuit breaker to each lighting outlet. A low-voltage controlled relay power switch is located at every outlet. These switches are controlled by multiple low-voltage push buttons that are connected to them with inexpensive bell wires. The bell-wire runs, which replace the normal high-voltage switch wiring, are relatively easy to install. Moreover, building code regulations, which require costly conduit and other electrical safeguards, usually do not apply to low-voltage systems.

For many of these alternatives to wall switches, the only prerequisites for simple installations are imagination and the desire to experiment. However, a lighting consultant's advice is always required for complex permanent systems. And it is valuable to remember that professional planning will insure initial success and trouble-free operation in any application.

LOW-COST STADIUM CAST ON BANKED FILL

Many stadium builders claim economy through precasting techniques on or off the site, but the contractor for the Autzen Stadium at the University of Oregon reversed the trend by casting the concrete in place for a low unit price of $52.50 a seat. (Similar facilities usually cost about $75 per seat). The 41,000-seat stadium cost just under $2,120,000, and both the contractor and the architects attribute the economy to the concrete casting system.

The comparatively simple tread and riser construction for the seating is built directly on banked earth fill. A high water table precluded a deep excavation for the field, so its elevation was set 3 ft above high water level, and the additional soil required for the earth forms was

scraped from the whole 89 acre site.

The top layer of inorganic silts was spread in disposal areas since it was unsuitable for fill. Beneath this, however, a strata of silty sands provided good soil for the seating embankments that were compacted and graded to a 3-to-1 slope for the seats and a 1.85-to-1 slope on the outer sides, which were later planted with ground cover.

Earthmoving costs accounted for about 19 per cent of the total contract. Unit prices for excavating below stadium fill were 26 cents per cu yd, and the stadium fill was 32 cents per cu yd.

The oval shape of the stadium required a concrete forming system for casting straight-sided sections of seats and wedge-shape sections at the ends of the stadium. Forms were built in sections 36 ft wide (since this was the spacing between aisles) by 30 ft deep from front to rear. The forms resembled giant egg crates with laminated beams and plywood facing for forming risers suspended beneath glue-laminated timber stringers spaced 6 ft apart.

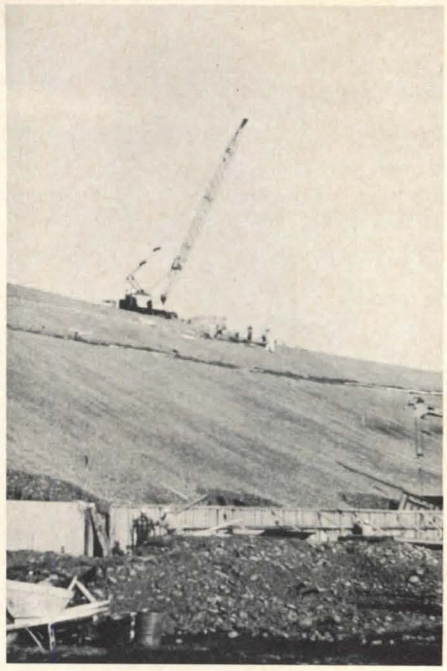
Being in Oregon, timber was used as the most economical material, and because of its workability in the field. The contractor could cut the forms into wedge-shapes after casting the seats at the sides of the stadium. With careful maintenance and oiling procedures, only five form units were required for the 200 separate seat sections.

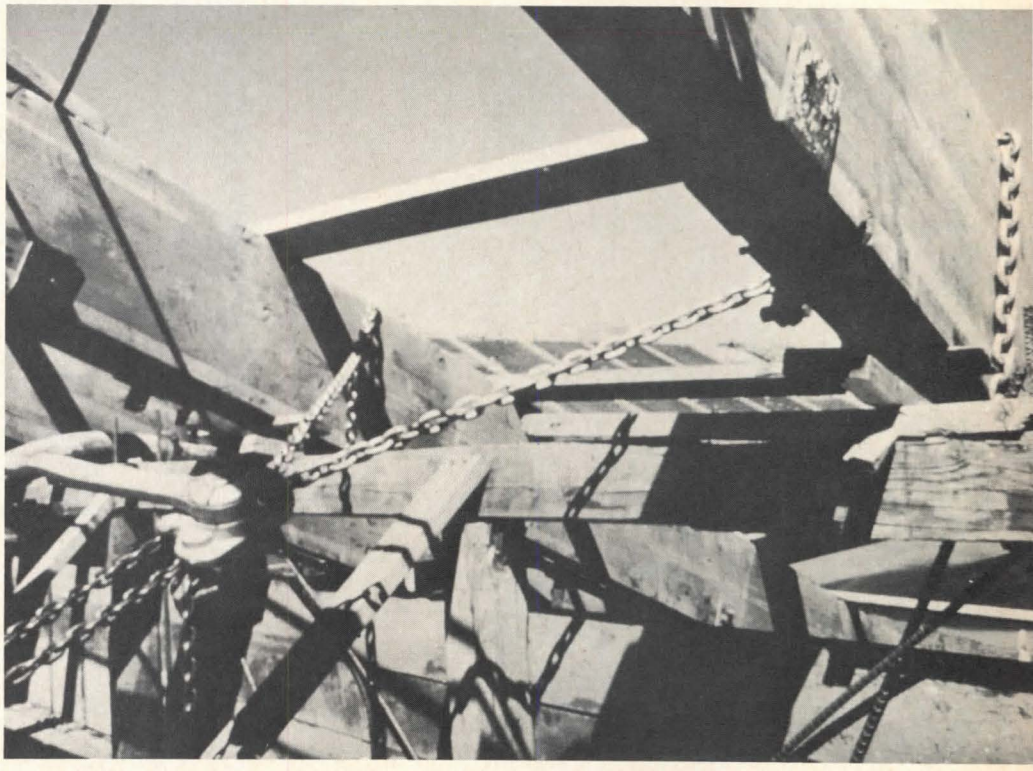
The stringers were set on timber posts located at each end. To prevent the forms moving while casting the concrete, the contractor bolted the stringers to anchors set in the concrete key beams cast flush with the grade.

Casting seats in place required that the forms be accurately positioned. For this, the contractor employed surveyors to locate bulkhead forms in the aisles. A profile of the treads and risers was marked on the bulkheads for the contractor to align the seating forms against.

A few hours after casting the concrete for the seats, workmen jacked the unit just enough to break the bond between concrete and form. Later, they lifted the whole 36′ x 30′ form with a crane to enable masons to patch the surfaces of the risers while the concrete was still green. One week later, workmen drilled the risers for seat brackets, and installed timber boards for seating.

Skidmore, Owings & Merrill, Portland, Ore., was the architect, Moffat, Nichol & Bunney, Portland, was the structural engineer, and Gale M. Roberts Co., Eugene, Ore., was the general contractor.

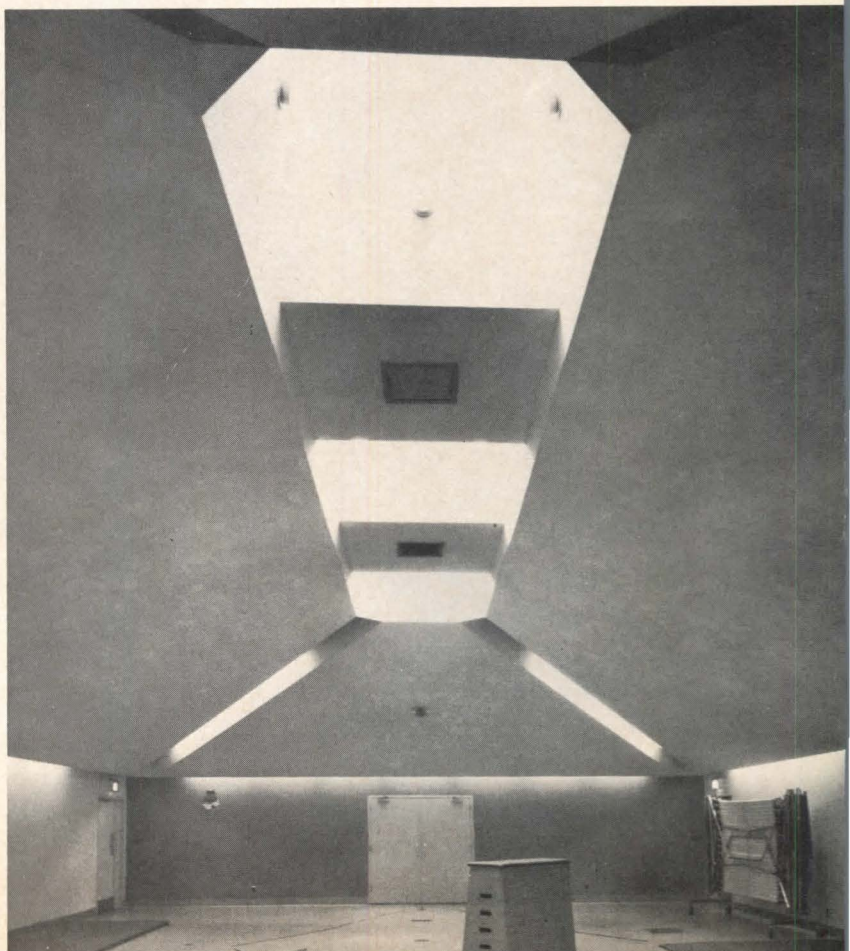




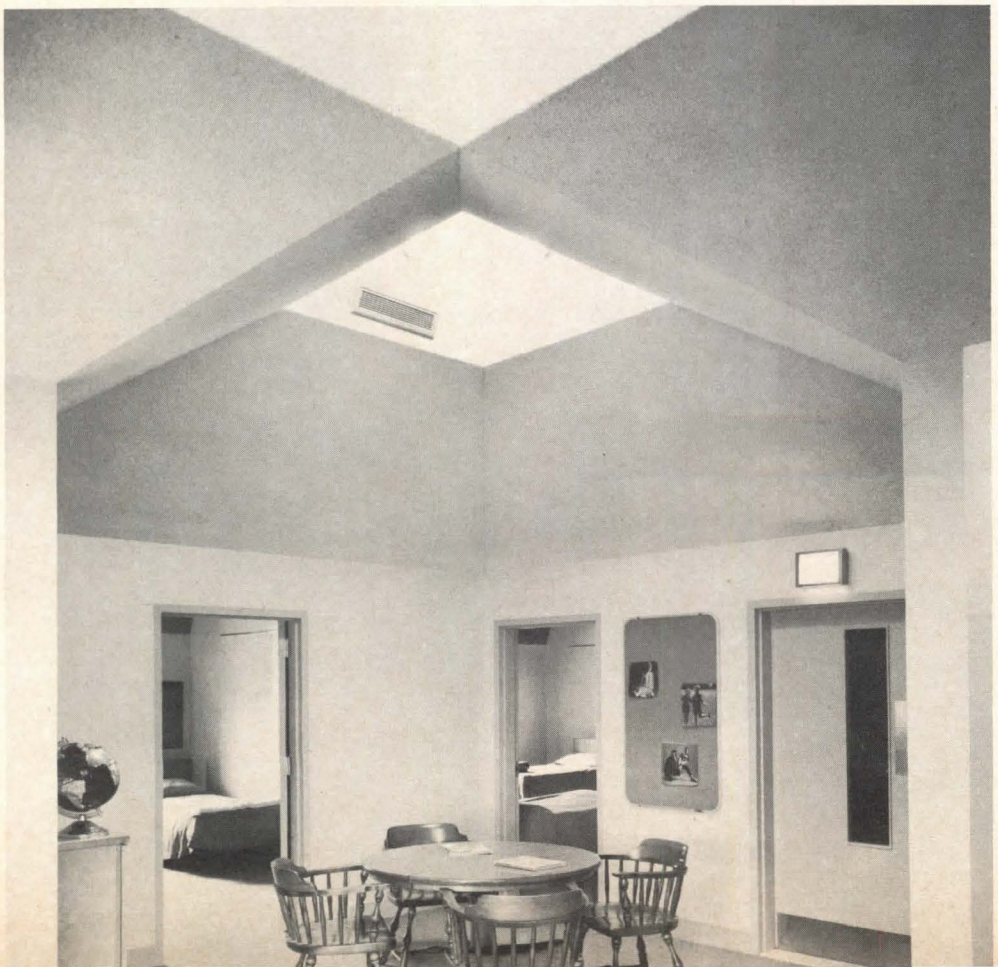
FOR THE MENTALLY RETARDED:

DEFINING SPACE WITH LIGHT

Photo: Earl Carlin



In creating an understandable environment for persons of limited perception, architect Earl Carlin uses contrasting patterns of light and shadow to help distinguish between functional areas.



A non-system ceiling and some bright paint were used to create an interior environment of light, shadow, and color in a center for the mentally retarded in New Haven, Conn. Rejecting the flat wash of light provided by so-called integrated ceilings, architect Earl Carlin chose instead to custom tailor overhead illumination to individual spaces. Troffers and coffers in various sizes, shapes, and combinations are cut into the deep dropped ceiling, and artificial light is combined with natural light. Some of the large open areas are spotlighted; or one wall of a room may be washed in light; or the bend in a corridor may be flooded with sun from a large skylight. In a building where most materials within reach must have a certain indestructibility, the ceiling seems an ideal spot for architectural play.

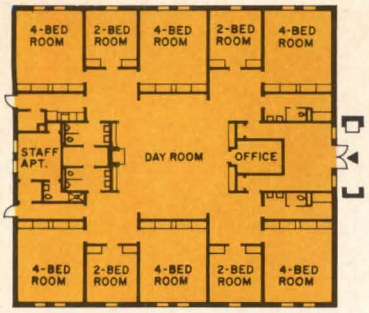
The center, reflecting Connecticut's recently formed policy of integrating treatment facilities into the community, incorporates much of the progressive thinking going on in the field of mental health. Possibly the most significant aspect of its planning from the treatment point of view is the decrease in size of nursing units and the increase in individual attention to the retarded person. In terms of the physical plant, this translates into two 20-bed units for the severely retarded and two separate residence houses for the moderately or mildly retarded. Plans for future construction include additional housing, a workshop, and a pre-school training building.

The significance of the 20-bed unit becomes apparent when one is told that it is still not uncommon to find 100 to 200 bed wards for the severely retarded. And since these cases are usually physically handicapped as well, they have, in the past, spent most of their time in bed.

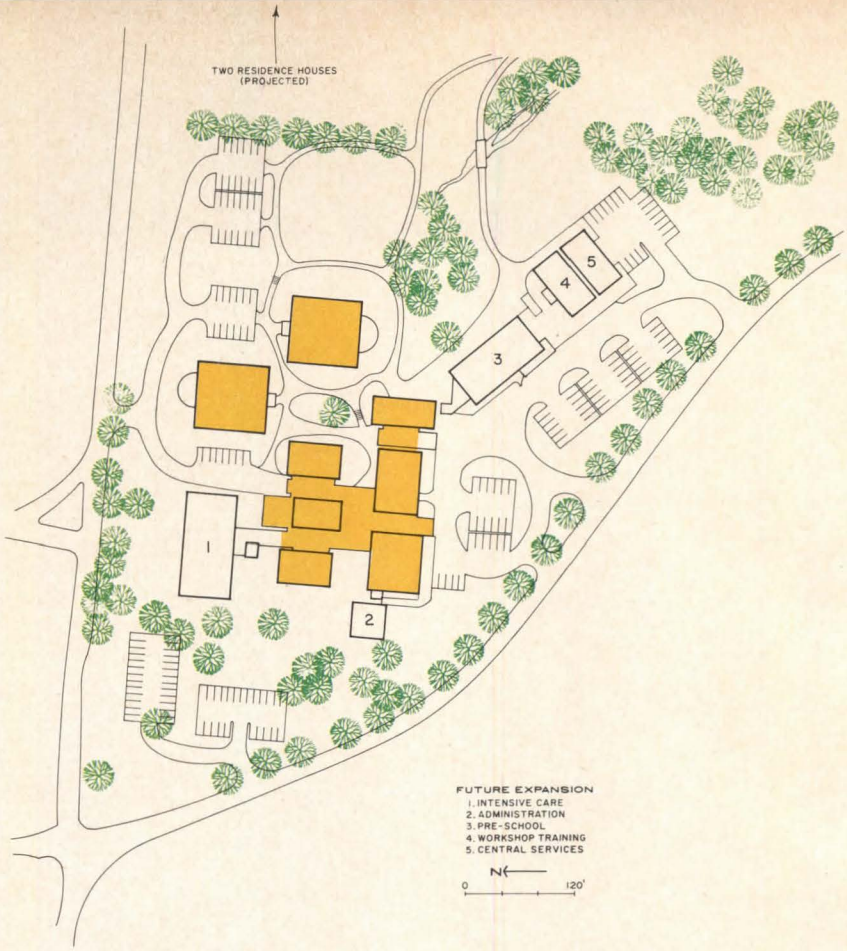
At the New Haven center, the "severe" units are large, open rooms surrounded along the three outside walls by sleeping alcoves. The property lines of each alcove are defined by divider partitions on two sides, and on the third side by a low storage cabinet that offers some shelter from the confusion of the communal play space at the center of the room.

In addition to the two nursing units that care for children from 3 to 18 years of age, the main building includes dining, administrative, and therapy spaces. Spots of bright color have been used on doors and walls. Circulation is free-flowing with few corridors. Instead of the possibly frightening enclosure of the corridor, traffic is often directed through larger activity spaces such as dining hall, therapy room, or lobby. In one wing, staff offices surround a glass-enclosed

Fluorescent light in intensive care unit (top) radiates from center skylight; exterior walls are washed by natural light. Double skylight covers small lounge (left), and physical therapy room combines natural and artificial light (facing page, bottom).

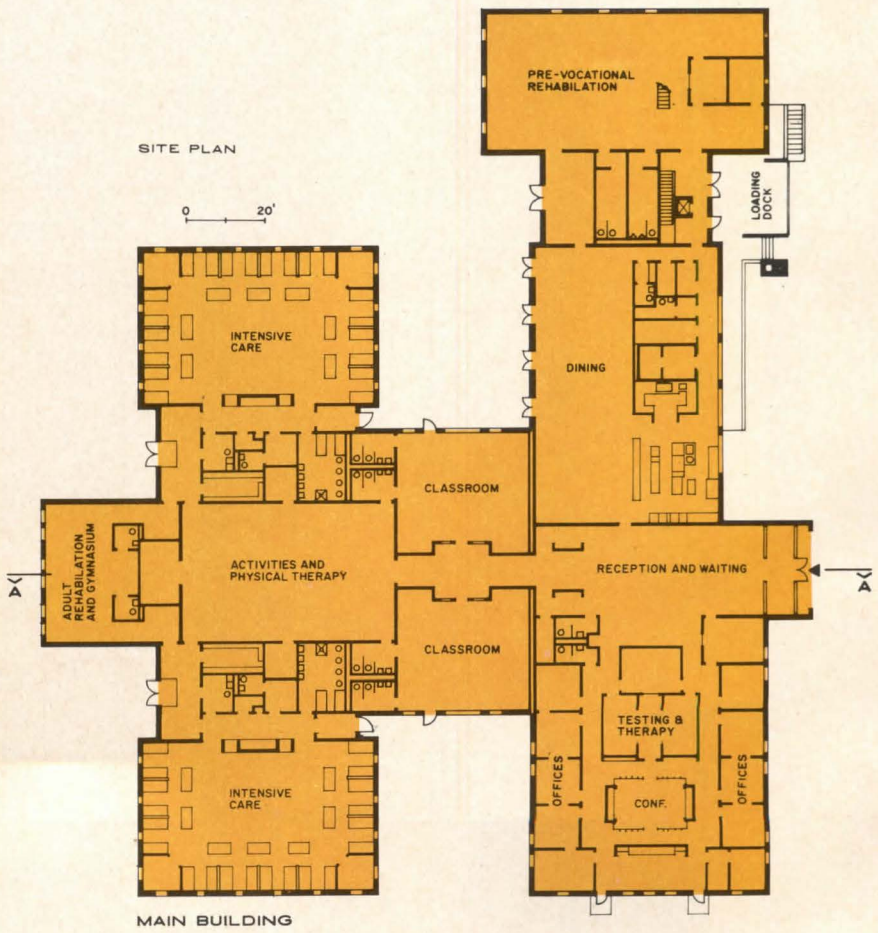


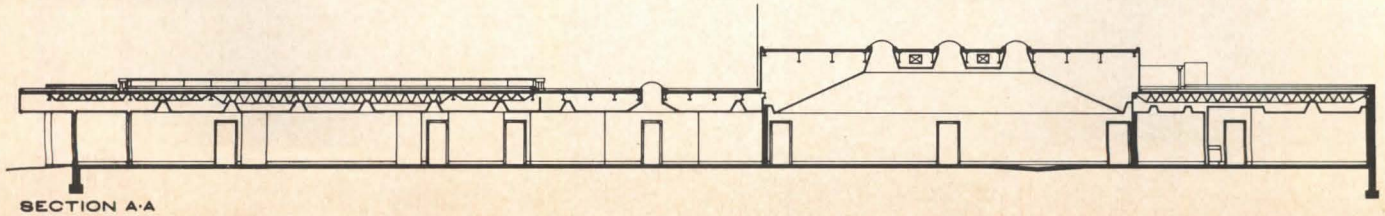
RESIDENCE HOUSE



NEW HAVEN REGIONAL CENTER FOR MENTALLY RETARDED PERSONS, *New Haven, Conn.* ***Architects:*** *Carlin, Pozzi & Associates. Peter Millard, Associate.* ***Site:*** *Semirural rolling 17 acres within the New Haven city limits.* ***Program:*** *To design a campus for the mentally retarded providing facilities for 100 residents and 175 day-care patients. Program developed jointly by Connecticut's Department of Mental Retardation and the architects.* ***Structural System:*** *Light steel frame.* ***Mechanical System:*** *Ducted air for heating and ventilating, supplemented by radiant heating for floors in intensive care units and other spaces where children may sit on the floor.* ***Major Materials:*** *Exteriors: brick, concrete, and cement-asbestos panels. Interiors: terrazzo, glazed wall surfaces, and acoustical plaster ceilings.* ***Costs:*** *$888,370 or $19.40 per sq ft.* ***Consultants:*** *Jerome F. Mueller & Associates, mechanical and electrical; Henry A. Pfisterer & Associates, structural.* ***Photography,*** *except as noted: Louis Reens.*

Glass-enclosed conference room illustrates philosophy of the open institution. Future expansion includes intensive care, workshop and pre-school training.





SECTION A-A

Photo: Ian Carr

Rich pattern of ceiling forms and light sources in dining room mixes cool and warm illumination: incandescent in foreground, fluorescent toward the rear, natural light washing rear wall, and small skylights alternating with incandescent along the right.

conference room — another step toward opening up the institution.

In the two residence houses, there is living space for 60 children from 8 to 17 years old who require less supervision. Two- to four-bed rooms circle a central lounge, and although they are conventional rooms with four walls and a door, unlike the low partitions for the severely retarded, the spatial arrangement is essentially the same — semiprivate sleeping spaces immediately accessible to a busy community space.

The state's regional program is aimed at keeping the mentally retarded as close to their families as possible. At New Haven, their number includes not only the 100 residents, but 175 day-care patients. Heretofore, the practice of isolating such facilities in rural areas has been, at best, an inconvenience to families. And many mental health professionals now look upon such isolation as an unfortunate hangover from the Middle Ages that fails to recognize the therapeutic aspects of contact with a normal world. Whatever the social and learning advantages to the retarded person, there were two immediate and obvious economic advantages to siting the facility in a city. Since medical support is nearby, it was not necessary to include a clinic or infirmary. Also, since trainable retardates are able to attend special classes at public schools, the need for classrooms and other educational facilities was greatly reduced. The residential character of the center is, therefore, reinforced.

The small campus has been received with both enthusiasm and cautious reserve. A withholding of complete approval, interestingly enough, has often come from professionals, who feel that the residential approach to design and use of spaces is overdone, that mixing retarded and visitors in the lobby, for example, is an invitation to trouble, and that bright colors might tend to overexcite minds that do not function normally. However, Director Joseph J. Colombatto has found that residents respond well, and that no problems have arisen as a result of design innovations. Perhaps just as important, the staff functions more happily in such surroundings, and parents welcome an approach that attempts to close the gap between normal and abnormal environments. It is now generally accepted that such attitudes on the part of adults are transmitted to children and can influence their progress.

Aside from advances in the philosophy and design of mental health facilities, the outstanding visual character of the center is established by its ceilings. The question of architectural purity could be brought up, since ceilings are hardly a straightforward expression of the structural system. However, the honest expression of mechanical systems (almost as necessary to the 20th-Century building as structure) is often ignored by purists and critics. Although lighting may have been the prime influence in design, the deep ceilings also accommodate oversized ducts required for the ventilation system. But whatever the rationale (or lack of it) behind the ceiling design, its contribution to the quality of interiors both in terms of form and light makes criticism seem rather beside the point.

graphics exterior

You may not be ready, again, for more Supergraphics, much less for learning that they are spreading to the outside. But though the onslaught of interior super stuff has not subsided, another wave already bears down upon us. The truth is that, proper out-of-doors "architecture" has been getting a cosmetic facelift of gigantic proportions for a couple of years, although the evidence has only built up enough recently to make collective journalistic proof of the fact. This boldly scaled lettering and decoration seem still to hold promise of design opportunity.

What is shown on the following pages is not all of the purest Supergraphic variety, as P/A has previously defined it (see p. 132, NOVEMBER 1967 P/A) — that is, incomplete fragments of lettering and other graphics that give a sense of a larger world beyond, in which one can complete the visible graphic in the mind's eye. Many of the following are merely huge lettering — complete letters, either detached or superimposed on each other — or superscale symbols, or greatly magnified Pop imagery. Some of them, such as Hardy's analogy to a packing crate, Seller's "three-distance" gate house, and Pelli's kinetic light well, imply meanings beyond the bold size.

Whatever the aesthetic goals of the designers, painted exterior decorations such as these serve admirably, Barbara Stauffacher points out, "as a means of solving circulation problems." And urbanistically (appropriately jumping up to a larger scale), paint is a quick, economical, and seldom used way of revitalizing "blighted" areas and of putting a little sprightliness in our too often dreary urban environments.

Photos: Richard Oliver

Photos: Fred Lyons, "Life" Magazine

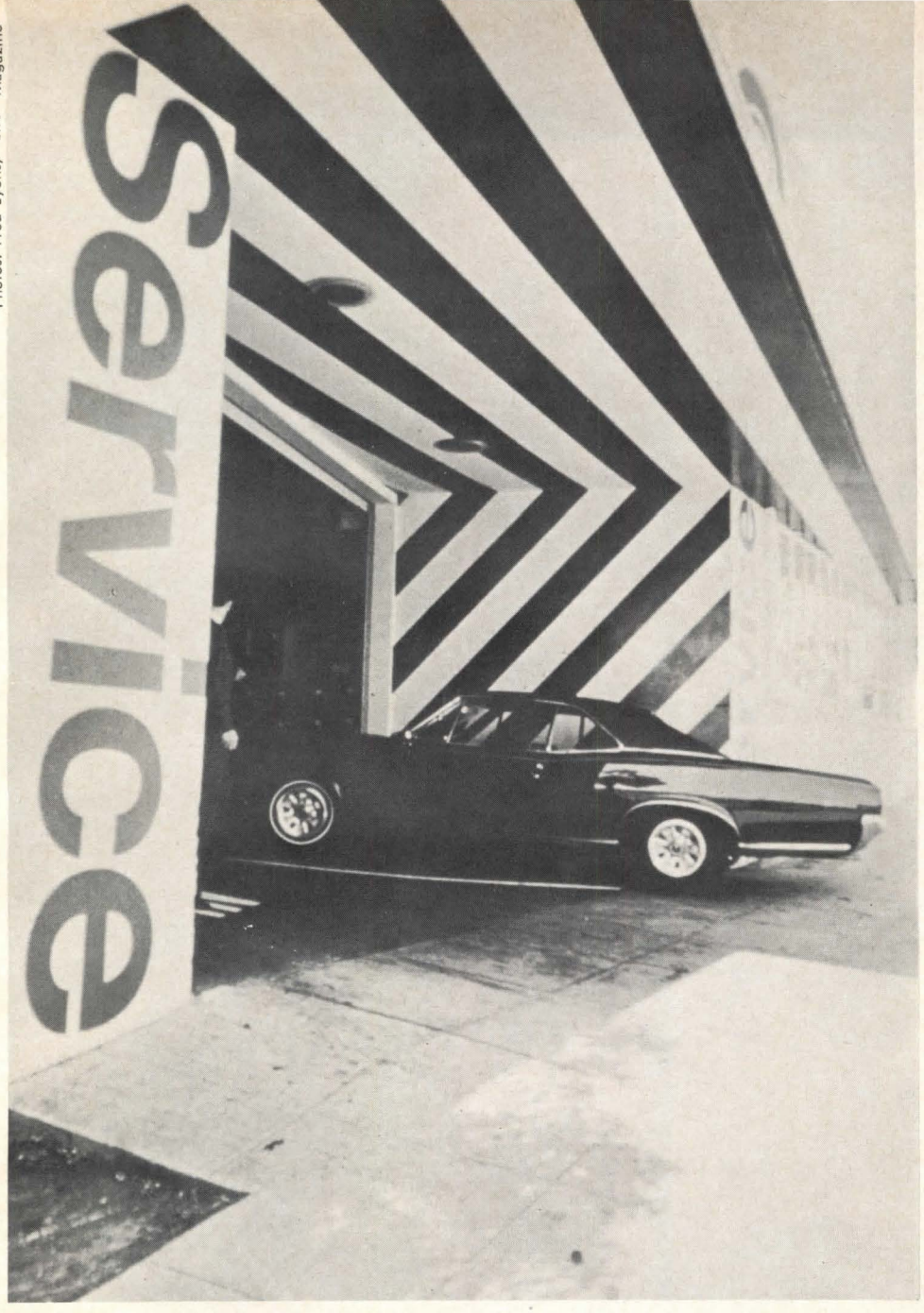
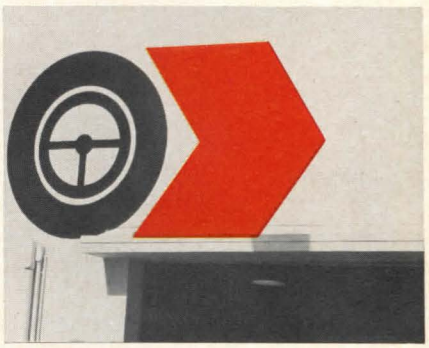


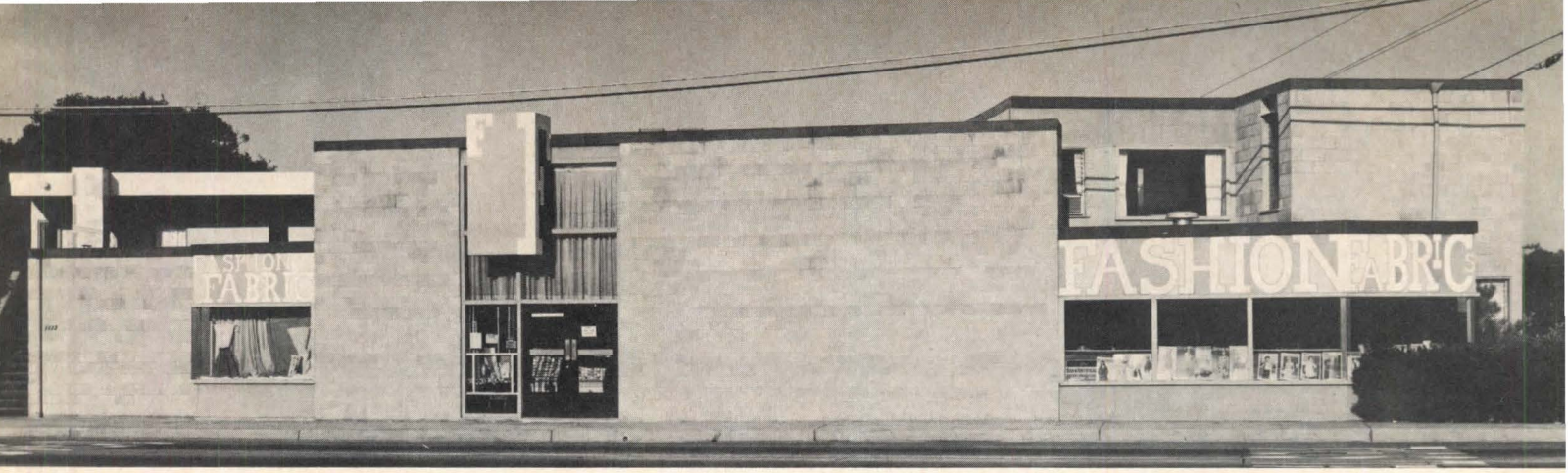
Photo: Garry Harley

For the eighth annual New Haven Festival of Arts, Garry D. Harley (of Carlin, Pozzi & Associates, Architects) designed some unmistakably clear circulation graphics. To indicate the entry of the Festival's exhibition space in the Mall, he painted arrows inside the glass building, pointing to the door. And the arrows were bold signs from the exterior.

Barbara Stauffacher, mistress of the large sign, has boldly announced where San Francisco's Boas Pontiac showroom and service center is, and, once a driver arrives there, blue-and-white stripes and bright red arrows with black steering wheels make it clear what door to go to.



A 20-ft high yellow arrow in front of the Architecture Building signalled last spring's end-of-term exhibition and public review, which the University of Texas at Austin called "Survey I." As an experiment in replacing the traditional jury system with interclass reviews by design critics, a public exhibition seen by hundreds of infrequent visitors from other departments, and daily informal discussions of "interaction" sessions, Survey I was judged sufficiently stimulating to be repeated this year. The arrow, built by students in two days, and assembled and painted in one evening, cost about $100, according to assistant professor Richard Oliver. "After Survey I was over," Oliver says, "the arrow became a symbol of the school and a powerful sculptural artifact on the main mall. It was moved on two occasions to announce two functions at the Union." Spatially, the arrow elicited the kind of ambiguous responses that Tony Smith's sculptures do, yet it was also a two-dimensional object, as Oliver points out. "It was a shape that ought to be small, yet it was awesome in size as well as scale. The relationships between it and people passing by were particularly tense and ambiguous — the surface reactions of people ranged from outright smiles, to admiration, to fear and intimidation," Oliver concludes.



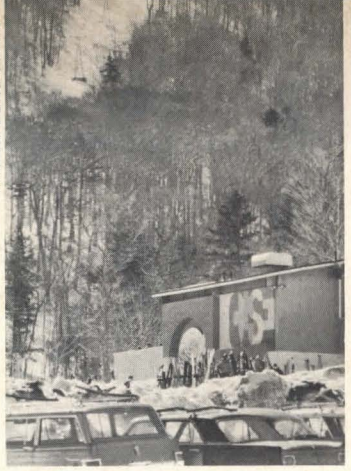
Photos: Morley Baer

As early as 1963, shortly after he had been impressed by the mirror-image graphics inside Robert Venturi's Grand's Restaurant, Donlyn Lyndon designed a series of signs with variable scale lettering and superimposition of colors for the "Fashion Fabrics" shop in the Freemont Professional Center at Sea Side, California. The colors are pink, red, blue, brown, and white. They were to have stretched along the building for 105 ft, like a billboard, but that seemed too much for the client five years ago. What was built — and what remains — are fragments of the mammoth early concept.

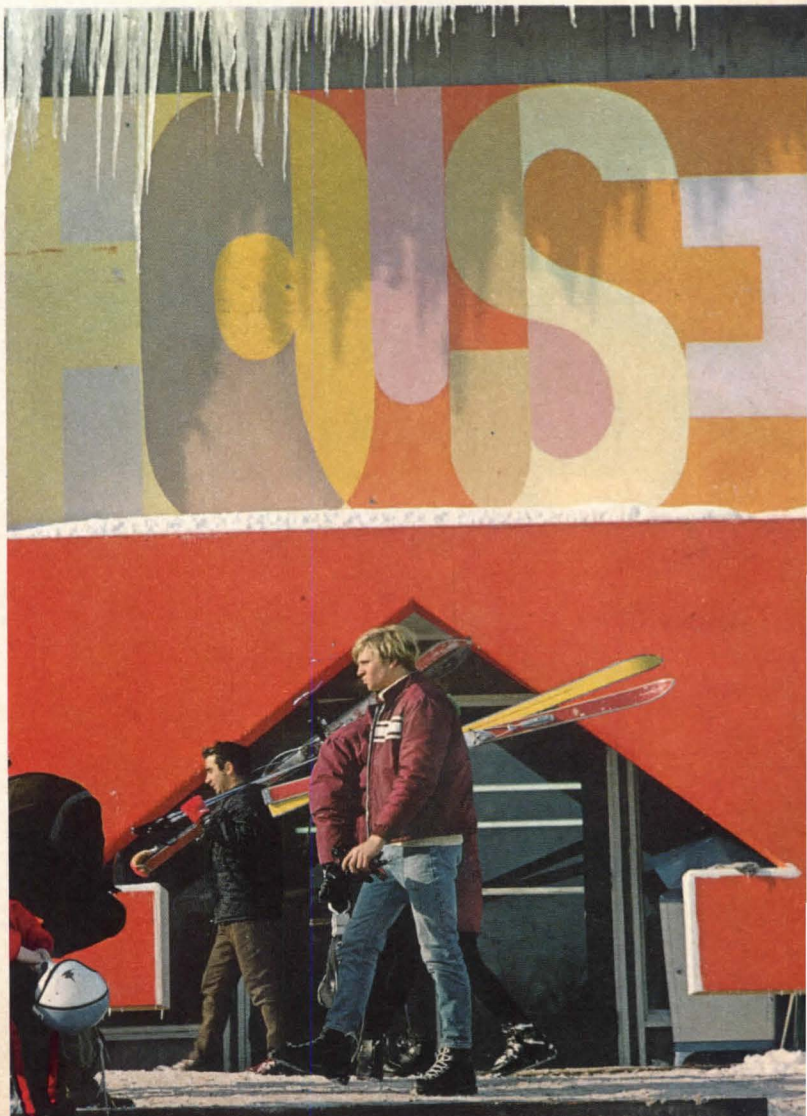
Photo: Norman McGrath

The Bedford-Lincoln Neighborhood Museum was converted by Hardy, Holzman, Pfeiffer & Associates from a former automobile showroom and pool hall to house the Brooklyn Children's Museum. "Muse" is painted in "traffic light yellow" diagonally across the building "like a stencil on a big crate," according to Hugh Hardy, "so that the building could be identifiable as something new and unlike anything else on the street." The main door is painted the same yellow, a chore the contractors found easier than executing letters on the bias consistently across glass, metal, brick, and mortar. "Muse," of course, connotes the muses as well as a mini-version of "museum," which seems appropriate for children.

Photos: David Sellers



Last skiing season, Dave Sellers and Charles Hosford designed a Supergraphic front for the gate house of the Sugarbush ski area in Warren, Vermont. The redesigned gate house could be read as a sign from three different distances: From afar, the basic red tones stood out against the terrain, giving a goal to drivers en route, and the gigantic superimposed multi-colored lettering became legible as "gate" on the left side and "house" on the right as one got closer. At middle distance, the entry to the lifts showed as an arrow to direct skiers to tickets, food, telephones, help, and so on. Close up, the large circle on the left of the front became legible as a map of the individual trails; the 3-ft deep semicircular red canopy over the map, which, like the arrow entry, was built forward 3-ft of the original wall, contained lighting. That was last season. The jet set, and those under 30, thought the sign was great. The rest hated it; and, since they owned the mountain, they restored the front as a really touching little indigenous Swiss chalet in Vermont.



The S.S. Independence was hopped up by Robert Miles Runyan & Associates with a huge yellow sun and leering Jean Harlow eyes surrounded by a burst of tangerine-and-strawberry rays that stretch 500 ft along the hull. The rays also bounce up over rails, bulkheads, lifeboats, and funnels, and envelope passengers along the upper decks in stripes of color riot. From a submarine's periscope, it must look as though a zoom lens had become fixed on the sunrise, and although that must be the most powerful effect of this floating Supergraphic, it has raised eyebrows all over New York harbor since last April. The designers also made a choice Pop-Art statement in a blue-green swimming pool by painting an action balloon on the bottom that joyously tempts "Splash."

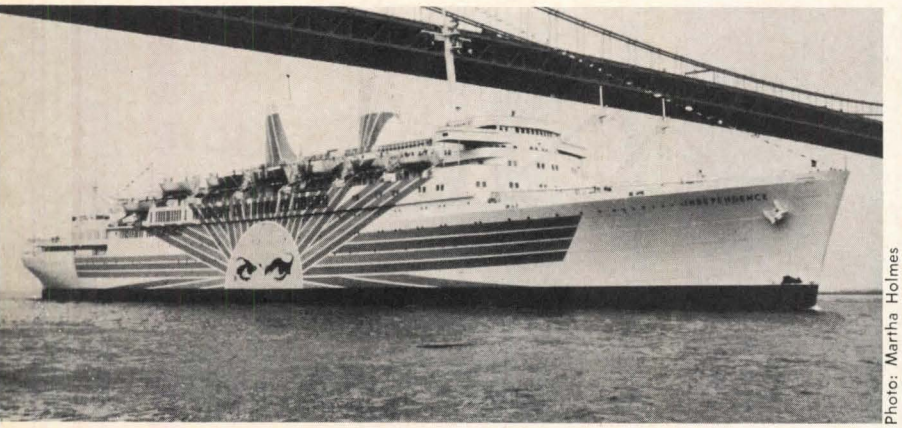


Photo: Martha Holmes

Photos: Peter Harrison

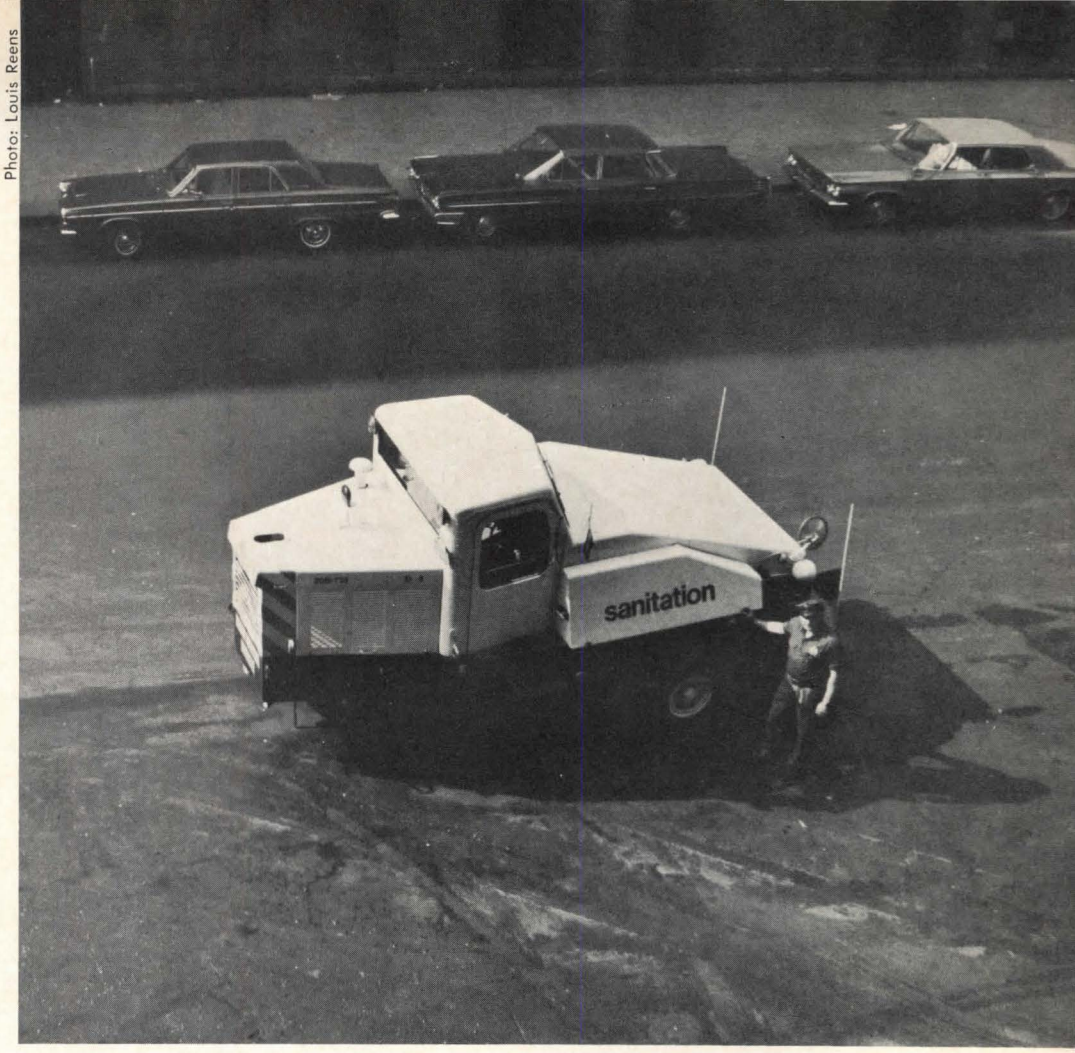
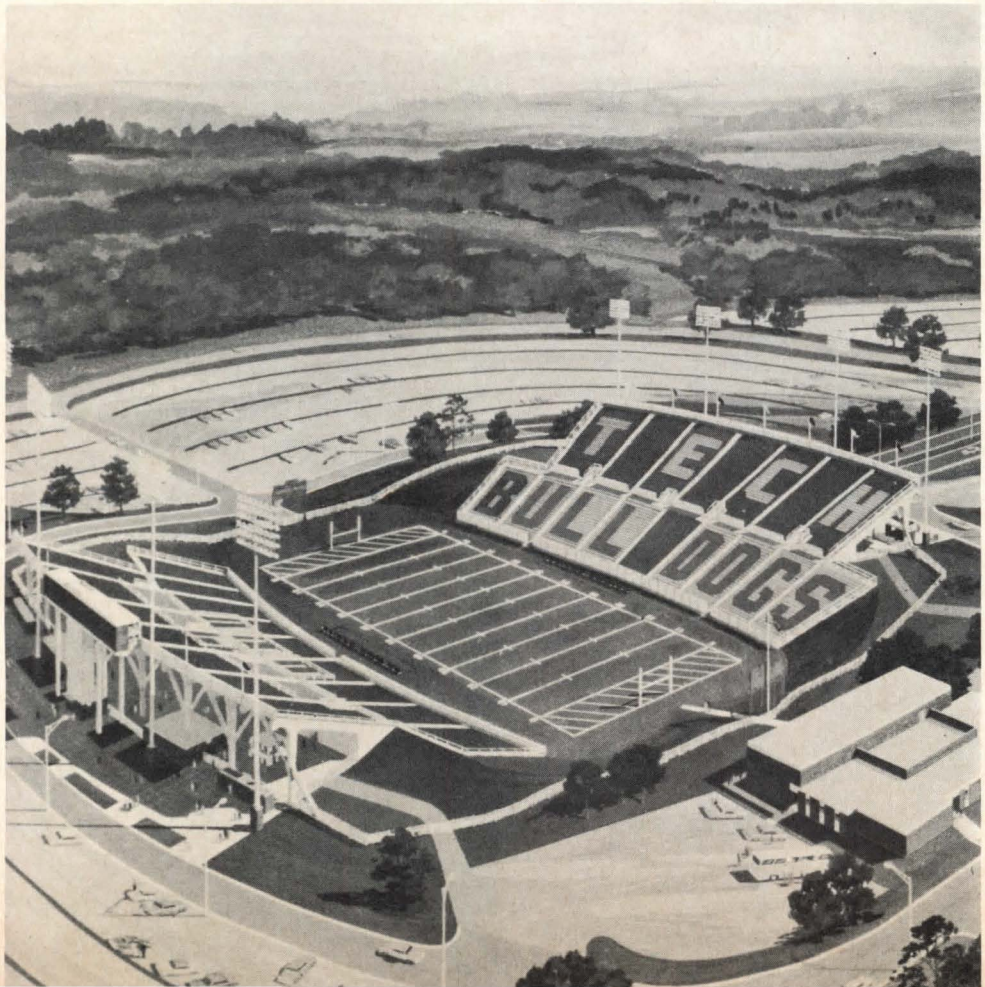


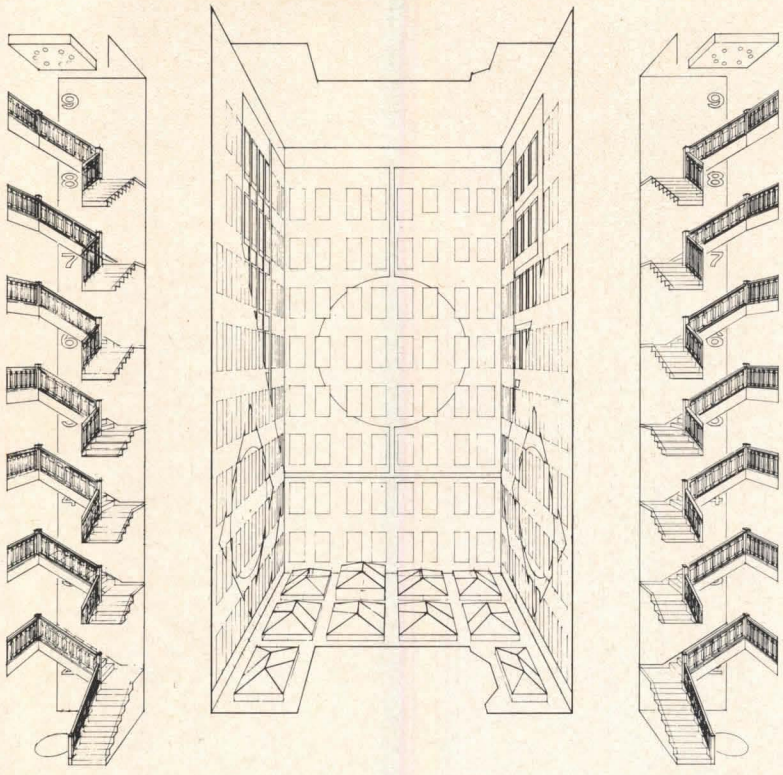
Photo: Louis Reens

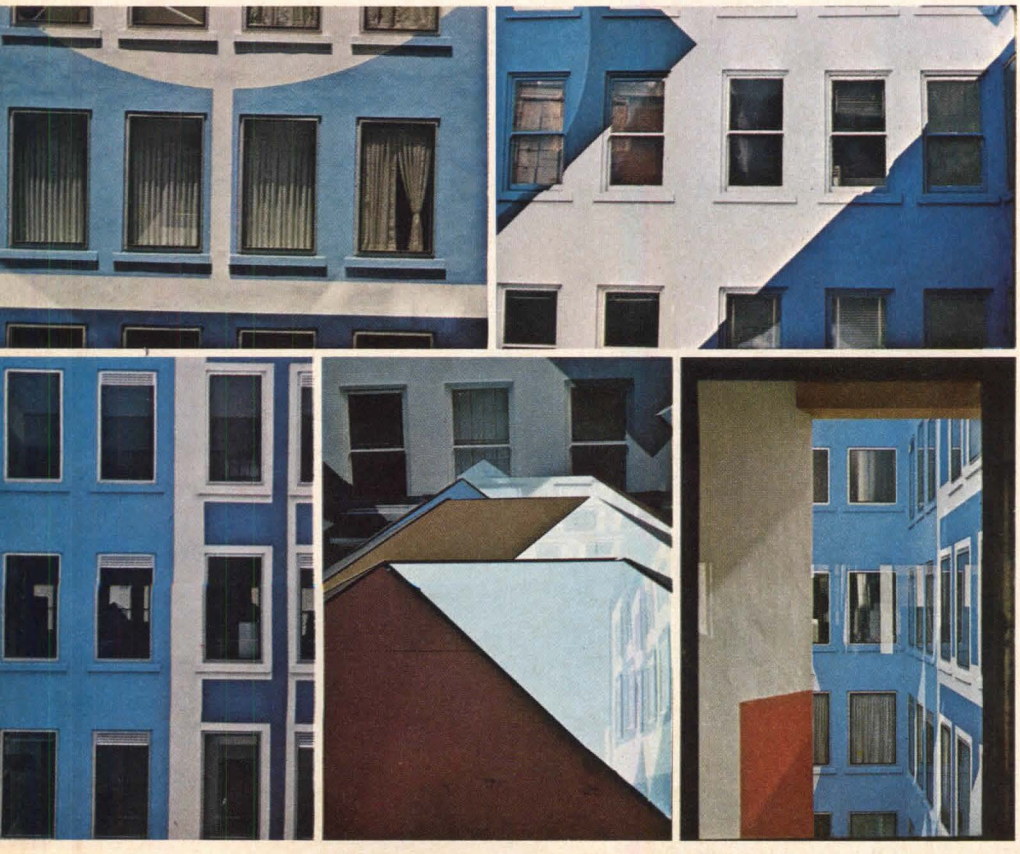
So bold and simply direct is the graphics program designed by Walter Kacik Design Associates for the New York City Department of Sanitation that it makes the trucks and street sweepers look like toy models, especially in overhead views from city office buildings. The Municipal Art Society of New York awarded the program a certificate of merit for pointing the way to "a visually cleaner New York."



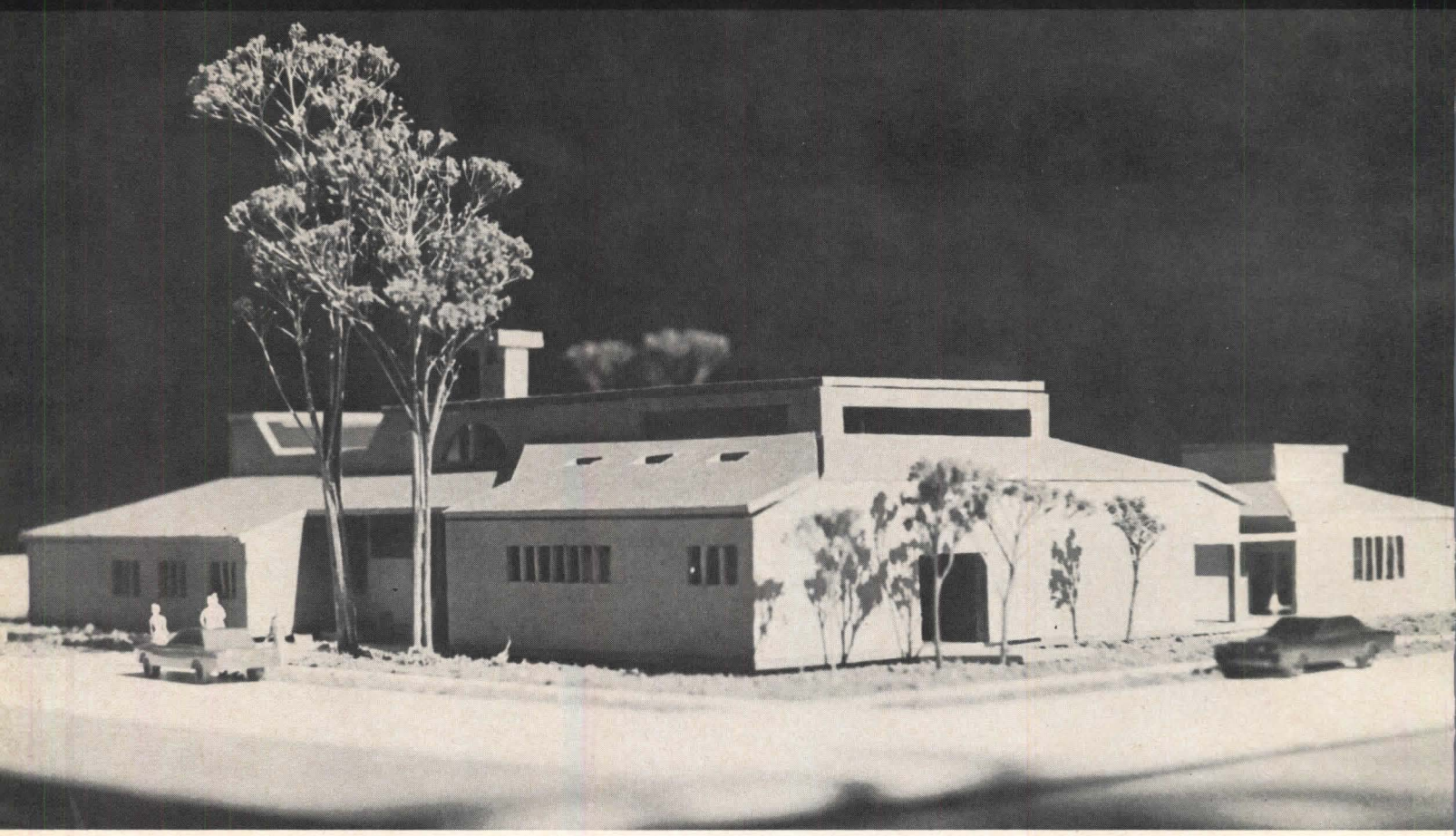
The new 20,000-person stadium designed for Louisiana Polytechnic Institute by Rader & Associates, Architects-Engineers, will have multicolored plastic seats spelling out the school's nickname "Tech" in blue on a surrounding red background (or seat ground) in the upper stands; in the lower stands, the school's red and blue colors spell the home team name, "Bulldogs." This should be encouraging to the team for practice sessions, but will spectators have to dress to match color-coded tickets to produce the same effect in a full house?

Photos: Arthur Golding





Daniel, Mann, Johnson & Mendenhall refurbished the old Consolidated Building in Los Angeles as a California Jewelry Mart, making the formerly dreary central court into a flashy, bejeweled fantasy landscape. Walls of the court are painted in big, "generous" shapes in blues and white with smaller areas of red and yellow; at the bottom of the court, the skylights are covered with mirrors and colored panels. Former design director Cesar Pelli says of the startling effect of scale, "The mirrored skylights inevitably suggest gigantic diamonds, and when the window man washes them with a big squeegee the whole landscape takes on an Alice in Wonderland quality." The painted wall shapes are designed as openended so as not to be interrupted by sunlight. "The moving diagonals of reflection and shadow," Pelli continues, "shift in and out of phase with the fixed diagonals of paint. A bright blue in shadow approximates a darker blue in sun; a reflection of sky and a highlight on a wall are the same color; a reflected ray of sun makes a deep blue brighter than a light blue above it." From inside the building, glimpses of these flashing, faceted views must offer an extension of the diamond appraisers' and jewelry designers' work experiences.

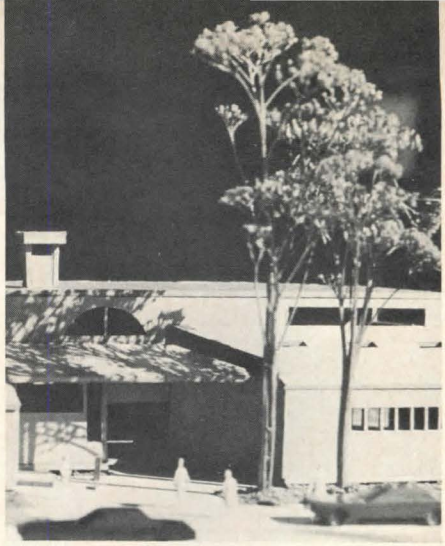


A "DEMANDING" BUT GRATIFYING JOB

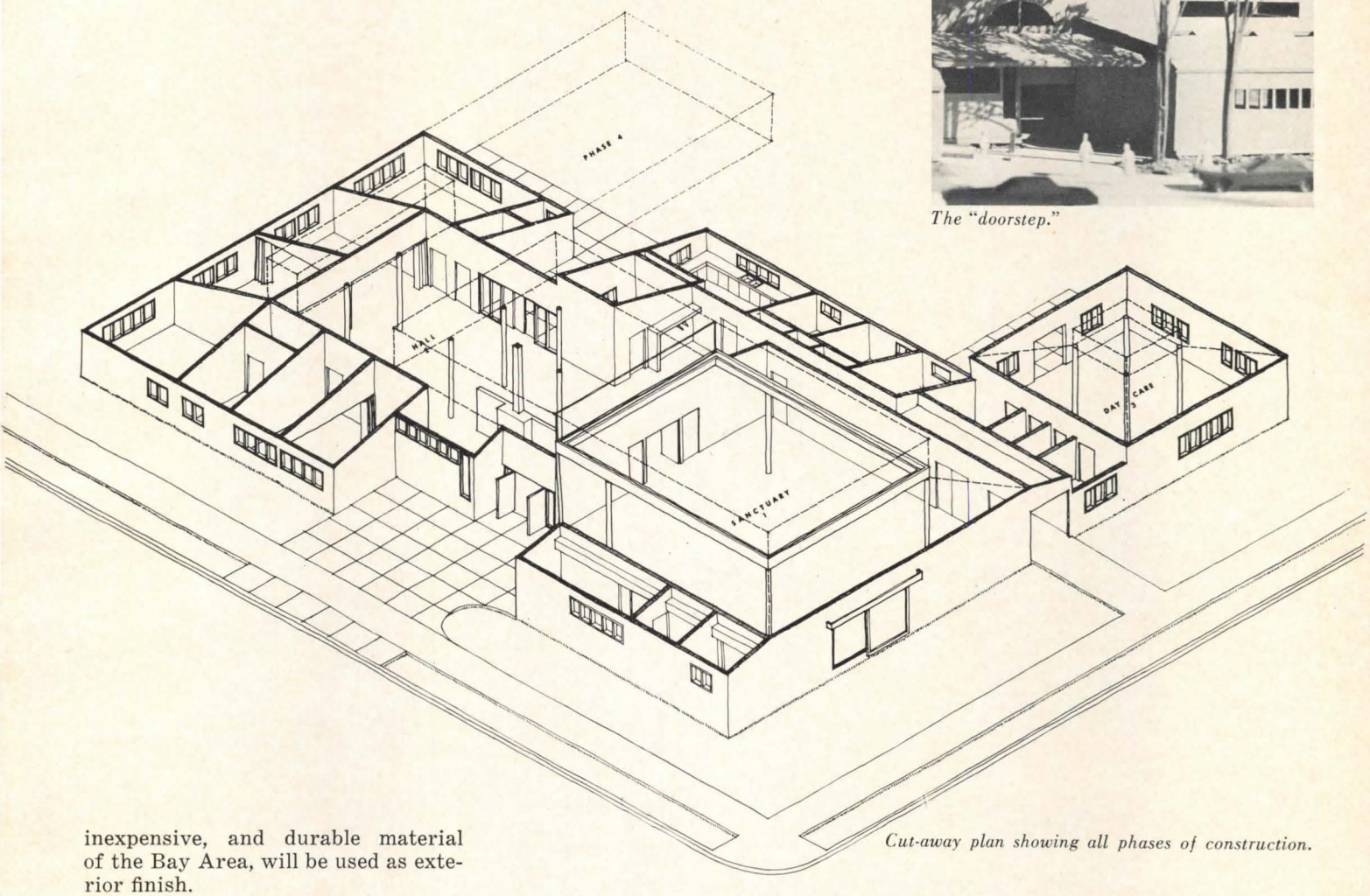
"A poor community does not have to settle for poor design, and, when suitably challenged, supposedly under-educated groups can make sound aesthetic judgements," thinks architect Patrick J. Quinn of Berkeley, California. His first statement is being borne out in practice with his plan for the transformation of Elmhurst Methodist Church, an established church in what is now Oakland's 80 per cent black area, into "totally new facilities for an interfaith, interracial ghetto community." The second observation came about as a result of the selection by the Elmhurst group of the GF 40/4 stacking chair (Triennale award winner, 1964) in lieu of pews or chairs by well-known furniture suppliers.

The new center, to be built in stages as money comes in, is designed so that spaces can adapt to various roles as necessary. The "sanctuary," for instance, will also be used as a meeting hall, a day-care play area, a ballroom, and a theater in the round. The crafts room will also be a classroom, the "Nook" a place for kaffee-klatching as well as a teen-agers' meeting place, and a meeting room will double as the office of the interdenominational South-East Oakland Parish, a collaborative venture by several ministries and churches in the area. The center will be open to all inhabitants of the area, in an effort to cut across social and religious lines and get all to contribute time and energy to improving their lot and the over-all community good without waiting for renewal plans, Model Cities projects, or other long-term programs to take effect. Quinn reports that the idea of the center has occasioned such interest that he was asked to present it to representatives of all the Methodist Churches in the East Bay region. The program was formulated jointly with the community (headed by the young and progressive minister of the Elmhurst Methodist Church), and has served as the basis for a design problem in one of Quinn's senior classes at the University of California, Berkeley. "It proved remarkably successful," the architect states, "in revealing to the students the complexity of what appears to be a relatively simple task in design for an urban ghetto area." The students presumably were fortunate enough to get a foretaste of the advocacy planning and community involvement that are likely to color their future practices. The community is decidedly the keystone of the Quinn plan, being symbolically represented by the entrance to the center, which he describes as a "doorstep" where ladies can congregate with their baby carriages, men can gather and rap together, and teenagers can find a substitute for street corners where they currently hang around.

Structural considerations are the uses of materials and building techniques that will permit competitive bidding by ghetto contractors, rough usage by adolescents, and generous provision for natural light to cut electricity costs. Main structure will be glulam posts and beams with substructure stud walls; roof of interlocking wood deck exposed on the underside and with outer covering of asphalt shingles. Interiors will be hardwood parquet over concrete slab and partitioning of resawn Douglas Fir plywood. Stucco, that ubiquitous,



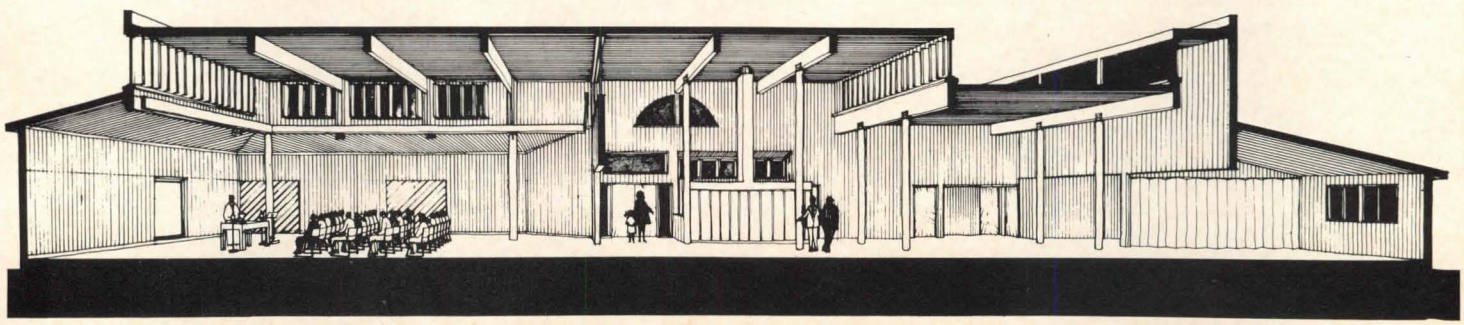
The "doorstep."



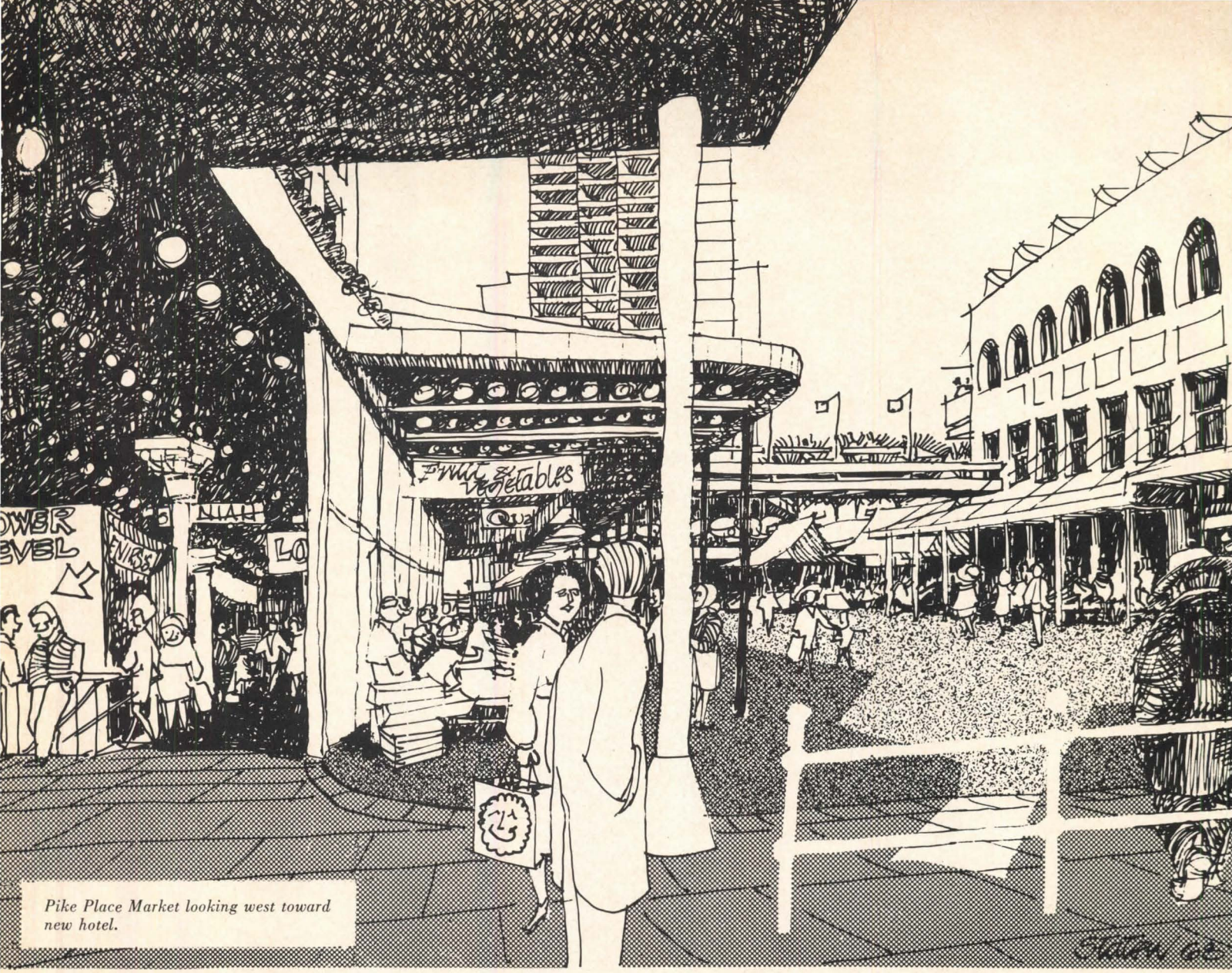
Cut-away plan showing all phases of construction.

inexpensive, and durable material of the Bay Area, will be used as exterior finish.

As Quinn has observed, this appears to be a simple project. But here an architect has gotten into areas of endeavor and discussion that were not his "province" until a more responsible, socially oriented climate started to be felt in the architectural profession recently. "Because of the unusual combination of liturgical, social and political factors involved," the architect said, "it is probably the most demanding problem which we have had to face in some years."



SECTION



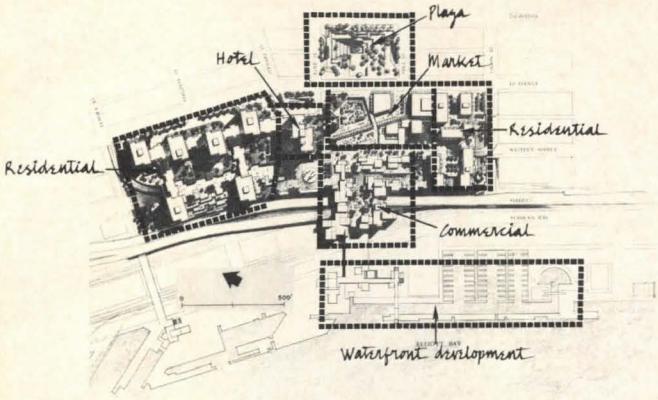
Pike Place Market looking west toward new hotel.

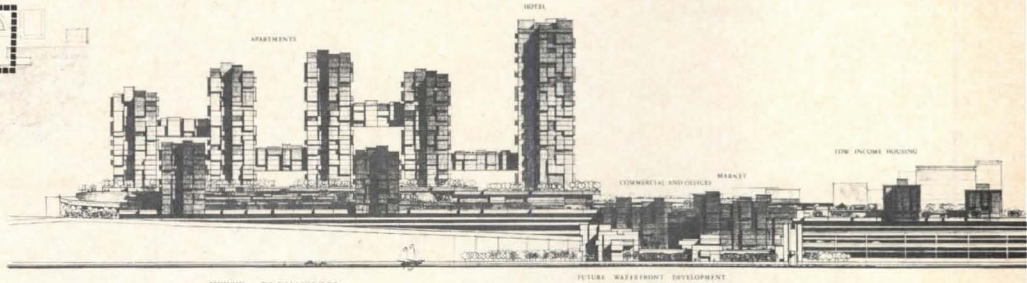
OLD MARKET KEYSTONE OF DEVELOPMENT

A few years ago, fans of Seattle's old Pike Place Market were worried lest it disappear under the impetus of bulldozing "redevelopment" plans of the sort that were common at that time. Since then, luckily, planning has taken a more responsible tack in many cities, and emphasis is on creative *conservation* of environmental and architectural resources as well as on building new and needed facilities for living and working. If the master renewal plan for a major portion of Seattle's waterfront by John Morse & Associates and Kirk, Wallace & McKinley is followed, one of the most atmospheric marketplaces in the U.S. will be preserved and reinvigorated. This is good news, for the Pike Place Market (begun in 1907) is a truly exciting series of spatial experiences, cutting across and up and down the precipitous urban terrain just west of the city's main business district. There were suggestions to retain — but "beautify" — it in the past, as well as to take it completely out of the way of "progress." Fortunately, both of these dubious approaches are absent in the current plan, which, in using the market for the community and tourist lodestone it should and could be, proposes it as the active center of a 20-acre, multiple-use plan.

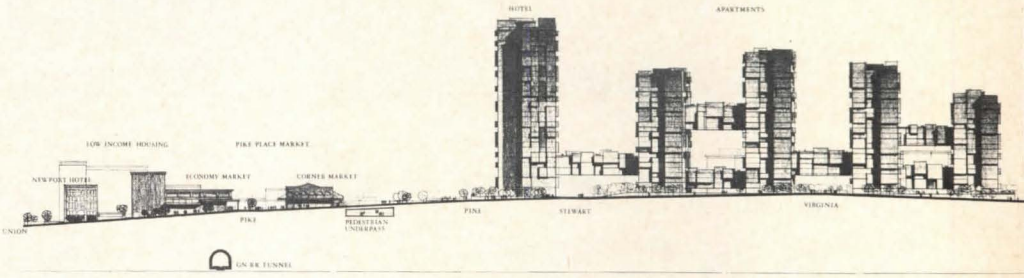
Pike Plaza Urban Renewal Project will achieve several goals: connection of downtown Seattle with its waterfront on Elliott Bay; rejuvenation of an area presently the site of run-down residential, warehouse, and factory buildings; creation of a logical movement pattern where there is now a crazy quilt of alleys and streets; provision of apartments for all income ranges; creation of artists' studio quarters and new housing for retired and elderly persons; a new luxury hotel; new shopping and office facilities; a one-block square park to act as entrance to the area from downtown; extensive lower-level garage and highway and roadway arrangements; and a thorough-going system of connections — malls, bridges, stairs, elevators, passageways, plazas, promenades, underpass, walkways, and so on — for convenient access within the plan and to surrounding areas and transportation and transit lines.

The two-level pedestrian platform will extend toward the bay from First Avenue over the garages and the Central Business District Distributor Road below. It will surround the "structurally rehabilitated but recog-





WEST ELEVATION
FROM WATER



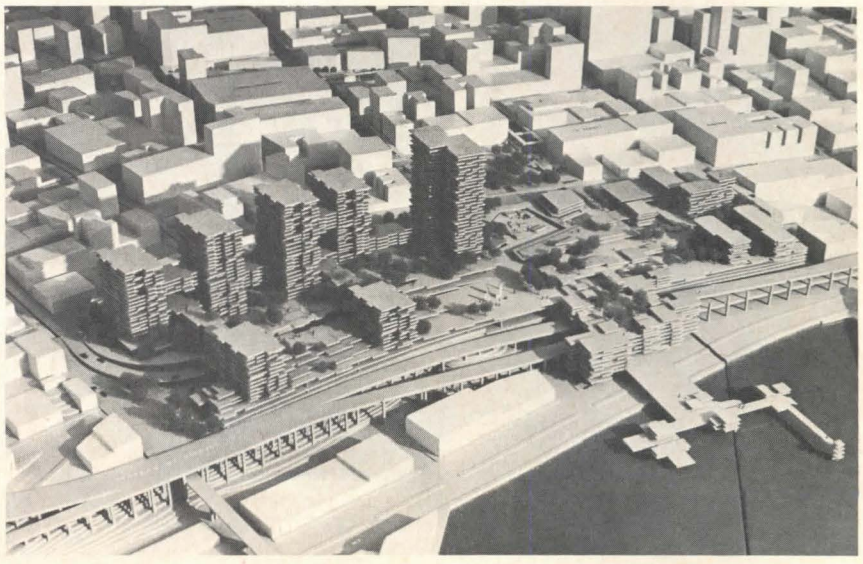
EAST ELEVATION
FROM DOWNTOWN

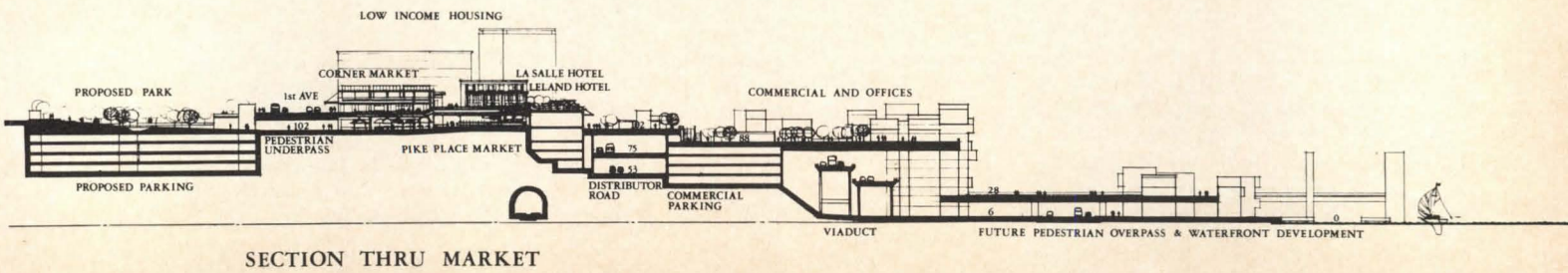
nizable" old market. North and south on the platform will rise high- and low-rise apartments, and the hotel will be located just north of the market. The new commercial area will extend from the market toward the water, and it is hoped that extensive development of the waterfront at this point will occur in the future to draw the tourist and inhabitant into involvement with the bay and Puget Sound.

Development will be based on the process of the city building the garage and support structures — providing, as it were, the base or frame for the development — and selling air rights to the "parcels" above to developers, who will submit their designs and plans to a professional design review board that will insist that the "intent of the Plan is followed."

Current provisions in the plan, which, it is estimated, will cost $85 million, call for 1350 upper-income units, 59 middle-income units, 350 units for elderly and/or lower-income, a 600-room hotel, 500,000 sq ft for retail and office space, 110,000 sq ft for "commercial recreation," 8.9 acres of public open space, an undetermined amount of space for community services, and 4190 parking places beneath the platforms.

Consultants were Rockrise & Watson, urban designers; Royston, Hanamoto, Beck & Abey, landscape architects; Livingston & Blayney, planners; Wilbur Smith & Associates, Inc., traffic engineers; Cornell, Howland, Hayes & Merryfield, structural and utility engineers; Henry Steinhardt, project associate.





SECTION THRU MARKET

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BOTTLE CAPS, MANURE & ARCHITECTURE

"Sweet are the uses of adversity;
Which, like the toad, ugly and venomous,
Wears yet a precious jewel in his head. ..."

Peace Corps architecture can be remarkably analogous to these lines from *As You Like It*. It is a unique branch of the profession, often practiced under such difficult conditions that it might better be termed "Adversity Architecture."

Causes of economic deprivation obviously cannot be remedied simply with architectural solutions, but designing buildings in an underdeveloped country is undoubtedly the best means for an architect to understand the circumstances surrounding poverty. The following chronicle of the experiences and work of a young Peace Corps volunteer is an example of the practice of "adversity architecture" that may be of interest to those practitioners who believe that comprehensive architectural services should be expanded to include the ugly and venomous as well as the beautiful aspects of the environment.

Lee Cott got his B. Arch. at Pratt Institute in 1966, and volunteered for the Peace Corps. After working two years in South America, he returned to study planning at Harvard.

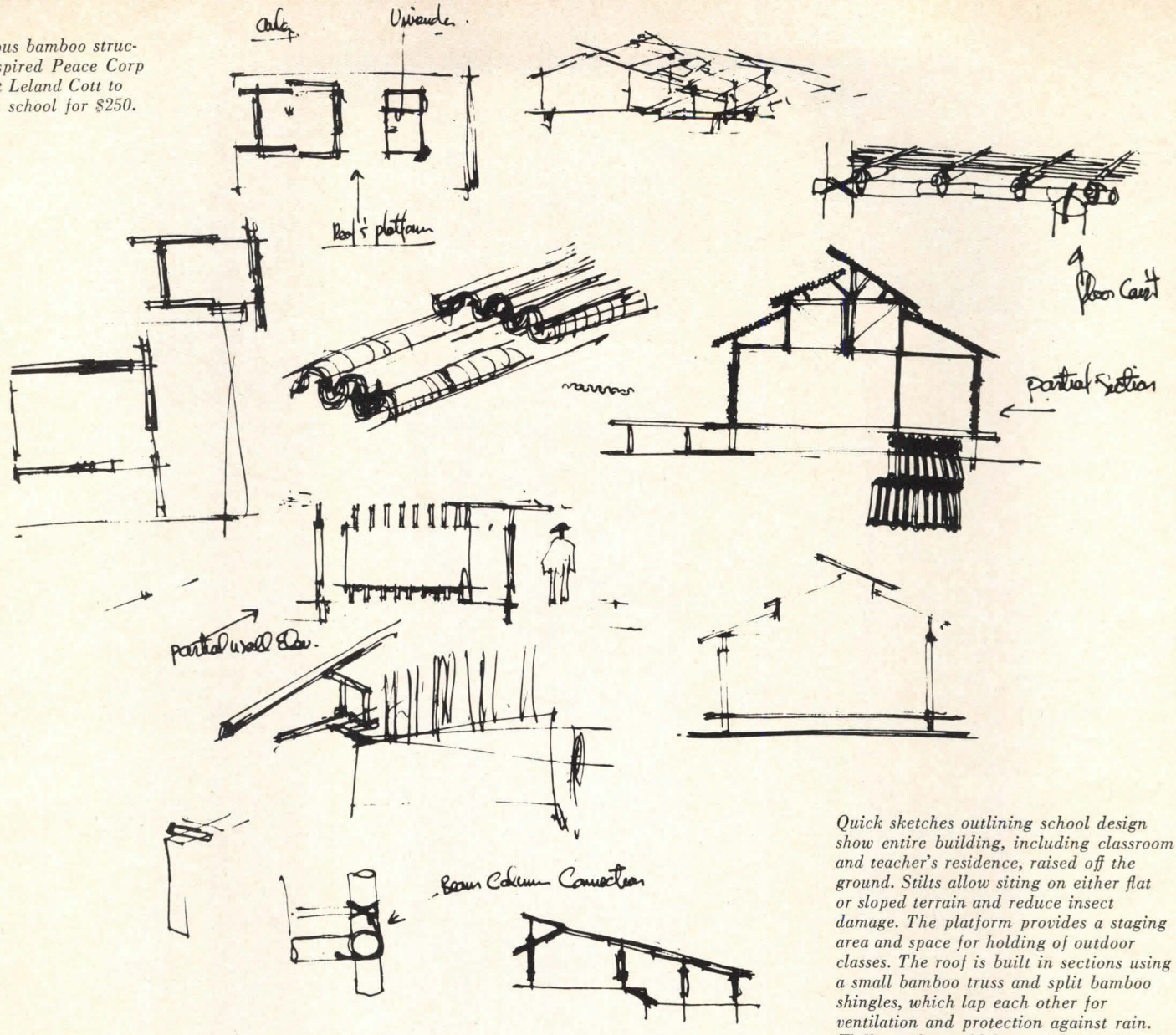
While in Colombia, Cott put his buildings together with the primitive materials at hand at costs averaging between $250 to $400 each. As Shakespeare made jewels from the eyes in a toad's head, Cott made architecture with nailed bottle caps for lathing and mud, with horse manure for a binder.

Adversity architecture as practiced in the Peace Corps is not limited solely to architectural design. Difficulties are inherent in the basic cultural and economic differences between the architect, his client, and the user. A North American architect is the product of a sophisticated architectural education. He has been exposed to advanced architectural technology and planning and lives in a machine ambience. In an underdeveloped country, he is thrown back upon his own resources. His training in advanced architectural techniques is useless to him as he grapples with building methods dating from before the time of Pissaro. Economically, he is in competition with native architects, but his contribution as a designer is justified by the fact that he will take projects that are too humble economically to provide fees for the host country's established architects. In short, the Peace Corps architect is transported thousands of miles to engage in philanthropic efforts that native architects will not travel 20 miles to perform.

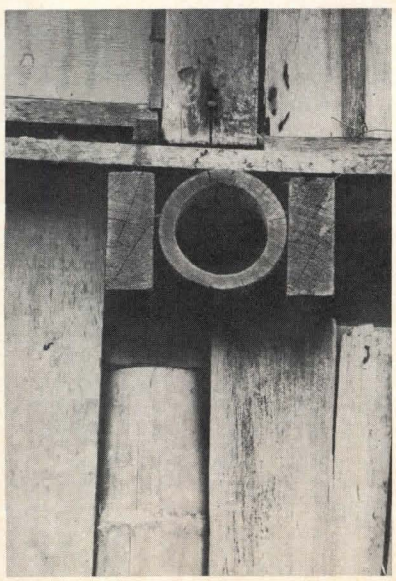
These are truths not immediately apparent to the volunteer. Cott began his service as the architect of a three-man government office consisting of an administrator, a secretary, and himself. He was overwhelmed by prospects of work beyond his fondest dreams.

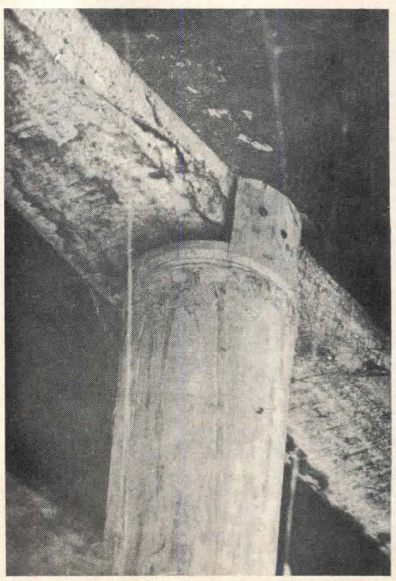
After six months of high hopes but little architecture, the pattern of the game began to emerge. "The feeling of my potential clients," noted Cott,

Indigenous bamboo structures inspired Peace Corp architect Leland Cott to design a school for $250.



Quick sketches outlining school design show entire building, including classroom and teacher's residence, raised off the ground. Stilts allow siting on either flat or sloped terrain and reduce insect damage. The platform provides a staging area and space for holding of outdoor classes. The roof is built in sections using a small bamboo truss and split bamboo shingles, which lap each other for ventilation and protection against rain. Wall panels would be prefabricated, made of stucco placed over a woven sheet of flattened bamboo strips and assembled on the site.





Drawings for a tamped mud school, one of about twenty Cott designed and built in Colombia. Walls are constructed of a local mud with a high clay content. It is mixed with horse manure, straw and stones tamped between wooden forms. Form ties are placed 50 cm apart (the width of a man's shoulders) and mud is tamped by foot and with wooden tampers.

"was that if you were a Peace Corps volunteer you could get your hands on a lot of money. They said they wanted every kind of building, which they did, but they were not willing to work for them. If I could produce the drawings, arrange the financing, and build the building, they were willing to take them."

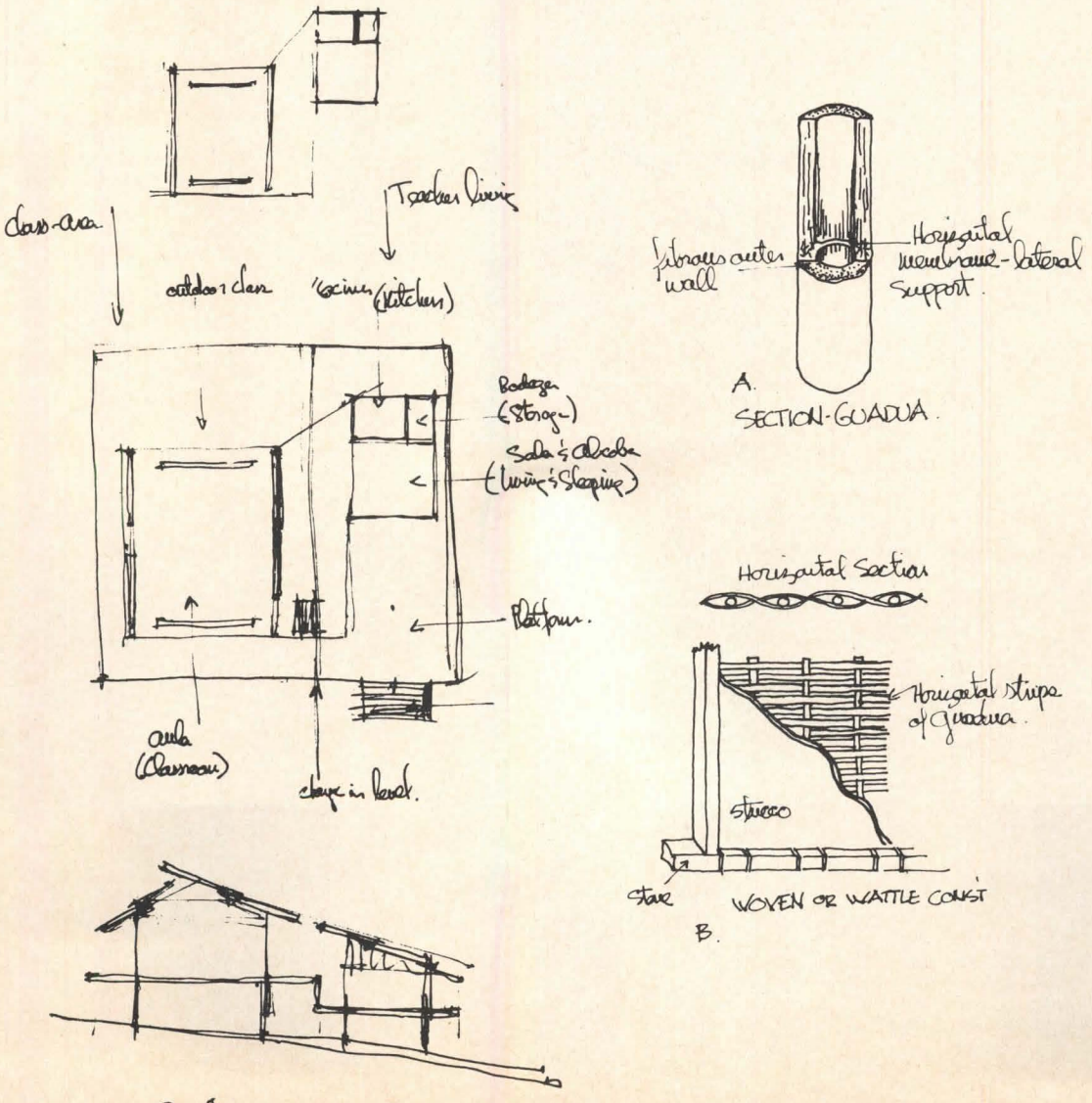
He "phased himself out" of the government operation and become what he terms a "social service." Cott went into business for himself. His office equipment consisted of a machete and a horse as sources of transportation and building products. He traveled the *campo* (back country) and encouraged communities either to build their own schools or build schools for other Peace Corps volunteers.

Cott devised his own concept of expanded comprehensive services. He helped raise the money with raffles and fairs, designed the buildings, then worked with the *camposinos* in laying adobe block and tamping down the mud and manure walls.

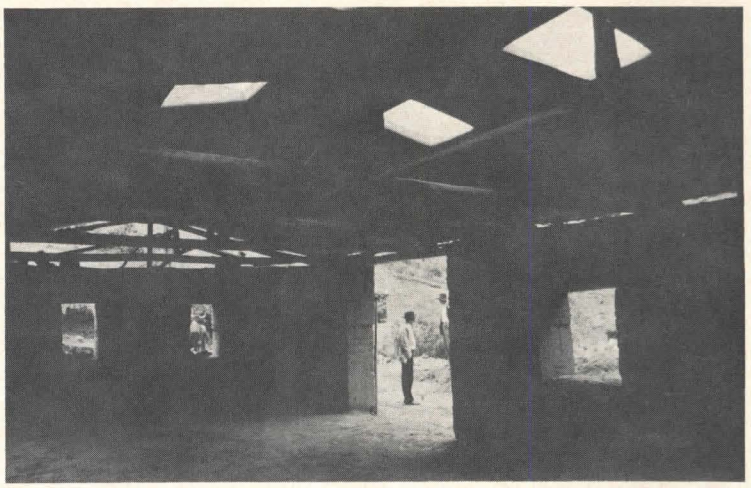
Besides schools in adobe and tamped earth, he became interested in bamboo (*guadua*) as a building material and designed a prototype school of this material. This project foundered, however, since his proposed clients would have nothing to do with the material, telling him: "We want brick or concrete schools; *guadua* is for poor people."

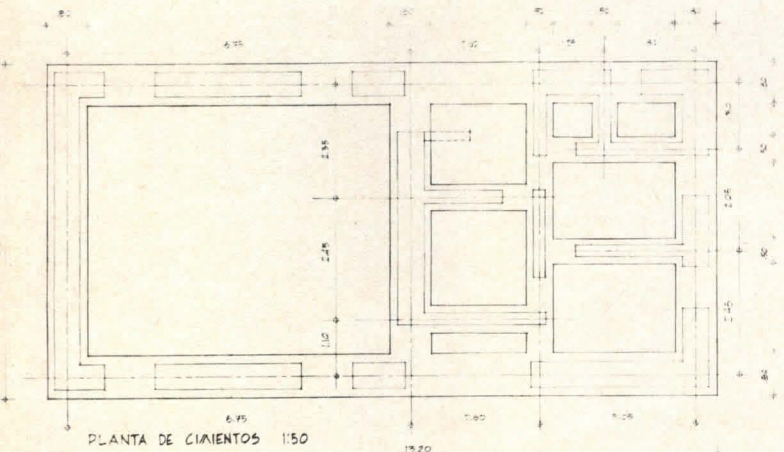
At the end of almost a year, Cott had completed more than 20 schools. Each has one room less than comparable government buildings but they cost only one-sixth as much. He had developed an instinctive feel for the entire operation and could build a school from initial community stimulation, through fund raising to finished building in three to four months. However, in his opinion, this was not really solving the problem of adversity architecture as he saw it. During the last six months of his stay, although he continued to build buildings, he concentrated more on getting native architects to continue his projects. He did this by contributing designs with the stipulation that they be financed, supervised, and built by his native architect friends, thus involving them as he was.

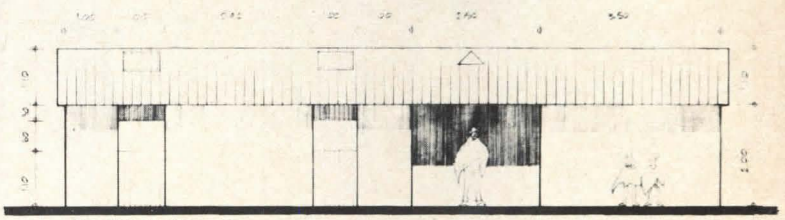
Back in New York, on his way to Harvard, Cott summed up his experi-

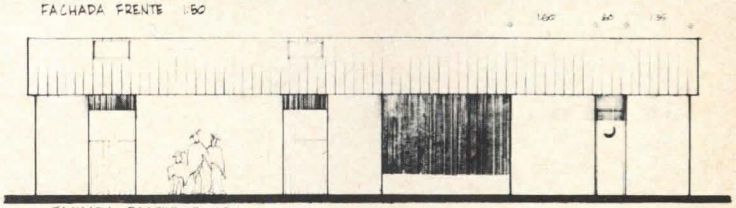


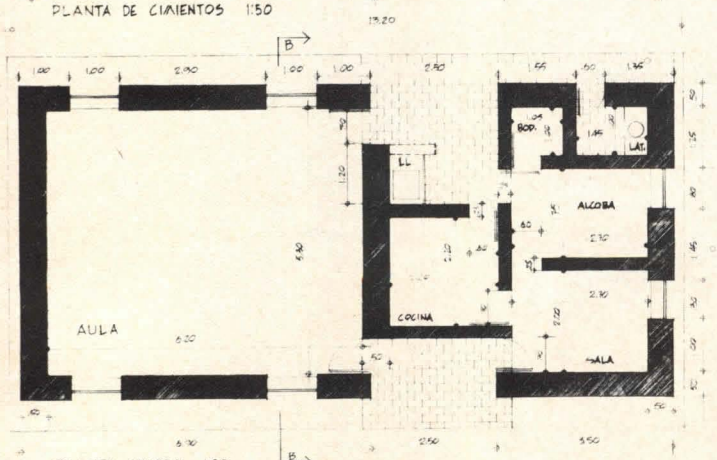
ences by saying that adversity *per se* was not the problem, but rather the frustration of being able to do so little. "It took me 20 months to see how the system worked. What I accomplished in terms of architecture was really insignificant in terms of helping the country. They might have benefited more if I had helped in a birth control program or overthrew the restrictions imposed by the church," he said. Cott managed to build three schools during his first six months as an official architect, and 20 as an adversity designer — an impressive tally for the first two years of a young architect in anybody's country. Yet he castigates himself for doing so little "in terms of architecture." Cott, like the rest of us, forgets that even though adversity might be turned to advantage, a toad's eyes are obviously not precious jewels and a mud school is obviously not "great" architecture, but they both might be something much more important to the reptile inside the toad skin and the *camposino* children inside the school. — FW

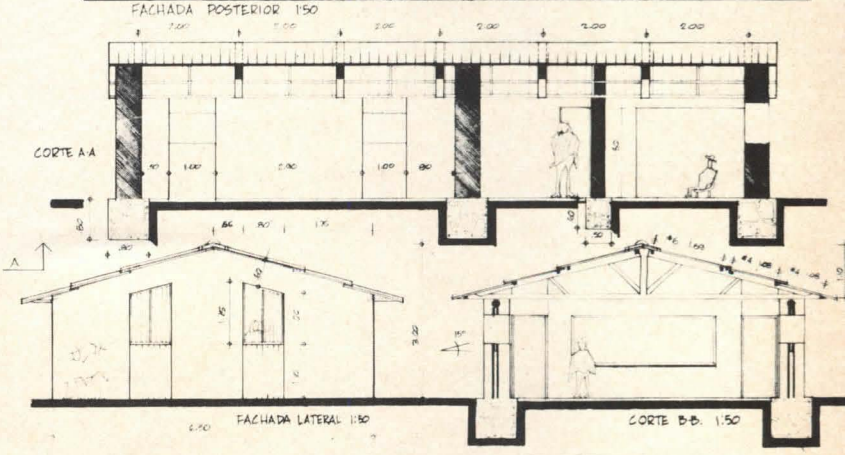


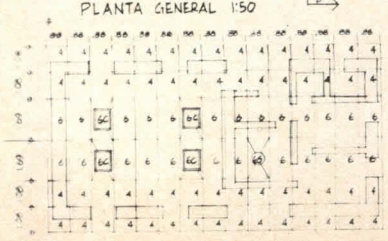


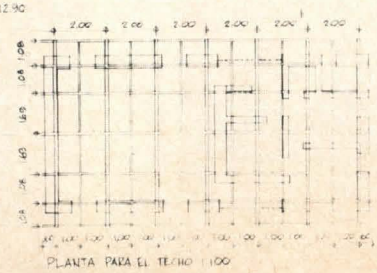










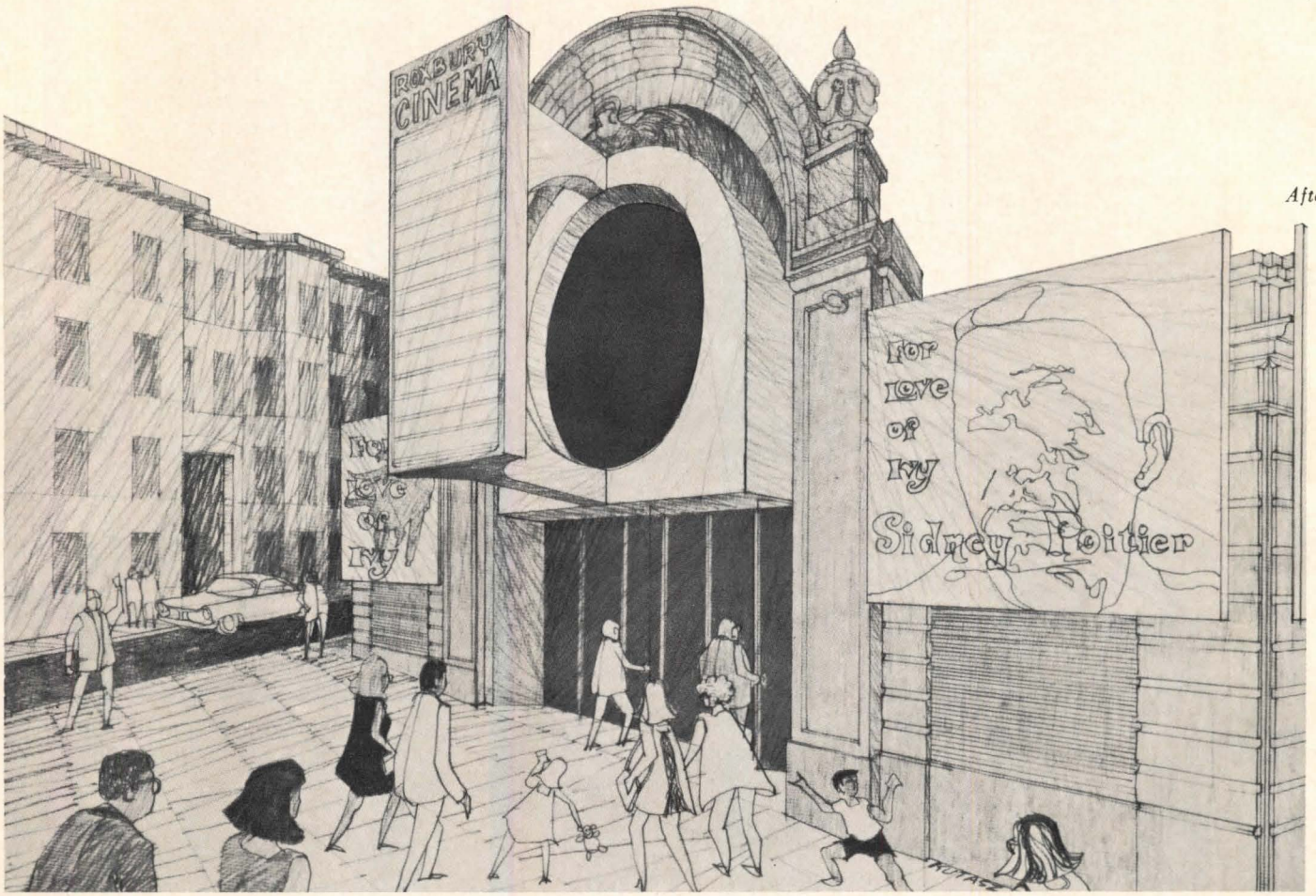


PRODUCTOS ETERNIT			
25	PLACAS #6	@ 34.90	$ 872.50
4	CLARABOYAS #6	@ 74.20	$ 296.80
4	VIDRIOS	@ 20.00	$ 80.00
1	PLACA SALIDA #6	@ 67.80	$ 67.80
60	PLACAS #4	@ 34.90	$ 2,094.00
15	CABALLETES	@ 17.10	$ 256.50
180	GANCHOS	@ 0.40	72.00
TOTAL			$ 5739.60

ESCUELA ACCION COMUNAL	
CUERPO DE PAZ	AREA CONST 81.27 m²
ARQUITECTO - LELAND COTT	

SOUL CINEMA

Before.

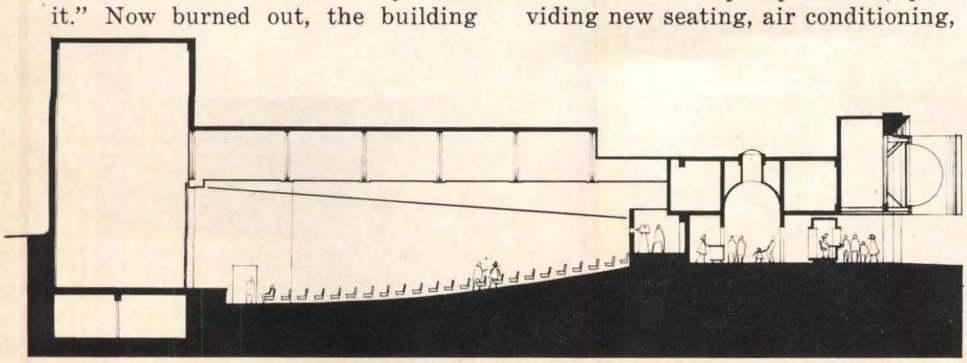


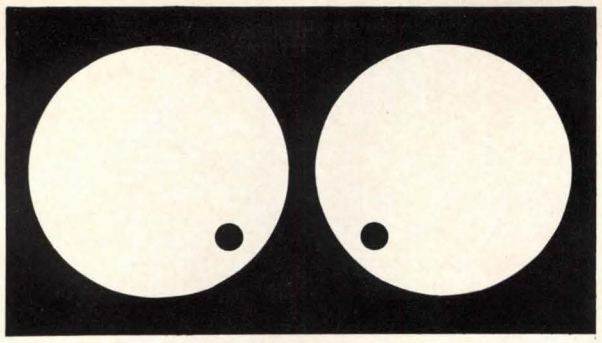
After.

Situated between a Model Cities area and the Washington Park urban renewal area in Boston's Roxbury district, a predominately black ghetto, the building that will house the Roxbury Cinema started life as a theater, then served for many years as "Glick's — Boston's Largest — New & Used Furniture — Est. 1917 — Easy Credit." Now burned out, the building will become an entertainment center for the surrounding redevelopment areas when polished up for a new existence.

Stull Associates, Inc., of Boston, architects for the remodeling, state that, of necessity, most of the small budget is going into demolition of furniture store paraphernalia, providing new seating, air conditioning, toilet facilities, and repairing, patching, and trying to reclaim the theatrical-spatial qualities of the original building. With what remains, they say, "an exciting character will be given to this abused example of 20's architecture; consequently, it will contribute to the street physically and to the spirit of the community."

Aside from new seating and a new hung ceiling for a more intimate auditorium, there will be little new "design" in the refurbished auditorium. Outside, the cleaned and painted façade will be enlivened with giant movie posters on simple plywood panels, and a new, three-dimensional "supermannerist" marquee will announce the arched entrance of the cinema where it turns the corner.





Crossing

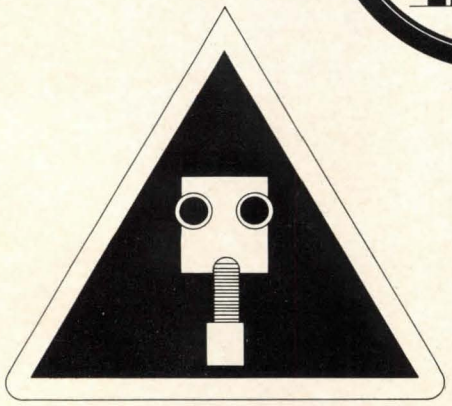
Animal crossing

SUPERHIGHWAYGRAPHICS

Not to be outdone by the the exterior supergraphics on pp. 120-127, P/A's superdelineator Forrest Wilson makes his contribution to the graphics of highways. The Department of Transportation, being currently interested in increasing the amenities of its concrete juggernauts, will no doubt take Mr. Wilson's sign proposals under serious advisement. Mr. Bridwell, take note.

Two way

One way



City limits

Thruway entrance

A HEALTHY DEVELOPMENT

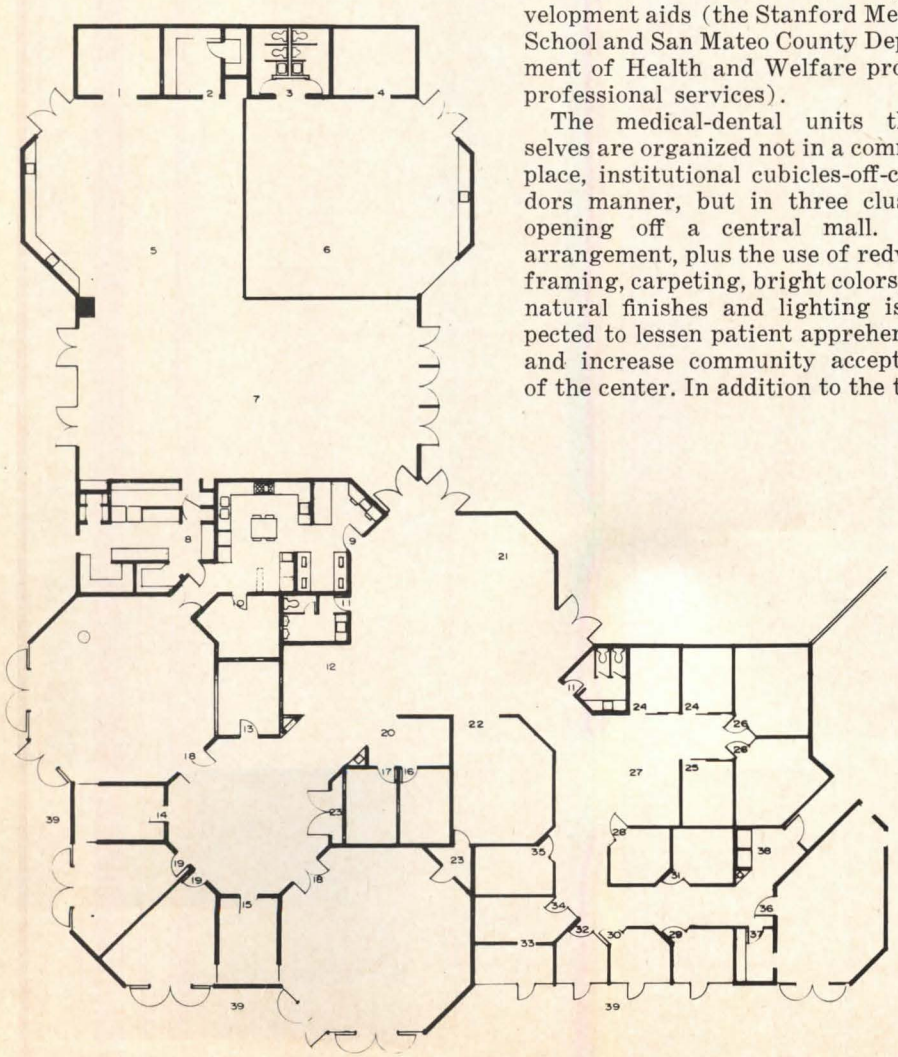
"The poor are likelier to be sick. The sick are likelier to be poor. Without intervention, the poor get sicker and the *sick get poorer*," says Dr. H. Jack Geiger of Tufts Medical School. The attempts of the Federal Government to alleviate some of this hardship testifies to the validity of his observation, but the problems of actually getting working facilities into disadvantaged areas and into full community use are rather more severe than simply providing funds for health care.

In designing the East Palo Alto-East Menlo Park Neighborhood Health Center, architect Sanford Hirshen of Hirshen & Van der Ryn, Berkeley, California, hit upon a funding technique that will possibly be of use in other communities. Under the umbrella of the Federal Housing Administration's Group Medical Plan, the group is using provisions of Title XI of the National Housing Act that authorizes FHA to insure mortgage loans financing creation (including physical plants) of group medical facilities for nonprofit corporations. Hirshen had the simple idea of applying the rule to the OEO neighborhood health center program, and the 98 per cent black community stands to profit not only in terms of greater health safeguards, but also in terms of citizen involvement in a medical center of its own.

For this is the second major aim of the center — community involvement. Everyone concerned with the project agreed that it definitely should not be a paternalistic gift *to* the community, but a viable facility created *with* the community. Emphasis in plan therefore is on pulling the people into the process of having a health center; there is a large area set aside as a "community health and development center" including child care, dining room and kitchen, a "health theater" for citizen instruction, community and mental health workers, and other health and community development aids (the Stanford Medical School and San Mateo County Department of Health and Welfare provide professional services).

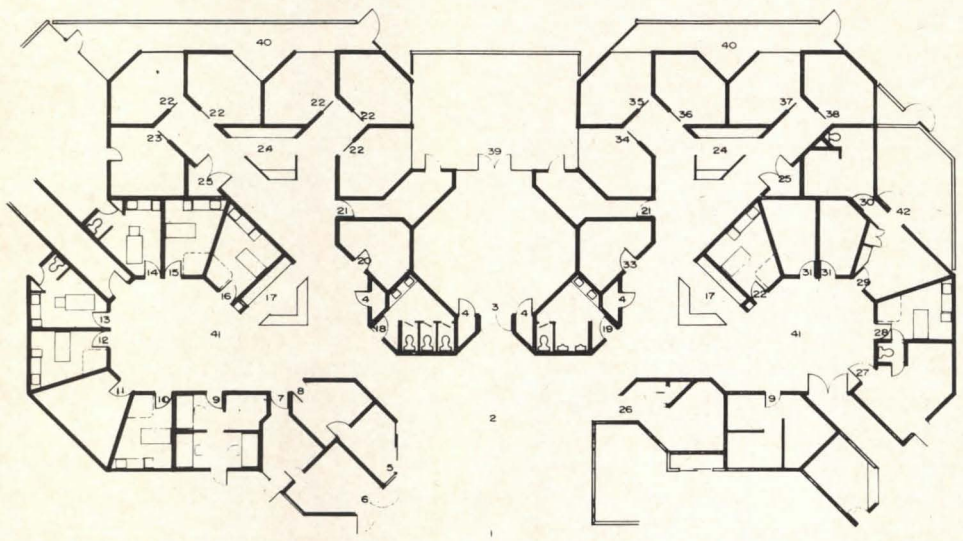
The medical-dental units themselves are organized not in a commonplace, institutional cubicles-off-corridors manner, but in three clusters opening off a central mall. This arrangement, plus the use of redwood framing, carpeting, bright colors, and natural finishes and lighting is expected to lessen patient apprehension and increase community acceptance of the center. In addition to the three medical-dental team clusters and the community health and development center, there is provision for an administration wing, central support facilities, and a medical-dental specialties area.

The East Palo Alto-East Menlo Park Neighborhood Health Center will be the result of many in-depth meetings that Hirshen, Van der Ryn, and medical authorities and consultants had with the people of the area. They found out what people want — a center with a "black heart" expressing black culture and the aspirations of the black community. The architects seem to have provided them a good place in which to do their thing. Now the community has to carry the ball.



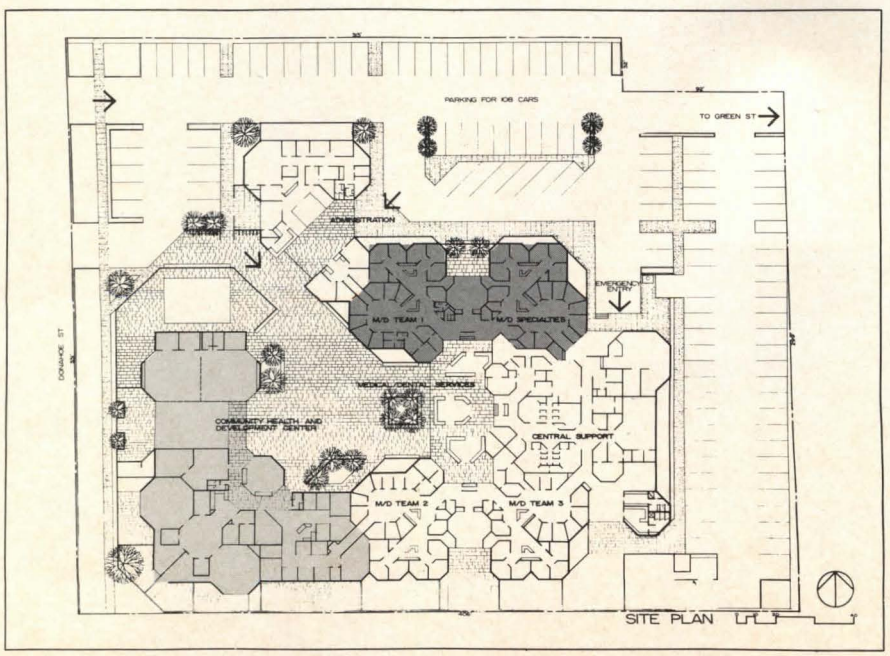
1 FURNITURE AND EQUIPMENT STORAGE
2 CHILD CARE EQUIPMENT STORAGE
3 TOILETS
4 CHILD CARE DIRECTOR
5 DAY CARE (EMPLOYEE CHILDREN)
6 CHILD CARE (PATIENT CHILDREN)
7 DINING/MULTI-PURPOSE
8 KITCHEN
9 HOMECARE WORKSHOP
10 HOME ECONOMIST AND NUTRITIONIST
11 TOILET
12 PSYCHIATRIC SECRETARY AND TRAINEE
13 PSYCHIATRIC SOCIAL WORKER
14 COMMUNITY HEALTH AIDES
15 COMMUNITY HEALTH AIDES
16 PSYCHIATRIST
17 PSYCHOLOGIST
18 GROUP THERAPY
19 FAMILY AND SMALL GROUP THERAPY
20 SUB-WAITING
21 WAITING
22 HEALTH THEATER
23 STORAGE
24 NEW PATIENT COMMUNITY WORKERS
25 NEW PATIENT TYPIST AND TRAINEE
26 NEW PATIENT MEETING ROOMS
27 SOCIAL SERVICE SECRETARY AND TRAINEE
28 HEALTH EDUCATOR
29 EDUCATIONAL COORDINATOR
30 COMMUNITY EMPLOYMENT COORDINATOR
31 UNASSIGNED
32 UNASSIGNED
33 EPA BOARD OF DIRECTORS OFFICE
34 EPA BOARD SECRETARY
35 COMMUNITY ORGANIZERS
36 TRAINING ROOM
37 BUSINESS AND AUDIO-VISUAL EQUIPMENT
38 VENDING MACHINES
39 ENCLOSED OUTDOOR COURT
40 EMERGENCY HOLDING AND TREATMENT

COMMUNITY HEALTH AND DEVELOPMENT CENTER



1 TEAM I AND SPECIALTIES WAITING
2 RECEPTIONIST AND TRAINEE
3 GROUP THERAPY AND CLINIC
4 STORAGE
5 PUBLIC HEALTH NURSE
6 FAMILY HEALTH AIDS
7 CONFERENCE
8 EXAM
9 DOCTORS OFFICE SPACE
10 PEDIATRIC EXAM
11 PEDIATRIC TREATMENT
12 GENERAL MEDICINE
13 UROLOGY/PROCTOLOGY
14 OBSTETRICS/GYNECOLOGY
15 GENERAL MEDICINE
16 GENERAL MEDICINE
17 M/D CLERK STATION
18 WOMENS TOILET
19 MENS TOILET
20 DENTISTS OFFICE
21 LOCAL DENTAL LABORATORY
22 DENTAL OPERATORY
23 DENTAL DIRECTORS OPERATORY
24 DENTAL AIDE STATION
25 MECHANICAL EQUIPMENT
26 OPTOMOTRY/FITTING
27 EMERGENCY/SURGERY
28 EXAM
29 ORTHOPEDICS/PHYSICAL THERAPY
30 WET ROOM
31 OPTHAMOLOGY/ENT
32 EXAM
33 HYGIENISTS OFFICE
34 DENTAL HYIENE OPERATORY 3
35 DENTAL HYGIENE OPERATORY 4
36 DENTAL OPERATORY
37 ORTHODONTIA/ORAL SURGERY
38 ORTHODONTIA/ORAL SURGERY
39 ENCLOSED OUTDOOR COURT
40 PRIVATE VIEW COURT
41 SUB-WAITING
42 EXERCISE YARD

MEDICAL/DENTAL TEAM Nº 1 AND SPECIALTY UNIT



SITE PLAN

SPECIFICATIONS CLINIC

SPEC SEMINARS

BY HAROLD J. ROSEN

The CSI sponsors courses to update specifiers in the uses of new materials and techniques in construction. Rosen is Chief Specifications Writer for Skidmore, Owings & Merrill, New York City.

In the fall of 1967, the New York Chapter of the Construction Specifications Institute conducted a course in the basic principles of specifications writing. This course was the first of its kind offered anywhere to practicing architects and engineers. Seventy-five professionals took advantage of the opportunity to obtain a better insight into specifications and its relationship to the other contract documents. About 30 hours were devoted to class time, and additional time was spent by the participants in the preparation of assignments. The course was repeated this fall.

The University of Wisconsin's University Extension offered a similar course at Madison last summer. Three of the New York Chapter instructors undertook to teach the same course to 20 registrants from all sections of the country for a two-week period. Between 50 and 60 hours were spent in teaching and workshop sessions.

In both instances, the comments were favorable. However, the mature, working professionals (as opposed to undergraduate college students) recognized the importance of the information relating to specifications, and they invariably asked that consideration be given to seminars devoted to the latest developments in materials, construction techniques and the use of computers in the field of architecture and engineering.

The need for a course in materials is quite evident. Since World War II, there has been a remarkable growth in the number and kind of man-made materials. These are the result primarily of an ever-increasing use of the products of chemistry and metallurgy in building materials and components. Unfortunately, there has been no medium to provide either the undergraduate or the practicing architect and engineer with updated information in the field of basic materials engineering or advanced materials technology. The New York Chapter of CSI is now preparing a curriculum of study in that area.

The course will attempt to follow the CSI format in the arrangement of materials to be studied, and how the knowledge is to be used in designing, detailing, and specifying.

Commencing with Division 2, Site Work, the course will provide information on soils classification (porous, cohesive and cohesiveless) soils compaction (optimum moisture, density, field tests), dewatering (well points, footing drains) rock excavation (blasting, payment). This should give the architect and engineer a better understanding of foundation design, how to write specifications for compaction of tills, how to measure and pay for rock excavation and how to observe conditions in the field related to these problems.

There will be a lecture devoted to piles, and a session on asphalt paving. The subject of piles will encompass jetting, test loads, misplaced piles and methods of payment. The course in paving will include design of base courses, binder courses and wearing surfaces for roads, parking lots and service areas.

Division 3, Concrete, will include the ingredients of concrete (cement, aggregates), admixtures, mix designs, testing, forms, placing, stripping, curing and finishing. Architectural concrete will include special treatments. Precast concrete will include special aggregates, form requirements, abrasive blasting, bush hammering and special treatments. Precast concrete will include forming, aggregates, finishes and methods of anchoring to building frames. Concrete construction will include prestressed concrete, tilt-up construction, lift slab and slip forming.

Division 4, Masonry, will include unit masonry materials (brick, concrete block, structural facing tile, gypsum block) mortars, anchorage, quarried stone (limestone, marble, granite flagstone) and design requirements for cavity wall construction and reinforced brick masonry.

Division 5, Metals, will encompass such studies as machine shop practice (metal working, welding, forming, brazing), structural metals, fasteners, weathered steel, anodizing and hard coat finishing of aluminum, stainless steel, and bronze.

Division 6, Carpentry, will include wood and wood products, species of wood, preservative and fire protection treatments, plywood, glulam, woodworking techniques, cabinet work, and finishing.

Division 7, Moisture Control, will discuss new developments in elastomeric waterproofing and roofing (including neoprene, butyl, vinyl and EPDM sheets), and liquid applications such as coal-tar polysulfides and asphalt-polyurethane combinations. Sealants including their properties and design considerations will be discussed in depth.

The other divisions will be covered in a similar manner. In each instance, experts will be brought in to expound on the materials, and the specifications consultant instructors of the New York Chapter will highlight the pitfalls and precautions to be exercised in selecting and using the materials in designing, detailing, specifying, and supervision.

The course in materials technology is planned to commence in February 1969 and will be conducted for two semesters of about 60 hours of classroom instruction.

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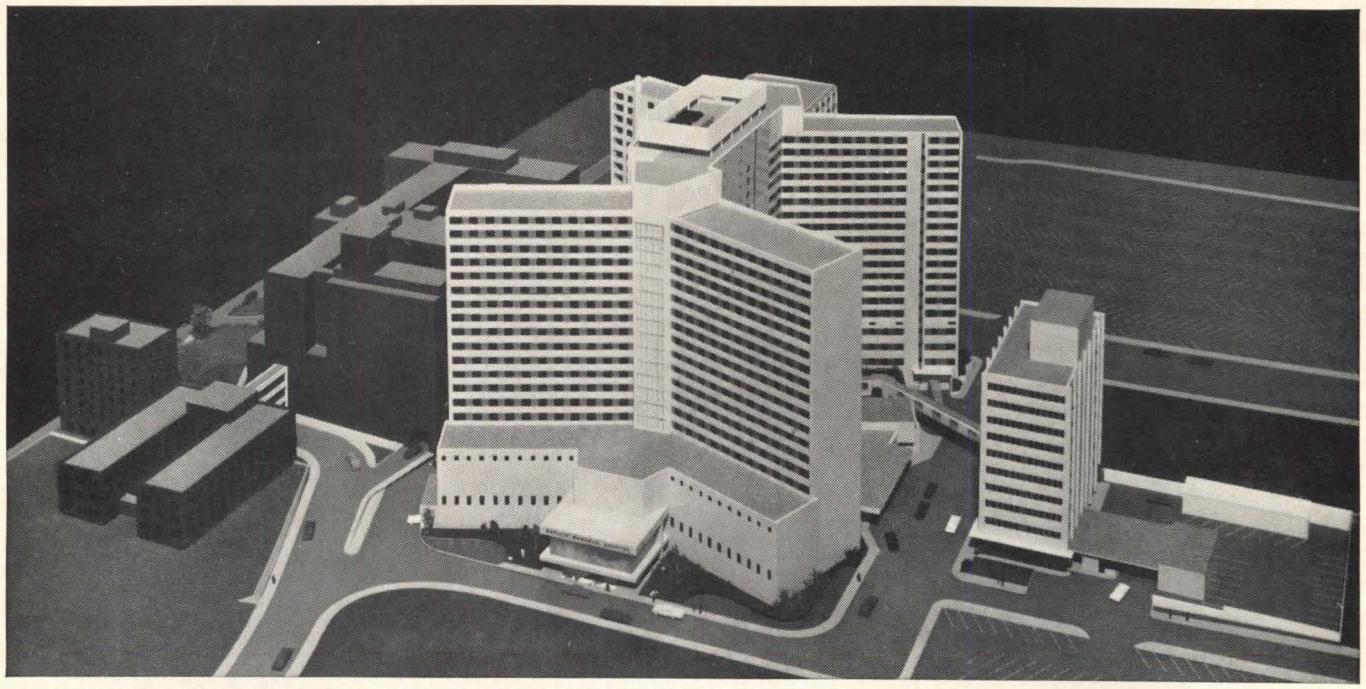

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Baptist Memorial Hospital—Memphis

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10. Radiation Therapy

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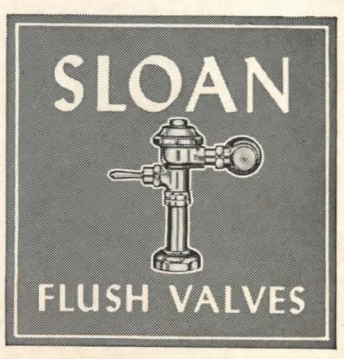

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IT'S THE LAW

DAMAGES AND DELAY

BY BERNARD TOMSON AND NORMAN COPLAN

P/A's legal team discusses a recent case in New York where failure to coordinate the performance of the prime contractors subjected the owner, and ultimately the architect, to liability for damages due to delay.

Where there are two or more prime contractors on a project, the owner's failure to coordinate their performance effectively may subject him to liability for damages arising from delay. Since any duty of the owner in respect to coordination is usually the function and responsibility of the architect, failure to coordinate effectively may also subject the architect to liability for damages.

If, due to an inadequate performance, one prime contractor is delaying another prime contractor, what steps should be taken by owner and architect to satisfy any obligation of coordination and to avoid thereby any future claim of liability? There is no clear-cut answer to this question. Although the construction contract may provide sanctions in the event of the failure of performance of a contractor, the unihibited use of such sanctions may further delay the project rather than expedite it. Some owners have sought to avoid claims of this nature by providing in the construction contract that any delays sustained by the contractor shall not be charged against the owner; in this case, the contractor's sole course of action is to secure time to perform. Judicial interpretation of this type of clause has often negated its objective and its validity is questionable.

Illustrative of the hazards to which an owner or architect may be subject on a multiple construction contract project is the recent case of *Forest Electric Corporation* v. *State of New York*, 292 N.Y.S. 2d 589, involving the construction of a state hospital. Under the requirements of the state, separate prime contracts had been made with contractors for general construction, heating, electrical, sanitary work, refrigeration, elevator work, and food service equipment. The anticipated time of construction was approximately 2½ years, but the work was not completed and accepted until the end of 4½ years. The electrical contractor, however, had performed 98 per cent of his work in approximately two years. Therefore, the electrical contractor asserted a claim for damages arising from the delay to his work, alleging that the owner had failed "to coordinate the performance and enforce the timely progress of the work of the various contractors, in particular that of the contractor for general construction." The electrical contractor was awarded a judgment for damages by the trial court and this judgment was appealed.

In defense of this appeal, the owner contended that the construction contract barred any action against him for delays to the contractor from any cause whatsoever. The State Architects' Standard Mechanical Specifications, which were part of the contract documents, provided as follows:

> "No charges or claim for damages shall be made by the contractor for any ordinary delays or hindrances from any cause whatsoever during the progress of any portion of the work embraced in this contract. Such delays or hindrances shall be compensated for by an extension of time as above provided."

In rejecting the contention of the state, the Appellate Court concluded that the delays involved were not "ordinary," and the provision of the construction contract above quoted was therefore inapplicable.

In further defense of the appeal, the owner asserted that he had made reasonable effort to coordinate the work and that the alleged failure of the owner to enforce or threaten penalties or sanctions contained in the contract for general construction was a matter of judgment and discretion on the part of the owner, for which he could not be held responsible to the electrical contractor. The Appellate Court, however, concluded that the efforts of the state had not been shown to be sufficient to satisfy its obligation. The Court stated:

> "The State concedes . . . there existed an obligation requiring the State . . . to keep the work of all the contractors progressing so that no contractor would be damaged as a result of delays caused by another . . .
>
> "Concededly, claimant frequently complained to the State of delays on the part of the general contractor hindering claimant's work; and although the State's engineer testified that he met daily with all of the contractors to hear their complaints, he said that to effect the necessary coordination he held joint meetings with the prime contractors on but seven occasions during these years, and his brief testtimony as to these meetings is so completely generalized and so devoid of any specifics as to afford no indication of any hard effort or anything more than discussions; the subject 'generally was the work that the [general construction] contractor anticipated doing in the future.' The question thus became, not what the State's representatives might have done or could have done, or whether, as the State contends, the omission to enforce or threaten penalties or sanctions was purely a matter of judgment for which the State is not answerable to claimant; but, whether, in this case, the State made any serious and substantial effort to progress and coordinate the work. Certainly, it would seem incumbent upon the State, once there had been shown a delay of two years in the performance of a two-year contract, to demonstrate pressure or effort of some kind more substantial and sustained than the infrequent discussions to which the engineer testified."

Because there is no contractual relationship between a contractor and the architect, a contractor who has been delayed by another contractor can have no direct recourse against an architect or engineer for alleged damages sustained. However, if such a claim is asserted against the owner, the owner may, in turn, contend that the architect has not properly performed under the architectural contract and may seek indemnification for any liability he might have to the contractor. In view of the additional services that must be performed and the potential liabilities that may be incurred in the coordination by the architect or engineer of multiple prime contractors, the architect or engineer should insist that his fee reflect these additional responsibilities.

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PEVSNER'S PIONEERS

BY PETER COLLINS

THE SOURCES OF MODERN ARCHITECTURE AND DESIGN. *By Nikolaus Pevsner. Frederick A. Praeger, 111 Fourth Ave., New York, N.Y., 1968. 216 pp., illus., $7.50. The reviewer is Professor of Architecture at McGill University, currently on sabbatical studying law at the Yale Law School in New Haven, Conn.*

On first perusal, this book appears to be a de luxe edition of the same author's *Pioneers of Modern Design*, which in turn was a de luxe edition of his *Pioneers of the Modern Movement*, first published in English in 1936 on the basis of a "short preliminary account" published in German in a lengthy review of the first volume of Le Corbusier's *Works*. On closer inspection, however, it will be seen that that *The Sources of Modern Architecture and Design* is not so much a rearranged and refurbished edition of the *Pioneers* as an unusually successful endeavor to rewrite this early work in the light of all the research and reappraisal accomplished in the last 30 years.

The most important revision is the suppression of Chapter 3, "1890 in Painting," and the expansion of the chapter on Art Nouveau. This change constitutes a valuable recognition of the fact that Chapter 3 of the *Pioneers* can now be seen, in retrospect, to be alien and detrimental to the whole thesis of the original book. Similarly, the expansion of the chapter on Art Nouveau corresponds to Pevsner's thesis, (now, therefore, fully formulated in *The Sources of Modern Architecture and Design*), that Art Nouveau's historical significance lies in "its refusal to continue with the historicism of the 19th Century, its courage in trusting its own inventiveness, and its concern with objects for use rather than with paintings and statues."

Whether or not the reader will agree with these assertions, it is impossible to deny that the text and illustrations now permit a far more effective assessment of Pevsner's thesis than was possible in the *Pioneers*. Not that the expansion of the chapter on Art Nouveau is uniformly beneficial. Apart from the author's funambulatory extravagance in trying to link all the exponents of Art Nouveau together (e.g., "Even some of Guimard's forms are the only causeway by which we can safely reach Gaudí"), his craving to tell the whole truth, as well as nothing but the truth, sometimes leads to embarrassing bathos. The picture of Emile Gallé's "great Butterfly Bed of 1904" is not enhanced by the information that Gallé "watched its completion from an invalid chair and died the same year." Similarly, the lengthy encomium on Tony Garnier could have been terminated more aptly than by asserting that "Garnier never had an opportunity to realize anything as bold and sweeping as the *Cité Industrielle*, but in the Public Slaughterhouse at Lyons, built 1906–13, he did demonstrate dignity in industrial architecture."

On the other hand, some of Pevsner's remarks seem unnecessarily cryptic, even allowing for the need to cram so many names and observations into such restricted space. For example, he refers three times to the Grand Duke of Hesse (on one occasion misspelt as "Hessen"), and we can only assume that this repetitious reference is intended to emphasize the author's thesis that the "Modern Movement" was essentially English in origin, an assumption reinforced by the remark that His Serene Highness was "a grandson of Queen Victoria." But if this was the purpose of the references, they would surely have constituted more compelling evidence if Pevsner had added that the Grand Duchess was also a grandchild of Queen Victoria, and that the Grand Duke's sister married an English nobleman (eventually becoming the mother of Lord Mountbatten and the grandmother of the Duke of Edinburgh).

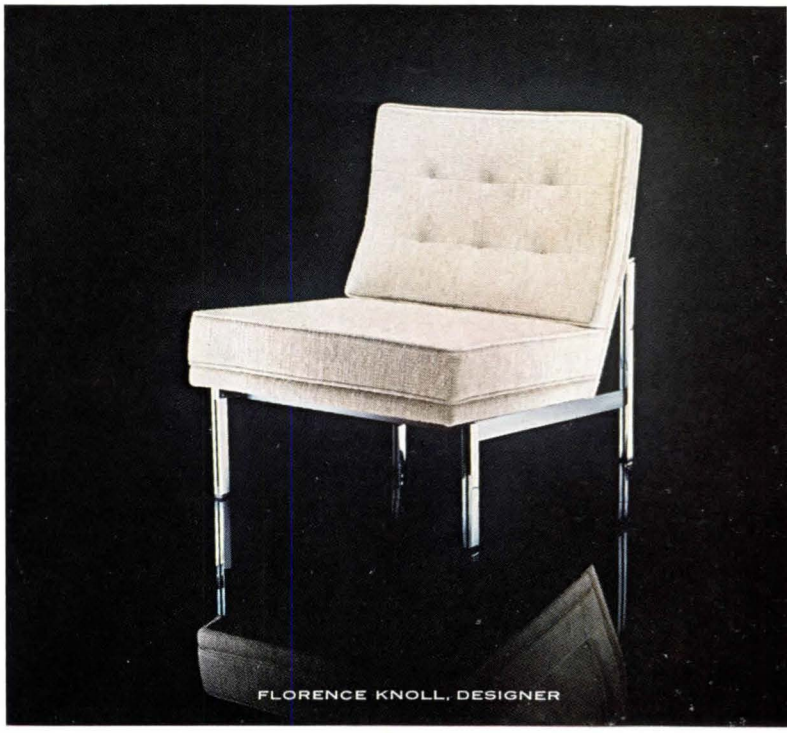
Nevertheless, the only real flaw in this book seems to be Pevsner's stereotyped standards of criticism. Perhaps it was appropriate, as well as convenient, in such a concise history of modern architecture and furniture, to distinguish the bad guys from the good guys by the simple formula: "He [i.e., William Morris] made young painters and architects in all countries turn to craft or design." But the facts do not fit the formula even in Pevsner's book, let alone in less tendentious books, such as Hitchcock's *Architecture: 19th and 20th Centuries*.

The second stereotype which pervades this book is best exemplified by the remarks concerning Alfred Gilbert's silver table-centre. Gilbert may well have been "the greatest English master of Art Nouveau sculpture," and it may well be appropriate to praise his work with such terms as "gristly," "crustaceous," "writhing," "sinister" and "grotesque." But if we compare this silverware with the 1851 silverware derided by Pevsner in the second chapter of *The Pioneers of Modern Design*, we are surely entitled to ask why the 1851 silverware makes Pevsner "particularly indignant," and why it demonstrates "the monstrous insensibility of the artist towards the beauty of pure shape, pure material, pure decorative pattern."

The third stereotype is best exemplified by such sibylline generalizations as: "Mackintosh alone could be a witness for the defense and for the prosecution of both Art Nouveau and Anti-Art Nouveau." If the reader repeats this phrase to himself ten times, I think he will agree that the only possible response is that whilst, as a generalization, it is indubitably pregnant with significance, there is always the possibility that the converse of its implications need not necessarily be untrue.

Despite these minor blemishes, *The Sources of Modern Architecture and Design* not only distills the essence of *Pioneers of Modern Design*, but reinforces the thesis already formulated in that book, as a result of new, clearer organization, new additional facts and new colored illustrations. As such, it is an indispensable companion volume to *Pioneers of Modern Design*, though those who have read neither will be placed in the agonizing quandary of having to decide which to read first.

Continued on page 155



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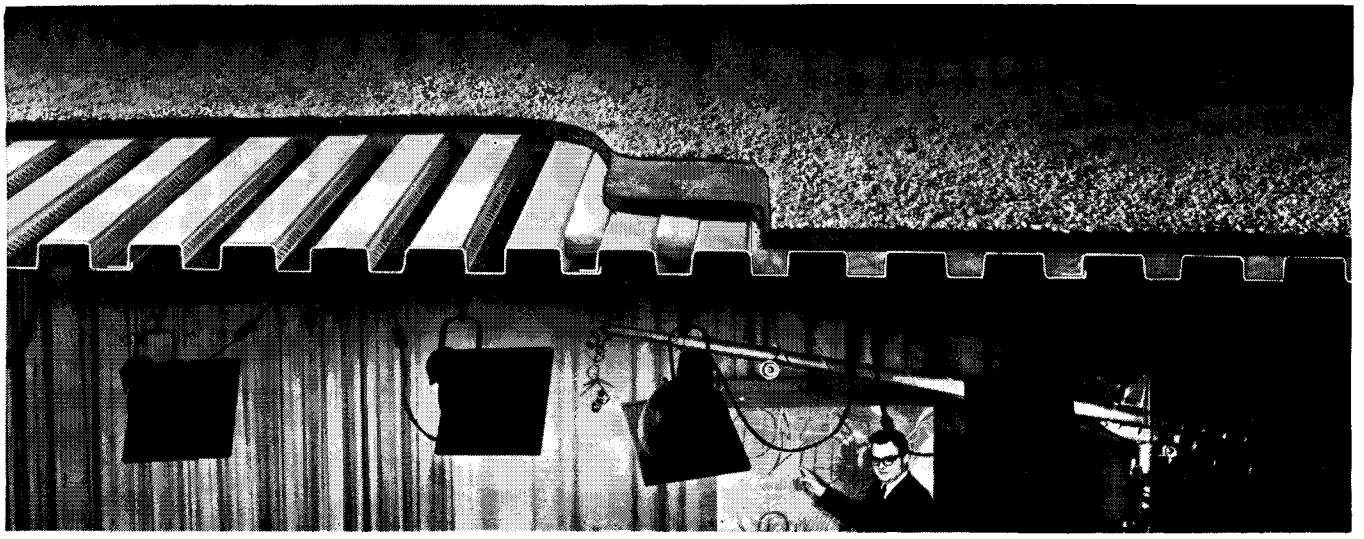

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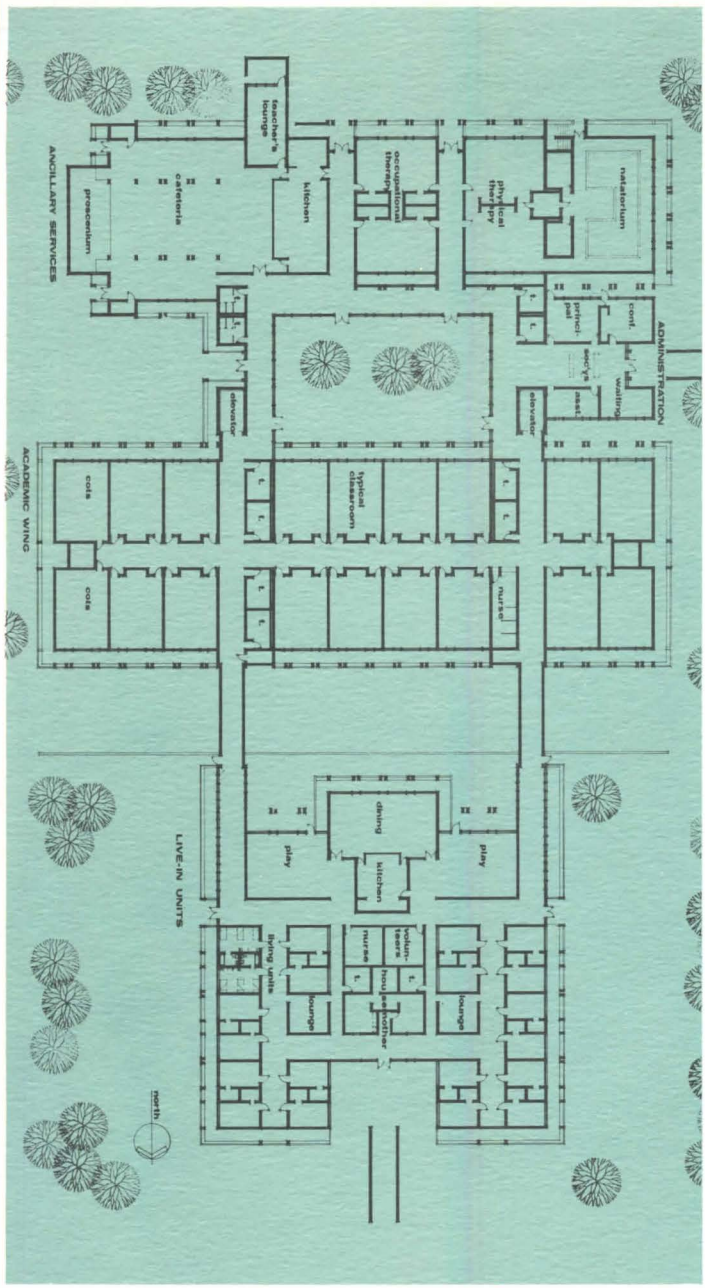

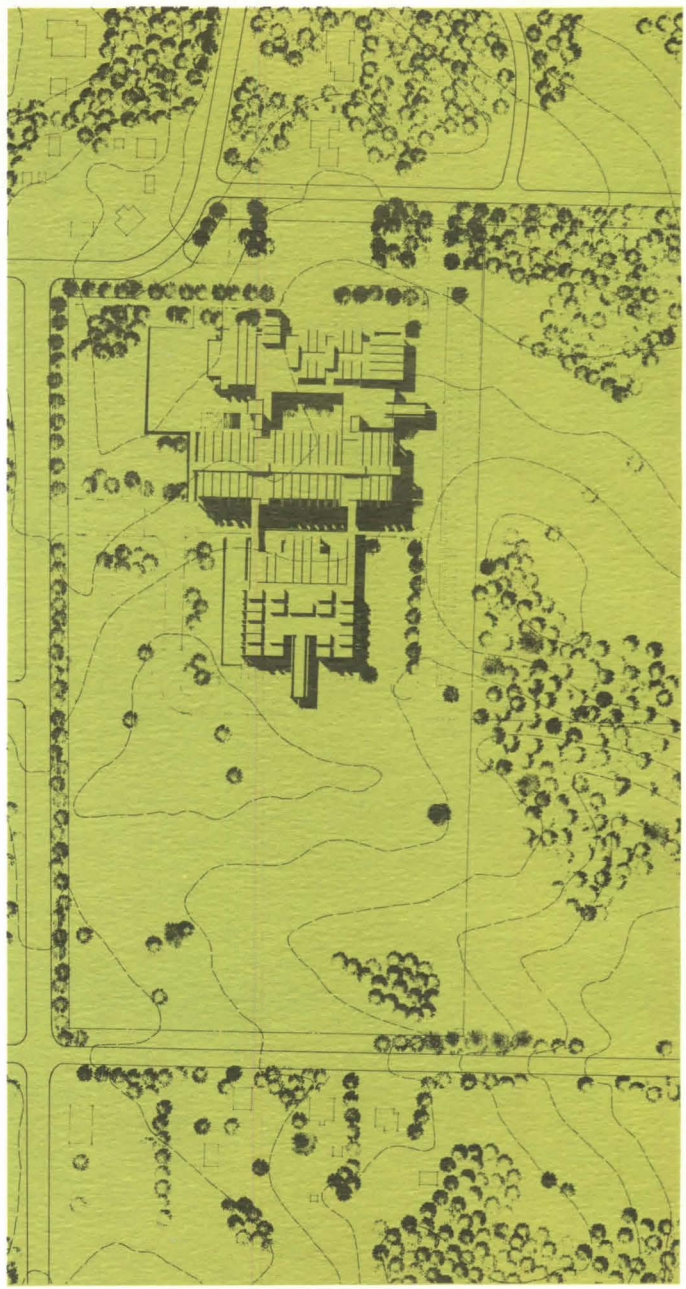

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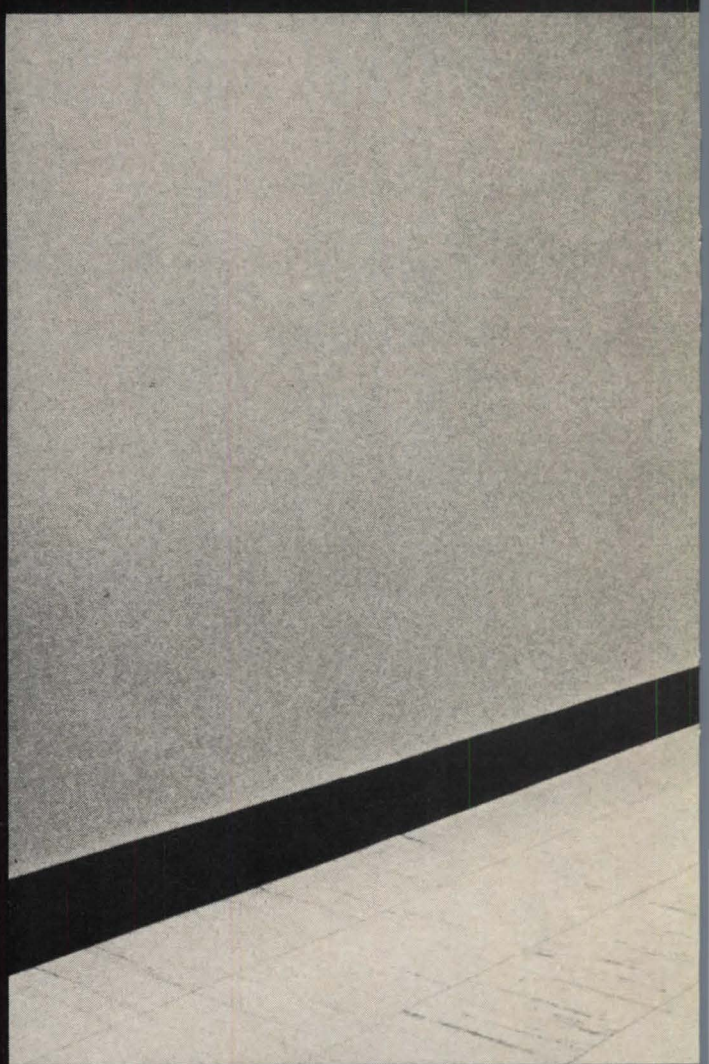

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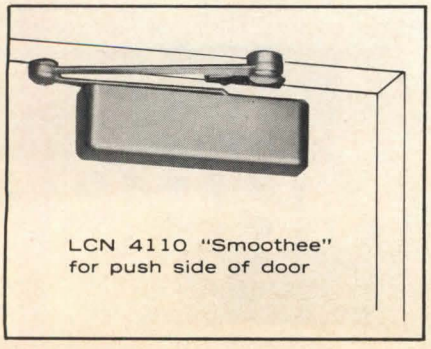

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Continued from page 144

Exhibitions for Queuers

BY BRYAN SCRIVEN

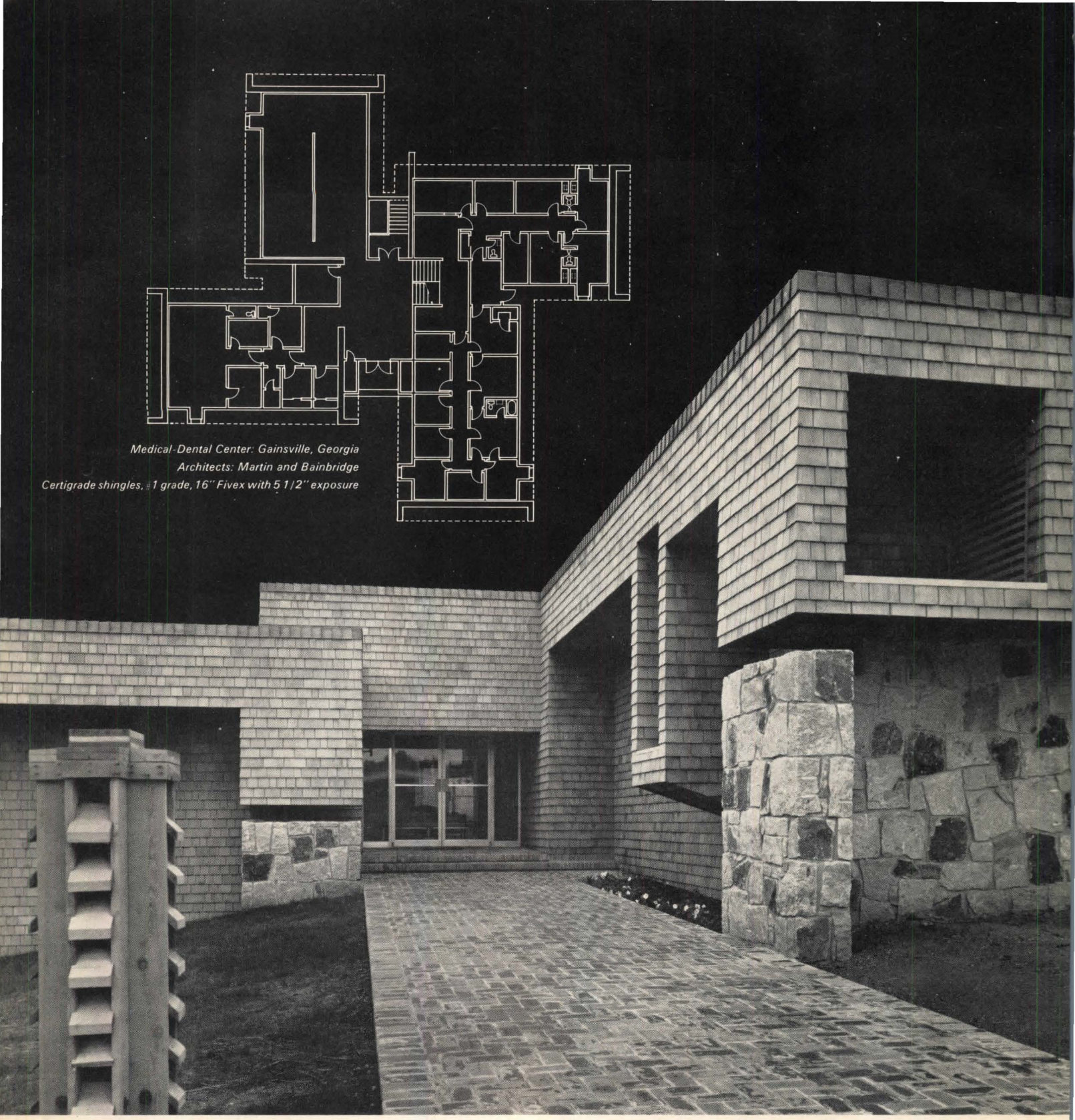
EXPOSITIONS, EXHIBITS, INDUSTRIAL AND TRADE FAIRS. *By Wolfgang Clasen. Translated from the German by E. Rockwell. Frederick A. Praeger, 111 Fourth Avenue, New York, N.Y. 1968. 205 pp. illus. $17.50. The reviewer, an architect practicing in New York City, is also a teacher at Pratt Institute, New York.*

This is a style book, a compendium of photographs and descriptions of all the notable exhibitions since 1962: the World Fairs at Seattle, New York, and Montreal; the Milan Triennale; the Swiss National Exhibition at Lausanne, and many others. The emphasis is on German and Italian exhibits. The book is an indispensable reference for the exhibition designer, although still inadequate.

There are many books on architecture and design of this type that seem to conform to some international standard. They all have the same faults: They consider only the visual aspects of design and omit everything else. Although they contain very little technical information, they are meaningless to people outside the design professions. Photographs and drawings are chosen for their graphic quality, not as a way of explaining the structures; in only one case in this book were the viewpoints of photographs marked on the plan. The description and criticism of any structure by photographs, drawings, and words, is difficult and exacting and is almost always badly done in glossy, hardcover books.

Clasen gives first place to World Fairs; these are the most visited, most expensive of exhibitions, although I think not the generators of the most exciting ideas. At first glance, it is surprising that World Fairs, belonging as they do to the 19th Century, should have survived into this age of universal technology and television. Technological achievment has ceased to amaze; nothing built at Expo 68 could rival the excitement caused by the Crystal Palace in 1851 or the Eiffel Tower of 1889 — the Towers of Babel of that age. The equivalent today would be the Apollo space capsule (it has long ceased to be a building or structure), but, even so, no space probe ever caused as much popular enthusiasm as Lindbergh's flight of the Atlantic. The chief attraction is no longer the exhibits or the structures that house them, but the gathering, a place to be, a "be-in." The organizers of World Fairs have not yet realized this.

Continued on page 160



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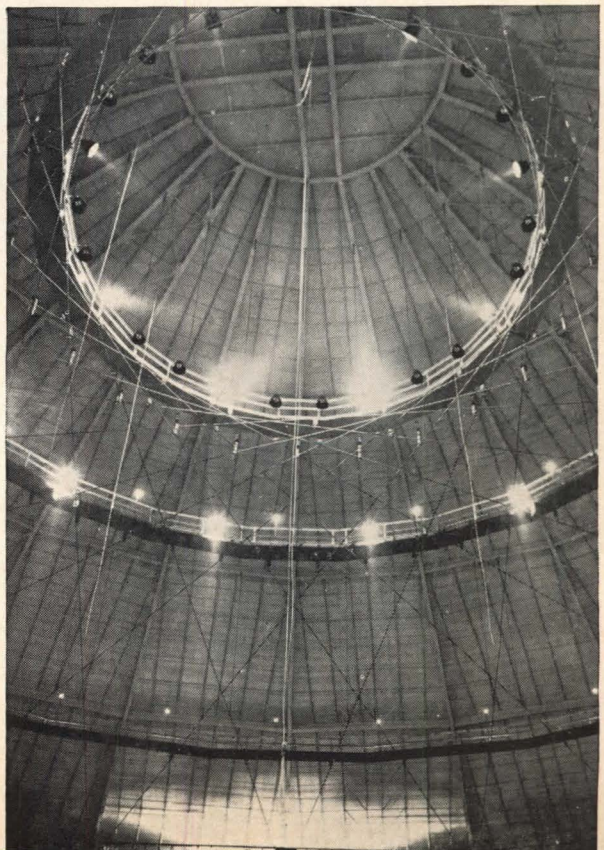

Note the off-center, non-radial, wheel-spoke system. With the tension ring eliminated, the public address system may be raised and lowered through the open "hub."

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Architect: Brubaker & Brandt **Engineer:** Fling & Eeman, Inc. **Steelwork:** Bristol Steel & Iron Works, Inc. **General Contractor:** Knowlton Construction Co.

BETHLEHEM STEEL

Continued from page 155

Clasen did not see fit to show photographs of pavilions with lines of people out front, although this has been my strongest impression of World Fairs. At Montreal, there was often a three-hour wait for an exhibit seen in 30 minutes. The queue, therefore, is an important part of the experience. Perhaps people like to wait in line; I have heard that some people were involved in as many as three three-hour waits to visit the Czech pavilion and that the queue for the English pavilion was the start of several romances. There was more camaraderie in the line than inside the pavilions. But does the waiting have to be dreary, like a Moscow bread queue? Does the shared discomfort bring people together more than shared pleasure? There have been attempts to design for the queue. At the IBM pavilion at the New York World's Fair, the queue advanced along a series of platforms and stairs held by the supporting structure. It was sheltered, and the queuer's view of the fair changed interestingly as the line moved forward. The U.S. pavilion at Montreal tried to eliminate the queue altogether by increasing the size of the exhibits wherever possible, by eliminating detail, and by speeding the tempo of the visit with an escalator.

Habitat at Montreal was not included. The author obviously thought that it could not be classified as an exhibit, although many people who are struck by the immense waste of World Fairs — built to last a year — think that Habitat is what exhibitions should be, so that structures do not have to be demolished or senselessly converted and something of worth is left behind. Moshe Safdie had a vision beyond the vague "Man and His World" theme of Expo and its games of national prestige. It was to use Expo as a means of demonstrating how the problems of public housing could be solved without neglecting the full complexity of human nature and human needs. As such, Habitat was a brilliant failure. It has an historical precedent in the model workers' cottages designed for the Great Exhibition of 1851 by that gifted amateur, Prince Albert, sponsor of the exhibition. Although designed for emulation throughout the kingdom, no more than a row were ever built.

NOTICES

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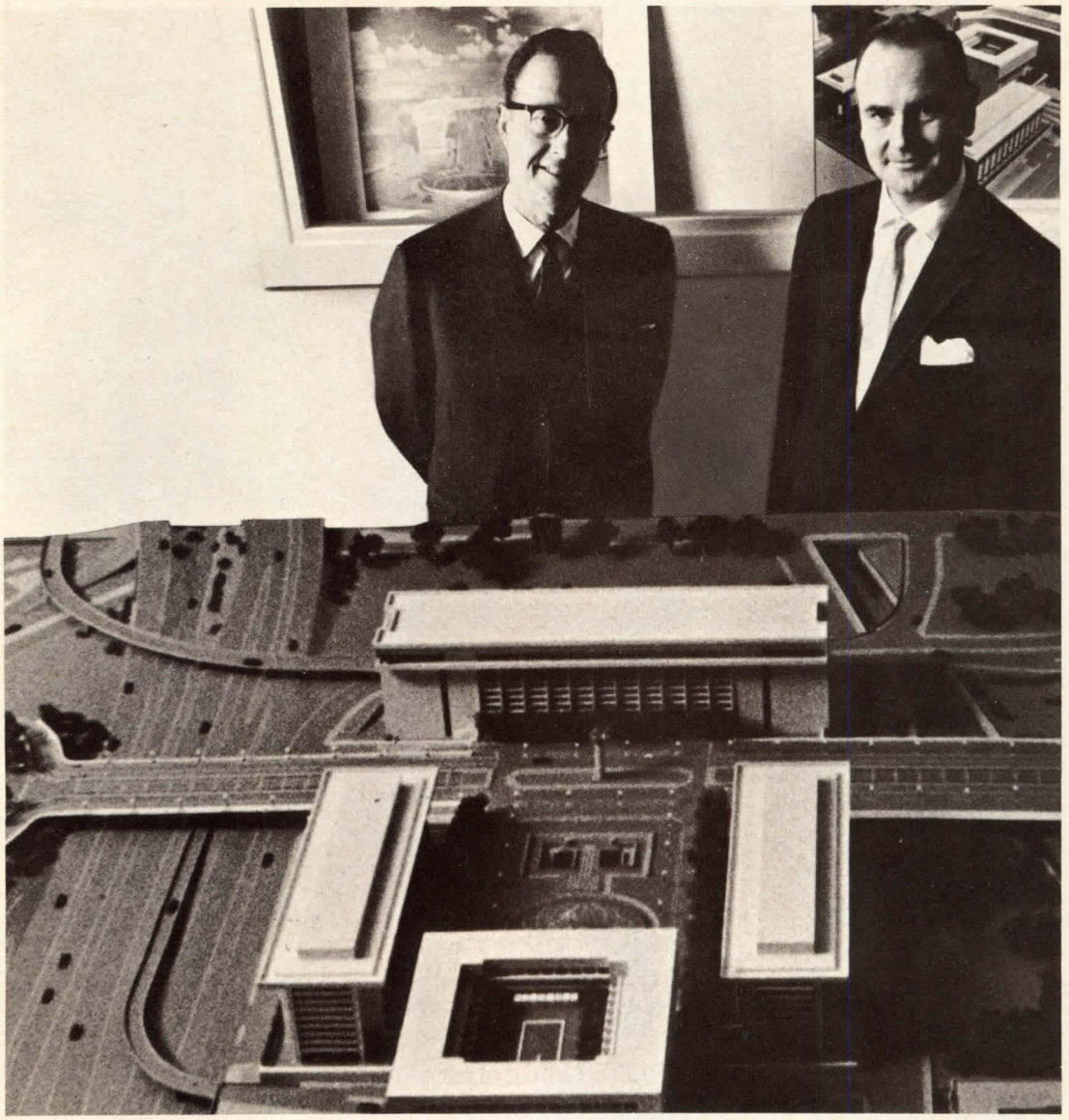

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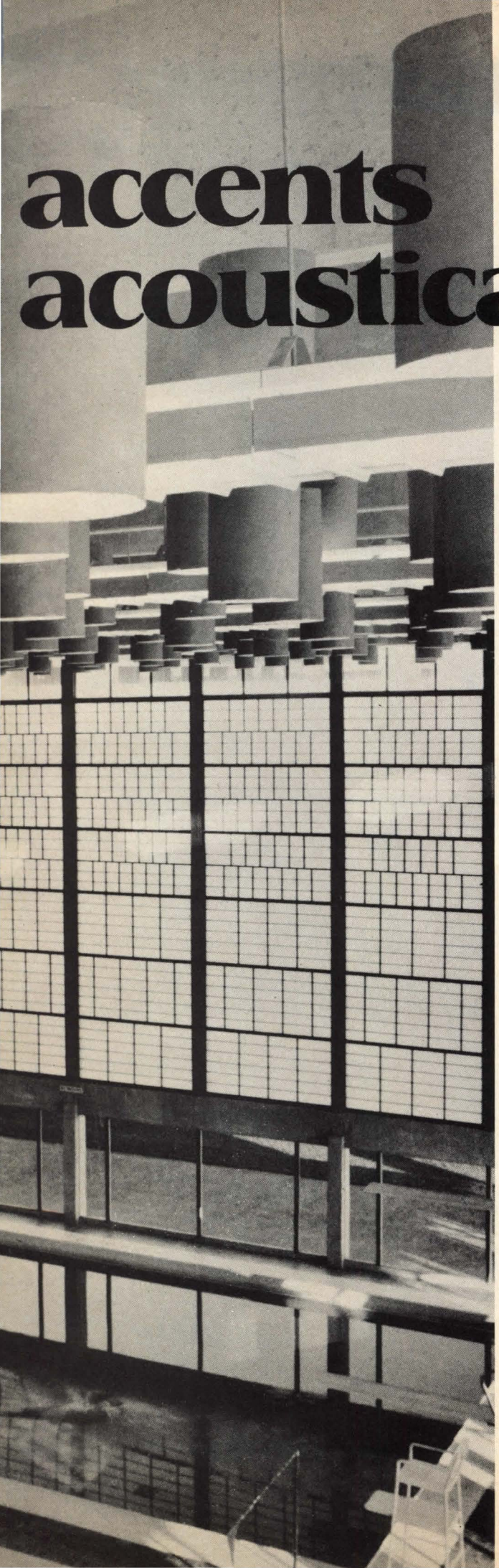

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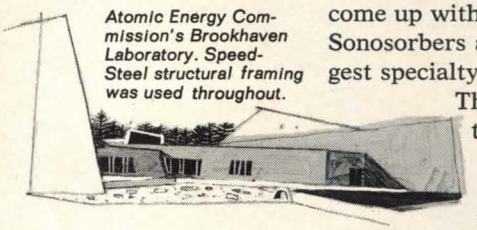

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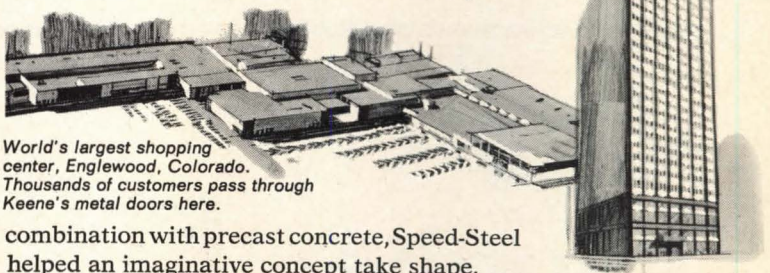

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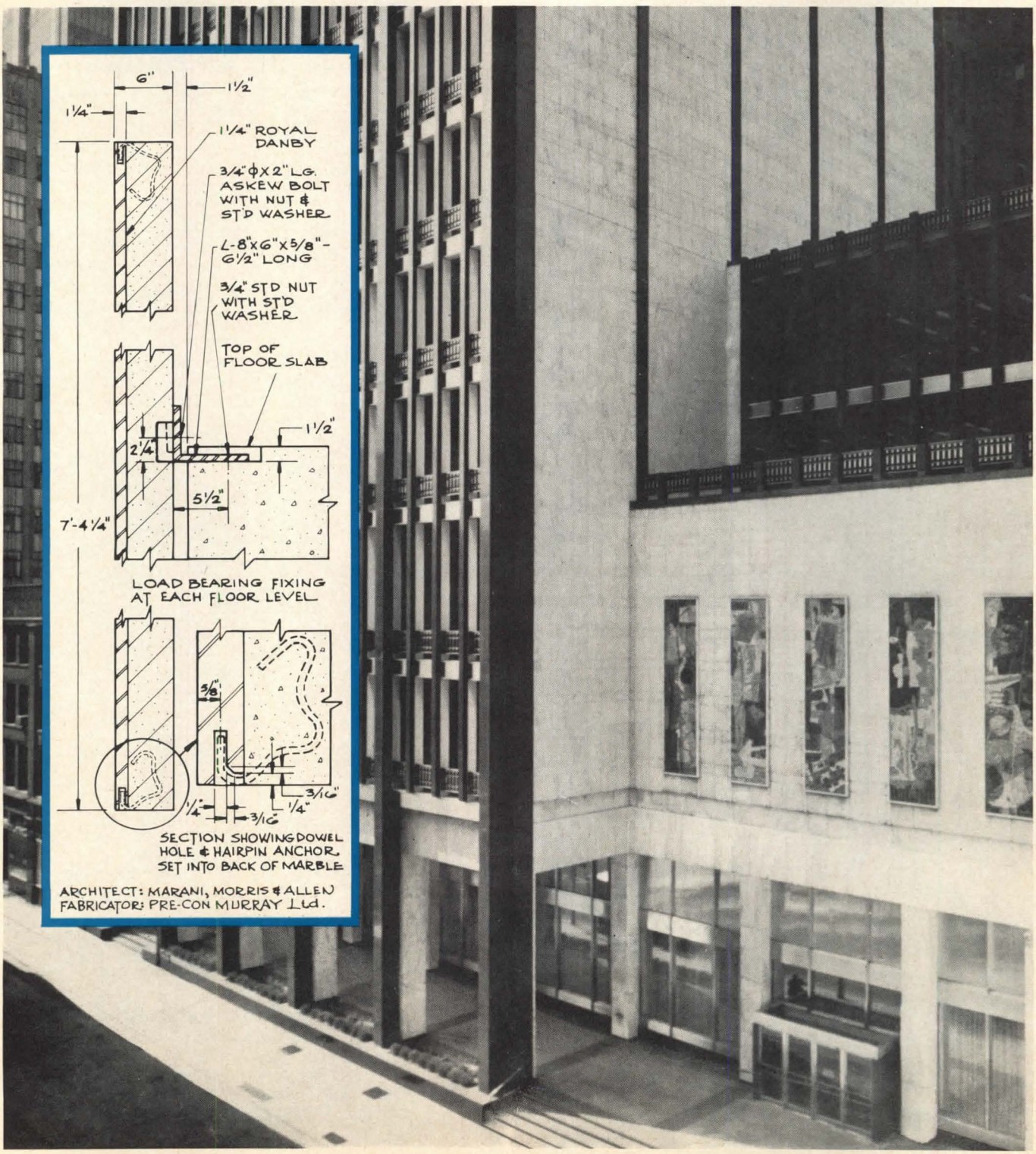

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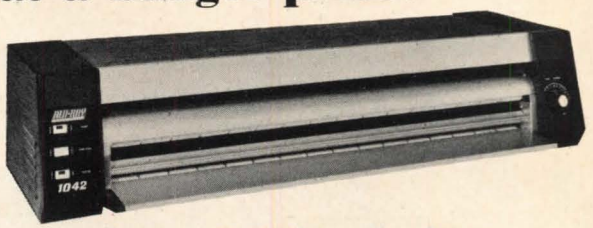

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Model 1042 is the big producer in our line of low-cost, compact whiteprinters. It challenges the output of big costly printers.

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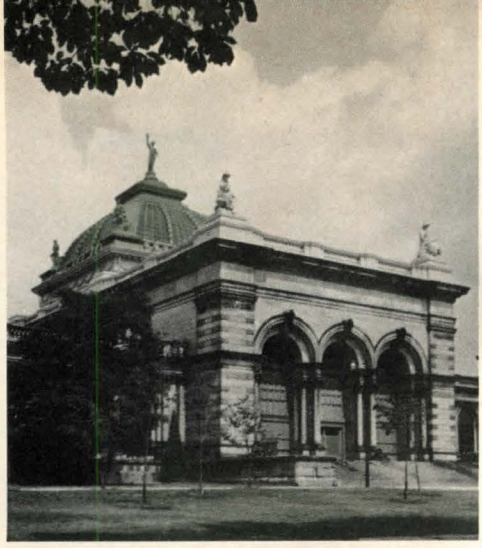

Memorial Hall in Philadelphia, erected for the 1876 Centennial Exposition. The statue of "Columbia" at the dome top, the dome's supporting members and the statuary groups at the corners of the building were all coated with PLY-LASTIC.

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Continued from page 160

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ERCHUL-TANIDA-HART & ASSOCIATES, Architects, Engineers, Planners, 530 Broadway, San Diego, Calif. 92101.

ROBERT W. EVANS, Architect, 1111 A Street, Tacoma, Wash.

FLORANCE & COHALAN, Architects, 3502 Connecticut Ave., N.W., Washington, D.C. 20008.

JAMES FOLLENSBEE & ASSOCIATES, Architects, 920 N. Michigan Ave., Chicago, Ill. 60611.

FOSTER/DOERNBERG, INC., Architects, Interior and Graphic Designers, 129 Whitney Ave., New Haven, Conn. 06510.

Elections, Appointments

ALEXANDER & MOSKOWITZ, INC., Planners, New York, N.Y., announce the appointment of THEODORE E. ZOLLENDECK as principal planner.

BENHAM-BLAIR & AFFILIATES, Architects and Engineers, Oklahoma City, Okla., have named RICHARD J. RIVA to the position of business manager and administrative assistant for all the firm's offices.

CANDEUB, FLEISSIG ASSOCIATES, Planning Consultants, Newark, N.J., have made JOHN COLEMAN code enforcement training coordinator for the firm.

ELLIS/NAEYAERT ASSOCIATES, INC., Architects and Engineers, Warren, Mich., have added A. ROBERT BLIVEN to their staff as project manager.

A. EPSTEIN & SONS, INC., Architects and Engineers, Chicago, Ill., have promoted MICHAEL J. ROOT to the post of project manager in the manufacturing and warehouse division; HARRY J. SPITZER has become project manager in the same division, and JORDAN GARY MERTZ has been named chief designer for the entire firm.

New Partners, Associates

AMES BENNETT, Architect, Palm Beach, Fla., announces that JEFFREY A. ORNSTEIN has joined the firm as an associate.

BROWN, JEFFERSON, SOUTHERN, TAYLOR, HALE & ASSOCIATES, Architects, Brooklyn, N.Y., announce that JOHN D. COOKE has become a partner in the firm.

CAUDILL ROWLETT SCOTT, Architects, Engineers, Planners, Houston, Tex., have named the following associates: DONALD C. AXON, ANDREW BELSCHNER, WILLIAM T. CANNADY, EDITH A. CHERRY, LEE J. ENRIGHT, ALVIN EPPES, ROBERT HENDRICKSON, THOMAS A. HOOKER, PAUL A. KIEL, CHALMERS G. LONG, JR., FREDERICK A. PREISS, DALE J. RUCKSTUHL, FRANCIS G. WHITCOMB, and WILLIAM WRIGHT, JR.

LATHROP DOUGLASS, Architect, New York, N.Y., announces the advancement of ALFRED J. SZCZEPANSKI to the post of associate.

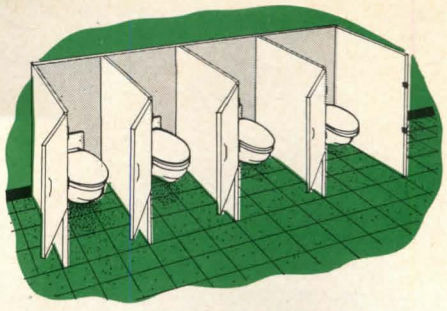
ENGELHARDT, ENGELHARDT & LEGGETT, INC., Educational Consultants, Purdys, N.Y., have named DR. KENNETH W. HUMPHRIES an associate in the firm.

Name Changes

MCCLARTY & SILVERTHORN, Architects, Bellevue, Wis., upon the addition of JAMES H. SILVERTHORN to the partnership; formerly, WILLIS R. MCCLARTY, Architect.

MCELVY, JENNEWEIN, STEFANY & HOWARD, Architects, Tampa, Fla., upon the admission of PRENTIS S. HOWARD to the partnership; formerly, MCELVY, JENNEWEIN, STEFANY.

if you "value-evaluate" the restrooms you will install off-the-floor fixtures



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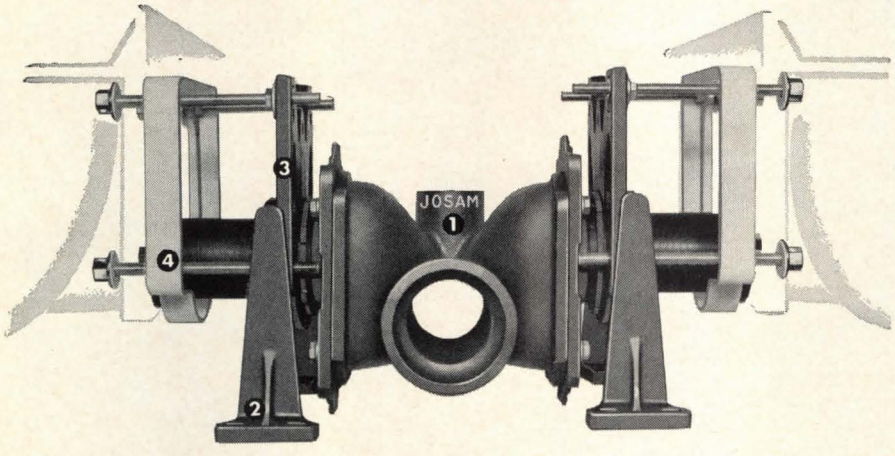

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Provides maximum strength . . . saves installation time

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Fits all types of toilets . . . saves handling time

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Simplifies alignment . . . saves time

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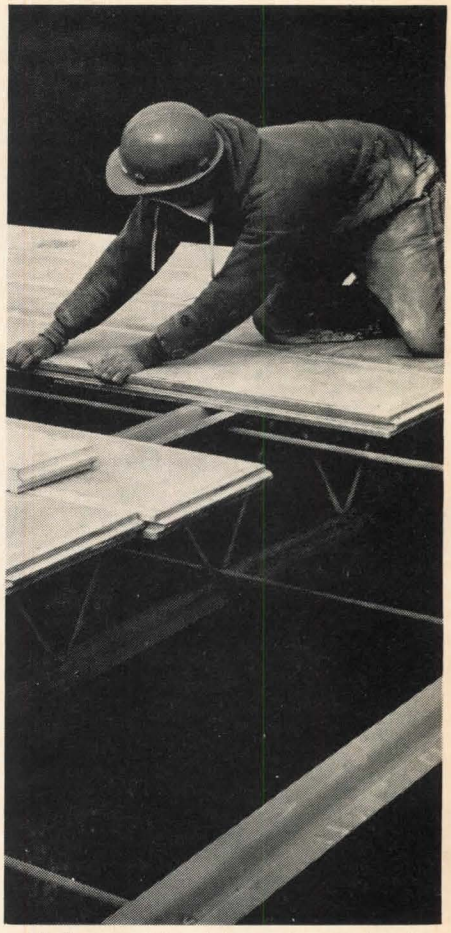
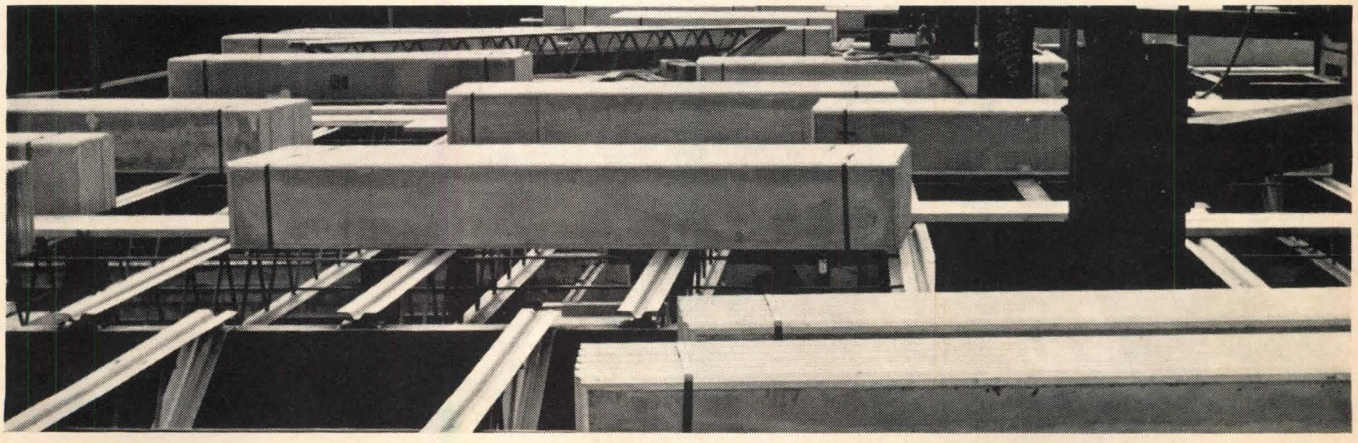
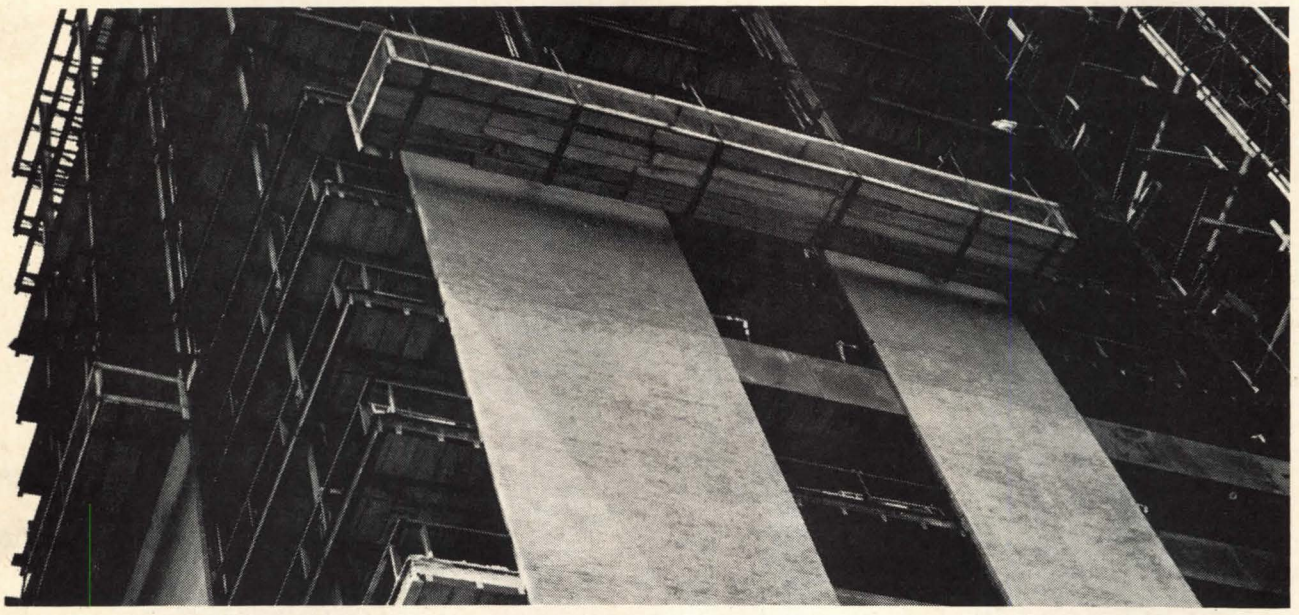


Steel-edged gypsum planks are welded to steel bar joists and to each other.



CRICKLEWOOD HILL APARTMENTS, Pittsburgh, Pa. Owner: Pittsburgh-Duquesne Development Corp. Architect: Joel *Robert Hillman* & Assoc. Structural Engineer: William Schimdt & Assoc. General Contractor: Mellon-Stuart Co. Steel Fabricator: Levinson Steel Co.

When steel goes up costs come down



Cricklewood Hill Apartments is costing less to build because of a steel frame and a new floor system. Chicago architect Joel Hillman has designed a steel-framed high-rise apartment building in which he estimates a savings of $500,000 under the cost of the originally conceived flat plate concrete design. Over-all construction efficiency, reduced foundation costs, reduced dead load in both the structural frame and floors, and the basic efficiency inherent in this new dry-floor system resulted in the savings which works out to about $2.30 per square foot.

The new dry-floor system consists of 2″ thick gypsum planks, manufactured by U. S. Gypsum Co., reinforced with 18 gage steel mesh and edged with 22 gage galvanized steel tongue-and-groove sections. Fitted together on top of steel joists, the planks are tack welded together and to the top flange of the joists. Troweled mastic, applied ½ inch thick, will level and provide a subfloor for the finished flooring when the building is completed.

As the gypsum planks are laid, they form a solid floor for workmen and stacked materials, obviating the need for temporary flooring.

The gypsum plank floors act as diaphragms, transferring lateral loads from the walls to the frame, where they are resisted by four K-braced bents across the building's 60-foot width, and one K-braced bent parallel to the 190-foot longitudinal axis.

The combination system of dry-floor and steel frame was jointly developed by U. S. Steel Corporation and U. S. Gypsum Company. The design was the outgrowth of research into low-cost floor-ceiling construction for low-income high-rise housing.

The braced steel frame uses A36 steel beams and some columns. The more heavily loaded columns are USS EX-TEN 42 and 50 High-Strength Low-Alloy Steels, with 42,000 and 50,000 psi minimum yield points, respectively.

The building's exposed spandrels are made of bare USS COR-TEN High-Strength Low-Alloy Steel. Left unpainted, bare COR-TEN Steel develops an attractive coating that retards further atmospheric corrosion.

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For a more detailed report on Cricklewood, ask for a copy of our "Structural Report" (ADUSS 27-3903-01) on the building. Call a USS Construction Marketing Representative in the nearest USS sales office, or write U. S. Steel, Box 86 (USS 5809), Pittsburgh, Pa. 15230.

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ARCHITECT—Major architectural firm located in midwest area has permanent opening for graduate architect to supervise project design teams on a wide variety of challenging and interesting projects. If you are seeking a position that offers both personal and professional growth, send us a detailed resume of your qualifications. Box #719, PROGRESSIVE ARCHITECTURE. An equal opportunity employer.

ARCHITECT—Opening available with expanding national retail firm for a registered architect who has initiative and is creative. Will assist the architect who is Manager of Store Layout & Design. Duties will include supervision of drafting department and coordination of outside architectural work. This is a permanent position which offers outstanding career opportunities. It includes excellent fringe benefits and a lucrative profit-sharing plan. Send resume with salary requirements in confidence to Box #720, PROGRESSIVE ARCHITECTURE.

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ARCHITECT'S ESTIMATOR—Wanted for a position in Chicago. Must be experienced estimator with knowledge of building construction cost. Salary open. Skidmore, Owings & Merrill, 30 West Monroe Street, Chicago, Illinois 60603.

ARCHITECTS—Career opportunities now open for two architects or architectural engineers with nationally known professional organization. These positions are in our new headquarters building in northwest suburban Skokie. Both positions offer excellent opportunities for professional growth and recognition. Please submit resume, including salary requirement to Employment Manager, PORTLAND CEMENT ASSOCIATION, Old Orchard Road, Skokie, Illinois 60076.

ARCHITECTS—Facilities planning consultants. New York City planning and design consulting firm seeks "people-oriented" architects with high personal standards of professional responsibility and proven capability in top level client contact, problem solving and report writing. We offer opportunities for individual growth, salaries commensurate with qualifications, increases based upon merit and, a comprehensive benefit program, including deferred profit-sharing. Primary responsibilities will concern the solution of client problems related to programming corporate headquarters, specialized educational facilities and major civic centers. Please submit confidential resume of experience and earnings to Becker & Becker Associates, Inc., Seagram Building, 375 Park Avenue, New York, N.Y. 10022.

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ARCHITECTURAL DESIGNER—For permanent position with generous fringe benefits in progressive medium size office in a university city set in the midst of four lakes. Send resume and salary requirements to: Weiler, Strang, McMullin, & Associates, 810 University Bay Drive, Madison, Wisconsin 53705.

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Continued on page 178

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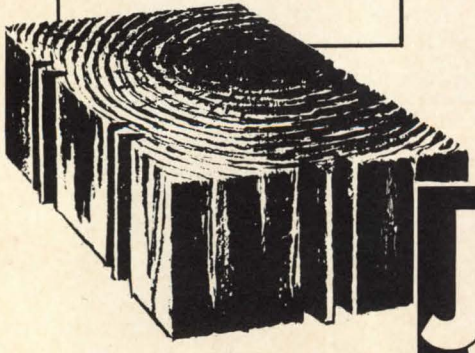

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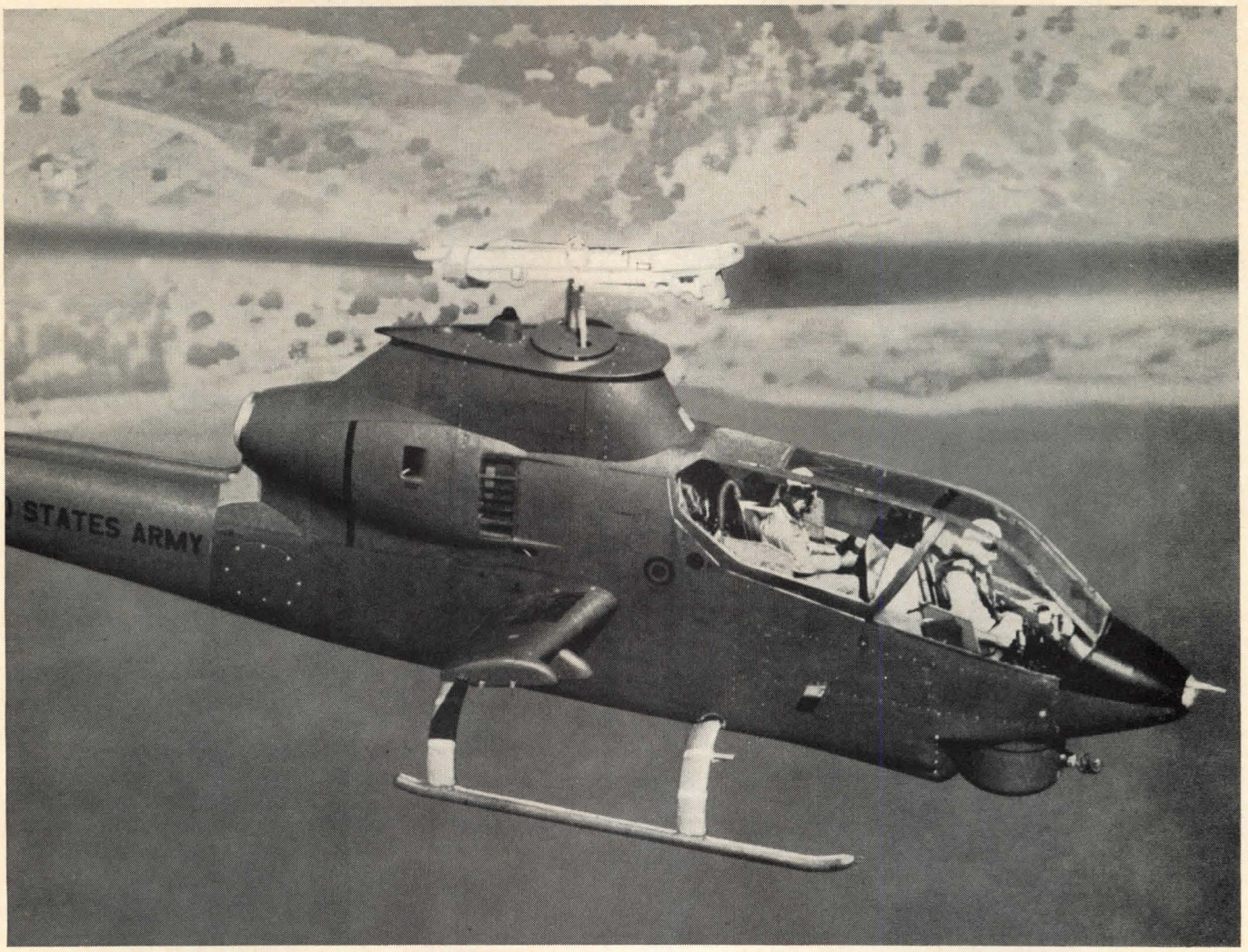

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Continued from page 174

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SITUATIONS WANTED

ARCHITECT—27, B.Arch., South African University. Married, one child. 5 years experience in Rhodesia, Britain and South Africa. Arriving in U.S. May 1969. Desires design position in U.S. firm. Resume upon request. Contact: D. Alexander, 14 Camden Street, Tamboerskloof, Cape Town, Rep. South Africa.

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