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BUILDING TYPES STUDY: SHOPPING MALLS IN SUBURBIA

DENVER ART MUSEUM BY JAMES SUDLER ASSOCIATES AND GIO PONTI

URBAN SPACES BY M. PAUL FRIEDBERG & ASSOCIATES

"WHY LONDON WORKS BETTER THAN NEW YORK" BY JONATHAN BARNETT

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# ARCHITECTURAL RECORD

MARCH 1972

**3**

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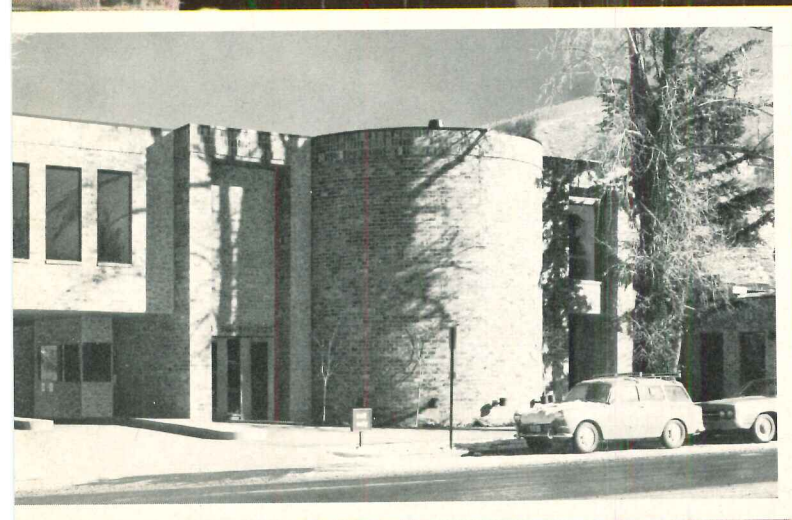
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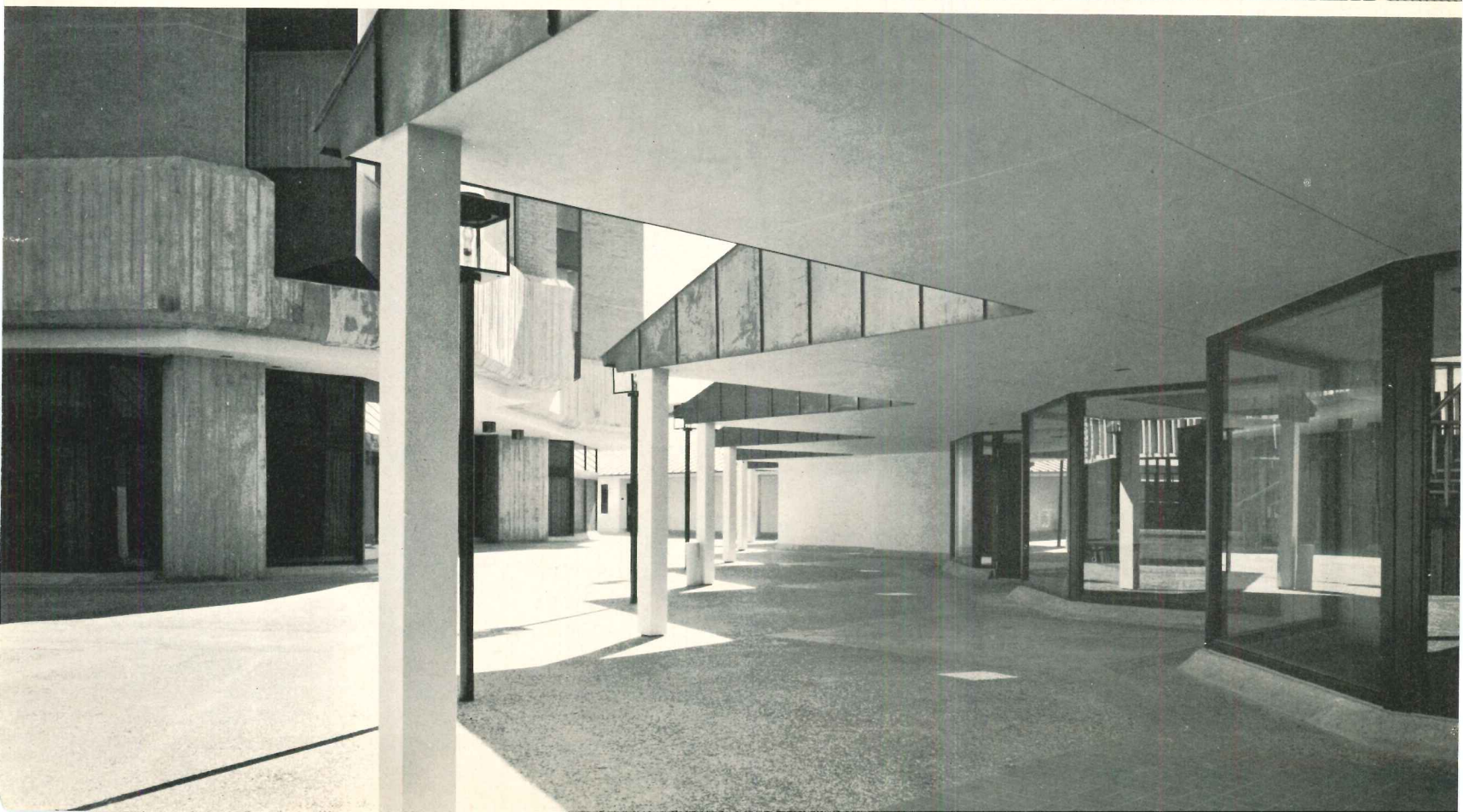
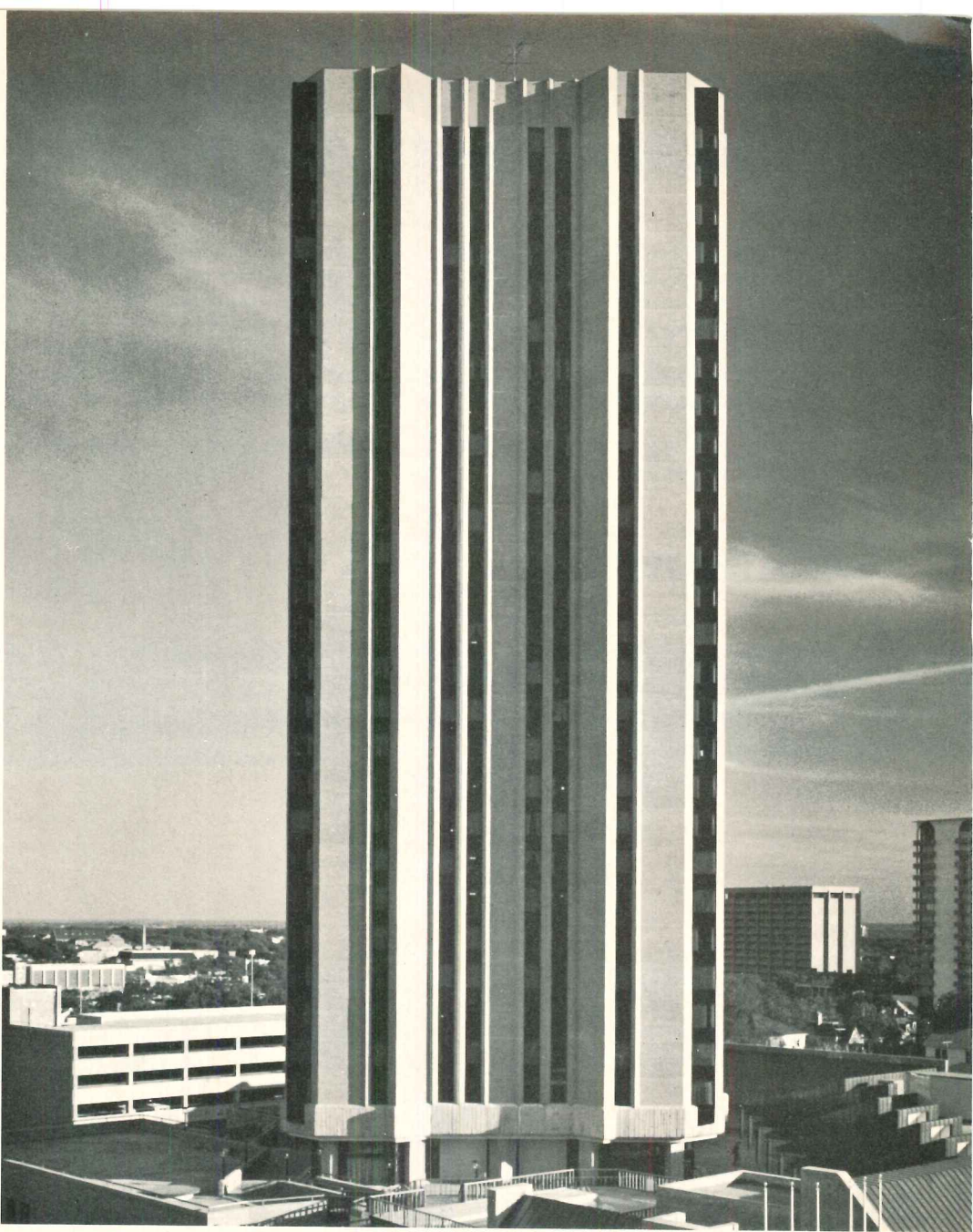
*For more data, circle 1 on inquiry card*

First National Bank, Aspen, Colorado  
ARCHITECT: Caudill Associates, Aspen, Colorado  
GENERAL CONTRACTOR: William F. Harwood, Inc., Grand Junction, Colorado  
MECHANICAL/ELECTRICAL ENGINEER: Rice-Marek-Harral & Associates, Denver, Colorado  
CEILING SYSTEMS CONTRACTOR: Acoustics & Specialties, Inc., Denver, Colorado





DOBIE RESIDENCE HALL, UNIVERSITY OF TEXAS, Austin—Architects/Engineers: Daverman Associates, Grand Rapids, Mich. General Contractors: Guy F. Atkinson Company, South San Francisco, Calif. Three Dover gearless traction elevators, 500 FPM, Computamatic® control; two Dover Oildraulic® elevators, installed by Dover Elevator Co., Hunter-Hayes Division.





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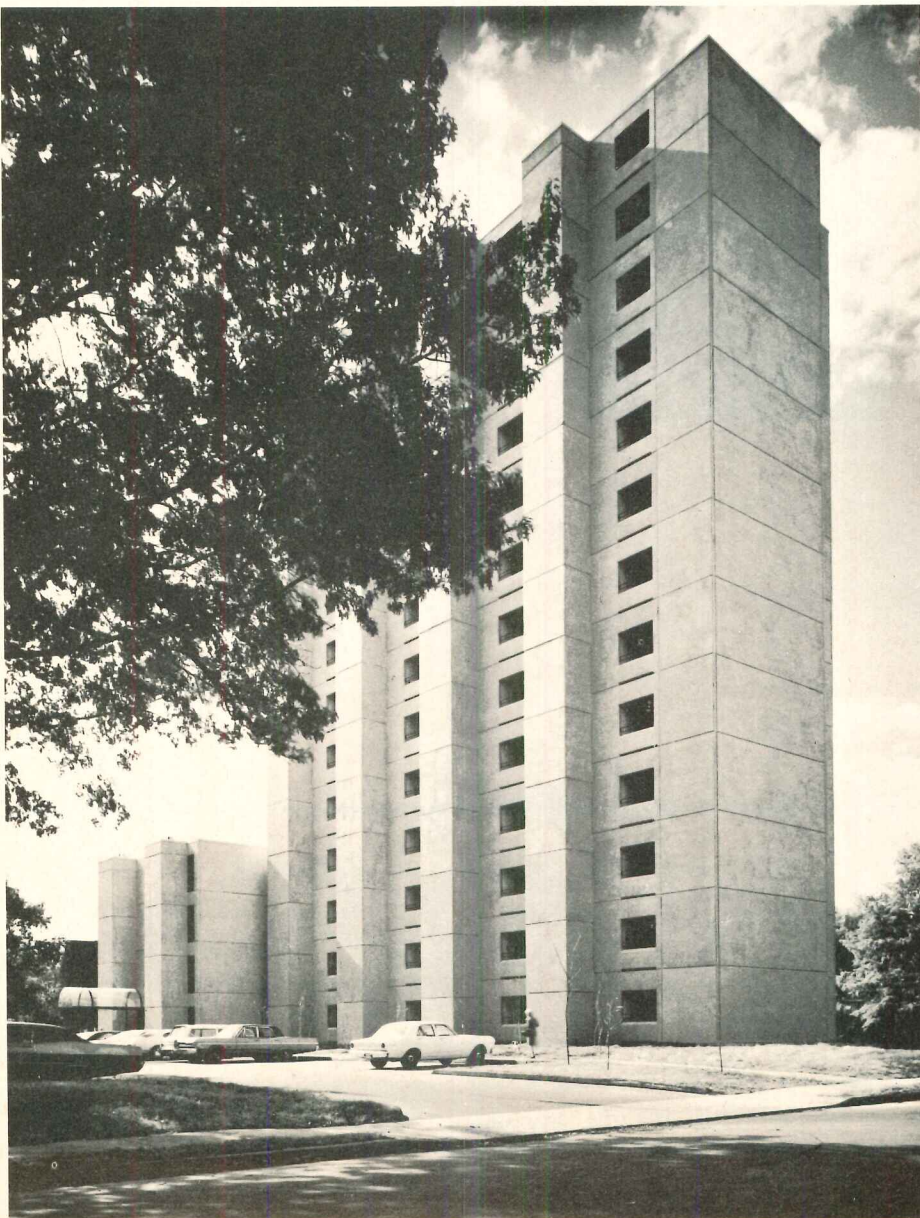
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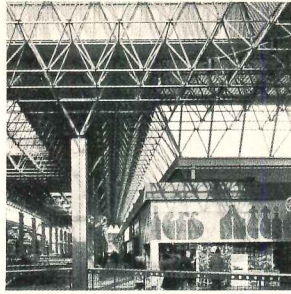
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LUTHER TOWERS, Memphis, Tennessee. Architects: Walk Jones + Francis Mah, Inc., Memphis. Structural Engineers: LeMessurier Associates, Boston. General Contractor: ALODEX Corp., Memphis. Two Dover geared traction elevators, 200/250 FPM, duplex selective control, installed by Dover Elevator Co.







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Architects: Cope, Linder & Walmsley  
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Edmund Y. Lee

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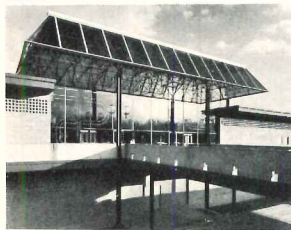
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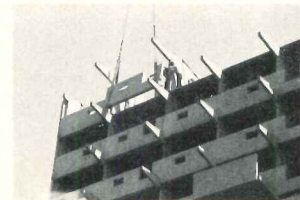
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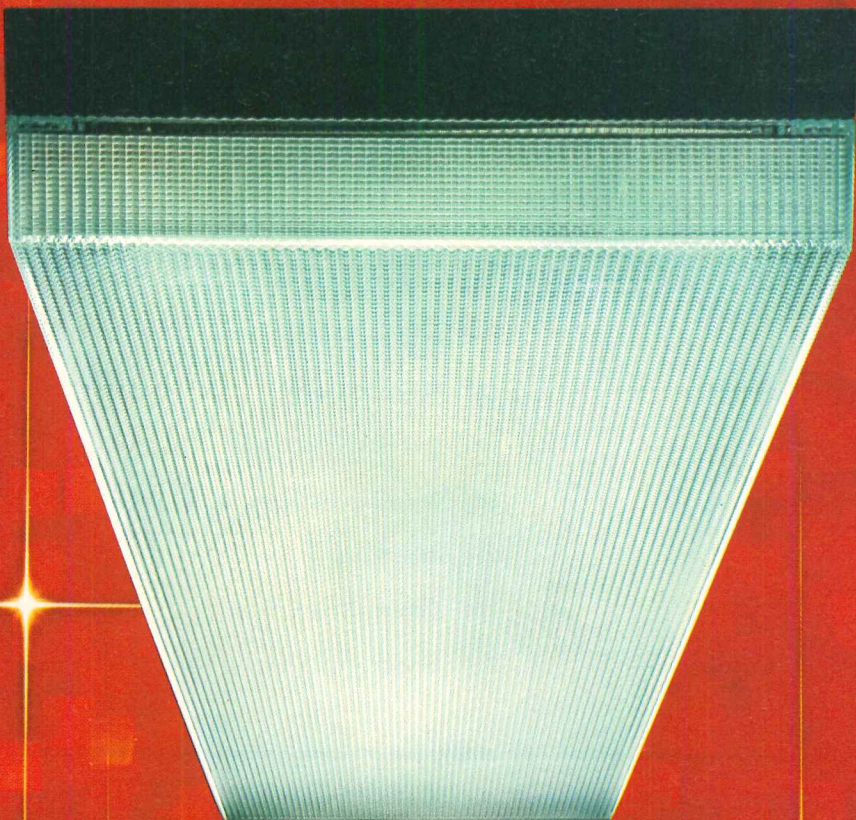
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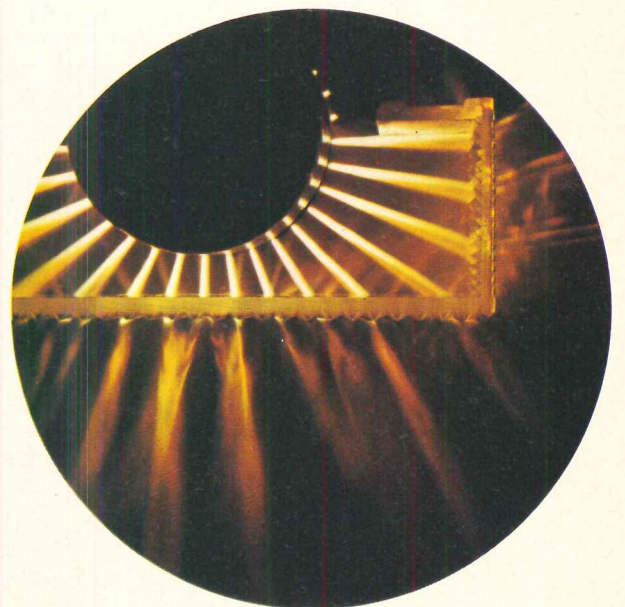
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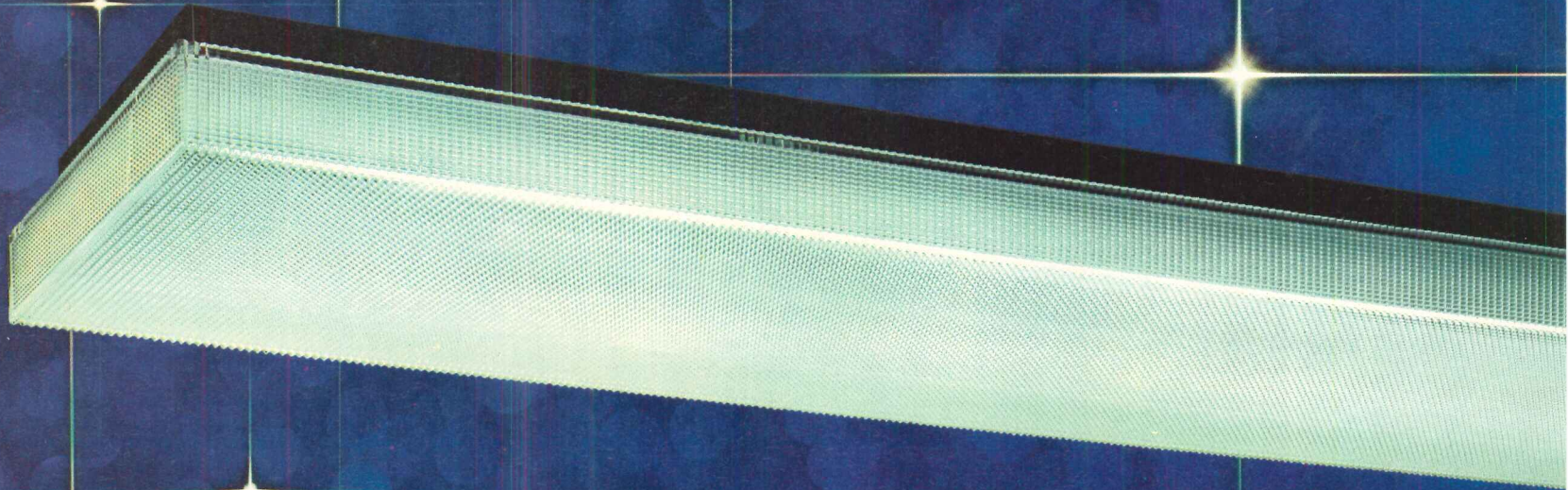


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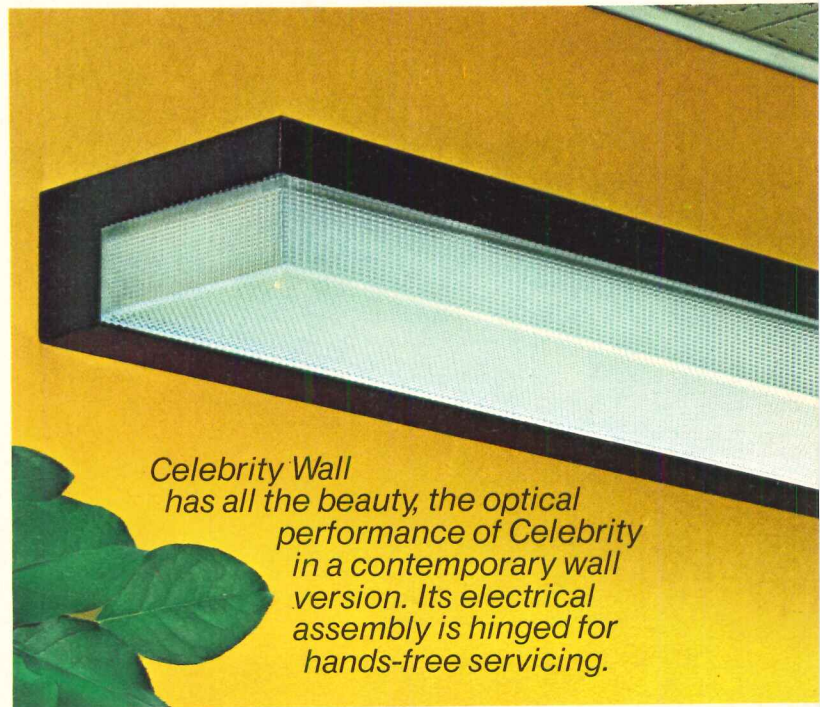




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## Random thoughts on architects, homebuilders, and the NAHB show

The NAHB's annual extravaganza, which this year took over Houston, Texas in its entirety from January 23rd to 27th, is a thought-provoking affair. For instance, it provokes thought on the role of the architect in the built-for-sale housing market.

You read a lot of statistics about that housing market—that last year the homebuilders topped the two-million-starts figure they've been shooting for since they almost made it in 1950, and in his speech to the assembled multitude, Secretary Romney talked about 2.1 million for next year.

Well, two million starts is such a big number that it's hard to conjure up an image of it. But you get a feeling of that much energy and activity at the NAHB Annual Convention and Exposition. For example:

■ 54,804 people registered at the Astrohall; which is, if memory serves, about 17 times as many people as registered at your average AIA convention. Mind you, that figure included a lot of wives, real-estate editors, lumber dealers, and at least one architectural editor; but it also includes a lot of builders who (for better or worse) build a lot of houses and apartments. It is enough people to fill up every hotel room (including some pretty weird motels) in Houston, Texas so that quite a few registrants couldn't get a room any nearer than Galveston.

■ The mood of the multitude was extraordinary. The program was a full one, and the sessions were packed.

Just for one example: even while HUD Secretary Romney was on stage Tuesday morning with Senator Sparkman, you could, if you wished, choose from seven alternate sessions. And an informal survey (me,

double-timing around that gigantic Astrohall) indicates that all of those sessions were well attended, and many of them packed.

Meanwhile, out in the exhibit area, 461 (give or take a few) exhibitors were having their best time in years, because despite the septuple loading of the working sessions, the crowds poured through the exhibit area in droves. With a great year behind them, and looking forward to another great year, the builders were on a high. They were optimistic, they were looking for ideas, and they were looking for hard information. The exhibitors were enthusiastic about attendance and attitude (and, alas, upon reading my badge made a lot of invidious comparisons on the handling and interest in booths at AIA conventions by architects).

■ The 54,804 attendees (I find on wondering about it after the fact and calling NAHB, who has it all on computer) included well over 1,000 architects—1304 to be exact.

And what do you make of that number? Some of the 1300 were on the program, of course. John Highland Jr., of Buffalo was on the "team approach panel." Jack Cohen of Silver Springs, Md., moderated the panel produced by the AIA Housing Committee which also included William Gould of Cleveland; Rodney Friedman of San Francisco, and Jack Craycroft of Dallas. Claude Miquelle, of Melrose, Mass., spoke on getting more variety by better detailing. Herman York of Long Island talked about detailing on a panel headed by Abba Polangin, an architect on the NAHB staff. Stephen Oppenheim of Los Angeles talked about apartment design and planning. Robert Wilson, of Stamford,

Conn., headed a panel on inner city housing opportunities. Robert Babbin of Chicago talked about developing industrial parks. Which leaves about 1280 architects who apparently came to see, perhaps to even talk to, a builder. Perhaps because of a growing interest in the housing market?

Way back in September 1970, on this page, I wrote that "It does look as though, at last, housing is starting to feel its way out of the horrendous slump that it has been in for the past four years. . . . And what of the architect and his role when all the demand and pressure [for housing] really unlocks the brakes? It's terribly important for architects in general (and individually, in terms of their own businesses) to analyze this huge coming market. Because the kind of housing that will be built will be very different from the kind of housing built in any previous boom, and all of the changes put this new housing very much in the architect's domain." And there I listed five reasons:

1. The increase in higher-density, multi-family housing.

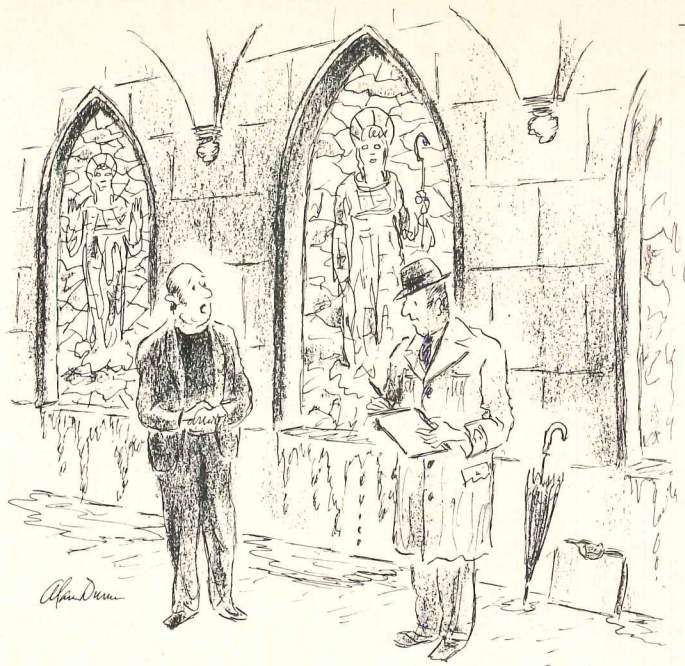
2. The increasing need for housing in core-city areas, that requires a kind of expertise and sensitivity "not needed when we were urban sprawling."

3. The possibility of industrialization of housing, developed by companies "which typically do not have the kind of architectural and planning staff necessary to create designs and land plans for individual sites."

4. "It may be that a 'new esthetic' is needed for housing. Many young architects are arguing that traditional design (whether the 'traditional' tradition of most developers or the contemporary 'tradition' of most architects) is invalid—that we need design disciplines that are more adaptable, more flexible, more tolerant to get the job done . . . and if there is to be 'a new esthetic,' there is no one it can come from except architects."

5. The possibility of more and more architects moving into housing on their





"Neoprene gaskets? Would that be fair?"

own account, as developers.

At any rate, I wound up that year-and-a-half ago editorial arguing that "it seems clear that the new housing boom will be a new ball game—and this time architects must field a great team and not just boo from the stands."

Are architects getting involved? While there's still plenty to be discouraged about in terms of the design quality of built-for-sale housing, there also seems to be plenty to be pleased about.

■ In a recent survey of 1970 homebuilding, RECORD's research department (using a fictitious name, like a good research department should) found: Of 308,400 single-family houses built by large builders (those constructing more than \$1 million of housing units in a year), 268,308 were architect-planned. Of 205,600 houses started by small builders, 67,848 were architect-planned. Of 579,000 apartments built, 526,890 were architect-planned. Further, according to studies conducted by RECORD, 60 to 70 per cent of all architectural firms design at least some (one?) during a year. Their custom-designed houses account for more than \$1 billion each year, and they work with builder clients on another \$7 billion. Which is a surprising amount of involvement, seems to me.

■ After the NAHB show, I called John Highland, who does a good deal of housing design from his Buffalo office, and who participated in the "team conference" in Houston, and asked what he thought about the involvement of architects with builders, and vice versa. Said Highland: "One measure of interest is the session that we put together for Houston. We were told to expect an audience of 500 to 600 builders, and well over 2,000 showed up. 900 stayed all day. In my view, the trend of architects getting together with homebuilders is astonishing. It's still not nearly as significant as it should be, but the situation is clearly changing. There is still a fundamental problem: builders fail to understand the

complexity and the opportunities of design; they still look upon design as part of marketing. But they are beginning to see that they can't sell anything they build anymore; they are beginning to see that people (in general, not just in housing) are becoming aware of the better product; are becoming more demanding. They are beginning to see that people are concerned about the use of land, the cutting down of trees; concerned with 'ecology'. Builders are beginning to see that buyers now can relate housing, the use of land, transportation and recreation—and that they want quality.

"It's my observation," says Highland, whose firm has been deeply involved in merchant-built housing for many years, "that most big builders have architects either on their staffs or have retained outside firms. And the small builders are coming to realize that they have to improve quality, too."

■ How many builders use architects? In their study "Profile of the Builder and his Industry," sponsored by the National Housing Center Council and published by NAHB (in 1970, using 1969 figures) Michael Sumichrast and Sara Frankel found that of medium-size builders (26-100 units a year) 8.5 per cent had architects on their staffs, an additional 40.4 per cent hired outside architects, and 6.0 had both. For large (over 100-unit) builders, the comparable percentages were 6.1 per cent, 36.4 per cent, and 5.5 per cent. And even for the small (1-25 unit) builder, 8.1 per cent had architects on staff, 28.4 per cent hired architects on a fee basis, and 4.4 per cent used a combination of both. The percentages were much higher, of course, for multi-family housing than for single family houses.

■ After the NAHB show, I talked to Jack Cohen, of Cohen, Haft & Associates (whose 50-man firm devotes 95 per cent of its practice to housing), who moderated the "Better Design, Better Building, Better

Profit" seminar sponsored by the AIA at Houston. Asked about his impression of builder interest in design, he reported: "We started with a standing-room only audience of builders in a room that seated 500. We lost a few during the two-and-a-half hour presentations (the session was repeated), but it was perfectly clear that a lot of builders had a genuine interest in improving the design quality of their houses and their projects.

"The problems remain, however: many builders are intimidated by architects; and many architects still do not understand the builder's problems."

So where are we left? Perhaps with a real desire by more and more builders to improve the design quality of their houses and developments—whether for idealistic reasons or selfish reasons really doesn't matter. And we have a lot of architects who could help (and profit handsomely)—if they tried harder to communicate with builders, and tried harder to understand their problems, their way of building, their way of operating.

The stakes—these days—are two million housing units a year. Which—in terms of land use, in terms of the way millions of people live, in terms of the development of cities and towns, in terms (if you don't care about anything else) of business opportunity and profit—seems an important enough matter to make it critical for everyone—NAHB and AIA, individual builder and individual architect—to take whatever steps possible to eliminate any failures of communication, any lack of knowledge of mutual respect, any hang-ups about roles; so that architects and builders can work effectively with each other on all housing—not just part of it—for their mutual advantage and to the advantage of the people who will live in that housing.

As I said in another editorial long ago; if all else fails, you might start by taking a homebuilder out to lunch.

—Walter F. Wagner Jr.



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Silicone-based coatings give steel and aluminum siding, panels, roofing, fascia, and trim unmatched protection from sun, wind, and weather. They resist blistering, chalking, chipping, and peeling, and have excellent color retention. They are easily touched up in the field if marred.

**Yet the cost of silicone-based finishes is almost identical with that of organic coatings, and 50 to 70% less than other kinds of high-performance coatings that have no demonstrably better performance.**

A colorful new brochure on coil-coated panels using these finishes, and the names of paint manufacturers who supply them, is in the current Sweet's Architectural and Industrial Construction Files. Or write Dow Corning Corporation, Dept. A-2301, Midland, Michigan 48640.

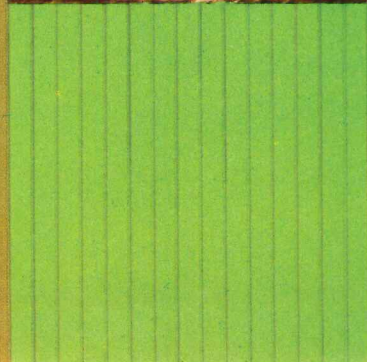
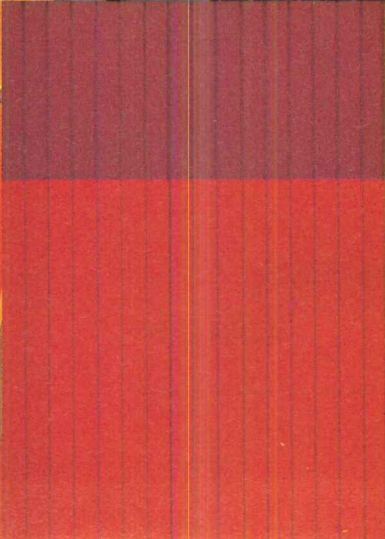
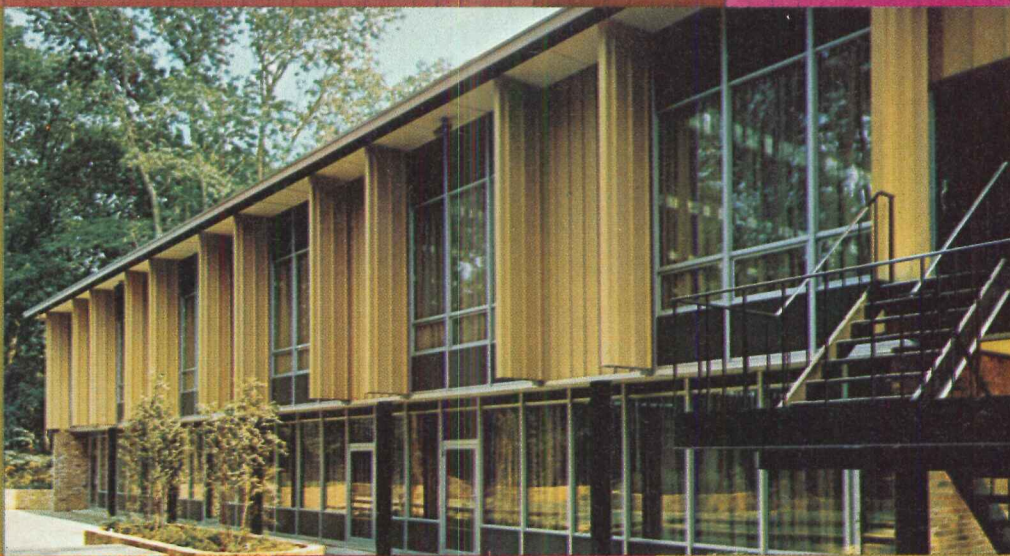
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***DOW CORNING***

DOW CORNING

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**For "life-of-the-building" beauty  
...and proved performance.**





KAWNEER introduces

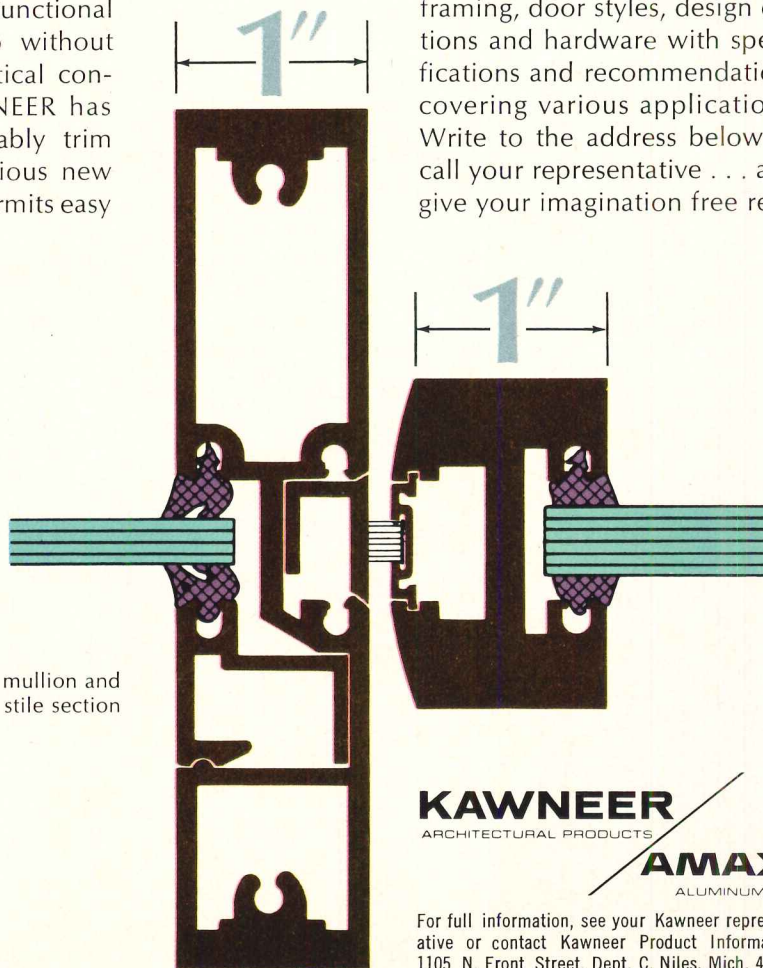
**i** line



## narrow profile aluminum framing and entrances

Now, for the first time, the clean, crisp drawing board concepts you have envisioned in your framing and entrance designs have been translated into aluminum . . . and can be realized in actual construction. □ KAWNEER's new *I-Line* narrow profile framing, with a 1-inch sight line, reduces by nearly one-half the face dimension of the traditional 1 3/4" framing profile. The new system, with its many horizontal design options, and with complementary thin stile doors, opens new vistas in aesthetic and functional design—and does so without sacrificing other practical considerations. □ KAWNEER has achieved the remarkably trim profile with an ingenious new mullion design that permits easy

"in-line" flush glazing—without the extra mullion width normally required for setting the glass. Yet, the *I-Line* system equals the structural strength and provides the same glass bite as traditional framing systems. *I-Line* framing is 1" x 4 1/2" deep and accommodates up to 3/8" glass thicknesses. It is available in clear anodized aluminum or Permanodic® colors. □ KAWNEER's new brochure, *I-Line Narrow Profile Aluminum Framing and Entrance Systems*, fully describes and illustrates *I-Line* framing, door styles, design options and hardware with specifications and recommendations covering various applications. Write to the address below or call your representative . . . and give your imagination free rein.

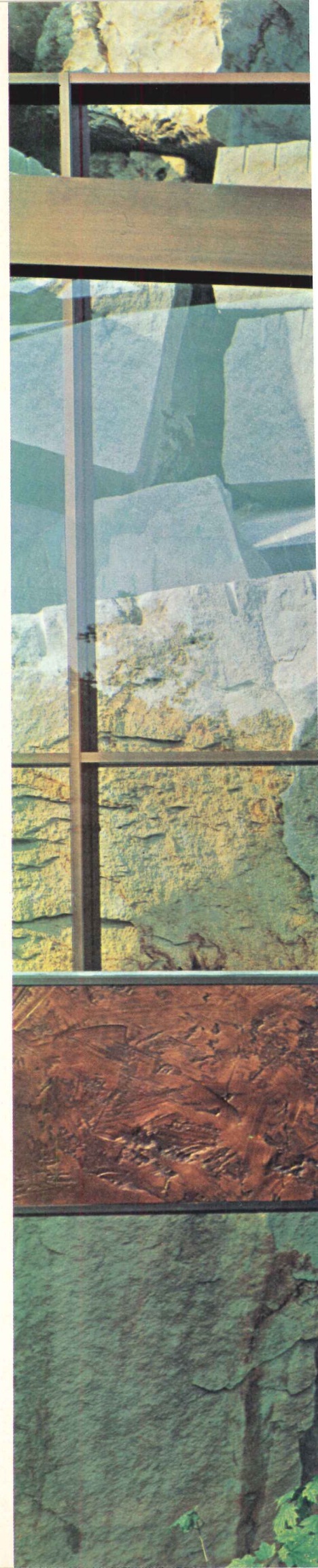


Typical vertical mullion and door stile section

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For full information, see your Kawneer representative or contact Kawneer Product Information, 1105 N. Front Street, Dept. C, Niles, Mich. 49120.

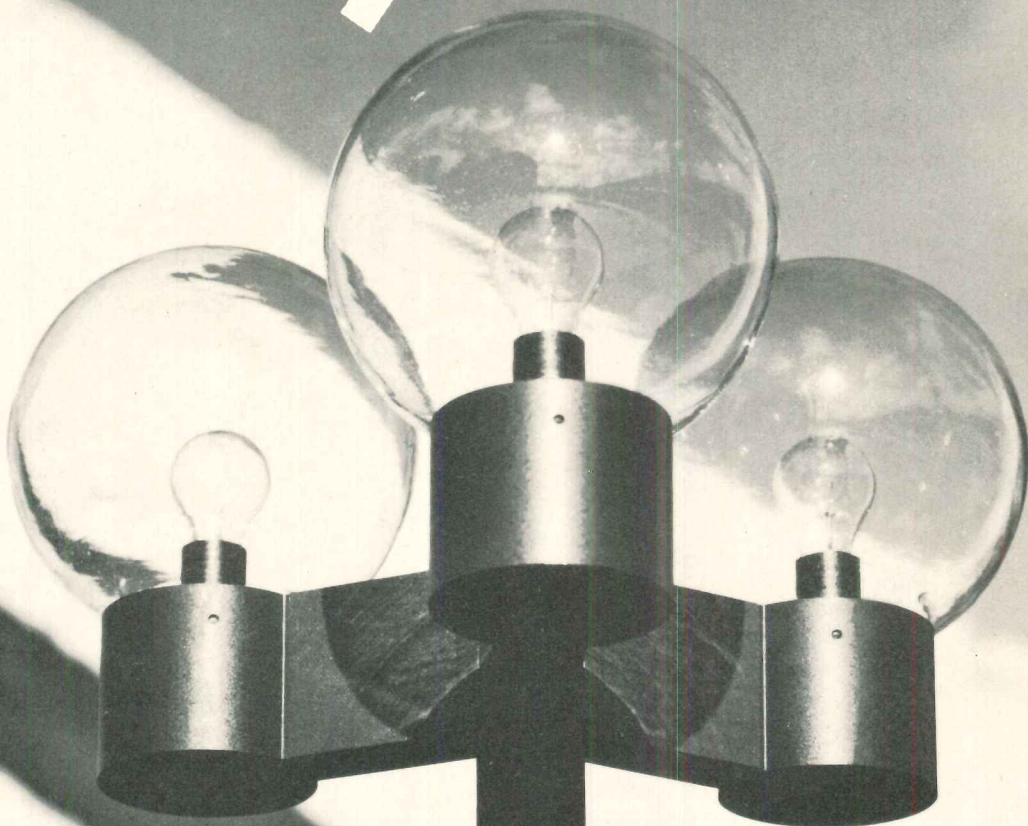








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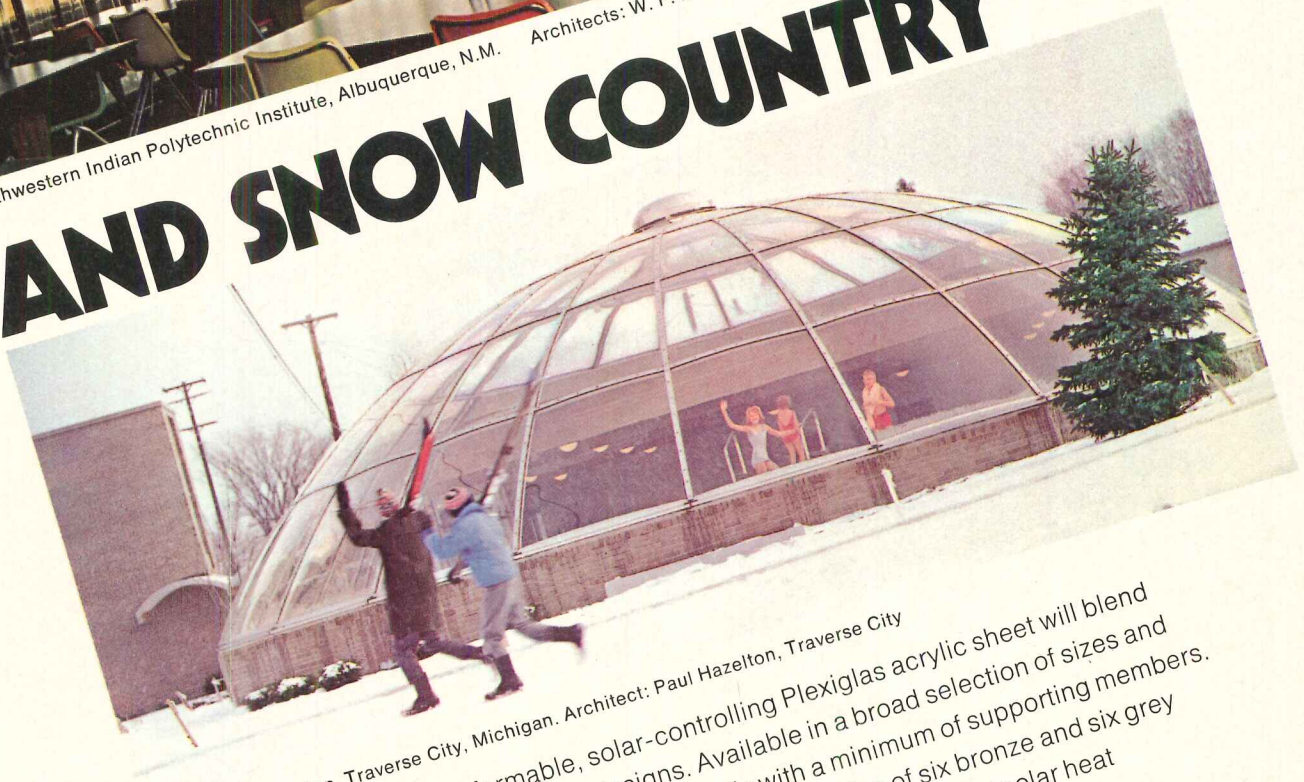


# PLEXIGLAS<sup>®</sup> TOUGH, GRACEFUL GLAZING FOR SUN COUNTRY



Southwestern Indian Polytechnic Institute, Albuquerque, N.M. Architects: W. F. Krueger & Associates, Albuquerque

# AND SNOW COUNTRY



Park Place Motor Inn, Traverse City, Michigan. Architect: Paul Hazelton, Traverse City

Breakage-resistant, thermoformable, solar-controlling Plexiglas acrylic sheet will blend gracefully with your most demanding designs. Available in a broad selection of sizes and thicknesses, Plexiglas is light in weight and installs with a minimum of supporting members. The Solar Control Series of Plexiglas sheet gives you a choice of six bronze and six grey transparent tints permitting aesthetic flexibility with a range of light and solar heat control. Write for our latest brochure.



Where building codes limit areas of plastic glazing, approvals of large area Plexiglas enclosures must be applied for on a special permit basis. Rohm and Haas Company can supply engineering and building code information on specific request.

**ANSI—Z97  
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Plexiglas acrylic sheet meets the requirements for a safety glazing material as defined by the American National Standards Institute.



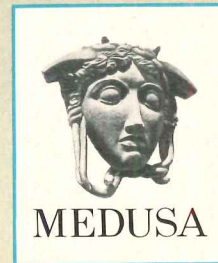
From Medusa...the Cementmaster.



**NEW COLORED PORTLAND CEMENTS TO BRIGHTEN THE FACE OF AMERICA.**

For the first time in the long history of portland cements, the architect, or precast producer has available a veritable rainbow of new Colored Portland Cements . . . from Medusa . . . the Cementmaster. All are pigmented, intermilled white cement base products manufactured under a strict scientific process for maximum color control.

Ten stock colors, plus white, available for color design flexibility. Special colors upon request. For a free sample of Colored Portland and literature, write Medusa, P.O. Box 5668, Cleveland, Ohio 44101.



*The Medusa Trademark head shown includes ten basic colors of new Medusa Colored Portland Cements*

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# introducing Sculptura II



New **Sculptura II** is the shape of the future for all institutional seating needs. Because its contour-molded design surpasses the comfort, durability and versatility of all other seating! It's just that simple.

This beautiful breakthrough adapts to offices, auditoriums, classrooms, conference rooms, lecture halls, cafeterias, etc. With dozens of alternative seat-basing adaptations. Meets need for seating unupholstered, with two piece padded seat and back, or fully upholstered. With textured, stain-resistant nylon or expanded vinyl. All in a rainbow of decorator colors for you to choose from.

Sculptura II is made of extrastrength fiber glass for long life and easy maintenance. For complete information about adaptations, specifications and options, mail the coupon today!



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Please send me your free brochure on new Sculptura II Institutional Seating.

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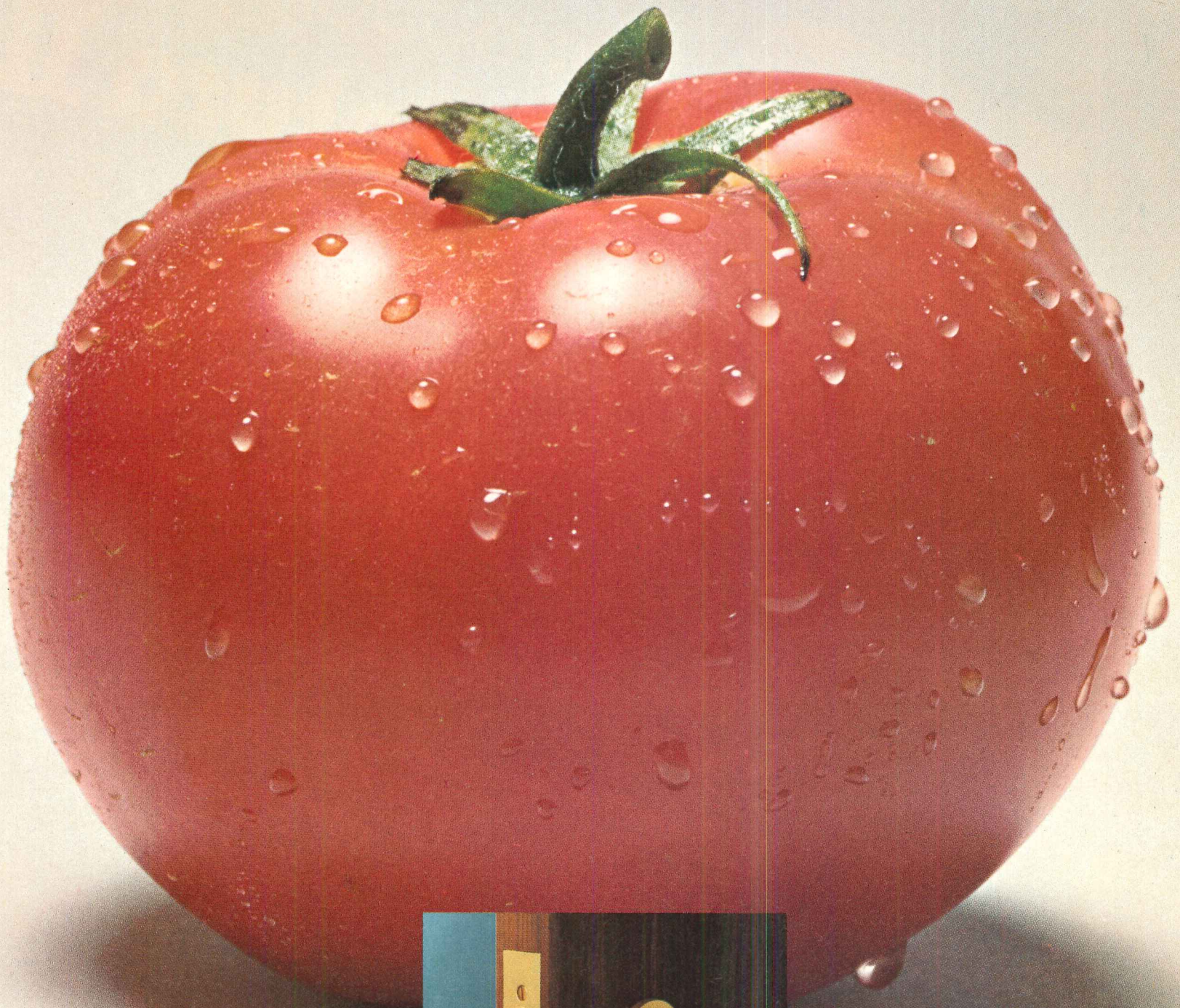
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# Corbin locks in flavor.

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From soup to nuts, our  
mortise locks protect and  
decorate hundreds of famous  
corporate suites. And we  
can flavor your own  
plans with a new brand of  
hardware beauty and  
safety. Try us. Reach a  
Corbin distributor now.  
We're some tomato.



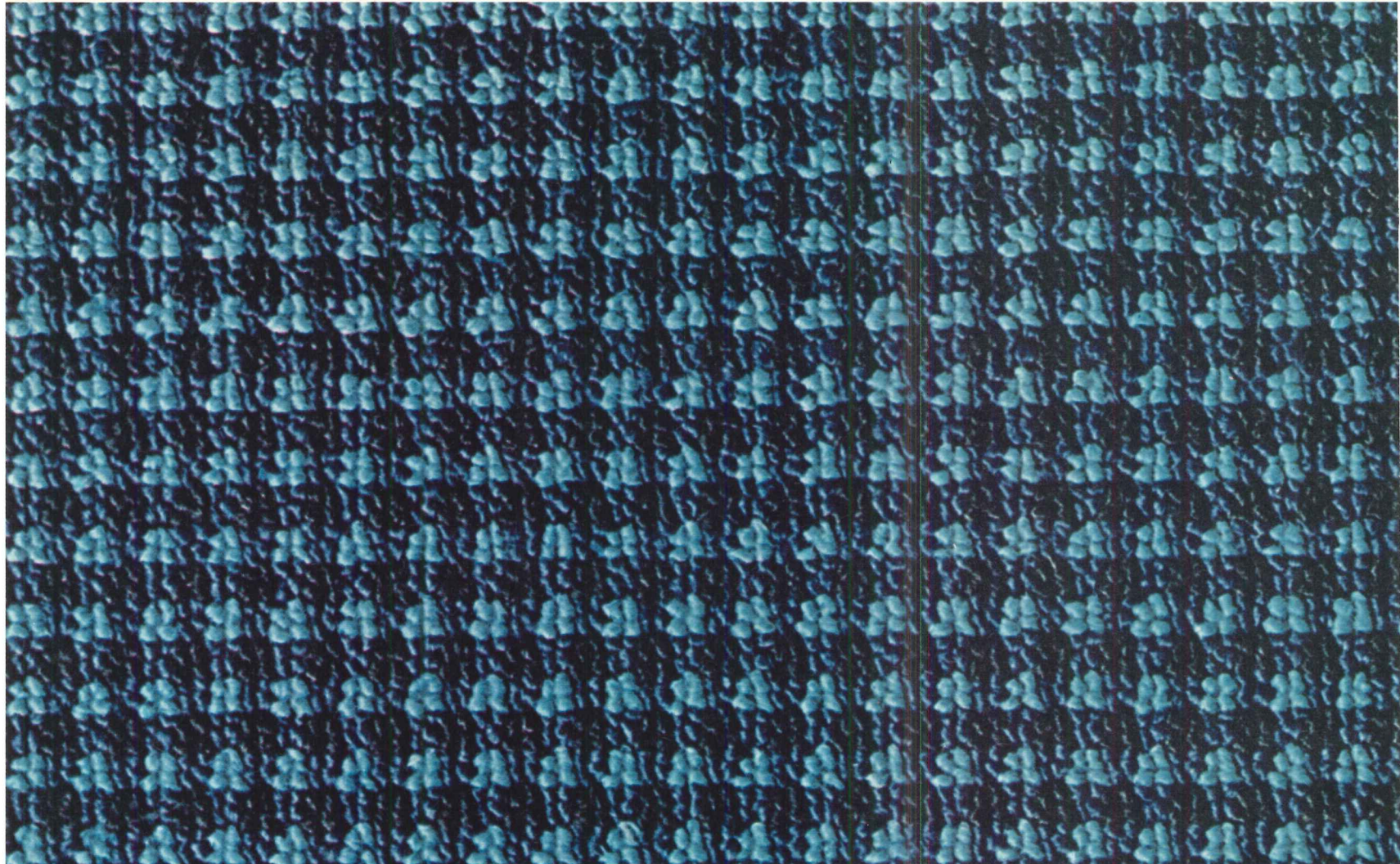
**The Security Analysts.**

For information write P & F Corbin, Division of Emhart Corporation, Berlin, Conn. 06037. In Canada, Corbin Lock Division.

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# An airport needs





# pretty-tough carpet.

Until now, you had a choice of pretty carpets that weren't very tough. Or tough carpets that weren't very pretty.

But in a store, or school, or an airport you need both. So we conceived carpets that are pretty and tough.

Some look like May flowers. Some like stained glass. Some like abstract art. They're part of our Masterworks Styling Program. And if these original designs don't meet your requirements, Allied Chemical will create exclusive designs that do.

To make these pretty carpets tough, they're made with 100% ANSO nylon.

According to standard tests with the Taber Abrader, ANSO wears three times longer than acrylic and seven times longer than wool. And Allied Chemical guarantees ANSO carpets against excessive wear for 5 years. (We've got more guaranteed carpet fiber installed than anybody — 40 million square yards.)

ANSO's opaque fibers also hide dirt. So pretty, tough ANSO carpets always look cleaner than they actually are. In fact, ANSO shows less soil than wool, acrylic, polyester or polypropylene in the standard AATCC visual soiling test.

If you need a pretty, tough carpet, ask for ANSO. Or contact Allied Chemical Corporation, Fibers Division, One Times Square, New York, New York 10036. Phone: (212) 736-7000.

BYRD AIRPORT CARPET BY SEAMLOC LOMA-LOOM CARPET CO



**ANSO nylon makes pretty-tough carpet.**

*For more data, circle 12 on inquiry card*



**Introducing lighting that  
calls attention to your merchandise  
instead of your ceiling.**







When a customer walks into your store, the center of attention should be the merchandise on your shelves and racks. Not the lighting fixtures on your ceiling.

It's with this thought in mind that GE developed the Warm Deluxe White Mercury lamp—the latest reason to look into General Electric's Savings in Light Association.

On the one hand, this lamp has a lot in common with our regular Deluxe White Mercury lamp. Both lamps, being mercury lamps, have long average lives of 24,000+ hours. Both can be used indoors to make merchandise sparkle and shine. And to help you make sales.

But there is a difference. Our regular Deluxe White Mercury lamp has been widely used in food stores. It produces a white light that's on the cool, crisp side, that also makes it great for displaying hardgoods like automobiles and appliances. The GE Warm Deluxe White Mercury lamp provides a white light that's a little bit warmer and richer-in-red. And that makes it good for indoor applications where warm color is important: for

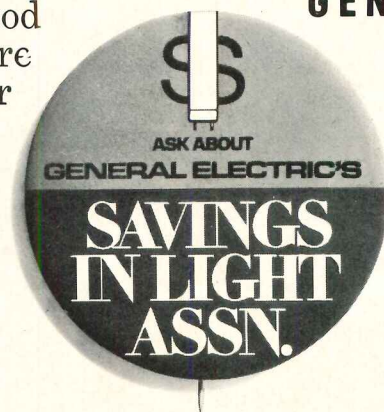
displaying soft goods, wood grains, fabrics, even flowers and food products.

The addition of this mercury lamp to our line means that many more businesses can now consider the savings potential of mercury lighting for interiors. The General Electric Warm Deluxe White Mercury lamp is available in 175- and 400-watt sizes—both of which are suitable for many commercial interior applications.

Check into GE mercury lighting. You'll find that differences in the way lamps perform can mean savings in your total lighting costs. Because most of the cost of light is in labor and electricity. The cost of the lamps usually makes up only a small part of your total lighting bill.

For more information about mercury lighting (as well as other features in GE's Savings in Light Association) contact your local GE lamp representative, or write: General Electric, Dept. C-118, Nela Park, Cleveland, Ohio 44112.

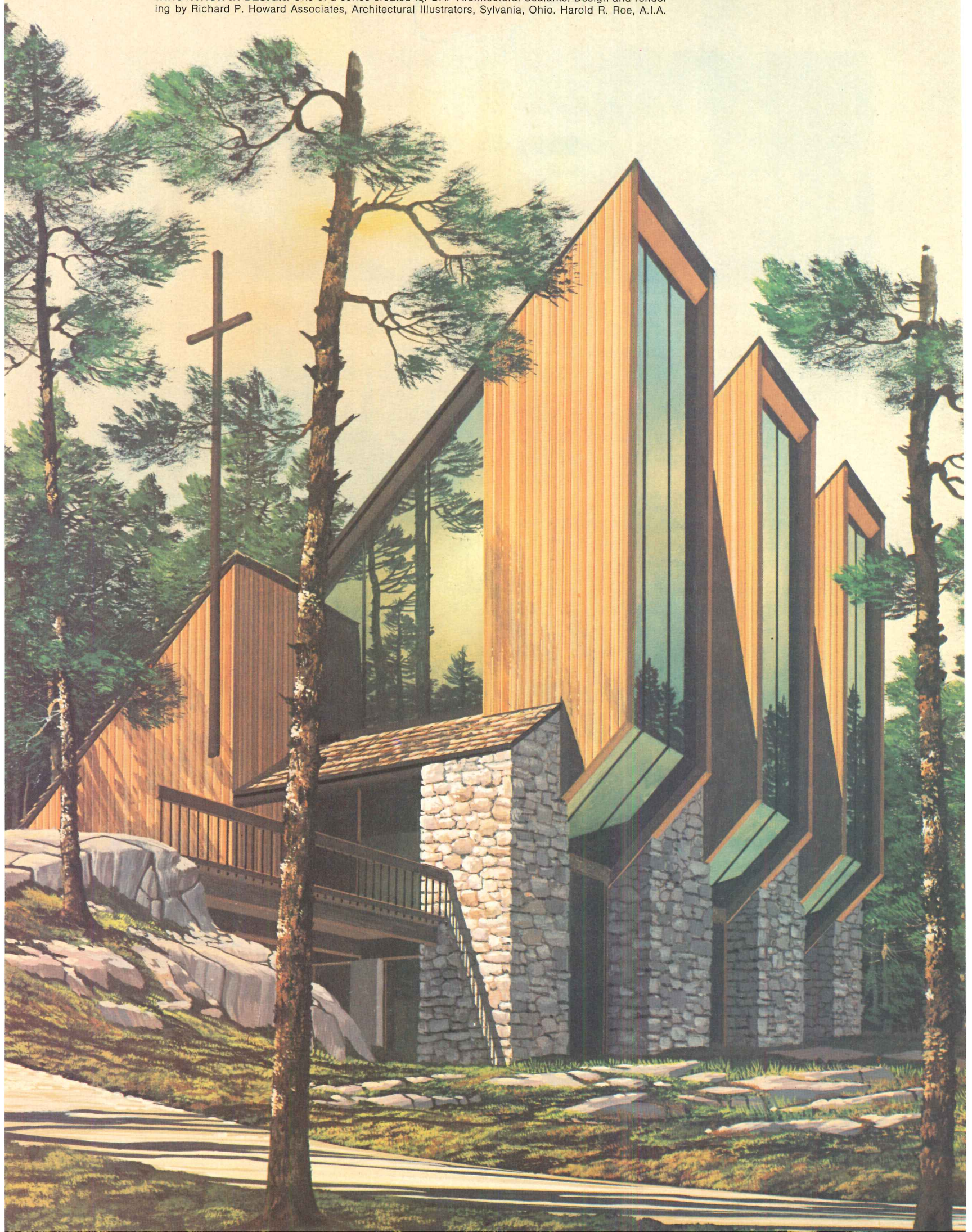
GENERAL  ELECTRIC



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**INNOVATION IN DESIGN.** One of a series created for DAP Architectural Sealants. Design and rendering by Richard P. Howard Associates, Architectural Illustrators, Sylvania, Ohio. Harold R. Roe, A.I.A.





# DAP Butyl-Flex®: butyl-rubber caulk with 5 times the endurance of conventional caulks

Whenever a sealant must assure long-term service in caulking joints, there is no better choice than DAP Butyl-Flex. Compounded from a 100% butyl solution, Butyl-Flex delivers watertight, weathertight seals over a 20-year span. It features excellent elongation, tenacious adhesion and the ability to withstand sheer stress in joints between similar and dissimilar construction materials. That's why DAP Butyl-Flex can be specified nine out of ten times you want to seal out wind, water and weather. For catalog on the full line of DAP architectural sealants, please write: DAP Inc., General Offices: Dayton, Ohio 45401/Subsidiary of *Plough, Inc.*

**DESIGN CONCEPT.** This chapel in the woods employs large expanses of glass to extend the feeling of interior space. Stone and wood are the basic materials used in the informal, yet disciplined chapel shape. Siting permits the forested surroundings to form an inspiring background for worship and study.

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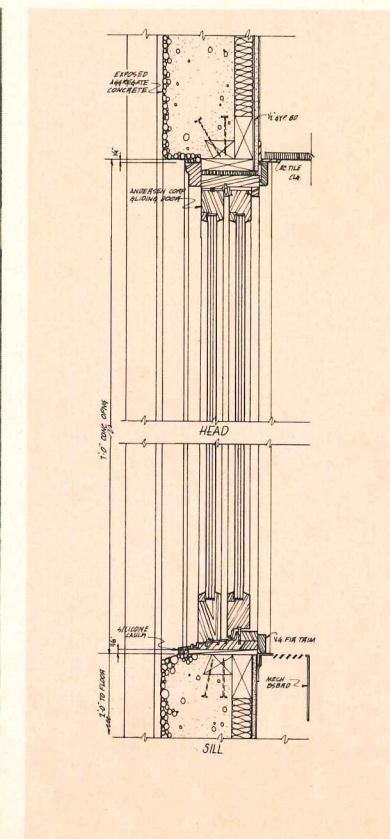
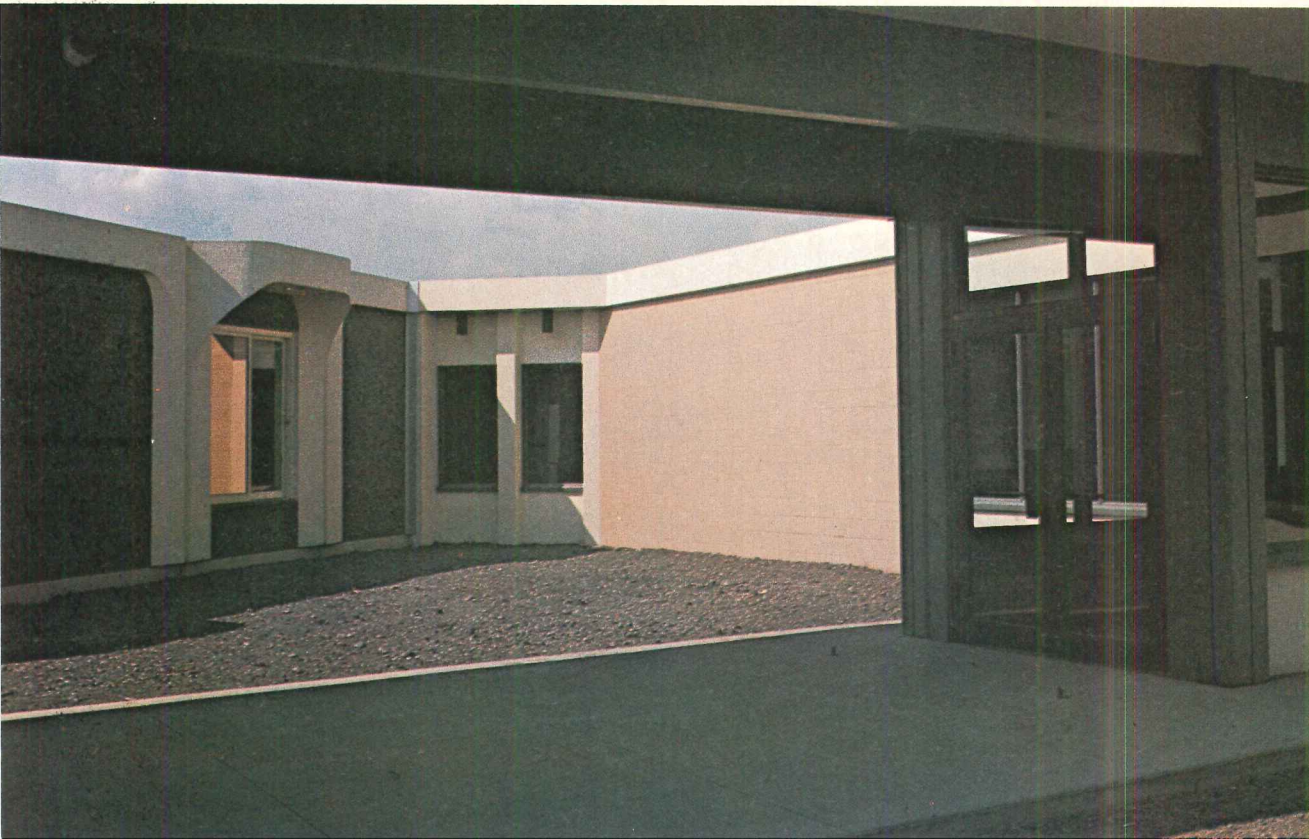


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# When is a window not only a window?

## When it's an emergency door.

The windows in Wonder Park School, Alaska, are in fact Andersen Gliding Doors.

This was the architect's creative solution to the problem of providing adequate emergency exits without limiting his freedom of design.

Placed 24" above the floor, these gliding doors become "window-exits." They are easily opened at any time and in emergencies the students can be evacuated through them in a matter of seconds.

These Andersen Gliding Doors solved more than one problem. Their welded insulating glass eliminates the need for storm windows—even in Alaska. And the glass is tinted to reduce glare from the low winter sun.

The superior insulation properties of wood, and Andersen's weather-tight construction, make these doors even more winter-worthy.

Wonder Park School is an example of how Andersen Windows and Doors—and a little imagination—can solve several problems at once—beautifully!

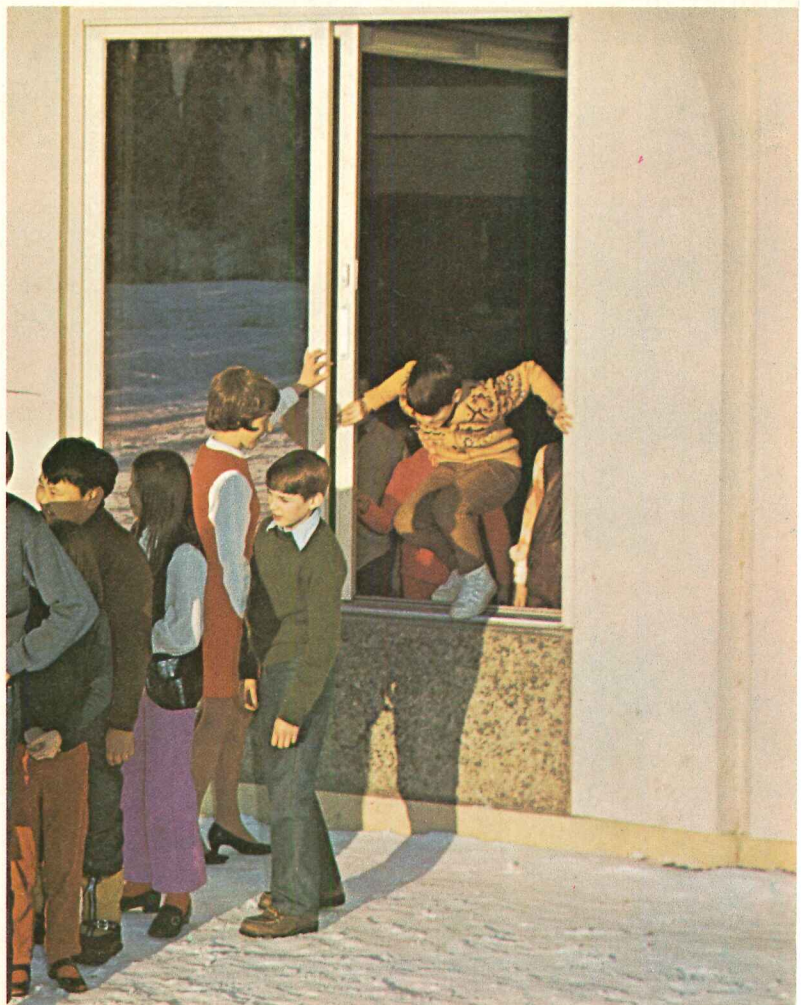
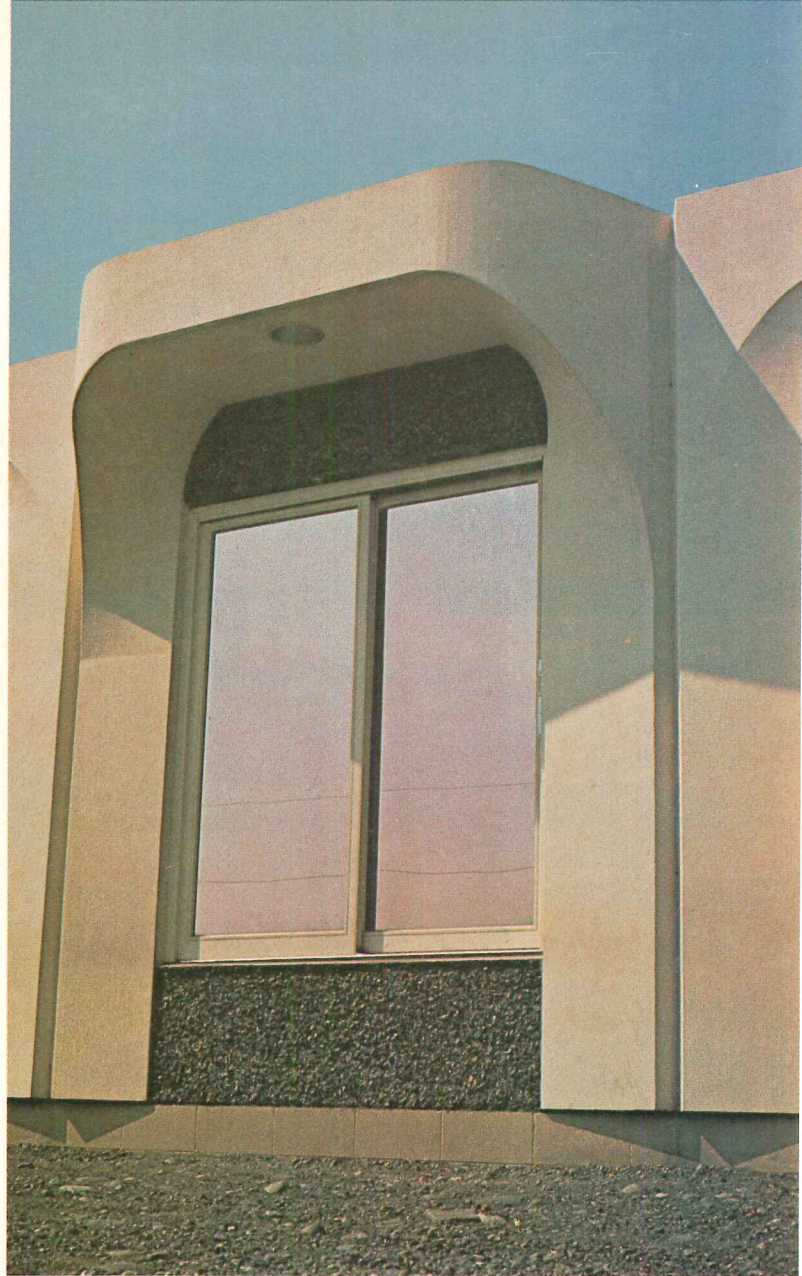
For details on all Andersen Windows and Doors (or even Window-Doors) see Sweet's File (Sections 8.16/An and 8.6/An) or your nearest Andersen distributor.

Wonder Park Elementary School, Anchorage, Alaska. Architect: D. J. Coolidge, AIA, Anchorage, Alaska. Consulting Architect: Ralph M. Alley, AIA.



**Andersen Windowalls®**  
ANDERSEN CORPORATION BAYPORT, MINNESOTA 55003

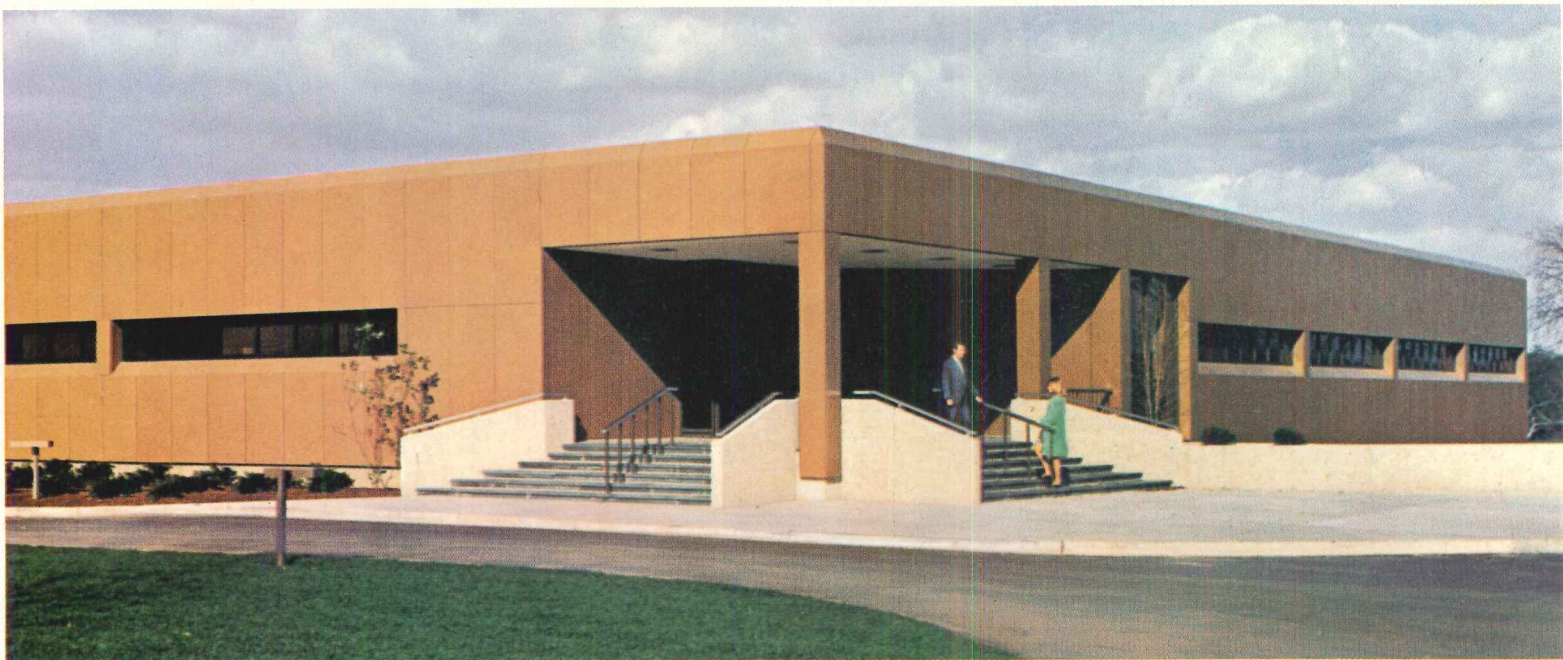
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# Porcelain-enameled home for National Molasses Company





A subtle charm sifts through the crisp simplicity of National Molasses Company's new headquarters office building near Philadelphia. All-over paneling in porcelain-enameled steel is relieved with accents of sandblasted architectural concrete. Vertical severity is avoided by back-slopes at the parapets, repeated along the window-sill line.

The structure achieves unity with its environment through the selection of an earthy umber hue for the porcelain enamel. Architects are making ever-increasing use of these Nature-tone porcelain finishes, along with attractive textures and embossments. On the practical side, porcelain-on-steel panels offer rigidity, light weight, corrosion resistance, cleanliness, and fastness of color.

Bethlehem furnishes special enameling steel sheets to fabricators who form and coat architectural panels. Ask us for a copy of the Porcelain Enamel Institute's brochure in the popular matte-finish Nature-tone hues. Bethlehem Steel Corporation, Bethlehem, PA 18016.

## BETHLEHEM STEEL



*Architects:*  
Hayes & Hough Architects, Philadelphia, Pa.

*Structural Engineer:*  
Charles O. Muscheck, Philadelphia, Pa.

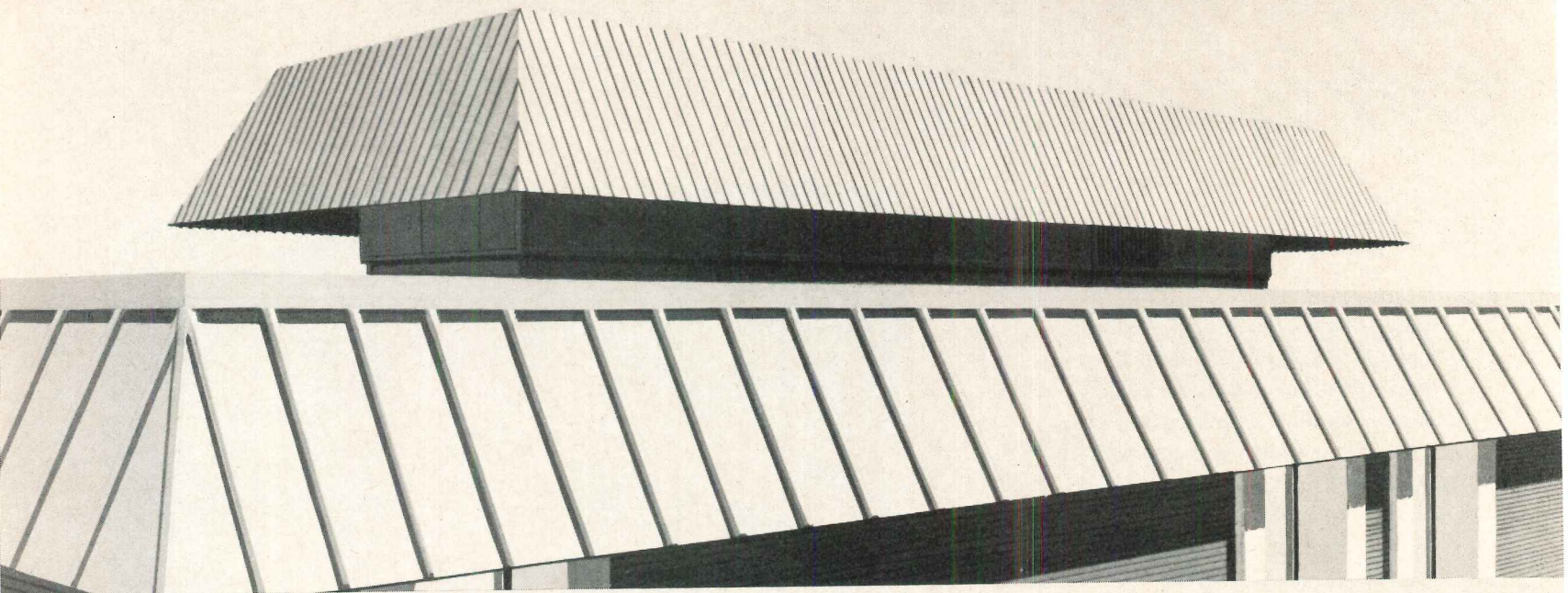
*Porcelain Enamel Panels:*  
The Betteger Corporation, Milford, Mass.

*Owner:* National Molasses Company,  
a Subsidiary of C. Brewer & Company, Limited,  
Willow Grove, Pa.

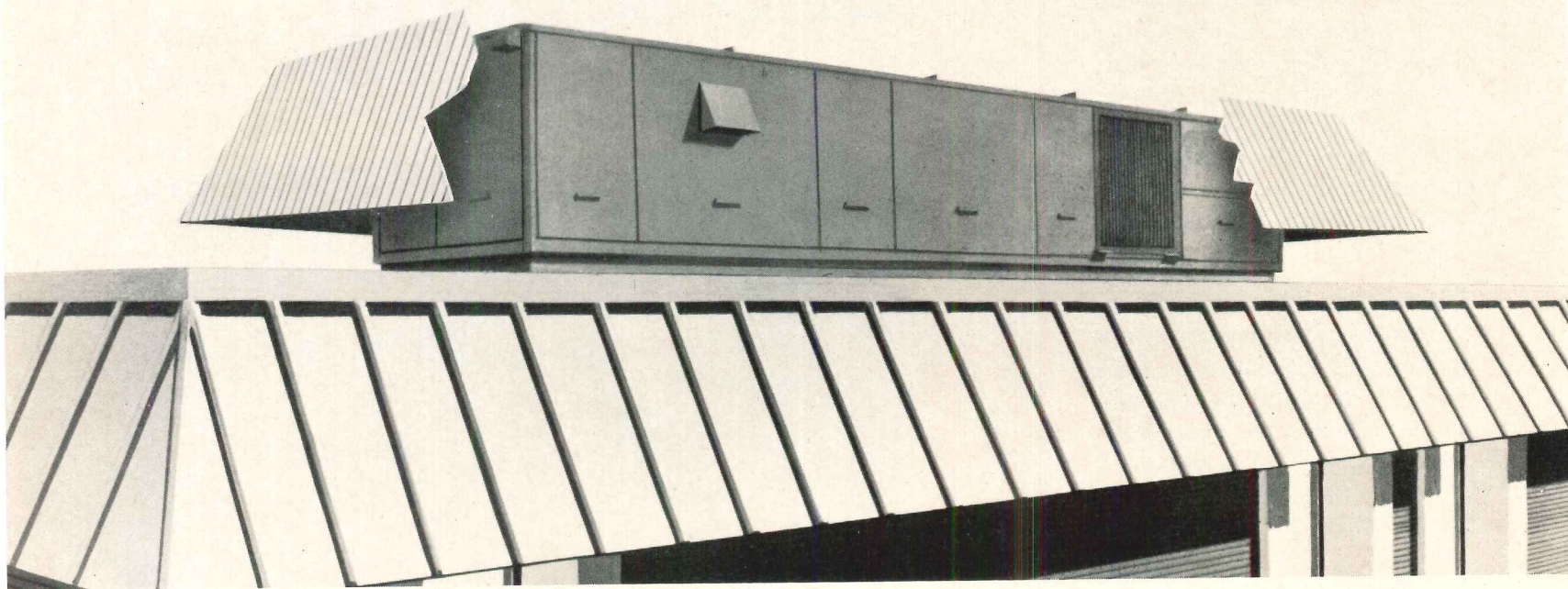




# Pretty smart idea outside



# full of smart new ideas inside



The new Mark 13 roof-mounted multizone now comes with an architecturally compatible facade system, in a choice of mansard or vertical designs. Sturdy aluminum fascia is available from AAF in 10 colors. In addition, many other fascia materials may be used to achieve building-matching designs.

*But that's not all.* Inside, you'll find a new multizone that is unsurpassed in engineering advances and dependability. We've added, for example, solid state

controls for precise, automatic year around programming and overload protection.

A new refrigerant reheat capability provides "free" heat and humidity control without activating the heating section in marginal and summer weather. When the heating section is called on, however, a new highly-efficient gas furnace assures economical, long-term operation. A new, fool-proof gas furnace forced draft system also eliminates problem causing vent

fans. Three other choices of heat are also available.

From top to bottom, front to back, the new Mark 13 offers a lot of smart new ideas, both fancy and functional. Write for Bulletin MZRM 103, Manager, Air Handling Products and Systems, AAF, Box 1100, Louisville, Kentucky 40201. In Canada: 400 Stinson Blvd., Montreal 9.

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American Air Filter

**AIR HANDLING PRODUCTS AND SYSTEMS**

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We're CCC, the largest manufacturer of commercial and institutional carpet systems with millions of square yards of references on the floors of major corporations, hospitals, schools and stores.

When you standardize on CCC for corporate carpet, we become your single source of responsibility for product performance, delivery, installation and maintenance.

Our program will reduce your administrative costs, assure you of consistent quality and price and give you centralized control of carpet purchases.


One call to a CCC corporate specialist will take care of your carpet needs from coast to coast. He's one of 70 experts we have around the country and he's backed by a nationwide network

of certified installers and regional standards operations managers.

To make sure you get maximum wear-life from your carpet at minimum life cycle cost, our man can help you set up a comprehensive maintenance program that's based on a building survey by a CCC maintenance consultant. The survey enables us to recommend a detailed plan for floor care procedures, frequency and equipment... including a CCC-formulated and endorsed line of maintenance chemicals.

Your CCC corporate specialist knows all about trench headerducts and other subfloor access systems and the best way to integrate carpet with them. He's well versed in leasing and can document how our Showplace

program will give you a completely carpeted building without using capital funds.

The CCC system features heavy duty Densylon carpet, constructed of Anso nylon and bonded to fire-retardant  sponge rubber cushioning. It has outstanding appearance retention, is easy to clean and keep clean, and contains a static control system. Densylon and our other heavy duty brands are available in a wide range of styles and colors so your standardization program can have all the design flexibility you want.

A carpet standardization program will effect a significant reduction in your operating costs if your supplier has the experience and expertise to make it work. CCC has both. Fill in the coupon and we'll share them with you.



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Dept. AR-3

Attention: Mr. Walter Brooks

- Please have a corporate specialist call on me.  
 Please send more information about your program.

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Title: \_\_\_\_\_ Phone: \_\_\_\_\_

Organization: \_\_\_\_\_

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State: \_\_\_\_\_ Zip: \_\_\_\_\_

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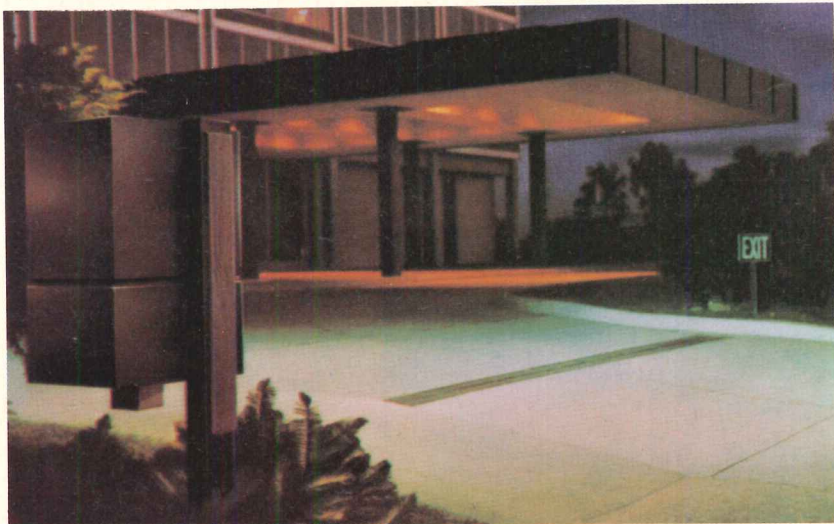
# Spaulding luminaires are seen in the very best places

Places like Veterans Stadium in Philadelphia, Pennsylvania . . . the Hayward City Center Building in Hayward City, California . . . at the entrance/exit of the Queen's Tower apartment/restaurant complex in Cincinnati, Ohio . . . and around the country at the distinctive blue roofed International House of Pancakes. ■ Spaulding luminaires, for seeing . . . and to be seen. Packages of light for planned communities, shopping centers, campuses, free standing buildings. Anyplace. ■ Lighting by Spaulding. Everything from sports to low level landscape lighting. Decoratively functional. Functionally decorative. A variety of luminaires to suit all of your lighting needs. ■ Spaulding is your one source of luminaires, posts/poles, brackets and lighting design innovation. All backed with dependable guarantees. All as near as your Spaulding representative.

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**LOOK TO SPAULDING FOR THE WIDEST  
SELECTION OF OUTDOOR LIGHTING  
PRODUCTS . . . ANYWHERE.**



*For more data, circle 18 on inquiry card*



## News in brief

The AIA has elected eight new honorary members who have made "distinguished contributions to the architectural profession, or to allied arts and sciences." The eight are: **Luis Echeverria Alvarez**, President of Mexico; **Stanley Marcus**, president of Neiman-Marcus Inc.; **Elliott Lee Richardson**, secretary of Health, Education, and Welfare; **Laurance S. Rockefeller**, president, American Conservation Association, Inc.; **Helen T. Schneider**, executive director, New Jersey Society of Architecture; **Beatrix Sebastian**, director, School Building Service, A.A.S.A.; **Sydney Steinborn**, chief, engineering division, U.S. Army Corps of Engineers, Seattle Division; **Wallace F. Traendly**, president, McGraw-Hill Information Systems Co.

**Architectural construction ended the year with a new high**, according to figures released recently by F. W. Dodge. The Dodge Index reported a 3 per cent seasonally adjusted increase in December coming mainly from the apartment building market. During 1971 a total of \$37.9 billion in non-residential and large residential building advanced from design to actual construction. This was 14 per cent higher than 1970's \$33.2 billion.

**Fiscal 1973 budget requests in the area of government-subsidizing housing look hopeful.** HUD's total estimated appropriations will jump from approximately \$3.8 billion in fiscal '72 to more than \$4.6 billion for 1973, and much of the increase is earmarked for housing programs.

**Cesar Pelli has been appointed Charlotte Shepherd Davenport Professor of Architecture at Yale University.** Pelli will teach at New Haven through the winter and spring sessions.

**Samuel M. Brody, FAIA, Morris Ketchum, FAIA, James Polshek and Louis Sauer have been named to the Bard Awards jury.** The jury will convene in mid-March to select winning entries in a competition aimed at promoting excellence in architectural and urban design in New York City.

**David Norton Yerkes, AIA, of Washington, D.C., has been named recipient of the 1972 Edward C. Kemper Award.** The award, given annually in recognition of an "AIA member who has contributed significantly to the Institute and the profession," will be presented to Yerkes in Houston during the 1972 AIA convention, May 7-10.

**The AIA/Community Services Department has recently published a brochure on CDC operations.** Single copies are available from the Institute headquarters free of charge. A larger, more comprehensive manual, entitled CDC/INFO and dealing with the subject in depth, will be available soon at \$12.50 per copy. In addition, a series of regional CDC seminars are scheduled for late March and April. For dates and locations, contact Vernon A. Williams, AIA national headquarters.

**Federal National Mortgage Association president Oakley Hunter** told homebuilders meeting at Houston, his agency expects to issue about \$7 billion in commitments and will purchase \$5 billion worth of mortgages this year. FNMA begins its secondary market operation in conventional mortgages this month. Hunter said his agency's planning was based on an expected inflation rate of about 3.5 per cent and GNP of 1.1 trillion or better.

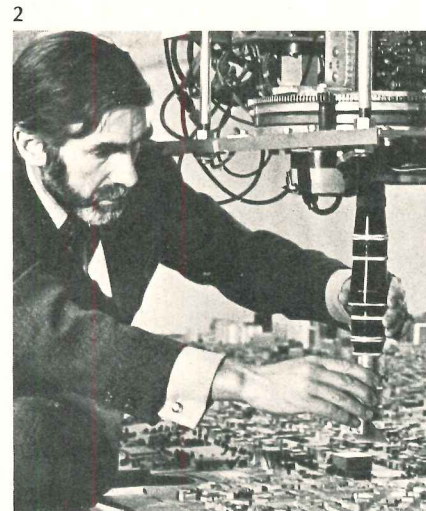
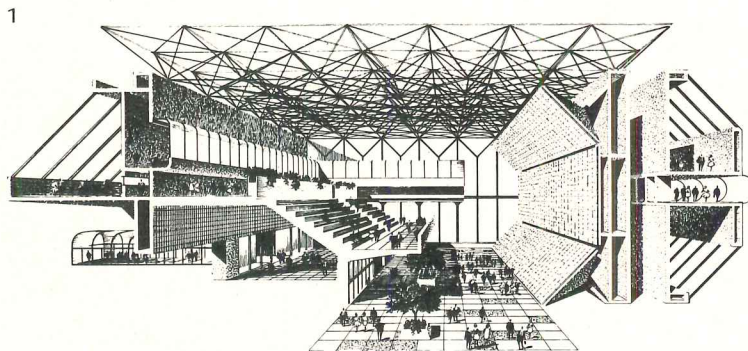
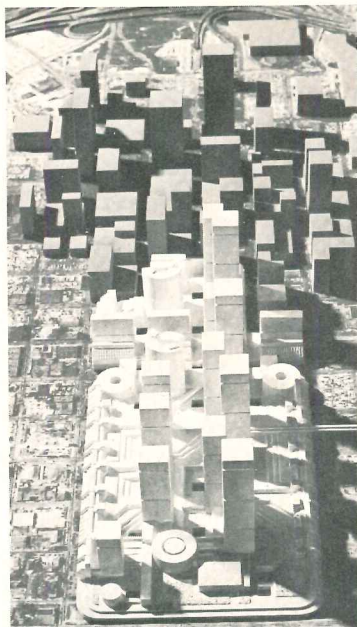
**Fazlur Khan, partner in charge of structural engineering at SOM's Chicago office,** was named *Engineering News Record's* "Construction Man of the Year." Kahn's recent work includes Chicago's John Hancock Building, Houston's One Shell Plaza and Chicago's 1450-foot-high Sears Tower.

**Arthur S. Newburg has been named director of Operation Breakthrough.** Newburg, who was deputy director, replaces Alfred E. Berry who will join the President's Advisory Council on Management Improvement.

**The American Institute of Planners and the Metropolitan Association of Urban Designers and Environmental Planners** are co-sponsoring a three-week study tour of Brazil in August 1972. Interested professionals will visit Rio de Janeiro, Sao Paulo, Salvador and Brasilia where they can study low-cost housing and urban problems. For information, contact Gail O'Gorman, American Institute of Planners, 917 Fifteenth Street, Washington, D. C., 20005.

**A World Symposium on Industrialized Building will be held at the Continental Plaza Hotel in Chicago on May 25-26, 1972.** Sponsored by Housing Research Incorporated, the symposium will be conducted by representatives of the Stanford Research Institute and the Batelle Memorial Institute. For further information, contact Mark A. Jorgensen, Housing Research Inc., High Crest Lake, Butler, N.J.





1  
**GROUND BREAKING  
ON HOUSTON CENTER**

Plans for the first increment of Houston Center, which will ultimately occupy 33 contiguous blocks of downtown Houston, were made public last month and construction of the initial phase has just begun.

The Houston Center concept envisions a "platform city," raised fifty feet above the existing street grid to completely separate vehicular and pedestrian traffic. The first three and one-half levels of the structure, along with two underground levels, will be devoted to parking for over 550 cars. The roof of the garage will form the main pedestrian level and will be reached from the street by an enclosed escalator, elevators and stairwells within the structure.

Initial buildings will include an office tower rising 40 stories above the platform level and a six-story wing which will extend along the north side of the block. The low-rise wing and the tower will be linked at the pedestrian level by a glass-enclosed air-conditioned gallery, two stories high and 180 feet long (rendering above).

When finally completed, Houston Center's elevated pedestrian level will extend without interruption to the inner loop freeway, comprising 74 acres of office buildings, hotels, retail stores, apartments and recreational facilities as well as extensive plazas, promenades and landscaped open space. Altogether, 23 million square feet of air-conditioned floor space will be ultimately provided, along with ample covered parking.

Associated architects of the first phase are William L. Pereira Associates and G. Pierce, Goodwin & Flanagan. Walter P. Moore & Associates will be structural engineers

and I. A. Naman & Associates, mechanical and electrical engineers. W. S. Bellows Construction Company has been named general contractor under the direction of project manager Brown & Root, Inc.

Houston Center was master-planned by William L. Pereira Associates of Los Angeles.

**NEW LIFE FOR RR DEPOTS**

Rep. Frank Thompson, Jr. (New Jersey) has introduced a bill that would help protect landmark railroad stations across the country from destruction. The bill would make unused passenger depots available to communities for such cultural activities as libraries, art exhibits and theatrical presentations. Responsibility for preparing programs for such uses would rest with the chairman of the National Endowment for the Arts.

The bill, currently in committee, is expected to receive a full Congressional hearing in the second session later this year.

**Shhhh!**

Due to its density, its traffic volume and its general level of industrialization, New Jersey has earned the title of "the nation's noisiest state." Governor William Cahill faced this problem squarely last month when he signed the country's first statewide noise-control law. New Jersey's Department of Environmental Protection now has authority to levy fines up to \$3,000 on chronic noise polluters.

**TACLE**

Seeking new approaches to solving city development problems, HUD has under consideration a new program it hopes to propose soon. This is TACLE—Total American Community Living Environment.

The final outlines of this newly-developed attempt to combine the resources of industry and the academic sector with government to secure better urban planning and development await determinations of the President's Domestic Council and of Mr. Nixon himself. (At press time, the plan had not moved beyond the Domestic Council at the White House.)

Depending upon its final form, the program might require Congressional action. If it does, the chances for approval this year would not be hopeful.

In essence, the proposal entailed selection of 14 areas for receipt of priority funding. HUD's requests for proposals would develop consortia composed of government agencies, government/industry combinations and educational interests. The proposals would entail major planning and development programs applied to area wide locations.

More precise details were expected in the President's forthcoming message on the subject of national growth policy.

**BICENTENNIAL SITE STILL  
UNCERTAIN**

Philadelphia has until March 15 to submit a comprehensive Bicentennial plan. If it fails to do so, fair officials warn that no 1976 World's Fair will be possible here or in any U.S. city. David J. Mahoney, chairman of the American Revolution Bicentennial Commission, noted that "... there have been five proposed sites and four presidents of the

Philadelphia Bicentennial Corporation in the past 13 months and we have yet to receive a complete report on what Philadelphia proposes."

At present, attention is focused on Eastwick, a site near the airport. The site has several drawbacks—noise pollution from the airport and air pollution from nearby tank farms—but under the pressure of impending deadlines, it appears to be Eastwick or bust.

2  
**ENVIRONMENTAL  
SIMULATOR**

The National Science Foundation has awarded \$704,600 to an interdisciplinary research team at the University of California to develop an environmental planning laboratory in Berkeley's Wurster Hall during the next two years.

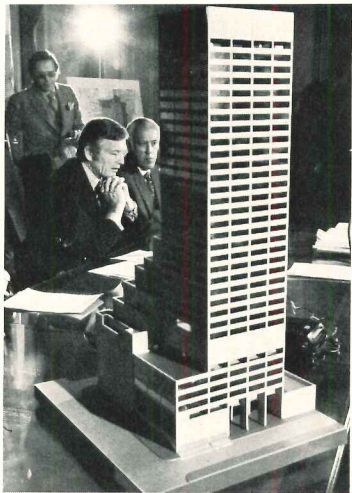
The heart of the laboratory will be a remotely guided television camera with tiny viewing attachments that will move through scale models of the environment, projecting continuous eye-level views on closed-circuit TV screens. The operator, seated at a steering wheel, will be able to "walk" or "drive" through small three-dimensional scale models of cities, suburbs, or natural environments. Trips through miniature environments can be shown realistically "live" to large audiences. Color films and videotapes can also be made, with computer-controlled guidance systems, for later screening.

Researchers Donald Appleyard and Kenneth Craik believe these vivid and accurate previews of alternative environmental futures should improve communication among professional designers, politicians, and the general public.

Working with public and private planning agencies and citizen



3

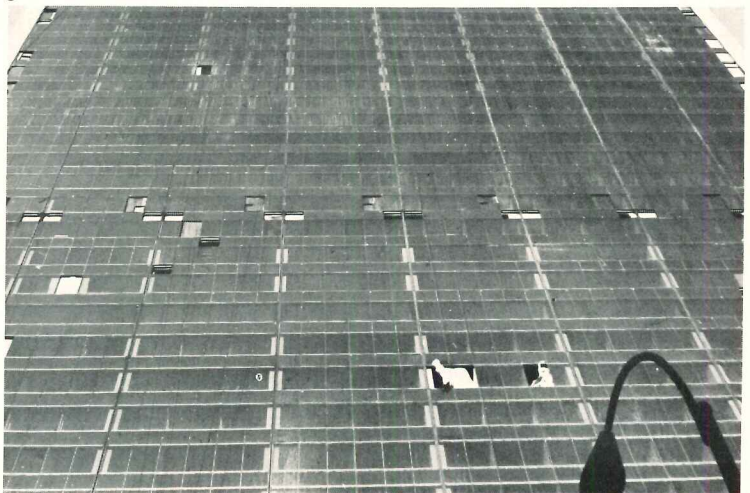


The New York Times

4



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groups, the researchers will simulate alternative development plans for research sites in the Bay Area. These plans will examine such critical environmental issues as population density; clustered site planning; the design, location and impact of alternative transportation systems; and traffic patterns. It will also deal with planning for the protection of hills, ridges and valleys, as well as creeks, flood plains and Bay shorelines, which are all under pressures for urban development.

This work will be based on a prototype machine-model system that started operating at Berkeley in 1970. This has been used for several projects, including a Ford Motor Company study of an automated auto guideway.

3

### NEW TOWERS FOR MANHATTAN UNDER INCENTIVE ZONING PLAN

Approval for two new multi-use structures to be located in midtown Manhattan was announced by Mayor John Lindsay at a press conference recently. The first, on the Fifth Avenue site of the old DePinna store, is a 37-story office/retail tower designed by John Carl Warnecke & Associates and built by Sam Minskoff & Sons. The second, on 58th Street off Park Avenue, will include stores, offices and thirty-five floors of cooperative apartments. David Kenneth Specter is architect for the 58th Street building and Madison Equities are developers.

Both structures are increments in a long-range effort by the City to infuse the mid-town area with 24-hour activity. Each building will therefore take advantage of special zoning incentives offered by the City to encourage more imaginative design. In each case, the devel-

oper's bonus was additional rental space. Both buildings, in return, provide covered retail arcades at street level as a pedestrian amenity.

Mayor Lindsay also used the conference to announce that John R. Blum will replace William S. Paley as chairman of the Urban Design Council. Alexander Cooper was simultaneously named director of the Urban Design Group.

4

### STEEL SCULPTURE FOR BROOKLYN MUSEUM SITE

A spiraling steel sculpture, 13 feet high, 7 feet wide and painted vivid orange, was dedicated last month in the plaza fronting The Brooklyn Museum. A gift of the Association for a Better New York, Inc (ABNY), the 2,000 lb sculpture, by Buky Schwartz, is one of the six large-scale pieces that will be relocated annually to different, pre-selected sites about the city.

### GROPIUS RETROSPECTIVE

An exhibition entitled "Walter Gropius 1883-1969: A Photographic Retrospective" will open on March 11 at Harvard's Fogg Art Museum. The exhibit, which is accompanied by a filmed interview with Gropius, includes more than 200 photographic panels and an historical assessment prepared by James Marsden Fitch. After its run at Fogg, the exhibit will tour the country.

### PLASTIC PIPE FOR SAN FRANCISCO

Apparently under pressure from HUD officials (who had warned that they would not approve requests for funds from cities with building codes that did not meet HUD's national standards), San Francisco's Board of Supervisors did a quick about-face recently by authorizing a change in the city's building code. They had previously voted down the proposed change that would have permitted the use of plastic pipe and electrical cable. Just as suddenly, and over the objection of the plumbers union, city fathers reversed themselves and approved the change.

The HUD funds at stake were \$38 million the city needed for various renewal and rehabilitation projects. San Franciscans were still smarting from cutbacks in other Federal funds which had precipitated a crisis in the City Redevelopment Agency.

5

### TOO MUCH FALLING GLASS AROUND CONSTRUCTION SITES

Eyewitness reports of large pieces of glass being sucked out of some mid-Manhattan skyscrapers this blustery winter reminds one of the downtown office building that nearly courted disaster some years back. A number of lights of glass, reportedly damaged during construction, were broken by the wind's suction and fell into an uncompleted, blocked-off plaza area.

Since that time many investigations and studies have been made; glass companies have refined their wind-loading recommendations; architects and engineers have become more familiar with wind effects on buildings; and—when such an approach

seems prudent—structural engineers and aerodynamicists are using wind tunnels to test building models set in their simulated surroundings to more accurately predict the effect of wind on the building structure and its enclosure.

Seemingly, more glass is being broken by the wind than should be. Recent reports of extensive breakage in a well-known New York-area building are unsettling, at the least.

Most often, glass is broken by wind when: 1) it has been damaged (surface scratches or abrasion weaken tensile strength of glass—e.g., welding spatter was the culprit in a famous Western building; 2) when the framing or gasketing that holds the glass can be excessively distorted by wind load; 3) when the glazing system has not been properly installed; 4) when the glass is not thick enough for the wind loads encountered.

Apparently no pedestrians have yet been killed by flying glass. But this is no reason why more careful study, design, installation and maintenance should not be applied before a serious accident really does occur.

### ARCHITECT TO HEAD N.Y. CONVENTION CENTER CORP.

Architect Thomas F. Galvin has been named executive vice president of the New York City Convention/Exhibition Center Corporation. This non-profit body has been formed to build and operate a large new convention center soon to be constructed on Manhattan's West Side.



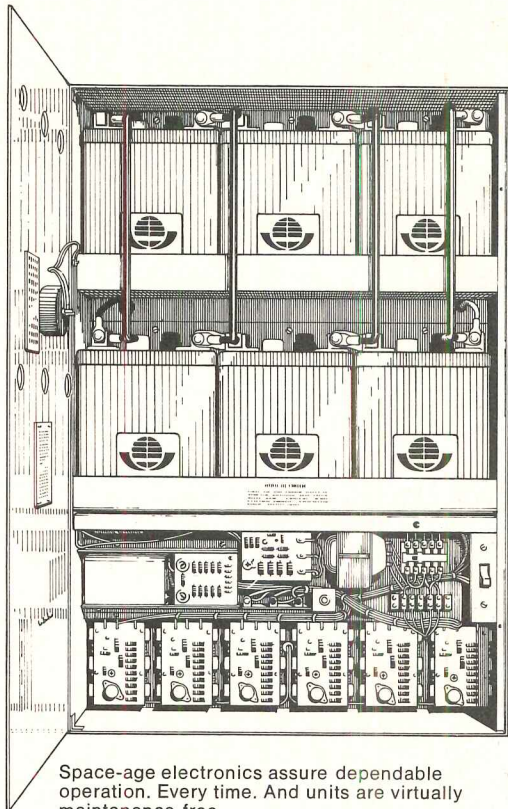
**H.E.L.P. Power Station.**

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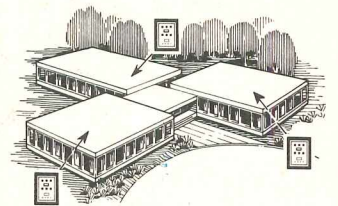
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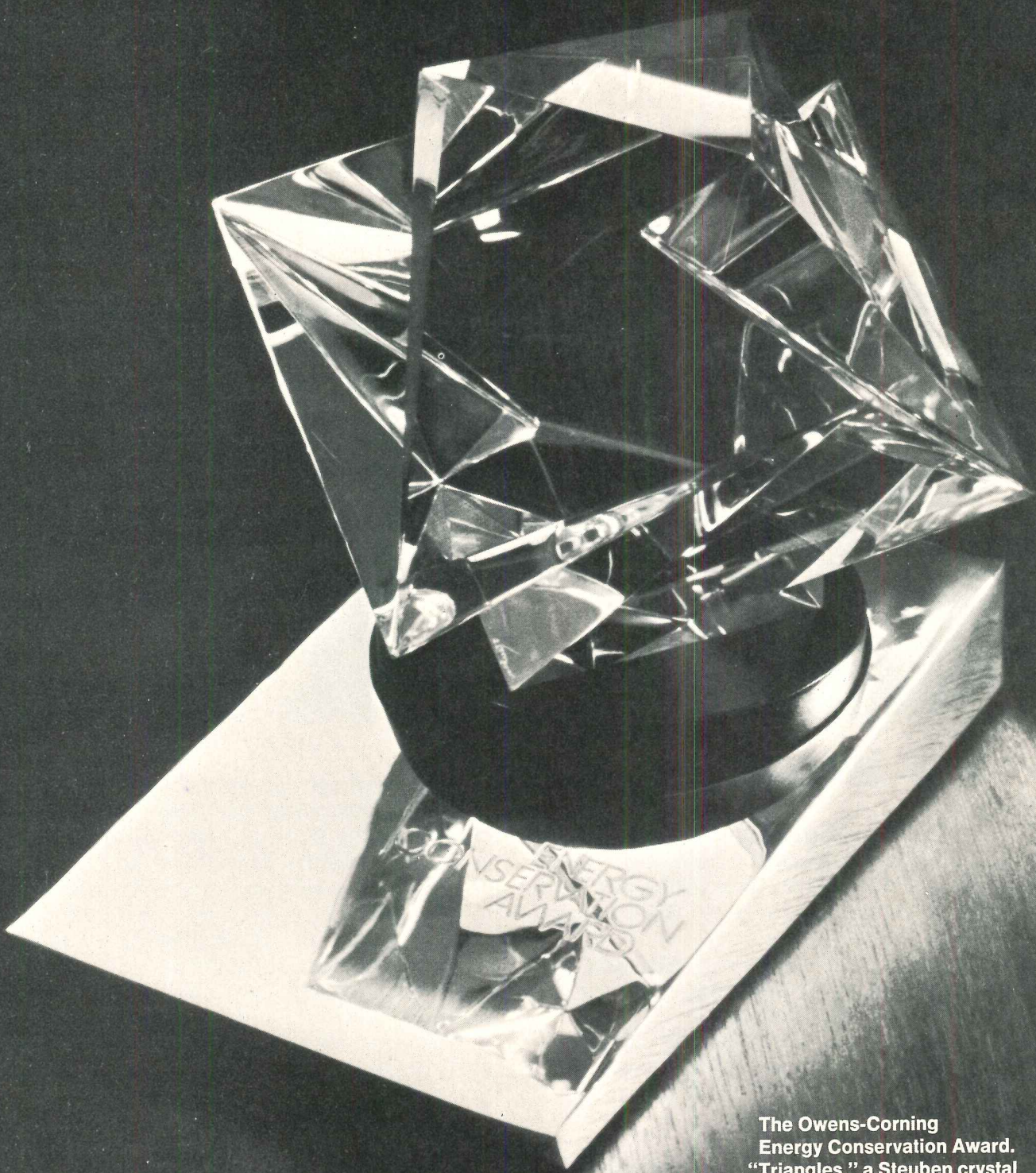
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**Who can enter.** All registered architects and professional engineers practicing in the U.S. are eligible. As individuals. Or in teams. But to qualify, your entry must be a commissioned building project—in the design process, under construction or a completed structure.

The use of Fiberglas\* products is not an entry requirement.

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professionals in the fields of architecture and engineering—will present an award in each of these categories:

*Institutional*—schools, hospitals and government buildings, for example.

*Commercial*—office buildings, shopping centers, retail stores and similar structures.

*Industrial*—including manufacturing plants, research centers, warehouses.

Equal emphasis will be given to all entries in each category, regardless of project size.

Winning architects and engineers will receive a Steuben crystal sculpture—the multi-faceted polyhedron shown on the opposite page. The firms and building owners associated with the winning entries will receive Steuben plaques.

**Send for entry details now.** Completed entries must be submitted by August 31, 1972, so that winners can be notified in September 1972.

For a brochure giving complete details, contact your local Owens-Corning representative. Or write: Owens-Corning Fiberglas Corporation, Energy Conservation Award Program, Fiberglas Tower, Toledo, Ohio 43659.

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to piece a library together by having to buy furnishings from five or six different manufacturers.

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for the first time, the means with which you can provide the best in modern library service!

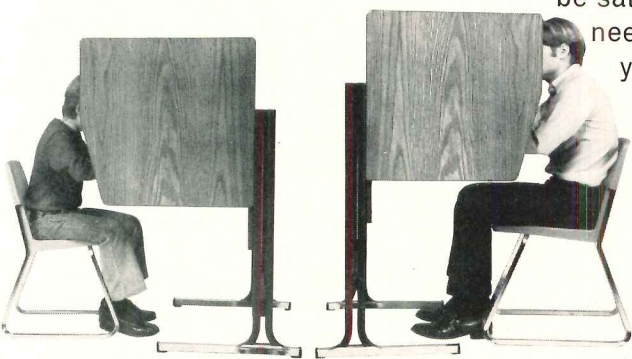
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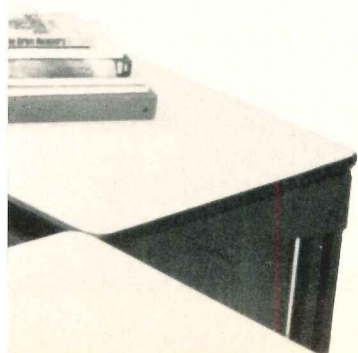


Periodical reference grouping.



Study carrels meet both elementary or secondary school physical requirements.

Charging desk assembly.

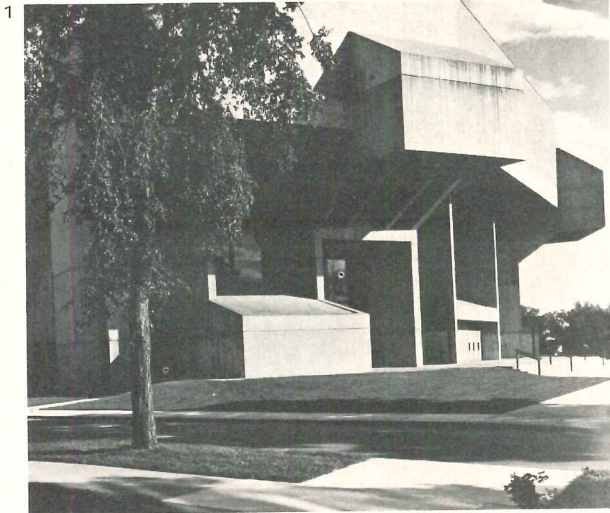


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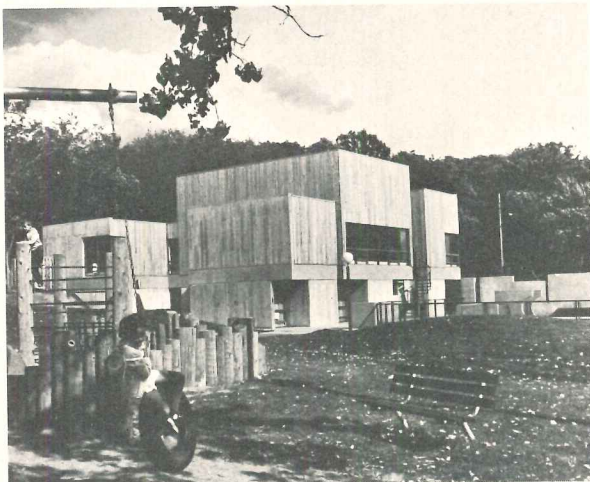
## AIA award winners across the country



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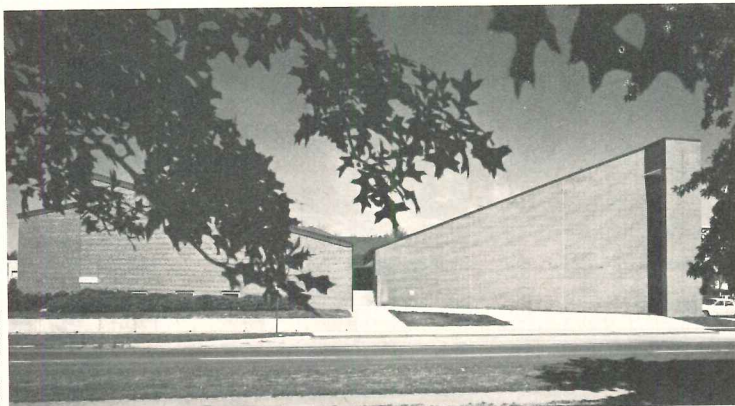


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The Minnesota Society of Architects gave seven Honor and six Merit Awards. Hammel, Greene & Abrahamson, Inc. won three Honor Awards for: College of Saint Catherine Fine Arts Center, (1), St. Paul; Bush Memorial Library, Hamline University (2), St. Paul; Jonathan Village Center, Chaska, and one Merit Award for: the Church of St. Rita, Cottage Grove. Hodne/Stageberg Partners Inc. won two Honor Awards for: the Hillsborough Apartments, Roseville; the Luxton Park Community Building (3), Southeast Minneapolis, and one Merit Award for the renovation of the Hodne residence, Minneapolis. The other Honor Awards went to Cottle-Herman Architects Inc. for a Betty Crocker Tree House Restaurant (4) in Dallas and to Voigt & Foure Inc. for Saint Stephen's Catholic Church in Anoka. Other Merit Awards went to Ralph Rapson and Associates Inc. for the Performing Arts Center at the University of California at Santa Cruz; Thorsen & Thorshov Associates Inc. for the Minnetonka Municipal Building; Bissell, Belair & Green for the Armstrong Senior High School in Plymouth; and The Cerny Associates for the Brooklyn Center Fire Station. The jury: Claude Stoller; Gerald McCue; Professor Richard Peters; Russell Ellis; Professor T.Y. Lin.



Joel Strasser

5

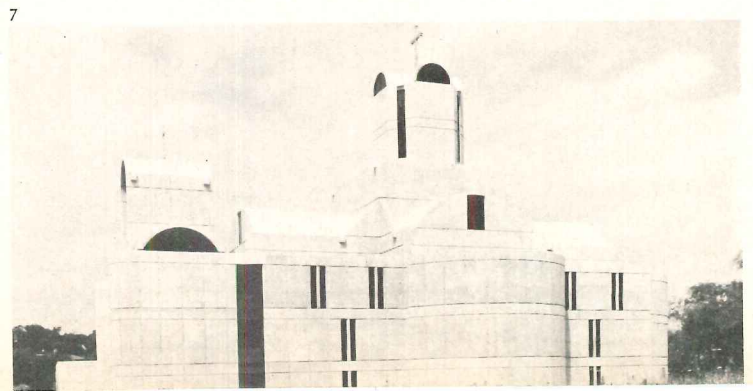
The Nebraska AIA gave Honor Awards to the Tollefson Residence in Wausa by Neil Astle & Associates; the University Lutheran Chapel (5) in Lincoln by Dana Larson Roubal and Associates; the John Skold Residence (6) in Lincoln by Bahr Hanna Vermeer & Haecker; the Charles H. Gere Library and the Madonna Home, both in Lincoln and by Clark & Enersen, Hammersky, Schlaebitz, Burroughs & Thomsen. The jury: George Anselvicius, chairman; George McCue; Gyo Obata.

Edholm & Blomgren



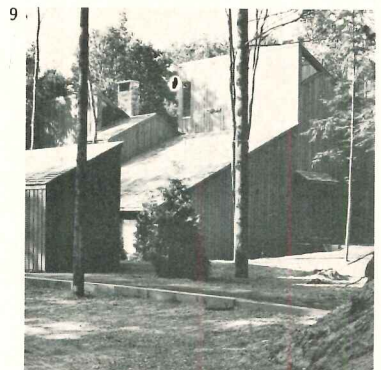
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The Pennsylvania Society of Architects gave its Distinguished Building Award to John V. Tomich for the Holy Trinity Serbian Orthodox Church (7) in Whitehall.



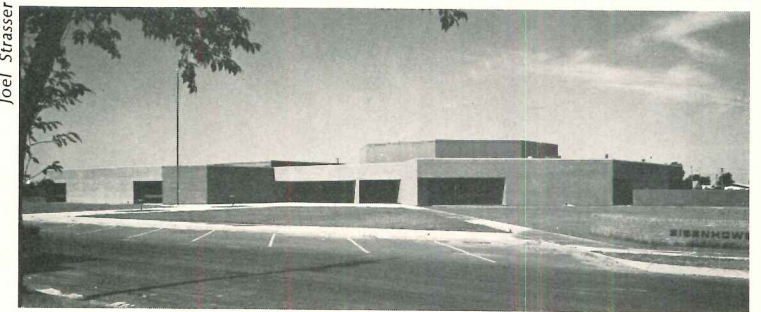
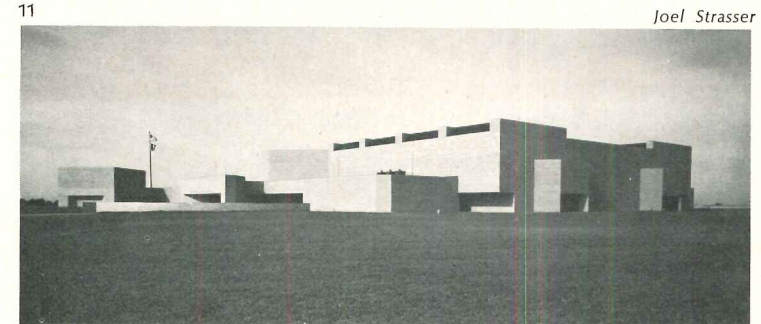
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No. 1, L'Arbre Croche Development (9), Harbor Springs by Swanson Associates, Inc.; Public housing for the elderly (RECORD, Mid-May 1970) in Wayne by William Kessler and Associates; Carillon Tower, General Motors Institute in Flint by Tarapata-MacMahon-Paulsen; Troy Public Library by Straub, VanDine Associates; Highland Park Environmental Design Program by Christopher Wzacny and Associates and Edward Colbert/Systems; Michigan Bell Telephone Co. Woodward District Plant Office and Garage, Detroit, by Smith, Hinchman & Grylls Associates, Inc. The jury: William Caudill, FAIA; George Pierce, Jr., FAIA, and Harwood Taylor, AIA.

The Detroit AIA gave Honor Awards to: The University of Michigan School of Dentistry (8), Ann Arbor, by Smith, Hinchman & Grylls Associates, Inc.; Condominium Group

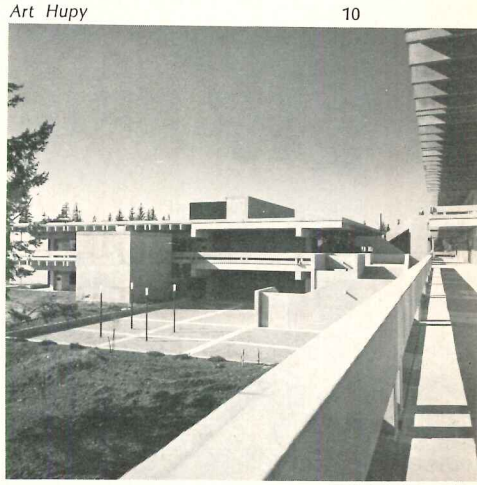


13

The Dallas AIA and the Texas Society of Architects both gave awards to: the Braniff Jetrail Terminal (15) at Love Field by The Pierce, Lacey Partnership, Inc.; the Cumberland School restoration (16) for Sedco, Inc. by Burson, Hendricks & Associates; and Eastfield Junior College (17) by Harwood K. Smith & Partners and Ernest J. Kump As-

sociates. The other seven Dallas awards included three to The Oglesby Group, Inc., architects, for: a Community Center in Allen; the Mr. and Mrs. Sidney Stahl residence; and 710 N. St. Paul, a remodeled office building. Other Dallas winners were: the Dallas Garden Center Solarium by Pratt, Box, Henderson & Partners; the Medical and Surgi-

The Portland AIA gave three First Honor Awards to: Portland Community College (10) by Wolff/Zimmer/Gunsul/Frasca/Ritter; Workers Lunch Room by Robert York; and to "A Visual Survey of Downtown Portland," a volunteer effort by local chapter members and other interested professionals to aid planners. Honor Awards went to: The West Side Apartments by Martin & Soderstrom; Portland Art School Addition and Sculpture Court by Pietro Belluschi and Wolff/Zimmer/Gunsul/Frasca/Ritter; Crown Plaza by Wolff/Zimmer/Gunsul/Frasca/Ritter; Tanglewood by Campbell, Yost & Partners; Oliver Residence by James Oliver; Mountainview Lodges by Wilmsen, Endicott, Greene, Bernhard & Associates. Citations were given to the Sheldon Residence by Colburn, Sheldon & Kaji; Sunriver Country Store by Herbert K. Chin; Park Residence by Martin & Soderstrom (RECORD,



March, 1972, pages 105-108); St. Peters Hospital by Skidmore, Owings & Merrill (see contents page); Zach Studio and Residence by Gary Michael; and Pacific University Athletic Center by Skidmore, Owings & Merrill. The jury: William Muchow, FAIA; Howard Backen, AIA; Lee Kelly, sculptor.

11 Joel Strasser



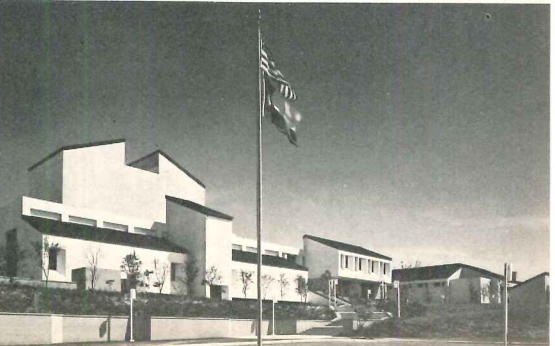
The Kansas AIA gave five Design Awards. The First Honor Award and three Honor Awards went to Schaefer, Schirmer & Eflin for Chaparral High School (11) in Anthony-Harper; Pizza Hut Corporate Offices (12), Wichita; Fort Dodge Infirmary (14), Dodge City; and Eisenhower & Kennedy Elementary Schools (13), Wellington. The Merit Award went to Charles McAfee for Volks Homes, Wichita. The jury: Ray D. Crites, Theodor M. Hoener, Dean Graves.



12 Paul S. Kivett

cal Clinic in Denison by Dale E. Selzer Associates—project architect, Leonard Volk; the Lejon Cosmetics store in Richardson by Gerald Worrall II; Mountain View College by Harrell + Hamilton/Chan + Rader. The Dallas jury: Donald Barthelme, FAIA; John Desmond, FAIA, and George Clayton Pearl, AIA. Additional Texas So-

ciety of Architects First Honor Awards went to the McCormick Country Estate in Brenham by W. Irving Phillips and Robert W. Peterson; the Anniston Educational Park, Anniston, Alabama, by Caudill, Rowlett, Scott; and the Trailwood Greenway and Pool Pavilion, in Humble, Texas by Charles Tapley and Associates.



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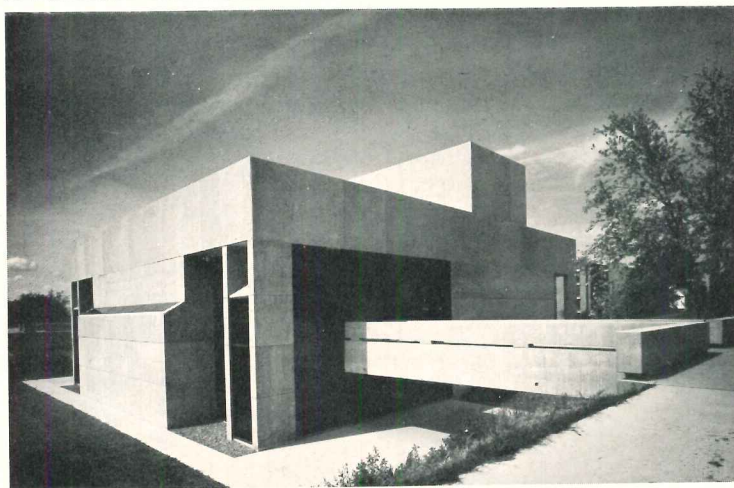
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**The Department of the Army Chief of Engineers Architectural Design Awards Program** jury consisted of Robert F. Hastings, FAIA; Peter J. Blake, FAIA; and William W. Caudill, FAIA. They gave three Awards of Merit to: the Officers' Open Mess (22), McGuire Air Force Base, New Jersey, by Nolen and Swinburne Partnership; family housing at the Presidio of San Francisco (23) by George Matsumoto and Associates; and Sacramento Peak Observatory (24), New Mexico, by Charles W. Jones, engineers.



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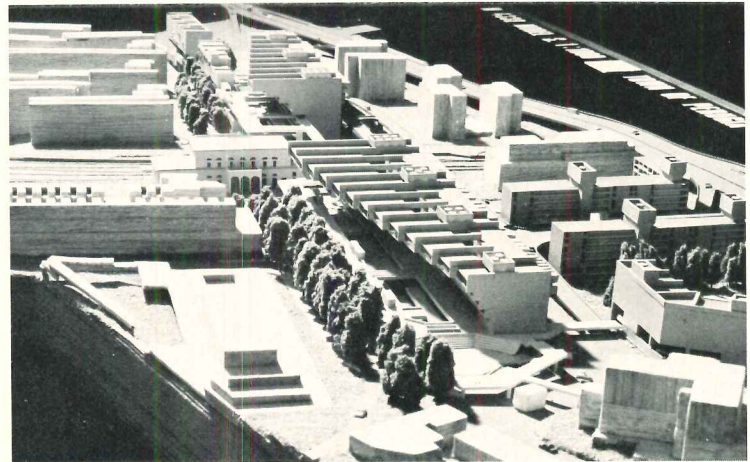
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The Iowa AIA gave two Medal Awards: one to William Nowysz and Associates for the Things & Things store in Iowa City (18); the other to Charles Herbert and Associates for the Ingersoll branch of the Home Federal Savings and Loan Association of Des Moines (19). Five Merit Awards also went to Charles Herbert and Associates for: the A. H. and Theo Blank Performing Arts Center, Simpson College, Indianola (20); the Executive

Offices of the Des Moines Register and Tribune, Continental Western Insurance Co. headquarters and a vacation house, all in Des Moines; and the University of Iowa College of Nursing building in Iowa City. Another Merit Award was given to Wilkins Bussard & Dikis for the A. H. Blank Golf Clubhouse (21) at the Municipal Golf Course in Des Moines. The jury: Ulrich Franzen, FAIA, chairman; Robert A. M. Stern, AIA; Jeanne Davern, Hon. AIA.

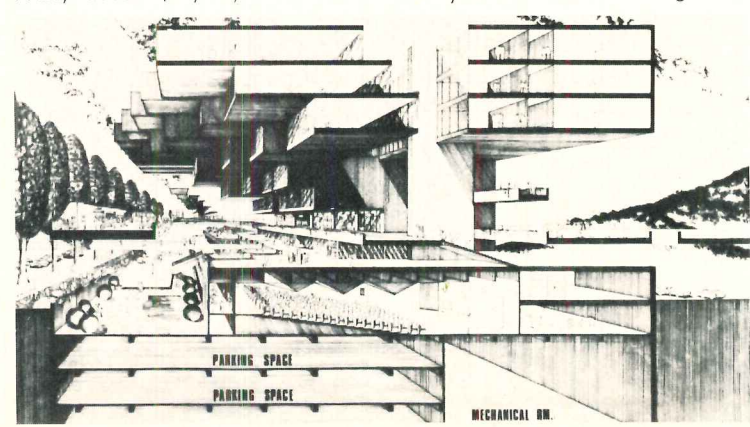
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**Winners of the international competition co-sponsored by Perugia and I.B.P. Industrie Buitoni Perugia** for the design of a downtown business district in the ancient, university hill town of Perugia in central Italy were as follows: First Prize (25,26), about \$19,000, to Tsuto Kimura of Tokyo; Second Prize, about \$16,000, to Warren

Schwartz of Cambridge, Massachusetts; Third Prize to Ludovico degli Uberti of Rome; Fourth Prize, to Alena Sramkova of Prague. Three other American firms won Honorable Mentions: Giori Stavi of Seattle; Hanford Yang of New York; and Michael Cunningham of Christiansburg. The 15-man jury consisted mostly of architects and engineers.

26





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BENEFITS ?**

# Answers to your Questions about the new **Barrett** roof inspection & service program.

Recently, we conducted a series of interviews with architects all across the country to determine their awareness of the advantages and benefits the new Barrett Roof Inspection and Service Program offers to building owners. The questions and answers on the following pages represent a composite of these interviews. We hope they will be helpful to you.

**THE CELOTEX CORPORATION**



# Answers to your Questions about the new Barrett roof inspection & service program.

## NO MONETARY LIMIT

**Q** How does the new Barrett Roof Inspection and Service Program differ from the 20-year bond plan which has been so widely specified for so many years?

**A** The most important difference is the amount of liability which Celotex assumes. The old standard 20-year bond limits the manufacturer's liability to a total of \$10 per square during the entire 20-year period. Under the new program, there is no limit to the amount Celotex will pay, during the entire period of the contract, to correct leaks due to causes covered in the contract.

Let's use a practical example to illustrate the difference. You have a 20,000 square foot roof. A series of leaks develops and it is determined that the roofing manufacturer is to pay the cost of repair. Under the old bond plan, our maximum liability is \$2,000. When that \$2,000 has been expended, there is no further monetary liability, regardless of the bond issue date. Under the new contract, Celotex would pay for repair of all leaks covered, during the full period of the contract.

The new program also differs from the old bond plan in period of coverage, in cost, and offers additional inspection service.

**Q** What is the period of coverage under the new program?

**A** The contract covers a period of 10 years. It also gives the owner option to renew for an additional 10 years, if he makes recommended corrections and preventive repairs to the structure and to the roof, which our inspector determines are necessary to put the roof in satisfactory condition for continued good performance. This feature provides a valuable service which the

bond did not offer: at no cost, at the end of 10 years, the building owner receives a roof inspection and recommendations which conceivably could help him avoid costly trouble. He can then elect to renew or not renew the contract.

## \$3 PER SQUARE FOR FIRST 10 YEARS

**Q** What does the building owner pay for coverage under your new program?

**A** Cost for the initial 10 years is \$3 per square. Cost to renew the contract for a second 10-year period will be two-thirds of the charge for the initial 10-year period in effect at that time.

Cost of the new program, for the initial period, is the same as the current cost of the old 20-year bond—yet the new plan provides additional inspection service and has no monetary limit on leak-repair costs. When compared to the cost of the bond and to the cost of independent inspection services—which do not provide monetary guarantee in case of leaks, or continuing inspection service—our new program is obviously the best investment of all.

**Q** How does the owner benefit by renewing the contract for a 10-year period? Why not just make recommended repairs, if any, and save the cost of renewing?

**A** If no problems are indicated, he may be saving money by not renewing. If he renews, however, he gets all the original benefits for another 10 years: unlimited manufacturer liability in case of leaks due to covered causes; free inspections should leaks occur; and free inspection and recommendations, on request, when alterations or additions are contemplated.

**Q** What other services and inspections are included in the new program?

**A** To begin with, on request, a qualified Celotex representative will review plans and specifications, attend pre-job meetings, and make recommendations. During application and after completion, inspections will be made and notice of inspection will be sent to the architect or owner. When the roof is two years old, another inspection will be made. And we'll make the 10-year inspection and recommendations, if requested, at no charge, even if the contract is not renewed.



## COVERS MATERIALS AND APPLICATION

**Q** Does the Celotex liability apply to repair of leaks caused by faulty application, as well as to leaks due to defective roofing materials?

**A** Yes. The new contract clearly states that Celotex will pay all costs of repairs necessary to correct roof leaks resulting from errors in workmanship of roofing contractors in applying Barrett roofing membrane and flashing materials. It also covers leaks due to failure of those materials resulting from usual and ordinary wear and weather. This liability does not apply to errors in building design or construction.

**Q** Does your guarantee include expansion joint covers?

**A** Yes, it includes the Barrett Expansion Joint Shield when installed in conjunction with a roof that is covered by our contract. It does not cover any other expansion joint cover even though that cover is installed by a Barrett Approved Roofing Contractor on a roof where Barrett roofing membrane and flashing are covered. To our knowledge, Celotex is the only manufacturer offering a guarantee-type plan that includes an expansion joint cover.

**Q** If I specify a reputable brand of roofing materials, and the general contractor retains a reputable roofer, isn't that sufficient assurance of good roof performance? Why should my clients spend the additional \$3 per square?

**A** It is true that under those conditions you minimize the risk of leaks due to faulty materials or application. Our roofing materials are produced totally by machine under quality control methods, and there is very little risk of their failing. On the other hand, application of these materials is largely manual and the chance for leaks due to human error is far greater.

No matter how good the roofing contractor's reputation is, or how dedicated he is to doing a first-class job, one of his workmen can make an error, or fail to follow an instruction, or neglect to follow some requirement of the specification, and a leak can result. The Barrett contract protects the owner against cost of repairing leaks resulting from this situation.

As with most types of insurance, the buyer hopes he will not have to collect, but the nominal cost makes it a wise investment in protection.

## OFFERS MOST RELIABLE PROTECTION

**Q** Does your on-the-job inspection insure proper application and adherence to specifications?

**A** Certainly the purpose of our inspections is to assist the contractor in making sure the roof is being applied as specified. No inspection, of course, can include every minute of time for every workman and every square foot of the roof during application. An error can occur on any roof, no matter how diligent the inspector. Under our program, chances for these errors are minimized in two ways: (1) the two-party inspections, ours and the contractor's, (2) the fact that only Barrett Approved Roofing Con-

tractors are authorized to apply our guaranteed roofs. Contractors must meet the highest industry standards to qualify for approval.

**Q** Why should the building owner buy an inspection and service contract to protect against the possibility of leaks due to faulty application? Doesn't the roofing contractor bear a responsibility for good workmanship?

**A** In some localities the roofer has a written obligation to repair leaks due to faulty application during the first two years after completion, but no liability of any kind after the first two years. Some roofers accept responsibility for their work for two years or even longer, but do not enter into a written agreement. In short, there is no standard industry practice. During a 10-year period, a roofing firm may change management and policies.

Experience has proved that the most reliable protection for the building owner is a long-term guarantee by an established roofing manufacturer. Barrett introduced the roofing bond in 1916, and all major manufacturers adopted the same type of plan. We have paid out many millions of dollars to owners of Barrett-bonded roofs for repair of leaks. This new Barrett Roof Inspection and Service Program is an updated version of the bond plan, with additional owner benefits.

**Q** One of our large clients has thousands of squares of built-up roofs installed annually. Wouldn't it be to his advantage to set up a \$3 per square reserve fund for possible repairs, rather than buy your inspection and service contract?

**A** It could work out that way. He may never have to spend any money for repairs due to faulty application or materials, and he would have saved the contract fee. On the other hand, one serious leak problem could wipe out his entire fund. What you are suggesting amounts to an underwriting plan with very little leverage. There would be no opportunity to spread repair costs against fees from a large number of owners as is normally done under insurance-type programs. Being his own underwriter could end up being a very uneconomical choice.

## TYPE OF LEAKS NOT COVERED

**Q** What types of leak problems are not covered by your contract?

**A** The contract plainly states that Celotex is not liable for leaks or damage caused by: natural disasters such as hurricanes, hail or windstorms; or by structural failures; or by changes in building uses unless approved in advance by Celotex;

(CONTINUED)

**THE CELOTEX CORPORATION**



# Answers to your Questions about the new Barrett roof inspection & service program.

or by additional installations on or through the membrane, or repairs to roofing or flashing membrane, after completion, unless accepted by Celotex. Nor is Celotex responsible for damage to interior, building contents, roof insulation or deck over which roofing membrane is applied.

**Q.** How will it be determined whether a leak is due to errors in application, faulty materials, structural movement or other causes?

**A.** When we are notified that a leak has occurred, a Celotex representative will inspect the roof. The architect and owner may be present or represented. In most cases, the cause of leaks will be readily apparent. For example, leaks through openings in the plies in an area where there is no evidence of structural movement, or leaks through blisters which may have ruptured due to drying out, would be ascribed to improper application and cost of repairs would be paid by Celotex. If the trouble is due to structural movement, evidence is usually equally apparent. If a flashing has broken away from a wall in which there are severe cracks, the cause is obviously building movement and is not covered.

**Q.** Do other roofing manufacturers offer this new-type contract?

**A.** A number of other major manufacturers offer inspection and service contracts that are close enough to the Barrett contract to qualify for acceptance in your "or equal" specification. The cost, periods of coverage, and renewal options are essentially the same. There is, however, one notable exception: the Celotex guarantee is the only one, to our knowledge, that includes an expansion joint cover—the Barrett Expansion Joint Shield.

## OLD-TYPE BOND STILL AVAILABLE

**Q.** Does Celotex still offer the old-type roofing bond?

**A.** Yes. Even though we strongly feel that our new Barrett Roof Inspection and Service Program is a far better program for building owners, we will continue to offer the bond as long as necessary from a competitive standpoint. Also,

many existing specifications calling for "bonded roofs" were written before the new program was developed, and Barrett Approved Roofing Contractors must be kept in position to bid these jobs.

## IF ROOF INSPECTION AND SERVICE PROGRAMS WERE FREE . . .

chances are that architects and building owners would insist they be included in every specification. Therefore, the added cost would seem to be the determining factor in deciding whether or not guarantee-type coverage should be specified. *What is the added cost of the Barrett Roof Inspection and Service Program in relation to total building cost?*

	SCHOOL 2 floors 100 MSF	HOSPITAL 6 floors 180 MSF	FACTORY 1 story 100 MSF	OFFICE BUILDING 10 floors 200 MSF
Sq. Ft. Cost of Building	\$24.	\$45.	\$14.	\$18.
Total Cost of Building	\$2.4 million	\$8.1 million	\$1.4 million	\$3.6 million
<b>ADDED COST FOR 10-YEAR BARRETT PROGRAM*</b>				
Total at \$3 per 100 Sq. Ft.	\$1,500	\$900	\$3,000	\$600
Per Sq. Ft. of Building	1½¢	½¢	3¢	¾¢

\*10-YEAR BARRETT ROOF INSPECTION AND SERVICE CONTRACT PROGRAM

The actual added cost for the Barrett Roof Inspection and Service Program is small. It is relatively insignificant in the total sq. ft. cost of the building. When consideration is given to the period covered (10 years) and the no-monetary-limit feature, the program is indeed extremely low cost protection.

We'll welcome your request to have a Celotex representative tell you more about the Barrett Roof Inspection and Service Program and supply you with data on Barrett roofing products and systems . . . "everything from the deck up."



**THE CELOTEX CORPORATION**

Tampa, Florida 33607  
Subsidiary of Jim Walter Corporation

For more data, circle 31 on inquiry card



# BARRETT ROOF INSPECTION AND SERVICE CONTRACT

No. C 000

THE CELOTEX CORPORATION, UNDER THE PROVISIONS STATED HEREIN, WILL PROVIDE INSPECTION AND REPAIR SERVICE TO THE BARRETT ROOF DESCRIBED BELOW FOR A PERIOD OF TEN (10) YEARS FROM DATE OF COMPLETION.

Owner: \_\_\_\_\_  
 Building Description: \_\_\_\_\_  
 Location: \_\_\_\_\_  
 Roof Specification No.: \_\_\_\_\_ Flashing Specification No.: \_\_\_\_\_  
 Area of Roof Under Contract: \_\_\_\_\_  
 Lineal Ft. of Flashing Under Contract: \_\_\_\_\_  
 Date of Completion: \_\_\_\_\_  
 Roofing Contractor: \_\_\_\_\_

**COVERAGE**

The Celotex Corporation will pay all costs of repairs necessary to correct roof leaks resulting from the following causes:

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. Deterioration of Barrett roofing membrane or Barrett base flashing resulting from usual and ordinary effects of wear and weather.</li> <li>2. Errors or mistakes in workmanship of roofing contractor in applying the Barrett roofing membrane and Barrett base flashing.</li> <li>3. Blisters, bare spots, buckles, wrinkles and ridges, in the roofing membrane.</li> </ol> | <ol style="list-style-type: none"> <li>4. Splits in roofing membrane or base flashing except as excluded below.</li> <li>5. Damage to roofing membrane or base flashing resulting from extreme fluctuations in temperature.</li> <li>6. Breaks in flashing strips over gravel stop or other metal flanges.</li> <li>7. Slippage of roofing membrane or base flashing.</li> </ol> |
|---|--|

**EXCLUSIONS**

The Celotex Corporation will not be responsible for leaks or consequential damage caused by any one or combination of:

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>A. Natural disasters including but not limited to floods, lightning, hurricanes, hail, windstorms, earthquakes, tornadoes.</li> <li>B. Structural failures such as settling, shifting, distorting, splitting or cracking of roof decks, walls, girders, partitions, foundations, etc.</li> <li>C. Improper application or failure of any component underlying the roofing membrane or base flashing such as deck, roof insulation, vapor barrier, etc.</li> <li>D. Changes in the original principal usage to which building is put unless approved in advance in writing by Celotex.</li> </ol> | <ol style="list-style-type: none"> <li>E. Erection or construction of any additional installation on or through the roofing membrane or base flashing after date of completion unless installed in a manner prescribed and accepted by Celotex.</li> <li>F. Application of or repairs to roofing membrane or base flashing after date of completion unless done in a manner prescribed and accepted by Celotex.</li> <li>G. Under no circumstances whatsoever shall Celotex be liable for damage to interior, contents of building, roof insulation, roof deck or other base over which roofing membrane or base flashing is applied.</li> </ol> |
|---|--|

**ACTION**

In the event leaks from any cause should occur, owner shall notify Celotex promptly, confirming such notice in writing. Celotex will inspect the roof, and if cause of leak is within the coverage as stated above, Celotex

will arrange for repairs to be made at no cost to owner. If cause of leak is not covered, Celotex will not be responsible for cost of any repairs.

**RENEWAL OPTION**

At the end of the initial ten (10) year period, the owner shall have the option to renew this contract for an additional (10) ten years under the following conditions:

During the tenth year of this contract, if the owner of the building so requests, Celotex will make an inspection of the roof and issue to the owner a report on the condition of the roof outlining any and all maintenance work that should be done. This inspection by Celotex is free of charge and without obligation.

If the owner elects to exercise his option to renew this contract, he shall have the maintenance work de-

scribed in the report performed at his cost by a roofing contractor acceptable to Celotex and will notify Celotex upon the completion of this work. Maintenance work required must be completed no later than 90 days after expiration date of this contract.

Upon payment of a charge which shall not exceed 2/3 of the then current initial service fee being charged by Celotex, the roof will be reinspected by Celotex and, if found to be acceptable, this contract will be extended for an additional ten (10) year period.

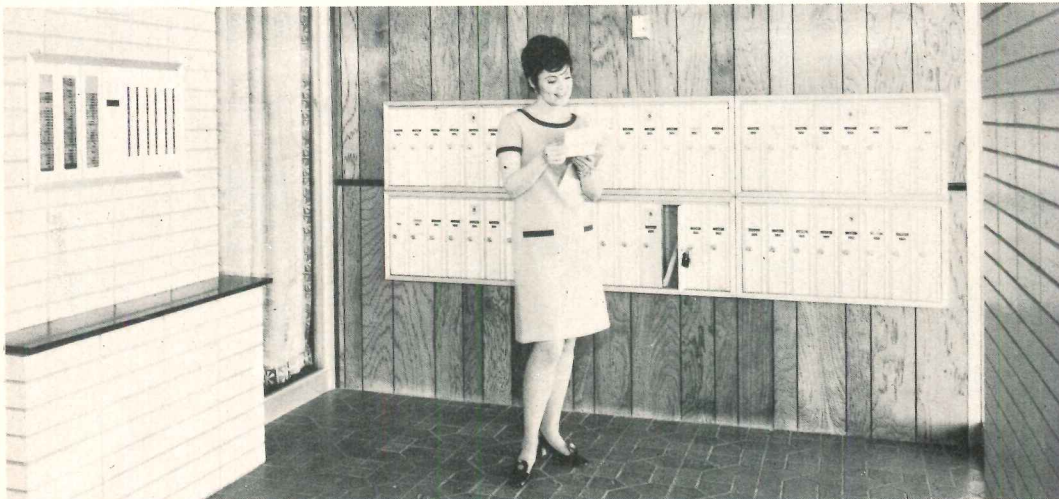
**Celotex makes no guarantees of any kind, express or implied, except as herein stated.**

By *E.A. Franklin*  
 Attorney-in-fact

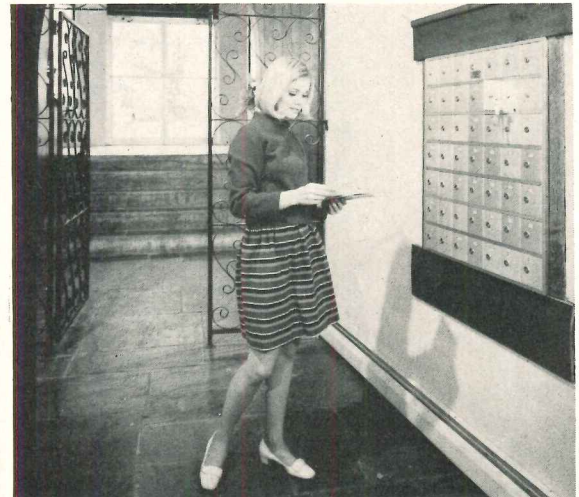
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## In support of excellence: a uniform language

Two recent advances toward uniformity in the language and format of specifications have underscored the theme of Walter Wagner's January editorial: "We use new tools, but remember they are means to an end, not an end in themselves." The end, of course, is architecture in its classic sense and mission. The significance of the two developments resides in the inherent commitment of the sponsoring bodies to exactly that end. The sponsoring bodies are the AIA and the New York State Council on Architecture; and the increasing use and compatibility of the CSI format are the means to the end at issue.

### AIA, CSI and PSAE agree on Masterspec format

The more recent of the two developments was the announcement in mid-February—jointly by AIA, CSI and PSAE (Production Systems for Architects and Engineers, a non-profit corporation established by AIA)—of agreement on the section format for Masterspec, PSAE's automated master specification. This agreement has paved the way for AIA and CSI to work together in the area of computerized specification technology and content.

The agreement between AIA and CSI marks a transition from the verge of competition between the two Institutes to a foundation for broad advances in professional understanding and use of one of the tools for getting the job of architecture done.

A panel representing AIA and CSI approved the CSI three-part format as the "most appropriate section format" for Masterspec. As a result, CSI endorsed the use of Masterspec. This will facilitate its use with Comspec, CSI's computer-language program for specification automation.

The main point of discussion involved whether Masterspec should continue to be written in its present four-part format without section part titles or whether it should follow the three-part section format advocated by CSI. The panel concluded that it would be preferable for the Masterspec sections to be in the three-part format. Appointed to the panel by AIA were Philip Will, Jr., and Stephen Kliment; appointed by CSI were Robert E. Vansant and Paul T. Heineman; jointly appointed by AIA and CSI was John P. Jansson. The formal

statement of the panel read, "It is agreed among AIA, CSI and PSAE that the most appropriate section format for the PSAE automated master specification system is the CSI three-part section format as set forth in the CSI Manual of Practice, Chapter MP-2B dated August, 1970. . . . In this format, the use of Masterspec will be endorsed by AIA, CSI and PSAE."

### N.Y. State agencies to use CSI format

An earlier development was launched by Governor Nelson A. Rockefeller in a letter dated December 29, 1971, directing all 44 New York State agencies that have a responsibility for planning design and construction of buildings to adopt the CSI uniform system of specifications—the well-known 16-division format—for all state projects and state-financed projects built for local units of government. This would have affected more than \$9 billion worth of construction in 1971.

The Governor's letter read, in part, as follows: "This is to advise you that, acting on the recommendation of the [New York State] Council on Architecture, its inter-agency Architecture-Construction Information Committee, and my Business Advisory Committee on Management Improvement, it is the policy of the state to adopt the Construction Specifications Institute format for state-sponsored construction projects. Wherever possible, this policy will apply to projects initiated after April 1, 1972. . . ."

"The Council on Architecture has been asked to work with all agencies in effecting this transition. All agencies are requested to advise the Council of implementation plans by February 1, 1972. Please get in touch with the Council prior to that time concerning any further questions you may have."

The Governor's acknowledgement of the role of the Council on Architecture was preamble to a joint meeting on January 12 among members of the CSI, AIA, and the Council. Keynote speaker at the meeting was John P. Jansson, executive director of the Council, who explained some of the background and purposes of the Council. On the grounds that the central objective of excellence in architecture rather than the devices of specification format or management techniques is the primary objective

of any of these searches for uniformity, the following extract of Mr. Jansson's talk is offered as evidence that at least one state has passed thoughtful legislation in support of excellence.

### The New York State Council, a giant client's move for excellence

The Council on Architecture, Mr. Jansson said, is a specialized management, consultant and advisory state agency that is organized to achieve a better man-made environment by effectuating better methods and procedures in the design, planning and construction processes for the state of New York.

The Council on Architecture, created by enabling legislation, began its operations in April, 1968.

In its research, the legislature found that the various agencies and authorities have a special responsibility for setting the levels of excellence in the man-made environment that involves the use of state funds or state credit. The following is quoted directly from the enabling legislation:

"Although there are significant exceptions, the policies of many agencies responsible for such construction have tended to discourage the achievement of high architectural quality. It is hereby further found that delays in the processing of plans, bureaucratic resistance to innovation, fee levels inadequate to attract architects of outstanding ability, reliance on old solutions for new problems, combined with a widespread belief among architects that such agencies have no interest in good design, have all had an adverse effect on obtaining desirable architectural standards."

As a result of these findings, the following was declared to be a policy:

"In proper balance with the prudent expenditure of public funds to strive for architectural design of the highest quality in all state and other construction activities, and to make grants in aid to units of local government for the rehabilitation of public buildings which are of historic or architectural importance, and to create a Council on Architecture for the purposes of implementing such policies."

The general powers and duties of the Council are:

1. To encourage excellence in architec-



tural design in all public buildings and other structures constructed in the state or under the supervision of any state agency or authority.

2. To encourage the inclusion in such public buildings and other structures of works of fine arts to complement good architectural design.

3. To stimulate interest in architectural excellence in public and private construction throughout the state.

4. To accept gifts, contributions and bequests of unrestricted funds from individuals, foundations, corporations and other organizations or institutions for the purposes of furthering the architectural objectives of the Council's programs."

The Council defines excellence in architecture (man-made environment) as:

1. The combined quality of the visual and spatial appearance, including the total impact of the project's environmental relationship and enhancement to those people who live and work in and/or around the project.

2. The functioning of the project as an independent unit and its compatible relationship to its immediate and regional, both man-made and natural, surroundings.

3. The realistic and prudent relationship of costs and time to the financial capability and requirements of the state, including the initial cost of planning, design and construction, as well as the ever ongoing operating and maintenance costs.

In addition to its concern for the quality of new and/or rehabilitated buildings, the legislature also realized the importance of avoiding the destruction of many fine public buildings that reinforce the rich heritage of the state. Many of our older public buildings which have historic or architectural importance add variety to the environment and also maintain the continuous identity of communities from an historical and cultural point of view.

The enabling legislation, therefore, undertakes:

"To make grants in aid to units of local government for the rehabilitation of public buildings which are of historic or architectural importance".

#### **Council to monitor methods for effective cost control**

During the last decade the structure of the building industry has changed considerably, Mr. Jansson pointed out. The inflated/depressed economy, the spiraling inflation of all costs, the lack of coordination between government, labor and industry, and the outdated laws governing design, planning and construction for the state, have all contributed to the present critical condition of the building industry.

The Council is charged with the task of coordinating all elements that play a part in the creation of the man-made environment and its proper relationship to nature. As such it serves as the overview organization for the building industry of

the State. It is committed to the premise that life can be more effective, fruitful, productive and enjoyable through the creation of an improved environment that will more fully meet the needs of the people.

Government must take the initiative and develop new methods and procedures to construct public and public-financed facilities more efficiently, in less time at less cost, in order to satisfy the vital and pressing needs that confront the people.

The problems of today's man-made environment are so vast, complex and inter-related that it will take considerable desire, effort and commitment on the part of the public officials, design and construction professionals, and the citizens of the state to effect satisfactory results. Each element must be made an integral part of the whole effort if success is to be achieved.

Now is the time to analyze old systems that are no longer capable of meeting society's demands and wherever possible alter or eliminate these old methods. In turn, new and productive methods must be developed that will effectively result in a richer life through the creation of improved working and living environments.

On the basis of our past research and experience, we (the Council) are convinced that all of this can be achieved at considerable dollar savings to the taxpayers, provided such programs are properly planned, organized, staffed, directed, coordinated and if sufficient funds are budgeted.

Since the start of the operation, we have served in advisory capacity to many communities and agencies of the state in the definition, resolution and implementation of solutions of problems that they have faced with reference to the man-made environment.

#### **Search for uniformity extends to contract documents**

We are serving as the leading "overview" agency in the coordination of the New York State building industry activities, Mr. Jansson continued. One of the objectives is to obtain uniformity in the methods and procedures utilized by the 44 agencies who have a responsibility for planning, design and construction.

We are in the middle of a program of setting up and establishing a uniform set of General Conditions Construction Contract for all state work. Hopefully, this format will follow that of the Federal edition of the AIA Edition A201 & A202/SC.

We work in parallel and close harmony on many of the programs of the New York State Association of Architects and that of the State's Consulting Engineers Council. The annual convention and conference of the NYSSA in October 1971 was based on the theme, "The Architect and New York State." The Council played a major role in the planning and coordination of this meeting.

One example of joint activity with the architecture-engineering professions is the

ACIC's sub-committee for payments to architects. This committee, under the chairmanship of Frank Matzke of the State University Construction Fund, has worked in close liaison and harmony with the State's Association of Architects and the State's Consulting Engineers Council. Through their efforts, new and better systems of compensation are going to be recommended that more suitably reflect the nature of the planning, design and construction process and changing professional relationships exist in today's market.

#### **Conference will set stage for new compensation methods**

Sometime during early spring, a one-day conference will be held on the subject of professional compensation. Invited to this conference will be representatives of the Governor's office, Division of the Budget, Audit and Control, all state and city agencies, as well as the practicing architects and engineers. The first part of this conference will present the changes that have occurred in the last decade; and the second part of the conference will indicate why new methods of compensation are necessary for the design and engineering professions.

Another aspect of our work is research of the laws of the state that govern planning, design and construction. Based upon studies conducted by the Council through its Architecture-Construction Information Committee and its Ad-Hoc Legal Sub-Committee. State Senator Warren N. Anderson, Chairman of the Senate Finance Committee, will introduce legislation in the 1972 legislative session which will direct the Council on Architecture to undertake a comprehensive analysis to effectuate the necessary changes to systematize the laws and to establish better coordination of all construction projects within the state.

Some 3½ years ago, under direction of chairman George A. Dudley, the Council reached a decision to utilize and establish the CSI uniform system for construction specifications for buildings for all state building projects, and state-financed building projects. At the time of this decision, our research indicated that out of the 44 state agencies then in existence, who had a responsibility for planning, design and construction, only a handful were utilizing the CSI uniform system. Hence, our first step was to point out the many advantages that could be brought about by the adoption of the uniform system. Slowly, but very surely, many of the state agencies recognized its value and advantages in their own operations and to the building industry throughout the state.

It is difficult to estimate the time and, hence, dollars that will be saved by this program. However, there can be no doubt that once it is firmly established, it can result in saving hundreds of thousands of man-hours per year in all segments of the building industry.



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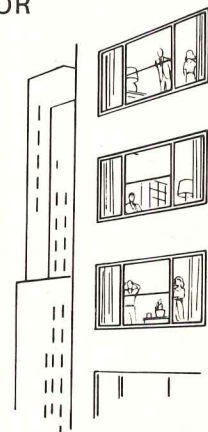
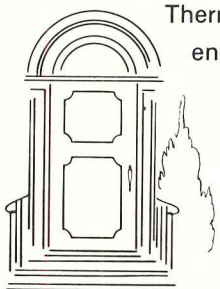
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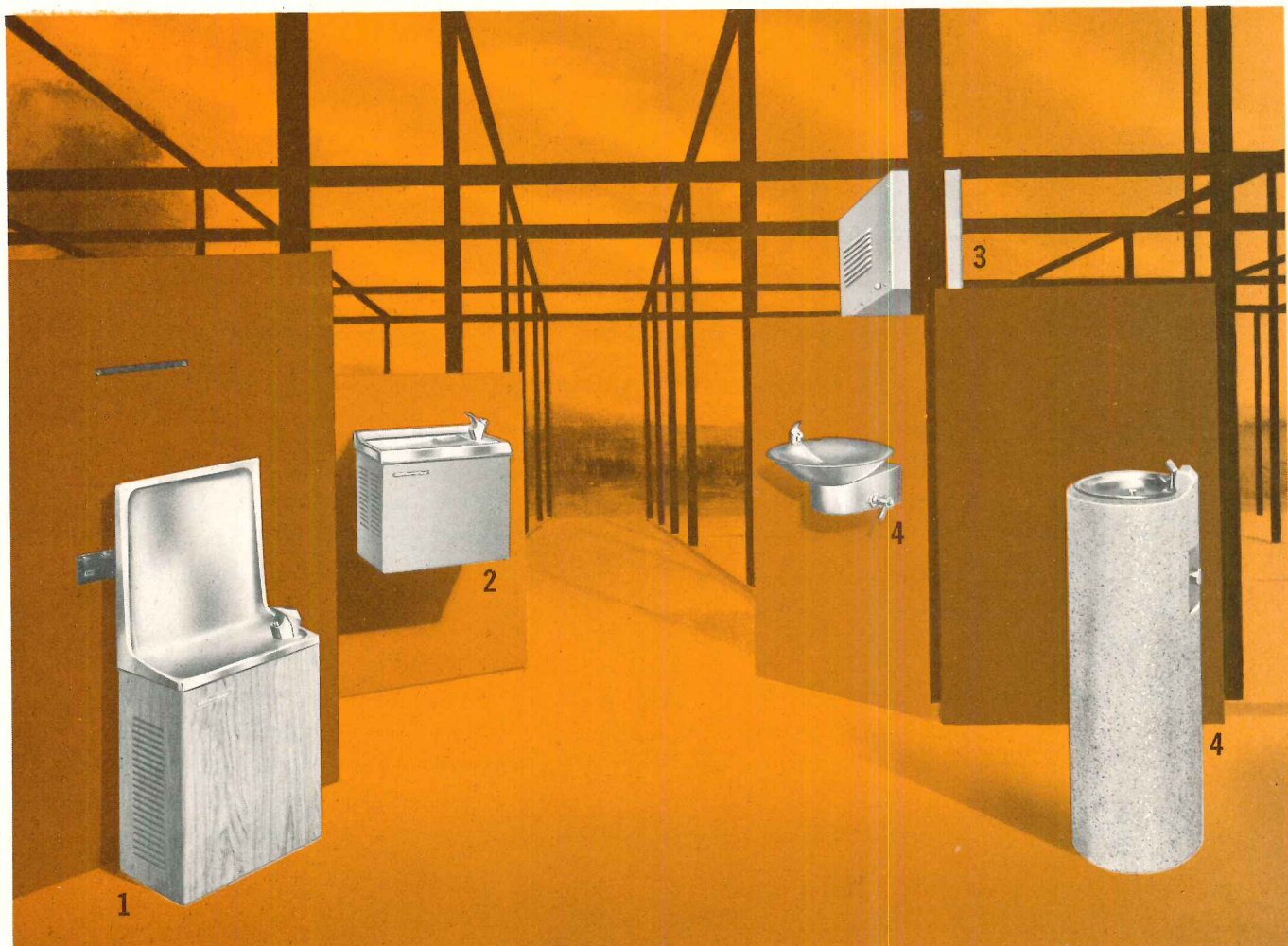
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# Why and how to plan professional firm management

By Bradford Perkins

Vice president, D'Orsey Hurst and Co., Inc., a division of McKee-Berger-Mansueto, Inc.

Success in the design professions, however it is measured, rarely happens by accident. Most successful firms have luck and talent to help them, but luck and talent alone are never enough.

Several years ago one of our clients asked us for a one word summary of what we found to be the common denominator for success. Our answer was "planning." The same concept which architects, engineers and interior designers attempt to promote among their clients has equal validity in the development of their own practices.

This article, and the five which will appear in subsequent issues, will attempt to discuss how firms can develop and implement successful plans for many of the major business aspects of their practice—business development, organization and staff, financial planning and control, and many other critical aspects of all design professional's practices.

Careful planning is the foundation for successful handling of any of the above areas, and the first step in the planning process is the development of a precise statement of the firm's goals. On the surface, of course, this sounds like something one does only for promotional brochures and to justify to one's friends and relatives why he is in business for himself working 16 hours a day for minimum per year. In fact, however, if done properly, a statement of objectives is the important first step in preparing a meaningful program for the firm's development.

Why it is important to outline objectives can be seen by examining the typical small young office's goals. Take, for example, an office of ten men headed by three equal partners a few years out of a large local office. If you asked them to list their goals, they would probably respond with the following:

1. To become respected by the profession and by the public as a leading design-oriented office.
2. To have an interesting variety of projects and thus, to avoid having the firm's practice limited to specialities in one or two building types.
3. To achieve a size large enough to undertake large projects but to be small enough to permit involvement by the principals in the design and client relations of every project in the office.
4. To make enough money for the principals to have a comfortable income.
5. To attract a group of bright, talented employees and to be able to pay them well.
6. To retain ownership of the firm among the current principals.

Consciously or unconsciously many firms seem to be pursuing goals like these. Admittedly, they are better detailed than one client firm's expressed goal: "Work like hell and get ahead." But what firms with similar objectives often do not realize is that some of the inherent contradictions in the above goals may prevent achieving any of them. Specifically, the major problems with these goals are the facts that it is difficult today:

1. To achieve a major reputation or comfortable income for both principals and key employees without some steady growth beyond a ten-man office.
2. To grow without both an able staff and some consistent means in the firm's business development program to differentiate the firm from all of its competitors for new projects. This latter point normally implies some specialization.
3. To attract and keep a good staff is almost impossible if the principals retain full ownership and control of all major project activities.

Thus, the next step in the development of a plan is the redefinition of the firm's goals in a form that eliminates the major contradictions. This redefinition should also be as specific as possible (i.e. how much growth, how much profit, etc.).

Having related its goals, a firm must then make a careful analysis of its strengths and weaknesses. The obvious purpose of this self-examination is to identify those factors which will help and those which will hinder obtaining the firm's objectives.

Every firm is different, of course, and, thus, each has a unique combination of strengths and weaknesses. Typical strengths are a demonstrable expertise in one or two building types, a principal who is a particularly good writer and speaker, and/or demonstrable expertise in an important area such as construction documents or construction cost control.

Identifying a firm's weaknesses can be even more important, but it is often more difficult to do, for it requires both experience and objectivity. In our experience, the most common shortcomings in the typical design firm are: one or two major gaps in the capabilities of the principals (usually business development or business administration); a weak project-manager level; little or no demonstrable basis for differentiating the firm from its competitors in a new-client presentation; inadequate financial control to permit planning or controlling the firm's profitability; and a staff which is not organized, trained or managed properly to achieve maximum productivity.

Following this self-examination, the next step is preparation of a plan that will

guide the firm toward its goals by exploiting its strengths and eliminating or minimizing its weaknesses. Although the next five articles in this series will discuss each of the major segments in a business plan in more detail, some of the important points from each area will serve as illustrations of what must be considered in every plan.

## A management approach to business development

The first step in most people's minds is obtaining a sufficient volume of work. Accomplishing this involves far more than meeting people or getting invited to enough presentations. In the simplest terms, it usually involves implementing what is known in other industries as the "marketing concept."

The marketing concept has been best defined by the simple statement "Find a need and fill it." Every client has needs which he expects the architect he commissions to fill. In some cases the overriding need in the owner's mind (particularly for facilities such as hospitals or schools) is to have a building that meets his functional goals. In others a more basic need is paramount, such as developing an acceptable facility within a tight budget for occupancy before a certain date. Even politically-oriented selection committees prefer to choose someone who they think is the safe choice—in other words, the easiest to justify on some reasonable grounds rather than political pull.

The most successful firms in terms of business development are consciously or instinctively aware of these needs and structure their efforts to reflect the appropriate client needs. The average firm (which does not have the advantages of a national reputation, principals who can spend their full time meeting clients, or hundreds of completed projects) must be even more careful to channel its business development efforts so as to achieve a maximum impact at each client contact.

In the management plan, the principals must decide the type of projects they will concentrate on developing. Shotgun approaches rarely work. Project goals might be defined by building type, by locality, by client type or some other classification. Care must be taken to select potential project groups which the firm has a realistic chance of obtaining. One friend of ours recently came close to having to close his practice because he concentrated on two building types which he did not have the marketing muscle to penetrate.

The next steps involve researching how to contact the selected target groups, an-



alysing their needs, and structuring the firm's presentations, staff and operations to meet these needs. There is a way of developing leads for every client type, all clients have needs, and the needs have definite implications for the design firm seeking work. Major hospitals, for example, are normally very concerned with performance, and thus, expect their architect to understand their operational requirements. As a result most firms that have been successful in obtaining hospital work have been able to talk about hospital administration problems and medical care concepts as well as bricks and mortar during their interviews. A firm hoping to enter this field usually must gain this working knowledge through research, by associating with a firm with previous experience in the field, hiring hospital specialists, and/or careful structuring of presentations to reflect the concerns of specific medical facilities clients.

The one trap that all design firms must avoid is the assumption that inherently superior design ability will somehow be rewarded with continuing commissions. To use another marketing buzz word, this introverted "product-orientation" (as opposed to "client orientation") is the one thing a business development plan must avoid. If the firm's design ability, however that is measured, really is superior, find some way to demonstrate it in an owner's terms on a regular basis to potential clients.

#### **How to develop organization and staff**

A firm with work must, of course, be correctly organized to handle it. The number of possible basic organizational structures is limited, and every office must choose the organization which is most appropriate to its practice.

Firms that handle only large, relatively simple projects such as office buildings can have a limited number of principals who draw on a generalist staff pool. On the other hand, offices with many small complex projects must have many more principals (or at least qualified project managers) and may choose to organize the office into specialist teams.

Staffing, too, is a critical planning concern. A firm should always be searching for staff that has the experience and capabilities to increase the firm's strengths or eliminate its weaknesses. For example, one firm's huge hospital practice can be traced directly to the hiring of a former hospital administrator (and architect) to head that segment of the practice. Prior to that time they had not been able to get a single major medical facilities project. What functions should be performed by which consultants (as opposed to in-house staff or subsidiaries), whether out-of-town work should be performed by a branch office or one central office, what personnel policies should be employed, and other questions should also be answered in the plan.

Even the legal organization of the firm—corporation, partnership, proprietorship or some combination—is important for reasons other than tax considerations. Each of the legal forms of organization should reflect the way decisions are made and a corporation with one president implies a different relationship among the principals than a partnership—even if it is not an equal partnership.

#### **How to go about financial planning and control**

The AIA has been very active in recent years promoting intelligent financial planning and control. This is, of course, one of the most important aspects of any plan. What can the firm afford to do? How much money do the principals want to earn? What fee volume will be necessary at break-even? What will be the source of cash to maintain the firm's operations? These are all questions that must be studied and answered. The techniques for answering these basic questions are all contained in the AIA publication *Profit Planning in Architectural Practice*.

The result of this planning process should be a comprehensive budget for at least the next year of operations and a method for measuring performance versus the budget. This involves decisions on the structure of the accounting system (accrual vs. cash, what coding, automated or manual, etc.), cash management procedures, methods of compensation (percentage, lump sum, etc.), payment of consultants, and other financial concerns.

All of the above areas and other aspects of the firm's operations should be studied on a regular basis, and it is worth committing each plan to writing. But once written they should not be put in a drawer and referred to on rainy Friday afternoons. Instead, they should be internalized so that the plan becomes an inertial guidance system for management.

This then leaves the final step—implementation. Obviously, this is the most difficult, for the first law of implementation is that it takes at least three times longer than anyone expects.

Moreover, there will be a continuing need for flexibility. In spite of all this planning—nothing goes exactly according to plan, and, thus, it must be administered flexibly. New projects, staff problems, and many other factors will all require adjustments in the plan. Few developments in the firm's practice, if any, need make the plan obsolete, however, as long as management uses the plan as a general guide rather than a detailed road map.

One development that can call for a detailed reevaluation of the plan is growth. A firm changes radically as it grows and management must be prepared to deal with these changes as they occur.

As with all other aspects of a firm's operations, the exact changes differ from firm to firm, but general guidelines still

apply. The most traumatic change takes place when a one-man office becomes a two-man firm. At this point the firm takes its first step away from merely being one man's services toward becoming an organization with a personality of its own.

The personality changes and becomes more formal when the staff reaches eight to twelve. By this time the technical staff are employees and projects are worked on by teams rather than individuals. As a result the firm has to have personnel policies, a steady volume of work, financial controls and the other business trappings.

At twenty-five to forty staff members, the principals must decide whether they wish to continue growing or level off. They are no longer able to be directly involved in every important aspect of every project. A group of competent project managers must be employed and the principals have to develop a more refined sense of priorities so that they can manage by exception. With the introduction of a second management level the firm has become too large not to have all of the most important management tools of large firms: a full-time aggressive business development program, a real accounting and financial control system, a personnel policy program, a formal organizational structure, etc.

By the eighty to one hundred staff level, the firm has wittingly or unwittingly made the decision to grow and it is already a big firm. It probably has shifted from teams to departments and already has added one or more in-house capabilities normally provided by consultants. But this size is an uncomfortable middle ground or "tweener" size. It is too big to have the flexibility of smaller firms and too small to support all of the specialized functions required by large offices. Therefore, it usually must continue growing or return to thirty to fifty.

At four to six hundred, staff usually reaches its peak, for the personality of the organization achieves domination over the combined personalities of the principals who built the firm. The men who developed the firm as an extension of their own capabilities and interests are gradually replaced by a group of professional architect managers.

At each of these points as well as at many points in between, every principal has to ask himself: is the firm prepared for the changes that are taking place, is it ready for the next stage whether it be growth or a new service, is it still moving toward the most meaningful objectives? If the answer is ever "maybe" or "no", the time has come for another thorough examination. Should the plan be changed or should steps be taken to bring the firm back in line with the plan?

This, then, is an overview of the planning process—the creation of an inertial guidance system for management. In subsequent articles, we shall look at some of the parts of this system in more detail.



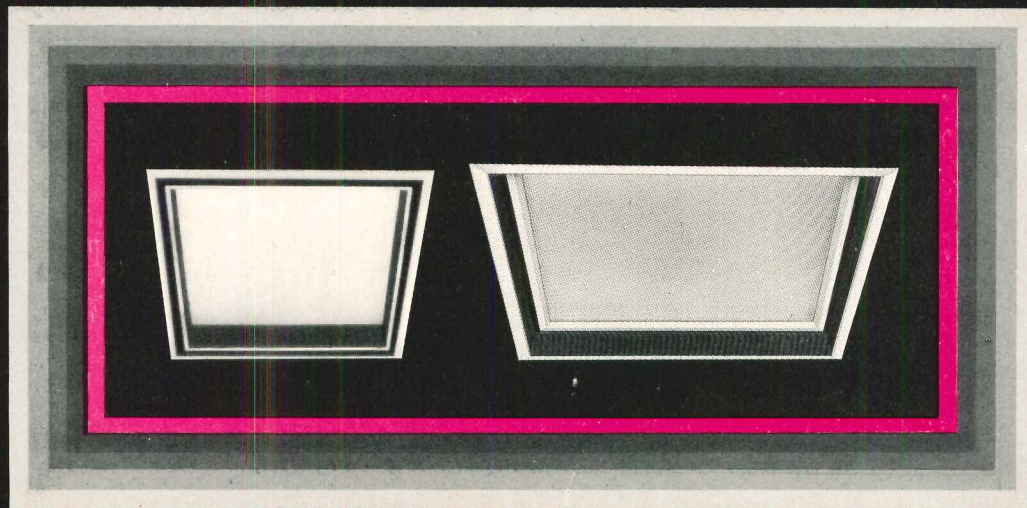


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James E. Carlson  
 Manager, Economic Research  
 McGraw-Hill Information Systems Company

## 1971 in review, II: regional roundup

A booming housing market, and a lagging industrial/commercial building category were the two pervasive factors in the 1971 national construction picture. These factors were evident in all four major regions of the nation as well, last year, but they were modified significantly by existing local economic conditions. This was true, even though the total construction figures in each region did not reflect it. If we just looked at the construction contracting totals, the difference among the regions would appear to be quite small. The 17 per cent gain in total construction that the nation as a whole finally wound up with in 1971, is composed of a plus 15 per cent in the Northeast, plus 16 per cent each, in the Midwest and West, and a plus 21 per cent in the South. No more than six percentage points separate the weakest (If you can call a fifteen per cent gain weak) region from the strongest.

This similarity extends down to the regional housing totals as well. The gains in each region cluster closely around the plus 40 per cent recorded nationally. Within the housing area, however, there exist significant differences. Multi-family structures, for instance, recorded contracting gains of close to 60 per cent in both the Northeast and Midwest, while in the South and West, the increases were plus 29, and plus 46 per cent, respectively. The major significance of these events is that, for once, multi-family housing is being built where the needs are. Until last year, both the Northeast and the Midwest had experienced a declining share of the national total of multi-family building for several years running—the Midwest since 1967, and the Northeast since 1965. The result has been that both regions have consistently recorded vacancy rate figures below the national average. In the case of the Northeast, the proportion of rental units vacant went from five per cent in 1965, to an estimated 2.5 per cent last year—that's half the current national rate.

Although it's late in coming, this shift in multi-family housing back in favor of the Northeast and Midwest, will help alleviate some of the critical shortages currently plaguing these areas. A look at the record shows that a number of the regions' urban core areas received a good measure of help from the 1971 boom. New York's borough of Manhattan, for instance, showed a sharp

gain. The same is true for central Baltimore, Boston, Chicago's Cook County, and the Cleveland Metropolitan area. Other areas, like Newark, New Jersey, and Philadelphia, did not share equally in the 1971 housing gains, though.

Contracts for manufacturing plants, down close to 30 per cent in the nation last year, were pretty bad throughout all the regions. Although they were off the sharpest in the heavily industrialized Midwest, which is particularly sensitive to turns in the business cycle, this region offers probably the best potential for a strong recovery in 1972.

The small gain in new office building last year—plus three per cent—was entirely due to conditions in the over-built Northeast. Office contracting in this region was off by almost 25 per cent, while the South and the West enjoyed gains exceeding 25 per cent. The Midwest trended between these two extremes, gaining a slight four per cent. The other major component of commercial building, stores, was buoyed up in every region by the strong relocation demand for new retail facilities stemming from the sharp gains in housing. Despite the negative impact of a slowdown in retail and wholesale sales—the lingering effect of the 1970 recession—contracts for new store building managed a gain of better than 10 per cent in every region but the Midwest, and, there, the increase was a respectable seven per cent.

The trends in the two major institutional categories, schools and hospitals, varied significantly from region to region last year. The eight per cent gain in school contracting nationally, was the composite result of a huge 22 per cent increase in the

South, a five per cent decline in the Midwest, and gains of nine and 11 per cent respectively, in the West and Northeast. The range in hospital contracting, on the other hand, went from a plus six per cent in the Midwest, to 21 per cent in the Northeast.

Public building, the strongest major category in 1971, soared to a 49 per cent gain. Seven individual large projects were responsible for most of this impressive showing; with the biggest ones concentrated in the Midwest. As a result, the 1971 Midwestern public building category was more than double the 1970 amount.

All building categories considered, the region with the best overall performance in 1971 was the West. The combined value of residential and nonresidential contracting in the region was ahead 28 per cent on the year, comfortably above the 23 per cent gain for the nation as a whole. The West's weak spot was in the area of nonbuilding, or heavy engineering work, where its fourteen per cent decline stands out against the gains posted by the other regions. The strongest region in the area of nonbuilding was the South, where gains in contracting for highways, and other nonbuilding work generated a nine per cent increase.

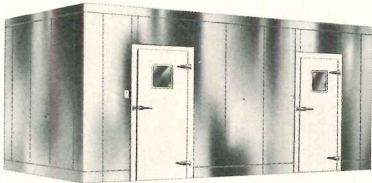
Perhaps, the most important aspect of the 1971 construction picture, though, was the trend that the industry followed during the year. In every region, the seasonally-adjusted totals for the fourth quarter of the year were significantly above those posted in the first quarter. Unlike the year before it, the industry is advancing into 1972 with its strongest foot forward. We'll be keeping abreast of the subsequent steps as they occur.

TOTAL CONSTRUCTION CONTRACT VALUE					
Percent change, 1970-71					
	total U. S.	north- east	mid- west	south	west
<b>nonresidential</b>					
commercial and manufacturing	- 3%	- 13%	- 9%	+ 3%	+10%
other	+14	+ 19	+ 10	+17	+ 7
<b>total nonresidential</b>	+ 5	+ 4	-	+ 9	+ 9
one & two family houses	+41	+ 35	+ 35	+43	+51
apartments	+45	+ 59	+ 57	+29	+46
other (nonhousekeeping)	+24	+110	+107	+23	-45
<b>total residential</b>	+40	+ 43	+ 43	+37	+42
<b>total building</b>	+23	+ 19	+ 20	+25	+28
streets, highways, bridges	- 2	- 13	- 7	+13	- 7
other	+10	+ 12	+ 15	+ 7	-18
<b>total nonbuilding</b>	+ 1	+ 3	+ 6	+ 9	-14
<b>total construction</b>	+17%	+ 15%	+ 16%	+21%	+16%



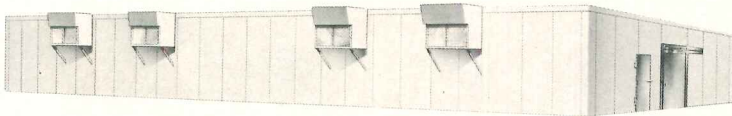


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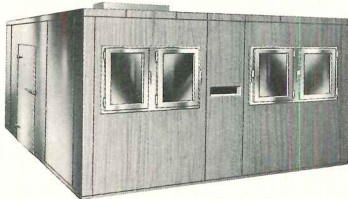
*Notre Dame, Ind.*

University of Notre Dame Athletic and Convocation Center  
20'x10' Combination Cooler/Freezer  
Architect: Ellerbe Architects, St. Paul, Minn.  
Dealer: Aslesen, Minneapolis, Minn.



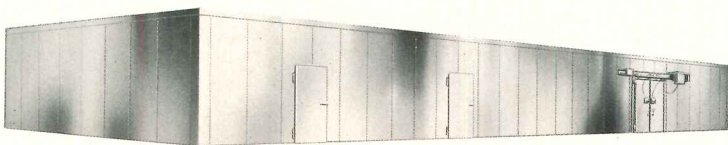
*Washington, D.C.*

Andrews Air Force Base  
96'x36'x10' Refrigerated Warehouse  
Architect: Vollrath Refrigeration Inc., River Falls, Wis.  
Dealer: Alto Inc., Alexandria, Va.



*Los Angeles, Calif.*

Straw Hat Pizza Palaces  
12'x14'x8'4" Reach-In Cooler  
Architect: Design Services Inc., Menlo Park, Calif.  
Dealer: Design Services Inc., Menlo Park, Calif.



*Clearwater, Fla.*

Pinellas County School Board  
24'x98'x10'7" Commodity Storage Cooler  
Architect: R. D. Bateman Co., Tampa, Fla.  
Dealer: R. D. Bateman Co., Tampa, Fla.

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# New Goodyear gives Delta

Delta Airlines recently completed the first two-story passenger facility at Louisville's Standiford Field. The new upper boarding lounge allows Delta passengers to enter and leave the plane directly, at plane level.

Delta chose Goodyear's SPEEDRAMP® system to take passengers from its street level lobby to the new upper boarding lounge.

SPEEDRAMP systems have it all over conventional escalators when long walking distances are combined

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Delta Airlines' new upper boarding lounge at Louisville's Standiford Field.

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**ALUMINUM PRICE INCREASE**

Early in February, Reynolds Metals increased prices on some aluminum products including most of its line of aluminum commercial and farm roofing and siding. Increases amount to four per cent, with some accessories increasing five per cent.

Also increased were prices on commercial aluminum shingle shakes by one dollar per square net on truckload shipments, with other quantity prices revised proportionately. Higher prices, which are effective with shipments dated March 1, also affect Reynolds' commercial corrugated V-beam, bold beam and rib sheet as well as interior liner sheet and accessories.

**Efficiency kitchen unit prices**

Self contained kitchen units for commercial and industrial employees are available in the following range of installed costs, including storage cabinet, oven, disposal and refrigerator. Units are 26 inches deep, 87 inches long.

width, inches	price, dollars
54	900 to 950
60	1050 to 1100
72	1150 to 1200
87	1400 to 1450

A smaller unit, 39 by 81 inches, costs \$820 to \$860.

**Building cost indexes**

All the indexes on this page are based on wage rates for nine skilled trades, together with common labor, and prices of five basic building materials are included in the index for each listed city.

1941 average for each city = 100.00

**MARCH 1972**

Metropolitan area	Cost differential	Current Indexes				% change last 12 months
		non-res.	residential	masonry	steel	
U.S. Average	8.4	368.4	346.0	361.0	352.0	+ 8.36
Atlanta	7.8	465.8	439.2	454.1	444.6	+ 8.60
Baltimore	8.0	389.2	365.9	379.2	369.5	+ 9.29
Birmingham	7.4	336.8	313.3	326.3	320.5	+ 7.13
Boston	8.9	367.6	347.4	364.7	353.6	+ 10.07
Buffalo	9.3	416.8	391.4	411.0	397.7	+ 9.00
Chicago	8.5	425.7	404.8	411.2	404.7	+ 8.34
Cincinnati	8.7	392.1	369.0	383.0	373.5	+ 10.64
Cleveland	9.6	422.2	397.3	412.5	402.7	+ 9.21
Columbus, Ohio	8.5	396.0	371.8	385.0	377.3	+ 7.14
Dallas	7.7	362.1	350.6	355.8	348.0	+ 9.26
Denver	8.3	398.2	374.7	394.5	380.5	+ 6.53
Detroit	9.6	415.2	395.8	413.5	398.8	+ 8.43
Houston	7.7	354.0	332.4	345.6	339.3	+ 7.79
Indianapolis	8.0	343.7	322.6	336.0	328.8	+ 9.41
Kansas City	8.3	350.1	330.8	340.3	332.8	+ 9.24
Los Angeles	8.3	410.6	375.4	399.1	391.1	+ 10.64
Louisville	7.6	363.3	341.2	355.3	347.8	+ 9.18
Memphis	7.6	342.7	322.2	332.7	328.3	+ 4.97
Miami	8.1	390.3	372.0	381.3	372.5	+ 8.78
Milwaukee	8.6	424.0	398.1	418.5	404.8	+ 7.32
Minneapolis	9.0	402.1	378.3	394.3	383.4	+ 9.72
Newark	9.0	367.2	344.8	362.4	353.1	+ 7.33
New Orleans	7.3	347.2	327.7	342.4	334.5	+ 7.03
New York	10.0	405.7	377.2	391.7	383.0	+ 7.93
Philadelphia	8.5	380.0	362.0	373.3	365.0	+ 8.06
Phoenix	7.8	208.3	195.6	201.2	198.3	+ 10.68
Pittsburgh	9.0	367.0	345.3	360.0	349.9	+ 10.51
St. Louis	8.7	381.4	360.0	376.9	365.2	+ 8.89
San Antonio	7.8	145.0	136.1	141.6	138.1	+ 3.78
San Diego	8.0	146.1	137.3	142.6	139.8	+ 5.34
San Francisco	9.2	524.7	479.6	520.5	504.4	+ 9.95
Seattle	8.8	368.7	330.0	366.3	351.6	+ 4.73
Washington, D.C.	7.9	347.7	326.6	337.0	330.3	+ 10.80

Cost differentials compare current local costs, not indexes.

**HISTORICAL BUILDING COST INDEXES—AVERAGE OF ALL NON-RESIDENTIAL BUILDING TYPES, 21 CITIES**

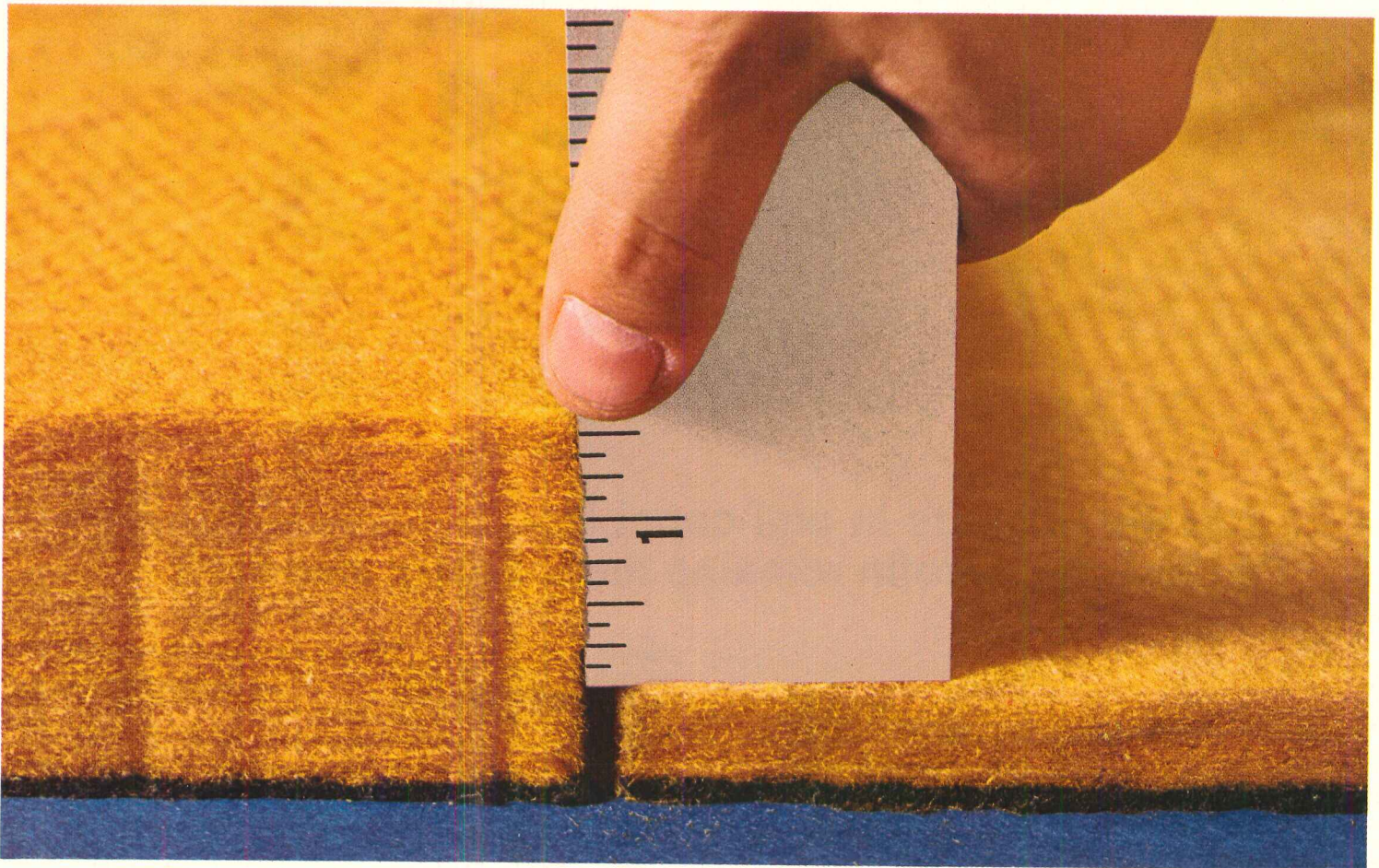
1941 average for each city = 100.00

Metropolitan area	1962	1963	1964	1965	1966	1967	1968	1969	1970 (Quarterly)				1971 (Quarterly)			
									1st	2nd	3rd	4th	1st	2nd	3rd	4th
Atlanta	298.2	305.7	313.7	321.5	329.8	335.7	353.1	384.0	399.9	406.2	408.1	422.4	424.0	445.1	447.2	459.2
Baltimore	271.8	275.5	280.6	285.7	280.9	295.8	308.7	322.8	323.7	330.3	332.2	348.8	350.3	360.5	362.5	381.7
Birmingham	250.0	256.3	260.9	265.6	270.7	274.7	284.3	303.4	303.5	308.6	310.2	309.3	310.6	314.6	316.4	331.6
Boston	239.8	244.1	252.1	257.8	262.0	265.7	277.1	295.0	300.5	305.6	307.3	328.6	330.0	338.9	341.0	362.0
Chicago	292.0	301.0	306.6	311.7	320.4	328.4	339.5	356.1	362.2	368.6	370.6	386.1	387.7	391.0	393.2	418.8
Cincinnati	258.8	263.9	269.5	274.0	278.3	288.2	302.6	325.8	332.8	338.4	340.1	348.5	350.0	372.3	374.3	386.1
Cleveland	268.5	275.8	283.0	292.3	300.7	303.7	331.5	358.3	359.7	366.1	368.1	380.1	381.6	391.1	393.5	415.6
Dallas	246.9	253.0	256.4	260.8	266.9	270.4	281.7	308.6	310.4	314.4	316.1	327.1	328.6	341.4	343.4	357.9
Denver	274.9	282.5	287.3	294.0	297.5	305.1	312.5	339.0	343.4	348.4	350.3	368.1	369.7	377.1	379.1	392.9
Detroit	265.9	272.2	277.7	284.7	296.9	301.2	316.4	352.9	355.2	360.5	360.6	377.4	379.0	384.6	386.8	409.7
Kansas City	240.1	247.8	250.5	256.4	261.0	264.3	278.0	295.5	301.8	306.8	308.8	315.3	316.6	329.5	331.5	344.7
Los Angeles	276.3	282.5	288.2	297.1	302.7	310.1	320.1	344.1	346.4	355.3	357.3	361.9	363.4	374.2	376.4	400.9
Miami	260.3	269.3	274.4	277.5	284.0	286.1	305.3	332.3	338.2	343.5	345.5	353.2	354.7	366.8	368.9	384.7
Minneapolis	269.0	275.3	282.4	285.0	289.4	300.2	309.4	331.2	341.6	346.6	348.5	361.1	362.7	366.0	368.0	417.1
New Orleans	245.1	284.3	240.9	256.3	259.8	267.6	274.2	297.5	305.4	310.6	312.2	318.9	320.4	327.9	329.8	341.8
New York	276.0	282.3	289.4	297.1	304.0	313.6	321.4	344.5	351.1	360.5	361.7	366.0	367.7	378.9	381.0	395.6
Philadelphia	265.2	271.2	275.2	280.8	286.6	293.7	301.7	321.0	328.9	337.7	335.7	346.5	348.0	356.4	358.4	374.9
Pittsburgh	251.8	258.2	263.8	267.0	271.1	275.0	293.8	311.0	316.9	321.6	323.3	327.2	328.7	338.1	340.1	362.1
St. Louis	255.4	263.4	272.1	280.9	288.3	293.2	304.4	324.7	335.2	340.8	342.7	344.4	345.9	360.0	361.9	375.5
San Francisco	343.3	352.4	365.4	368.6	386.0	390.8	402.9	441.1	455.4	466.9	468.6	465.1	466.8	480.7	482.6	512.3
Seattle	252.5	260.6	266.6	268.9	275.0	283.5	292.2	317.8	325.4	335.1	336.9	341.8	343.3	347.1	349.0	358.4

Costs in a given city for a certain period may be compared with costs in another period by dividing one index into the other; if the index for a city for one period (200.0) divided by the index for a second period (150.0) equals 133%, the costs in the one period are 33% higher than the costs in the other. Also, second period costs are 75% of those in the first period (150.0 ÷ 200.0 = 75%) or they are 25% lower in the second period.



# Efficient building idea: Use this much more Fiberglas roof insulation and save up to \$27,000 every 60,000 sq.ft.



Those are the potential savings you could realize on the initial cost of heating and cooling equipment. Your client could also save an additional \$2500 a year on fuel.

Simply by using 2 1/4" instead of 3/4" of Fiberglas\* roof insulation.

These particular savings were figured for a suburban office plaza in the northern climates (zone 1). Factors taken into account were: the normal temperature range of

the region, size and type of roof deck, the "U" improvement due to thicker insulation. And the added cost of the thicker insulation.

How much can you and your client save by using 2 1/4" insulation?

Send for our free booklet "Raising the Roof." It'll show you how to figure your own savings for your section of the country for common types of roof decks.

Write Mr. A. D. Meeks, Architectural Products Division, Owens-

Corning Fiberglas Corp., Fiberglas Tower, Toledo, Ohio 43659.

#### Energy Conservation Award

Owens-Corning is offering awards to stimulate new designs and ideas for conserving energy. Special Steuben sculptures will go to the three architects or engineers who—according to a panel of independent judges—do the best job of designing buildings that don't waste fuel. See our announcement in this magazine for details.

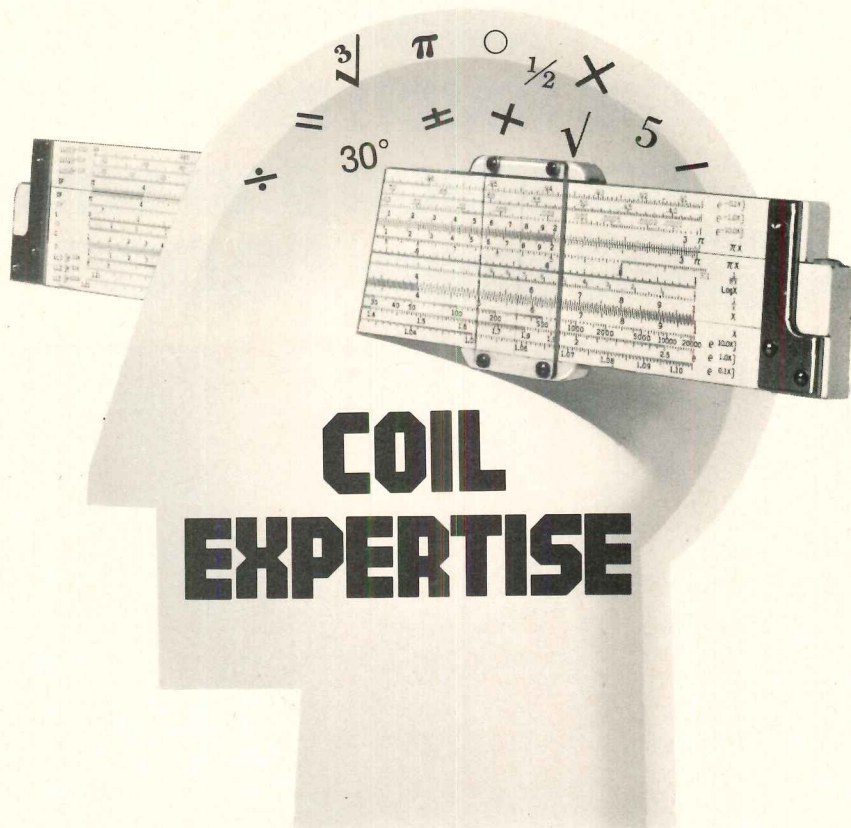
\*T.M. Reg. O.-C.F. Corp.

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For more data, circle 38 on inquiry card





# COIL EXPERTISE

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No wonder Aerofin remains the industry standard**

**WATER COILS  
COOLING/DEHUMIDIFYING**  
Type C - Bulletin CCW-71  
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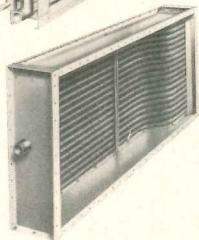
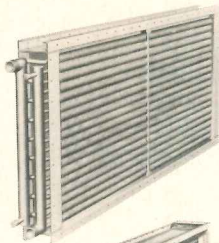
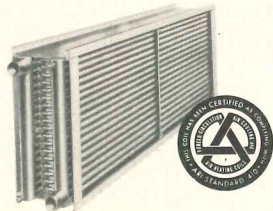
**Removable Header**  
Type R - Bulletin R-50  
Type RC - Bulletin RC-57

**HOT WATER COILS — HEATING AIR**  
Type CH - Bulletin CH-62  
Type MP - Hot Water Booster—  
Bulletin MP-61

**STEAM COILS — HEATING AIR**  
Type B - Flexitube Steam—  
Bulletin B-58  
Universal Steam Coil  
High Pressure Steam Coil

**Non-freeze Steam Coil**  
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**REFRIGERANT COILS  
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Aerofin's reputation as *the* heat transfer coil specialist is grounded in progressive design, manufacturing and solid sales-engineering.

Our line-up of standard coils for routine requirements more than matches competition. But for innovative applications—the one-of-a-kind, in unusual sizes—row configurations—flow channels—freeze-up hazards—thermal liquid/refrigerants operations—nobody comes close to Aerofin. Truly advanced helical-fin coil technology delivers optimum heat transfer efficiency for every kind of fan-system heating, cooling, air conditioning, process and energy.

And Aerofin's national network of knowledgeable sales engineers are noted for helpful technical service. It's the only way Aerofin knows how to do business.

# AEROFIN

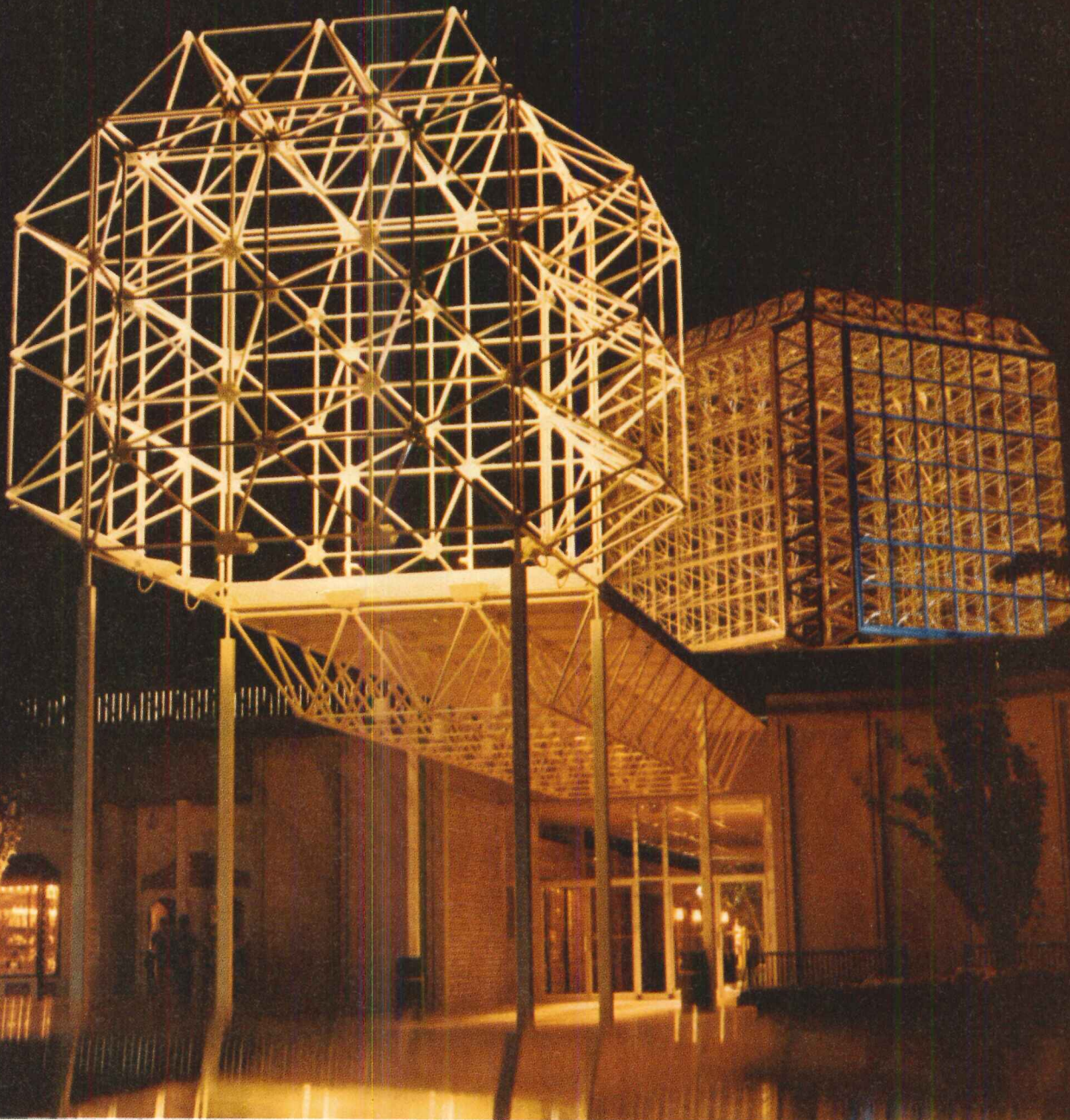
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Aerofin is sold only by manufacturers of fan system apparatus. List on request.

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# Identity for Suburban Shopping Malls



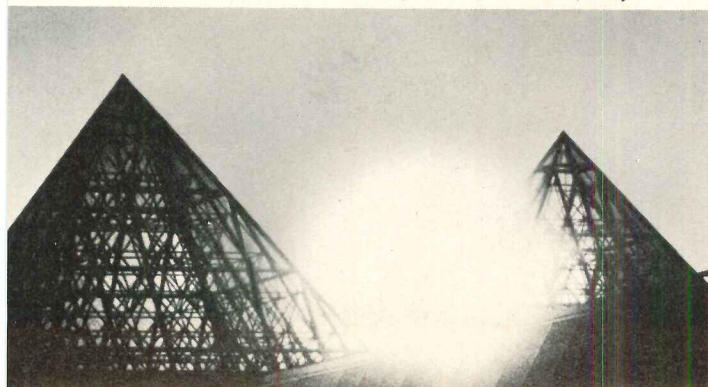
**FRANKLIN PARK MALL** Toledo, Ohio  
Owner: The Rouse Company, Columbia, Maryland  
Architect & Engineer: Daverman Associates, Grand Rapids, Michigan  
Contractor: The Lathrop Company, Toledo, Ohio

**COLUMBIA MALL** Columbia, Maryland  
Owner/Developer: The Rouse Company, Columbia, Maryland  
Architects: Cope, Linder & Walmsley, Philadelphia, Pennsylvania  
General Contractor: Whiting-Turner, Baltimore, Maryland

Space-Frame Structures by



WAYNE, MICHIGAN 48184







Environmental Systems Building, St. Louis, Mo.  
Owner: Emerson Electric Co.  
Architects: Hellmuth, Obata & Kassabaum Inc., St. Louis, Mo.  
Glazing Contractor: Hadley-Dean Glass Co., St. Louis, Mo.



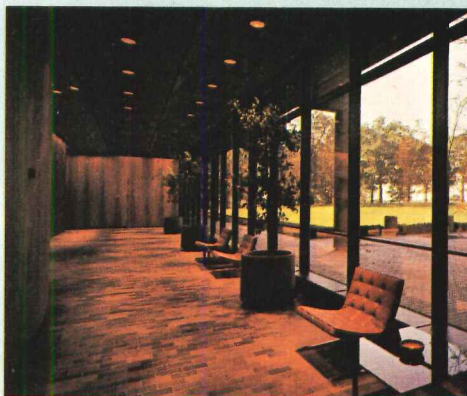
# How to save electricity without remembering to turn out the lights: Vari-Tran.<sup>®</sup>

Emerson Electric's new Environmental Systems Building is sheathed in Thermopane<sup>®</sup> insulating glass with a Vari-Tran 208 coating. Because Vari-Tran was used instead of ¼" bronze plate glass, over \$4,000 less electricity will be needed every year for heating and cooling. With the problem of energy supply being critical, that's a meaningful saving in power.

As for pure financial saving, Emerson started saving money the moment it approved

Vari-Tran for its building. Early studies showed that Vari-Tran was the least expensive glass that met Emerson's rigid specifications. Even though it's *our* most expensive glass.

Emerson saved heat because Thermopane units have a 50°+ inside surface temperature when it's zero



outside. That meant there was no need for under-window radiation and under-floor piping, which saved some \$40,000. And Thermopane units virtually eliminate drafts, allowing desks to be placed next to the windows.

Compared to tinted glass, the reduction in solar heat gain with Vari-Tran reduced air-conditioning equipment requirements by 97 tons. Resulting saving: \$24,250.

As for aesthetics, Vari-Tran's golden color harmonizes beautifully with the building's Corten Steel.

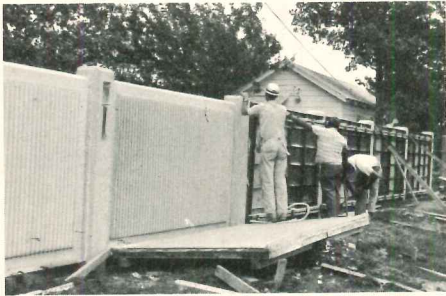
If you're planning a building, we're sure Vari-Tran can provide comfort and save dollars, too. So let us send you a computerized cost analysis of glazing alternatives. Simply contact your L-O-F Architectural Representative or Architectural Dept., Libbey-Owens-Ford Company, Toledo, Ohio 43695.

For more data, circle 39 on inquiry card.

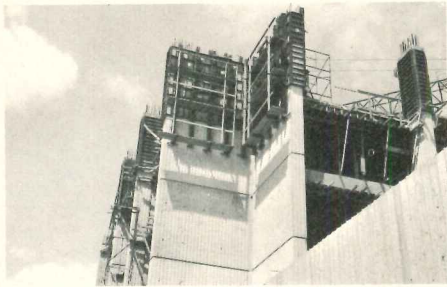
**L-O-F** Hi-Performance Glass  
GLASS The glass that cuts building costs



# This Decorative Wall



# and this 11 Story Library



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Cast a prefinished wall with Symons Form Liners. Standard liners available are . . . striated, bold striated, 1½"–¾"–½" trapezoidal rib, rough sawn cedar, rustic brick, aged board, and 1½" bush hammered deep rib. For that special effect, we will work with you to produce a custom liner. Form liners offer a pleasing departure from the monotony of flat surfaces.

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## OFFICE LITERATURE

For more information circle selected item numbers on Reader Service Inquiry card, pages 221-222

**STEEL FLOOR JOISTS** / Spacing requirements and maximum allowable span tables for both simple-span and two-span continuous installations are given in a 4-page brochure. All necessary accessories are supplied with the joists. ■ Armco Steel Corp., Middletown, Ohio.\*

Circle 400 on inquiry card

**SCHOOL DOOR HARDWARE** / A complete line for vandalism protection and fire/life safety is described in a 16-page booklet. ■ Rixson Inc., Franklin Park, Ill.\*

Circle 401 on inquiry card

**FLOOR GRATING/SAFETY STEPS** / Welded, pressure locked, riveted, and aluminum I-bar types are described in a 4-page catalog. Safe load tables for grating and bearing bar sizes, and tread widths for safety steps are included. ■ Borden Metal Products Co., Elizabeth, N.J.\*

Circle 402 on inquiry card

**EXPOSED AGGREGATE COATINGS** / A wide range of colors is available. Design possibilities for marble, stone and other aggregates are discussed in a 6-page brochure. ■ Desco International Assn., Buffalo.\*

Circle 403 on inquiry card

**CERAMIC TILE** / A recent catalog presents an entire line including a tile system with flexible silicone grout, glazed tile, ceramic mosaics and quarry tile. The company's mural and swimming pool design service is described. ■ American Olean Tile Co., Lansdale, Pa.\*

Circle 404 on inquiry card

**INDOOR/OUTDOOR PLAY EQUIPMENT** / A line of child-scaled play-exercise equipment designed with the safety and physical development needs of the small child in mind is described in an 8-page brochure. ■ Playground Corp. of America, Long Island City, N.Y.

Circle 405 on inquiry card

**ROOF-TOP, REVOLVING RESTAURANTS** / The manufacturer's restaurant turntables are discussed in a 4-page brochure. Plans, sections and trim details of typical turntable arrangements are included. ■ The Macton Corp., Danbury, Conn.

Circle 406 on inquiry card

**GLASS-CERAMIC FACING** / Four technical bulletins describe applications for two curtain wall systems, fascia or spandrels, and panels for elevator cabs. The paneling is available in large sheets. ■ Corning Glass Works, Oneonta, N.Y.

Circle 407 on inquiry card

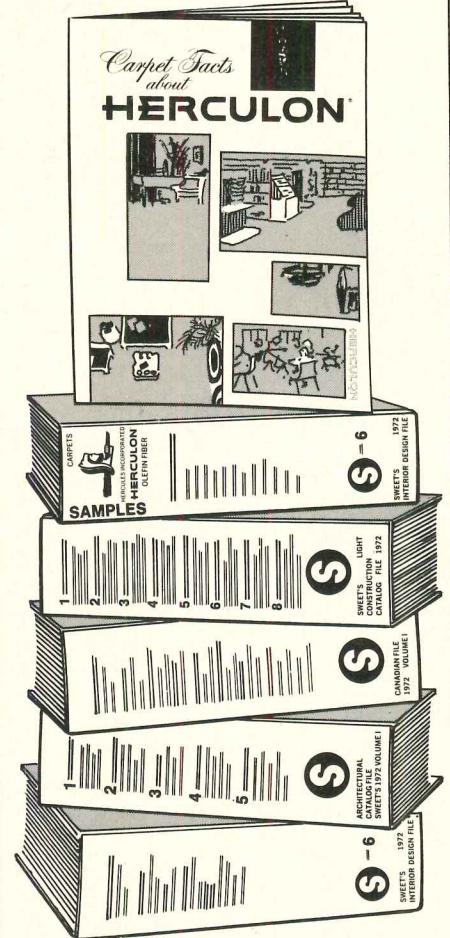
**AIR DIFFUSION** / A 356-page catalog provides comprehensive information on a complete line of products in the air diffusion field. Catalog is updated each year and cross-indexed to facilitate information retrieval for persons unacquainted with the line or their model numbers. ■ Titus Mfg. Corp., Waterloo, Iowa.\*

Circle 408 on inquiry card

\*Additional product information in Sweet's Architecture File

more literature on page 193

# Look for our book...



## ...in your books.

Our book is called Carpet Facts About HERCULON®. A colorful, 24-page booklet detailing the performance, construction, installation, maintenance and specifications of carpets made with pile of HERCULON\* olefin fiber. You'll find it in four volumes of the 1972 Sweet's Catalog . . . Architectural, Interior Design, Light Construction and Canadian files.

A special swatched binder in Sweet's Interior Design file features a cross section of carpet constructions in HERCULON. It's a first for Sweet's . . . the first full volume of carpet samples ever assembled by a fiber producer.

We are doing all this for one very simple reason. The more you know about carpets of HERCULON, the more likely you are to specify them.

 **HERCULON®**

\*Hercules registered trademark

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For more data, circle 40 on inquiry card

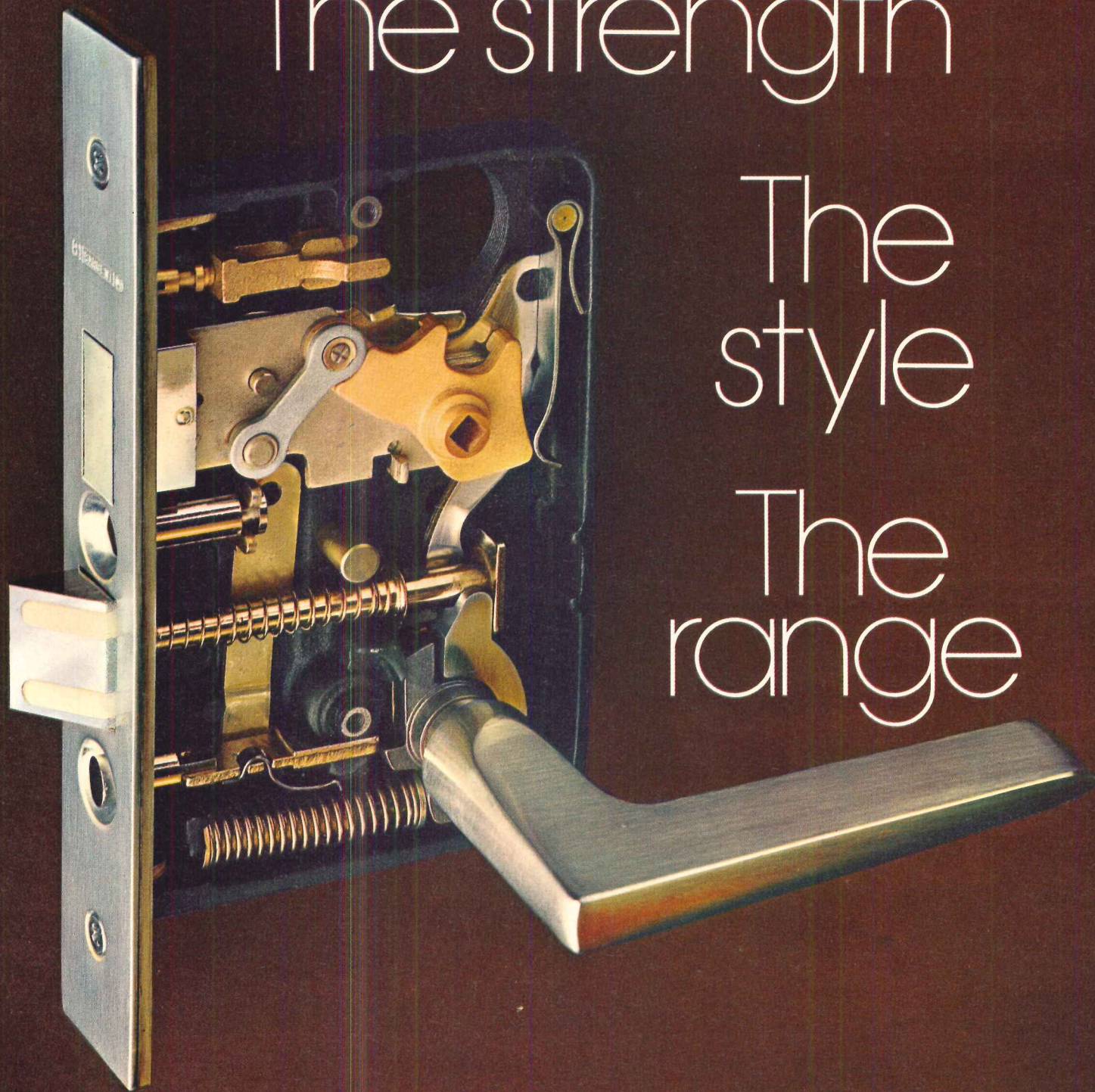


The looks, the lines of Sargent locksets speak for themselves. The high-styled trim, the handsome hardware finishes. □ Now look deeper for the inside Sargent quality. We give you the works that last . . . and out-last. □ And Sargent provides the range of locks and latches to accommodate any door requirement, in any value range. □ Sargent locks and latches . . . well worth another look.

The strength

The style

The range

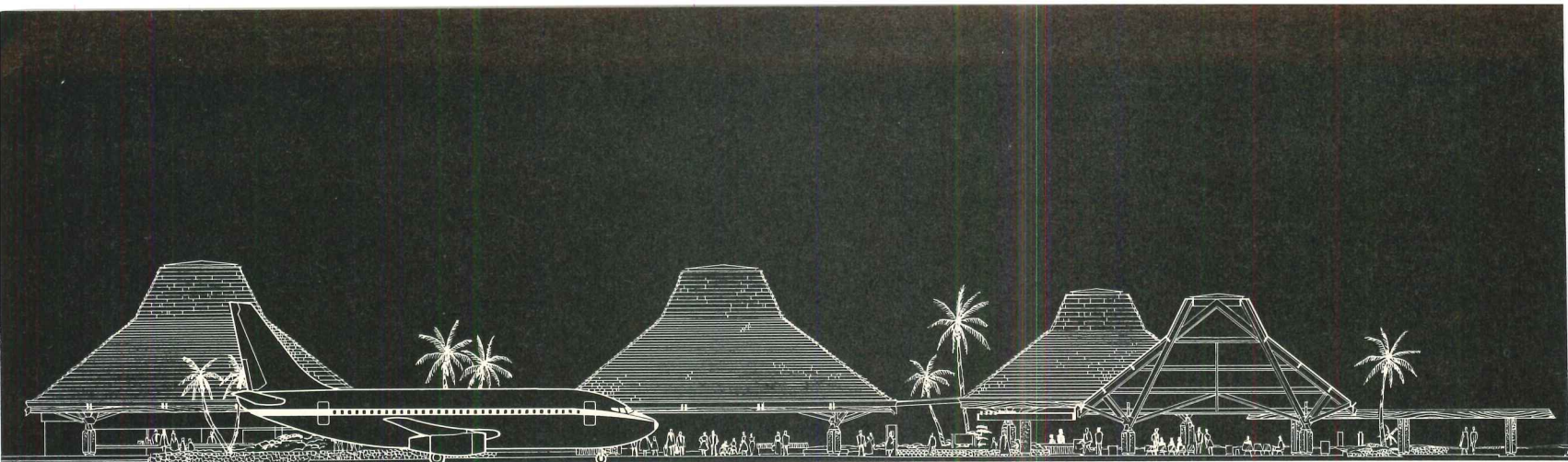


 **SARGENT**®

A complete line of advanced architectural hardware, including the Sargent Maximum Security System  
New Haven, Connecticut □ Ontario, Canada

*For more data, circle 42 on inquiry card*





Ke-ahole Airport, Ke-ahole (Kona Coast) Hawaii. Certi-Split Handsplit/Resawn shakes, 24" x 3/4" to 1 1/4". Architects: Aotani & Oka, Inc.



## Red cedar shakes: striking departure for an airport.

Hawaii's Ke-ahole Airport doesn't look much like an airport, it looks like Hawaii. That's a remarkable achievement considering the functional demands of the facility.

The terminal consists of 15 high beam-ceiling bungalows. A thatched-roof effect is attained by extensive use of red cedar handsplit shakes.

The richly textured shakes serve to unify, creating a harmonious cluster of indigenous architectural forms. They remain maintenance-free for decades. And they withstand hurricane winds.

Put the beauty and durability of red cedar to work for you. But insist on the real thing: Certi-Split

handsplit shakes or Certigrade shingles. They're worth it.

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5510 White Building, Seattle, Washington 98101. (In Canada: 1055 West Hastings Street, Vancouver 1, B.C.)



### Red Cedar Shingle & Handsplit Shake Bureau

One of a series presented by members of the American Wood Council.

For more data, circle 43 on inquiry card





UNMISTAKABLE VALUE. A rare and beautiful Stradivarius violin crafted many years ago in Cremona, Italy. There's a history of value behind every new Jamison door, too . . . in quality construction, performance, and Jamison service.

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Whenever you select a Jamison cold storage door you get the extra value and extra benefit of Jamison's published technical information and engineering services. Comprehensive reference material such as Architects' Data Sheets and a unique publication, "How to Select and Specify Doors for Cold Storage Warehouses and Food Processing Plants" give you useful, practical

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An 8-in-1 Sico master stage serves all of your clients' needs for about 2/3's conventional built-in stage cost.

■ One Sico master stage will convert into at least seven other stage configurations.

■ A conventional built-in stage harnesses your clients to one, and only one, use . . . forever.

■ Mobile Sico staging provides that same use, plus the freedom of choice shown at right.

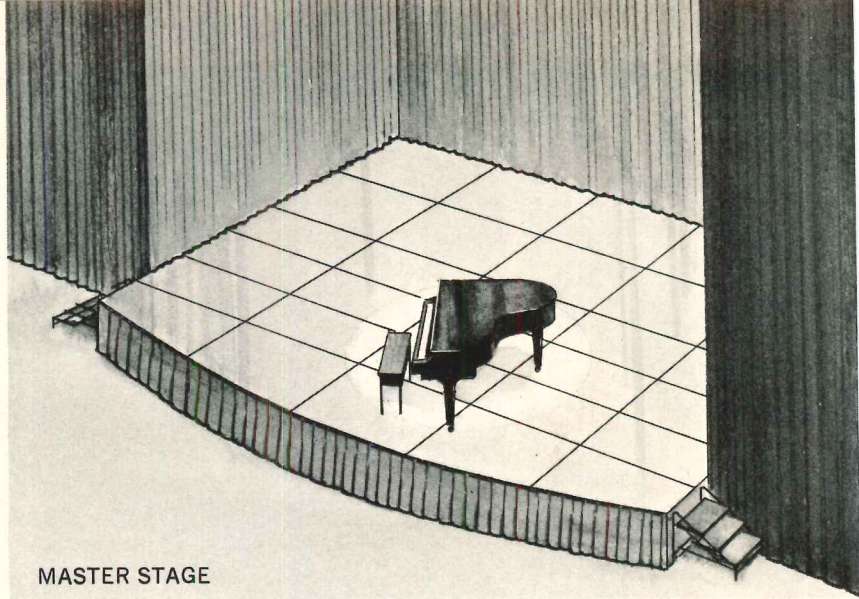
■ Sico Programmed Multi-Staging offers you *the* vital resource: functional multiple-uses-of-space. That means open building areas are re-shaped to accommodate any conceivable public activity, quickly and easily. In schools, gyms, cafeterias, auditoriums, civic centers, hotels and motels, in a great hall or modest-sized room; anywhere!

■ Sico's innovative stage and scaffolding module designs enable you to satisfy all of your clients' true needs: master ("built-in") stage; seated riser; band/chorus riser; head table riser; theater-in-the-round; speakers' platform; runways; special events; and much more.

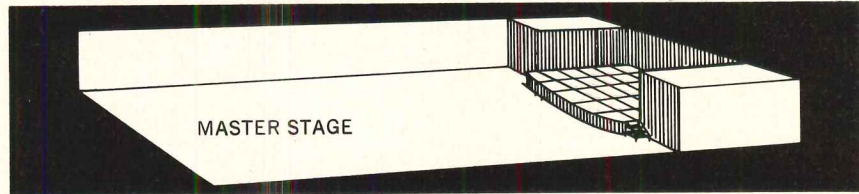
■ Best of all, Sico delivers this freedom of choice at about 2/3's the cost of any single-use, conventional built-in stage.

■ What do you get for your money? Uncompromising, professional-quality staging. Time and labor saving module sizes. Custom shapes and carpeted surfaces, if you wish. One man set-up, in most cases. Backdrops. Draperies and hangers. Steps. Guard rails. Chair and table stops. Trucks for accessories. In short, Sico offers everything to meet all of your clients' ever-changing needs; today, tomorrow, in future years.

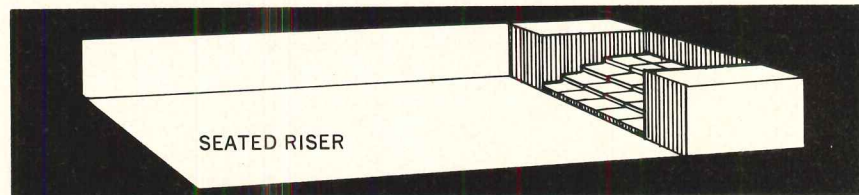
■ But most of all, Sico Programmed Multi-Staging delivers full-time FREEDOM OF CHOICE.



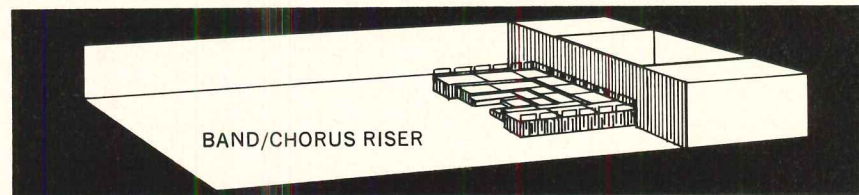
MASTER STAGE



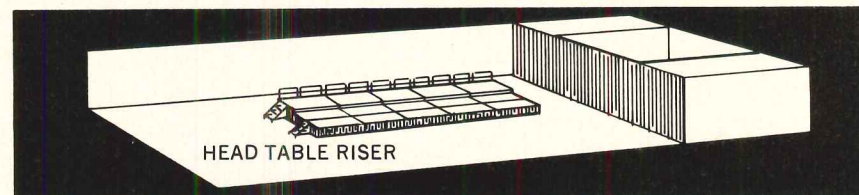
MASTER STAGE



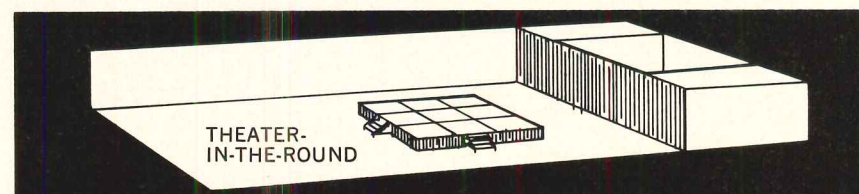
SEATED RISER



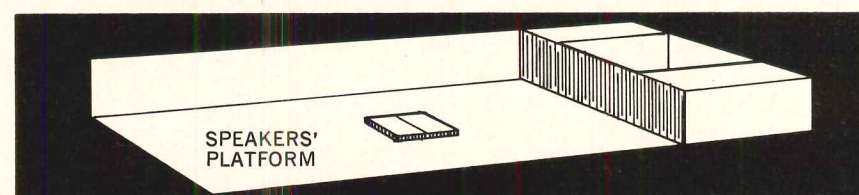
BAND/CHORUS RISER



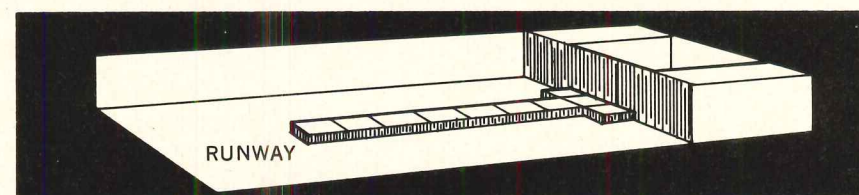
HEAD TABLE RISER



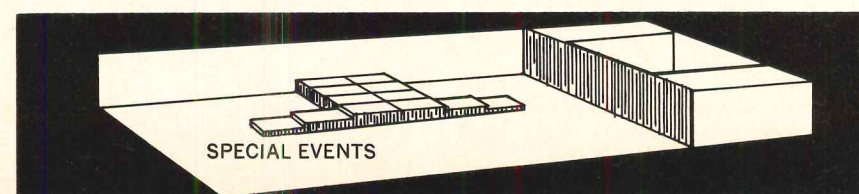
THEATER-  
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SPEAKERS'  
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RUNWAY



SPECIAL EVENTS

  
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For more data, circle 45 on inquiry card





## Long life! New "Champagne" Kalcolor<sup>®</sup> aluminum

Ask for a sample of our "Champagne."

This new shade of Kalcolor architectural aluminum is that rare pivotpoint color—between light-and-dark, coolness-and-warmth—around which daylight can turn. It makes buildings come "alive" with color-change through the bright morning. Warm sunset. Cool evening.

Yet for sunfast long life, this material is unsurpassed.

Kalcolor aluminum has a thick, hard anodic coating of integral color uniquely resistant to outdoor exposure. The exclusive process for producing it—developed, patented and licensed by Kaiser Aluminum—uses no dyes.

Already it is the pride of buildings worldwide in Gold, Light Amber, Amber, Statuary Bronze, three new Grays and Black.

For your sample of new "Cham-

pagne"—and locations of approved Kalcolor aluminum anodizers—write to Architectural Marketing Manager, Room 2142, Kaiser Center, Oakland, CA 94604.

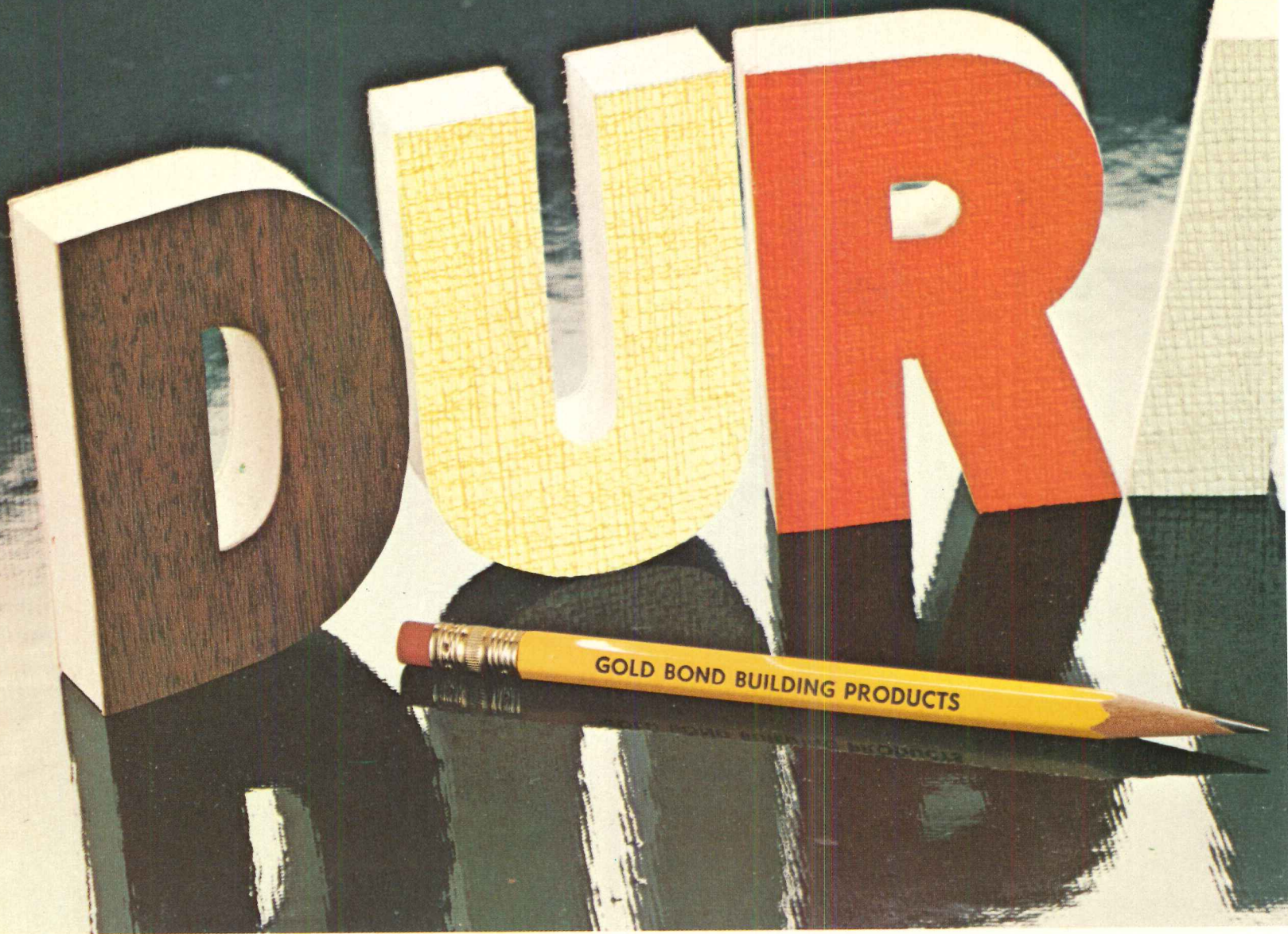
See our *Aluminum in Architecture* catalog in *Sweet's Architectural File*, Index No. 5.1/Ka.

**KAISER  
ALUMINUM**

For more data, circle 46 on inquiry card

ARCHITECTURAL RECORD March 1972 75





**Durasan is gypsum drywall  
with a factory-applied  
vinyl surface.**

**It is low-first-cost,  
low-maintenance-cost,  
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and meets all the  
important fire codes.**

**And it gives you plenty  
of elbow room for design.**





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Once up, you've got a wall that resists abrasions, fading and stains. A damp sponge makes it look new for years.

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Fire ratings are comparable to regular gypsum wallboard in our recommended systems.

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Then it's easy-up with matching mouldings and color pins . . . or adhesive. All part of the Durasan system.

Durasan could solve a lot of problems for you — aesthetic problems, functional problems, budget problems.

Durasan, like so many of our products, is a constructive suggestion because it solves a number of your problems at once. For details, write Gold Bond Building Products, Division of National Gypsum Company, Dept. AR-32G Buffalo, New York 14225.



*For more data, circle 47 on inquiry card*



# Wood on a mall floor?

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Northlake Mall is a Joint Venture Development of Crow, Pope & Carter Enterprises, Atlanta, Georgia and Monumental Properties, Inc., Baltimore, Maryland. Architect: Toombs, Amisano & Wells, Atlanta, Georgia. Project Architect: Henry E. Kromer.

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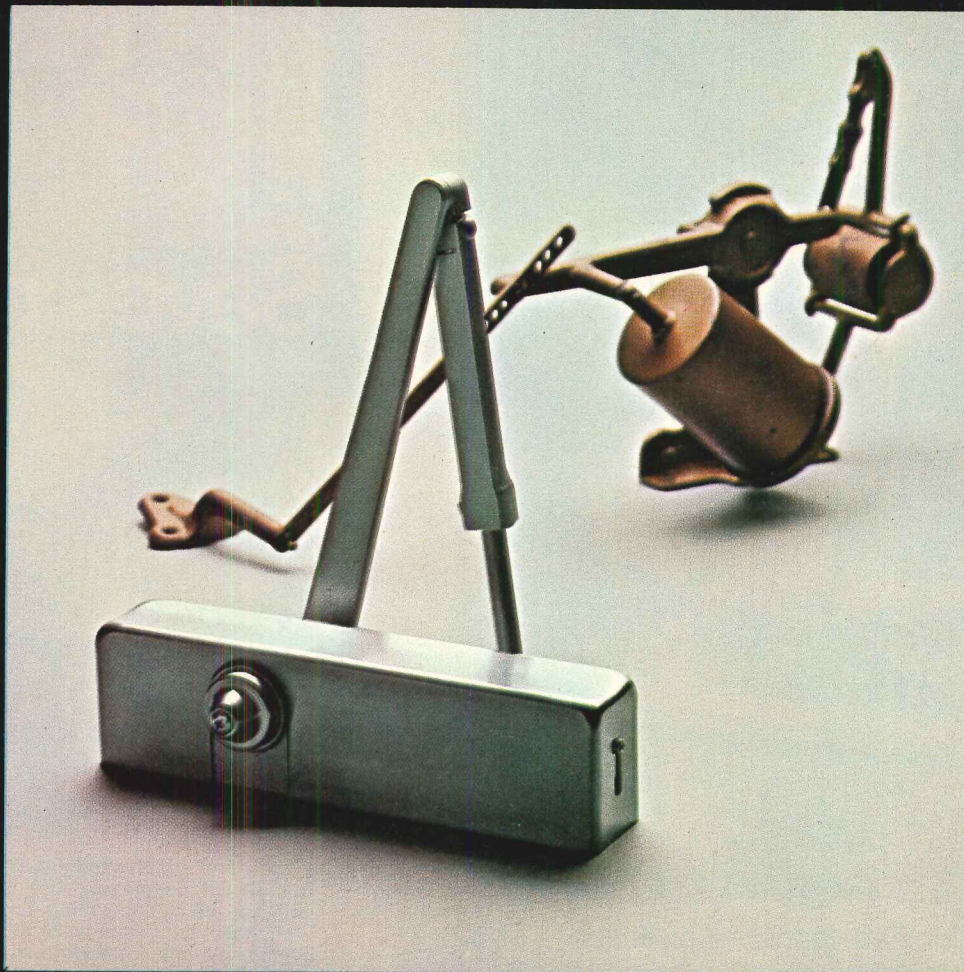


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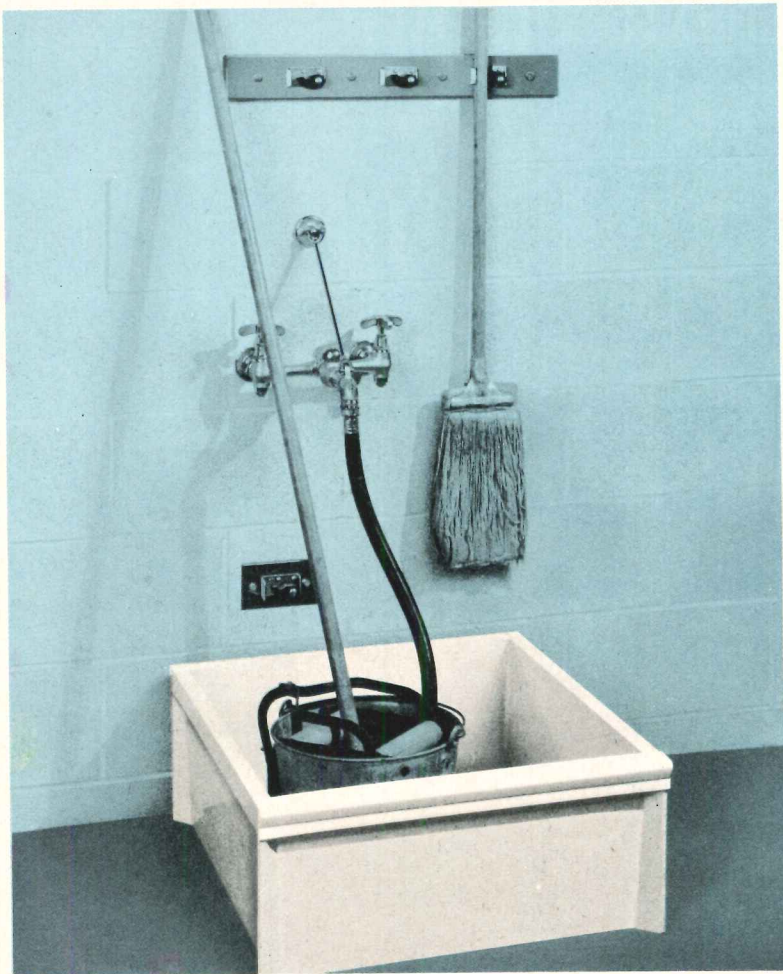
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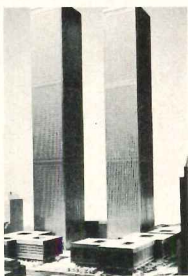
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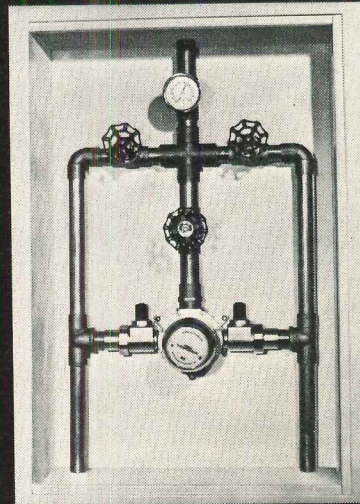


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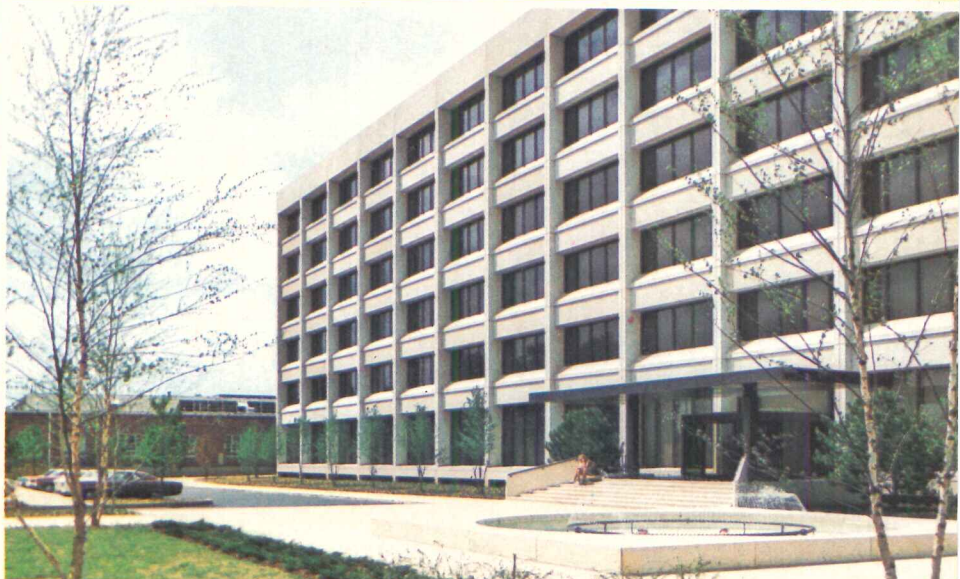
#### Credits:

**Administrative and Research Center,  
Plough, Inc., Memphis, Tennessee**  
Architects: Gassner/Nathan/Browne,  
Architects/Planners, Inc.,  
Memphis, Tennessee

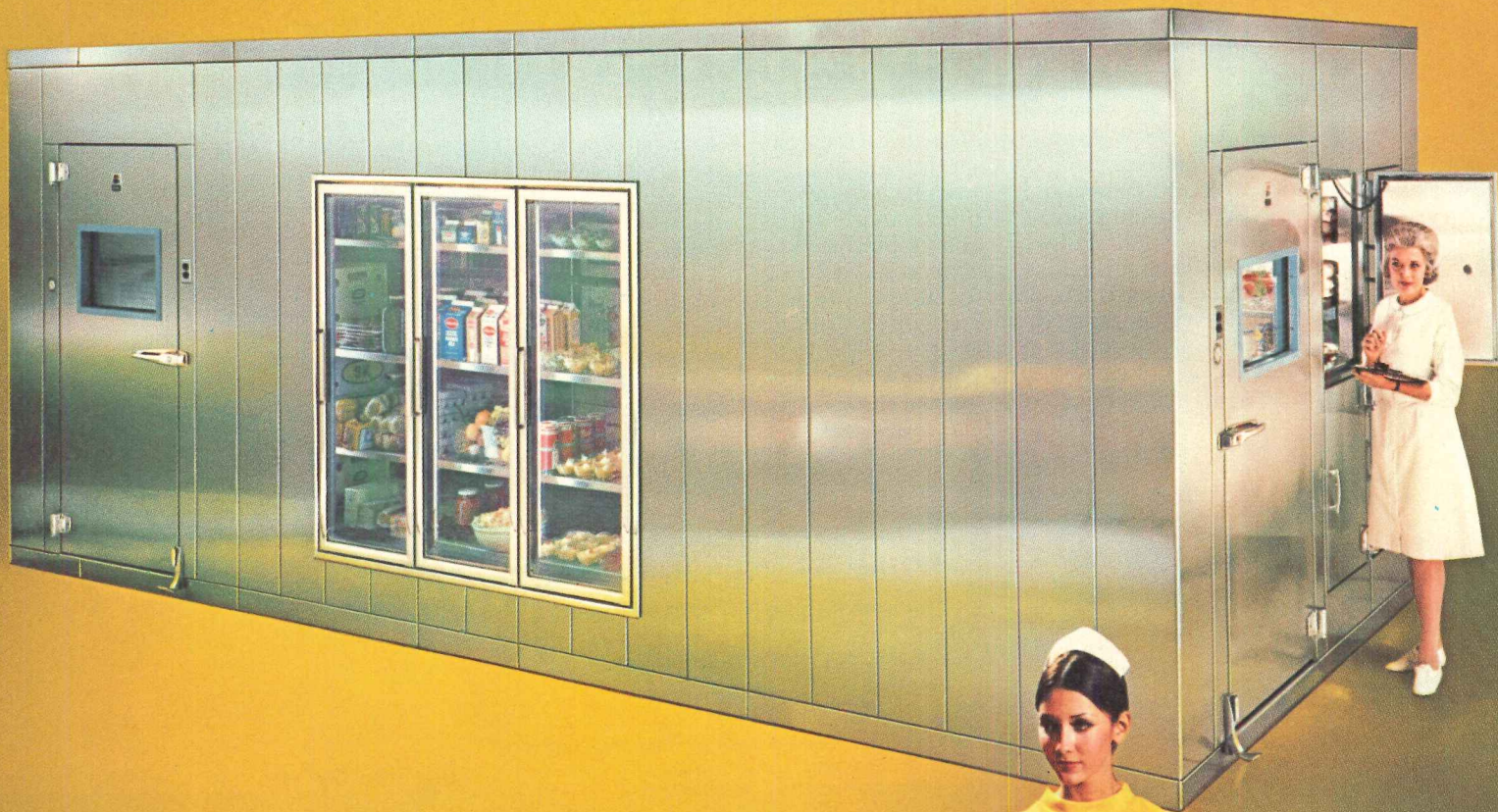
**General Contractor: Allen & O'Hara, Inc.,  
Memphis, Tennessee**  
**Panel Manufacturer: White Stone Company,  
Inc., Memphis, Tennessee**  
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kitchen



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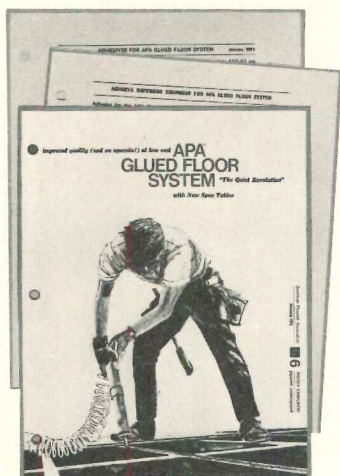




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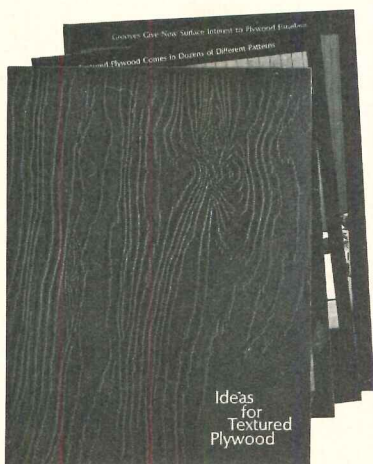
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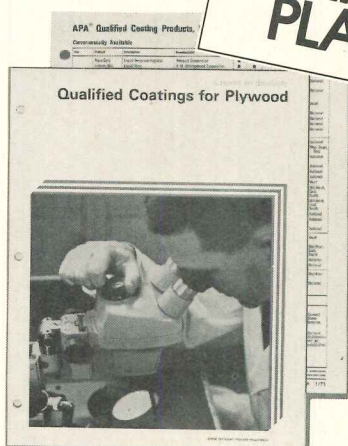
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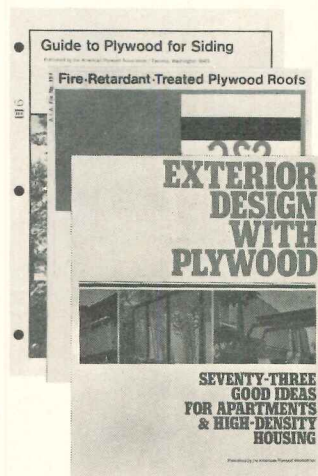
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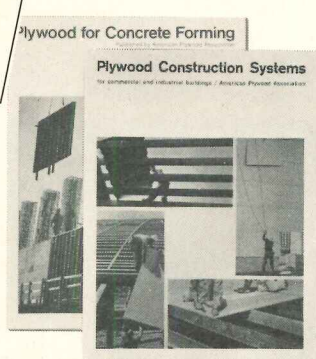
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**Plywood Construction Package.** *Plywood Construction Systems* for commercial and industrial buildings. Including roofs, walls, floors and load span data. New *Plywood For Concrete Forming* book, including: application examples, special textures, and engineering data.

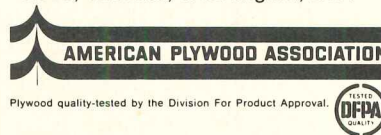
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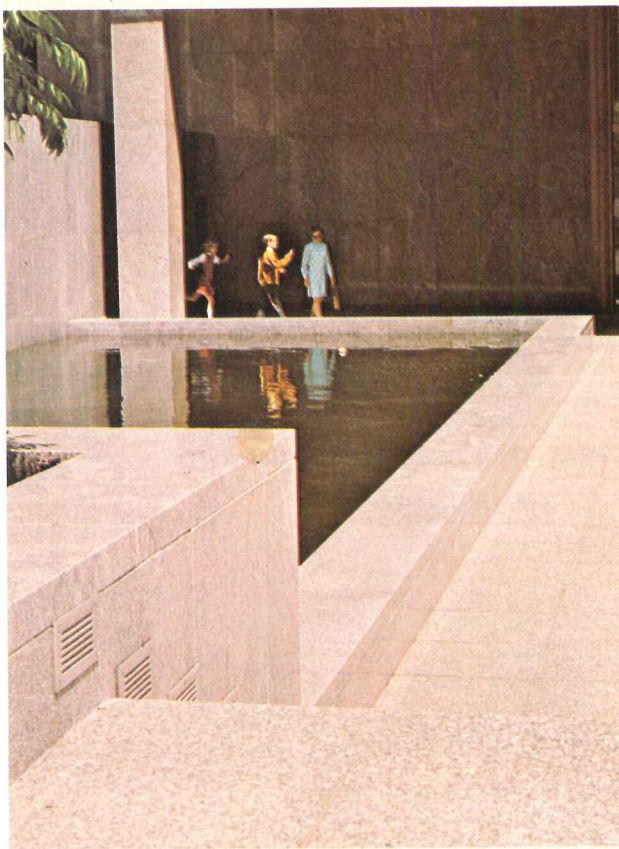
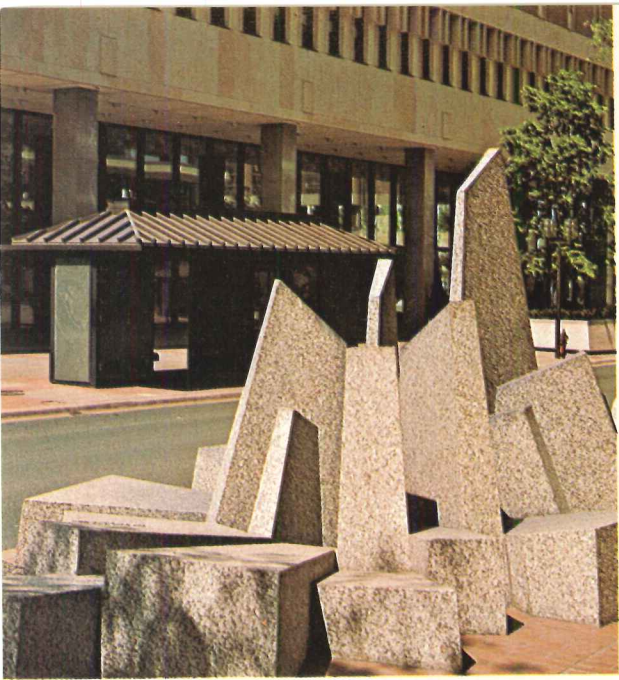
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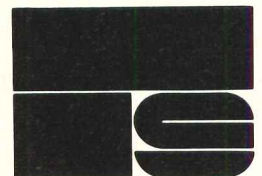
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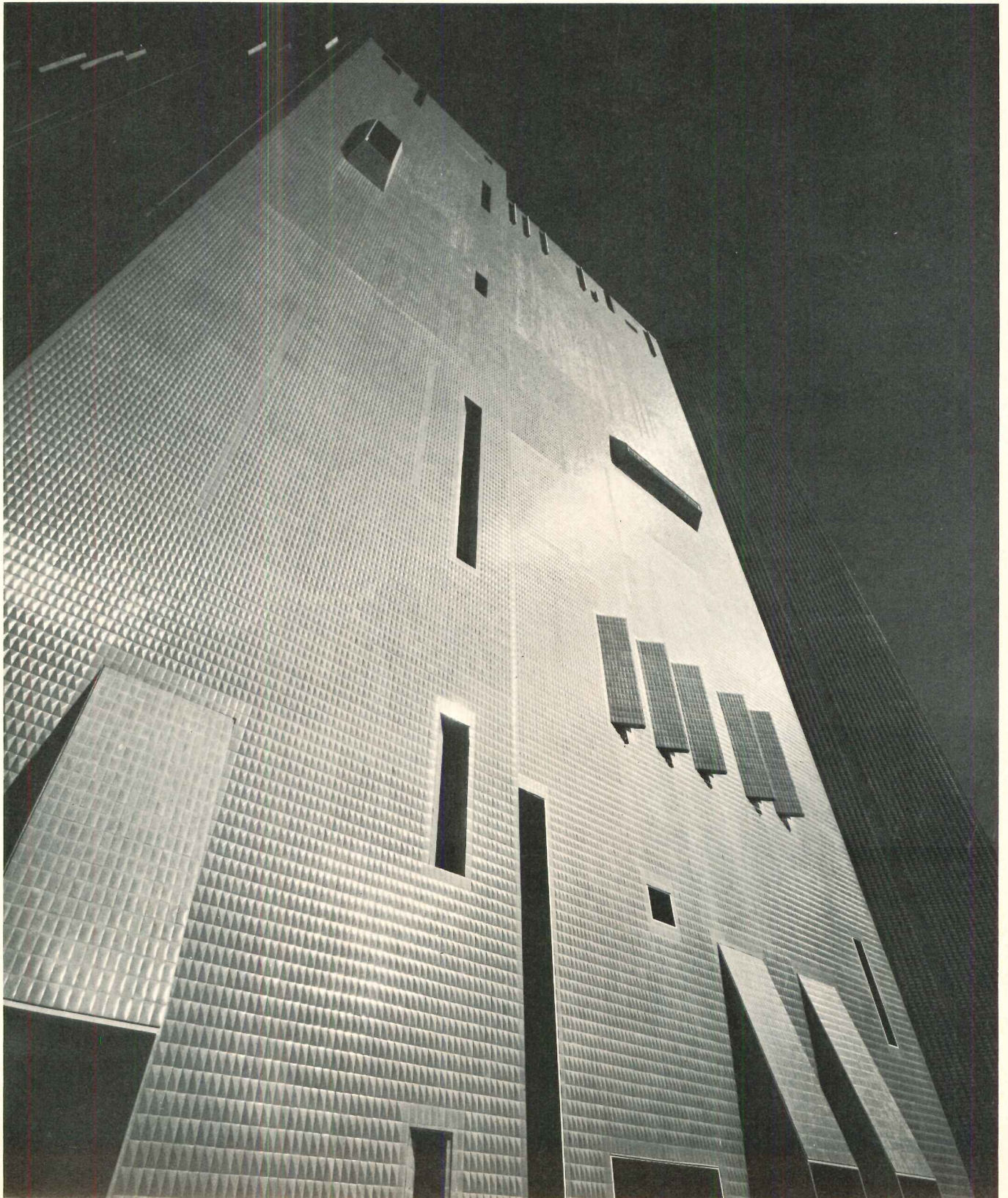
# SHAW-WALKER



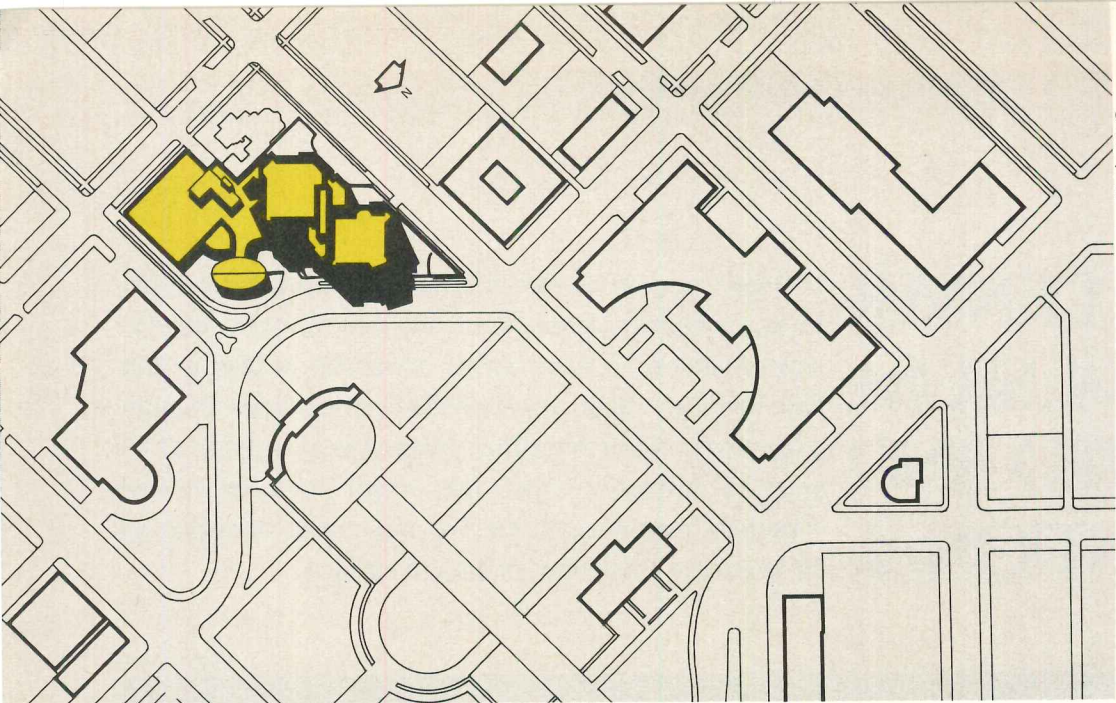
# DENVER ART MUSEUM: SPIRITED AND UNCONVENTIONAL

Unusual and provocative in design and plan, exceptional in its functional clarity, the lively new Denver Art Museum Building by James Sudler Associates of Denver and Gio Ponti of Milan, Italy, breaks with tradition in both museology and architectural expression to provide a 79-year-old institution—the only major museum in the mountain region—with the first real means of displaying its extensive collections of art and artifacts.

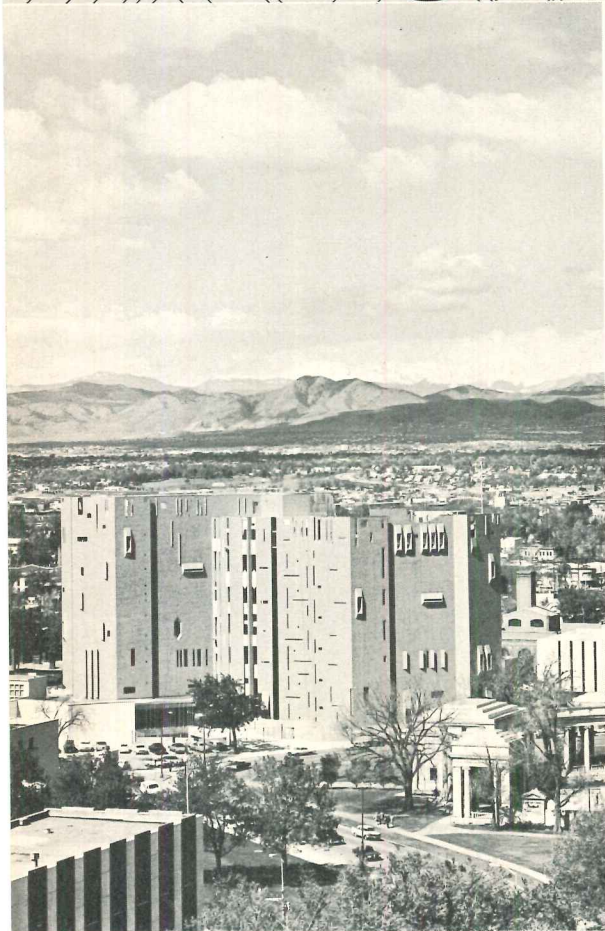
*Wayne Thom*



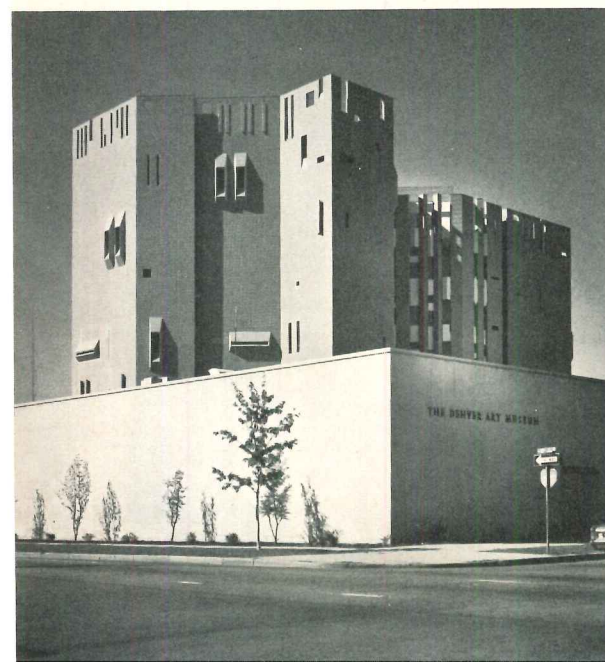




Rush McCoy

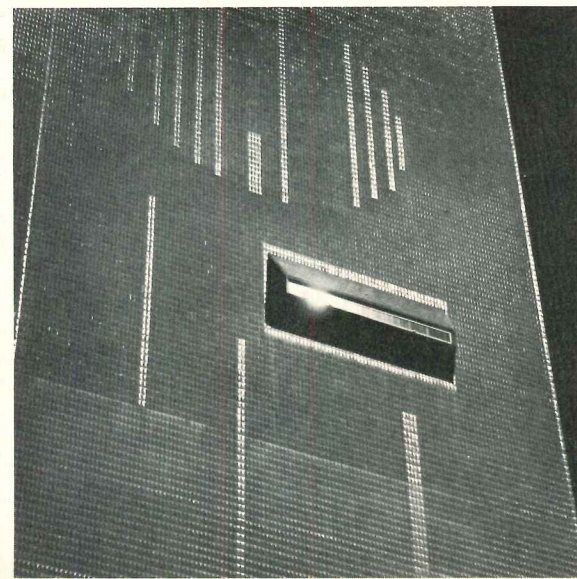
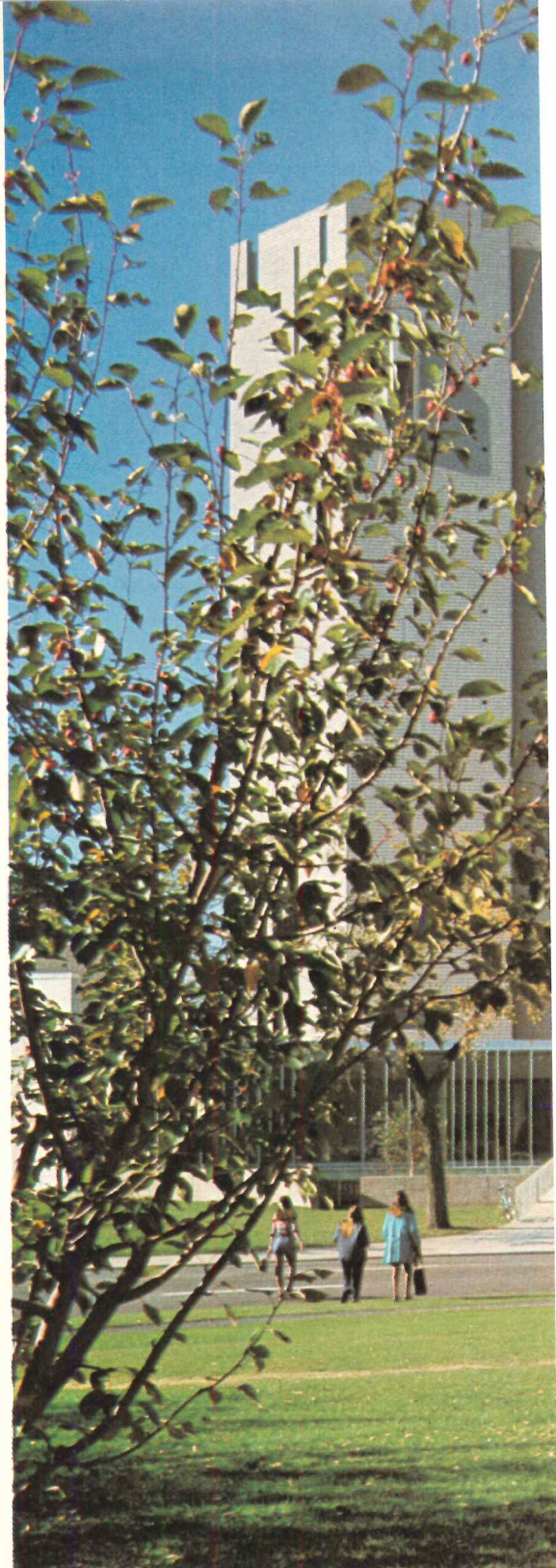


Myron Wood



Rush McCoy

Neither James Sudler of Denver nor Gio Ponti of Milan had known each other before the opportunity developed for collaboration on the design of the new building for the Denver Art Museum. The museum board, mindful of its need to get popular support for building the museum (which had never had a proper building) and to raise funds for the project, wanted to add the prestige of an international name to that of its local architectural firm, James Sudler Associates. Sudler chose Gio Ponti, partly because he greatly admired the Pirelli Building, partly because of Ponti's wide and long architectural experience. Neither difference in language nor in generation interfered with the collaboration. In four intensive visits to the Ponti studio in Milan, Sudler and Joal Cronenwett, his partner, absorbed the Ponti philosophy and fused it with the program requirements and the museological theories of Otto Karl Bach, the museum's vital director for the last 27 years. Dr. Bach's request that only artificial light be used for displays played easily into a Ponti axiom: when there are only facades to design, make a composition of openings. Although no openings were needed, windows of varied sizes and shapes are used in a highly sophisticated pattern, cunningly and with great artistry designed to suggest, but not to describe, the interior spaces. In plan, the building seems to be two cubes joined by a core element. In elevation, however, it is a multiplanar structure of inexplicit geometry, tantalizingly



Rush McCoy

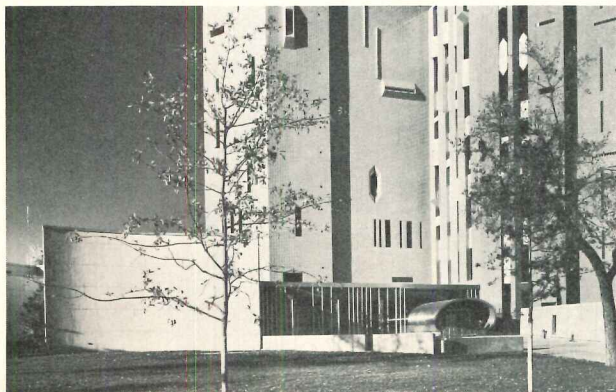
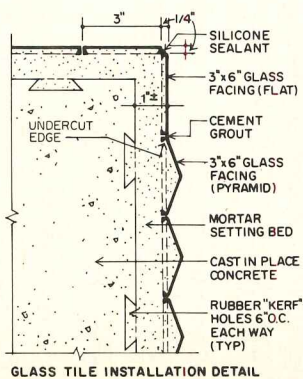




The new museum is part of Denver's civic center complex, and its entrance—an open-ended stainless steel tube with glass doors—faces the park around which the buildings are located. Exterior

wall surfaces are faced with special glass tile, used instead of Ponti's more usual ceramic tile which proved unsuited to Denver's extremes of heat and cold. The gray tile are in two shapes: pyramidal for

general use, and flat to define edges of planes and to create patterns in large unbroken wall areas. They are handset, an undercut on each side holding each securely in the mortar bed. (See drawing.)

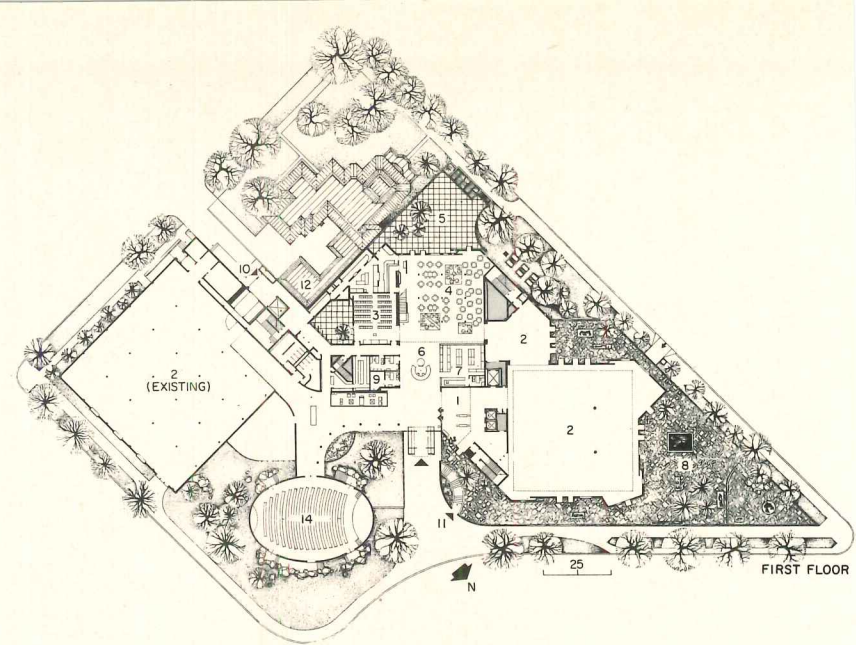
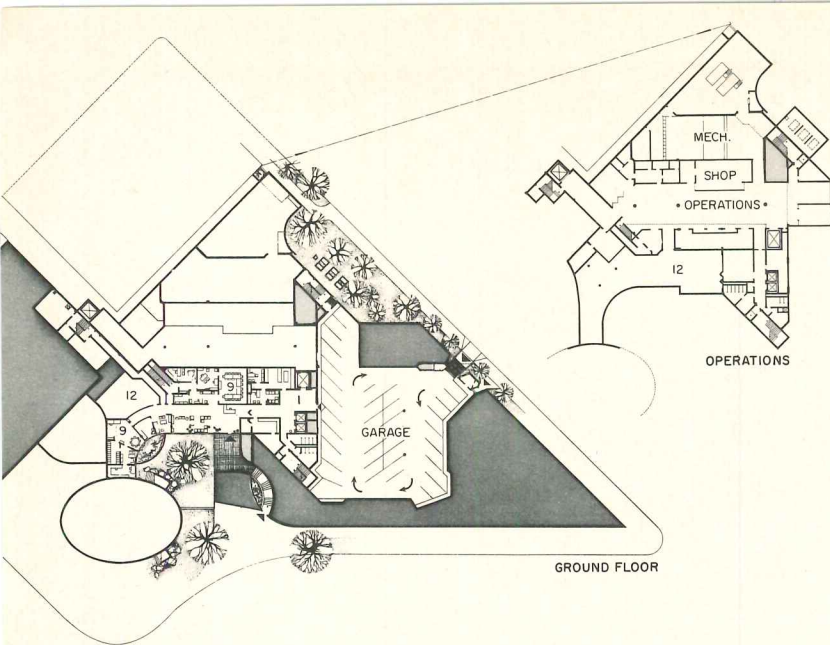


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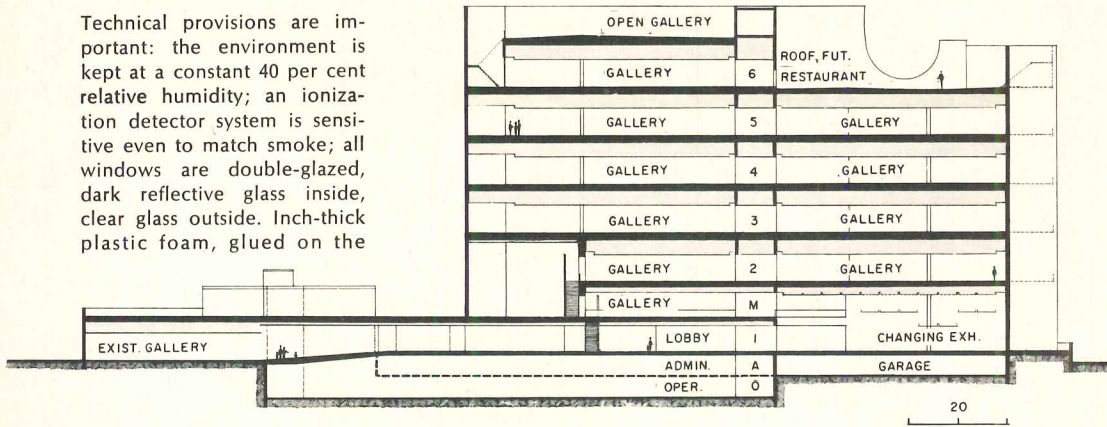


Rush McCoy





Technical provisions are important: the environment is kept at a constant 40 per cent relative humidity; an ionization detector system is sensitive even to match smoke; all windows are double-glazed, dark reflective glass inside, clear glass outside. Inch-thick plastic foam, glued on the



concrete walls, provides both vapor barrier and thermal insulation. Ponti's desire for "nocturnal architecture" is acknowledged in concealed neon strips which light some of the vertical panels at night, augmenting the patterns formed by the lighted windows. The building has the height over-all of a 10-story structure but since its floor-to-floor height is 17.6 feet, it actually contains seven floors.

Wayne Thom



Wayne Thom



Rush McCoy



Wayne Thom

but indefinitely, reminiscent of something medieval and most particularly provocative in its utter unrelatedness to anything in Denver's past or present.

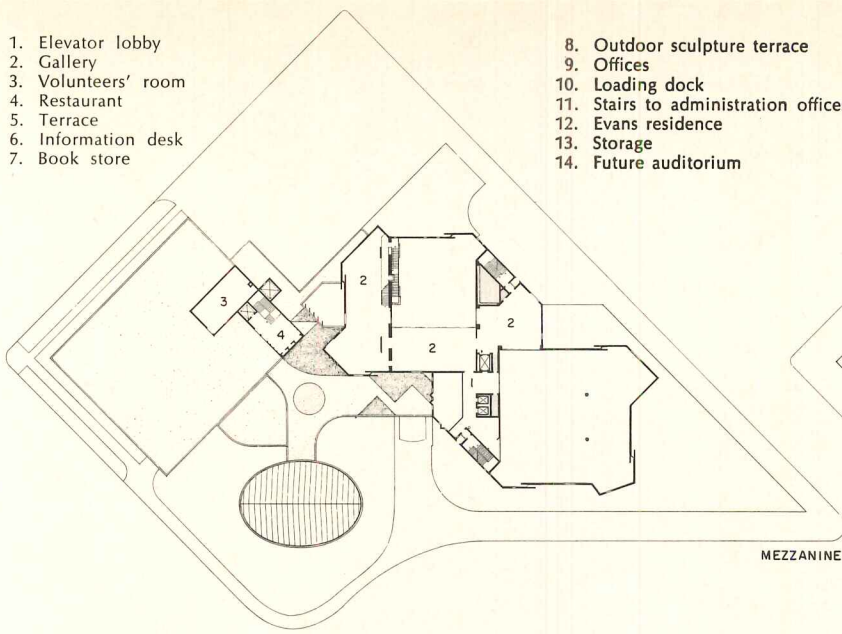
Eleven galleries were needed for the museum's extensive collections of American Indian, medieval and Oriental art. The small site would not have permitted the typical horizontal solution, but since Dr. Bach wanted no skylights, stacking the galleries presented no problem; in fact, it offered an almost unique opportunity to design as directly for the viewer as for the viewed. The galleries, two to a floor, are each 10,000 square feet in area, exhibit space that can be seen by the average viewer in 45 minutes (the average attention span for museum-goers). Each gallery is directly accessible from the elevator lobby, and with only two galleries per floor, the visitor always knows where he is, and can easily and quickly go from entrance to gallery. Elevator lobbies, light and airy, contrast with the galleries, where a low level of illumination is used. Lighting equipment is exceptionally flexible.

THE DENVER ART MUSEUM, Denver, Colorado. Architects: James Sudler Associates—James S. Sudler, Joal Cronenwett; and Gio Ponti—John M. Prosser, project drawings; Douglas I. Johansen, administration; William D. Webb, inspection. Consultants: Gio Ponti (Studio Ponti, Fornaroli, Roselli, Milan, Italy), design; Sudler Monigle Cronenwett Inc., graphics; Duane Newlin & Associates, kitchen. Engineers: Andersen, Koerwitz & Hawes, Inc., structural; Woodward-Clyde, foundation; Francis Stark, Lynn Wray, mechanical; Swanson-Rink & Associates, electrical. Landscape architect: Jane Silverstein Reis. General contractors: (Phase I) Mead & Mount Construction Co.; (Phase II—Interiors, floors 3-6) Berglund-Cherne Co.

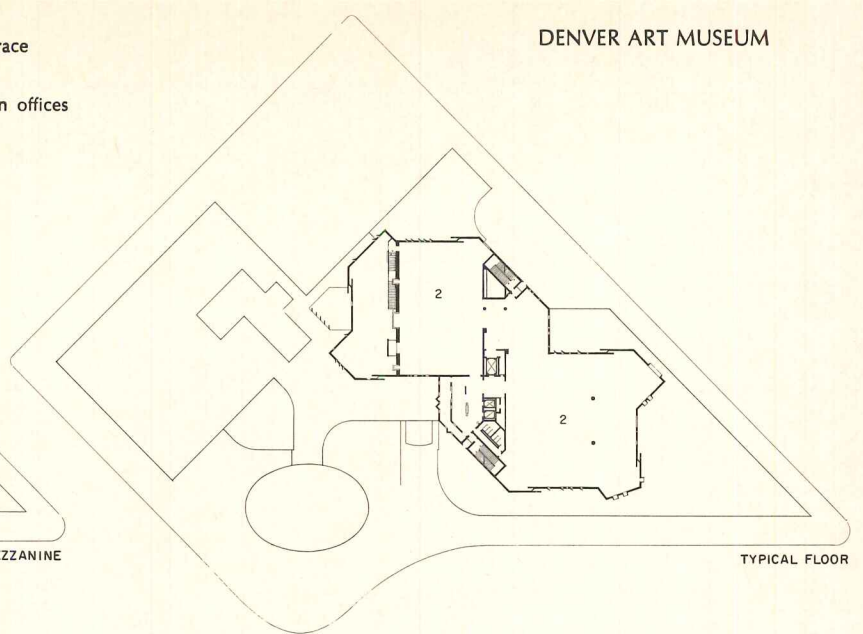


- 1. Elevator lobby
- 2. Gallery
- 3. Volunteers' room
- 4. Restaurant
- 5. Terrace
- 6. Information desk
- 7. Book store

- 8. Outdoor sculpture terrace
- 9. Offices
- 10. Loading dock
- 11. Stairs to administration offices
- 12. Evans residence
- 13. Storage
- 14. Future auditorium

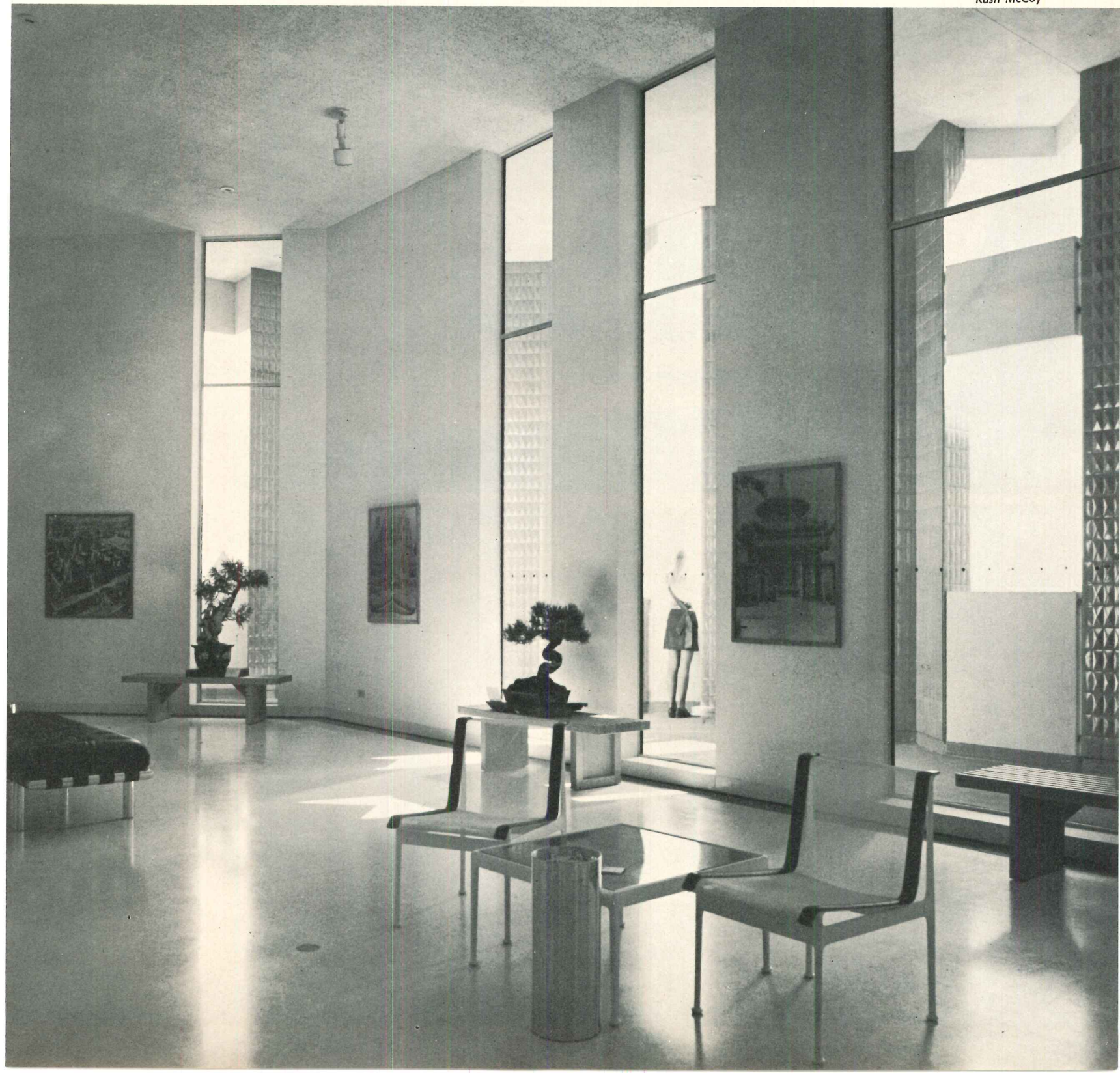


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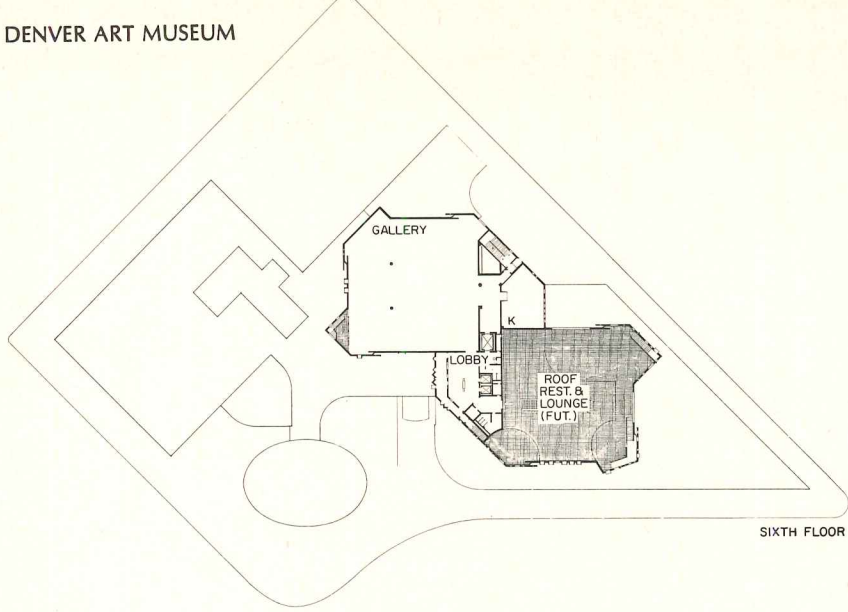


TYPICAL FLOOR

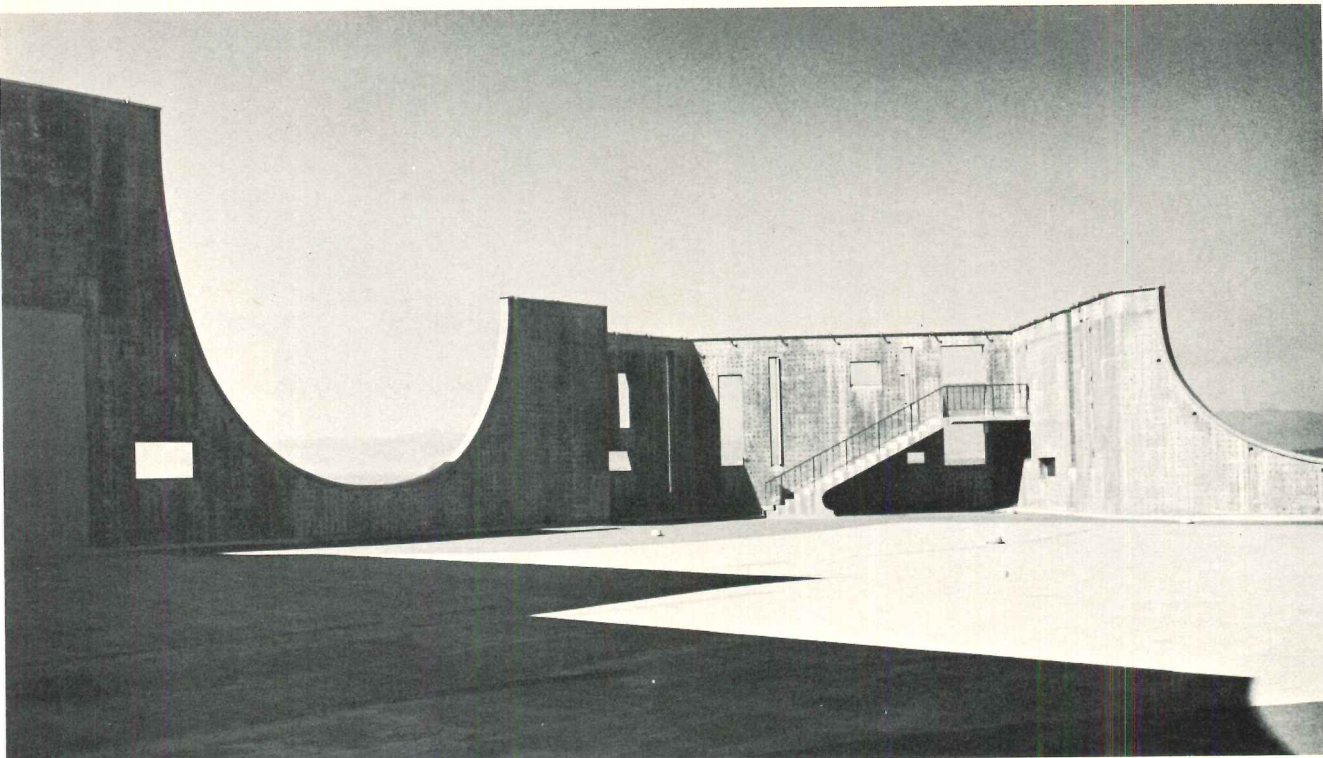
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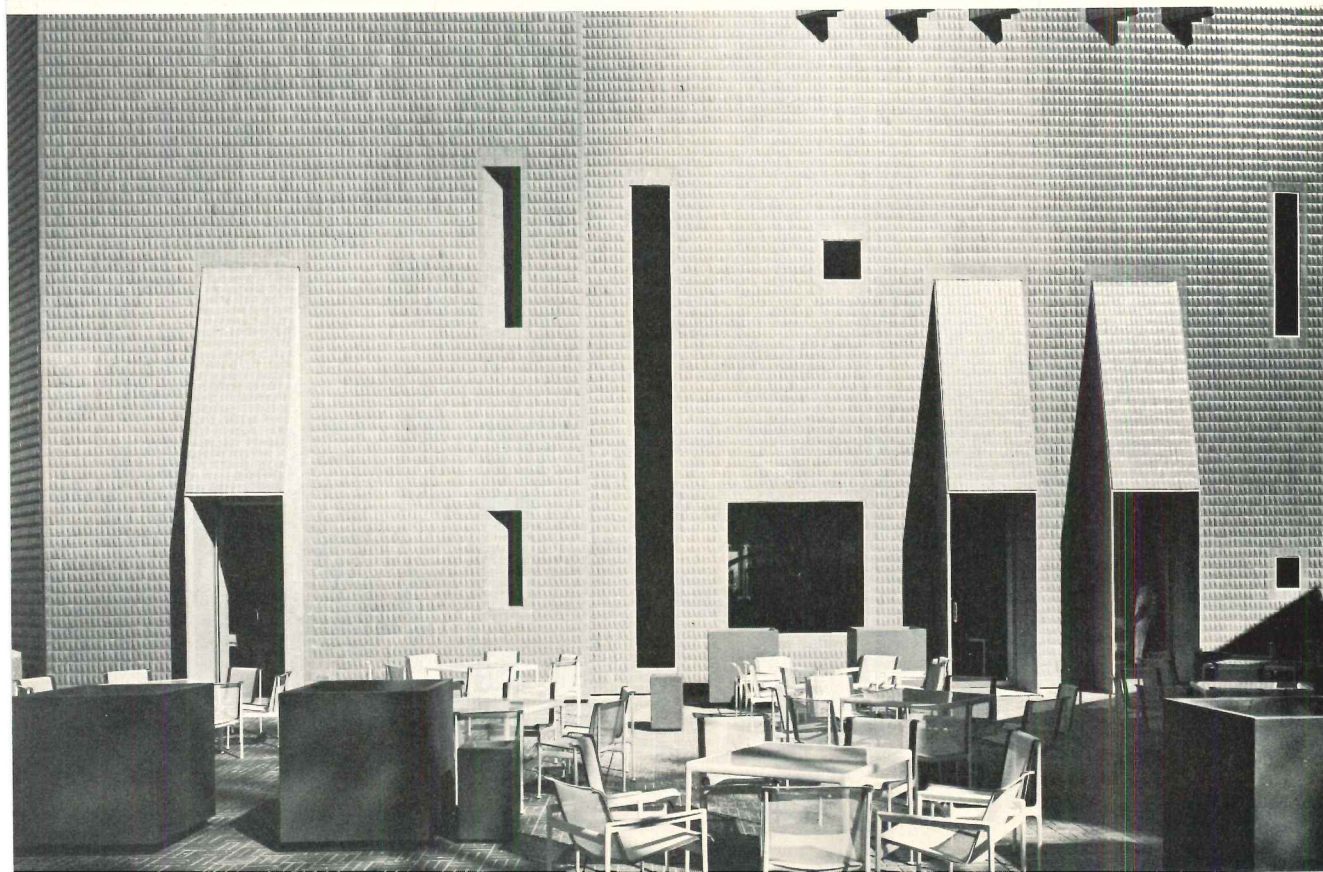




The restaurant on the first floor (designed to double as exhibit space if needed) opens on a sheltered outdoor terrace on the sunny south side of the building. The three hooded openings are doors to the terrace; vari-shaped windows flood the interior of the restaurant with daylight. Floors two through five are typical in arrangement; the sixth contains only one gallery. The rest of its area is reserved for a rooftop viewing area and, eventually, a members' lounge and restaurant. The openings in the high parapet are unglazed, emphasizing the shell-like character of this part of the wall. In two places, great arcs are cut to provide panoramic views of the city and the Rocky Mountains.

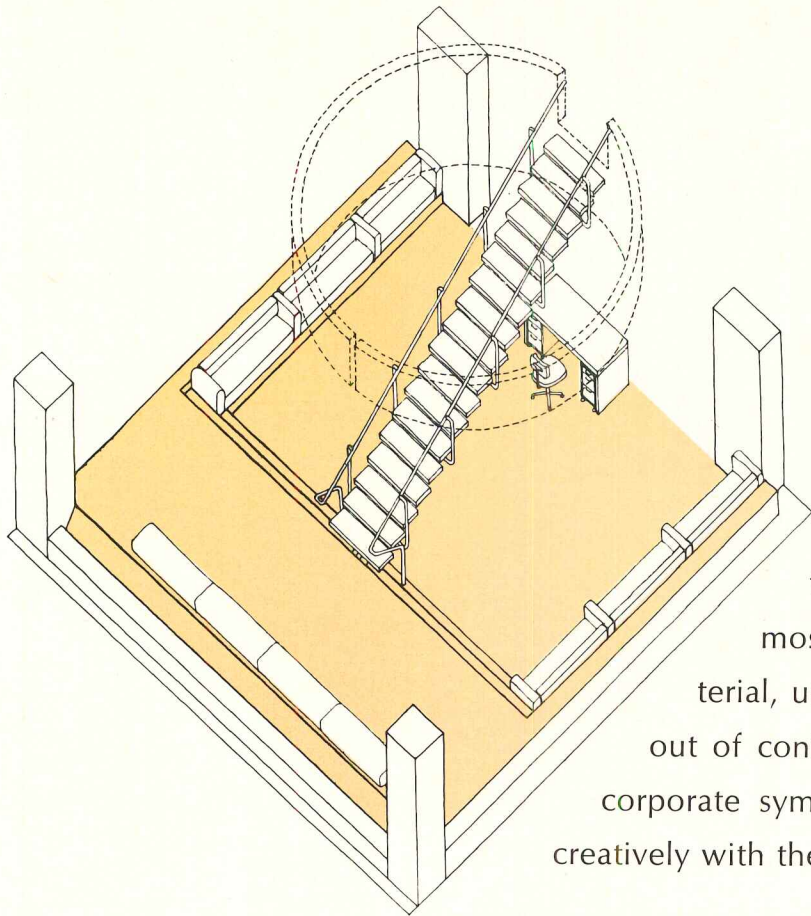


Rush McCoy



Wayne Thom





## ALCAN'S TORONTO OFFICES SPARKLE WITH ALUMINUM AND LIGHT

Designed by A. J. Diamond and Barton Myers, these interiors are a silver, glittery evocation of most people's associations with aluminum as a material, using neon tubing, glass, and aluminum products out of context to set the mood. It is an interior used as a corporate symbol, yet it attempts at the same time to deal creatively with the individual needs of the people who work there.







Aluminum-like finishes have been used in many areas of the office, like the planter tubes in the photos above and below, built-in closet doors, and the cube office tables designed by the architects, shown in the photo at right. In the color photo opposite, two coffee tables made from solid aluminum ingots may be seen right and left. The ceilings throughout both floors are those provided by the office building.



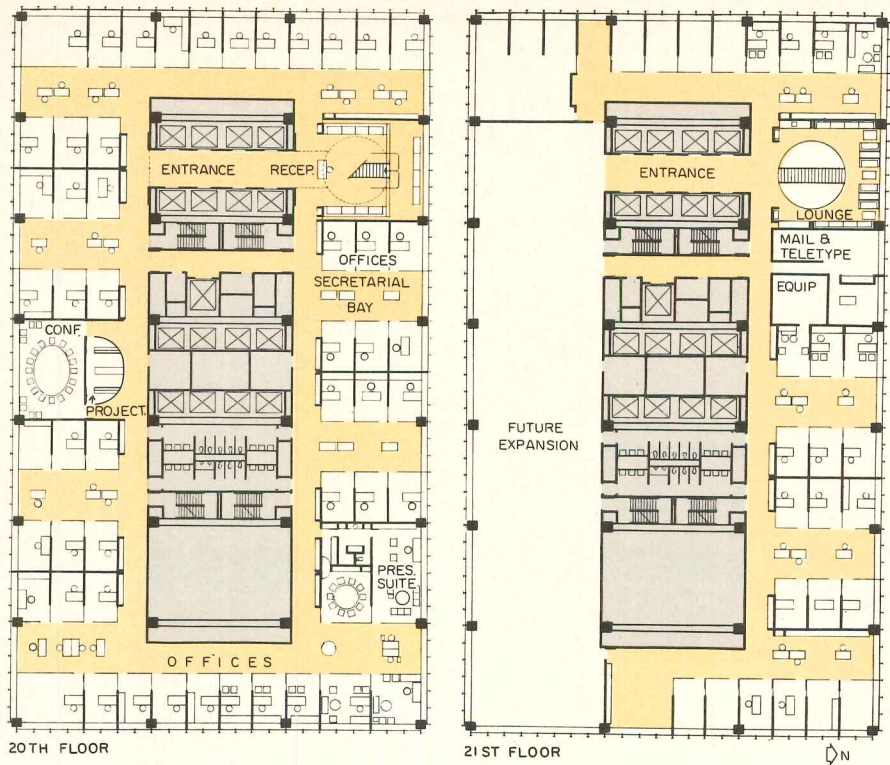
Ian Samson photos



The elevator lobby and reception area for the Toronto offices of Aluminum Company of Canada, Ltd., (color photo, right, and previous page) establish the major visual impact of the offices for a visitor. Neon tubes at the ceiling lead from the elevator space of both floors into the reception area, acting as a strong visual magnet pulling the visitor along. The reception area occupies both floors (see plan and section, page 95) with a spectacularly open, carpeted aluminum stair rising through the center of a full circle cut in the framing of the 21st floor structure.

The building in which these spaces are leased is Mies van der Rohe's 56-story Toronto Dominion Centre (RECORD, March 1971, pages 105-114). ALCAN houses about 140 people—including 87 executives—on both floors. A majority of perimeter wall space is thus occupied by private offices, but one of the major objectives of the design was to give secretarial and clerical employees direct outside light, too. The intermittent secretarial bays (see plans, and photo, above left) accomplish this, and eliminate any large, impersonal secretarial pools. The main circulation path around the build-



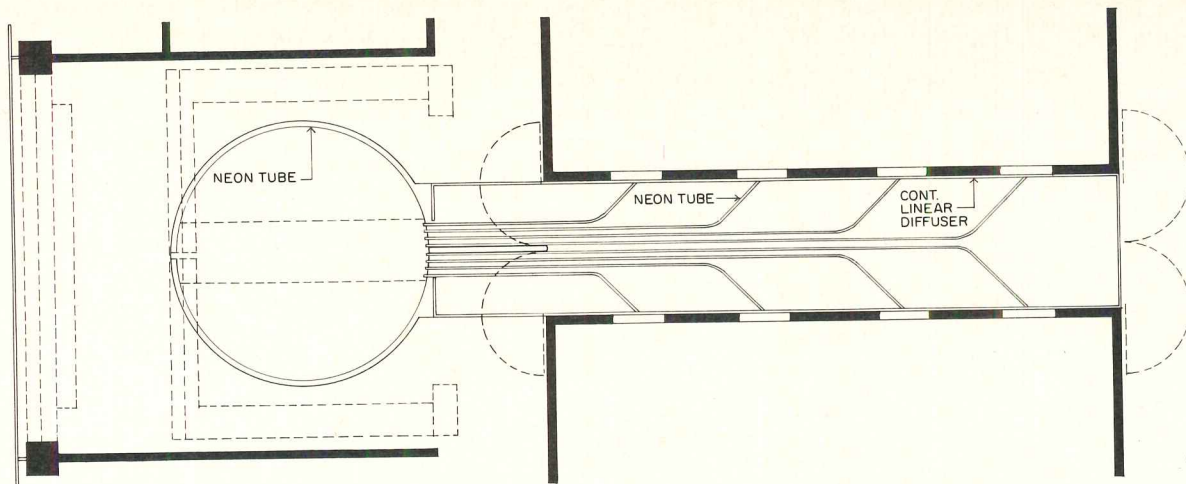


All of the walls of the ALCAN floors in the plans above are metal studs and gypsum board, fixed in place. The designers spent extra money making floor-to-ceiling glass walls in front, allowing indirect light inside. Curtains may be drawn in any office for privacy, while the relatively mullion-free secretarial bays create a spacious, elegant mood.

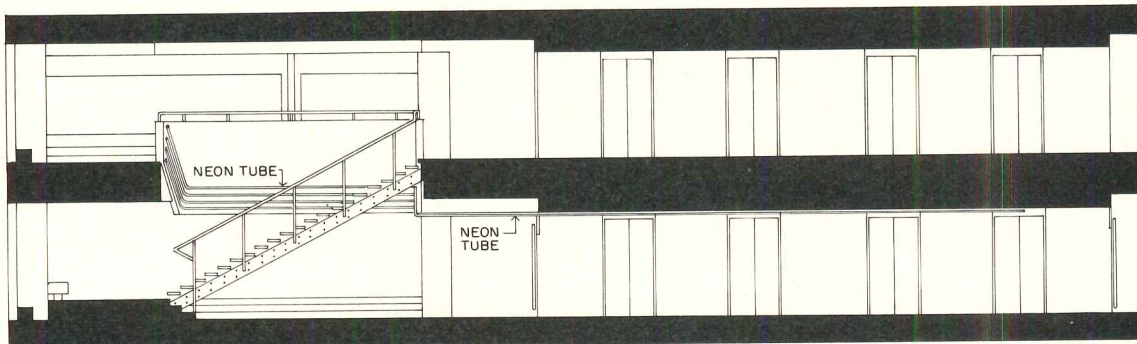
*Michel Proulx*



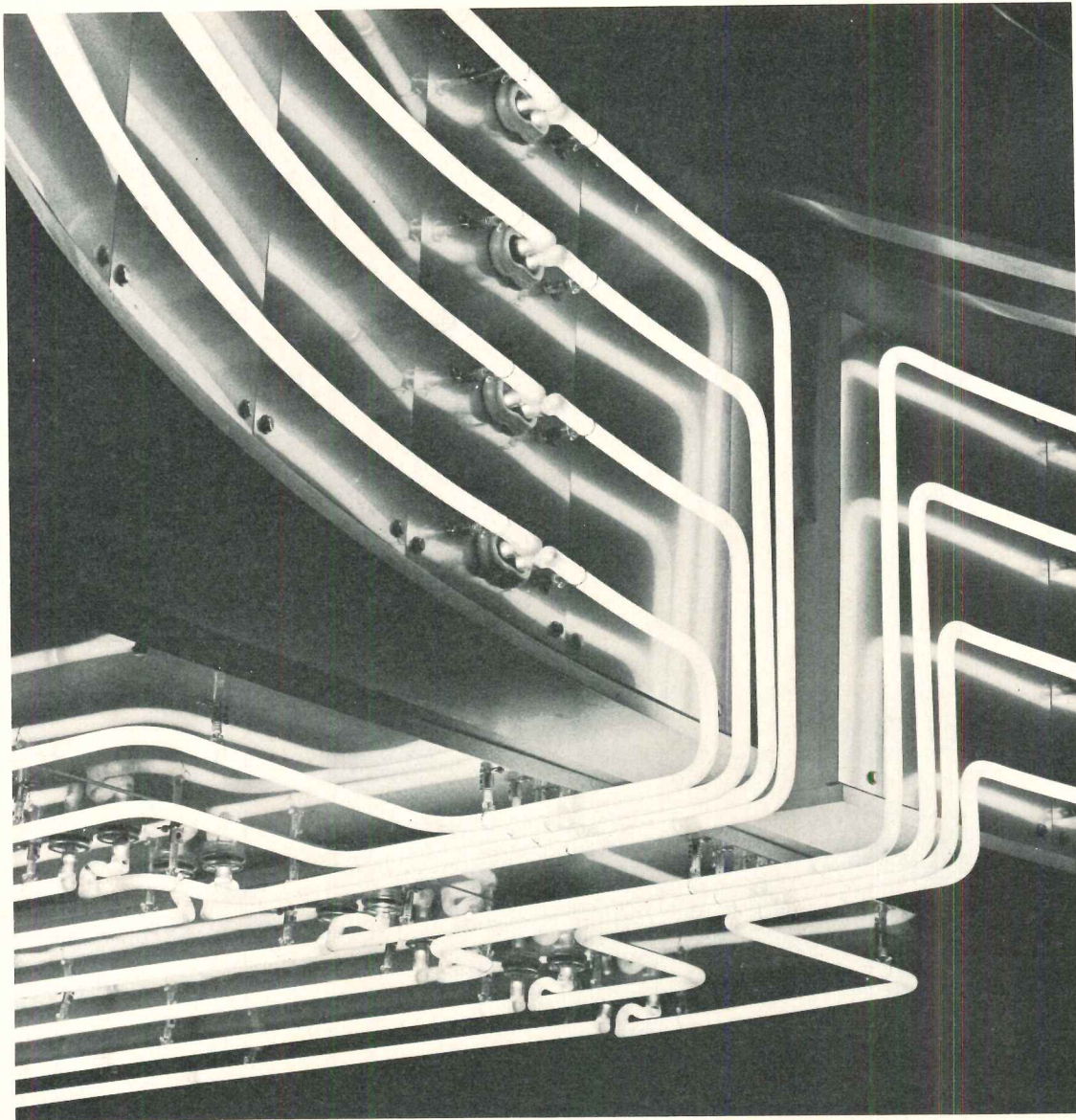




REFLECTED CEILING PLAN-20TH FLOOR



LONGITUDINAL SECTION



ing's core is more a gallery than a corridor (photo, page 94). It is a full seven feet wide, it has exposed incandescent lighting fixtures that cause high contrast and "sparkle" off the silvery glass finishes, and there are built-in filing and coat closets along its length to further mix the use of the space.

The plan and section of the reception and elevator areas (above) help explain the arrangements for neon tubing, so dominant in many of these photographs. One tube leads from each of eight elevator doors, running parallel to each other down the corridor and converging on the aluminum-clad circular passage between floors. At this point the tubes turn 90 degrees vertically, as in the photo at left, and run around the circular opening in both directions. It is a dramatic display of lighting, and a dramatic initial representation of ALCAN's offices.

ALCAN CORPORATE OFFICES, Toronto, Canada. Architects: A. J. Diamond & Barton Myers—A. J. Diamond, Barton Myers & Tony Marsh, design team. Cost control: Helyar, Vermeulen, Rae & Mauchan; mechanical & electrical engineers: H. H. Angus Associates; structural engineers: C. D. Carruthers & Wallace; general contractors: McMullen & Warnock Ltd.



# Designing the urban landscape: new projects by M. Paul Friedberg and Associates



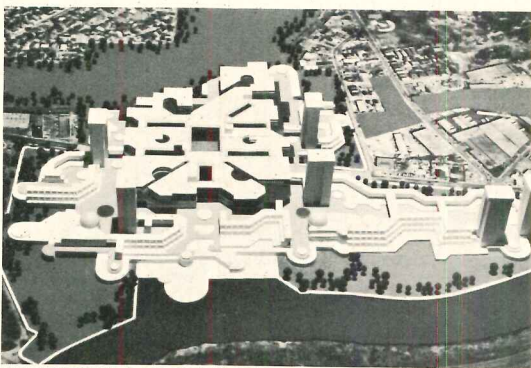
BEDFORD STUYVESANT SUPERBLOCK

Only a handful of architects and landscape architects are at work on the urban landscape in the sense of being directly involved with the physical design of urban open space. The reasons for this are obvious. In the United States in the past 40 years, depression, war, recovery, the cold war and Vietnam have minimized public and private investment in such urban amenities as parks, plazas, squares and promenades. The U.S. citizen's infatuation with his automobile combined with his disinclination to walk has caused existing pedestrian-oriented open space to deteriorate and little new open space to be acquired and designed. It is true also that this very decline of the urban landscape forces people into their cars to escape it—thus furthering deterioration by air pollution and neglect.

For these and other reasons which stem from the economic deterioration of central urban areas but which are too numerous to go into here, the twentieth century U.S. urban landscape is as under-designed as any in the world—and as bleak.

Nevertheless we celebrate from time to time the occasional restored plaza, newly created park, pedestrian mall or slum playground that emerges as the result of an intelligent presence or two within a given planning bureaucracy, or through the determined efforts of a citizens group, or by means of a small grant from HUD, or because Mrs. Vincent Astor cared, or through a combination of these good forces acting in concert. These small achievements give us hope that there will be a change for the better, as does the work of landscape architect and planner M. Paul Friedberg.

*text continued on page 104*



WATERTOWN EAST DEVELOPMENT



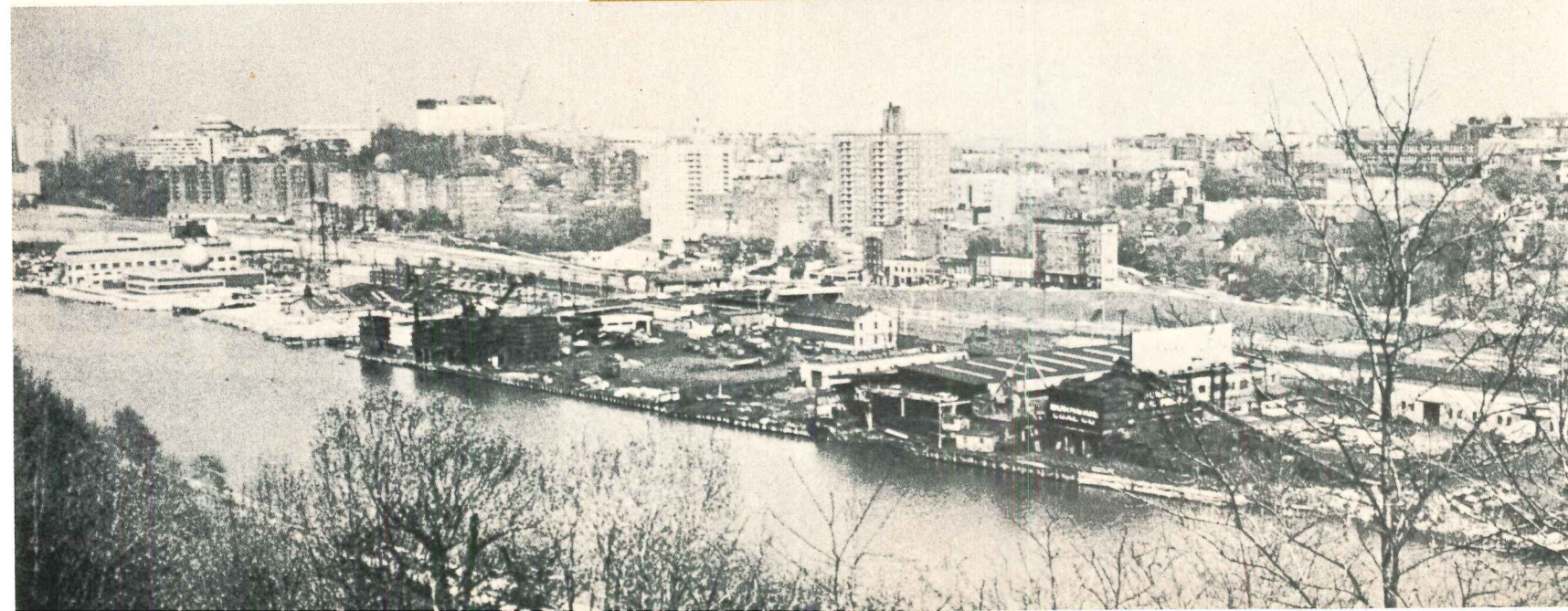
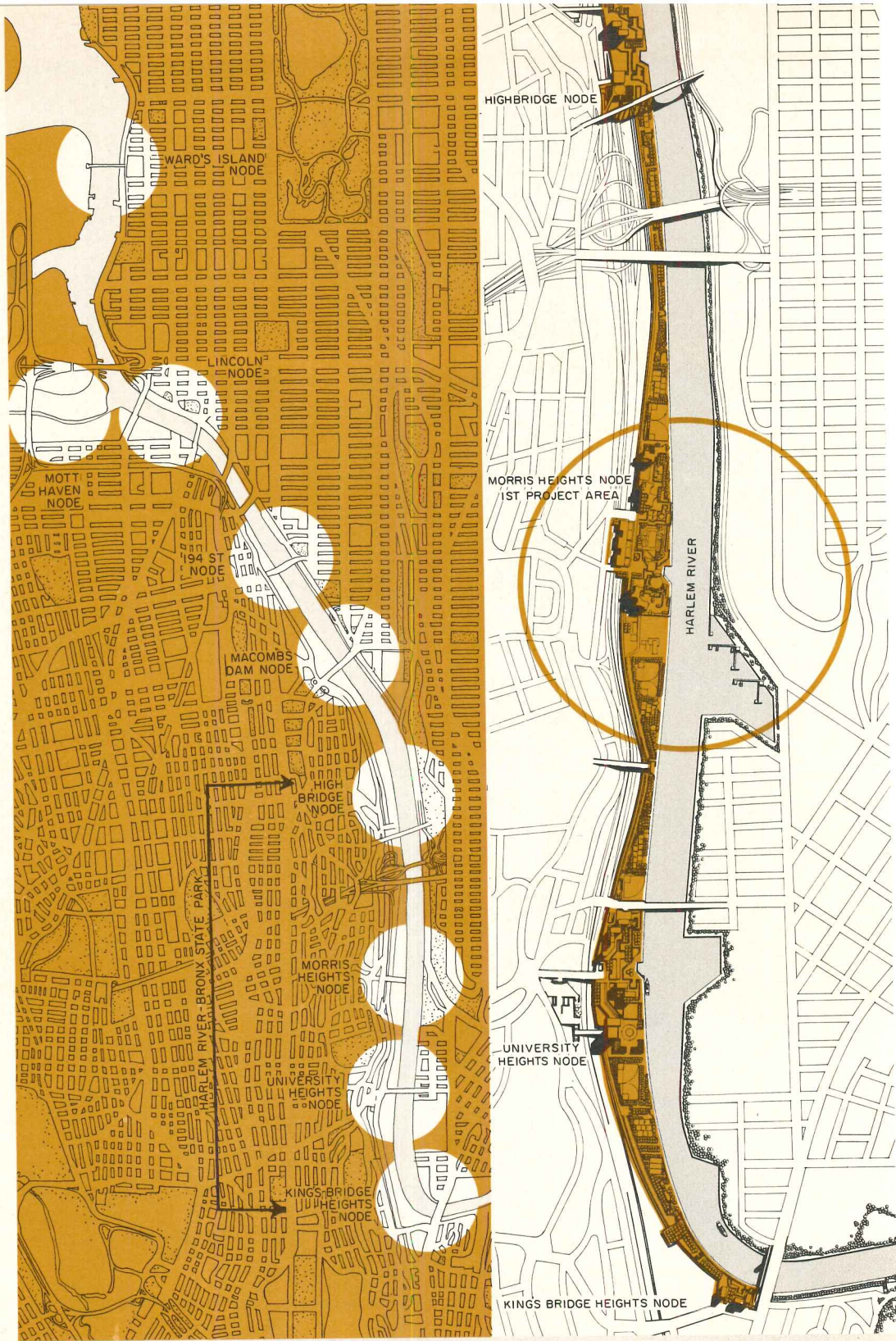


## A 22-acre park designed to contain 1,000 units of housing

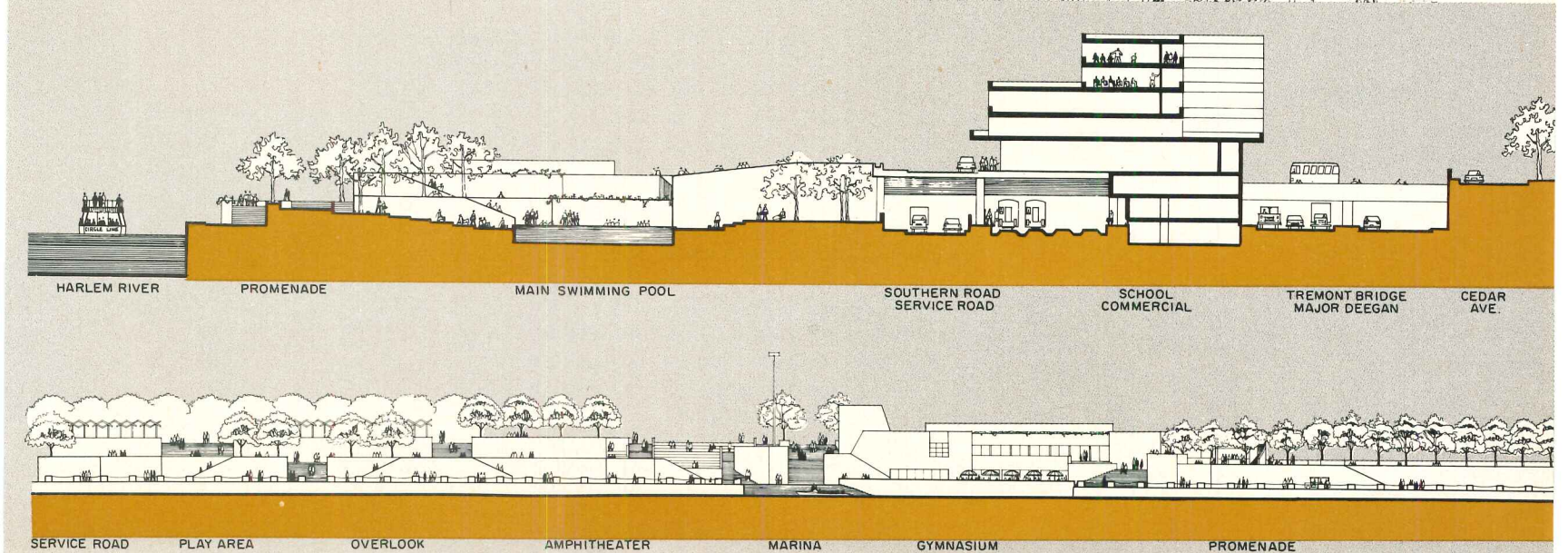
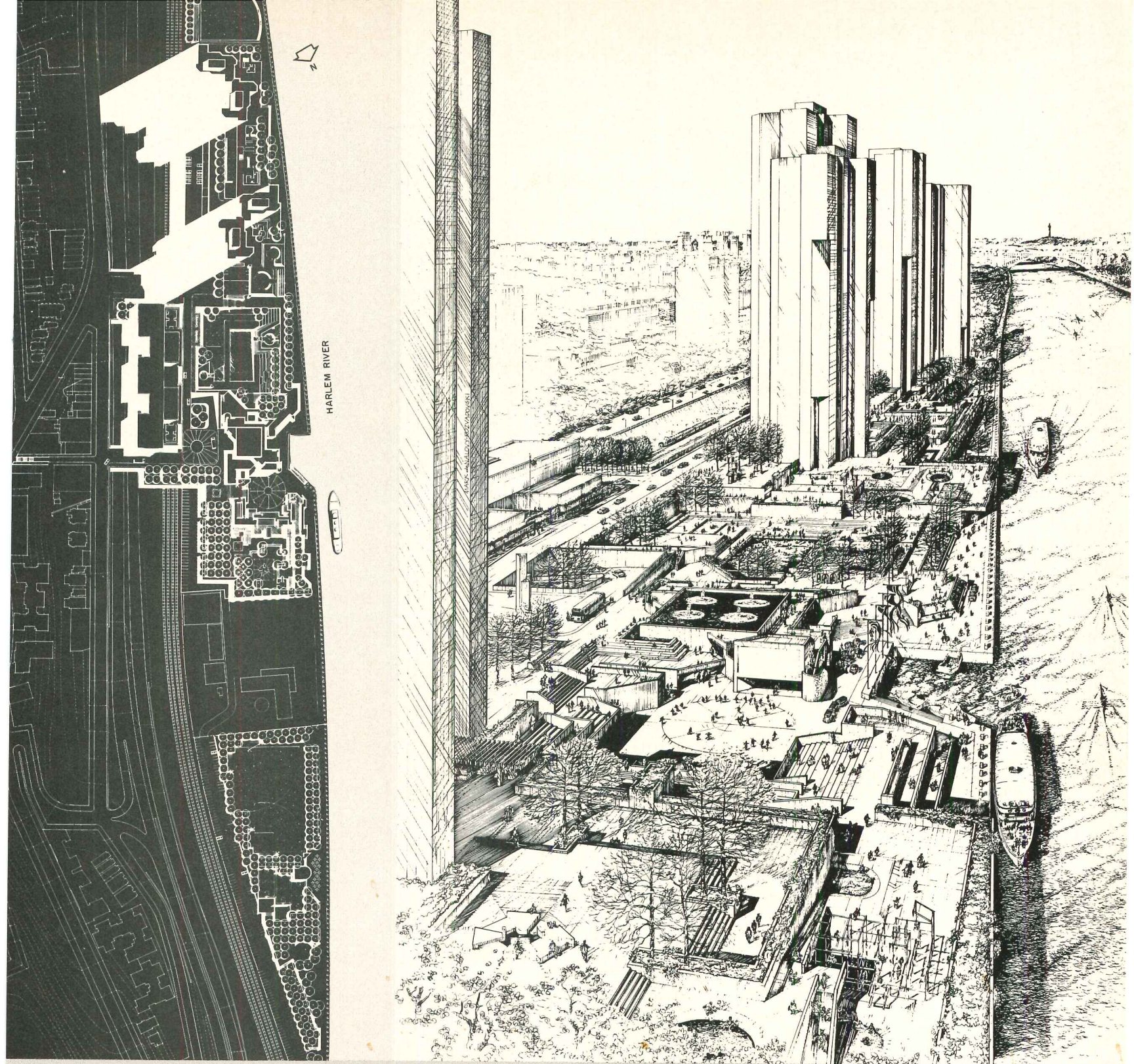
In the future we will have fewer urban parks designed exclusively for recreational use. New concepts of urban landscape architecture call for the integration of park and recreational facilities within an inter-related system of residential, educational, commercial and cultural buildings.

The \$12 million Harlem River Bronx State Park, the first phase of which is now in construction, was designed by M. Paul Friedberg & Associates for the State Park Commission for the City of New York. Programmed for 3500 active users plus spectators it will become the neighborhood community center for the residents of Harlem River Park Housing designed by Davis, Brody & Associates for the Urban Development Corporation.

The skillfully interwoven linear open space fabric will include a school, shops, railroad station, teenage center, amphitheater, gyms, pools, athletic fields, day care center, marina, exhibition spaces and eating facilities. Located in the Bronx on the abandoned and derelict industrial site shown in the lower photo, the new park will become a link in the chain of existing or proposed waterfront parks shown in the diagram (near right). The plan (far right) shows the proposed development for the entire 65-acre riverfront parcel extending from Marble Hill and Kingsbridge Road on the north to a point south of Highbridge. Development will be focused upon the four so-called activity nodes indicated. The Harlem River Bronx State Park falls within the Morris Heights node and is the first element in this proposed linear open space system to be developed. Land acquisition was funded by New York State, assisted by a grant from the Federal Bureau of Outdoor Recreation.









## A privately developed park for New York City workers in the Wall Street district

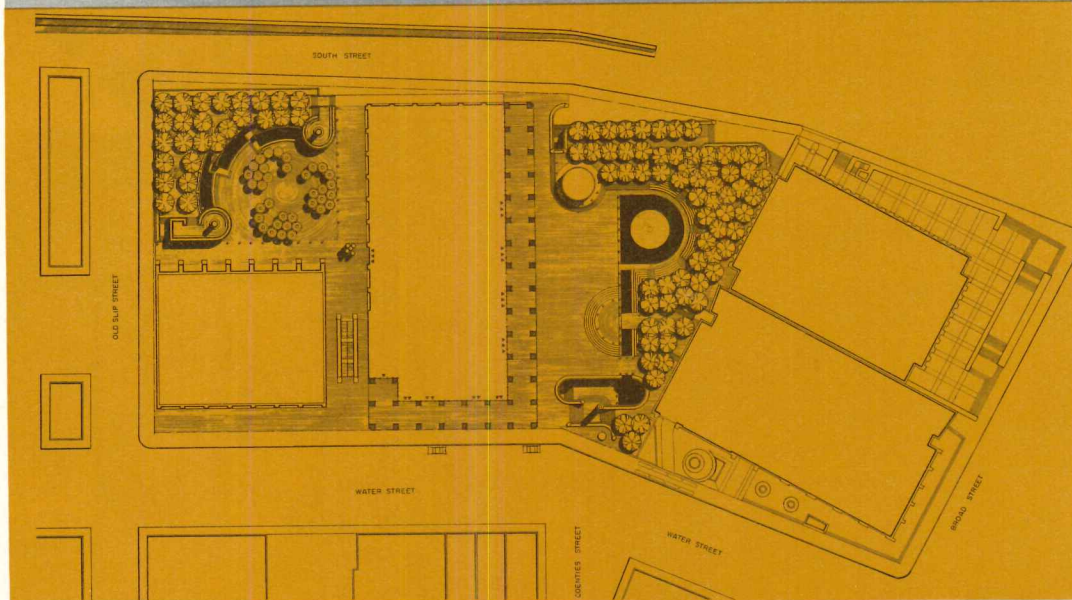
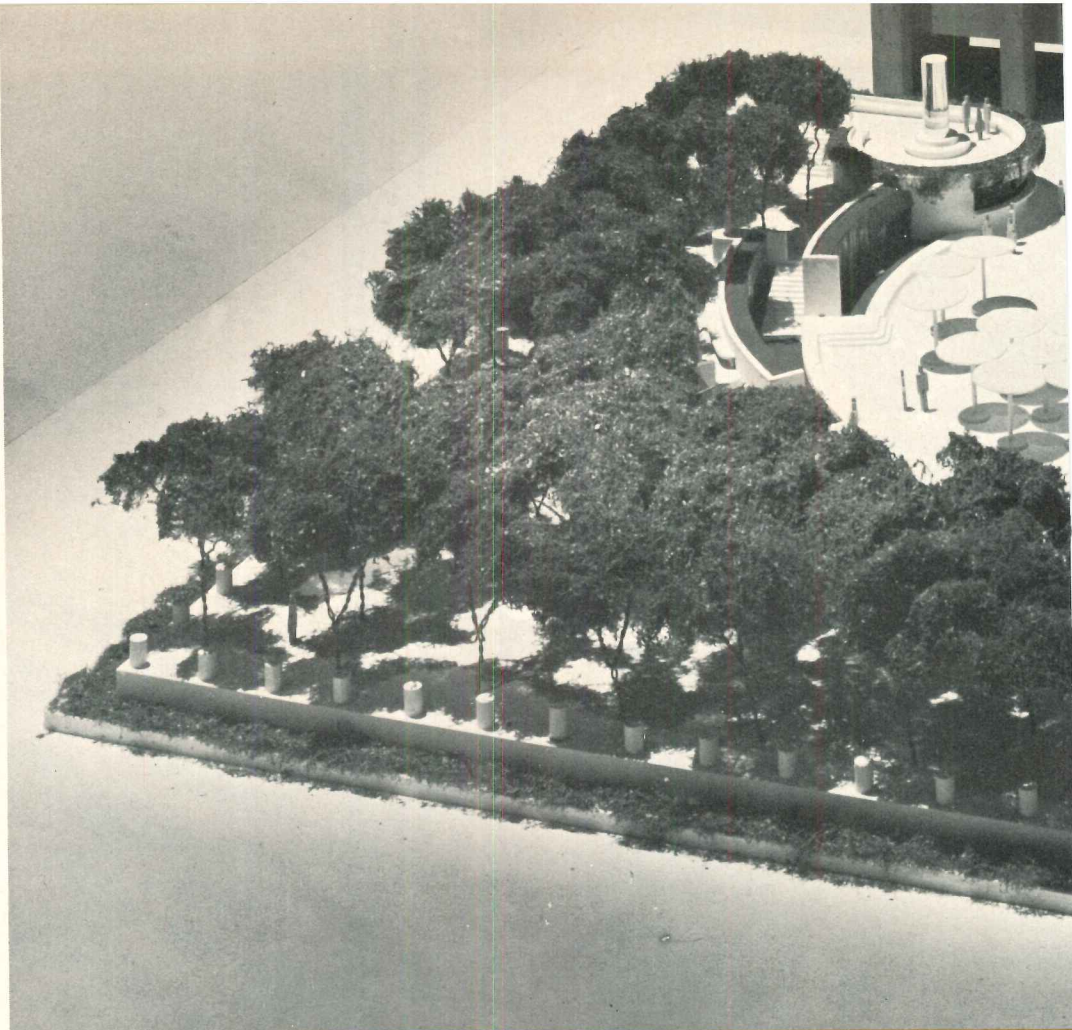
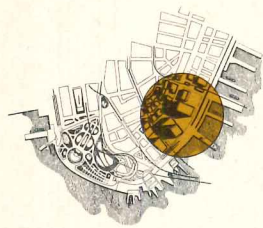
By the end of 1972 Lower Manhattan will have an elegant new public plaza, approximately one-third of which has been built upon existing city park land and a closed-off public street, with the remainder made available

for public use by a private developer. The major cost of developing the entire plaza is being born by the developer—the Uris Buildings Corporation—in conjunction with their construction of two speculative office buildings which adjoin the plaza.

M. Paul Friedberg & Associates have designed this plaza in a new manner for them which reflects the fact that office workers during the working day have different recreational needs than they do at other times in other places. It is essentially a place for Wall Street pedestrians to rest and have lunch. To this end the plaza will be uncluttered and serene in striking contrast to the active, crowded streets of the district. At the upper level will be a cluster of large honey-locust trees which form a canopy of shade. No other trees are used and this simple consistency is matched by the use of a brown iron spot brick on all surfaces—plaza floor, walls, stairs and kiosks.

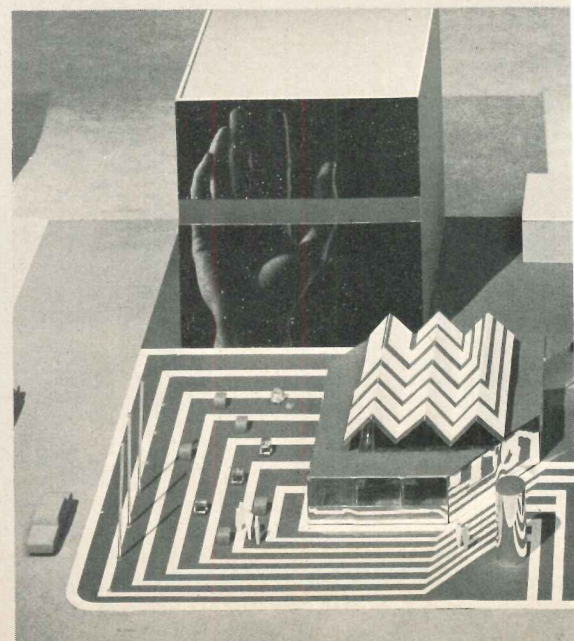
The only accents will be the vertical cylinders which serve as ventilating stacks. These will be surfaced in stainless steel. The plaza will have backlitged waterfalls, fountains and quiet pools.

It is hoped that a portion of the lobby floor of one of the two office buildings can be leased to a restaurant so that the lower plaza may be used for outdoor dining. One of the two circular kiosks may become a food concession.

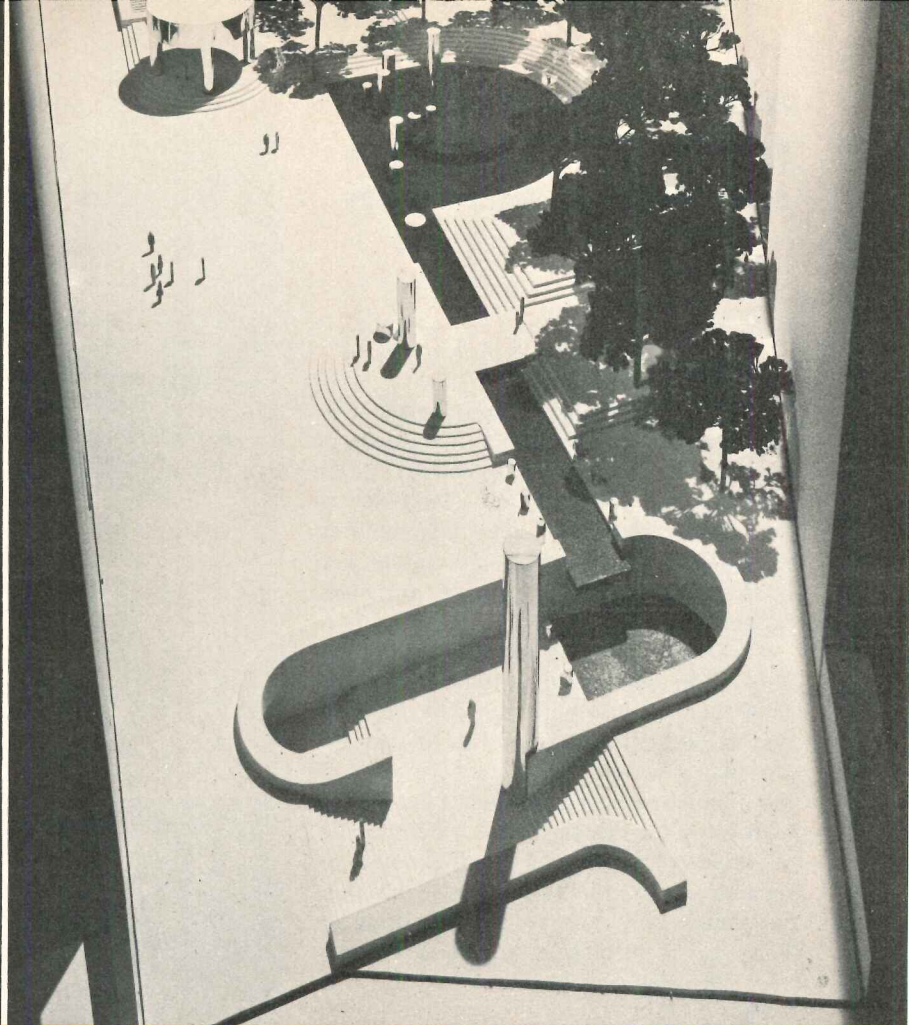
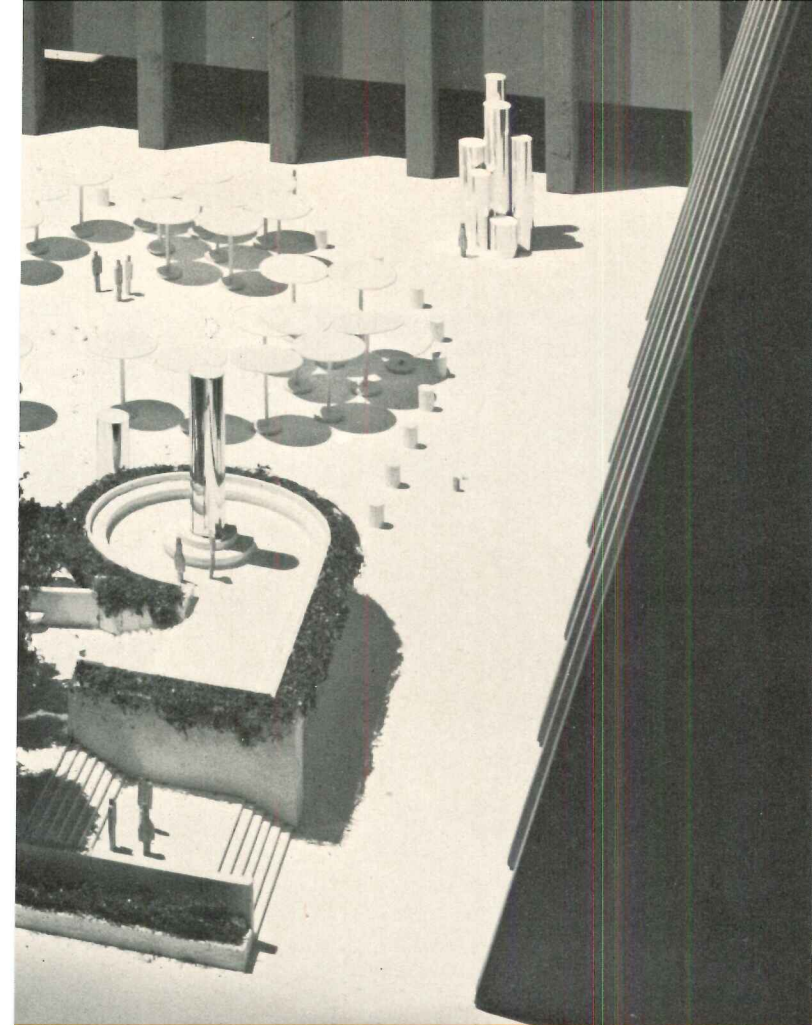


## A modular and mobile money making urban park for video watchers

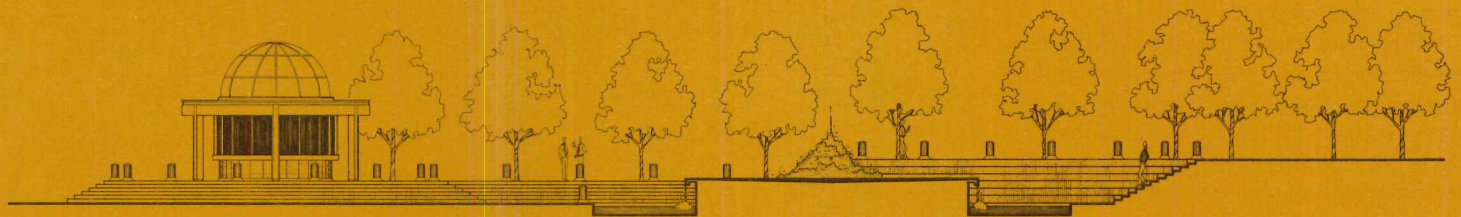
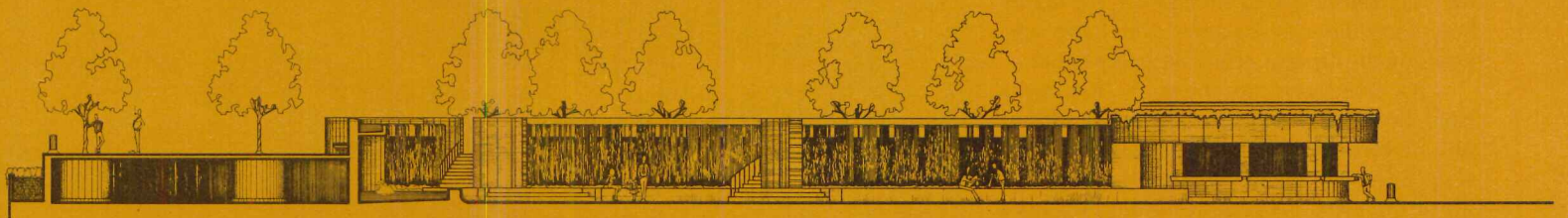
Small circuses, carnivals and amusement concessions still visit our neighborhoods and towns, set up tents and mechanical rides on available lots, do business for a few days or a week or two and then pack up and move on. M. Paul Friedberg and Associates in collaboration with Jay K. Hoffman Presentations have devised a contemporary carnival based upon video projection. Designed to be moved from one vacant neighborhood lot to another the video park, for which admission would be charged, would consist of projection equipment, collapsible screens, a video tape library and a restaurant. The latter would have monitors which would televise to the diners inside the events going on in the park outside.



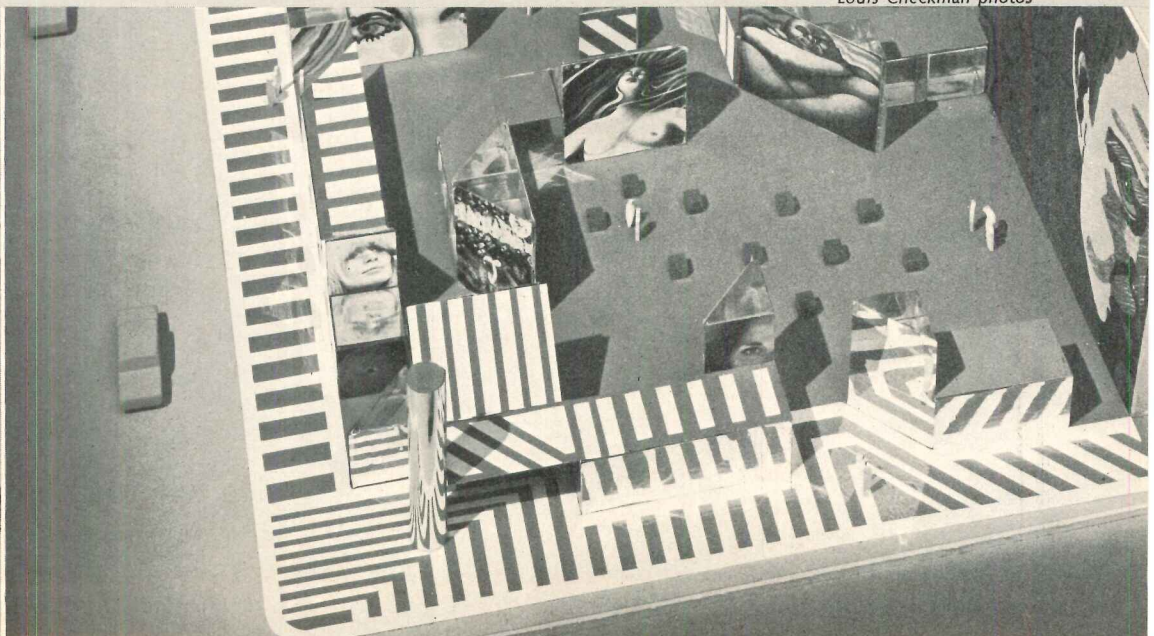




Louis Checkman photos



Louis Checkman photos





## Abstract forms for children's play stir their imaginations and challenge their bodies

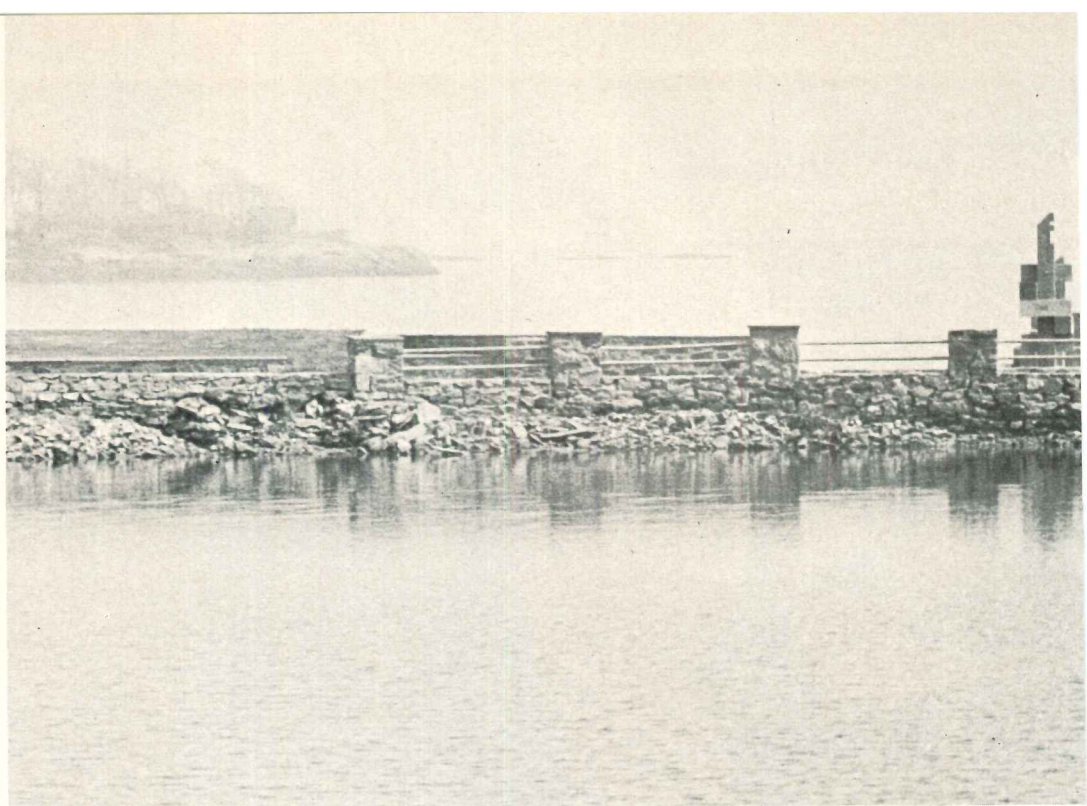
This is a private playground for the children of one family built on a causeway between their house, designed by Ulrich Franzen, and the mainland. Multiples of this design are, of course, adaptable to many kinds of playgrounds, public and quasi-public as well as private, on many different kinds of sites.

The causeway is narrow and sandy, flanked on one side by a road and on the other by a rip-rap bulkhead. The problem was to design a playground to fit into this area which would reflect the character of the marine landscape, while not conflicting with the bold design of the residence. To accomplish this, M. Paul Friedberg and Associates used a commercially available pre-cut timber play unit system consisting of 12 in. by 12 in. timbers of varying lengths.

This play unit system effectively challenges a child's physical capabilities teaching him how high he can go, how strong he is and how strong he can be. He learns how long he can balance and hang and how much physical effort he can endure.

As Friedberg describes it, the units have been assembled "to create a silhouette of verticals which would penetrate the skyplane and mark the event—yet not block the view." "A series of interconnected stepping column mounds, vertical climbing units and raised horizontal elements satisfy the play requirements.

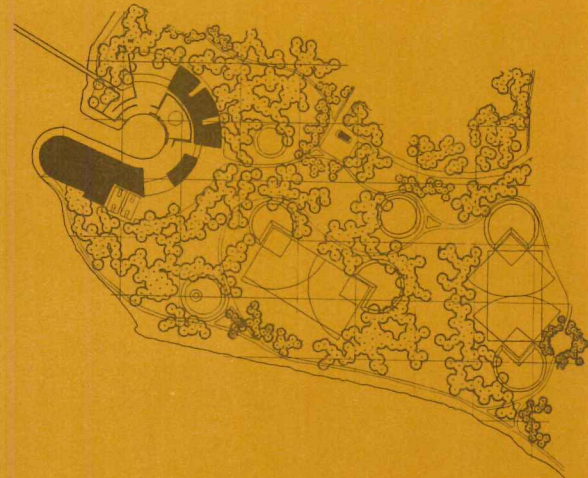
The owners have pronounced it an extremely successful play environment and the configuration—now weathered by salt spray—appears to belong in the landscape. When the children grow up the assembled play units will remain, elevated by the passage of time into a work of art.



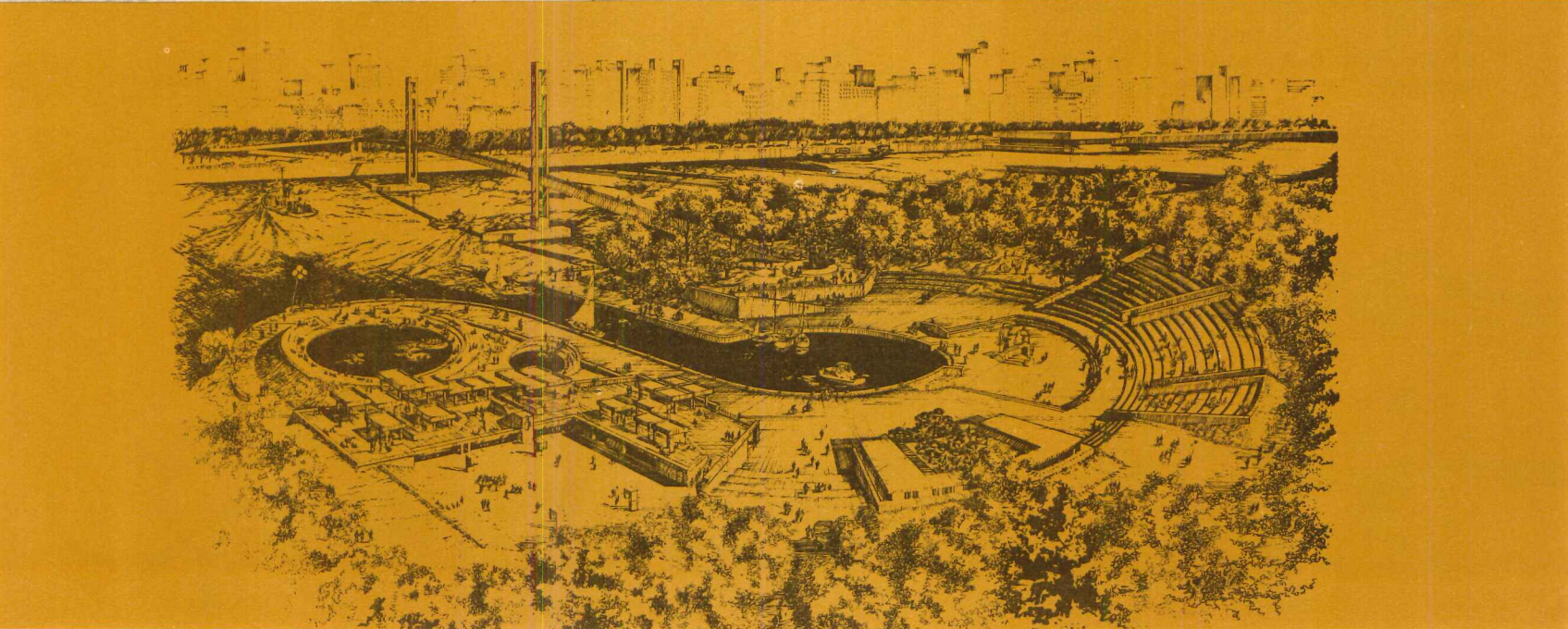
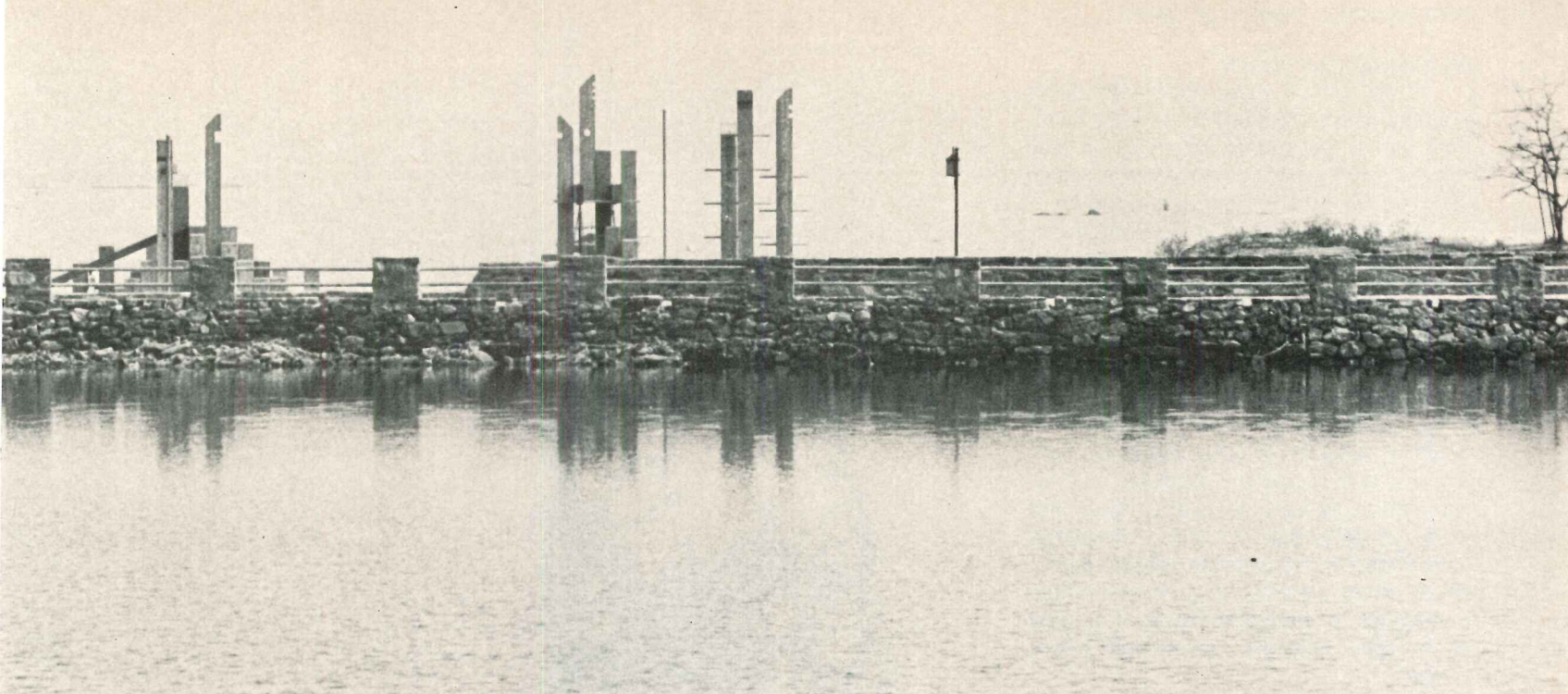
Ron Green photos

## A portion of Ward's Island designed as a park for the Harlem community

Ward's Island Park is connected to Harlem by means of the existing foot bridge shown in the rendering by M. Paul Friedberg and Associates indicating their scheme for the improvement of this portion of the island. At present this area which can only be reached on foot is idyllically uncrowded. On weekends a few Harlem ball clubs use the playing fields, bicyclists meander on neglected footpaths, and families picnic along the water's edge. The views of Manhattan are dramatic from many points along the shore. Friedberg proposes an urban plaza, near the end of the bridge, to act as a magnet to bring more people to the park. The park's value as a place of almost pastoral contrast to the teeming streets of Harlem will disappear, but in Friedberg's hands new urban values will emerge.









text continued from page 97

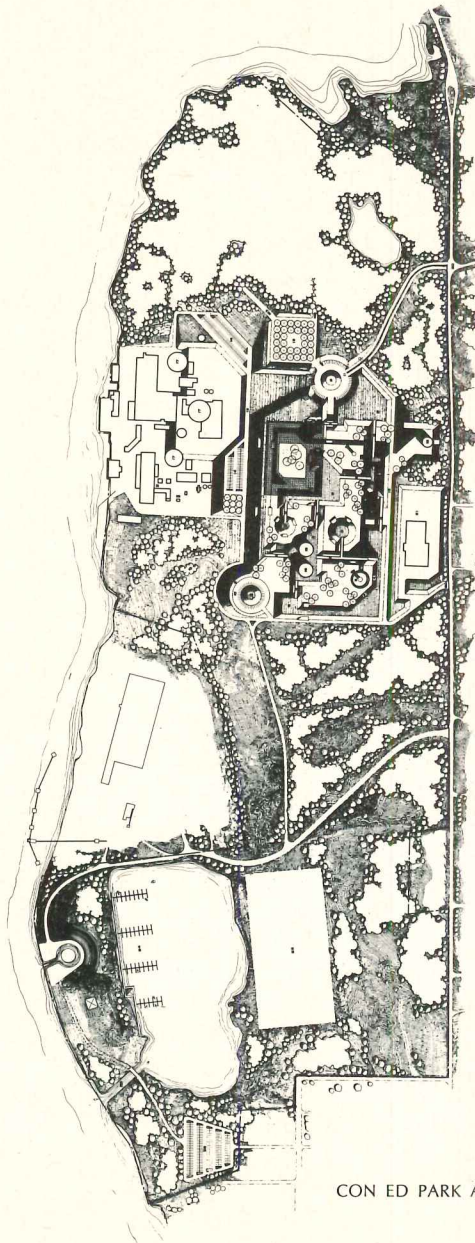
If the phrase urban landscape has a contemporary meaning it is because Friedberg and a few others have created new images with space and materials which show us what urban open space can be.

He has reintroduced a well-scaled spatial complexity to the urban scene by means of intricately related multi-level planes connected by steps, amphitheater seats, chutes, glides, waterfalls or banks of trees. He uses familiar landscape materials—stone setts, gravel, pebbles and ground cover; commonplace landscape objects—benches, bollards, drinking fountains, light fixtures; and customary structures and focal points—trellises, fountains, pools and water, in delightful new ways. Friedberg's work shows that he understands the diverse needs of city people. Assessed as a whole it responds to the requirements of citizens of all ages, economic levels and ethnic groups.

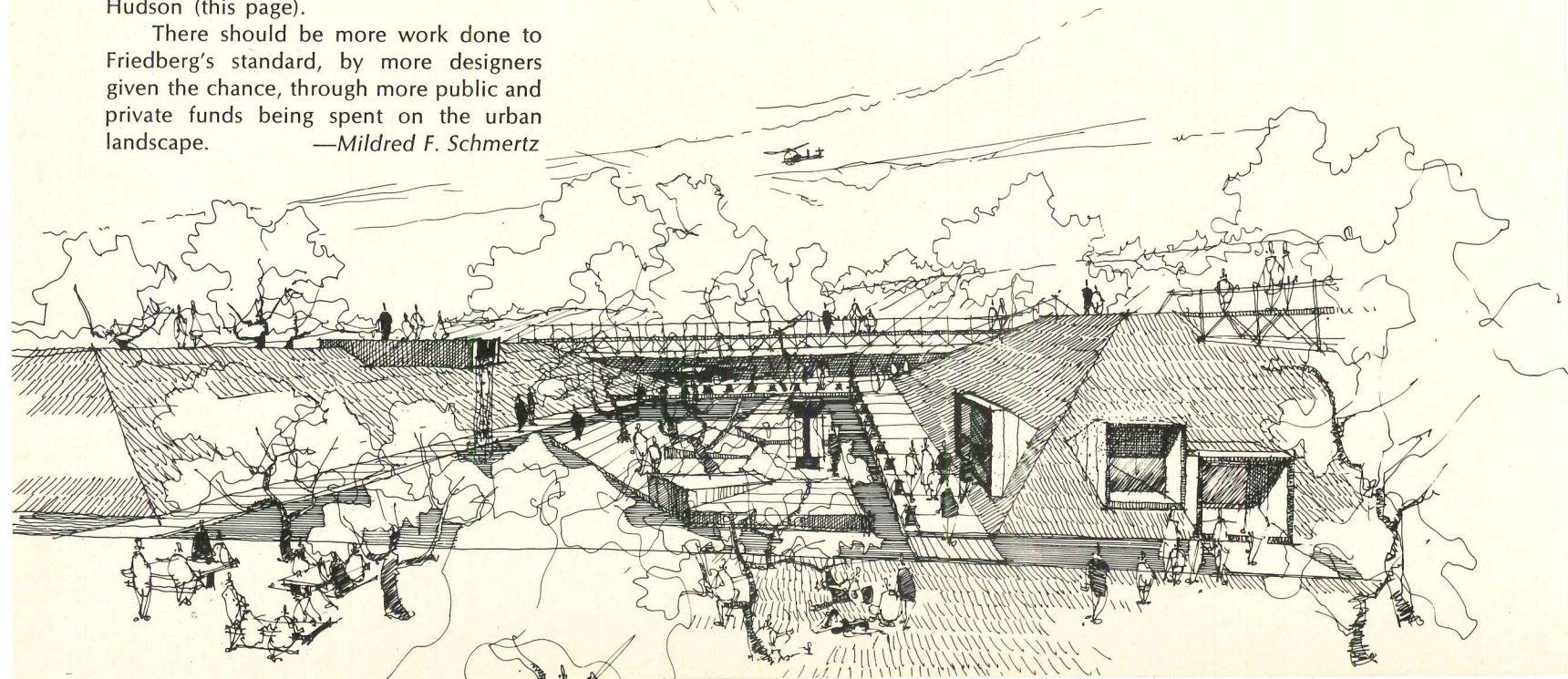
This collection of his current work includes two unique projects—a small private playground for the children of one family (page 102) and a privately-owned portable video carnival (page 100) designed to be moved from one vacant lot to another and open to the public for a small admission fee. Under construction is the Harlem River Bronx State Park (page 98) which incorporates a housing development as well as generous public recreational facilities within its boundaries. His work so far has encompassed the design of combined public and private space for public use as shown in the Jeanette Park project (page 100); of public space for total public use illustrated here by the Superblock in Bedford-Stuyvesant in Brooklyn (page 97) and Ward's Island Park (page 102); of new developer-built total communities with a network of public open space as in the proposed Watertown East Development for Watertown, Massachusetts (page 97); and of private space for public use in the park and visitor center on the site of a Con Ed nuclear power plant at Indian Point on the Hudson (this page).

There should be more work done to Friedberg's standard, by more designers given the chance, through more public and private funds being spent on the urban landscape.

—Mildred F. Schmertz

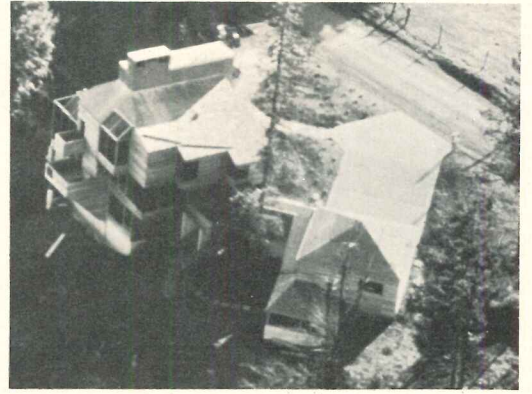


CON ED PARK AND VISITOR CENTER

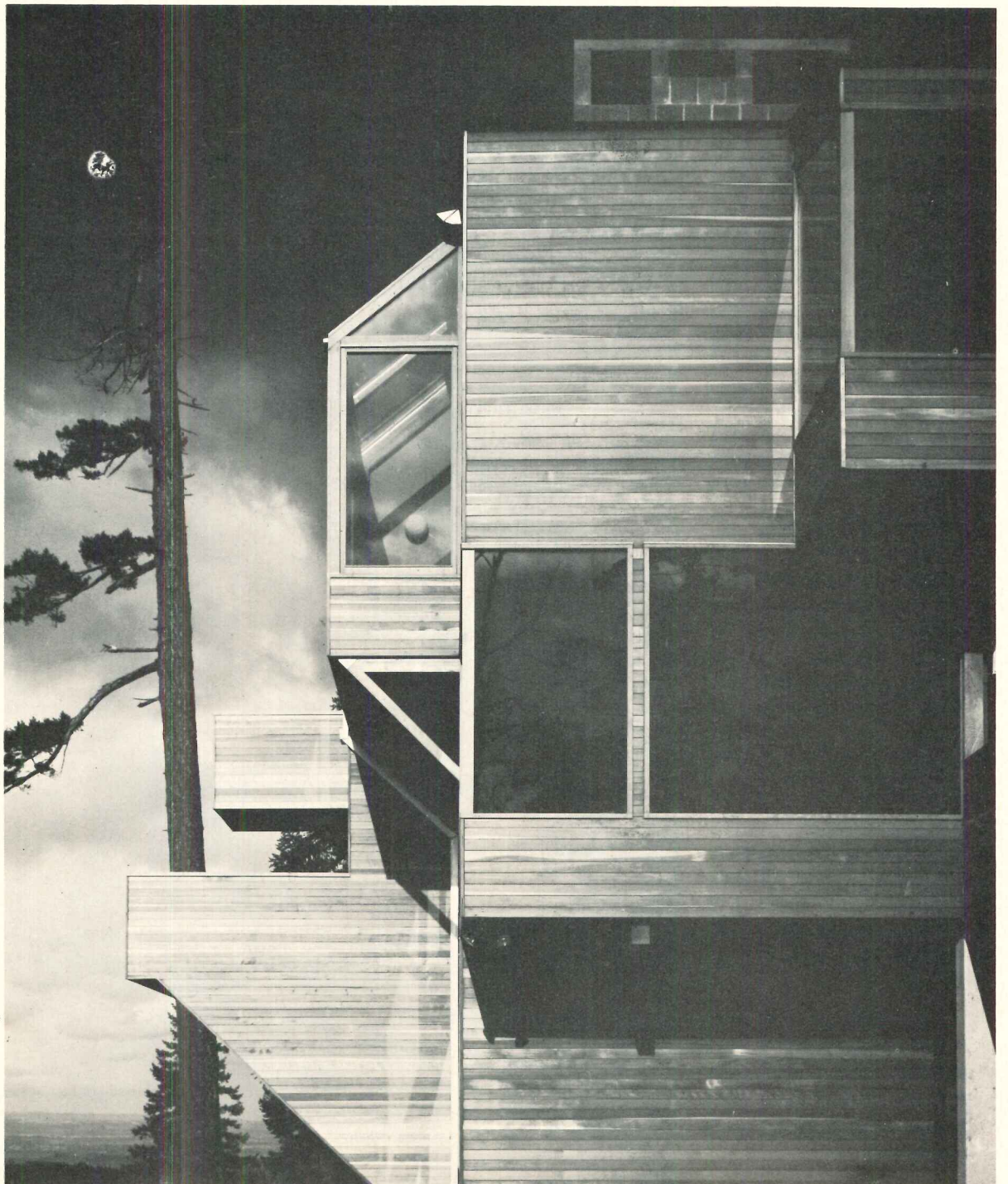




# For an Oregon mountainside: a robust house built with a cabinetmaker's care

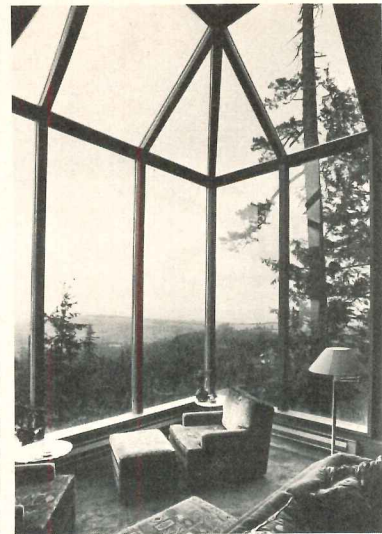
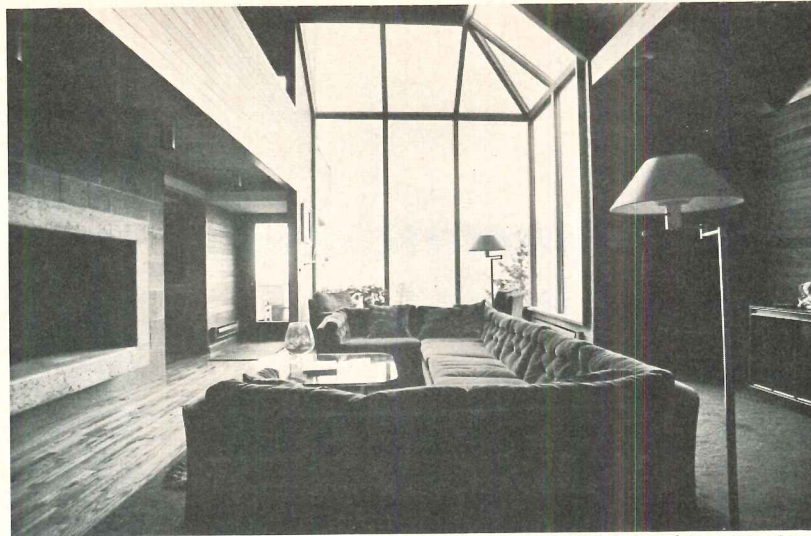
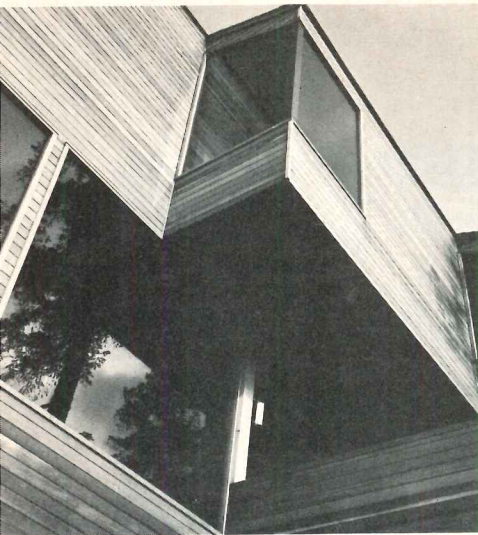


Anchored on a ridge among stands of tall trees, this house for a Portland family makes a virtue of ordered irregularity and takes fine advantage of some of the most splendid views to be found anywhere in the Northwest.



All exterior photos: Larry Hudetz





All interior photos: Ron Green

Starting with a steeply contoured site southwest of Portland—a site that offers arresting views to the north and northwest—architects Martin and Soderstrom planned a complex, three-level house for a couple with two teenage daughters. Dominated by a massive masonry core, the house is organized so that support spaces are located in the core or on the blind side while prime spaces open generously to the view of valley floor and mountains beyond. The necessary degree of intra-family privacy is achieved by sensible vertical and horizontal zoning (see floor plans and transverse section on facing page).

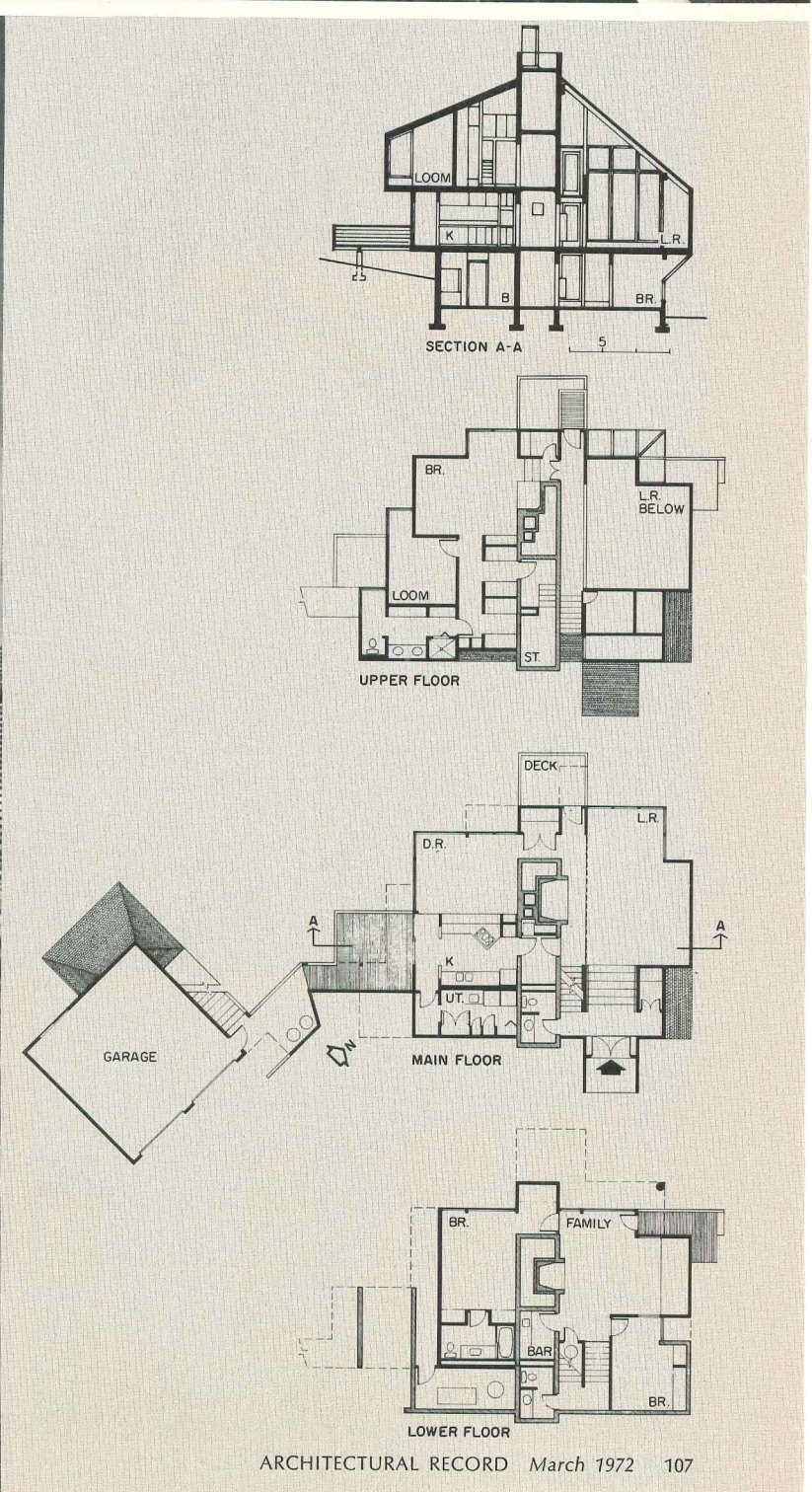
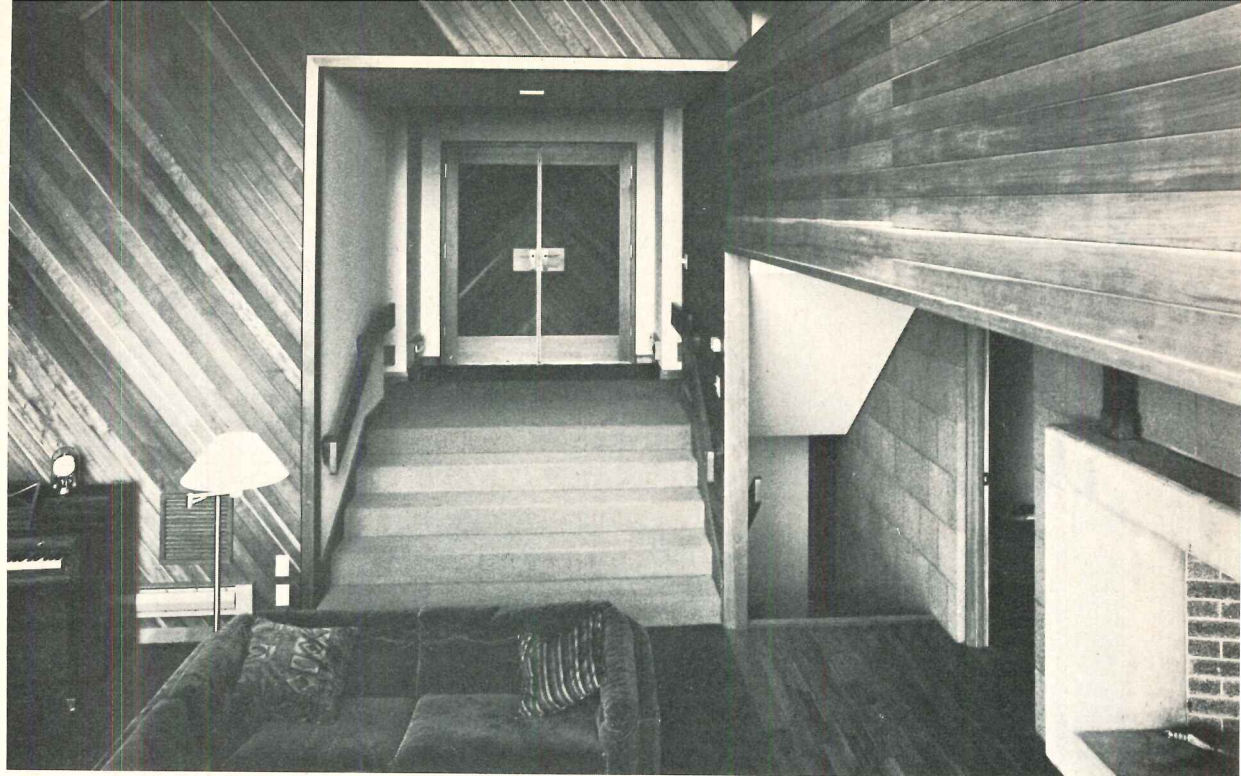
What is perhaps most appealing about the house is the way that consistent detailing and use of materials have united an almost unmanageable assortment of projections, intersections, roof slopes and window openings. Visual rhythms are all but absent. But this complexity of plan and massing is clearly not the result of vagrant afterthought. It is an integral part of the planning and contributes a spirit of relaxed informality. This is a house that depends for much of its success on energetic but unifying detail and really superior craftsmanship. Happily, it got both.

PRIVATE RESIDENCE, Portland Oregon. Architects: *Martin & Soderstrom*; structural engineers: *Werner Storch & Associates, Inc.*; general contractor: *Architectural Construction Company*; interiors: *Robert Weller Design* in collaboration with *Martin & Soderstrom*.

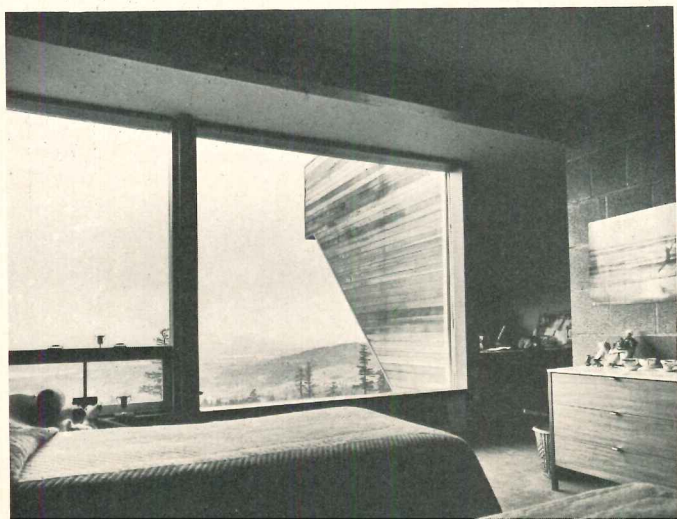
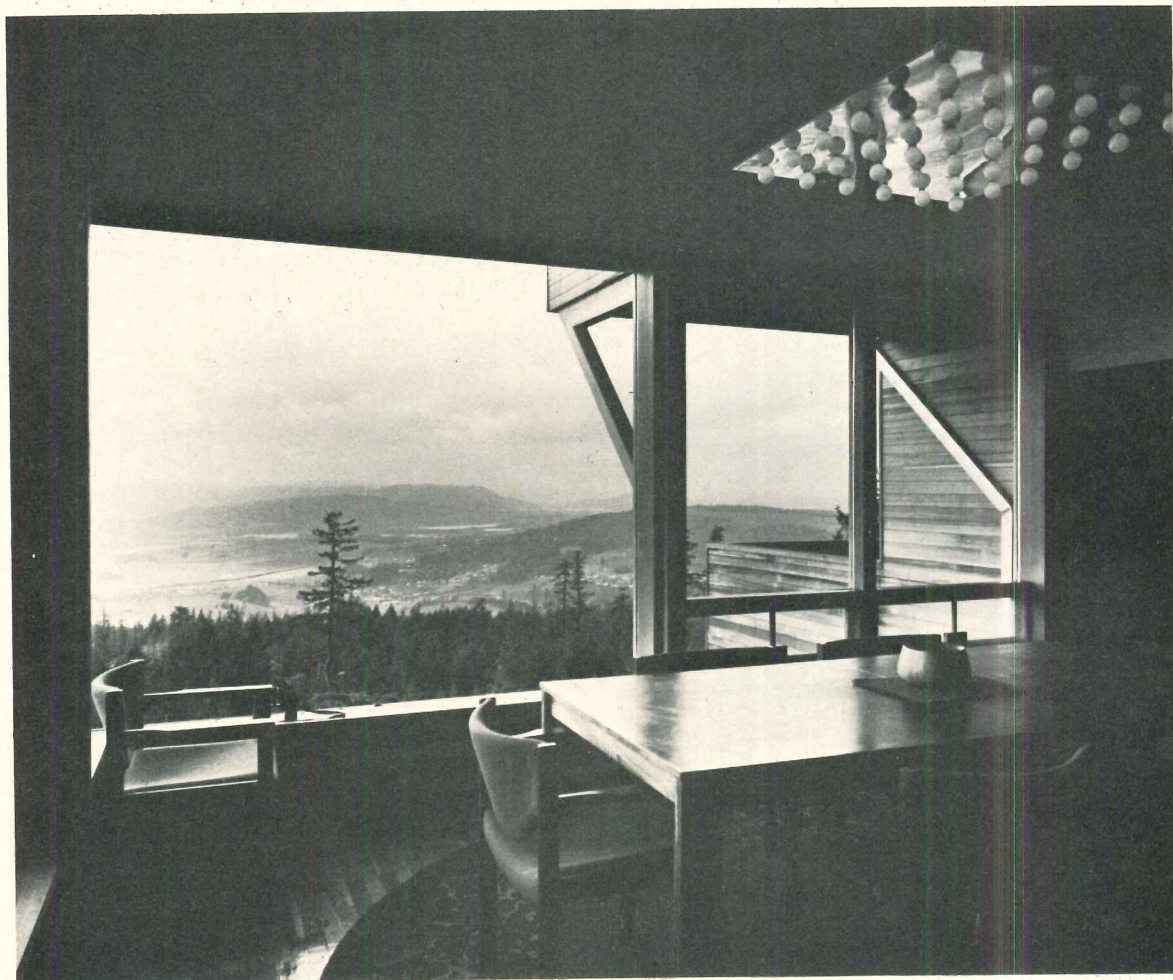
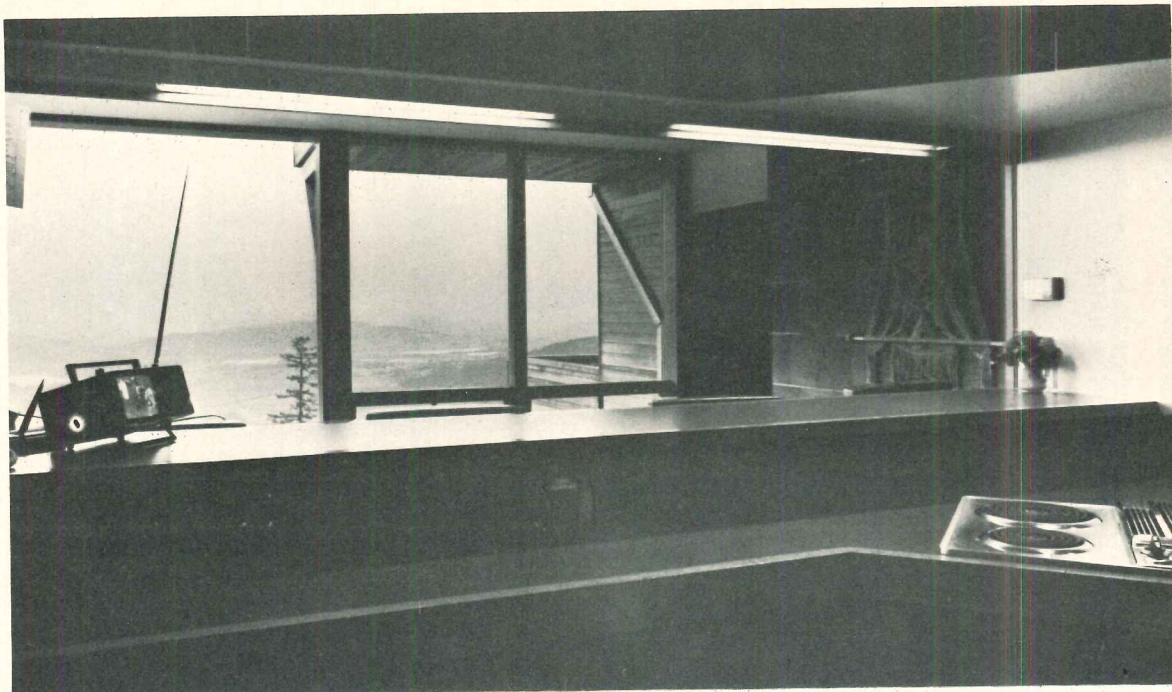




The plans contain several unexpected or personal elements. Over the entrance stair, a small playroom anticipates the arrival of grandchildren. It is reached only by an accommodation ladder from the stair itself. On the lower level, light is introduced into the back of the family room by an unusual device—an inside window into a daughter's bedroom. A loom room, part of the upstairs master bedroom suite, is used by the owner's wife. Finally, extending out from under the detached garage, the owner has a workshop turned out toward the timbered valley. The use of sapwood in the cedar siding, both inside and out, lends lively visual interest. Further interest is achieved by decks that extend living and dining spaces toward the view.







The interiors are designed and executed with the same respect for material and attention to detail. Cedar siding is carried inside for continuity where it contrasts in color and texture with gypsum board and concrete block. Windows are double glazed and trimmed with fir. The over-all result is a series of spaces that are comfortable, view oriented, and—even on a gray, winter day—invested with visual warmth.



## WHY LONDON WORKS BETTER THAN NEW YORK

by Jonathan Barnett, AIA

Governor Rockefeller has stated that New York City's government should be more like London's because London is a better run city than New York.

In this analysis, Jonathan Barnett suggests that most of London's advantages come from national planning and financial policies which all American cities desperately need, and without which the nature of local government won't make much difference.

Governor Rockefeller of New York has commissioned a report on New York City which, he says, will recommend a new municipal government system modeled on London's. While this proposal seems to be just another rock heaved over the wall in the continuing battle between the Governor and Mayor Lindsay (while Rockefeller has had a commission at work investigating the City, the Mayor has had another group studying the State) comparisons between New York City and London are inevitable and intriguing. In what ways are their real problems similar? Can the planning schemes of one be related to the other? If London does "work better," is governmental reform of New York the way to begin? Adopting bits and pieces of someone else's government system has to be rather like helping yourself to some pills from a friend's medicine cabinet. Just because they are good for him is no guarantee they will be any help to you (and you could have a disastrous reaction).

New Yorkers arriving in London have a way of saying: "Ah, this is how a city should be: all the excitement of a metropolis and not so many of the problems." Elegant old buildings give an intimate scale, crowds are smaller, streets are cleaner, neighborhoods safer, public transportation works better, there is a general sense that people are still on top of things instead of the other way around. Used to hearing that New York City is ungovernable, New Yorkers look around and find that London appears well governed. It seems logical to copy London's governmental system.

The government system is only a small part of the story, however, and first impressions can be misleading. Some of the aspects of London that seem most successful to the visitor are not really working all that well; and what makes the city run is a complex of laws and administrative actions that are all but invisible until you know where to look.

For example, the part of London the visitor sees, and which seems so self-evidently superior to most American cities, is in many ways a mirage. We tend to forget that the elegant houses and charming squares were built to house aristocrats or wealthy merchants and professional people whose way of life was supported by

the tenants in the rows of dreary tenements in other parts of London, or the industrial north; not to mention servants tucked into stifling attics or damp basements. In this sense, these houses always were a handsome false front, behind which there was much suffering and misery. Today the way of life these houses were built for has gone, and behind the facades you find offices and small apartments. Commercial pressures for more intensive use of the land, the same pressures that are at work in New York, Boston and San Francisco, or Tokyo and Melbourne, may wipe the whole beautiful stage set off the map in another generation. Individual buildings of special importance may be saved, but the over-all townscape is anachronistic and will only be preserved if a comprehensive effort is made to do so. Direct comparisons between New York and London can also be misleading if the visitor relies on his own impressions. New York is a much bigger city than London. It is true that both cities are said to house 8,000,000 people, but London does so in twice the land area of New York; and, when you compare the metropolitan areas, you find that, while the New York urban complex contains 20,000,000 people, London's represents only 12,000,000. No wonder London feels less crowded; it is less crowded. And so on: one reason streets are cleaner in London is that Londoners generate only one-third as much garbage and rubbish as their more affluent New York counterparts.

However, the accomplishments of London are real; it was not so long ago that London had all the problems, slums and crime that can still be found in any large American city, and the greatest improvement has taken place since World War II.

"Looking back," wrote Leonard Woolf in his autobiography, "I am struck by the immense change from social barbarism to social civilization which has taken place in London (indeed in Great Britain) during my lifetime. . . . The slums and their unfortunate and terrifying products no longer exist. No one but an old Londoner who has been born and bred and has lived 50 or 60 years in London can have any idea of the extent of the change. It is amazing to walk down Drury Lane, or the small streets about Seven Dials today and recall their condition only 50 years ago. Even as late as 1900

Jonathan Barnett is the director of the Graduate Program in Urban Design at the City College of New York. He was formerly the Director of Urban Design for the New York City Planning Department.



it would not have been safe to walk in any of those streets after dark. [Today] the poverty, dirt, drunkenness and brutality have disappeared."

These words were published in 1960; and, since that time, Londoners have found that not all the old problems were solved as definitively as they should have been; and new problems have appeared. There has been an influx of migrants that have found themselves living in slum conditions, automobile traffic has grown to the point where the city is choking both from congestion and pollution, employment growth hasn't followed anticipations. Nevertheless, the chances are that London will be able to cope.

Why? The answer is intangible; essentially one of philosophy. Leonard Woolf calls it the change from social barbarism to social civilization. Great Britain has arrived at a social consensus that government should take an active role in promoting the welfare of all the people rather than seeing society as a game where the object is to "succeed," and where the role of government is to set rules of fair play, and to step in sometimes to set the losers back on their feet.

The underlying acceptance of a leading role for government has allowed all jurisdictional levels in Great Britain to engage in comprehensive planning for the future, without which no nation is able to make an effective attack on modern urban problems.

This is not to say that the British haven't sometimes done the right thing for the wrong reasons, as well as having tried the wrong thing for the right reasons.

What is meant by comprehensive planning, and why does it work? This question is much more to the point than the details of London's two-tier municipal government system in understanding why London is governable. If Governor Rockefeller could offer New York City its benefits, and the appropriate revenues, the Mayor should very definitely take him up on it.

When the British talk about comprehensive planning, they are talking about identifying problems on a national basis, setting priorities, and then directing government resources towards achieving solutions. The term has become rather meaningless in our country because various levels of government so often go through the motions of planning without the ability to make hard decisions or follow through with the necessary resources. The "comprehensive plan" then becomes nothing more than an interesting document which is given to visiting foreigners by public information officers.

It is not surprising that many well informed Americans have come to look upon comprehensive planning as a bromide, just at the point where its use on a national basis has become essential.

A leading role for government has allowed all jurisdictional levels in Great Britain to engage in comprehensive planning for the future, without which no nation is able to make an effective attack on modern urban problems.

Population movement is such a basic component of the "urban crisis" that it is usually overlooked. The concept that the middle class is leaving the city may be a staple of cocktail party conversation, but most welfare, urban renewal, or housing programs in the United States are only attempts to deal with some of the symptoms of a wide-spread process of change.

According to the 1970 census, New York City's total population has remained about the same over the last decade; but there has been an increase of 750,000 in the "non-white" population which, unfortunately, in our society, still pretty much is a term that describes the poor. While the poor have been flocking to the city, the supply of unskilled and semi-skilled jobs has been shrinking, replaced by automation or lost in the migration of factories, set free by modern truck transportation from their old location constraints.

One person in seven in New York City is now on welfare, and New York is relatively well off. In Boston the figure is one person in five, in Newark it is one person in three.

All our cities are helpless to deal with this situation. In New York, and many other places, money collected from the property tax, which should be used for street cleaning and other basic services, is being diverted to help feed the poor, which obviously must take first priority; but it is no way to run a city. If, by a miracle, New York were to find the means to keep up basic services, eliminate slums, create hundreds of thousands of new jobs, and maintain its welfare population at a decent standard of living, it would simply draw more needy people from all over the rest of the country, until it was again unable to handle them.

Welfare, housing and education are national problems, and localities simply can not deal with them on an individual basis.

The British now take it for granted that welfare, subsidized housing and education are a national responsibility, which alone is enough to make a decisive difference in the governance of British cities.

In addition, Great Britain has been fortunate enough to have some form of com-

prehensive national planning for the last 35 years. This is not to say that the policies produced have always worked, or that the art of regional and national planning has reached a state of perfection in the British Isles; but what has been done is a great deal better than nothing.

The most familiar aspect of these planning policies is, of course, the planned new town, whose origins go back to the theories of Ebenezer Howard who published them first in 1898, originally under the title: "Tomorrow: a Peaceful Path to Real Reform." As the title suggests, Howard was as interested in comprehensive planning as in his proposal for self-contained "garden cities," which he saw not only as an alternative to the continuous urban sprawl which even then characterized the growth of London, but, in the form of clusters of interrelated garden cities, as an alternative to the metropolis itself.

Howard, unlike many theorists, had the energy, persistence and practical good sense to see prototype garden cities realized in his lifetime, but only now are the larger implications of his theory beginning to be visible.

The British geographer, Peter Hall, in his brilliant exposition of the "Theory and Practice of Regional Planning,"\* shows that Howard's ideas influenced the report of the Barlow Commission on the Distribution of Industrial Population, which was established in 1937, and made its report in 1940. This report was motivated largely by wartime strategic considerations, a case of the right thing done for the wrong, or, at least, now outmoded, reason; but it represented the first steps towards a comprehensive population policy for Great Britain.

Hall also reminds us of the influence of Howard on Patrick Abercrombie, who was a primary force in preparing the County of London and Greater London development plans while the Second World War was still going on. These plans accepted Howard's thesis that the growth of London must be limited, greenbelts placed around the suburbs, and the "over-spill" of population siphoned off into new towns.

This complex of policies came to be implemented after the war through the New Towns Act of 1946, which is the enabling legislation for New Town development corporations; the Town and Country Planning Act of 1947, which set national controls on land use; and the Distribution of Industry Act of 1945, which gives the national government control over the location of all new manufacturing industry.

These three acts are used together; the Town and Country Planning Act provides the authority for choosing New Town locations, the New Towns Act sets up financing and an interim governmental structure, and the Location of Industry Act in-

\*"The Theory and Practice of Regional Planning" by Peter Hall. Pemberton Books, London, 1970.



asures that appropriate employment opportunities can be created in the New Towns.

The success of housing policies in London has to be viewed in the context of the hundreds of thousands of Londoners who have moved to the 27 New Towns created so far, and the unknown, but surely considerable, number who would have moved to London if the New Towns had not been available. They provided the "leverage" which allowed the housing problem of the central city to be brought under control. War-damaged areas could be rebuilt to lower densities and substandard buildings be demolished without creating impossible relocation problems, or intensifying slum conditions elsewhere in the central area.

The planners were not infallible. In 1944 they projected the static population figures from the Thirties and failed to foresee the post-war population and immigration boom. As a result, despite the New Towns, London has jumped the Greenbelt and continued its sprawling growth.

The planners did not predict the recent increase of office buildings and the resulting congestion in central London, and they failed to foresee the social consequences of continuously exporting skilled workers from London over a 25-year period. London will now have to adopt measures to keep and attract a balanced range of employment.

All the same, the effects of following a somewhat imperfect planning policy have been clearly superior to having no policy at all. The New Towns have worked, the central cities have benefited, and London has been able to house its residents and control its growth far better than it otherwise would have done.

**A**nother significant reason for London's successful housing policy is that the British have been much like the Scandinavians or the Dutch in regarding publicly subsidized housing as a perfectly appropriate function of government. Until recently, we have looked upon publicly-aided housing as something akin to the poor-house over the hill. Planners and architects in Great Britain have not been forced to remove "frills" and make new subsidized housing look as cheap as possible, and tenants in London's subsidized housing are not forced out of their apartments when their incomes pass a certain level—a guaranteed recipe for community instability that we still follow in the United States.

The final basic difference is the amount of national resources allocated to housing. Over the past 25 years London has consistently built twice as many housing units as New York, and most of London's new housing has been subsidized. In the United States we tend to subscribe to the trickle-down theory of housing—that is, the poor will live in the discarded housing of the more affluent, so that pro-

The success of housing policies in London has to be viewed in the context of the hundreds of thousands of Londoners who have moved to the 27 new towns created so far. . . .

grams like Federal mortgage insurance are expected to benefit the poor indirectly. The British have built housing for those who need it; and public opinion in Great Britain clearly supports this kind of direct aid to the cities for building housing according to need.

The result is that, while London, like New York, has a housing shortage, there is quite a contrast in the quality of housing available. It is not easy to find slums in London; you have to go and look for them. Five per cent of the available housing is officially considered substandard. In New York, the comparable figure is 25 per cent, which is not unusual in the United States, where more than 20 per cent of all houses and apartments were judged to be substandard in the 1960 census. Even allowing for some variation in standards, these comparisons are striking, particularly when you remember that in 1946 London was suffering from the aftermath of the Blitz, and that there are many more old buildings in London.

In 1946 something like 60 per cent of the housing in the central area of London was in bad condition, so that the improvement there has been especially dramatic.

It is true that the government has concentrated too much energy in new construction and has not given enough attention to conservation and rehabilitation. Overcrowding and deterioration have overtaken formerly elegant town houses in some of London's western districts, and, at the moment, assisting the preservation of old houses for townscape reasons does not have any kind of priority.

Nevertheless, the latest London city plan looks forward to the elimination of slum conditions within the next 15 years. On performance to date, London would seem to have a good chance of meeting that goal. Fifteen years from now in New York, if present trends continue, the percentage of slum housing will have risen from 25 to 40 per cent.

**C**ontrolling environmental pollution is another area where comprehensive planning is essential, as the flow of air and

water is not known for stopping at jurisdictional boundaries. Until recently, London has been far ahead of New York in this area, but the new Federal air quality legislation and increased expenditure by the State and Federal governments for sewage treatment plants gives New York the chance of catching up within the decade. New York City itself has an exemplary Clean Air ordinance; but it doesn't control the industrial cities across the Hudson in New Jersey, and the prevailing winds blow from the west. Ironically, the City Housing Authority does not have the funds to upgrade the incinerators in its buildings, so that some of the worst local sources of pollution are owned and managed by the City. All the same, environmental control is not really a local problem, and the nature of the local government does not have too much to do with its solution.

Similarly, crime in the streets is more than a local problem, although law enforcement is a city responsibility. (The police in London are under the control of the central government, but that is more of an historical accident than the result of policy). London is a safe city; you can walk almost anywhere, at any hour of the day or night, without giving the matter a second thought. This is not to say that London is free from crime or irrational violence. England has always been noted for the ingenuity of its criminals; and roving gangs of youths have been known to set upon innocent pedestrians. However, compared to the experience of walking around in, let us say, Washington, D.C., London can be considered safe.

**I**t is hard to tell how much of this difference is ascribable to the varying temperament of the two countries; but a large part must be the result of social welfare programs. After all, London as recently as the Thirties was a much rougher place than it is today, and historically London had more than its share of crime and violence.

The best known British social welfare program is probably the policy of making narcotics available to addicts on prescription. While not providing a solution to the causes of addiction, the effect has been to keep down the kind of desperate street crimes and burglaries that addicts are driven to when they must pay for drugs on a criminal black market.

Social welfare also takes the desperation out of being poor. It is still more satisfactory to be rich in London as just about anywhere else; but in London national government programs guarantee not only such basic necessities as food and clothing, but also a high standard of subsidized housing, an active job development policy, good medical care, and a well-run educational system.

The social welfare system has its failures: Andy Capp, the English chronic wel-



fare recipient, will be familiar to you if you read the comic pages. But notice that Andy rents a whole house, under conditions that are far more favorable than you could draw for his American counterpart. Because the national government takes on the problems of trying to get Andy to take a job, and of keeping him in food and drink in the meantime, London can spend its real-estate tax money on keeping the mechanism of the city running.

London has been least successful in dealing with problems of congestion, particularly traffic congestion. It took officialdom a long time to get over the notion that automobiles were only for the rich and that freight was moved by rail. As a result, containerized shipping, with distribution of freight by truck, and the new affluence that puts cars within the reach of almost anyone have both caught London by surprise.

As an expedient, London traffic has been rerouted into a fantastic maze of one-way streets; and visitors should be prepared to have their taxi circle its destination several times, like a cat settling down for a nap.

The latest Greater London Plan proposes a series of new expressways, forming three concentric rings and a system of radiating spokes. The plans are being strongly opposed, and with good reason, as they appear to repeat some of the worst mistakes of urban freeway planning in the United States. It is hard to see why the inner ring, at least, should not be omitted. Still, something must be done, and what London is realizing, is that it must pay the cost of assimilating new expressways into the existing urban fabric—either by tunnels or by associated building programs—a realization we have also come to in New York.

In the long run, however, London has a good chance to solve its congestion problems through comprehensive planning. Because London does not have to compete with other cities for private real-estate development in the way that New York does, London can afford to be very conservative about density. The maximum size of office buildings permitted in London is one-third that of the buildings permitted in New York and the highest housing density in London is 200 persons to the acre, with this type of building density being used very sparingly. The maximum housing density in New York produces around 1,100 persons to the acre, and densities of 800 or 900 are routine.

Planning will also help alleviate traffic problems which, in the end are not solved by building expressways through existing points of congestion, but by understanding the origin and destination of traffic and planning new routes. The same principle applies to other manifestations of urban imbalance, such as power and water shortages. Such problems must be

... Industrial location powers  
have provided  
the basic means for implementing  
regional plans and establishing  
new centers of population.

viewed systematically, in the literal sense of the word. Planning in Great Britain still has a long way to go, but the mechanism for a total systemic approach to congestion exists, and is starting to be used.

All of Great Britain has been divided into planning regions, with regional councils charged with drawing up development plans, and a national planning policy in the process of formulation, based upon a correlation and harmonization of these regional plans. The Council for the South East Region, of which Greater London is a part, can formulate plans that conserve regional resources and distribute the development of new towns; and the major decisions are pulled together by the national government. Because bond issues for capital expenditures in cities and new towns are generally raised through the national treasury, local municipal bonds do not have to compete in the financial markets. London is thus a part of an at least theoretically rational planning and administrative hierarchy, which measures priorities and distributes resources.

The industrial location powers have provided the basic means for implementing regional plans and establishing new centers of population. Ultimately, if the regional plans are well drawn, the causes of congestion can be reduced at the source: industries can be spread out, freight can be routed around London to new distribution centers, traffic can be guided to "park and ride," and so on.

Local government in Great Britain has not kept pace with the sophisticated regional structure of the planning hierarchy, but has retained the traditional distinctions between town and country. A reform of local government structure is being studied and the changes made in London nine years ago can be viewed as a step in this process—although most people in Britain appear to consider the London changes a piece of redistricting done for essentially political motives.

London now has what we would call a "metro government" with new boundaries which are more or less contiguous with the main metropolitan area. The constituent parts of this Greater London have been divided into semi-autonomous Boroughs, which have the same kinds of powers whether they were formerly part of central

London or whether they were formerly suburban communities. Local councils collect real-estate taxes, paying a percentage to the Greater London Council, which shares its revenues to insure that each Borough has an adequate level of funding.

The effect was roughly equivalent to drawing a new boundary around New York that takes in the metropolitan areas of eastern New Jersey, southern Westchester County, Greenwich and Stamford, Connecticut, and the western part of Nassau County; and then dividing this new city up so that Newark and Stamford—which are now independent cities—and Jamaica and Flatbush—which are now just place names—end up with the same kind of local government, and with powers half way between the former independence of Newark and Stamford and the former total submersion of Jamaica and Flatbush.

You will have noticed that Newark and Stamford happen to be in different States from New York City, and the State is an intermediate level of government which doesn't exist in Great Britain, unless you count Scotland and Wales. Short of a constitutional amendment, there is no real way for New York to follow London's example, a pretty good reason why this prescription is unlikely to be much help to New York, even if it went to the cause of the city's problems, which it does not.

Of course, comprehensive planning could come under the heading of someone else's medicine, as well. Until recently it appeared that the kind of government powers needed to control industrial location would never be acceptable in the United States, and industrial location is the key to British population distribution policies. Now, however, with the Federal Government theoretically setting the price of every commodity from a jar of marmalade to a steel beam, and controlling every salary, Federal planning powers no longer look quite so preposterous. It is also worth keeping in mind that the Federal Government already has enormous planning resources. The Interstate Highway System, farm price supports, or placing the Manned Spacecraft Center in Houston all are examples of comprehensive planning powers, the only difference being that we don't make use of them according to a plan.

London demonstrates that comprehensive planning of national policies and resource allocation can help a large city deal with its problems far more effectively than if the city must try to solve all its problems with actions that apply only within its own borders. There must be some way of bringing this lesson home to the United States. Surely we are not going to stand by and watch our cities sink under their social welfare burdens and the suburbs go bankrupt trying to provide schools and other services to the people fleeing the cities. Or are we?



# SHOPPING MALLS IN SUBURBIA

**The growing commitments to concentration and mixed activities in these malls are a strong sign that people do not want to abandon their urban life—even in the suburbs**

Suburbia is (supposedly) a powerful threat to existing cities; the people in suburbia don't (supposedly) like crowded cities—and the suburban road systems, two car garages, ranch style living and all the drive-in banks, movies and churches are (supposedly) the ultimate formal proof of that suburban rejection of the city and its concentration. Not only do suburbanites say they hate the city, but they prove their animosity in what they build (supposedly).

But suburban shopping malls are taking on all the best urban characteristics of central cities. These shopping malls are even achieving some of the idealized techniques of urban life that central cities have seldom achieved: separation of vehicular and pedestrian traffic; moving platforms, ramps and stairs for people-transportation; flowing water and trees integrated with heavy pedestrian use; multi-level arcaded spaces that are concentrated, urban and enclosed. Signs and advertising are reasonably controlled without limiting the individual freedom of expression necessary for small shops and, of course, for democratic life in general. Perhaps they show that it is time we recognize in suburbia the same human tendencies that have always led people to busy places: a need for social exchange in conversation, the presence of choices that make daily life interesting, the stimulation to our imagination that comes from watching crowds of different people on different errands, or the ability to go unnoticed for a



while—to not participate—which every small-town citizen knows exists only in crowds, in places like cities. The key is concentration—the close personal proximity of people and their activities—and that is at least part of the reason suburbia goes to shopping malls.

Suburban malls are still a little schizophrenic within their total boundaries. Automobiles—and of course malls cannot survive without them—seem to strangle the pedestrian part of malls in a no-man's land of parking lots and garages. But more and more the automobile and its parking lots are being given more design attention—as necessary evils, not “the main idea.” Designers are trying to conceal them with berms, or screen them with trees, or stack them in little trays of garages to reduce the amount of space they require. The parking lot will never disappear; not until transportation problems are solved on a regional or even national basis, and maybe not even then if people insist on going anywhere, anytime—as they can now in an automobile.

The two major shopping malls in this study—The Mall at Columbia, Maryland, pages 113-121, and The Eastridge Regional Mall in San Jose, California, pages 124-128—have no offices or residential units above them, or in close conjunction down the street, but Columbia's new downtown will come very near to that kind of urbanity. Seen in the aerial photo on the following page, nearby garden apartments and townhouse developments put some residents of Columbia within walking distance of the mall. There is one office building completed now in the downtown center, and connected to the mall by a wide pedestrian bridge. A bank, the Rouse Company headquarters building, a hotel called the Columbia Inn, two movie houses and two more parking garages will be constructed soon. The true urban experience requires this full range of commercial, entertainment and housing activities in relatively close proximity.

But there is no question about the impulse to achieve this urbanity being alive in these suburban malls now; it is planned for, it will be achieved, and most importantly, the images and some of the content of urban life are there to feel and see today. The concentration and diversity of malls are drawing people to them, away from the older long-line shopping centers with parking in front, away from the small-village centers around which suburbia first grew. And in so doing they tell us that our large central cities cannot be abandoned, or more correctly, that they will never be abandoned. The human reasons for the existence of cities in the first place are still alive, and we have greater technical means at hand for building or re-building cities than ever before. What suburban residents flee from is bad air, bad schools, or dangerous streets; and these are not the direct result of concentrations of people, as suburbia is beginning to learn for itself. Shopping malls are a strong sign of our returning commitment to urbanity, using techniques that may one day revolutionize our cities, too.

—Robert Jensen

## The Mall at Columbia mixes foliage, water, a space frame and graphics to create its city-like world

The property for Columbia, Maryland was purchased as pastureland in 1963, and construction of the first houses was begun some three years later. It is now an incorporated city, and along with Reston, Virginia, it has been described as the first modern new town in the United States. Today it has a population of 20,000 people within its city limits, with a projected population of 110,000 by 1980. Columbia, the new town, has been one of the major enterprises-for-profit of The Rouse Company, and its land values have risen dramati-





ically, along with its population. Long before Rouse was building new towns, however, the company was building profitable shopping centers. They started in the 1950's with the then-typical long-line centers facing the road, and today—including Columbia—have about 16 fully enclosed shopping malls completed around the country, with more in development. They are experienced experts in the organization of suburban shopping complexes, and the mall at Columbia—creating as it does the shopping and "downtown" focus for their

own new town—can be seen as the showcase of the company; the focus for their best creative energies.

**The mall shown here is the first phase of what will eventually become a 2,000,000 square foot enclosed shopping district**, with five department stores. Today there are two department stores (Hochschild-Kohn and Woodward & Lothrop) at either end of a 720-foot-long enclosed mall, as shown in the site plan and aerial photograph below. When expansion takes place in the mall, it will grow toward

the grove of trees behind it in the aerial photo, bringing it somewhat nearer the major portion of townhouses at Columbia.

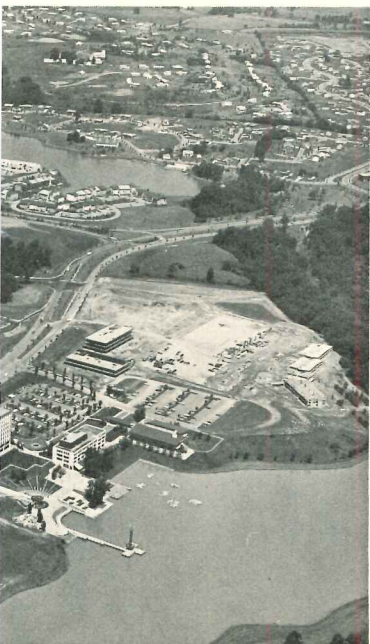
The mall at Columbia is two levels and enclosed, with entrances directly into both levels. It is set into a hill, bringing the west side parking lot up to the level of the upper floor gallery; the south side parking garage, with a capacity for 300 cars, also allows entrance to the upper floor. As seen from the main route through Columbia's town center (photo below), the mall projects a surprisingly

urban, city-of-the-future quality. The bridge spanning the highway leads to Columbia's office center and recreational lake, discussed in the introduction. (See page 113.)

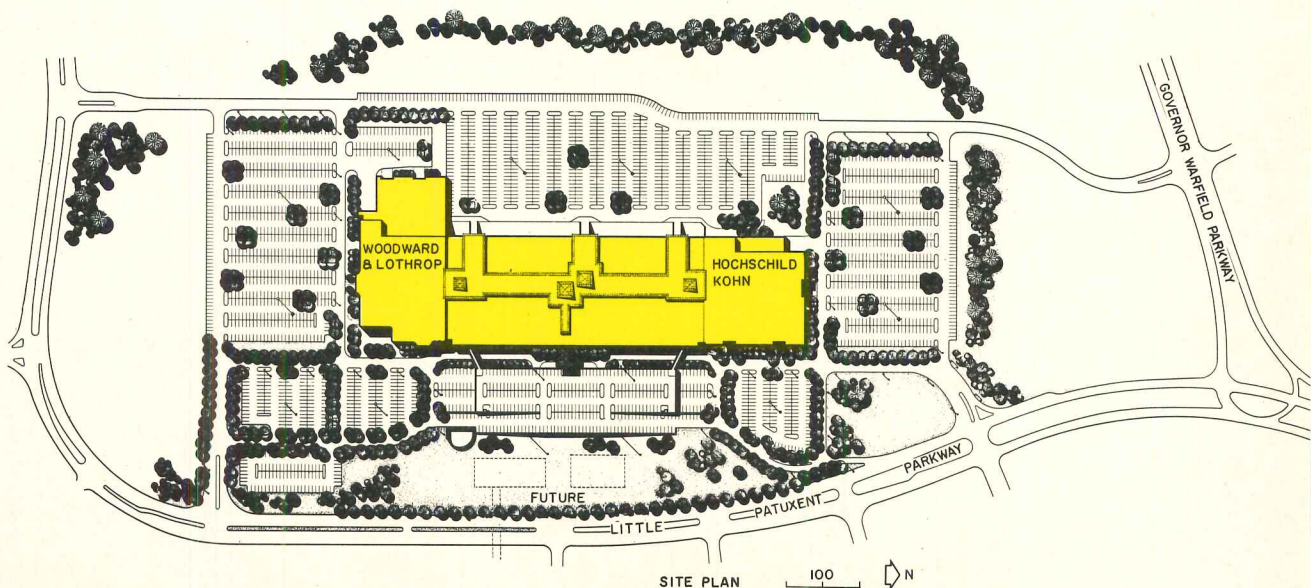
**The principal architectural feature of the mall is its space frame, used to roof all of the public thoroughfares.** Gerald Cope, of Cope, Linder & Walmsley, architects for the mall, says he chose the space frame because of its powerful architectural order. It allows almost any number of extraneous forms to be added to it or set in front



Norman McGrath photos



Northway Studio





of it, without losing its own consistency. The space frame has also been used as a kind of heraldic symbol of the Mall: It has been carried to the exterior facade at the main west side entrances (photo, next page) and the eight-foot-high band of clerestory light that the space frame admits in the daytime (or projects at night) has been carried around the whole perimeter of the mall concourse. The four pyramids over the public plazas within the mall can be seen at night from the major roads in the area.

The clerestory and pyramid

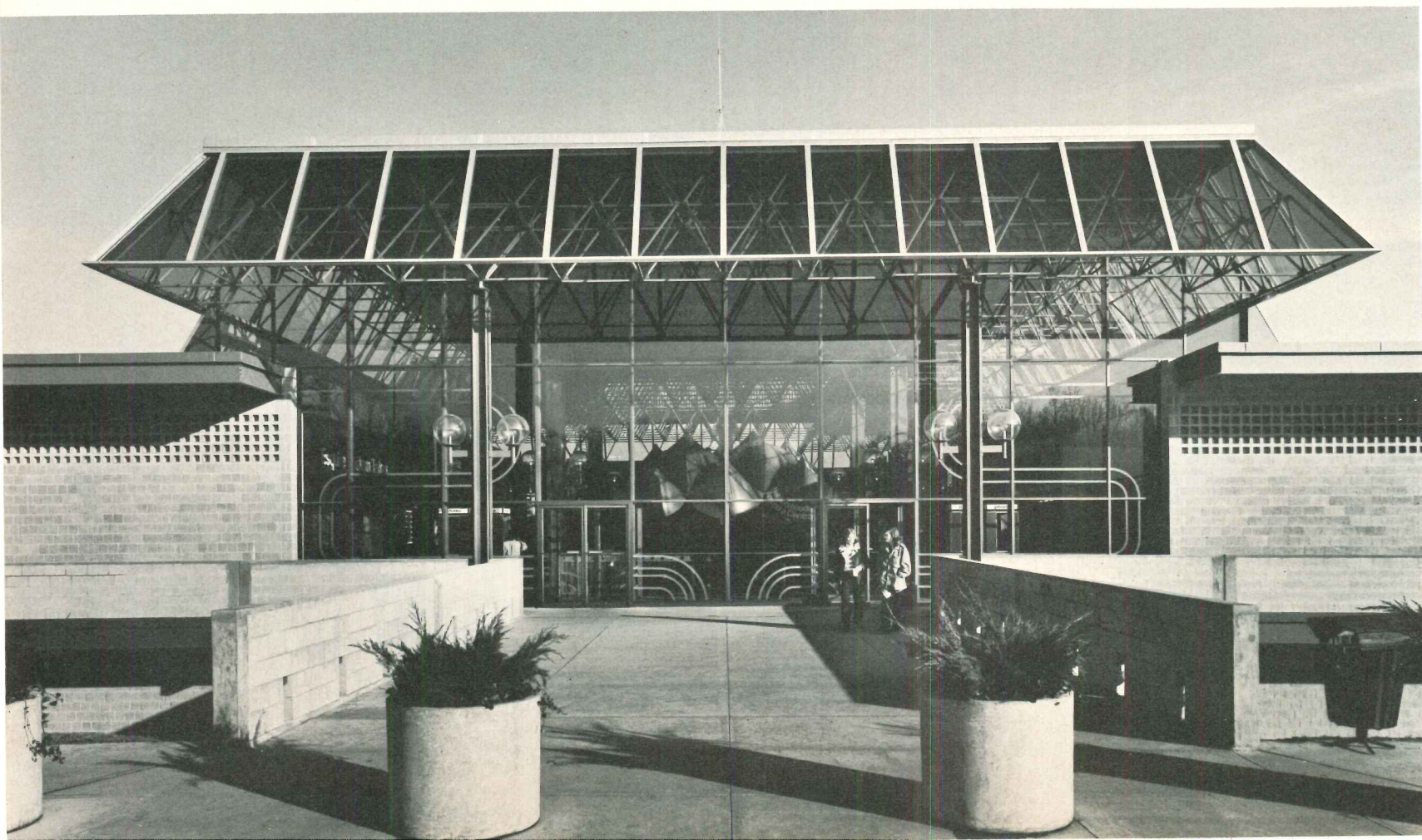
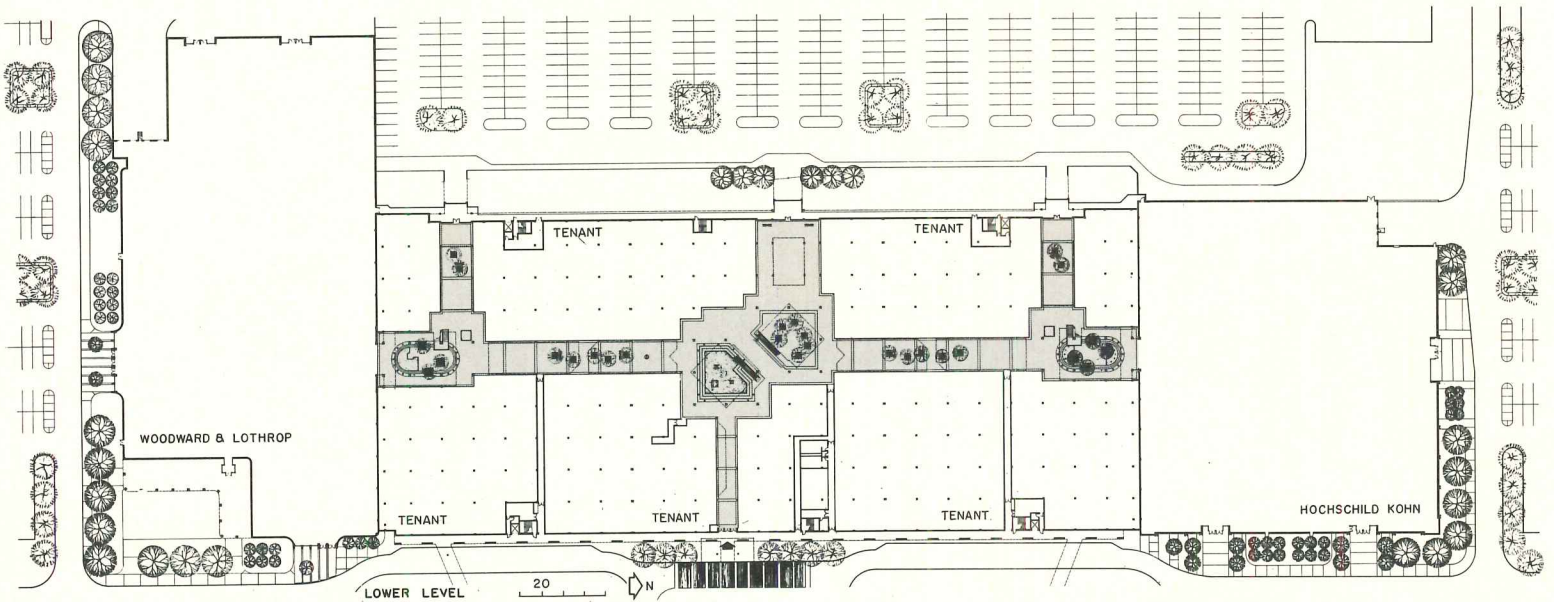
structures are glazed with tinted sheet plastic and set in gasketed aluminum supports. This aluminum-glass-and-plastic feeling within the shopping mall is reinforced by the lacy, powerful ordering of the space frame system, and both the lightness and the order are carried out in a consistent visual pattern. The five-foot space frame modules carry into 30-foot-square column bays, and the columns themselves run through to the ground floor in the gallery spaces. The metal handrailing throughout the gallery echoes the ceiling, with light steel bars

and circle cut-outs to lighten the railing member itself. The stairs at either end of the Mall are brightly painted, appear to be floating in their space, and continue the circle motif of the handrails (color photo, right). Everywhere direct sunlight sparkles in, creating strong shadow patterns on the walls and ground, as in any busy, concentrated outdoor place.

The typical mall section at Columbia is unusual: Instead of cantilevering two upper level walls over a wide ground floor, the designers have created a T-shaped section (see page 119).

This has several advantages. Anyone walking along the upper aisles can easily see the signs for the stores at the ground, because they are no longer tucked underneath the opposite balcony. The section creates a narrow, often crowded and jostling urban sidewalk on the ground floor, and this is just what the designers wanted. The balconies above are carpeted and more serene, but at the ground, the paths seem to burst into the large plaza areas.

The architects have used the space frame with steel roof deck exposed for the ceiling,









and brick pavers for the ground floor, set in patterns that follow the line of stairs and fountains. The brick is a reminder of outside walks and old streets, lending warmth to the surprisingly inexpensive materials of most of the rest of the center. Exterior walls are a combination of textured and plain concrete block cast in a special soft brown color, and fascias are exposed painted steel.

**Foliage, water, lighting and signs contribute most to the excitement and urban quality.** In the Mall, greenery is every-

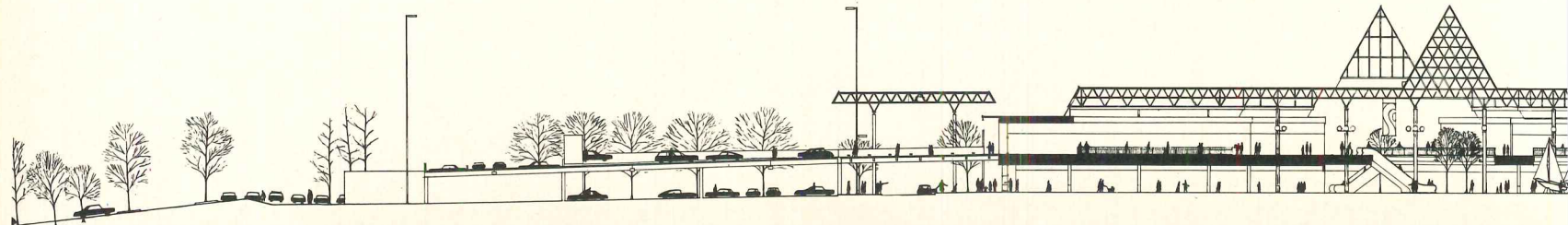
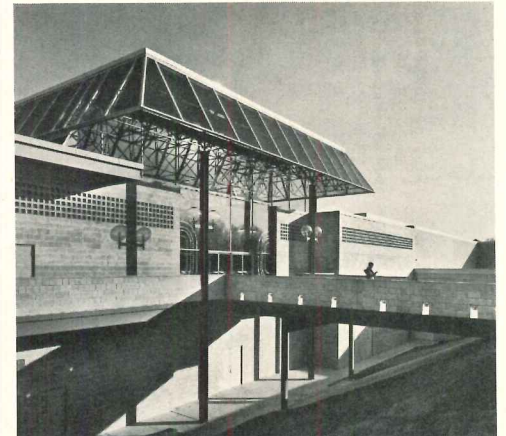
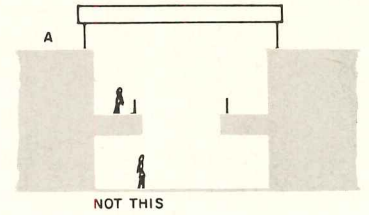
where, from small shrubbery to the large Ficus trees imported from Florida that line the gallery and the main Center Court as in the photos below. Each grouping of live foliage is set in its own sealed container and must be individually watered. This allows the floors to be hosed down and scrubbed with soap without fear that chemical-filled water might reach the root systems of the plants.

Fountains add to the sense of activity in the space. In the Center Court (opposite, lower left) two fountains alternately gush to 25 feet in the

air then fall to nothing, with smaller bubble-fountains causing a smaller scale of activity in the same pool. These fountains are lighted and may alternate in color, but it is not just their visual quality that is important. The sounds of running water and splashing fountains fill the shopping center, and establish a warm, even restful background noise that helps obliterate harsher noises from other sources.

And, of course, the lighting of this center, particularly for evenings, was an important issue. The only exposed fixtures

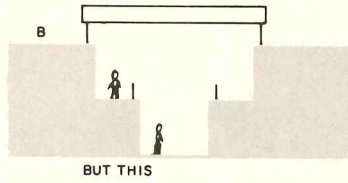
are the clear-glass globes placed two-per-column throughout the concourse. These establish a soft general light, and are an obvious and understandable light source for orientation. But unlike the Eastridge Shopping Mall shown on pages 121-128 of this study, the Columbia designers have chosen to have few visible fixtures. Instead, most of the light sources are concealed, and objects being lit are the only things drawn to the viewers' attention. In the photos below, cylindrical light fixtures may be seen within the webbing of the space frame mem-



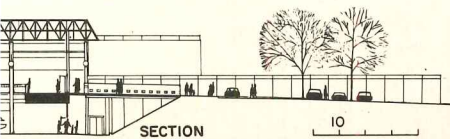
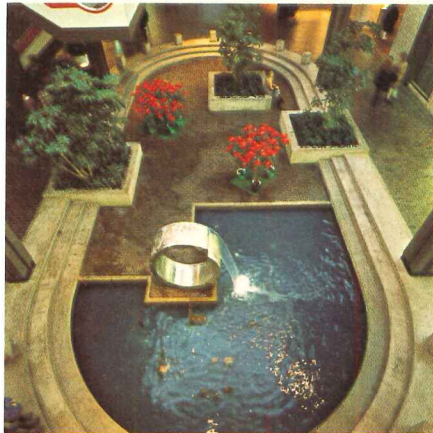


bers, and these lights have been carefully placed to provide both accent and fill light. The viewer never notices them. But at night, as in the photo at right, their existence is acknowledged in the sparkle of the trees and walls.

**One of the best parts of Columbia's Mall is its signs and graphics.** Through long experience The Rouse Company has learned to control tenant signs for the benefit of the merchants as a whole, and to clearly set forth the limits of allowable signage. The basis at Columbia



Robert Perron





for clear communication with the tenants was the Rouse-created Tenant Information Manual. It specifies and illustrates sign criteria that tenants must follow, and these are worth illustrating here. It requires that tenants submit all of their own preliminary drawings for signs to Rouse for approval, then sets out a clearly drawn series of basic sign types, to be followed in preparing drawings. The first thing the Manual establishes are the Basic Sign Types for Columbia.

**Type 1:** (illustration, below) describes dimensional wood or metal letters that may be applied to a bulkhead (14 inches high maximum).

**Type 2:** describes wood or metal letters applied to a storefront. All dimensional letters must be at least one-inch-thick.

**Type 3:** metal letters back-lit (halo effect). Warm white light (3200°K-3500°K only) is permitted (no illustration).

**Type 4:** internally illuminated channel letters with opaque metal sides and plastic face. White plastic only is permitted for the faces (14 inches maximum).

**Type 5:** describes an internally illuminated sign box. The sign must employ graphics or color on all five exposed sides. The box may be plastic, painted with translucent colors or partially opaque. Or the box may be transparent plastic with exposed neon tubes forming design inside.

**Type 6:** externally illuminated signbox. Signbox may be painted wood with color, graphics appearing on all exposed sides, stained or natural wood, polished chrome, or brass, etc., with letters or design cut through faces, or with letters and design routed or carved into faces. Note: Imitation wood, wood grain laminated plastic, are prohibited.

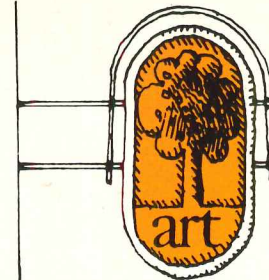
**Type 7:** sign band 14 inches by length of store. Band to be painted wood or metal with letters cut through and back-lit. Lettering to be white. Panel may be sheet-plastic and comfortably, internally illuminated over its entire surface.

**Type 8:** exposed neon tubes forming letters and logo as approved by landlord.

**Type 9:** exposed incandescent bulbs forming letters as approved by landlord.

**Type 10:** sign, logo, decorative elements painted directly on bulkhead. Entire bulkhead covering full width of storefront must be painted.

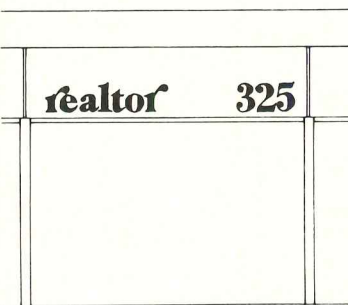
**Type 11:** projecting signs. To give added excitement to the mall and added exposure to the tenant, project signs like the ones shown at right were encouraged. Signs were designed by landlord and furnished and installed by tenant at tenant's expense. Six basic types are illustrated here:



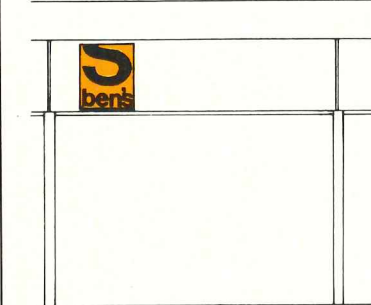
Carved or routed wood



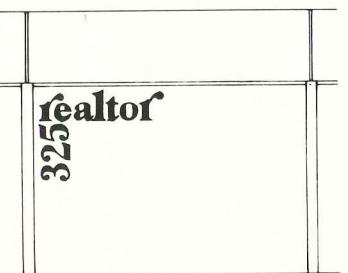
Transparent signs (partially or totally)



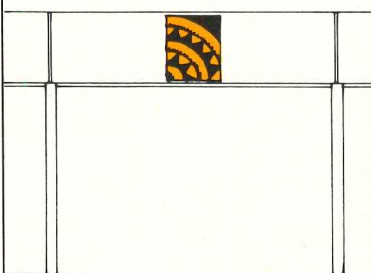
TYPE 1



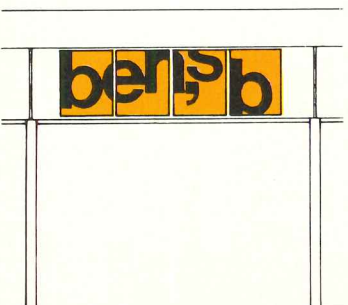
TYPE 5



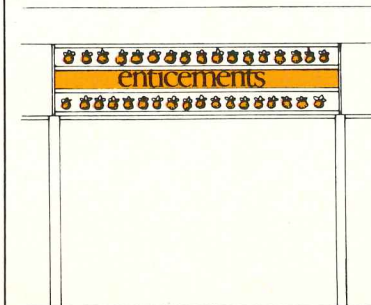
TYPE 2



TYPE 6



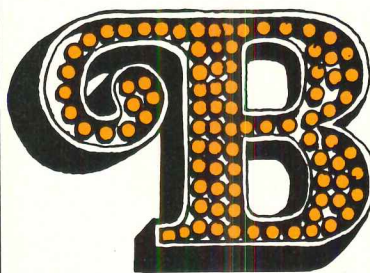
TYPE 4



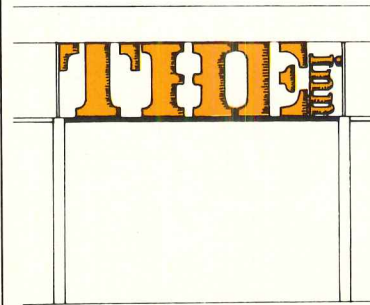
TYPE 7



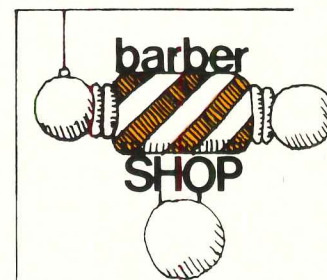
TYPE 8



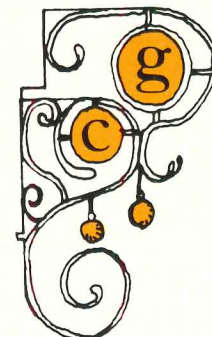
TYPE 9



TYPE 10



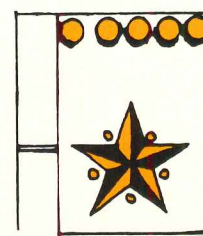
Three-dimensional signs



Wrought iron, chrome, brass, turned wood (non-solid signs)



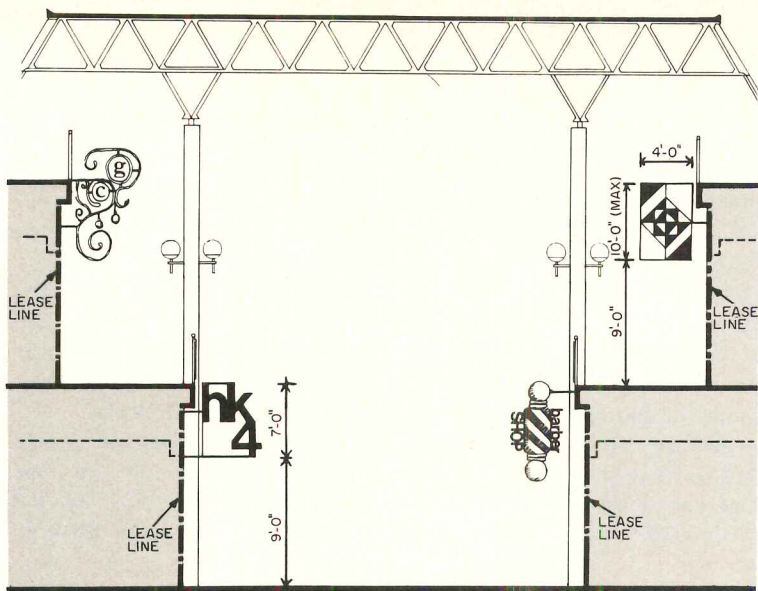
Painted panels



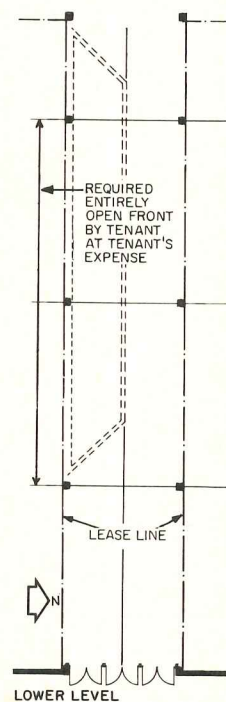
TYPE 11

Painted sign with decorative lights





Special areas, like the main entrance arcade, have special specifications as described in the final three drawings shown here. In this case, the arcade is very narrow, and it was made clear to anyone who might lease space on it that they would have to provide a special open front, or at least a fully glazed front, rather than a solid wall, along their part of the arcade facade. The drawings below help describe the specifications.

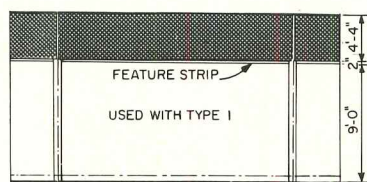
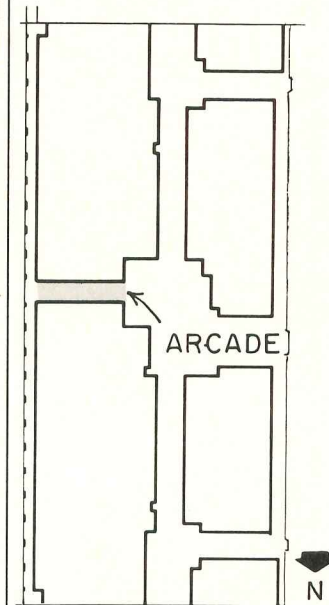


SECTION

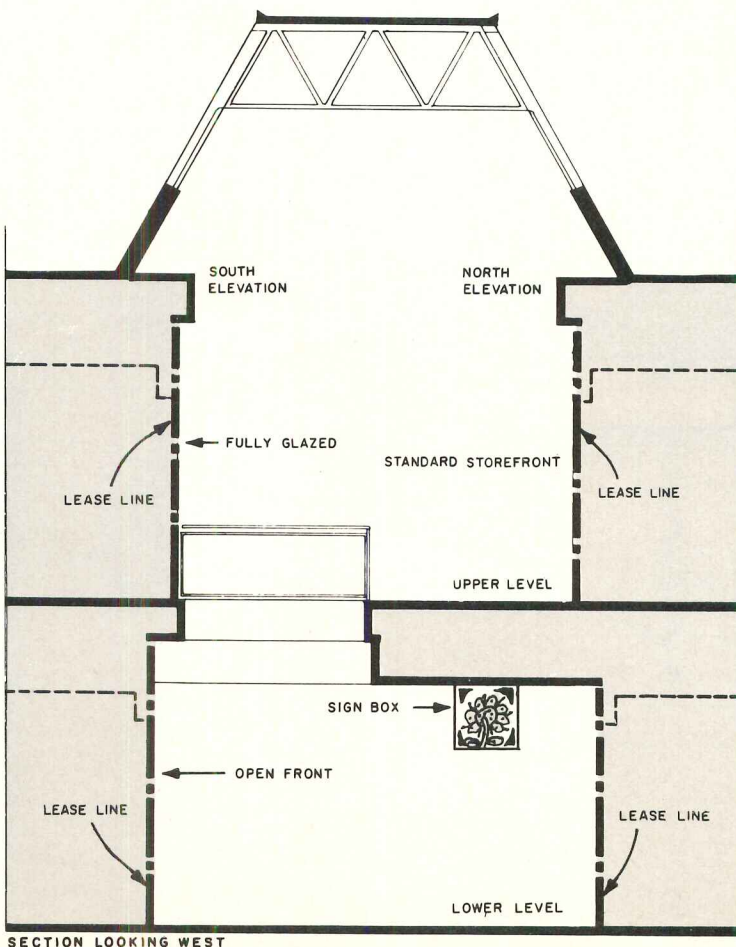
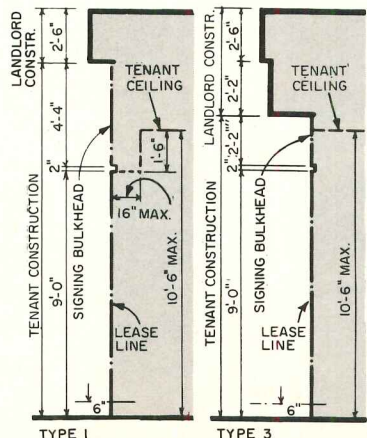
The sizes of signs were specified throughout at Columbia Mall, and the Tenants Manual set forth the drawing above, saying along with the drawing that: "projecting signs on lower level may be no larger than seven feet tall and four feet wide. Projecting signs on upper level may be as tall as ten feet if they are at least 40 per cent transparent."

On some of the sign drawings just illustrated, the reader will not notice the consistent facade background on which various allowable signs are drawn. This facade is also part of the specifications of the Manual, as drawn below.

Based on six different "typical rough openings" on to the mall, the manual specifies that a tenant's wall facade will always allow for a "feature strip," as shown in the preceding drawings, that must be exactly 9'-0" above the floor. This establishes a horizontal line continuously throughout the shopping mall, and all signs bear some consistent relationship to this feature strip, as can be seen in almost any of the preceding interior photos.



ELEVATION 4'-4" BULKHEAD  
BELOW ARE THE STOREFRONT TYPES THAT EXIST DUE TO THE ARCHITECTURAL CONDITIONS OF THE CENTER.



SECTION LOOKING WEST

Judging from the number of people who crowd into its spaces on the weekend, the mall at Columbia would appear to be a huge commercial success. Some of that success is certainly due to its location in a market area that encompasses over 430,000 people, but we can feel from these pictures what an exciting place it is for just strolling, and looking, and meeting your friends. The designed-in concentration and diversity of the mall is also part of the reason for its crowds, and whether it's suburbia or not, people will continue to be drawn to such urban environments.

THE MALL IN COLUMBIA, Columbia, Maryland. Architects for Mall and sitework: Cope, Linder & Walmsley—Gerald Cope, partner-in-charge—Duncan Buell, project architect—Tevlin Poneck, job captain. Architects for two major department stores: Raymond Loewy/William Snaith Inc. Owners: The Rouse Company—Jerome McDermott, senior project director; John Fischer, project director; Barry Blumberg, construction manager; Harold Aarstad, project manager; Edwin W. Baker, planning and design director; Laurin B. Askew, project design coordinator; John Westbrook, project design. Mechanical engineers: A. J. Creati & Associates; electrical engineers: Irving Schwartz Associates. Lighting consultants: Sylvan R. Shemitz & Associates. General contractor: Whiting-Turner Contracting Co.



## A small fast-foods plaza in Columbus, Ohio marks an unusual impulse toward urbanity on the strip

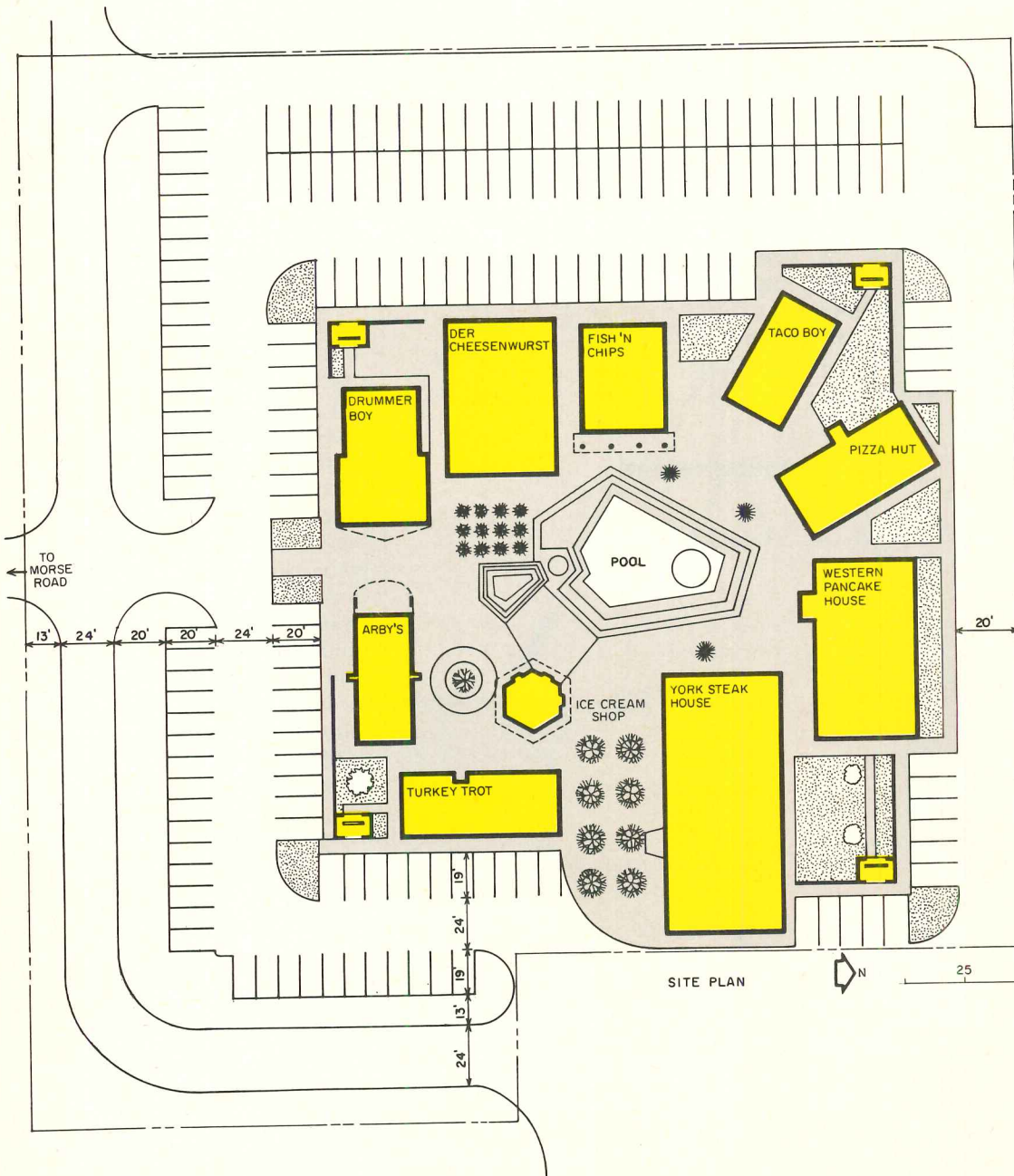
This story is about what happens across the road from major shopping malls like Columbia or Eastridge—on the highway strip. No one would ever call the linear commercial strips that line our highways in and out of cities urban; they are uniquely suburban—vital, growing, sometimes ugly and usually out of control. But they are subject to the same human impulses as anywhere else, and in the case on these pages—The Mall Center for Fast Food Operations—those impulses have led to a small, specialized move toward urbanity.

The owners of one of the best roadside locations outside of Columbus, Ohio, across the highway from a major regional shopping center, wanted to place the maximum number of fast-food outlets on their land. They approached the firm of Byron Ireland Associates, with the request that they sub-divide and organize the property in conformance with their plans, and act as co-ordinating architect for the owners in dealings with the various fast-food franchise holders. At this point, Ireland accomplished an extraordinary feat. He took the job, but

managed to convince the owners that the over-all use of their land, and the visual impact of the fast-food stands on the highway, would be improved if all the operations could be organized to face inward on a common court, with parking for everyone around the edges.

As can be seen from the aerial photograph opposite, the project was actually built: over the objections of the franchise holders, Ireland reports.

The major roadway is immediately south of the Fast Food Center, so most of the cars pull in from the drive at



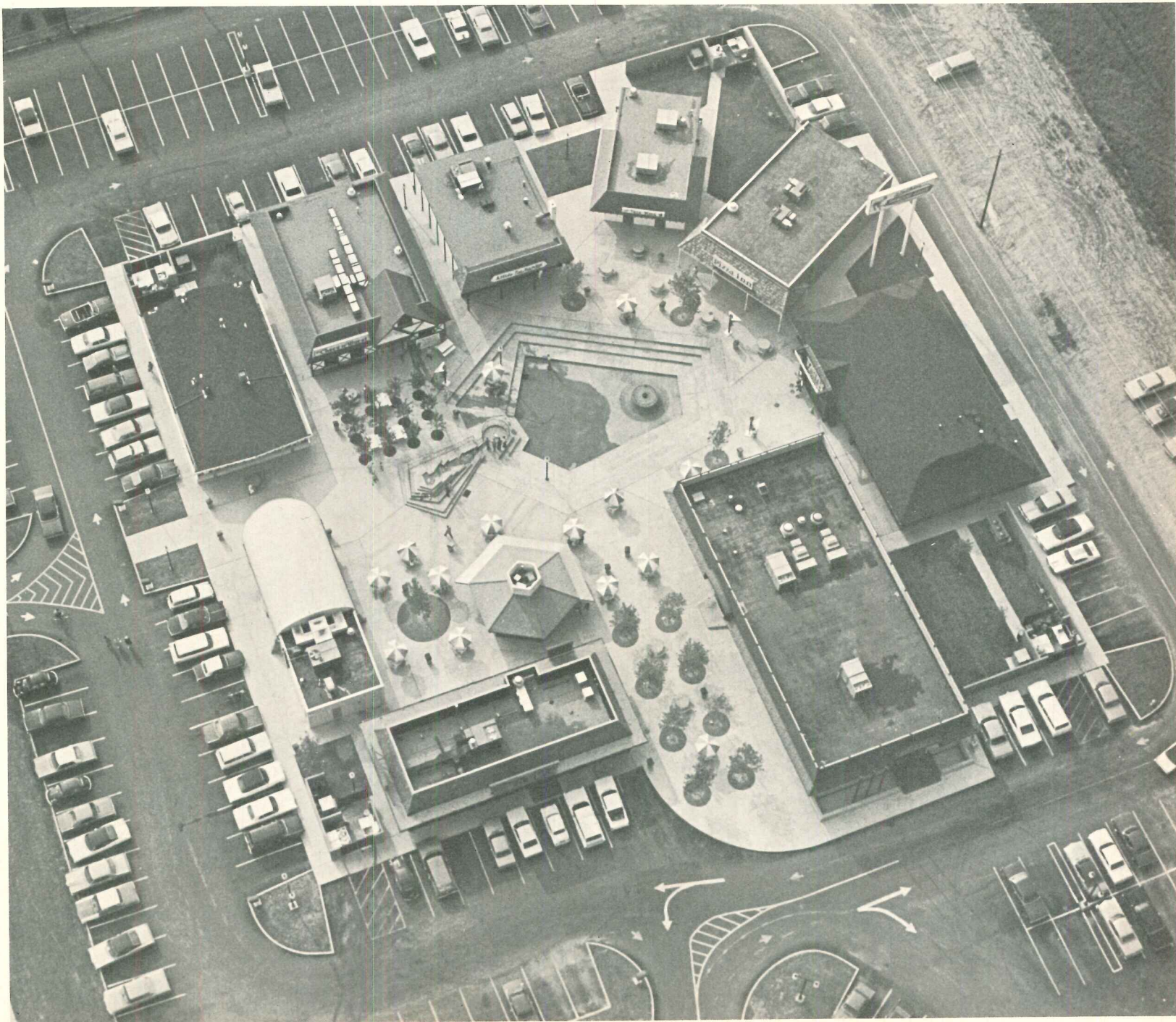


the far left in the aerial photo, and see the view represented in the first color picture. A secondary entrance/exit for both people in the central plaza, and for cars, is located toward the bottom in the aerial photo, and shown in the second picture.

These small buildings, designed to attract as much attention to themselves as possible while sitting alone along the highway, seem to work well together, also. The visual intention common to each building is one reason they do, along with the relatively consistent eave lines maintained around the plaza, and the powerful or-

ganizing force of any central place on which buildings are focused. There is a circus-like atmosphere to these concentrated architectural gymnastic events that any child would find exciting and it would seem very convenient to an adult with a car full of kids, each wanting something different to eat. Despite the high mortality rate of fast-food operations today, the project is a financial success.

MALL CENTER FOR FAST FOOD OPERATIONS, Columbus, Ohio. Architects: *Ireland Associates*. Owners: *Ohio Equities, Inc.* Landscape architects: *Ireland Associates*. General contractors: *Outlook Construction*.





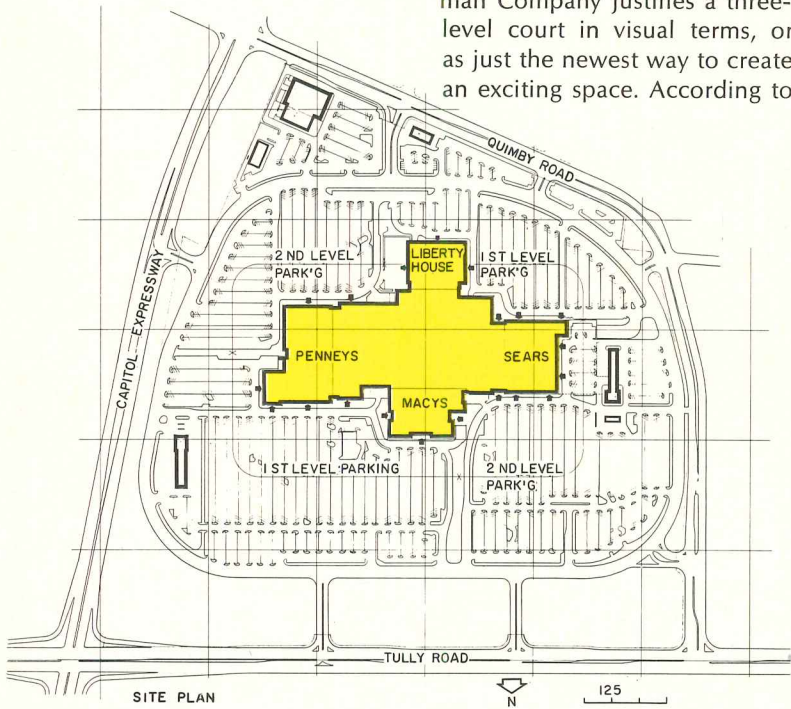
**Designed for compactness and concentration, Eastridge in San Jose has three levels of shopping**

The Eastridge Regional Mall in San Jose, California, is one of the largest shopping developments in the country—1,750,000 square feet of retail area—and just as any mall with two levels was revolutionary six years ago, so Eastridge's three levels of shopping in the central court (photo, below right) is considered unusual today. Neither the architect, Avner Naggar, nor the principal developer and builder, Alfred Taubman of The Taubman Company justifies a three-level court in visual terms, or as just the newest way to create an exciting space. According to

these men, there are very real economic pressures, and pressures inherent in the nature of people themselves, that are generating three-level malls today, and these pressures will continue to make shopping malls more and more compact. That seems to be the key word—compactness—which of course sets no limit on total size. Taubman believes there is a limit to the amount of walking a shopper will willingly do, however, which sets limits on how far from each other the large "magnet" department stores may be. Also small retailers do not want

to be too far from the action around the central court of any shopping center. Further, if there is a limit to the amount of walking any shopper is cheerfully willing to do, that limit seems to be extended a little if the shopper's goal—the store he or she is trying to reach—can actually be seen. That is, there are advantages to people being able to quickly comprehend how big a place is.

**All of these issues lead inevitably to designs that compress and concentrate activities, such as the three levels at Eastridge.**



Joshua Freiwald photos



Actually, the mall is more complicated than that, with four different levels inside that we may call 0 ft, + 6 ft, + 18 ft and + 24 ft. The west end of the mall near Penney's (see section and plans, following page) is divided into the normal two levels (0 ft, + 18 ft) and the east end near Sears has two different levels (6 ft and 24 ft). Where these two malls meet at the central court an intermediate gallery at + 12 ft is created, thus making the three level (0, + 12 ft, + 24 ft) major space. One level should not be thought of as secondary to any

other, and this was accomplished at Eastridge by sloping the parking lots up or down. The site (plan, below left) has been sectioned into quadrants, with the ring road that circles all the parking areas established at one constant elevation. Each quadrant of parking meets the building at different elevations, so that each level inside has direct access to parking at the same level. This required substantial land grading, but most of the existing mature trees on the site were saved through use of retaining walls or tree wells.

The exteriors of the mall

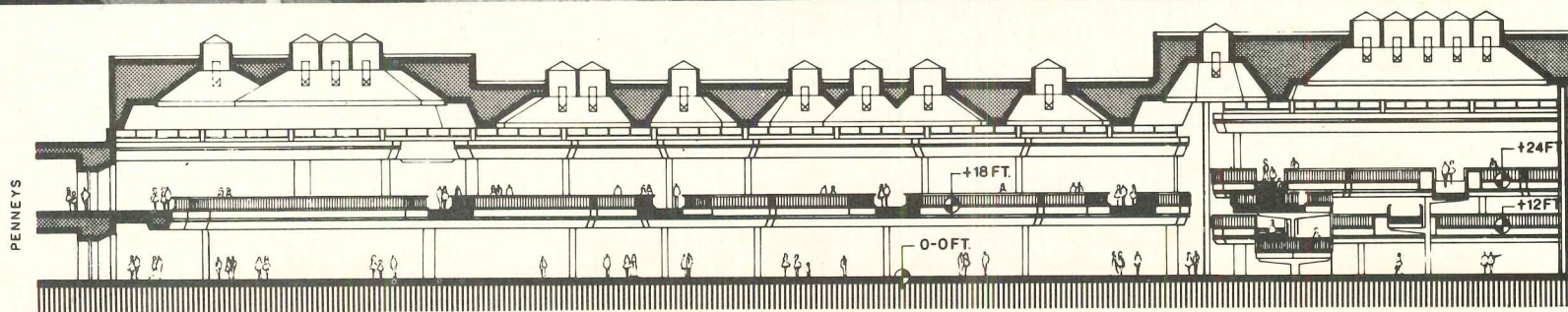
(photos, below left) utilize face brick, poured-in-place concrete and pre-cast concrete. The angularity of these facades echo one of the major themes inside that makes the Eastridge Mall visually cohesive; that is, the common slope of the walls, step risers, and ceiling skylights as shown in the interior below. What appears to be multiple angles in the storefronts and fascias is in fact only one angle, with a three-to-seven slope, chosen because it fits exactly within the structural grid of 24-foot by 28-foot column bays. The terrazzo tiling of the floor,

the edges of the many pools and fountains, the stair risers, and the edges of the intricately skylit ceiling all repeat this angle to establish a sense of fluid spaciousness in the center.

The Eastridge Mall draws on a residential population of about 500,000 people, and is the only large suburban commercial center in its area. Consequently, the developers have concrete plans to establish an office complex and low-rise residential units in second and third phases. They own property west and north of Quimby Road, adjacent to the mall, and







LONGITUDINAL SECTION



design is underway on these additional projects. Alfred Taubman estimates that about 300 new apartments have already been generated in the immediate neighborhood of the mall, that would never have been built otherwise. A major mall such as Eastridge may generate 5,000 new jobs in a community, with a complementary need for new housing, according to Taubman.

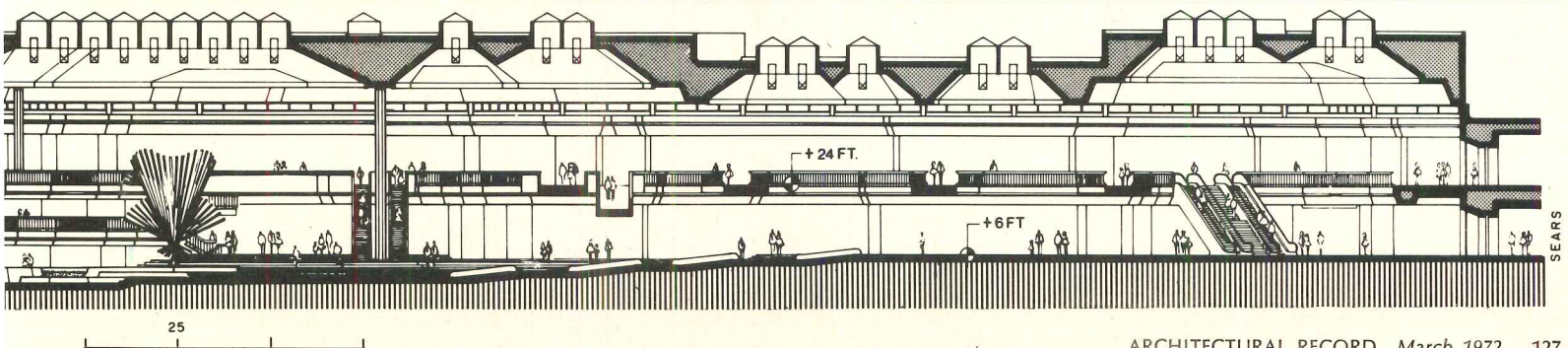
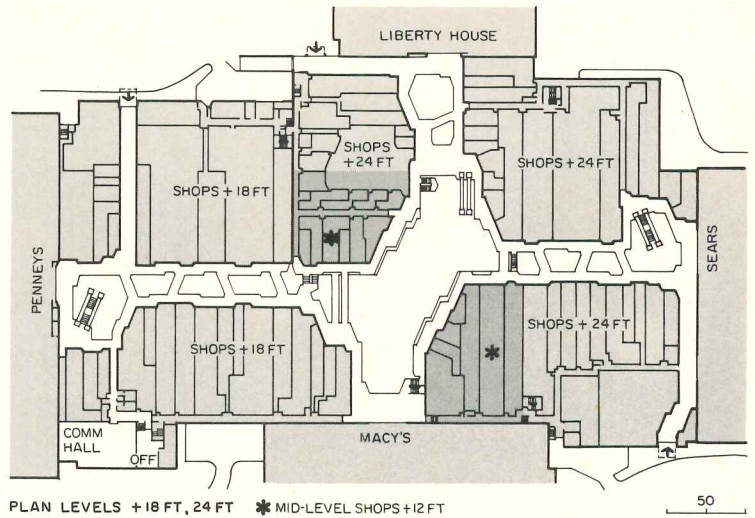
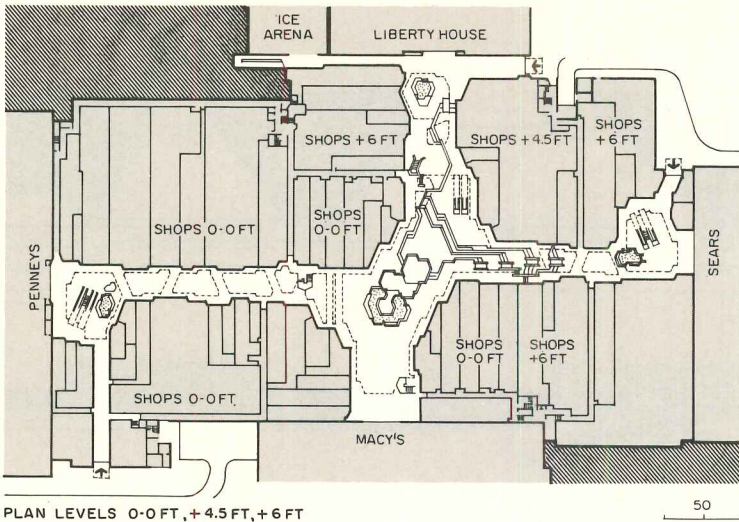
The ice arena near Liberty House, (see plans, below) and the Community Hall near Penney's are both subsidized by the center as public spaces.

Both can be reached directly from outside, when the rest of the center is closed.

The plastic dome of the information booth (large photo left) dominates one end of the pool, cascading gently downhill within the space, and there are rather luxurious carpeted seating areas at four different locations on the main floor. The plans below indicate the many changes in level within the mall, particularly in the major long arcade leading to the Sears store (see photo below, left). Each change in level uses only three risers to

eliminate the need for close handrailing, and of course there are ramps throughout for wheelchairs or carts. The many bridges are apparent in the lower plan, so shoppers may easily reach any store on an opposite gallery.

**The lighting at Eastridge is based on a different original premise than most of the lighting for the Columbia Mall.** Rather than allow the fixture to disappear in the background, thereby revealing only the object being lit, the lighting consultants here preferred that fixtures be revealed as objects. Evans and Hillmann make the point that any viewer becomes more involved in the lighting of the space, and understands it better, if he can see the fixtures that produce the light. This point-of-view requires that prominent fixtures be closely integrated with the architectural forms, and this has certainly been accomplished at Eastridge. The mall is skylit, but within each bay of skylighting have been placed special lighting fixtures used at night or cloudy days, so that the light, whether bright sun or eve-





ning, always come from generally the same area of the ceiling (see section below).

The fixtures themselves that Evans and Hillmann designed are worth noting, and one is shown in detail in the photo below. The basic components are a standard high-bay industrial luminaire with a 50 per cent louver for brightness control, pairs of 400-watt mercury lamps and panels of acrylic plastic, intersecting at 45 degrees. The luminaire is wrapped in a rectangular housing painted white, and a rectangular clear acrylic basket,

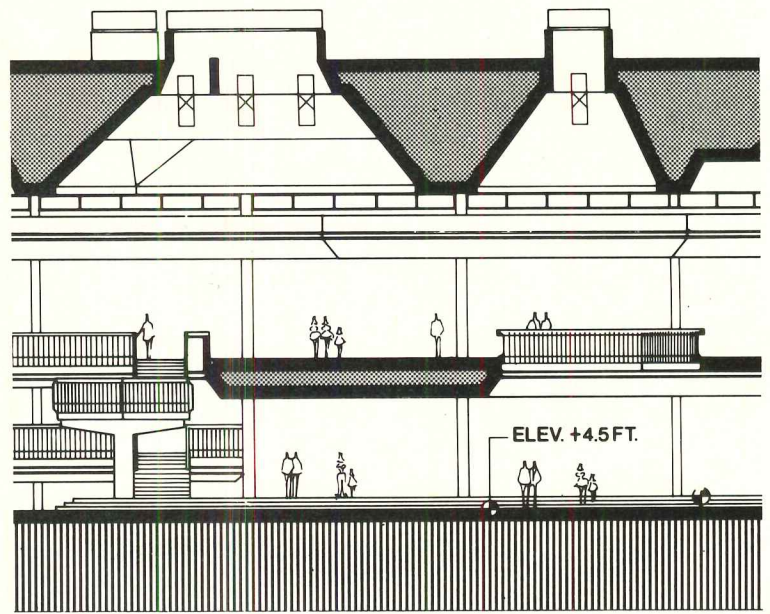
containing the intersecting panels of acrylic, is suspended beneath the luminaire as shown in the photo.

The fixture lights the floor and ceiling planes simultaneously. All light rays striking the intersecting planes of acrylic at 42 degrees or greater are reflected up and out onto the ceiling panels. The remaining light rays are passing through these panels to provide lighting at the floor. The result is a general glow of light in the whole mall space, as the photographs indicated, aided by the more normal cove in-

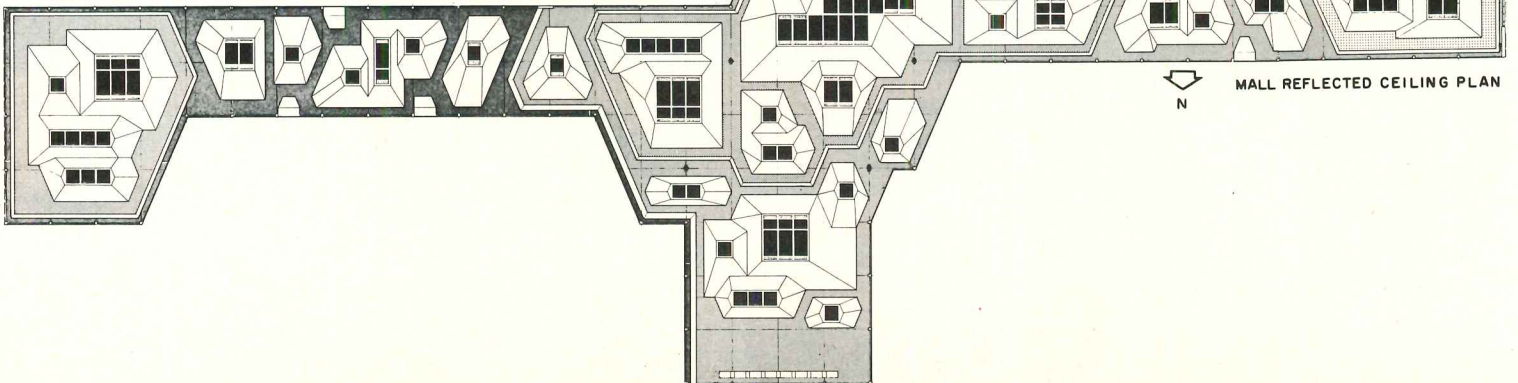
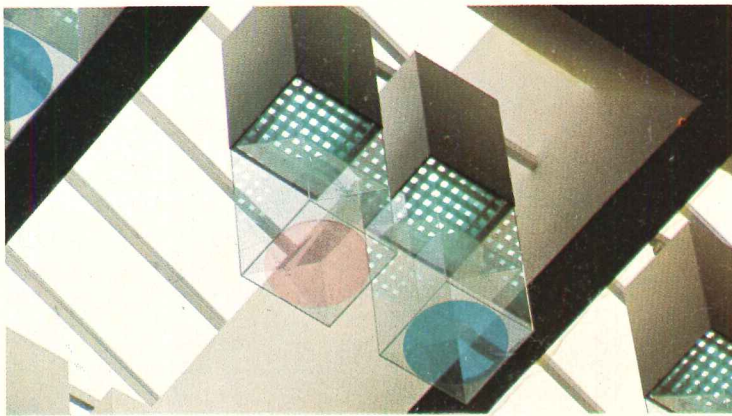
candescent lighting at the gallery soffits. It is an almost shadowless environment when compared to the strong lights and shadows of the Columbia system. The specially designed pink and blue filters at the bottom of the acrylic shroud are there to alter the vertical light rays, according to Evans and Hillmann, creating subtle color nuances at the floor level, along with high illumination. The reflected ceiling plan (below) shows the complex pattern of skylights and light sources within the mall. In one of the mall cafeterias, clear-

glass globes hang from the ceiling like bunches of grapes, acting as reflectors for the light source above them.

EASTRIDGE REGIONAL SHOPPING MALL, San Jose, California. Architect: Avner Naggar. Owners: Bayshore Properties and Homart Development Co. Structural engineers: Butzbach, Bar-Din & Dagan; soils engineers: Woodward, Lundgren & Associates; mechanical engineers: Yoshpe Engineers; electrical engineers: Edward S. Shinn & Associates; lighting consultants: Evans & Hillmann; landscape architects: Lawrence Halprin & Associates; traffic engineers: Barton-Aschman Associates; general contractor: The Taubman Company, Inc.



SECTION @ CENTRAL COURT





## Adapting a European housing system to the U. S. —a case example

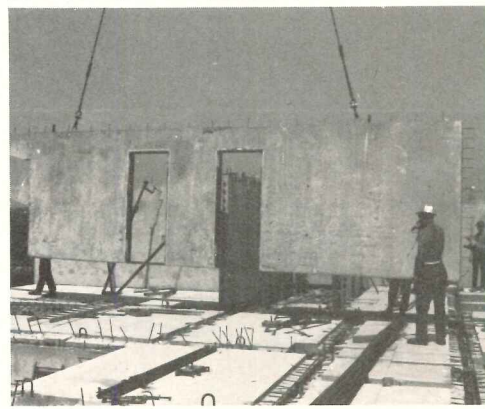
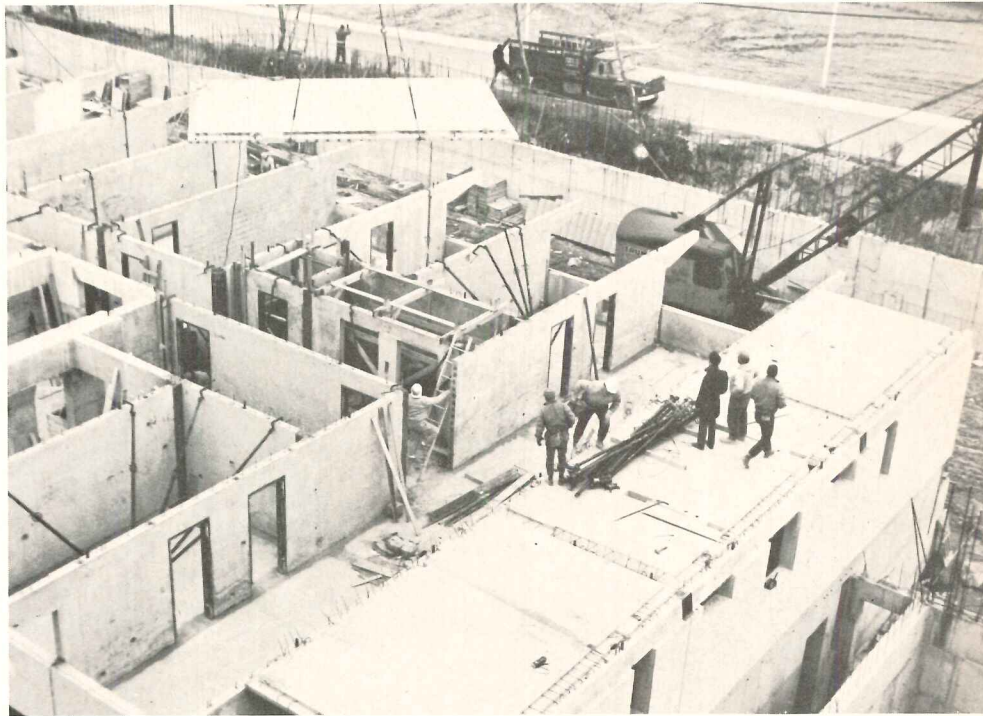
European industrialized building systems for housing cannot be used directly in this country without some modifications—for some a few; for others a great many. The result is that architects and consulting engineers have more to do the first time they work with a system than they would with traditional construction. At the least, they have to familiarize themselves with many details of the particular industrialized system they will be working with.

Modifications to the transplanted industrialized systems may be necessary to accommodate differences in code requirements between Europe and the U. S.; differences in structural design approaches and field practices; differences in materials and practices acceptable to sponsoring and lending agencies (such as HUD and FHA) and to regulatory organizations (such as Underwriters' Laboratories); and, finally—hardly an insignificant factor—differences in what people expect in the way of standard of living—in room sizes; mechanical, electrical and plumbing systems, etc.

The architect may need to analyze the building with respect to how many different types of concrete panels are necessary—different sizes and shapes of panels with different sizes and shapes of openings. Of course, the fewer types of panels there are, the better will be the cost picture. The structural engineer will need to understand that there are differences in such things as reinforcing details between conventional construction and industrialized buildings (because most of the structure is factory fabricated, reinforcement is placed more accurately than in the field; concrete strengths are more uniform, etc.) The extent of the structural engineer's participation will depend upon whether he has been engaged to adapt a European system to American practice, or whether he is operating in the traditional fashion of consultant to an architect in using an industrialized system that has already been adapted by the entrepreneur.

In the first case he could get involved in redesigning the reinforcement (an example shown in this article) for more efficient use of the material.

In the latter case he will, no doubt,



This 20-story apartment building in Yonkers, New York is one of the first applications of a European industrialized housing system in this country. Panels were trucked a short distance to the site from a factory in the Bronx. Maximum dimension of floor slabs is 12 ft (spanning distance) by 25 ft, and walls are a maximum of 32 ft in length. These limitations were set to fit the size of casting beds and to meet transportation requirements. Maximum panel weight was limited to 10 tons for handling purposes. Average rate of placement was 1½ apartments per day. Empty electrical conduits were installed in the slabs and panels at the factory. Plumbing and exhaust ductwork were installed conventionally at the site.



want to assure himself of the structural integrity of the system with respect to the context of its use; conformance with applicable codes; wind resistance of the system.

Consulting mechanical and electrical consulting engineers have to do more than they would normally, the first time the system is used. For example, they have to find out where openings are permitted in the structure (floor and wall panels), and then these have to be accurately laid out.

With prestressed planks, for example, openings cannot cut across prestressing strands. Perhaps, where openings must be large, the planks may need to be cut short, and the opening framed separately. The electrical engineer may have to accurately lay out conduit runs—a function normally performed by the electrical contractor with conventional construction.

Presently, a large portion of the mechanical work is done in the field—installation of piping and ductwork; running of wiring and connection of wires to utilization devices. Probably a certain amount of this will always be done in the field. Piping “walls” can be, and actually have been, prefabricated. Drainage, waste, and vent (DWV) piping and branch water piping lend themselves to the prefabricated approach. But making connections with water risers, because of changing pipe sizes and the type of joint necessary, is more susceptible to misalignment problems, and, with present technology, is better done in the field.

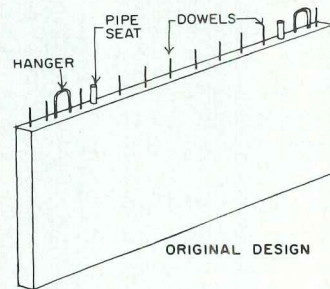
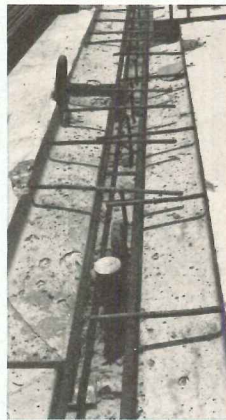
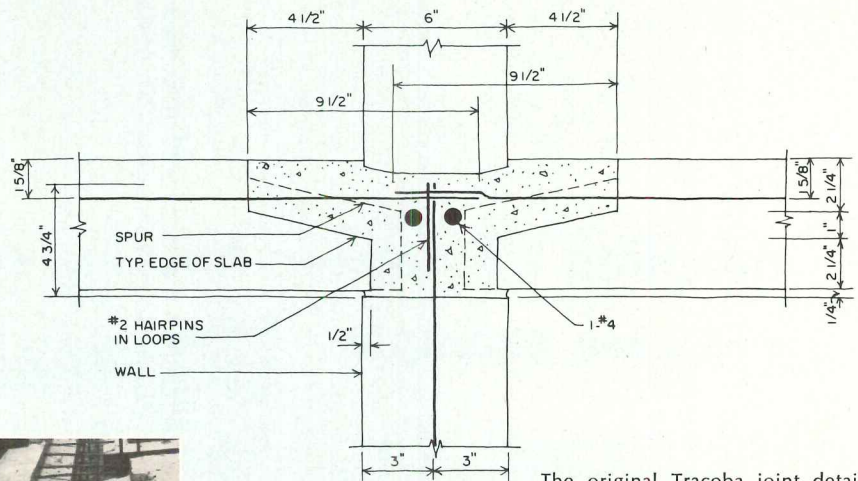
Once the system has been adapted, its use can be repeated—provided that the client and sponsoring authority (if there is one) accept the original design, apartment layouts, utilities, etc. When changes are made, however, then new investigations are necessary—with engineers working out new details and coordinating various aspects of the sub-systems. New shop drawings must be made, and these reviewed by the consulting engineers.

The economy of industrialized building is, of course, adversely affected when a factory has to produce a lot of special panels and other elements. The factory production line has to run smoothly, with “specials” being produced at a rate that integrates with total production so that the total process is continuous. A factory must produce a given minimum number of housing units per year to be profitable. If, for some reason, a project has a lot of specials, then consideration should be given to on-site, rather than factory precasting. Obviously, the more that architects and consulting engineers understand the possibilities and the constraints of a given system—and the more they design with these in mind—the better the cost picture will be.

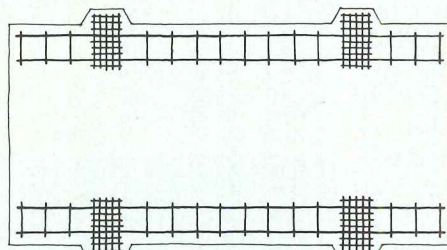
### Yonkers project serves as a “pilot plant” for trying out a French system

Of the more than 50 industrialized building systems in use in Western Europe, Tracoba is one of the largest, with over 80,000 hous-

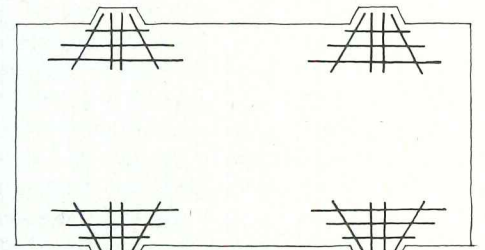
## The structural engineer saved reinforcing steel by taking a sophisticated approach to the design of the floor slab



The original Tracoba joint detail is shown above, utilizing lapped reinforcing bars, dowels and longitudinal bars. The pipe seat serves as a spacer between wall panels for pouring the joint. The consulting structural engineers saved steel in the slabs as shown below. Before the joint is poured, slabs are supported by spurs. The engineer's redesign, employing computer analysis, considered the slab as a point-supported plate, and the lesser amount of reinforcement is obvious in the drawing.

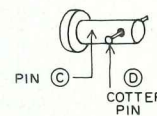
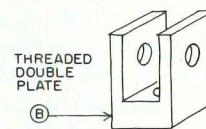
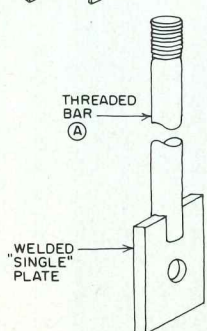
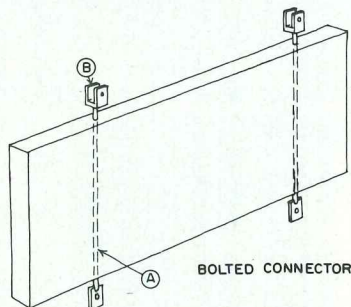


REINFORCING ORIGINALLY REQUIRED FOR SEATING SLAB ON SPURS

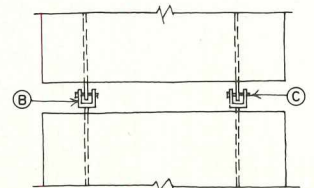


NEW SPUR REINFORCING

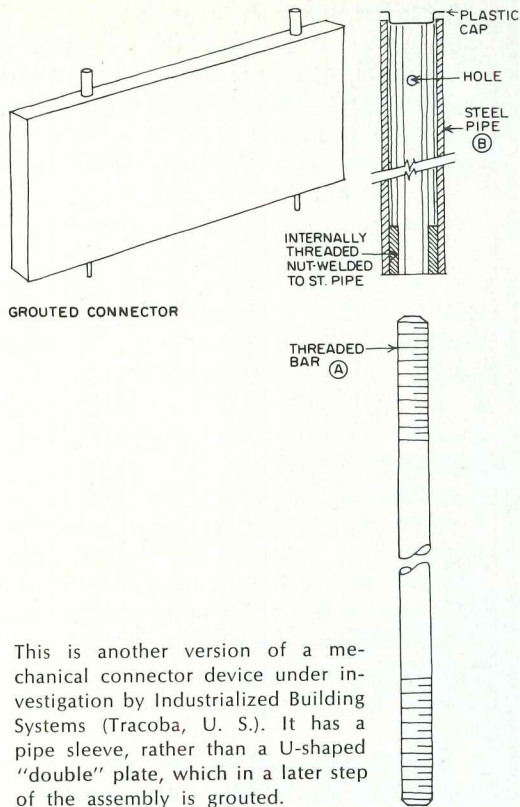
## Changes were made in the joint details to give a mechanical connection that would meet recently adopted HUD-FHA criteria



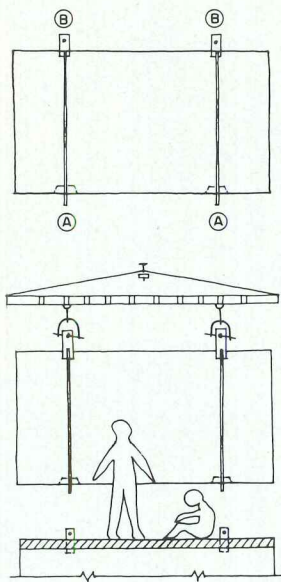
HUD and FHA require a mechanical connection between wall panels. So, for an Operation Breakthrough project in Jersey City, the detail shown here will be used. The U-shaped, threaded “double” plate serves as a leveling device, as a hanger for lifting panels, and receives the welded single plate which is pinned to the double plate.





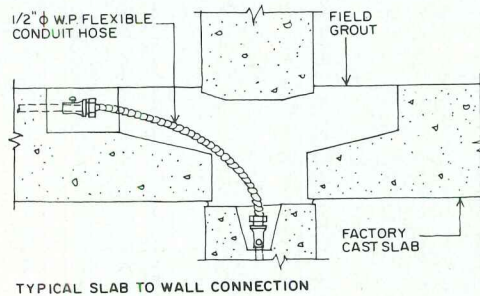


This is another version of a mechanical connector device under investigation by Industrialized Building Systems (Tracoba, U. S.). It has a pipe sleeve, rather than a U-shaped "double" plate, which in a later step of the assembly is grouted.

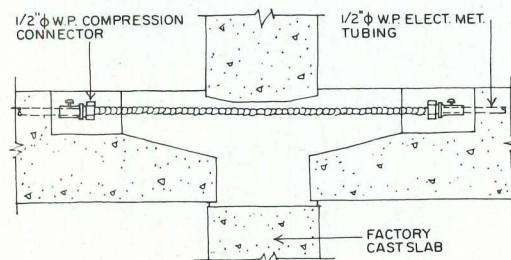


**Plumbing and ducting were conventional, but required careful coordination with structure. The electrical system utilized new devices; was laid out by the consulting engineer for factory conduit installation**

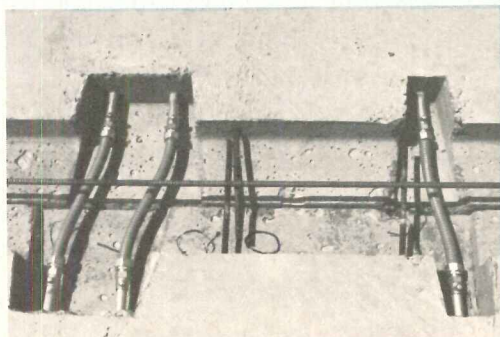
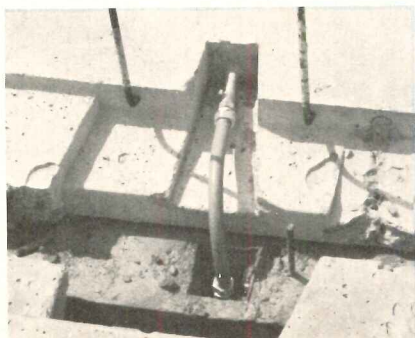
Connections from conduits in one floor slab to conduits in an adjacent one, to handle circuitry common to two rooms, is made with water-tight flexible conduit. The same connector is used to join a conduit in a slab to a conduit in a wall panel. The feed is down from the top of a wall panel to outlets and switches. Positioner boxes placed in the forms fix the location of the conduit terminations. A different device, called a contramold, will be used in the future for more accurate installation of conduits. The water-tight flexible conduit has a limited bending radius which can work within the tolerances of construction, but can be affected if misalignments occur in the factory fabrication of panels.



TYPICAL SLAB TO WALL CONNECTION



TYPICAL SLAB TO SLAB CONNECTION



ing units having been built in Europe and North Africa. The system has been adapted to American practice by Industrialized Building Systems, Inc. (IBS) of New York City, and the system was chosen by Module Communities, Inc. (MCI), a building systems developer of Yonkers, New York, as their entry to the market.

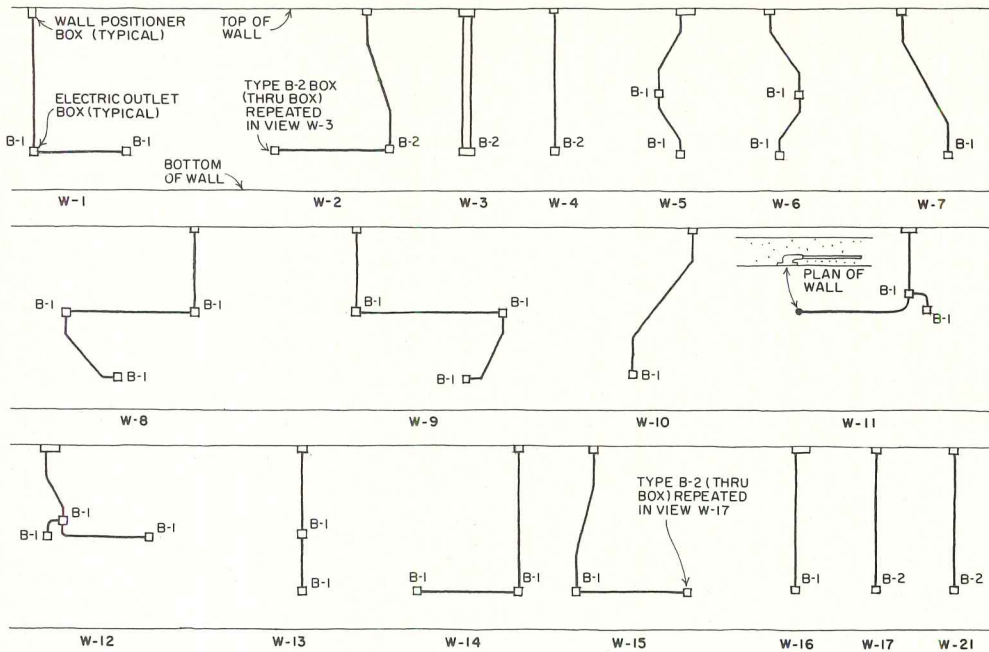
Working with IBS on the structural adaptation was Paul Weidlinger, consulting engineer; on mechanical adaptation (HVAC and plumbing) it was Cosentini Associates, consulting engineers; and on electrical adaptation it was Eitington & Schlossberg, consulting engineers who were associated with the Cosentini firm. Architects were Renato Severino and Herbert Rothman.

The structure for the Yonkers project is basically the same as that used in Europe with one important exception. Floor slabs of the system have four "spurs" which support the slabs on the walls until the joint is poured between two contiguous floor panels and the wall slabs above and below them (see structural detail). Such arrangement makes the leveling process simpler. In the European design, the edge of the floor slab abutting a wall was considered as a beam, and was reinforced accordingly. Weidlinger, on the other hand, assumed the slab to perform as a point-supported plate, and redesigned the reinforcement. According to Weidlinger partner Matthys Levy, this saved about 1/2 lb of reinforcing steel per sq ft of slab. In the alternate design, the slab was analyzed using a fine mesh grid and a computer to obtain the stress pattern. From these results, a reinforcement pattern radiating from the spurs was proposed. A prototype panel tested with the new spur reinforcing substantiated the safety of the design.

Another structural modification—a different joint connection—was developed for Tracoba projects in which there is FHA and/or HUD involvement. The typical Tracoba joint provides lapped reinforcing bars in the joint between floor slabs and wall slabs. But FHA and HUD criteria, adopted for Operation Breakthrough, call for a more conservative design. These criteria follow the design criteria for joining panel structures that were developed in England after an investigation into the collapse that occurred at Ronan Point after a gas explosion in a corner apartment set off a chain of collapse of all of the 18 floors below it. FHA and HUD criteria specify welded or bolted joints, only. The new Tracoba detail developed to conform to the criteria, shown on page 130. This connector will be used in Operation Breakthrough projects in Jersey City and for three apartment towers in the Twin-Parks project in the Bronx sponsored by the Urban Development Corporation.

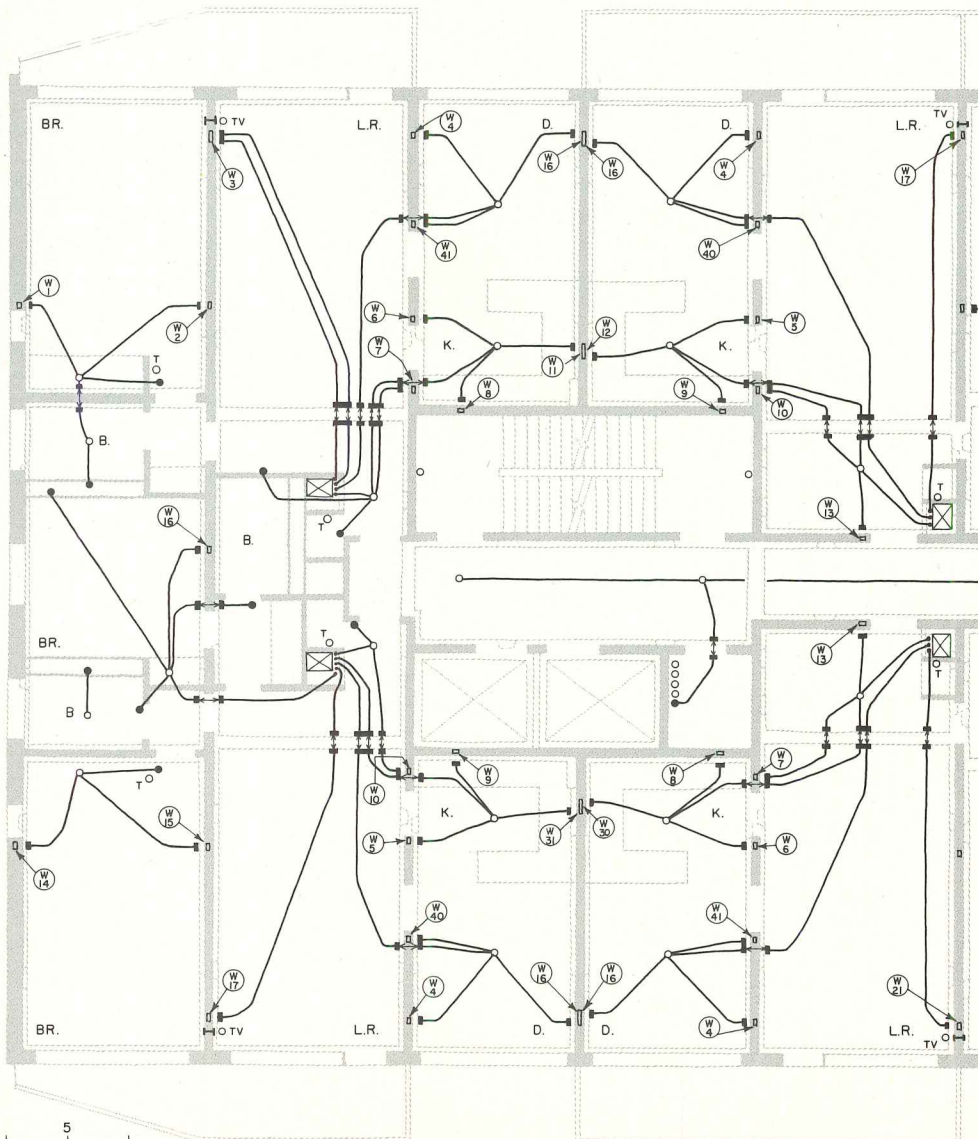
A different connector device utilizing a grouted sleeve in lieu of a mechanical connector is presently being tested. This device costs somewhat less and will be adopted once field tests are finished.





The electrical plan below shows how the consulting engineer laid out exactly the conduit shapes and locations so that the conduit could be cut, bent and installed in panels at the factory. Positioner boxes are shown in adjacent floor slabs where conduits must be joined by the flexible con-

nectors. Also identified on this plan (by numbers in the hexagons) are the various wall panel conduit conditions—nearly 40 in all—that occur throughout the building. The wall panel conditions in the area of the floor plan given are shown in the drawings above. Electrical boxes are indicated.



### Electrical wiring had to be worked out in detail by the consulting engineers

The Yonkers project was not designed with the idea that it would serve as a prototype for successive projects. Rather it was a project with which the building systems developer could, so to speak, "cut his eye teeth." Apartments are spacious and will rent at the higher end of the scale. The exterior, happily, is attractively designed.

Because the Tracoba system uses short spans for floor slabs, almost all walls are bearing walls. This means that a lot of the wiring is buried in the wall slabs as well as in the floor slabs. Some dry walls are used to conceal the main electrical risers and to conceal plumbing.

There are more electrical risers in the Yonkers project than would normally be encountered: apartments are individually metered, and all meters are located in the basement, necessitating more feeders than if the building were centrally metered. Apartments will have electric baseboard heating and through-the-wall air conditioners.

In Europe, Tracoba uses plastic conduit for the buried wiring. In the Yonkers project thin-wall conduit (EMT) had to be used. Connections from one floor slab, across a joint, to another floor slab, and connections from floor slab to wall slab were made with flexible, water-tight connectors that were approved for this application by Underwriters' Laboratories. These connectors can accommodate to the usual tolerance expected with panelized construction. Positioner boxes which establish terminal points for conduits in the concrete panels have to be carefully installed in the slab in the factory, however, because the flexible connectors have a limited bending radius. The conduit in a floor slab has to line up fairly closely with the conduit in the wall panel. A device called a contra-mold is being used in the slabs for succeeding projects to assure accurate spacings of conduits—with slabs installed within tolerances, conduits should line up.

In the Yonkers project, many different wall conduit situations were necessary. These were identified and keyed to an electrical plan (such as an electrical contractor ordinarily would do) by the consulting electrical engineer (see drawings this page). The engineer showed the exact conduit shapes and locations for both wall and floor slabs.

The empty conduit was installed in the MCI factory, located in the Bronx, by laborers supervised by a New York City (Local 3) union electrician. The electrical contractor pulled the wires in the field and made all necessary connections to utilization devices (switches, lights, appliances, convenience outlets, etc.). An electrician had to be on hand during the erection of the precast concrete panels to install the sections of flexible water-tight connectors, inasmuch as they are contained within the poured concrete joint between panels.



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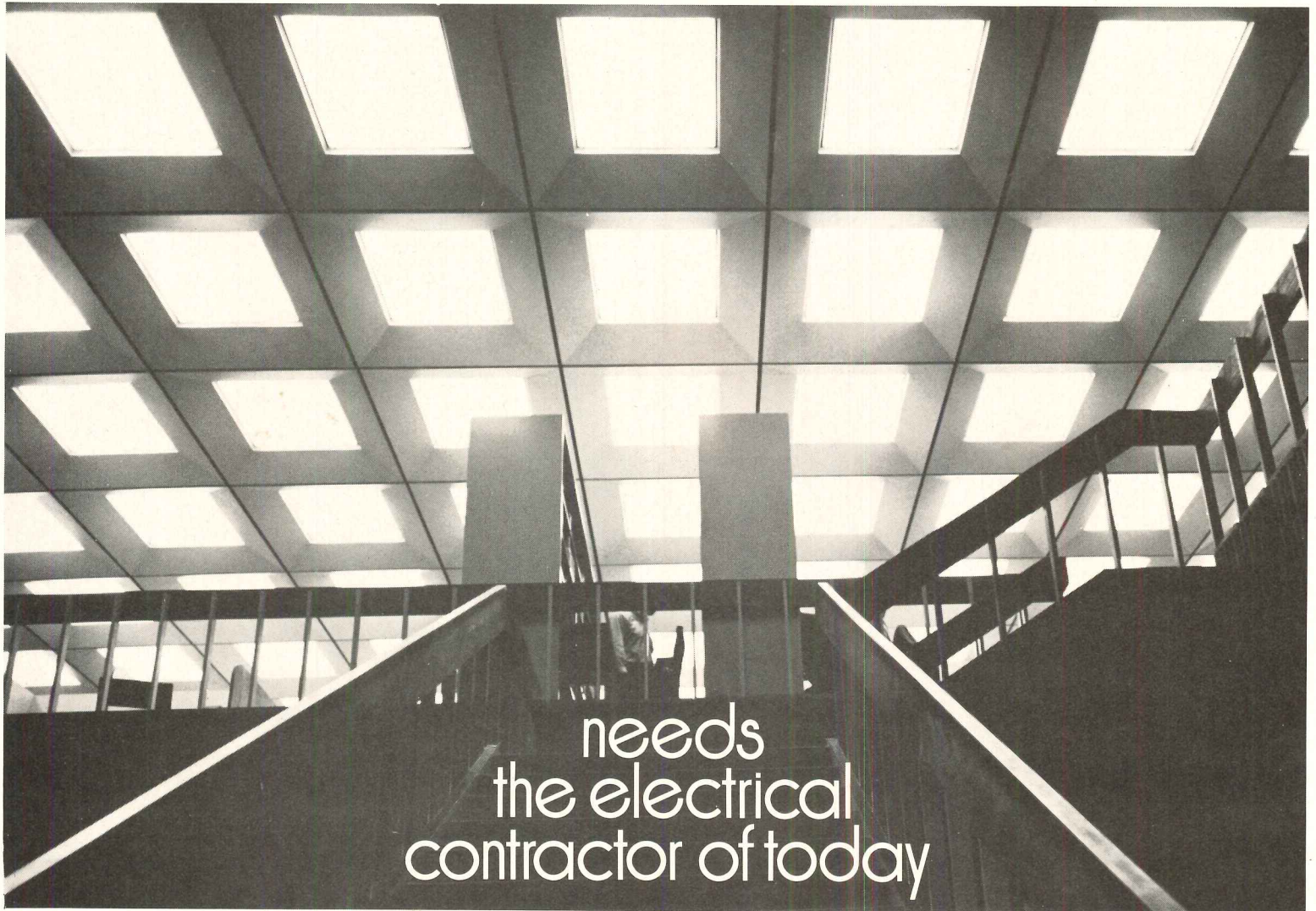
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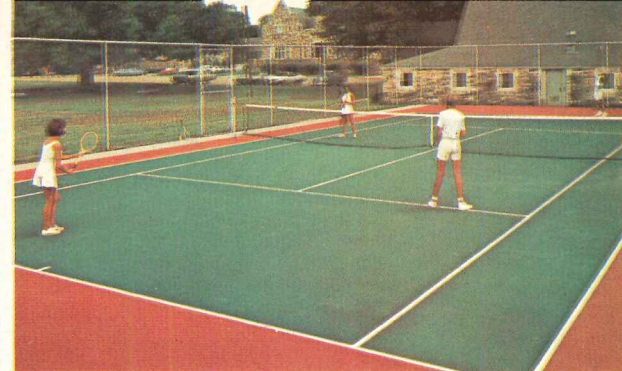
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Washington, D. C. 20036



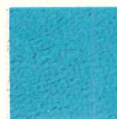


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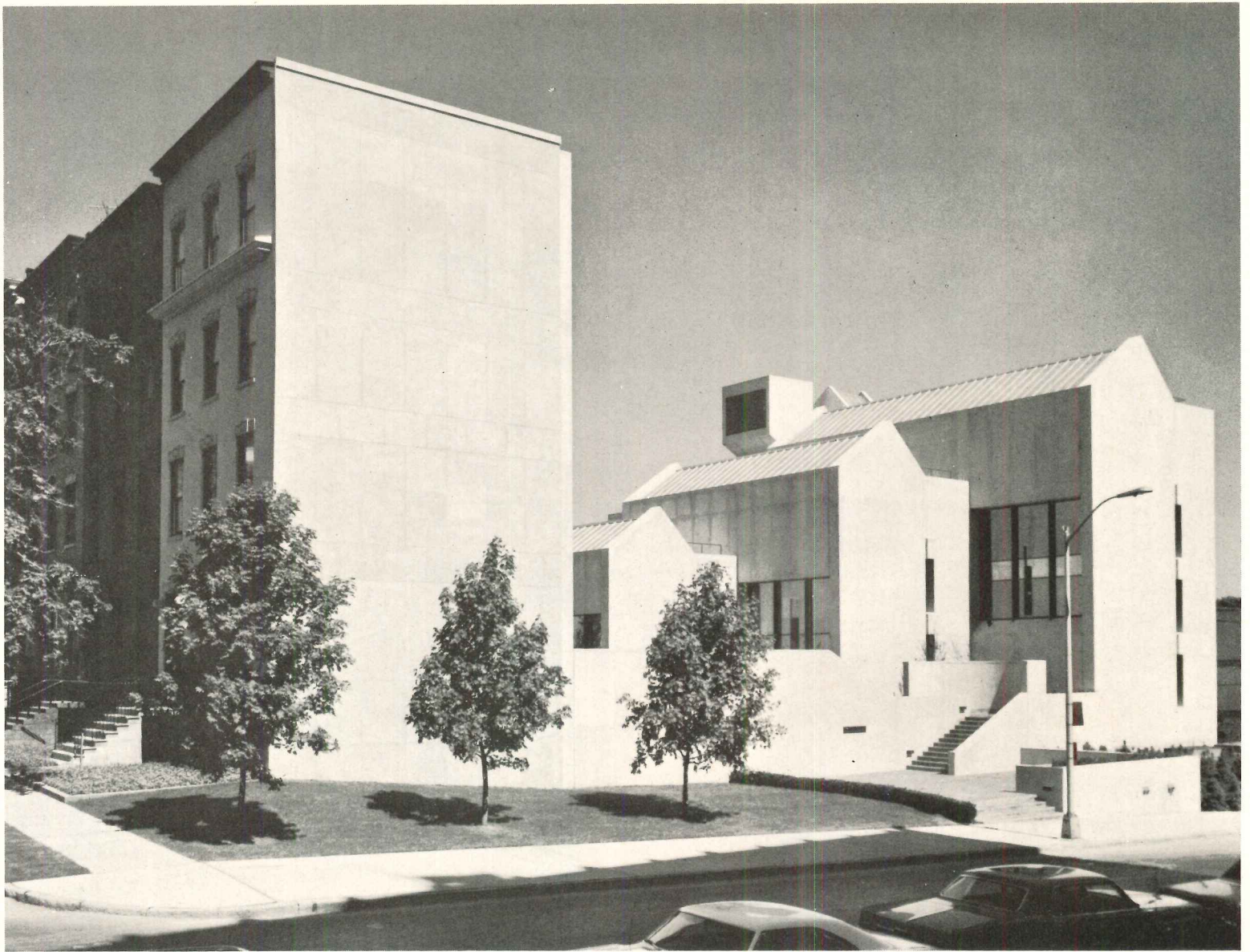
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Headquarters, New York State Bar Association, Albany, N.Y.

Architects: James Stewart Polshek and Associates, New York, N.Y.

Photographer: George Cerna

## TCS... and a "lesson in civilized architecture"

"The headquarters of the New York State Bar Association," as a most distinguished critic recently wrote, "is an object lesson in how to build intelligently, sensitively and well... In a happy alliance, the lawyers and the architects, James Stewart Polshek and Associates, have preserved a row of handsome 19th-century town houses and incorporated them, not as a false front, but as a working part of a completely and strikingly handsome contemporary complex built

behind them. The words that come to mind are skill, imagination and taste, qualities not encountered too often on the urban scene."

We at Follansbee Steel are particularly gratified that Mr. Polshek specified TCS (Terne-Coated Stainless Steel) for all pitched-roof areas on this outstanding building in which originality of design and integrity of site are so felicitously coupled.

### FOLLANSBEE STEEL CORPORATION

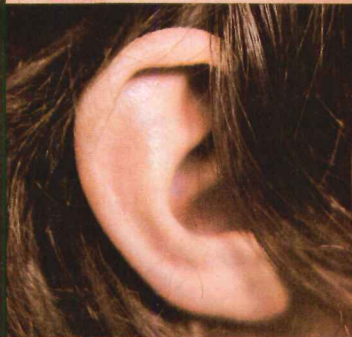
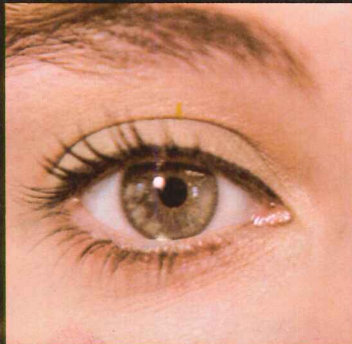
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For more information circle item numbers on Readers Service Inquiry Card, pages 221-222

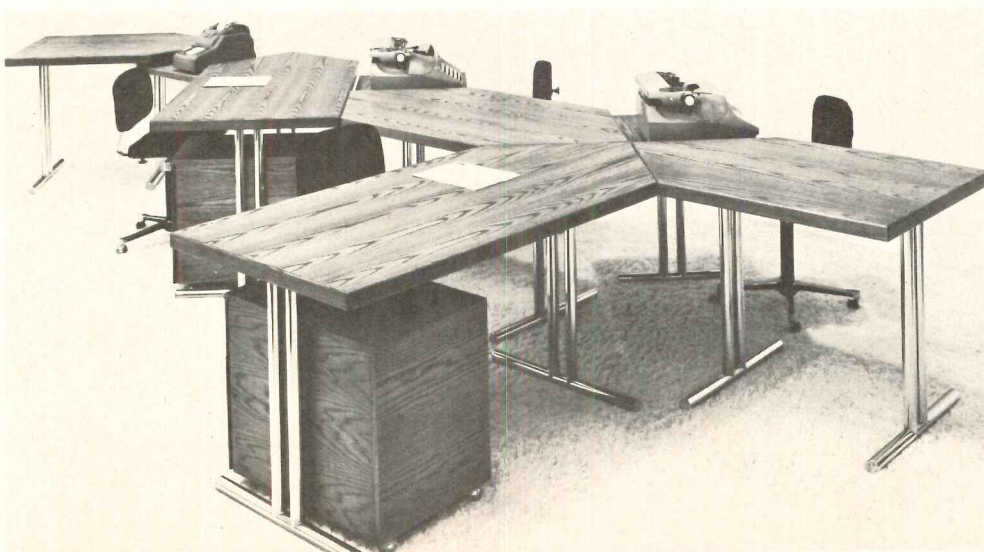
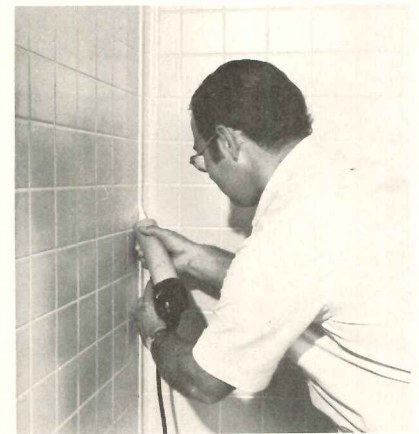
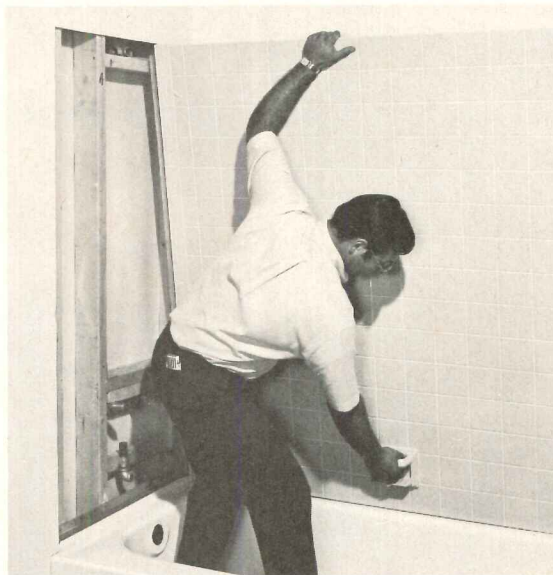
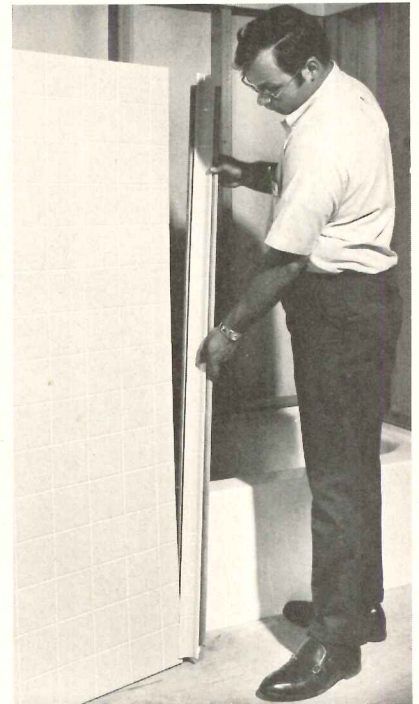
**CERAMIC TILE WALL PANEL SYSTEMS** / Panels are composed of sheets of factory-grouted ceramic tile bonded to a 1/2-in. thick urethane foam backboard. Of the three systems now available, two are tub surrounds and the third consists of interior wall panels. Both tub surround systems feature internal corner trim strips which permit up to 5/8-in. adjustment to fit most standard tub recesses, thus eliminating measuring and cutting of panels. Each includes a glazed ceramic soap dish/grab bar in the rear wall panel. One of the tub surrounds consists of three 5 ft.-high panels. The other tub surround extends tiling to 6 feet above the tub, has a tiled drop-ceiling, and consists of seven panels. The interior wall panel system can be used wherever tiled wall surfaces are desired. Panels are 4 feet square and are particularly applicable to large areas.

Advantages of the systems include a flexible, silicone rubber grout which permits tub surround to withstand stress of building movements without cracking or splitting, and is waterproof, mildew- and stain-resistant; simplified, high-speed installation directly over wood or metal studs; and excellent urethane foam insulating properties.

Installation is as follows: After metal support strips are attached to studs to provide a base for the panels, mechanical fasteners are inserted which will hold panels in place until adhesive has cured. Standard stud adhesive is applied, then trim closure unit is slipped on back wall panel. Entire back wall is placed on support strip and mechanically locked in place, followed by two end walls. Internal corners and perimeter edge joints at tub and adjacent walls are sealed with flexible silicone rubber grout.

Panels are stocked in ten bright, matte, and crystalline glazed colors. ■ American Olean Tile Co., Lansdale, Pa.

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**OFFICE FURNITURE** / Office planning possibilities ranging from conventional rectangular groupings to clusters of work stations which channel and control the flow of work and traffic are offered through the Pentaplan furniture system, consisting of table/desks, typing units, and storage units.

Table/desks are available in rectangular, hexagonal and pentagonal shapes, and come in a choice of oak veneer or oak-edged plastic tops. All tops have slightly rounded solid oak edges that discourage marring and denting. Bases are made of heavy-gauge welded steel tubing in which electrical wiring can be concealed. Typing units can be suspended between desks, or extend from one side of a desk. Free-standing units are also available. ■ Harvey Probbler, Inc., Fall River, Mass.

Circle 301 on inquiry card  
More products on page 146









**Mal Levy (World Trade Center, Chief of Planning and Construction, The Port of New York Authority) discusses the new role of the building owner:**

"The conventional notion of a building owner is that of a man who outlines the building requirement, sets a budget, chooses an architect and then retires discreetly to the background until the building is completed. It doesn't work that way. At least, it didn't on the World Trade Center project.

"From the very beginning, the Planning and Construction Division of The Port of New York Authority operated as an unconventional owner. Our first

departure from the usual pattern was our choice of an architect. We were determined to find a man who shared our vision of the World Trade Center—someone who wanted to create great architecture, above and beyond the basic functional requirements of the building.

"After preliminary contacts with some of the outstanding architects in the profession, we decided to retain Minoru Yamasaki and Emery Roth and Sons, associate architects.

"Next, we brought together and worked closely with a building team *early in the process*. The general contractor, for example, was consulting with us during the design stage. Subcontractors, such as the curtain wall people, were making contributions six years ago.

"In addition, we insisted on performance specifications, instead of the usual descriptive ones. We felt that since the World Trade Center was a

precedent-breaking structure, it called for its own performance criteria.

"This was advantageous for two reasons: first, because performance specs set common goals for the entire building team . . . and second, because they stimulated concepts tailored to the special needs of the World Trade Center, instead of warmed-over ideas from previous building experience.

"If our involvement with the Trade Center has taught us anything, it is this: The building owner's professional manager must function as an active member of the entire building team."

The World Trade Center is a project of The Port of New York Authority. Engineering and development were carried out under the Authority's World Trade Center Planning and Construction Division. The curtain wall fabricator was Cupples Products Division, H. H. Robertson Company.

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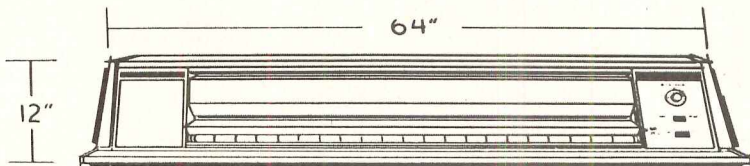


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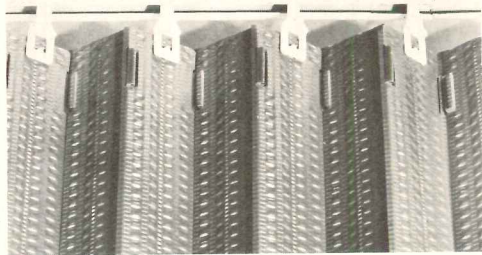


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continued from page 139

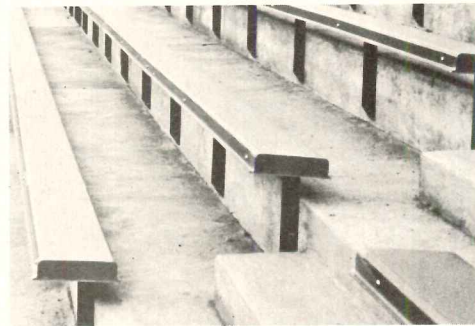


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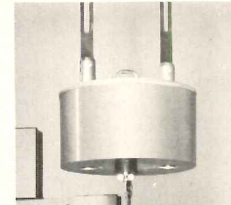
**FIBERGLASS STADIUM SEATING** / Each seat is fabricated in a module of 15 ft, with interlock-ends. Seats are unconditionally guaranteed against glass blooming or breakage for seven years. ■ Miracle Equipment Co., Grinnell, Iowa.

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Dor-o-Matic, Chicago.

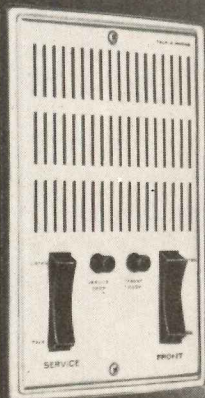
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more products on page 154

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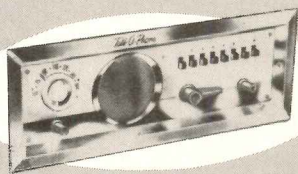


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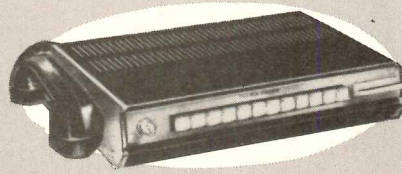
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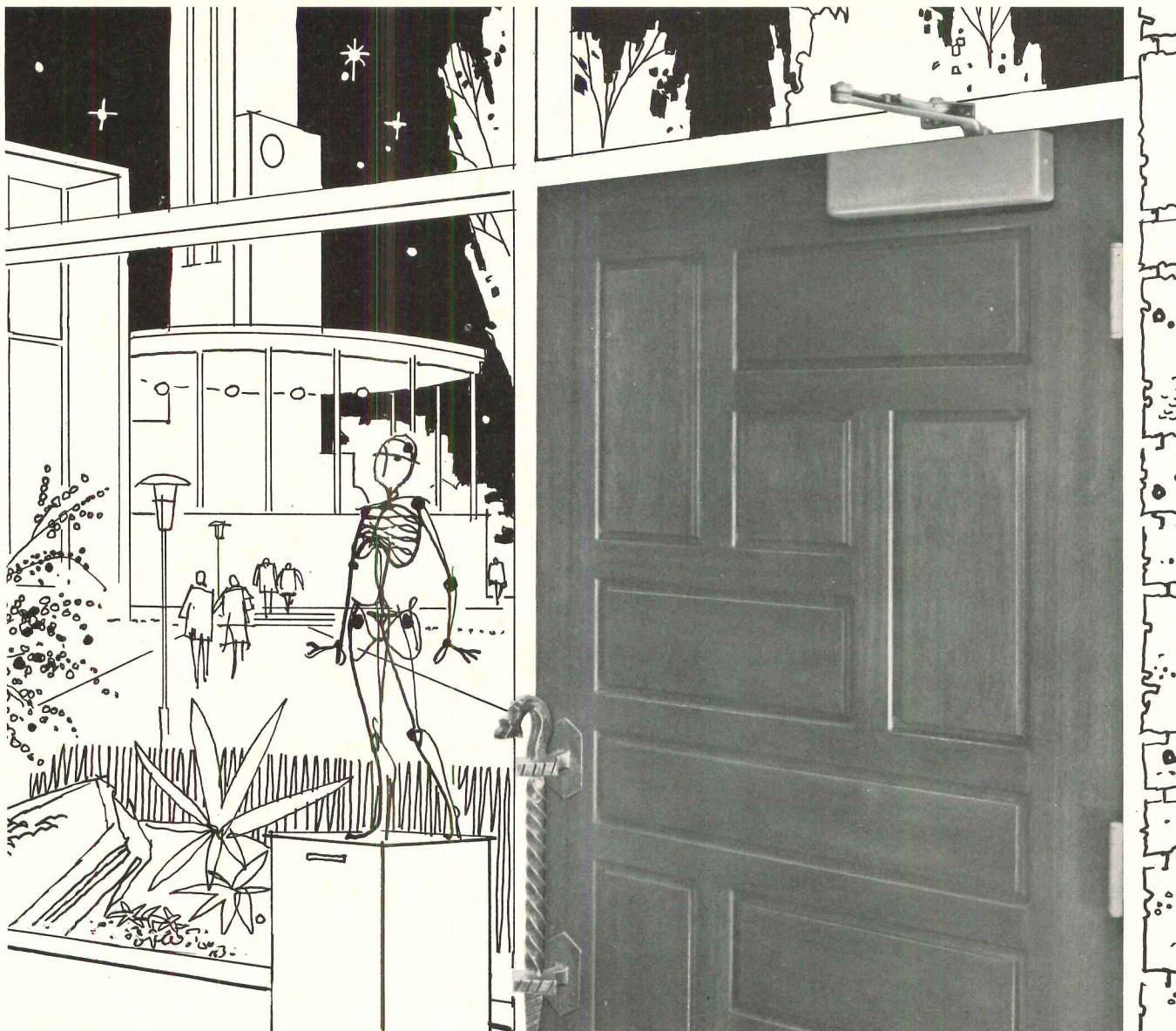
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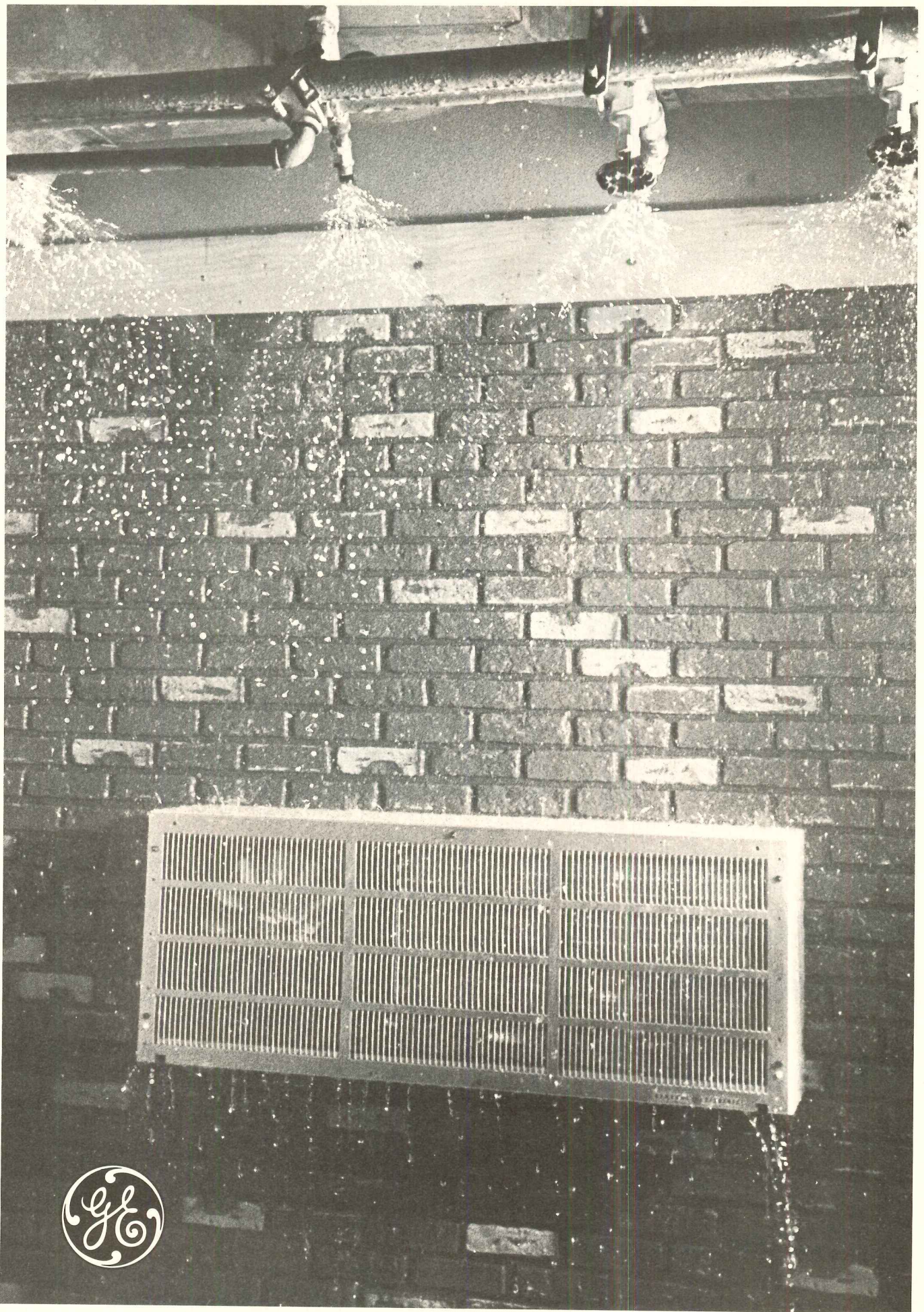
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**EATON** Security Products & Systems

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For one thing, we had to design and build special testing rooms. Rooms like the one on the other page. It's our *Rain Room*. Here we test the ability of the units to operate under wind and rain conditions. Conditions that test the case seal to prevent leaks on the roomside, also.

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This whole testing procedure is a part of a total quality system. A philosophy and series of complex procedures designed to solve problems before they become headaches to you.

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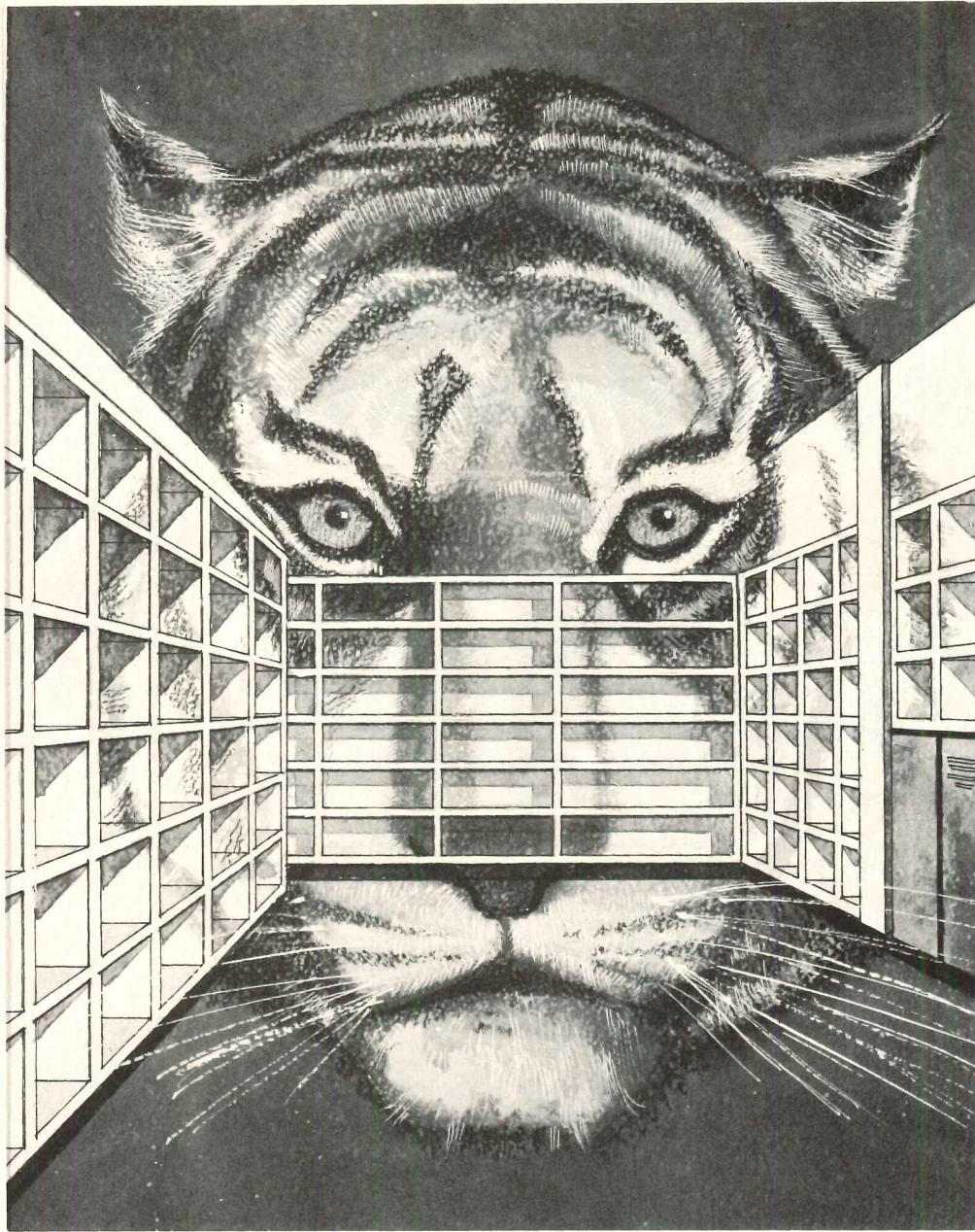
For more information, call your local GE Contract Air Conditioning Sales Representative.

At General Electric making Zoneline heating/cooling units is a profession, not a sideline.

GENERAL  ELECTRIC

For more data, circle 64 on inquiry card





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Like the people who use it, hospital equipment must be reliable and efficient. Watson Hospital Casework is equal to the task. There need never be a wasted motion when working around our casework. It's designed for maximum efficiency and ease of maintenance. And it's built to take the all day, all night action of a hospital . . . year in, year out.

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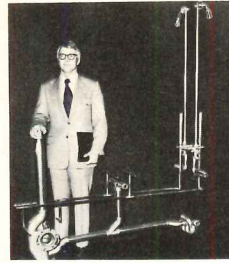
HOSPITAL DIVISION



**WATSON**  
Manufacturing Company, Inc.  
Jamestown, New York 14701

For more data, circle 65 on inquiry card

**COPPER PLUMBING WALL** / This unit represents the latest development in the copper *Sovent* self-aerating one-stack drainage system. Designed for two to eight-story apartments, wall may be prefabricated and installed by the contractor or manufactured as a modular unit for sale to the contractor. Advantages are speed of installation and savings of up to 12 feet of water tubing per bathroom. ■ Copper Development Assn. Inc., New York City.



Circle 309 on inquiry card

**FIRE-RETARDANT EPOXY COATING** / High heat or flame in contact with coated surface causes foaming action in which coating swells up to three hundred times its original thickness, forming a dense crust which insulates the under surface and prevents the flame from spreading. Coating is specifically designed for application over steel beams, columns, ceilings, and open web steel joists. ■ Sylva-Gard Co., Ltd., Scarborough, Ont.



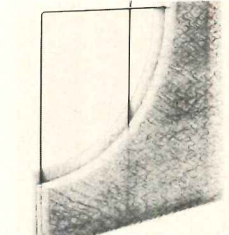
Circle 310 on inquiry card

**CEILING TILE/PANELS** / Three-dimensional, embossed, non-directional swirl pattern reminiscent of Spanish tile will complement most decors. Twelve sq in. tiles can be stapled to dry-wall ceilings or to wood furring strips. Drop-in panels measure two by four ft and install easily using the company's grid system. ■ National Gypsum Co., Buffalo.



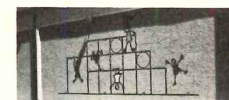
Circle 311 on inquiry card

**AIR FILTER** / Double-element construction consists of two-stage, resilient fiberglass filter element and a tackified polyester fiber medium sandwiched between an internal rigid self-supporting wire ring. Panel-type disposable filter is said to combine optimum air flow, maximum dust-holding capacity and highest efficiency. ■ Drico Industrial Corp., Wallington, N.J.



Circle 312 on inquiry card


**EXPOSED AGGREGATE COATINGS** / Marble, quartz or ceramic-colored stones are embedded in a resinous matrix. Three-dimensional coatings will adhere to any sound backing, including spandrels and columns. ■ Desco International Assn., Buffalo.



Circle 313 on inquiry card

more products on page 166





**VON DUPRIN 66. The Original Stainless Steel Exit Device.** And still regarded as the ultimate in the industry. In appearance. In performance. In quality. Full complement of mortise lock, vertical rod and reversible rim applications. Also available in bronze. For illustrated catalog information, write for Bulletin 654.

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THE OWNER OF THIS  
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No wonder he's sold on the people who advised him to insulate.

It makes sense. Masonry walls need insulation even more than wood frame walls.

ZONOLITE® Masonry Fill is a water-repellent, granular vermiculite that improves the thermal performance of masonry walls up to 50% or more. It provides increased comfort through warmer walls and uniform temperature.

Year-'round savings quickly pay for this low-cost insulation. Typical average returns on the cost of insulating with ZONOLITE Masonry Fill range from 21% to 48% over a ten-year period.

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The same building in Atlanta: \$3,500 savings, a 21% return. In Minneapolis: \$8,150, a 48% return!

Reductions like these in fuel consumption can ease the nation's energy crisis, and reduce pollution caused by excessive fuel use.

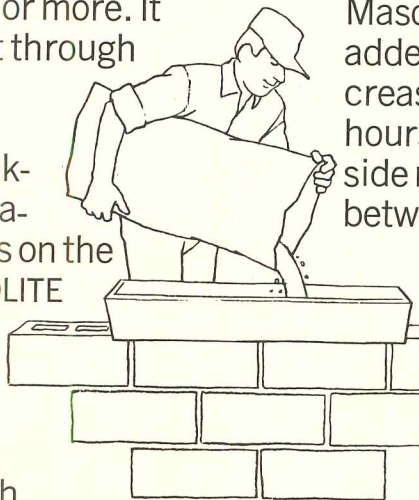
In addition to saving money, ZONOLITE

Masonry Fill Insulation provides added fire protection—actually increases fire resistance up to 6 hours, while helping to deaden outside noises and noise transmission between rooms.

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cost data proving the savings ZONOLITE Masonry Fill Insulation offers your clients.

W. R. Grace & Co., Construction Products Division, 62 Whittemore Ave., Cambridge, Mass. 02140.



For more data, circle 67 on inquiry card



# HOPE'S WEATHERSTRIPPED STEEL WINDOWS

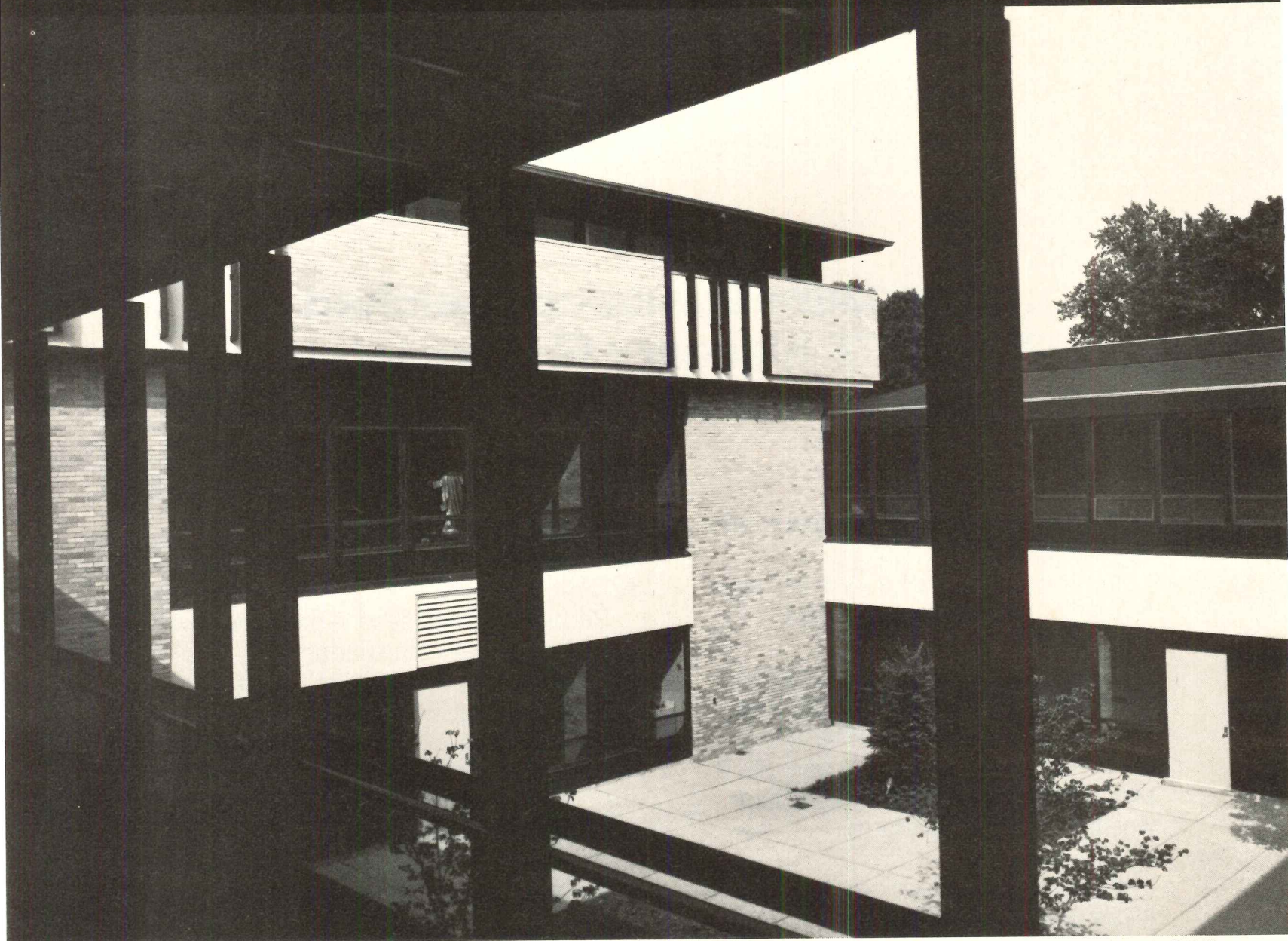


Photo by M. E. Warren

St. Martin's Home for the Aged — conducted by the Little Sisters of the Poor, Baltimore County, Maryland  
*Architects:* Gaudreau Architects, Baltimore, Maryland • *General Contractors:* R. S. Noonan Company, York, Pennsylvania

The concept of "bringing in the outdoors" guided the architect in the design of this handsome and very livable structure. Compatibility with the religious and daily living functions of the aged and a type of ventilation and hardware suitable for the occupants determined the architectural design requirements of the windows. Consideration of these factors prompted the architect to specify Hope's Heavy Intermediate Weatherstripped Steel Windows with clear lights above and hopper vents at sill. Through the large upper fixed lights, the outside scenery is pleasantly visible to both the elderly and the staff during the course of each day's routine. To obtain the desired color and the durability of a factory-applied finish, Hope's Ultra-Coat was

specified. This process includes cleaning by shot blasting prior to fabrication; zinc phosphate treatment in a continuous five-stage process; a prime coat of oven-baked epoxy alkyd; and a spray finish coat of acrylic enamel applied in an automated electrostatic process and oven baked. Hope's Weatherstripped Steel Windows with continuous Neoprene weatherstripping applied in integrally rolled grooves combine the strength and rigidity found only in steel and have an air infiltration rate comparable with weatherstripped windows of any type. Hope's engineers worked closely with the architect from the initial design stage, and erection by Hope's own crews eliminated the problem of divided responsibility.

## HOPE'S WINDOWS

*Jamestown, New York 14701*

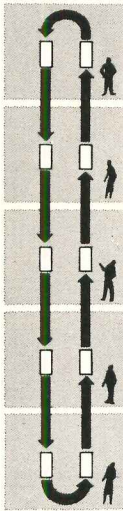
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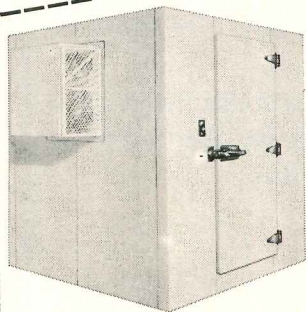


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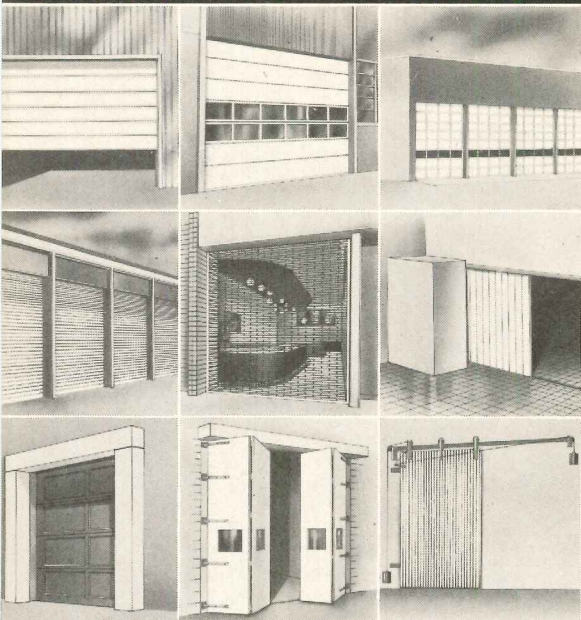
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it comes to  
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an opening...  
any opening



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**Crawford Door Company, 4270  
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48229**

Division of The Celotex Corp.

### PRODUCT REPORTS

continued from page 154

#### DOUBLE HUNG WINDOW

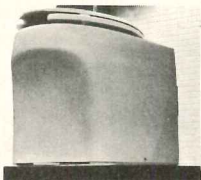


Double weather stripping on each sash protects against water and air infiltration. Spiral balances allow each sash to be opened to any selected position. A white bronze sweep latch at the meeting rails locks the windows in a closed position.

Optional hopper vent in the lower sash allows for cleaning from the interior. ■ Amarlite/Anaconda, Atlanta.

Circle 314 on inquiry card

#### TOILET



Use of water is completely eliminated. Solid waste is reduced to inert ash less than 0.5 per cent in volume. Latent heat flashes off liquid waste. There are no discharges, holding tanks, or septic tanks.

Unit operates on standard house current. ■ Tekmar Corp., Stamford, Conn.

Circle 315 on inquiry card

#### ROOFTOP SINGLE-ZONE EQUIPMENT

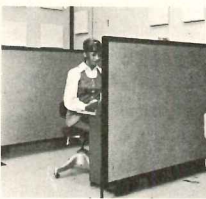


This higher capacity unit (25-through 60-ton) is curb-mounted to preserve the low silhouette (47½ in.) and enhance the smooth lines of the enclosure.

Stainless steel forced draft gas furnaces are used. ■ Nesbitt, Div. of ITT Environmental Products, Philadelphia.

Circle 316 on inquiry card

#### ACOUSTICAL PARTITIONS



Noise reduction coefficient is 60 to 70 per cent. Partitions are said to be especially efficient at higher noise frequencies. Burlap facing is available in seven colors. Fabric or perforated vinyl facing is also available. ■ Conwed Corp., St. Paul.

Circle 317 on inquiry card

#### STRUCTURAL STEEL PANELS



These lightweight, load-bearing panels have been used to replace individual steel members in a recently built apartment complex. Eight different panel sizes are being supplied by the manufacturer; panels include necessary openings for windows, doors, and heating, ventilating and air conditioning equipment. Panels, which can be erected immediately, replace individual studs welded on job site. ■

Keene Corp., Parkersburg, West Va.

Circle 318 on inquiry card

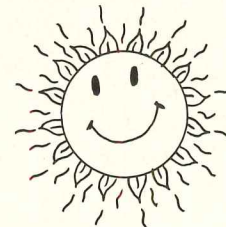
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## UP

## A

## CLIENT'S

## DAY....



...As a matter of fact most of his days.

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Daylight is measurably the best source of light for human performance.

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more products on page 171

For more data, circle 71 on inquiry card



**City of Chicago Northwest Incinerator**

Louver Manufacturer, Air Balance, Inc.  
Extrusions and Coating Application, Howmet Corp., Air Master Div.

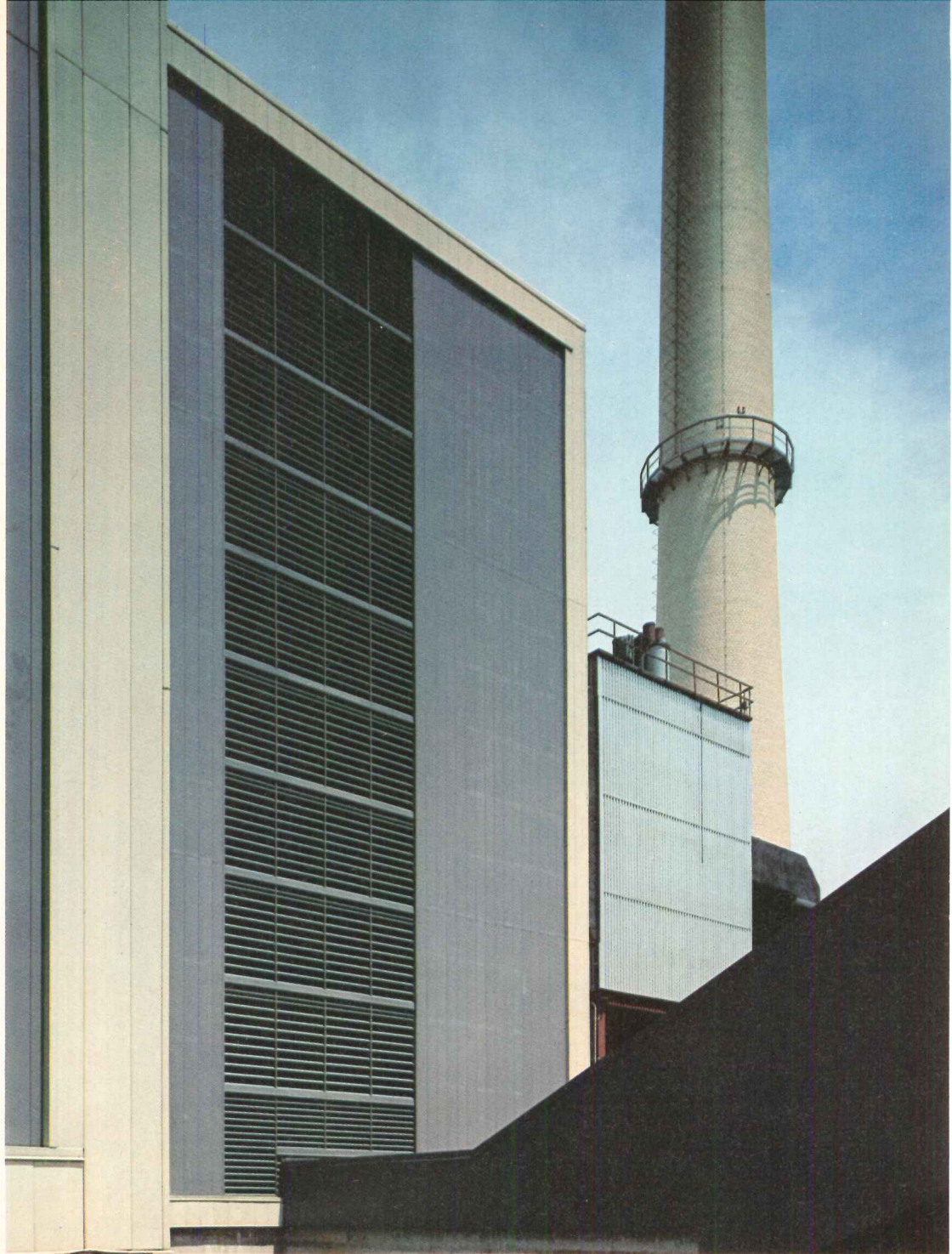


The specifications called for a coating that would last 20 years. That's why the 80 foot-high extruded aluminum louver assemblies on this incinerator plant were factory finished with long-life DURANAR 200 fluoropolymer coatings from PPG.

DURANAR 200 color coatings combine rich architectural beauty with maintenance-free surface protection rated at 20 years. They resist ultraviolet deterioration, weathering and attack by airborne chemicals and dirt. Color integrity and color life match the film stability of the fluoropolymer base.

Moderately-priced DURANAR 200 coatings offer a cost/performance advantage that is unequalled today in architectural color coatings. For spec data, see Sweet's Architectural and Industrial Construction Files, or write Product Manager, Extrusion Coatings, PPG Industries, Inc., Dept. 16W, One Gateway Center, Pittsburgh, Pa. 15222.

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## 20-year finish specs on giant incinerator plant met with DURANAR® 200 coatings

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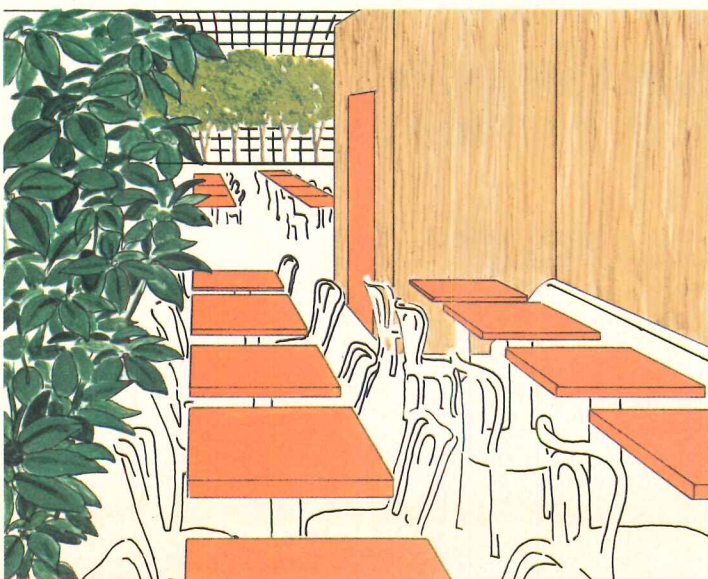
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For more details about the 30-minute Fire Door that saves money and lives, write Weyerhaeuser, Box B-8923, Tacoma, Washington 98401.



**Weyerhaeuser**



*continued from page 166*

**GLIDING WINDOW** / Features include rigid-vinyl cladding over preservative-treated wood sash and frame. Standard double units have stationary right sash and operating left sash. Concealed locking hardware, weather stripping and stainless-steel glides are factory installed. ■

Andersen Corp., Bayport, Minn.

Circle 319 on inquiry card

**CHAIN CLOSURE GATE** / Two track and roller models custom manufactured to fit in specific size openings offer options to produce large-size gates with electric operators. Aluminum track and carrier result in smooth operation. Gates are used for security or traffic control. ■ Roll-O-Matic

Chain Co., Kansas City, Mo.

Circle 320 on inquiry card

**PRE-WIRED REFRIGERATION SYSTEM** / Seven models of different capacities are offered for walk-in coolers and freezers. Each package system consists of a factory-wired condensing unit and an evaporator section anchored to a steel base. Installation

costs can be reduced up to 75 per cent, the manufacturer reports. Components are piped, sealed and interwired. ■ Nor-Lake, Inc., Hudson, Wis.

Circle 321 on inquiry card

**SELF-STACKING SHELF SYSTEM** / Functional furniture incorporates individual "cubes" which stack without tools. Components come in seven sizes and are interchangeable. Units can be arranged in three dimensions. Laminated construction finish is

white acrylic. ■ Cubicon Corp., St. Louis, Mo.

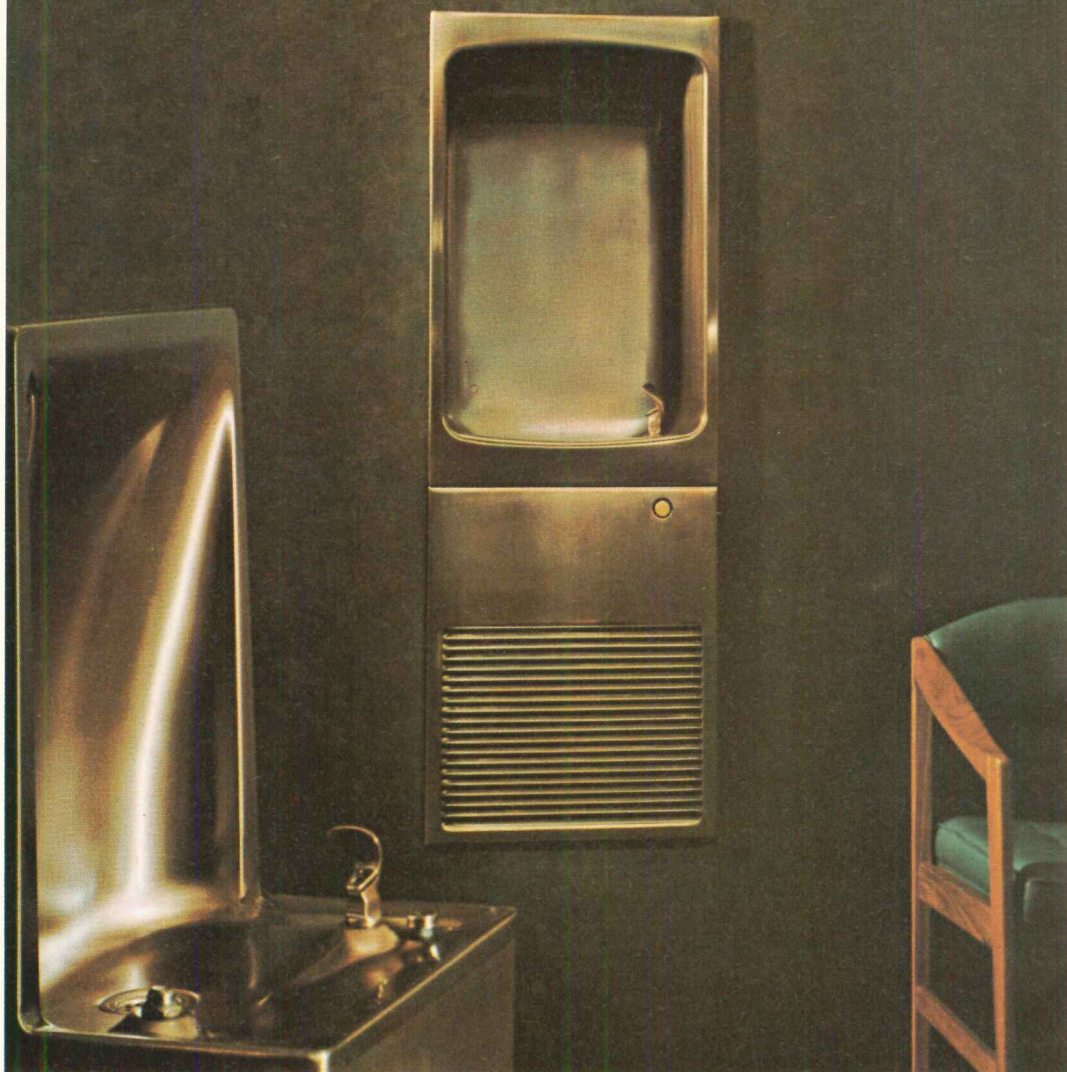
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**MODULAR FOUNDATION FORMING SYSTEM** / A one-man module is made with an interior and exterior panel secured with patented ties. Outside panel is made rigid by a steel extrusion. The forms float on concrete, sitting on and slightly into the wet, poured footings. Concrete exerts pressure from the inside. Ties hold the assembly together and keep concrete in place. ■ Kynell Industries, Inc., San Jose, Calif.

Circle 323 on inquiry card

more products on page 178

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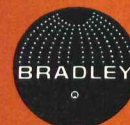
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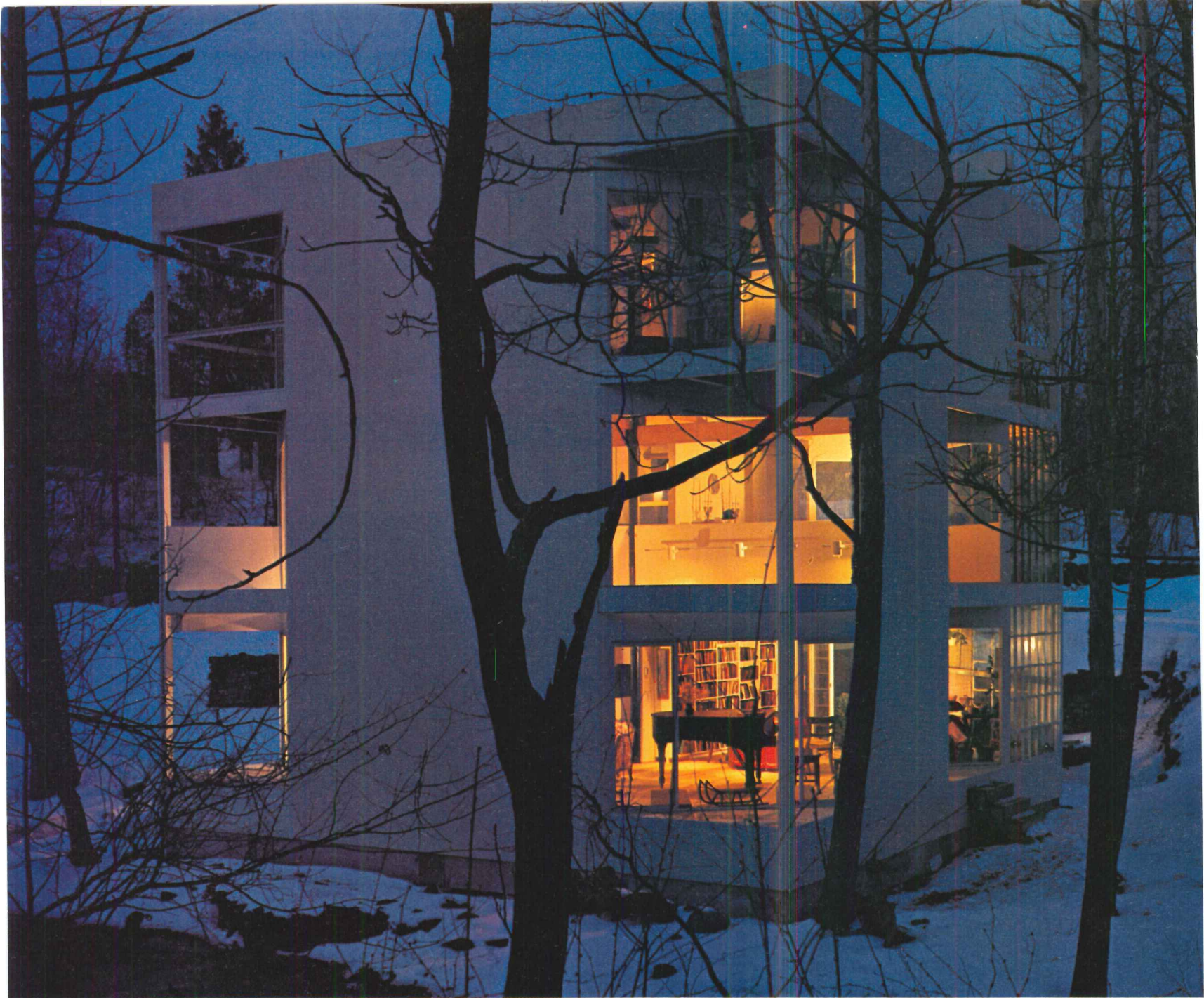
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*For more data, circle 80 on inquiry card*







(Top left) House for Rev. and Mrs. Frederick Q. Shafer; Annandale-on-Hudson, N.Y.; Architect: James B. Baker; Photographer: Otto Baitz. (Bottom left) House for Mr. and Mrs. Stephen Perl binder; Sagaponac, Long Island, N.Y.; Architect: Norman Jaffe; Photographer: Bill Maris. (Bottom center) *Islandia*, Alameda, Calif.; Architects: A. Robert Fisher, Rodney F. Friedman and Robert J. Geering; Photographer: Joshua Freiwald. (Top right) Residence in Waccabuc, N.Y.; Architects: Kroeger-Perfido; Photographer: Bill Maris. (Bottom right) Palmetto Dunes Corp., Hilton Head Island, S.C.; Architects: Copelin and Lee; Photographer: Joseph W. Molitor.



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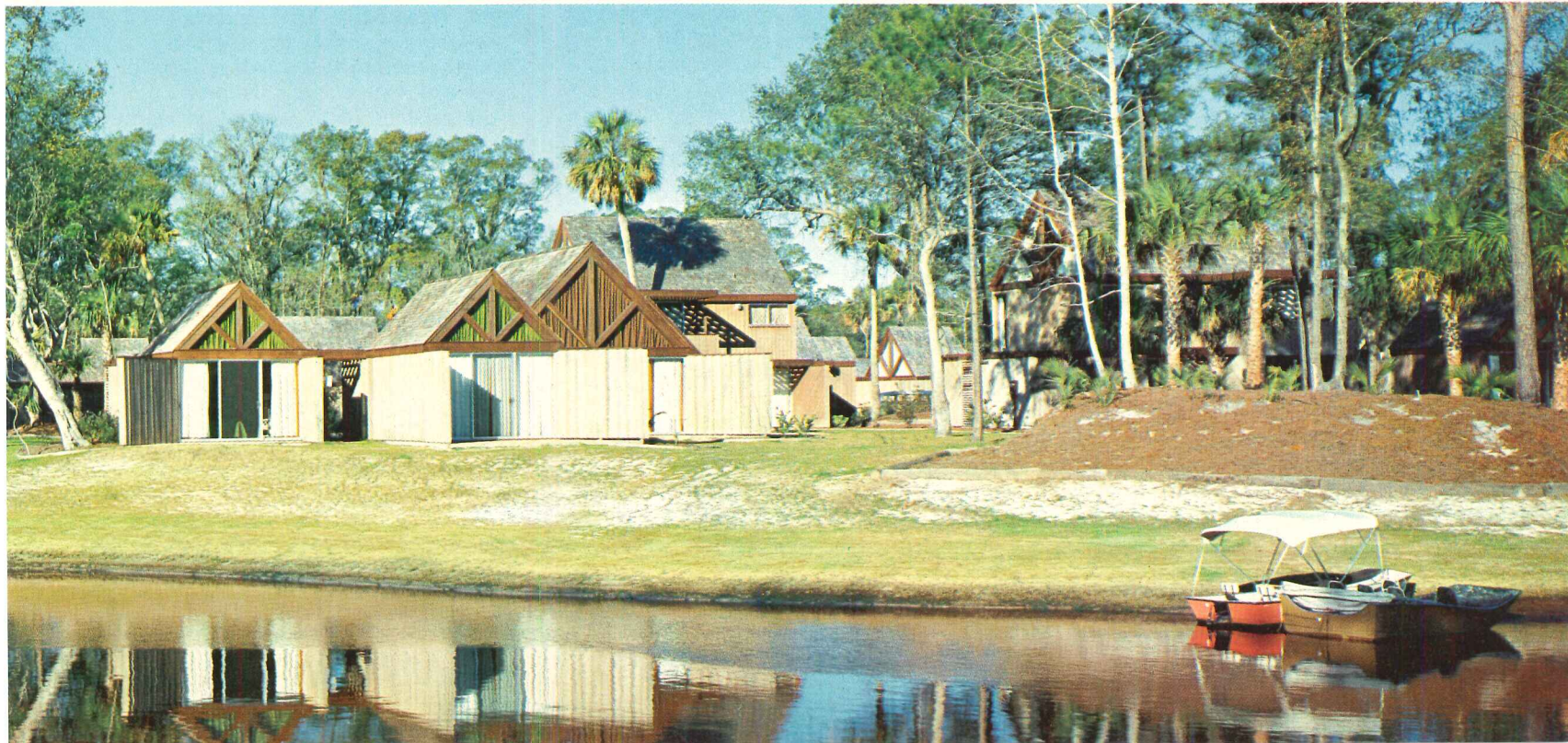
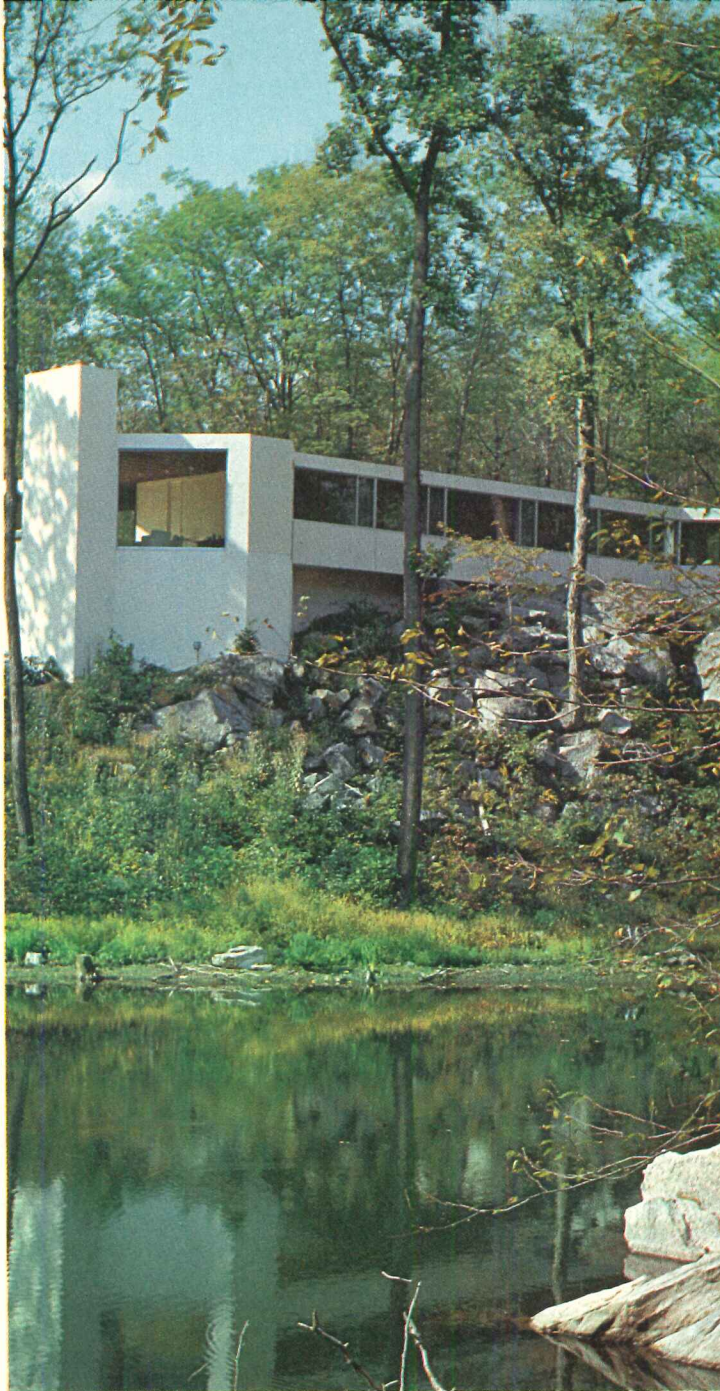
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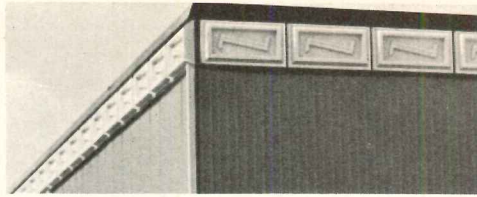
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PRODUCT REPORTS

continued from page 171



**FASCIA/SMOKE VENTS** / Uvex plastic sheet supplied by this company was used in construction. Vents, designed to resemble white translucent windows, surround the top perimeter of the building, and are secured with a heat-fused link designed to melt and release the vents in case of fire. ■ Eastman Chemical Products, Inc., New York City.

Circle 324 on inquiry card

**CORNER WASHFOUNTAIN** / Three-person use unit features foot-controlled wash spray.



Bowl is composed of stone, is reinforced with bars, and treated with epoxy resin for corrosion resistance. Bowl is available in five colors with glossy finish. ■ Bradley Washfountain Co., Menomonee Falls, Wis.

Circle 325 on inquiry card

**IONIZATION DETECTOR** / Unit reacts to combustion before fire or smoke is apparent. Invisible elements produced by even a small amount of combustion trigger an alarm. To forestall false alarms, the detector has a special checking chamber for reference, so that changes in temperature, humidity or barometric pressure won't turn in a false signal. An integral sensitivity switch permits adjustments for special room situations. The detector measures about 5-in. in diameter, can be flush- or surface-mounted and is UL-approved. ■ Honeywell's Commercial Div., Minneapolis.

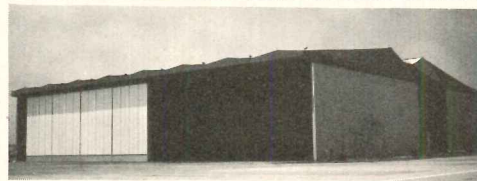
Circle 326 on inquiry card

**VANDAL-PROOF LIGHTING FIXTURES** / This collection is designed to resist tampering, vandalism, or rough treatment in general.



Wall bracket and surface-mounted units are constructed of heavy die-cast aluminum. Diffusers are injection molded polycarbonate. ■ Prescolite, San Leandro, Calif.

Circle 327 on inquiry card

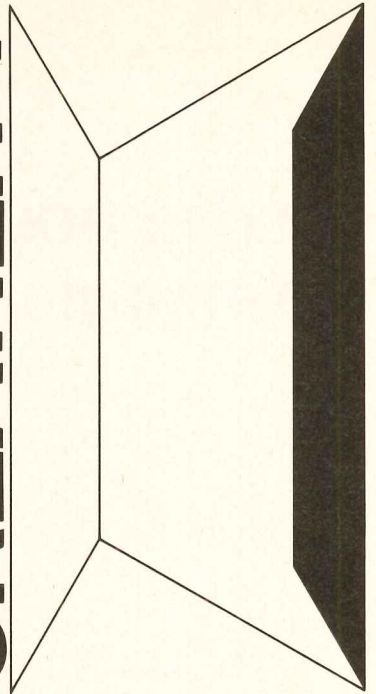


**FABRIC-FINISHED DOORS** / Designed especially for airport use, where metal doors interfere with electronic signals, disrupting communications between ground personnel and aircraft, steel doors covered with vinyl-coated fabric demonstrate ability to deflect the reflection of electronic waves. ■ Air-Tech Industries, Inc., Clifton, N.J.

Circle 328 on inquiry card

more products on page 183

**CREATILITY**



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For more data, circle 90 on inquiry card



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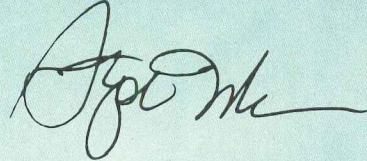
When you're one of the most luxurious living complexes in Miami Beach, everything's got to be just right. And that includes the faucet fixtures.

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What Delta faucets have done for Seacoast Towers, they can do for you. Write Delta Faucet Company, a Division of Masco Corporation, Greensburg, Indiana 47240.



President of Alexander Muss & Sons, Inc.  
Builders of Seacoast Towers.

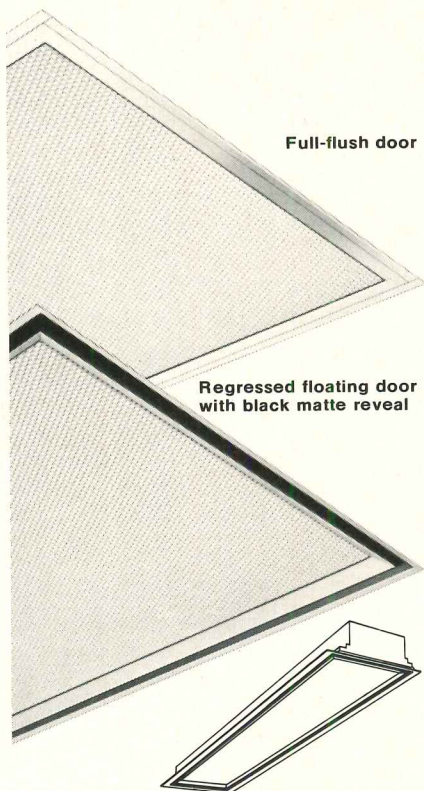
## Delta Faucets. They're washerless.



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**LPI non-air  
extruded aluminum  
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Crisper by design. With clean, precise, anodized aluminum extrusions providing extraordinary beauty to complement the excellent lighting performance of these LPI troffers. Available for an unusually wide range of application requirements: choice of regressed floating door or full-flush door . . . for all common ceiling systems . . . individual or continuous-row installation . . . with a variety of optional diffuser types. In 1'x4' and 2'x4' sizes for two lamps. Or 2'x2' and 2'x4' sizes for four lamps. Plus matching squares (2'x2', 3'x3', and 4'x4'). All troffers are also offered with steel exposed trim as well as extruded aluminum. And all have LPI's rugged construction features including diffuser frames with positive mechanical latches that permit hinging from either side (or complete removal) . . . "P" type ballasts . . . and much more. Write for complete specifications and photometric data.



**LPI air supply  
and return  
extruded aluminum  
troffers.**

Beautiful matchmates for the LPI non-air troffers described at left, identically styled in crisp extruded aluminum or steel trim and available with the same choice of diffusers, ceiling system mounting arrangements, and sizes (including squares). The regressed floating door is identical in appearance, but in this series the flush door style "floats" to permit the air supply function. Both door styles have attractive black matte reveal. You'll find the same high quality electrical and mechanical features too. These LPI air supply and return troffers may be installed with either a side-mount or saddle-type air diffuser. Write for complete specifications, including photometric and air-handling data.



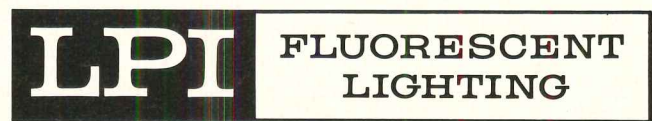
**LPI air supply  
and heat removal  
extruded aluminum  
troffers.**

This LPI extruded aluminum or steel trim troffer series is available for combined air supply and heat removal, or for heat removal only. Other choices—with regressed or flush floating door, diffuser types, ceiling system mounting arrangements, and sizes available are the same as for the non-air and air supply troffers described at left. This series installs with either a side mount or saddle type air diffuser. For heat removal, air flows through the troffer, drawing off lamp and ballast heat into a negatively pressurized plenum. Control is achieved easily with an adjustable damper at each end of the troffer. Write for complete specifications, including photometric and air-handling data.

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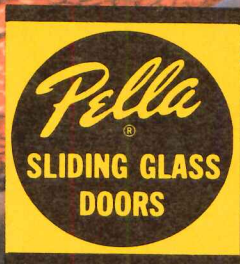


Lighting Products Inc., P.O. Box 370, Highland Park, Ill. 60035

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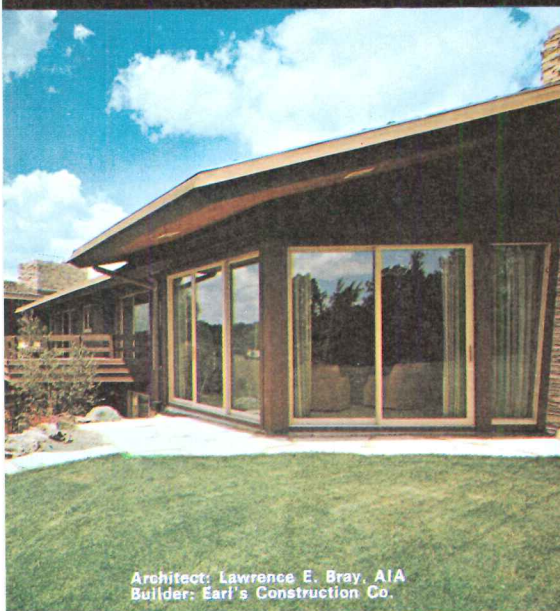
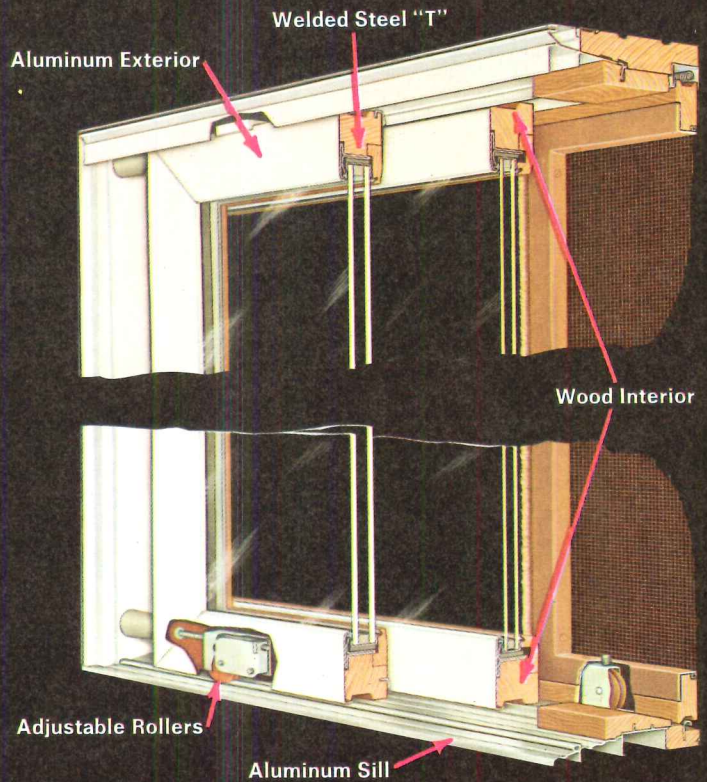




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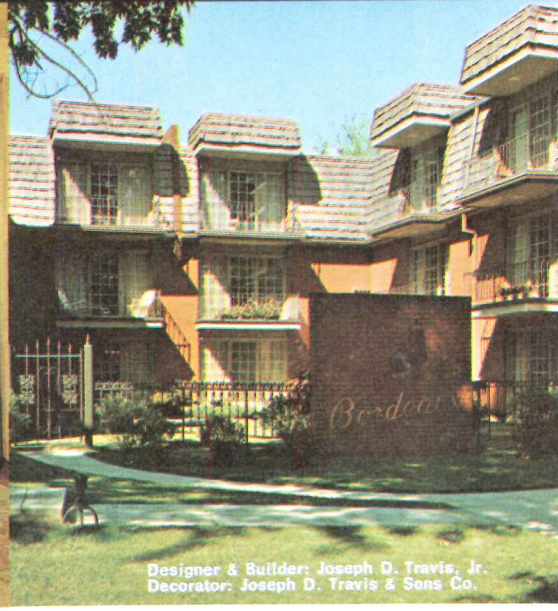
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For more information, mail this card, or phone your PELLA Distributor — look under "Doors" in the Yellow Pages — or see SWEET'S Architectural File. **ROLSCREEN COMPANY, PELLA, IOWA 50219**

PELLA MAKES QUALITY WINDOWS, FOLDING DOORS AND SLIDING GLASS DOORS



continued from page 178

**DOUBLE-GLAZED WINDOW** / One transparent



metallic coating reflects the sun's heat and light and conducts electricity to warm the glass area when desired. Blanket of air between two glass panels insulates against exterior heat, cold and noise. Window is designed for commercial structures requiring precise environmental conditioning. ■ PPG Industries, Inc., Pittsburgh.  
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**ELECTRONIC CALCULATOR** / Machine weighs



nine ounces and fits into a shirt pocket. Battery-powered, it performs all trigonometric and logarithmic functions, square root, arithmetic and other operations, each with a single key-stroke. ■ Hewlett-Packard, Cupertino, Calif.  
Circle 330 on inquiry card

**DOOR WEATHER STRIPPING SYSTEM** / De-

signed for residential doors, system reduces air infiltration and eliminates water leakage. Components include the manufacturer's weather strip, featuring a wipe and compression seal of flexible plastic for side jambs and header, and an integral pile corner seal. The door bottom has a double seal comprised of dual durometer vinyl and polyurethane clad foam in a single unit. The system exceeds sealing requirements of HUD Operation Breakthrough criterion. ■ The Schlegel Mfg. Co., Rochester.  
Circle 331 on inquiry card

**CHAIRS** / Ten models in contoured lines are



available: swivel tilt with and without arms; swivel non-tilt conference with a memory return, with and without arms; and fixed base conference with and without arms. Side chairs are offered. Fabric and vinyl upholstery are available. ■ All-Steel  
Equipment Inc., Aurora, Ill.  
Circle 332 on inquiry card



**PLASTIC SOUND-ABSORPTIVE CEILING** / Resonance system allows for greater absorption of low noise, while still absorbing high-frequency sounds. Ceiling comes in various slat widths, shapes, modules and colors. ■ United Lighting and Ceiling Corp., Oakland, Calif.  
Circle 333 on inquiry card  
more products on page 186

For more data, circle 87 on inquiry card

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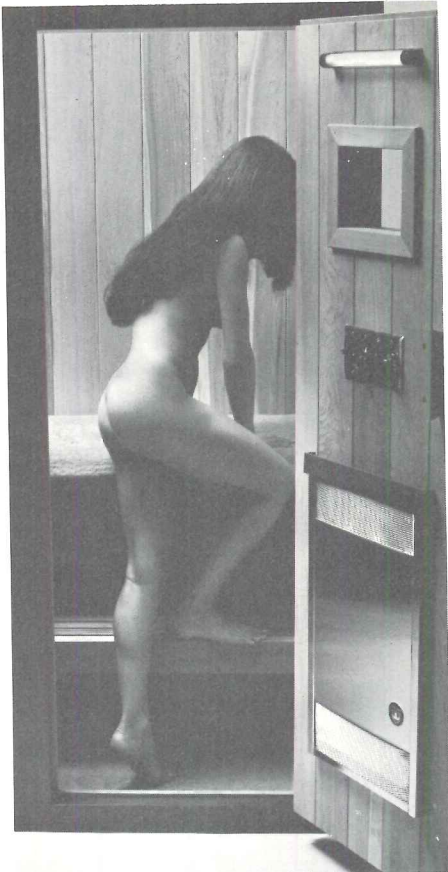
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PRODUCT REPORTS

continued from page 183



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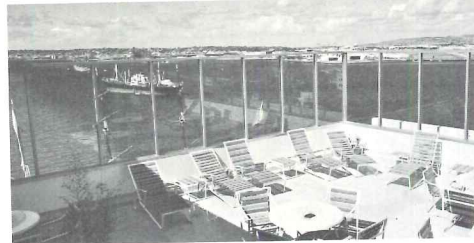
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COMPANY

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**Distributor inquiries invited.**

For more data, circle 81 on inquiry card



**TEMPERED SAFETY GLASS** / Wind partition has high impact resistance. Glass disintegrates into relatively small pieces when resistance limit is reached. ■ Libbey-Owens-Ford Co., Toledo, Ohio.

Circle 334 on inquiry card

**GERIATRIC FURNITURE** / Chairs, sofas, beds and tables especially designed for the elderly are available for immediate delivery from Sweden. Adjustable high-back easy chair adjusts to nine different sitting positions for the correct sitting height, depth, angle, stiffness and contour of filling. ■ Skandi-Form, Inc., Washington, D.C.



Circle 335 on inquiry card

**CAST CONCRETE DRINKING FOUNTAIN** / Reinforced concrete shell resists abuse. Exposed aggregate exterior can be tinted. Receptor, bubbler and shield are solid bronze and heavily chromed, and recess into top of concrete shell. Hand-push plate, push button, or foot controls are available. Unit is anti-freezing. ■ Murdock, Inc., Cincinnati.

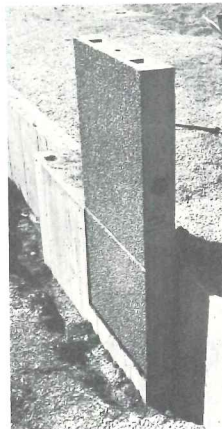


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**SOUND-RETARDANT DOORS** / Large 42-decibel doors measuring 5 ft by 12 ft are available in a variety of finishes and with hardwood veneer, medium-density overlay, or high-pressure laminate surfaces. Doors were designed specifically to meet radio and television facilities' needs for size and sound-resistance. ■ Weyerhaeuser Co., Tacoma, Wash.

Circle 337 on inquiry card

**COMPONENT BUILDING SYSTEM** / Walls, floors, ceiling and roof deck are the basic structural components, constructed of pre-cast concrete. System features a "stitch" wall feature which eliminates the need for conventional bracing and post tensioning. Basic "stitch" unit is shown above. Initial stitch wall units support first floor bearing walls. Second tier of stitch walls is bolted to the upper half of the bearing walls. Floor planks are set between the bearing walls, and the cycle is repeated for each additional story. ■ Spancrete Industries Inc., Milwaukee.



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**Georgia-Pacific**



GYPSUM DIVISION, Portland, Ore. 97204

Architects: Charles Luckman & Associates

General Contractor: Hoffman Construction Co., Portland, Oregon



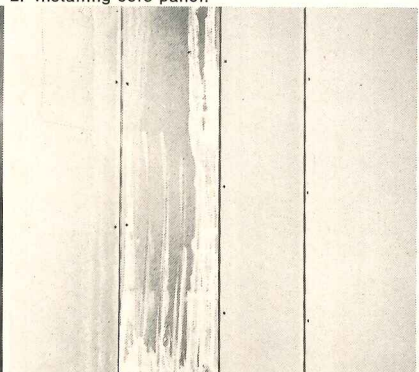
1. Installing floor track.



2. Installing core panel.



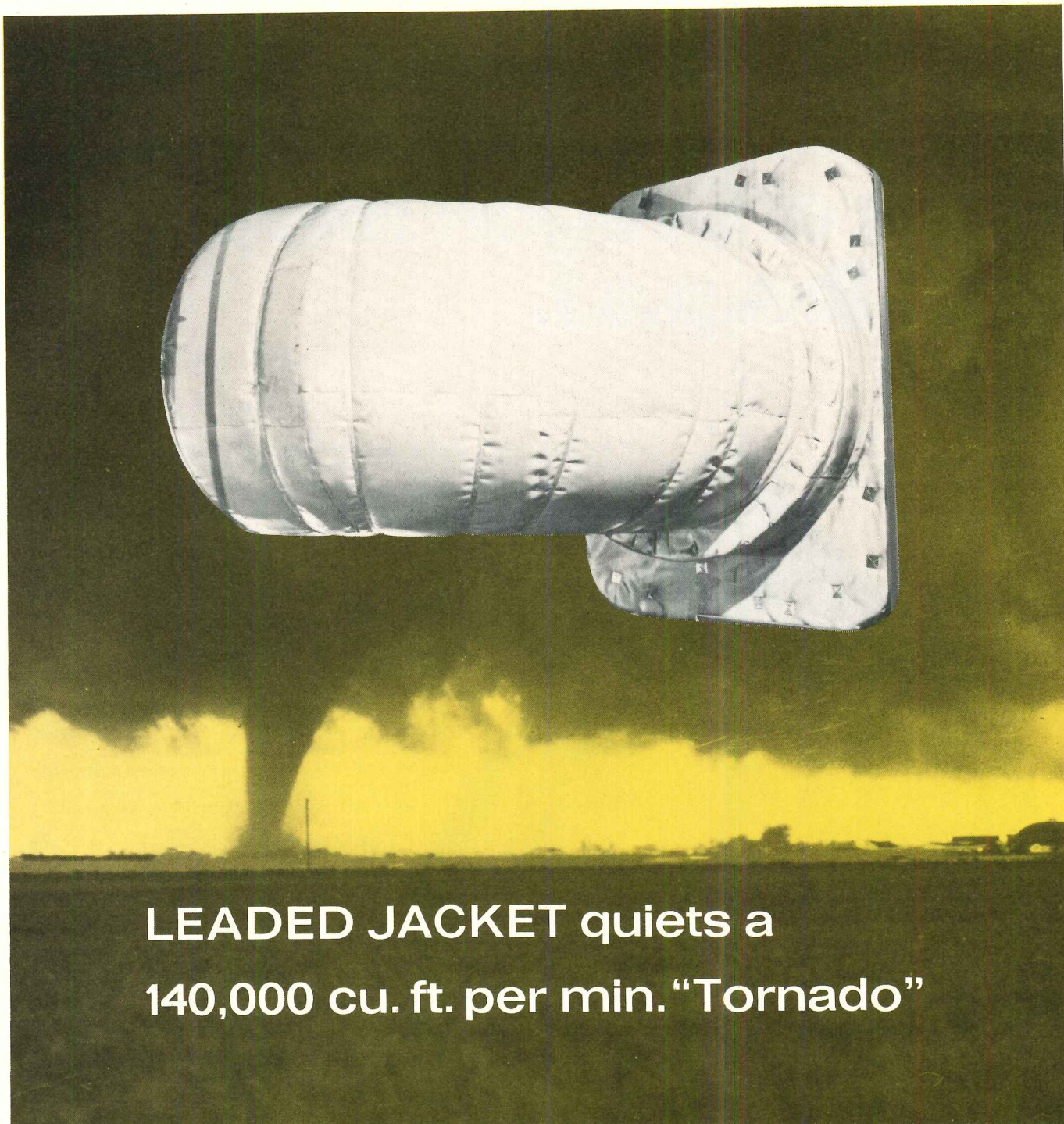
3. Attaching core to T-spline.



4. Applying finish layers.

For more data, circle 92 on inquiry card





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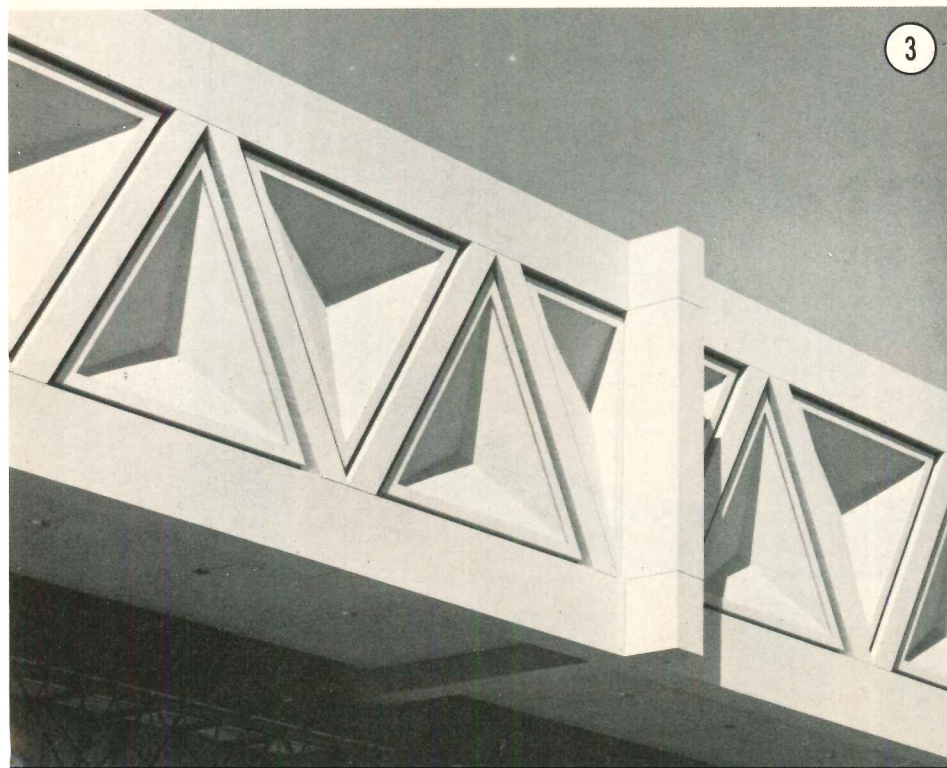
For detailed information, see Sweet's Section 5.3/In. Or write for Catalog 31-2 to Inland-Ryerson Construction Products Company, Dept. C, 4033 W. Burnham St., Milwaukee, Wis. 53201.

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*continued from page 70*

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*Circle 409 on inquiry card*

**LUMINOUS CEILINGS** / A leaf-design in textured transparent acrylic is illustrated in a brochure. Standard leaf size in acrylic is 6 in. by 9 in. Colors available are ruby, turquoise, vermillion, and mint green. ■ Luminous Ceilings, Div. of the Celotex Corp., Chicago.\*

*Circle 410 on inquiry card*

**AIR CURTAIN** / Year-round unit for door entrances of high-traffic commercial buildings is described in a 4-page catalog. Features include a discharge grille with adjustable louvers which allows the air pattern to be regulated to specific door requirements and weather conditions. ■ Emerson Electric Co., St. Louis, Mo.

*Circle 411 on inquiry card*

**REFLECTIVE WINDOW FILMS** / Two types are especially designed for use where maximum visible light is as important as reduction of solar heat and glare. The films are particularly suited to tinted glass to minimize additional light reduction when used to cut down on solar loading. ■ 3M Co., St. Paul, Minn.\*

*Circle 412 on inquiry card*

**INSULATING CONCRETE** / Ease of installation and fire-resistive ratings for roof deck systems are detailed in a 4-page data sheet. ■ Perlite Institute, Inc., New York City.\*

*Circle 413 on inquiry card*

**STRUCTURAL GLUED LAMINATED TIMBER** / Design concepts in laminated wood, solid and laminated wood decking data, beam and arch design procedures and appearance grade definitions are explained. ■ American Institute of Timber Construction, Englewood, Colo.

*Circle 414 on inquiry card*

**DECORATIVE GRATING AND EXPANDED METALS** / Applications, including fascia panels, balcony railings, security screens, walkways and platforms, are illustrated in a 20-page catalog. ■ United States Gypsum Co., Chicago.\*

*Circle 415 on inquiry card*

**ROOFTOP HVAC EQUIPMENT** / A thorough compilation of design and application data covering specifications and layout details is provided in a 70-page technical brochure. Complete performance criteria is presented encompassing a wide range of capacities. ■ Governair Corp., Oklahoma City, Okla.

*Circle 416 on inquiry card*

**PNEUMATIC TUBE SYSTEMS** / Advantages of different types of systems are discussed in an 8-page circular. Descriptions of carriers and terminals are included. ■ Powers Regulator Co., Skokie, Ill.

*Circle 417 on inquiry card*

**PRE-HUNG SEALED DOORS** / Detailed specifications of custom-designed and manufactured doors, gates and seals which provide efficient barriers to dust, water, gas, contaminants, noise and/or pressure differential are given in an 8-page brochure. Applications include test chambers, clean rooms and laboratories. ■ Presray, Pawling, N.Y.\*

*Circle 418 on inquiry card*

**PREFABRICATED WOOD SHELVING** / Solutions to shelving problems are included in an 8-page catalog. Technical specifications for a line of shelving are given. ■ Myers Industries, Inc., Decatur, Ill.

*Circle 419 on inquiry card*

**BUILT-UP ROOFING SYSTEMS** / Features in this 1972 manual include a description of the company's roof inspection and service contract, a systems index that includes roof membranes, vapor barriers, and flashings, and product descriptions. ■ Jim Walter Corp., Tampa, Fla.

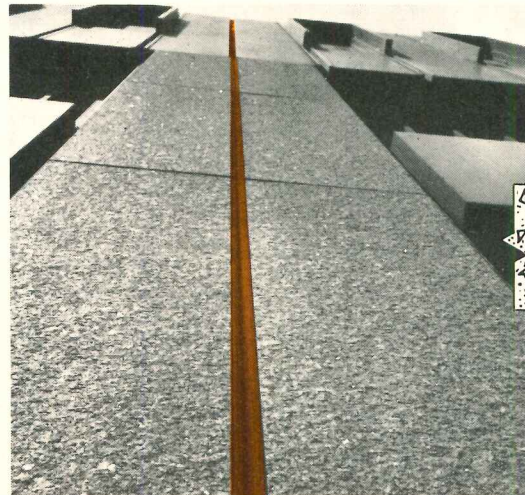
*Circle 420 on inquiry card*

\* Additional product information in Sweet's Architectural File.

*more literature on page 208*

## ACMASEAL® keeps expansion joints free of water ...and maintenance

With ACMASEAL preformed joint seals, expansion joints are permanently sealed from water, corrosive elements, and incompressible solids. Accommodating movement and maintaining seal over wide temperature changes, ACMASEAL reduces joint maintenance... lengthens total structure life. Standard architectural size seals and sealing systems available for 3/32" to 3" movement in parking ramps, sidewalks and roof, traffic bearing and control joints, as well as joints for perimeter, vertical, horizontal interior and exterior walls.



Elastomeric ACMASEAL compresses and expands as ambient temperatures open and close the joint. Constant pressure is exerted against joint sides to maintain seal. At no time does the elastomeric extrusion extend beyond the joint surface.



Virtually maintenance-free ACMASEAL is the economical answer to many expansion joint sealing problems. Acme engineers will help specify to your particular requirements. For full technical data and specifications, write...

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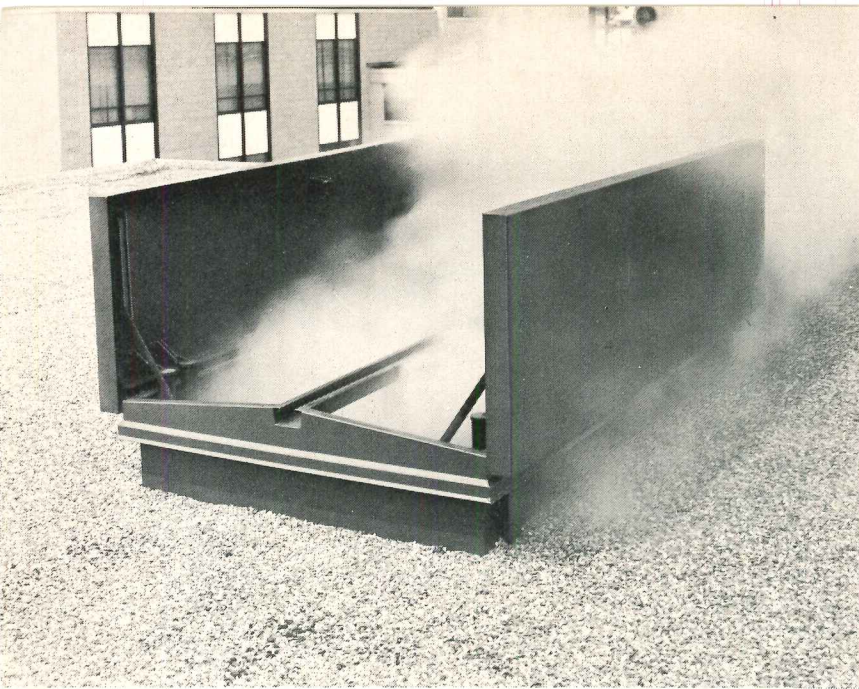
HIGHWAY PRODUCTS CORPORATION

33 CHANDLER ST., BUFFALO, N.Y. 14207 ■ (716) 876-0123

Products illustrated are covered by U. S. and Canadian patents.

*For more data, circle 95 on inquiry card*





## Your Automatic Fire Vent should do a lot more than just vent.

Certainly, installation of automatic fire vents on large, single-story buildings is vitally important protection against a catastrophic fire loss. Prompt venting, vertically through the roof, confines a fire and removes smoke for safer, more effective fire fighting.

However, the right automatic fire vent for your building should do a lot more than just vent. Since the vent may be installed over critical work areas, costly machines, or areas where valuable merchandise or supplies are stored, it must be designed so it won't open accidentally due to wind or other conditions. It should be fully insulated and gasketed to seal out rain and snow. For minimum maintenance, long life, and complete reliability, it should be ruggedly constructed with covers and curbs of not less than 14 gauge steel or 11 gauge aluminum.

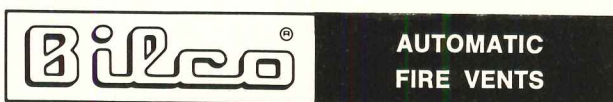
### How Bilco fire vents work



At Bilco, we build such a vent—a vent that does everything you have a right to expect of it. And we back it with our reputation as the leading manufacturer of horizontal doors. Compare a Bilco Vent with any other on the market, and you'll see what we mean. Meanwhile, write for complete information and a free copy of the National Fire Protection Association booklet, "Guide to Smoke and Heat Venting."

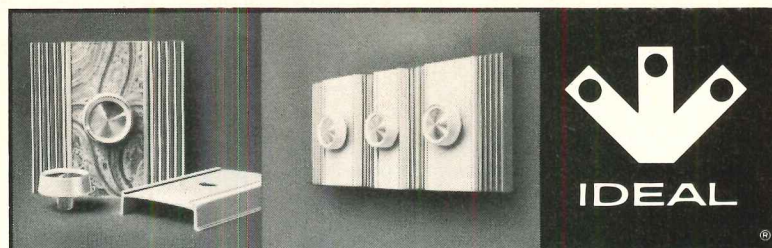
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The BILCO Company, Dept. AR-32 New Haven, Conn. 06505

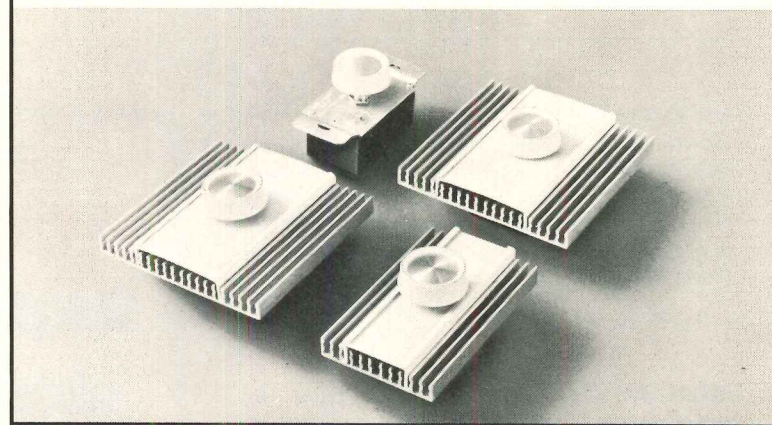
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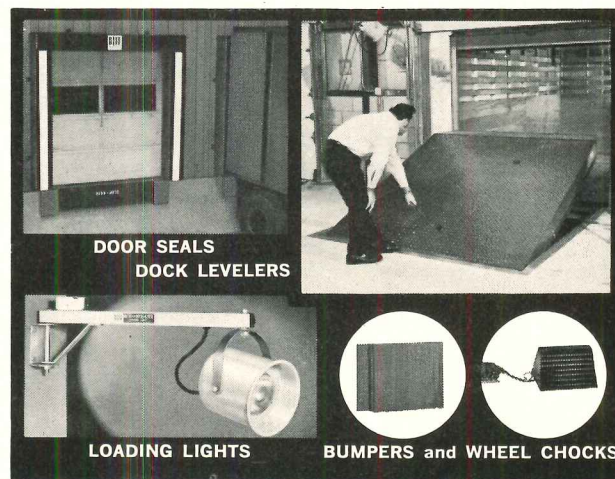
## Incandescent, Fluorescent Dimmer Switches from Ideal.

14 models of incandescent and fluorescent dimmer switches to handle virtually every requirement. Voltage compensated, solid-state circuitry. Complete, self-contained units. From economy units to attractive Decorator Styled designs. Send for your FREE dimmer switch reference file.

IDEAL INDUSTRIES, INC., 1328-C Becker Pl., Sycamore, Ill. 60178  
In Canada: IDI Electric (Canada) Ltd., Ontario



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## RITE-HITE LOADING DOCK EQUIPMENT

Solve all your loading dock design problems with one quality source. Rite-Hite pioneered efficient mechanical dock leveling equipment over 25 years ago and now offers dozens of models to meet your exact requirements. Also choose from Rite-Hite Door Seals, Rite-Hite Loading Lites, Rite-Hite Dock Bumpers and Wheel Chocks for total dock safety. Sold and serviced coast-to-coast.

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IN CANADA: Matthew Moody Ltd.  
251 St. Louis Street, Terre Bonne, P.Q., Canada

Visit Us At Booth 130, Material Handling Show

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After you've gone to so much trouble to make your patients, staff and visitors comfortable, it would be a shame to shock them with your carpet.

Because no matter how beautiful or luxurious a carpet may look, it will still build up static electricity. Which you can feel when you open a door, turn on a light or touch someone.

It's not enough to harm you. Just enough to continuously annoy you. That's why the architects and interior designers of Deaconess Hospital specified Sequoyah Industries Parthenon® carpeting line, a blend of 68% Zefkrome® acrylic, 29% modacrylic and 3% Zefstat® metallic yarn for static control.

Unlike other anti-static control devices that may wear out or wash out, Zefstat anti-static yarn is the only one backed by a guarantee to provide comfort from static. For five years or the life of the carpet, under normal conditions.

Of course no one will see or feel Zefstat in the finished carpet. Because we blend it into our nylon and acrylic yarns during yarn production.

What you, your patients, staff and visitors will see is a certified quality carpet, tested and approved for hospital use by Dow Badische. You see, before our label goes on we subject samples of the carpet to rigorous testing for all sorts of wear and tear. So that when you see our

label you can be assured that the beauty of your carpet isn't superficial but is built in for long life under hospital conditions.

Anything less than that would be shocking.

For more information on how Zefstat can make your hospital more comfortable, send for our booklet on Static Control for Hospitals. Write Dow Badische Company, Dept. 105, 350 Fifth Avenue, New York, New York 10001.

**ZEFSTAT** DOW BADISCHE

THE ONLY ANTI-STATIC CARPET YARN GUARANTEED FOR 5 YEARS

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**We've taken some of the shock  
out of getting a shot at Deaconess Hospital.**



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## Ask Maintenance Manager Mallard Our Pitt-Glaze® Coating System Tackles Tough Printing Ink— Keeps Maintenance Costs Down



At the Charlotte News and Observer—morning and evening newspapers of the Knight Publishing Company, Charlotte, North Carolina—Gordon Mallard, Jr. needed a coating that would fight the ravages of printing ink, keep his maintenance costs down and make a show place out of the various interior areas of the publishing company's new building. The answer was the polyester-epoxy *Pitt-Glaze* Coating System—the hard, tile-like finish that even stubborn printing ink won't stain. A *Pitt-Glaze* ivory colored glossy finish was applied on the walls, pillars and ceilings

in such hard-use areas as the press room, the colored ink mixing room, the wash-rooms, stairwells and cafeteria.

As Mr. Mallard describes the results, "printing ink catches paper dust during the printing and folding operations, causing the dust to cling to walls and the ceiling. Since the *Pitt-Glaze* Coating surface is smooth and monolithic, it does not attract the dust and dirt as much as do walls painted with conventional paints. Printing ink hand prints and smudges are easily washed off the *Pitt-Glaze* finish, leaving it clean and glossy." Visitors have proclaimed

his press room, "the cleanest ever seen."

If our *Pitt-Glaze* Coating System can make Mr. Mallard's press room "shine and sparkle," think what it can do to those stubborn stains that dull your day and play havoc with your maintenance costs.

There's informative, descriptive literature available with no obligation. Write *Pitt-Glaze* Coating, PPG Industries, One Gateway Center, 3W, Pittsburgh, Pa. 15222.

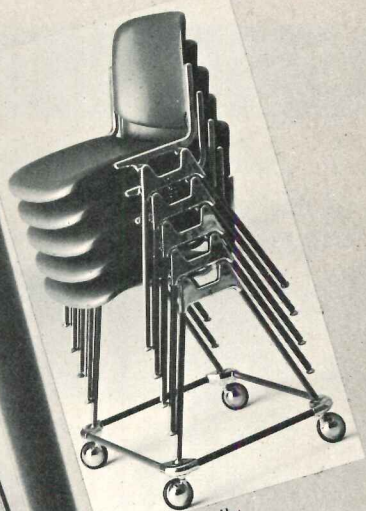
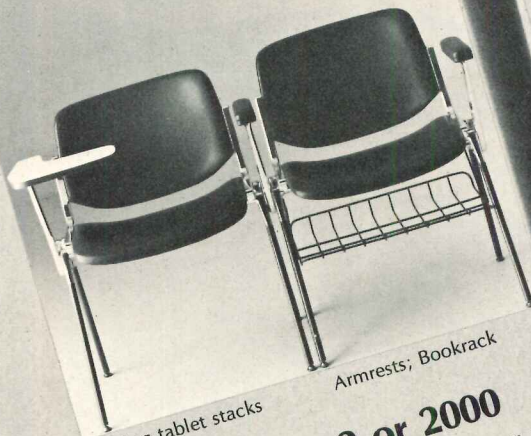
PPG: A Concern for the Future

**PITTSBURGH® PAINTS**

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**No matter if your meetings are for 2 or 2000  
You need the versatile Castelli/Krueger 106 chairs**

The Castelli 106 is not just another chair. It's a chair designed with aesthetic European styling and seating comfort that appeals to everyone, regardless of how small or large the group. Highly versatile, you can stack them, gang them, easily add on features such as armrests, tablet arm, bookrack and others. Write for our full color Castelli Brochure, you'll readily appreciate why the 106 is not just another chair.

Assembled and solely distributed by

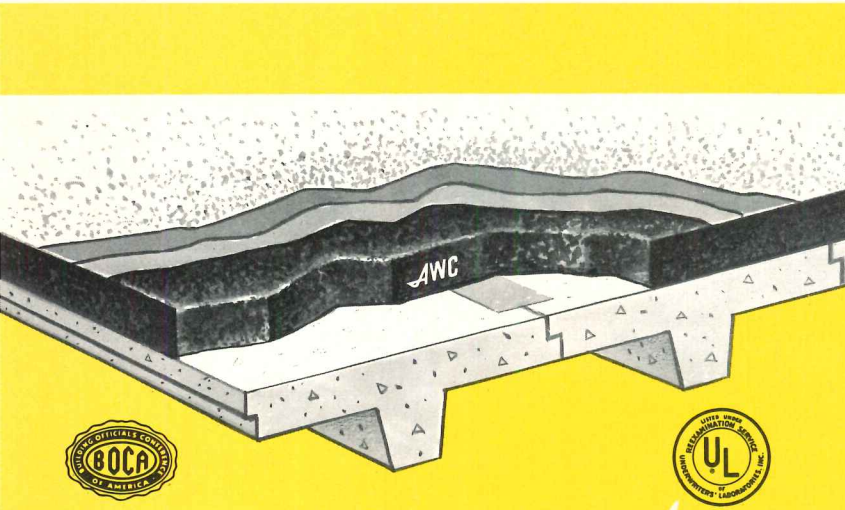
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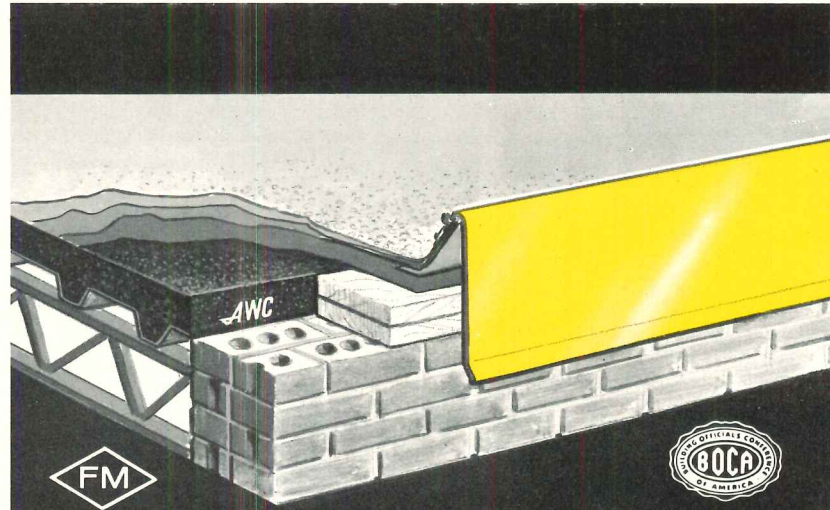


# Four typical insulation systems that demonstrate All-weather Crete's multi-functional capabilities.



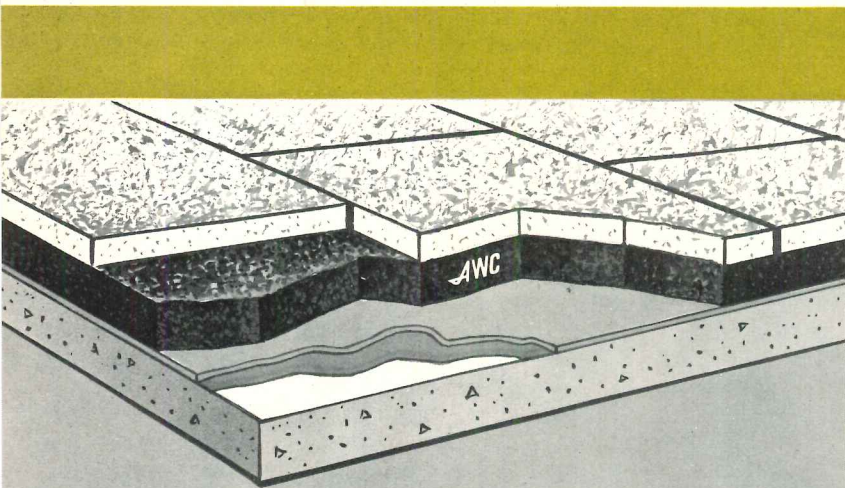
## 2 HOUR FIRE RATED ROOF DECK

All-weather Crete seamless insulation (K factor .40) is applied over pre-tensioned concrete units. U/L Design No. RC19. It can be sloped to drains, eliminates camber and uneven joints. This provides a smooth even surface for immediate conventional built-up roofing.



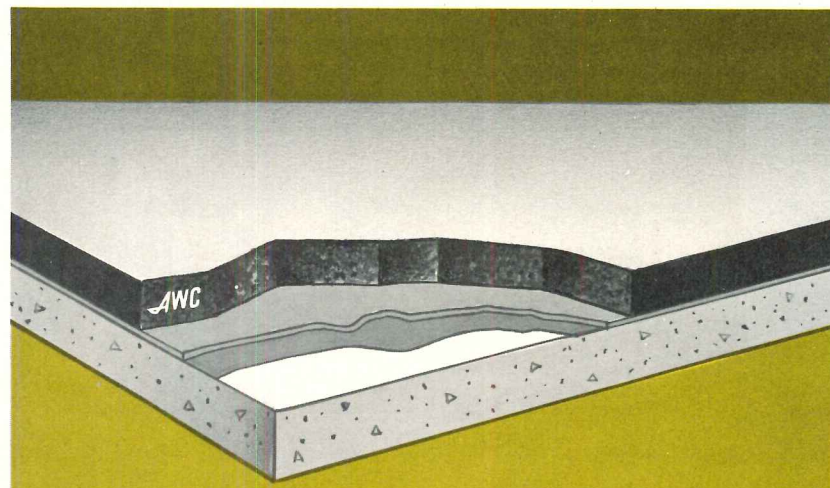
## CLASS 1 METAL DECK CONSTRUCTION

This tested roof deck insulation system meets Factory Mutual requirements for fire hazard and wind resistance. With special Silbrico adhesive, it is an approved U/L deck (No. 360 R13.15). The Silbrico Fascia System shown above also meets Factory Mutual roof perimeter flashing requirements of Data Sheet 1-49 to resist wind uplift of 60/Lin. Ft. of wall. The perfect combination for maximum protection.



## PLAZA DECK

There are eight widely used All-weather Crete plaza systems. Not only does AWC provide the most effective available insulation, but it protects the water proofing membrane keeping it ductile and active for the life of the system.



## ROOF DECK OF THE FUTURE

Over a decade of designing, testing and practical application have produced this new Silbrico system. All-weather Crete is placed over the water proofing membrane protecting it from severe thermal change and climatic elements which are the major causes of roof failure. All-weather Crete insulation has the properties of being unaffected by these severe conditions. Consult Silbrico Corporation regarding this new concept.

For complete information, specifications and detail diagrams regarding these and many other successful AWC systems, write Silbrico Corporation, 6300 River Road, Hodgkins, Illinois 60525. References: Sweets catalog and Spec Data.



For more data, circle 102 on inquiry card





*Why steel joists were the right answer to this building need*

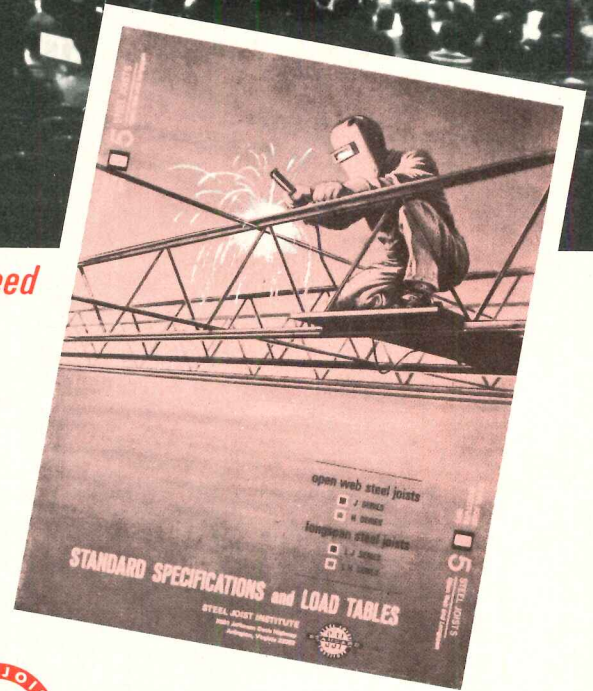
## NO INTERIOR SUPPORTS. NOT A CRANED NECK IN THE HOUSE!

Sit anywhere in Hofheinz Pavilion at the University of Houston, and you get a clear view of the action. There are no interior columns in this multi-purpose structure, thanks to the space-spanning, open web steel joists used for roof support.

Whenever you must span large areas, you can do it with greater speed, ease and economy with lightweight, high-strength open web steel joists. In fact, these structural members are so versatile, they can be used effectively in *any* type of building—low-rise, high-rise or otherwise. They go in fast, and are available in a wide selection of lengths, depths and load-carrying capacities.

Complete technical information on open web steel joists is contained in our Specifications and Load Tables for Open Web Steel Joists and Longspan Steel Joists.

Send coupon now for your free copy.



### STEEL JOIST INSTITUTE

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Please send me a copy of your Specifications and Load Tables.

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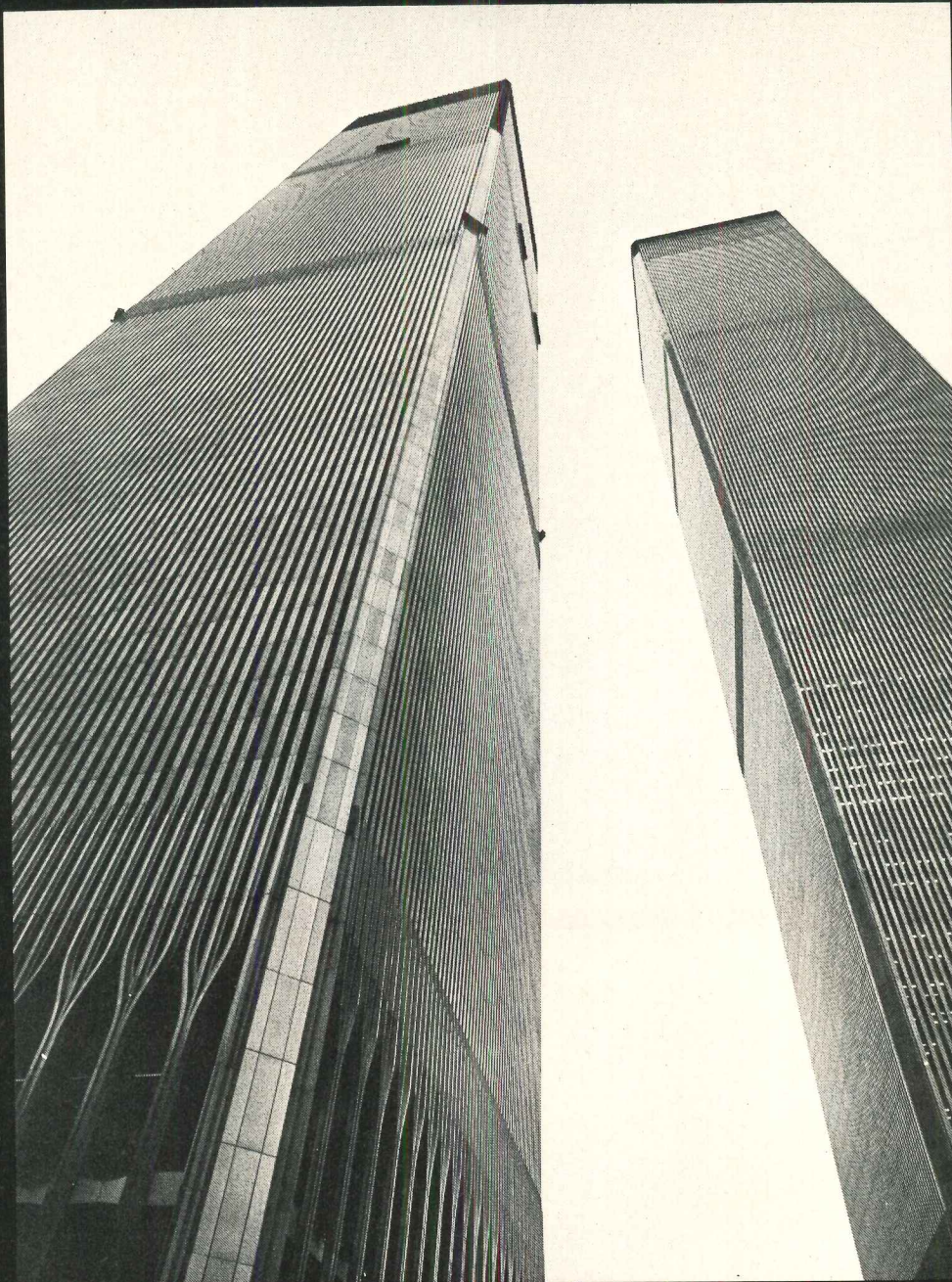
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71-004



This is the World Trade Center in New York City. It is one of the biggest, most expensive building complexes in the world. It has 43,600 windows. And every single one of them is sealed with LP<sup>®</sup> polysulfide polymer.

We rest our case.



Suffice it to say that nobody in his right mind would skimp or accept anything less than the very best in a project costing upwards of \$700,000,000.

Which explains why more than a decade of in-depth study went into every conceivable aspect of this monumental complex which has been described as "a preview of 21st Century construction methods."

Selecting the proper sealant for the World Trade Center's twin 110-story towers was an arduous task. But after the data had been thoroughly interpreted, this decision was made—the sealant must be one based on Thiokol's two-part LP<sup>®</sup> polysulfide polymer.

The choice was an excellent one for many reasons. First of all, no other kind of sealant had built up such a successful track record—more than 20 years of performance-proven dependability. Secondly, every sealant that bears Thiokol's exclusive Seal of Security has proven that it can withstand everything the

elements can dish out.

For instance, sealants based on Thiokol's LP<sup>®</sup> polysulfide polymer have demonstrated that they can adhere to glass and aluminum in spite of stretching and contracting joints. They have withstood simulated environmental changes varying from -15° to 158°F.

Needless to say we're proud that a sealant based on our formula measured up to World Trade Center expectations. And, quite frankly, we're confident that such a sealant will measure up to yours.

For more information, including detailed comparisons between sealants based on Thiokol's LP<sup>®</sup> polysulfide polymer and eight other kinds of sealants, write: Dan Petrino, Thiokol Chemical Corporation, P.O. Box 1296, Trenton, N.J. 08607.



*Thiokol*

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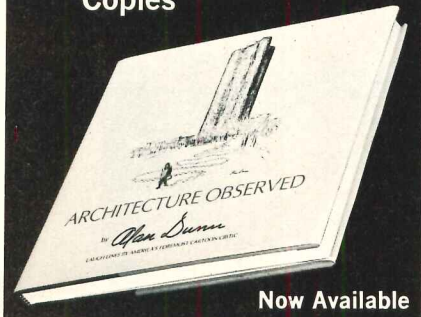
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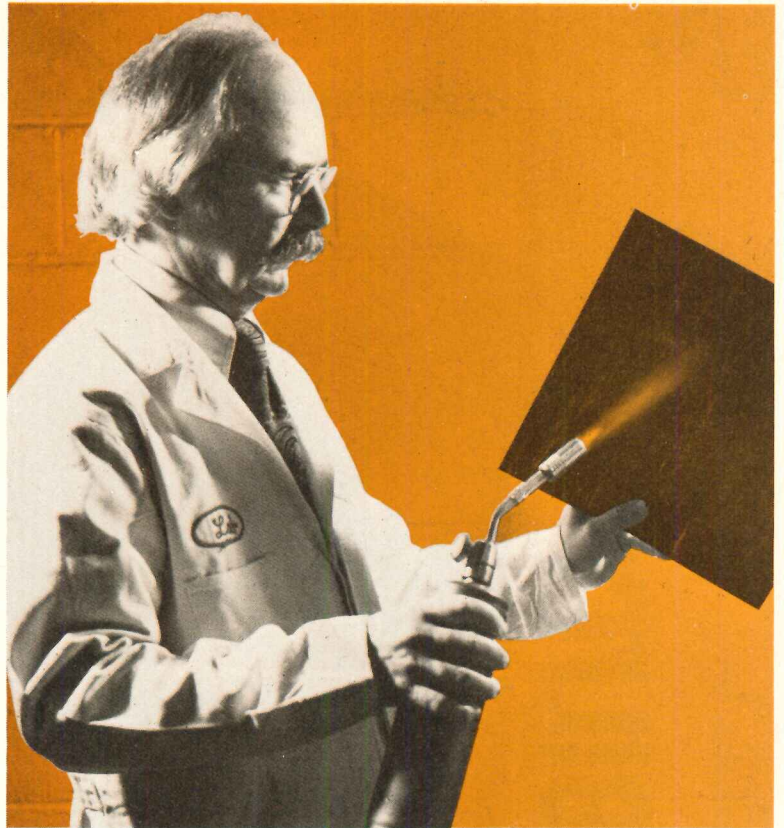
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## Fire resistance... another reason for using Burke tile

Fires in offices, schools, banks, stores, and schools are never a pleasant thought. That's why concerned specifiers always select flame resistant materials.

And that's just one more reason Burke rubber tile is so widely used. Tests have been conducted on Burke tile for flame spread rate. The result? Burke rubber tile meets Federal Flammability requirements and has passed the A.S.T.M. tunnel test.

But, if flame resistance isn't enough, here are 8 more reasons for specifying Burke rubber tile: a broad range of colors and styles; color that goes clear through the tile so it never wears off; dimensional stability that won't shrink or warp; excellent underfoot comfort; muffles traffic noise level; excellent static load resistance; reduces maintenance cost and time; resistant to cigarette burns.

When you use Burke rubber tile on your next installation, you'll add a ninth reason . . . years and years of satisfactory performance.

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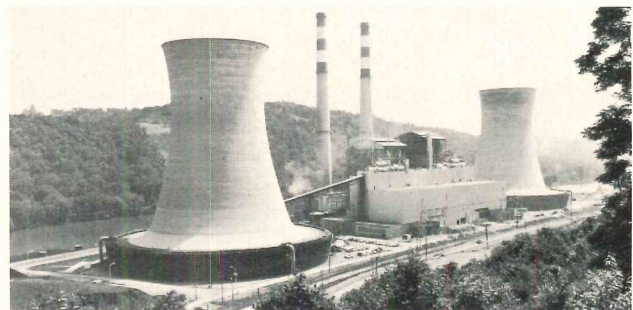
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**When it comes to metal wall and roof systems,  
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Whether your project is an industrial building, power plant or office building, this Systems Approach can save you time and money.

SMITH'S Single Responsibility concept is the Systems Approach to solving your metal wall problems. It's a complete system . . . from the earliest Architectural/Engineering contact to placement of the final product fastener on the job site. SMITH Sales Engineers are specially trained to estimate and submit quotations, provide assistance in specification writing and detail suggestions. SMITH engineers design the products to suit your specific project. The material is color-coated and fabricated by SMITH personnel . . . erected on the job site by experienced SMITH erection crews. This Single Responsibility is the most important factor in Design/Construct.

Specify SMITH Single Responsibility for your next building project. For full details and specifications, consult Sweets Architectural File or write.

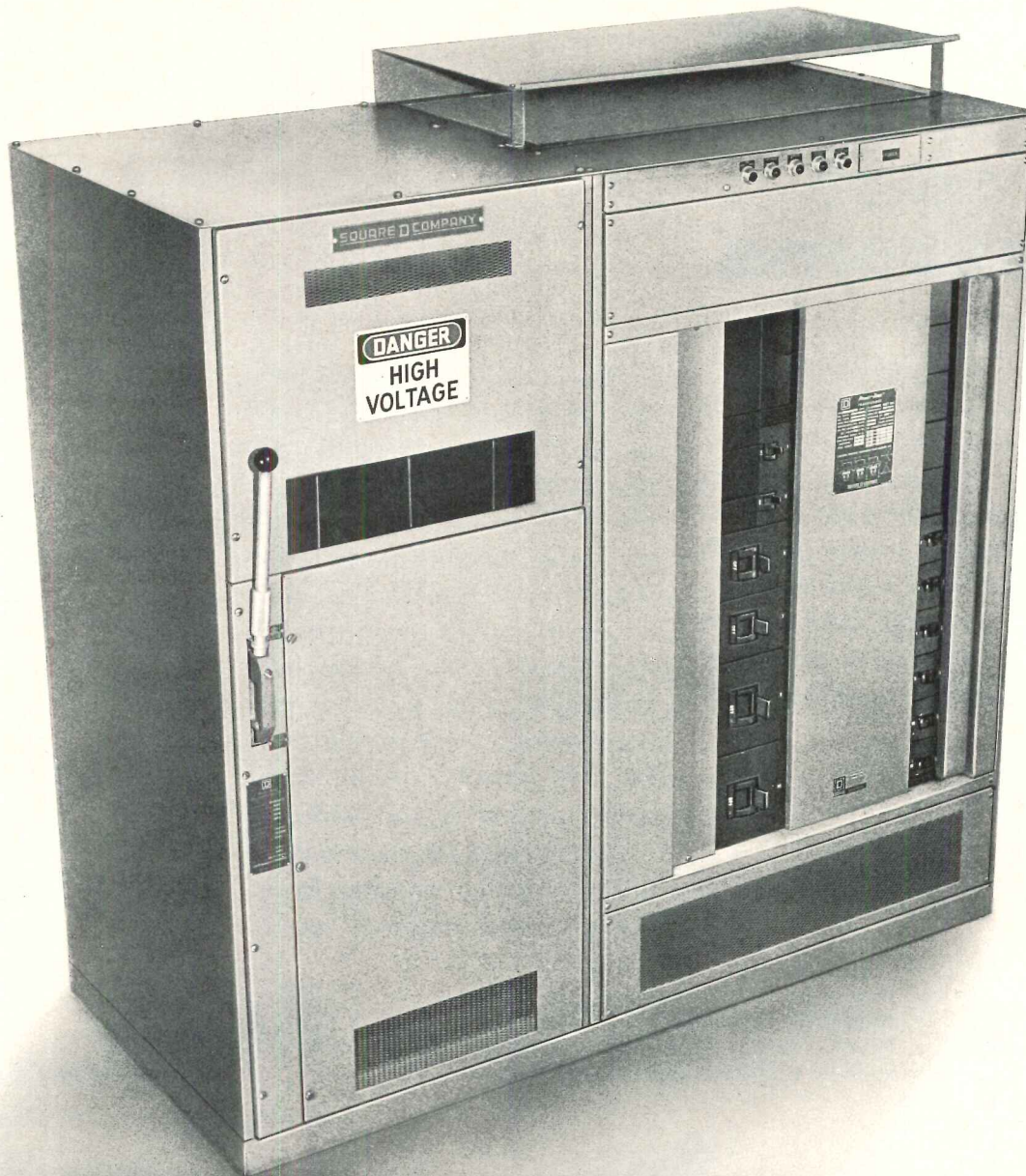


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## Now you get more flexibility with Power-Zone unit substations.

Exactly the same breakers and bus structure used in I-LINE® switchboards now are used in Power-Zone® package unit substations. This provides vastly increased substation flexibility. You can add plug-on circuit breakers as needed, quickly and easily. Cables are readily accessible, and it is simple to change a breaker if necessary.

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Power-Zone unit substations offer other benefits, too. You get the only substation with an integrated equipment rating. Plus a forced air cooling system for greater kva capacity.

And a low operating sound level that makes them ideal for institutional use. Power-Zone package unit substations are available in ratings from 75 through 750 kva, with primary voltages ranging from 2400 to 13,800 volts. Sectionalized secondary load center unit substations are also available with higher kva ratings.

Contact your Square D distributor. Or write Square D Company, Dept. SA, Lexington, Kentucky 40505.



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# the most versatile of all roof systems

● What kind of roof profile will best fit your design? Pitched, tapered, parallel? Or does it call for a curve or crescent? Perhaps you want the building to be circular or even a hexagon. Whatever it may be, TRUS JOIST can furnish the roof system to complete your design and almost always at a cost below that of any other system.

● TRUS JOIST versatility can also give you clear spans of up to 150 feet and cantilevers up to one fourth the length of the joist. It bears equally well on frame, concrete or steel construction. Wide nailable wood chords allow for easy attachment of a variety of low cost decking or ceiling material and open webs provide ample room for fast installation of ductwork, plumbing and wiring.

● Light weight can mean fewer and less costly footings, foundations and bearing walls.

It also means faster erection, usually without expensive mechanical equipment.

● Remember too that each TRUS JOIST is engineered and manufactured to fit your design, and they're built only in company plants under strict standards of quality control.

● For more information . . . design manual, free cost estimates, just send a card or call. Today.

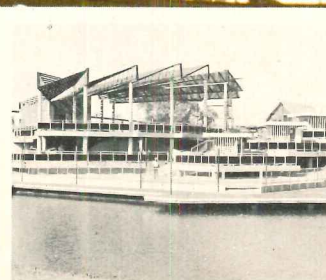
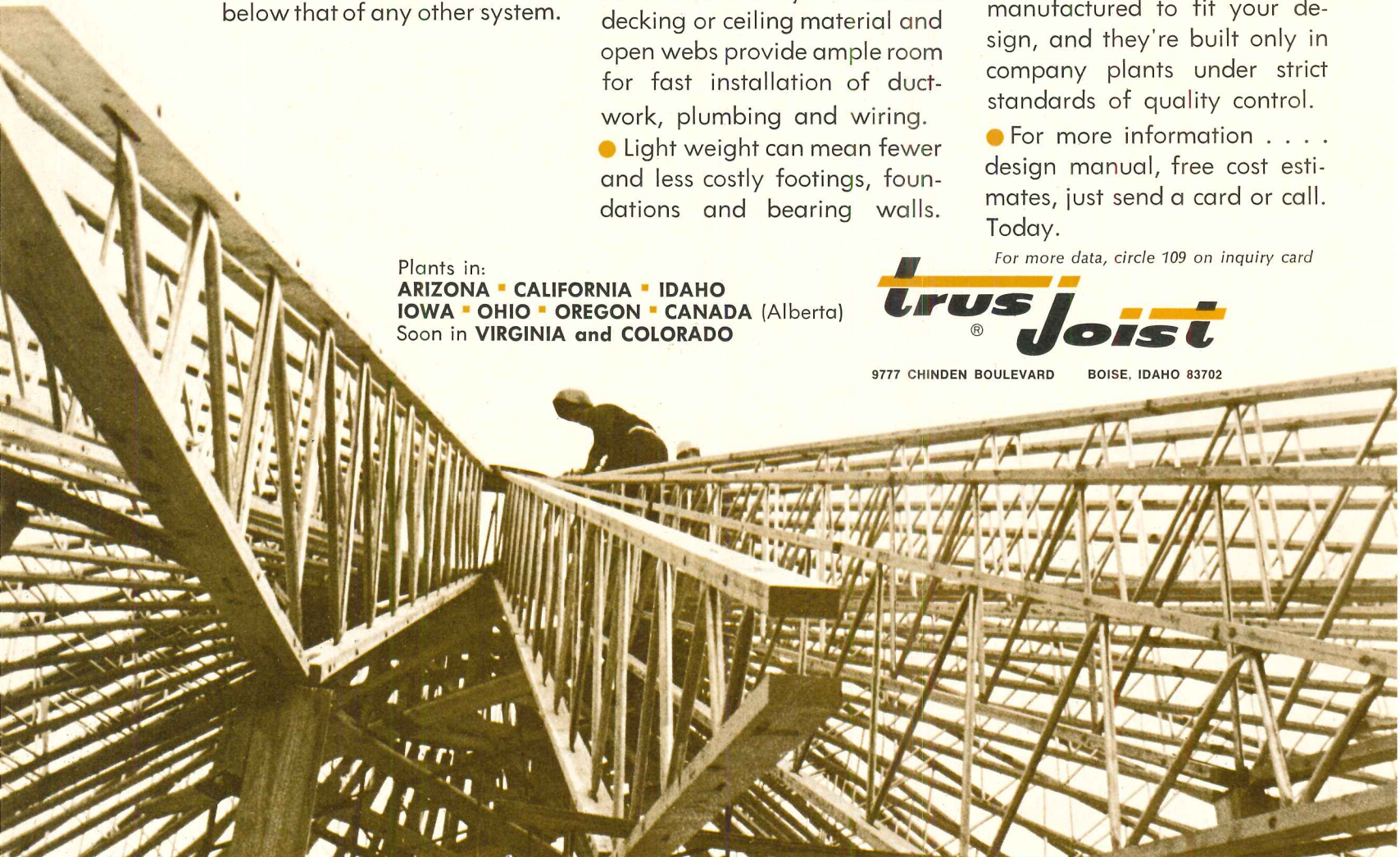
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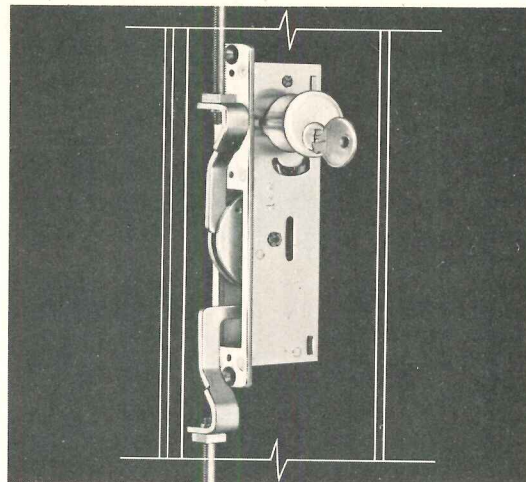




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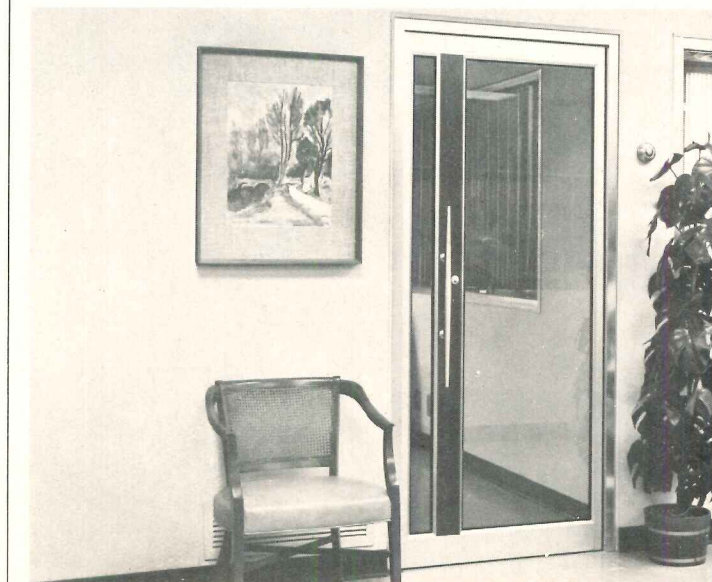
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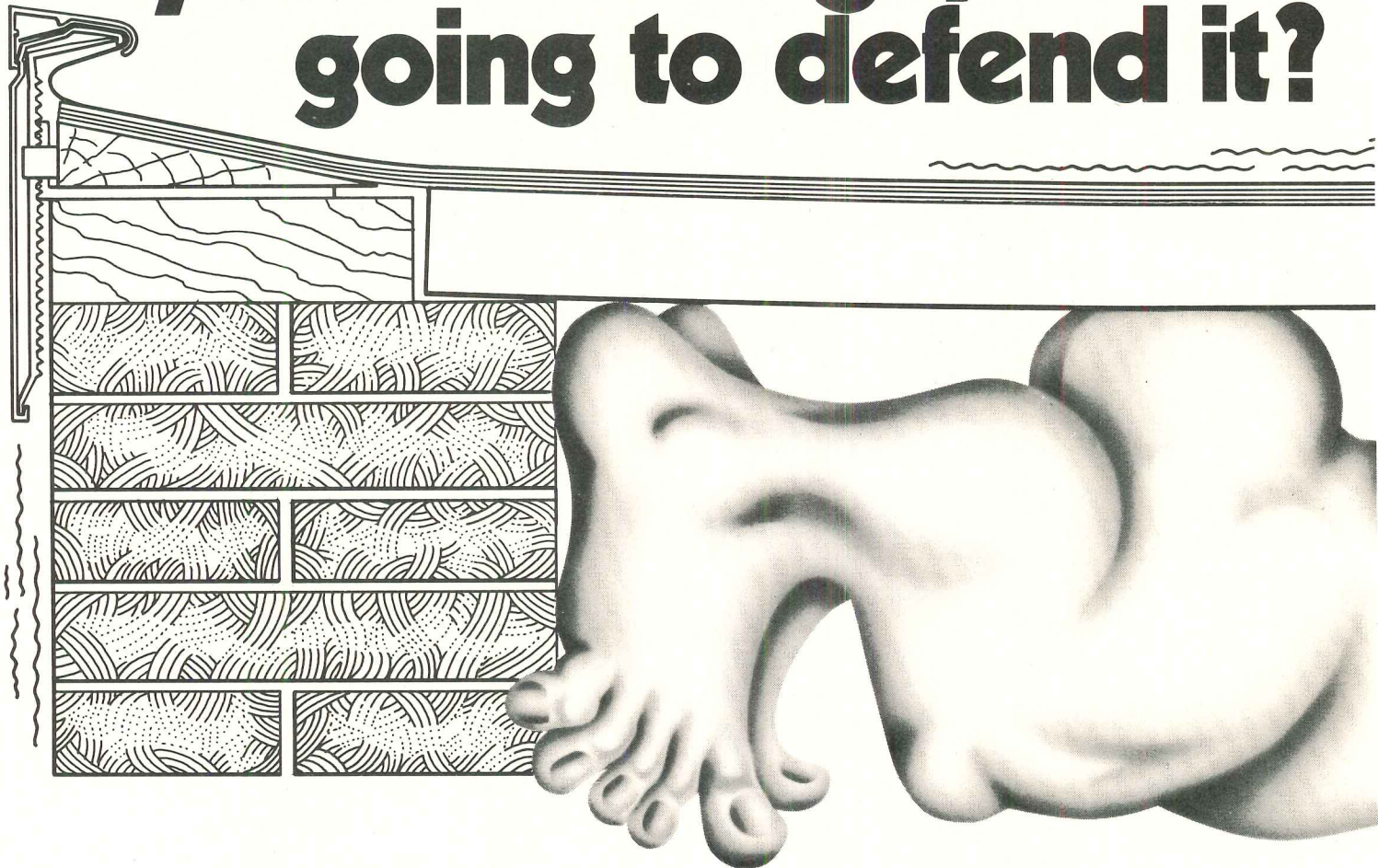
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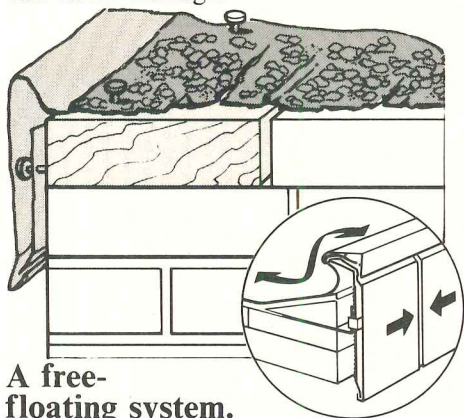
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# When movement attacks your roof edge, what's going to defend it?



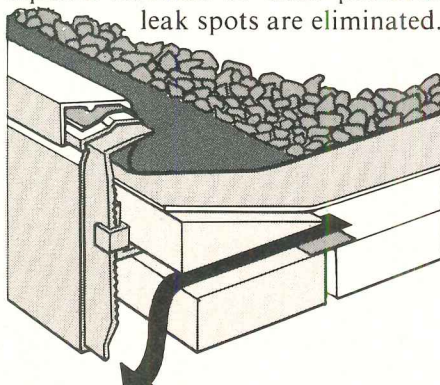
Everybody knows you can't stop the attack. For wherever you find two adjoining structural planes, you'll also find movement. Movement in different directions, at different rates, that makes nails pop, nail holes enlarge, joints open, etc. Any of which can cause leakage.



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But now there's a beautiful defense against movement: Tremline, a unique free-floating fascia system that takes movement in stride like no other roof edging system can.

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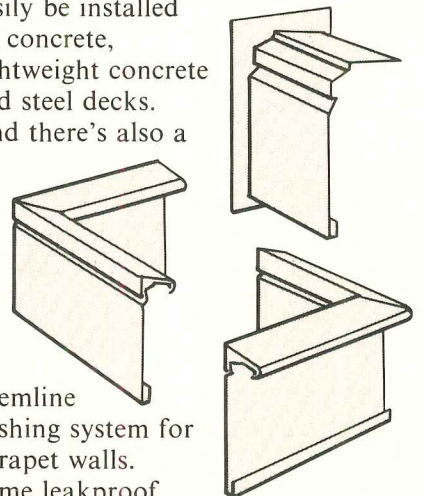
## Built-in venting, too.

Tremline also allows perimeter venting of the roof insulation. Other edgings provide only partial venting, if any. And with the neoprene mem-

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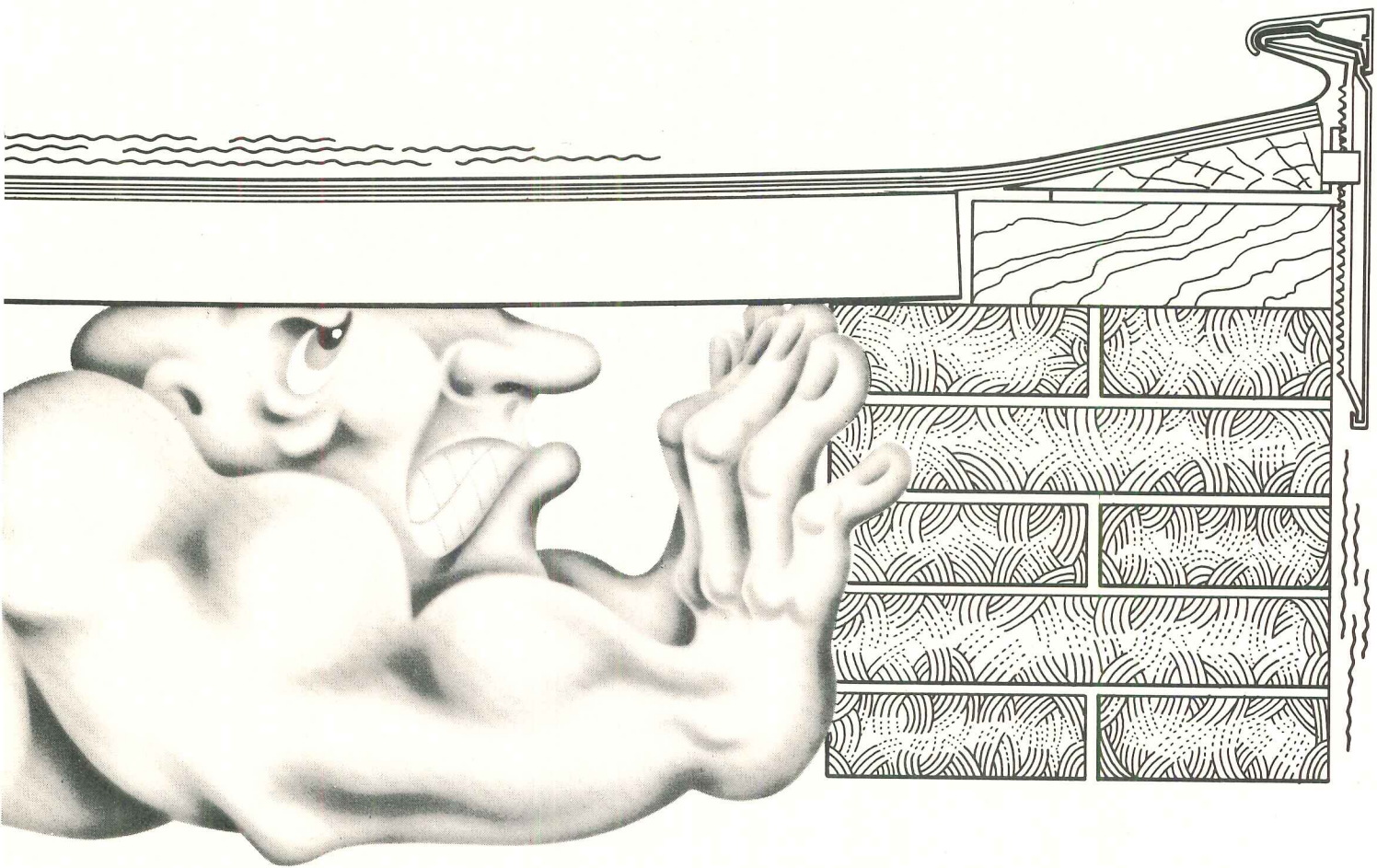
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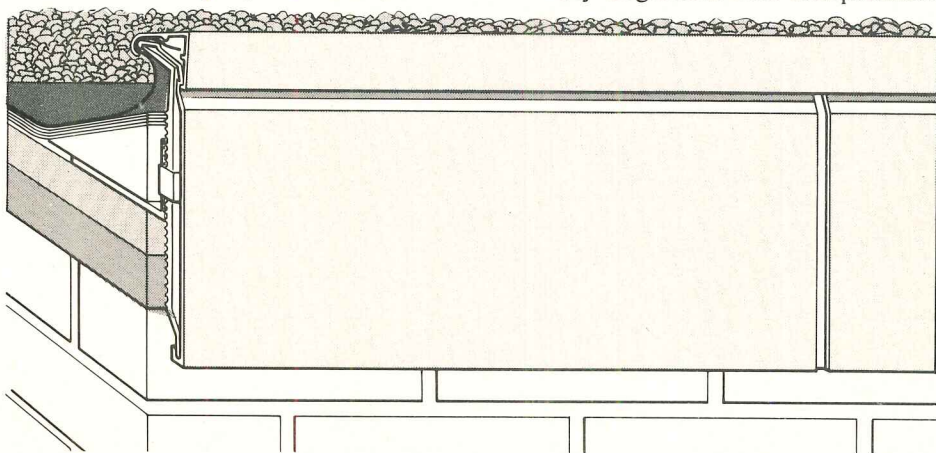
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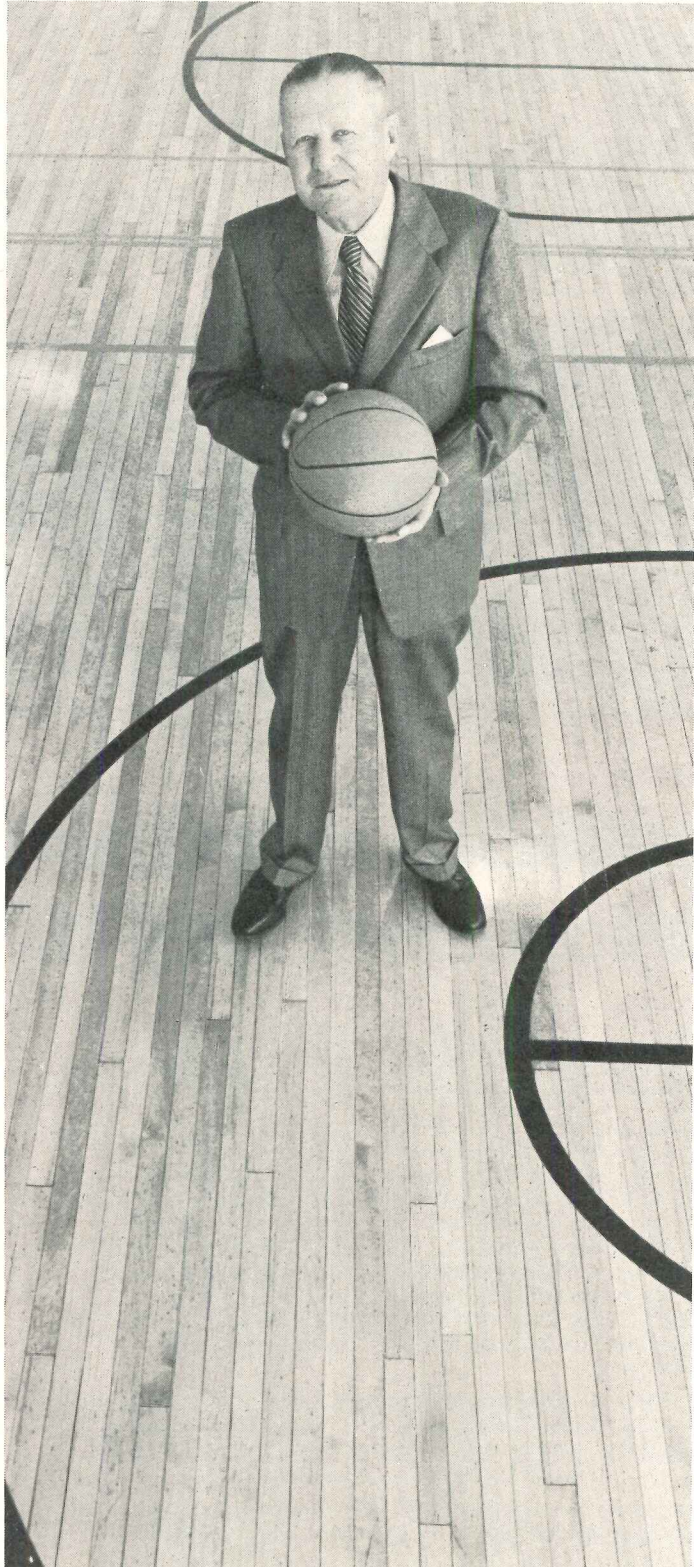
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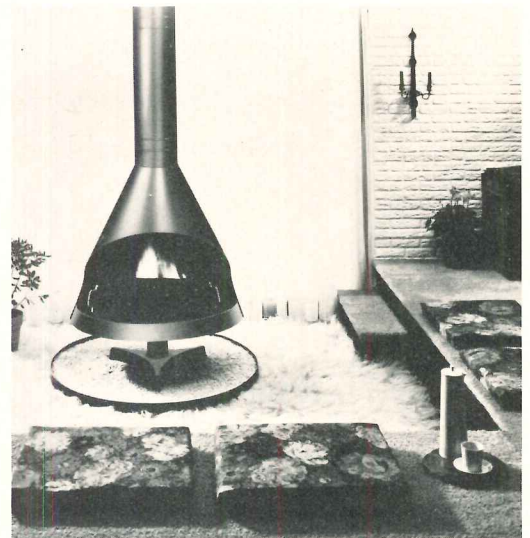
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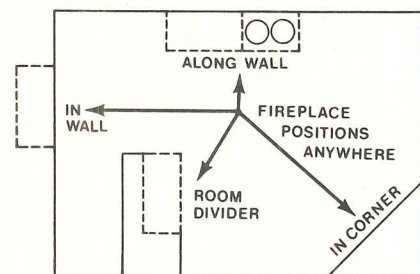
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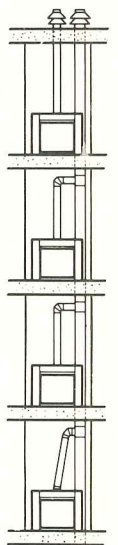
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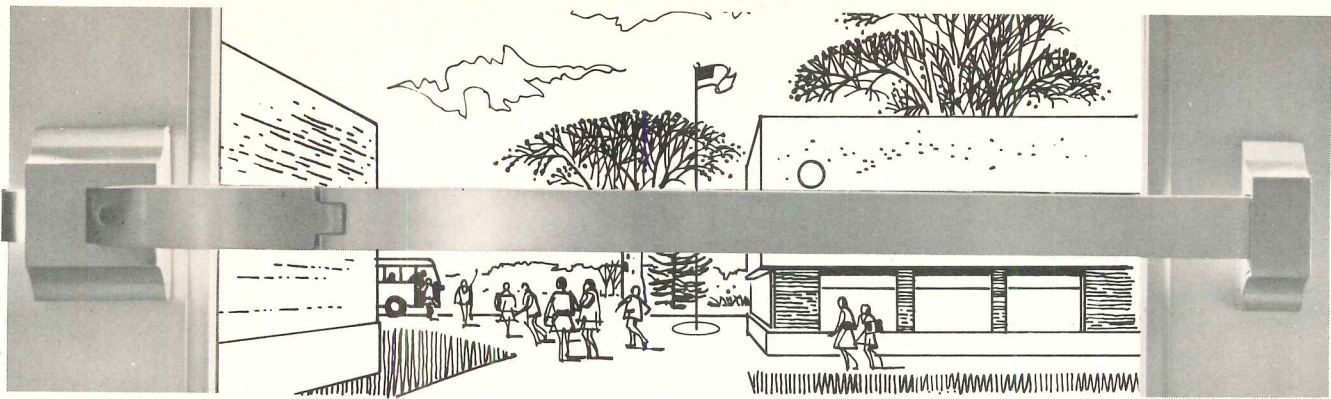
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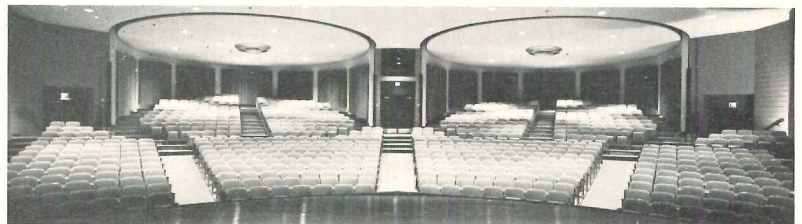


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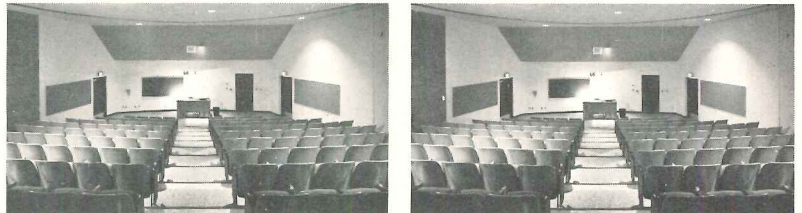
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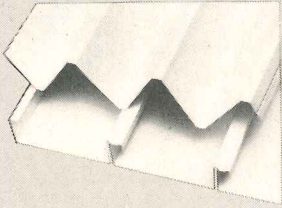
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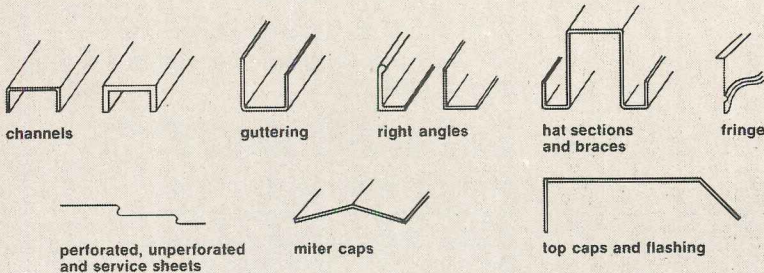


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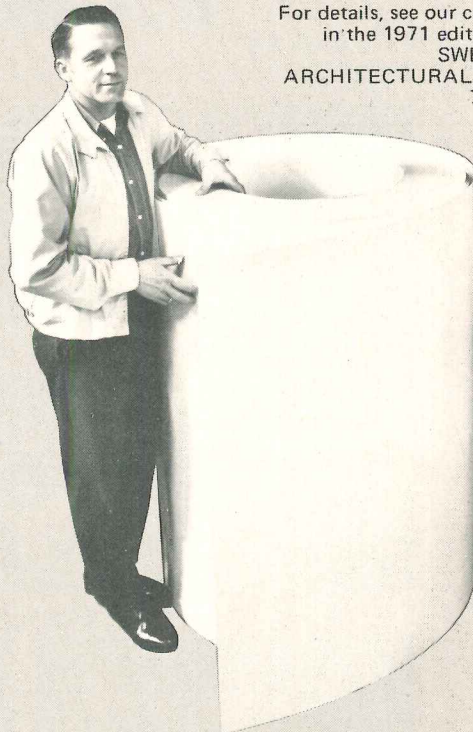
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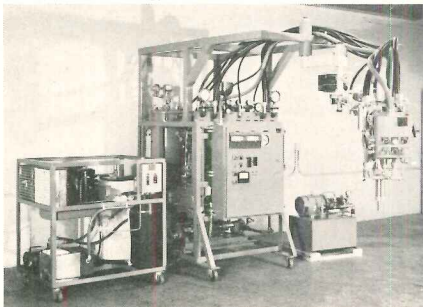
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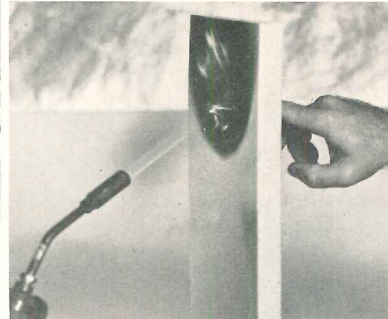
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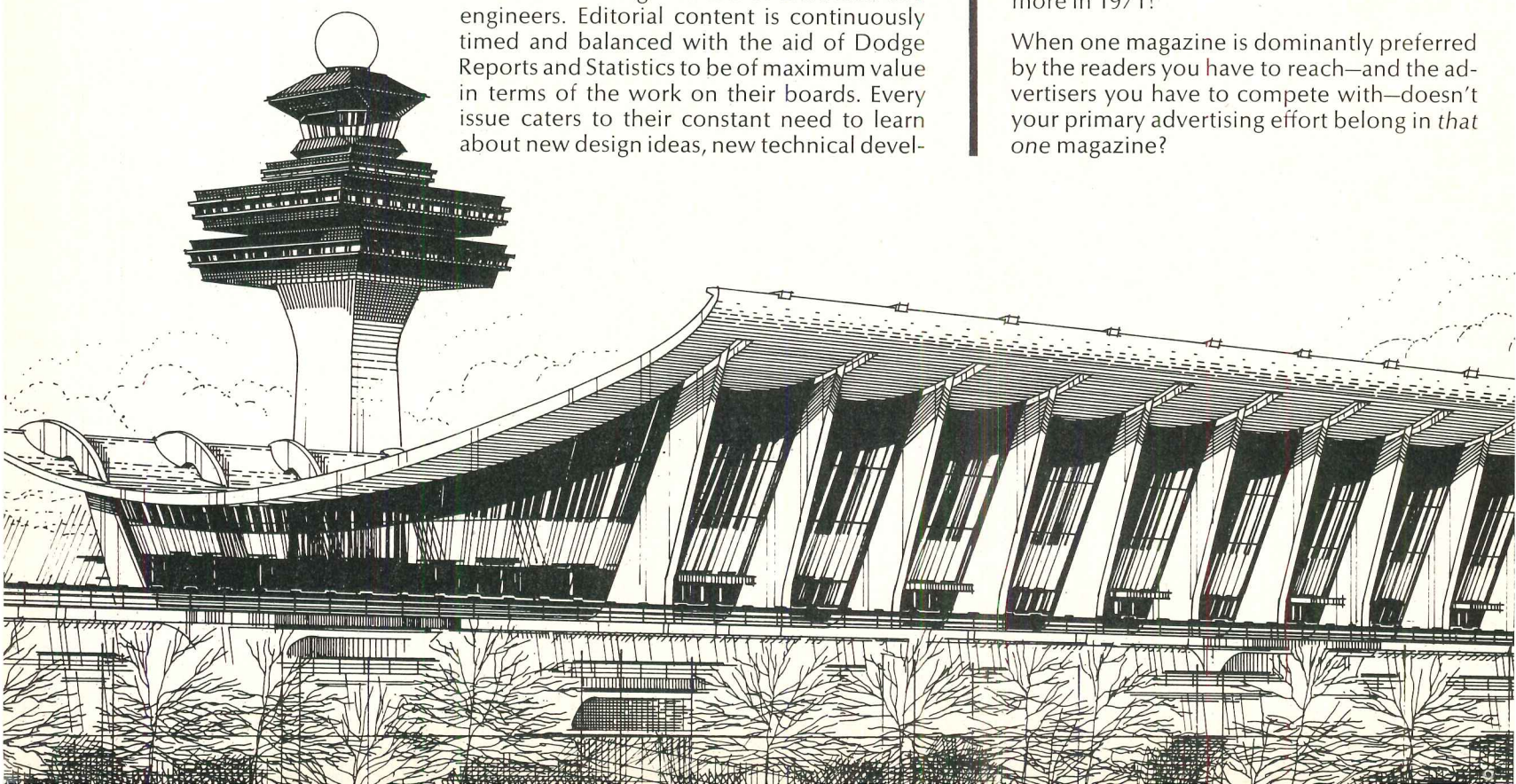
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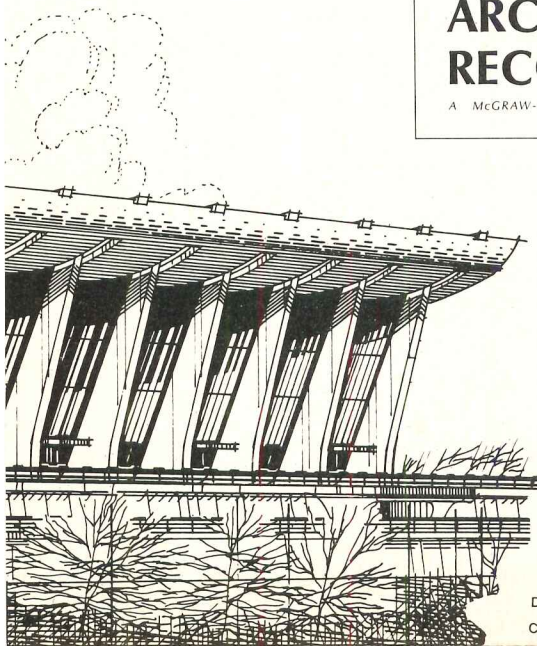
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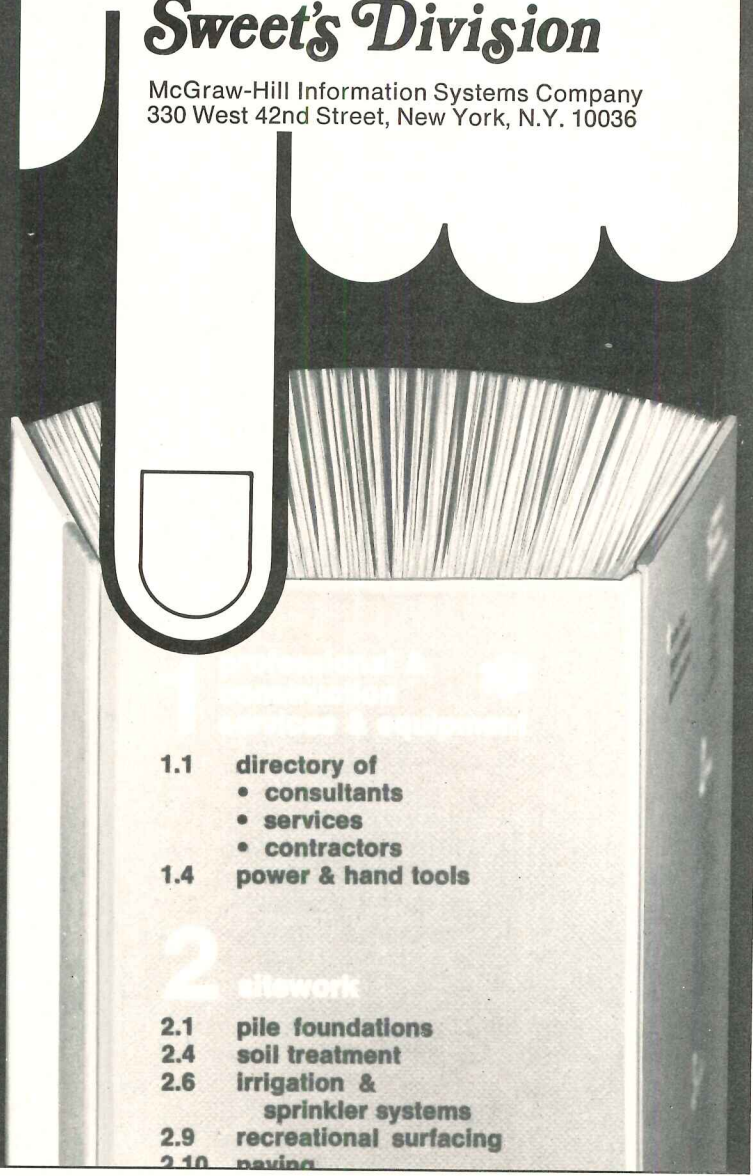
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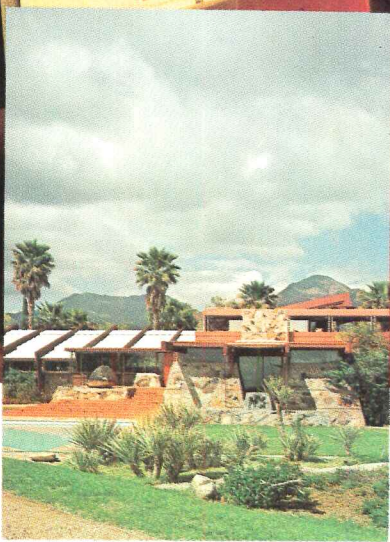
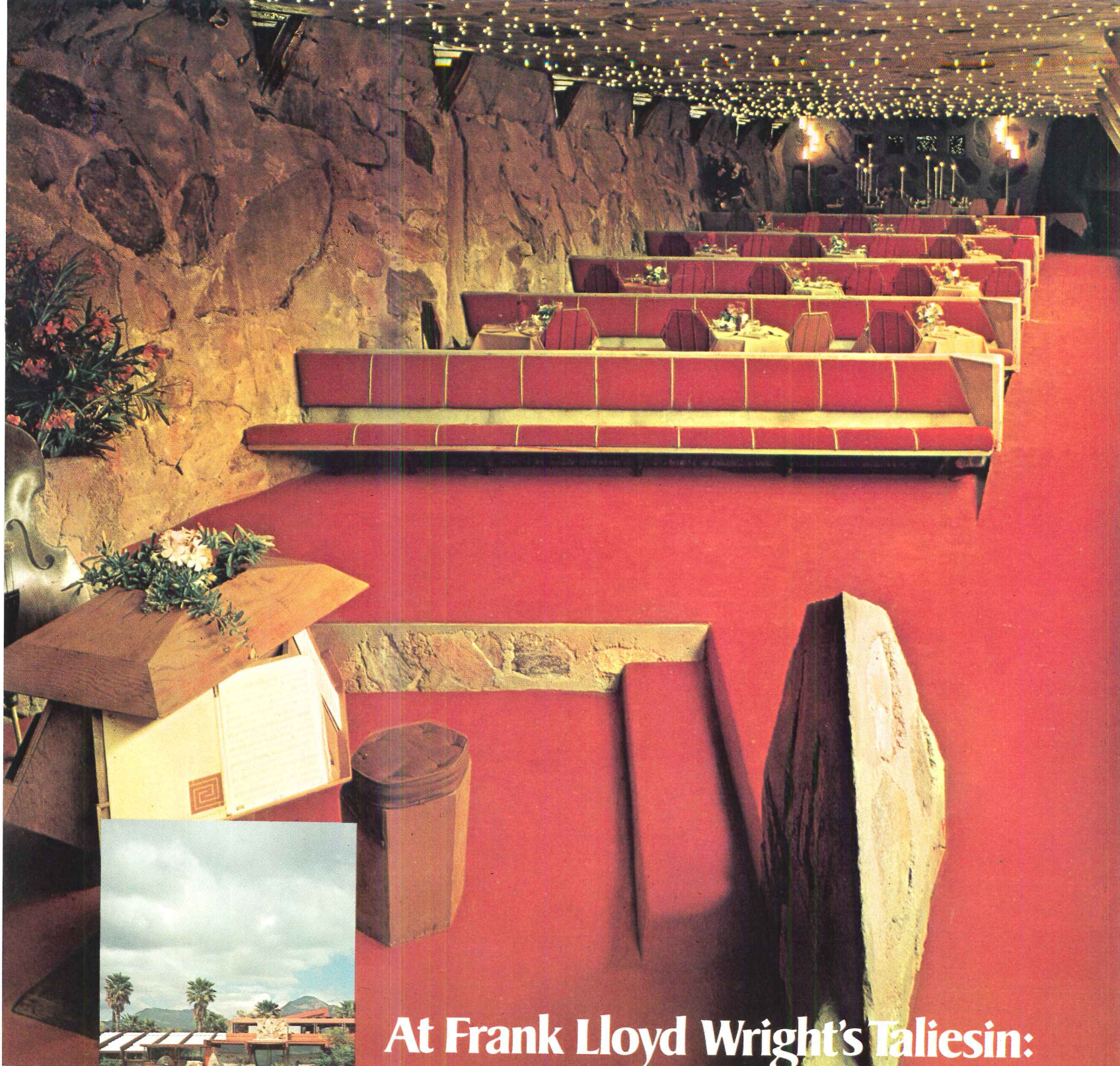
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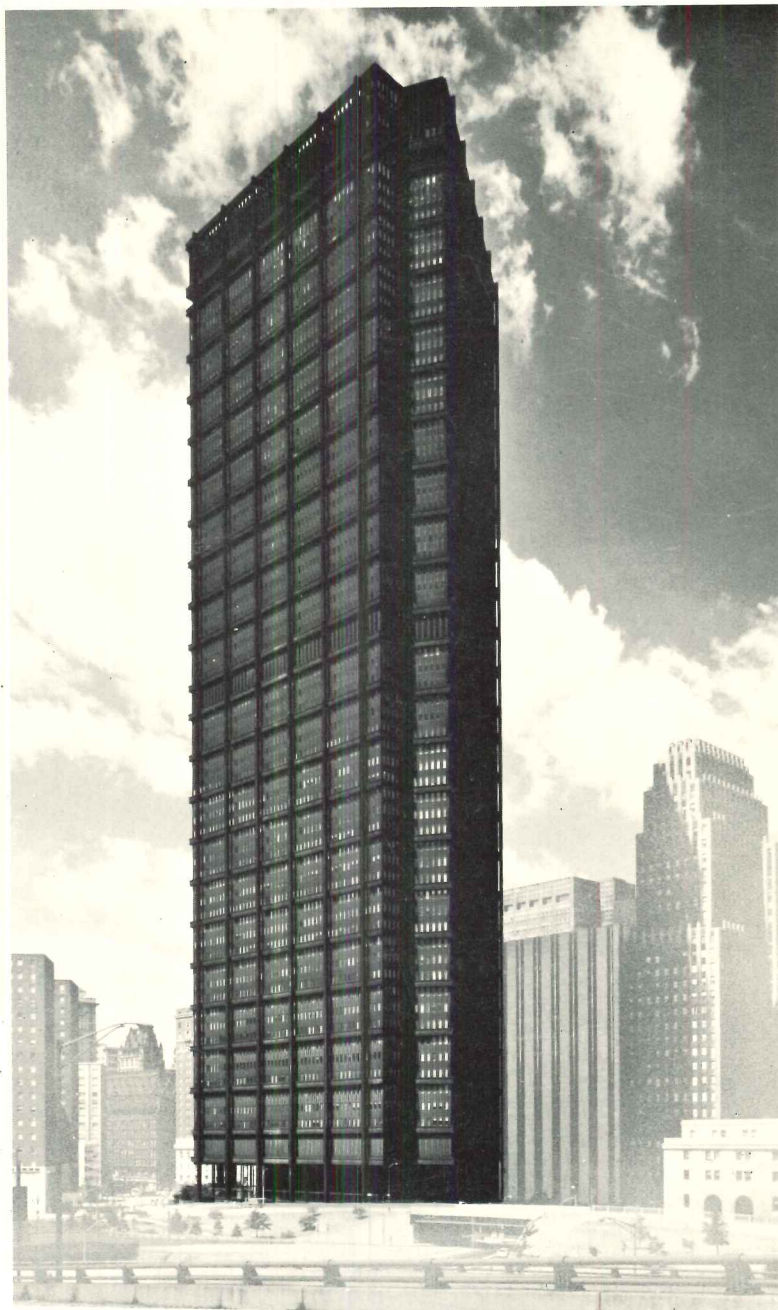
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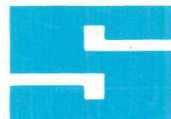
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