



OLD WESTBURY COLLEGE SERVICE BUILDING, BY JAMES STEWART POLSHEK AND ASSOCIATES  
A PHYSICAL SCIENCES COMPLEX AND A PRECAST OFFICE TOWER BY PAUL RUDOLPH  
"THE ENVIRONMENTAL RESPONSIBILITY OF THE ARCHITECT," BY MAX O. URBahn  
BUILDING TYPES STUDY: SUBURBAN OFFICE BUILDINGS  
FULL CONTENTS ON PAGES 4 AND 5

# ARCHITECTURAL RECORD

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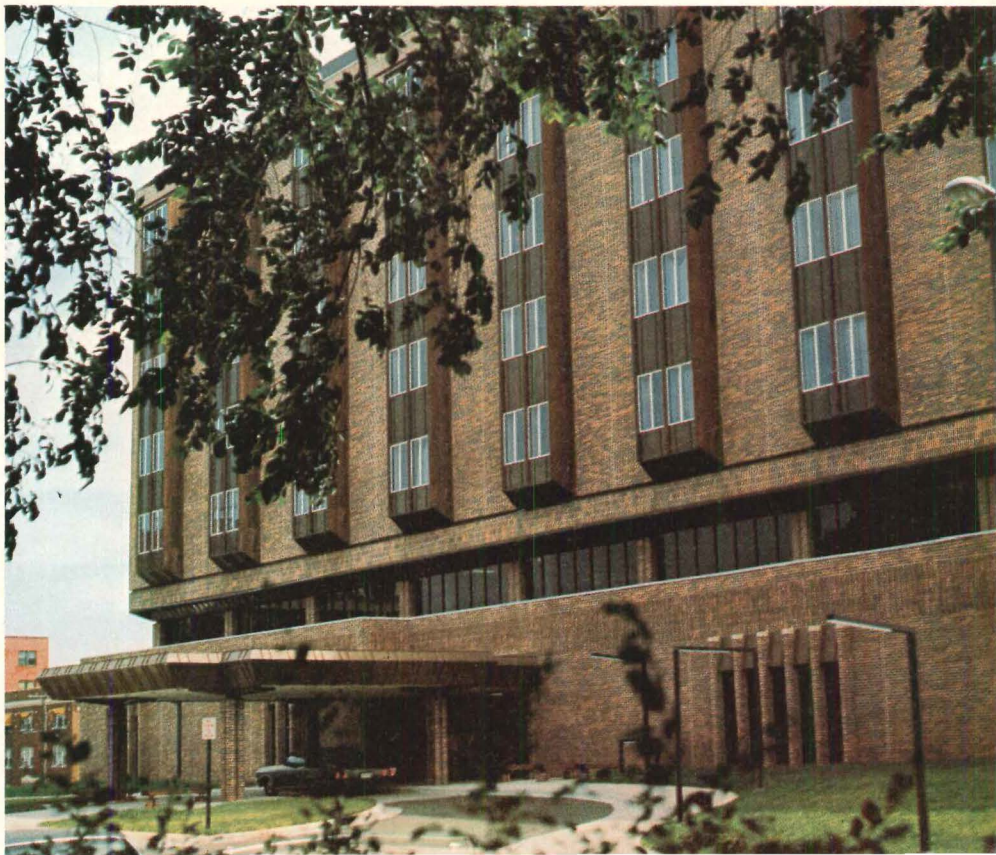
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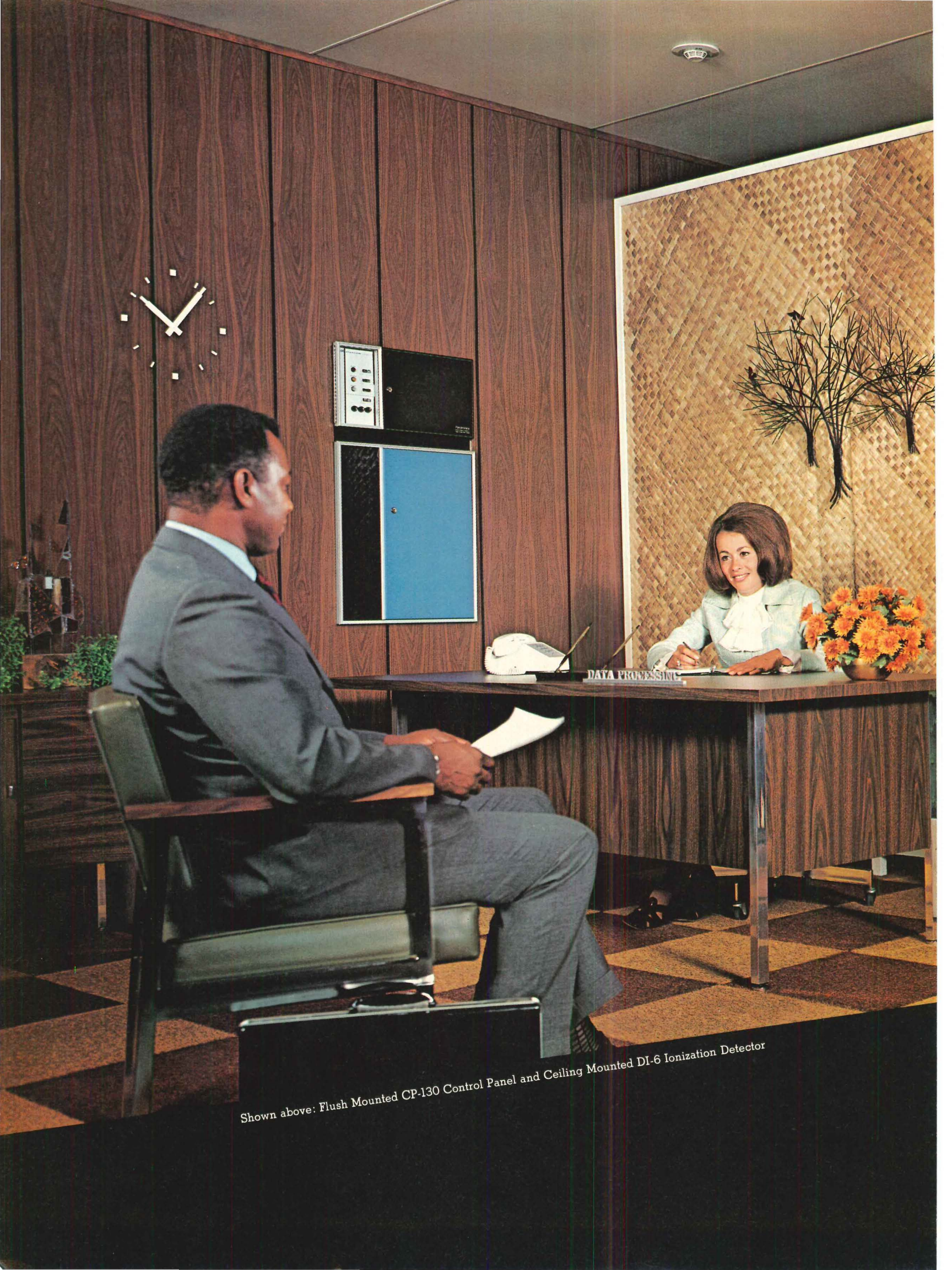


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**THE RECORD REPORTS**

**9 Editorial**

National policy: the AIA's boldest and best proposal yet

**33 News in brief**

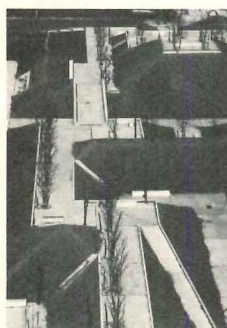
Short items of major national interest as well as award-winners and announcements.

**34 News reports**

Excerpts from the report of the AIA's Task Force on National Policy which has now been approved by the Institute's board of directors and will be submitted to the membership at the national convention in Houston, May 7-10.

**41 Buildings in the news**

Including awards of the Prestressed Concrete Institute and the New York State Association of Architects. One NYSAA winner, a Queens, N.Y. park, by Richard G. Stein & Associates (below).



**ARCHITECTURAL BUSINESS**

**53 Photo-drafting: time-saving aid to quality**

Increasing sophistication and flexibility of reproduction products and processes generate a special role for photography in the drafting room. Many processing firms, with the special equipment required, are now ready to help architects take much of the repetitive chore work out of drafting while adding new dimensions to communication with engineers and contractors.

**58 1971 in review: Insight on the outlook**

A surge in housing pulled construction contracts up to the gain side of the 1971 chart, and James Carlson takes a look at what happened in housing and other segments to give perspective to what's ahead.

**64 Indexes and indicators**

Church and landscape costs



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**FEATURES**

**87 A physical sciences complex and a precast office tower by Paul Rudolph**  
 The \$5 million Sid W. Richardson Physical Sciences Building in Fort Worth, Texas is a mammoth structure subtly designed to appear less imposing than it is. Brookhollow Plaza in Dallas, Texas is almost totally constructed of precast concrete elements—columns, spandrels, floorplanks and core walls.

**97 A flexible service building for Old Westbury College**  
 The service buildings for Old Westbury College on Long Island are the first buildings to be completed for the new campus. Designed by James Stewart Polshek and built to house the maintenance staff and their vehicles, these buildings have ended up being temporary spaces for classrooms.

**101 New concepts for public spaces combine art and architecture**  
 SITE (which stands for Sculpture In The Environment) Inc. is a group of young sculptors with some new ideas about urban spaces.

**105 House remodelings that reshape living patterns as well as space**  
 Three houses show that renovation work can be as highly creative as totally original design.

**111 Issues in Architecture**  
 "The environmental responsibility of the architect," by Max O. Urbahn, FAIA. In this article by the new president of The American Institute of Architects, his colleagues are called upon to recognize a new professional obligation as architectural counsellors to the public.

**BUILDINGS TYPES STUDY 431**

**113 Suburban office buildings**  
 Four suburban headquarters offices, whose companies chose greater space and park-like surroundings over a downtown location, are shown here.

**114 PepsiCo, Inc., World Headquarters,**  
 Harrison, New York.  
 Edward Durell Stone Associates, architects.

**118 Burlington Industries Corporate Offices,**  
 Greensboro, North Carolina.  
 Odell Associates, Inc., architects.



Gordon H. Schenck, Jr.

**122 California Casualty Insurance Group Home Offices,**  
 San Mateo, California.  
 John Carl Warnecke and Associates, architects.

**124 Environmental Systems Building**  
 at World Headquarters of Emerson Electric Company, St. Louis, Missouri.  
 Hellmuth, Obata & Kassabaum, architects.

**ARCHITECTURAL ENGINEERING**

**129 Science Center is precast for fast assembly**  
 The \$17.7 million Harvard Science Center is practically all precast concrete, including the 400- by 60-foot, five-story laboratory wing, which was erected in only seven months. The structure for the laboratory features three-story high "ladder" columns and precast, post-tensioned mechanical shafts—supporting 60-foot-long perforated girders that span 50 feet clear.



- 135 Product Reports
- 174 Office Notes
- 182 Personal Business
- 187 Update
- 188 Books received
- 190 Record Impressions
- 194 Office Literature
- 196 Advertising Index
- 198 Classified Advertising
- 199 Reader Service Inquiry Card

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*PHOTOGRAPH: TOM UPPER*



*Main banking floor of the Bank of Washington Plaza, Tacoma, Washington.  
Design concept developed by Skidmore, Owings & Merrill,  
Architects, Engineers, Portland, Oregon.  
General Contractor: Donald N. Drake Co., Portland, Oregon.  
Electrical Contractor: Carl T. Madsen, Inc., Tacoma, Washington.*



## National policy: the AIA's boldest and best proposal yet

This month, we've done something that more often happens on newspapers than on monthly magazines: we (to coin a phrase) stopped the presses. Reason: well after our usual press deadlines there was a press conference on the AIA's Report of the National Policy Task Force, and I for one thought the Report of sufficient importance to turn a few publishing cart-wheels to talk about it this month instead of waiting for March.

In short, I believe that:

**The Report of the National Policy Task Force is not just good, it's brilliant; the best kind of intervention by architects in public policy; and worthy of active support by all.**

In the news section this month (pages 36-37) you'll find a two-page report on the key points of the Report, but additionally, I find myself compelled to take some more space here to comment on it, and to urge all architects to get involved with the ideas and policies it proposes. At this stage, the National Policy Report embodies the ideas of a relatively small group: 1) The Task Force itself, chaired by Archibald Rogers and including Bill Slayton, Ieoh Ming Pei, Jacqueline Robertson, Paul Ylvisaker and (ex-officio) Bob Hastings and Max Urbahn; and 2) The board of directors of the AIA which has unanimously approved it. The board representatives from the AIA's 18 regions will, of course, in the month's ahead, be leading discussions around the country about the Report—its goals and its implications—in preparation for the convention in Houston in May; where the Report will be discussed, perhaps revised or improved or added to, and—I very much hope—be approved as a background for action by the architects of America.

The broad goal stated in the introduction is the kind of thing that we shall hear much of from the army of presidential candidates in the months ahead: "This report is about America at its growing edge. It outlines a set of policies that can enable this nation—as a responsible member of a threatened world of nations—to shape its growth and improve the quality of its community life." What's different about this report from most such pronouncements is that it includes (and again I'd urge you to read pages 36 and 37) some very specific and realistic ways those policies might be set up and implemented *and financed*.

One example of its realism:

"It may well be that a diverse nation which values above all free choice may have to live with a national growth policy that is less than coherent, which contains more inconsistencies than it resolves, which turns the power of conflicting forces into creative energy—and which succeeds because it strives towards unity but does not mutilate its freedoms in an all-out effort to achieve it."

One of the things the convention in May is going to have to debate (it always debates it) is the architect's competence to suggest national policy. I've always argued on this page that there's no one else better qualified to suggest national policy in the area of national growth and quality of life, and the Report argues this way: "[In this report] we have spoken assertively, but only to enrich the national debate, not dominate it. We have tried to convert what we think are legitimate discontents into constructive ideas of how to make America better. And [and this is where the AIA's policy suggestions differ from most] we have taken the risk of translating general-

ities (these are easy) into specifics (which are tough)."

In an early section, the Report makes a key point that few people except architects talk much about—that the problem is not just quantity, but quality: "It is not the numbers we should be concerned about, but the quality of living and the choice of life style that are opened to Americans whoever they are and however many there may be."

And the recommendations of the Report, as you will see in this issue and hear at local meetings, are then built around the neighborhood as the "growth unit," which the report defines as (ideally, though not necessarily), a neighborhood of 500 to 3,000 housing units—"enough in any case to require an elementary school, day care and community center, convenience shopping, open space, and recreation." This general scale of planning and development, the Report argues, is "consistent with likely trends during the 1970s which will encourage the filling in of open land and the renewal of older neighborhoods within existing metropolitan areas, as well as the expansion of outlying communities. . . . It also coincides with the trend toward 'miniaturization' which seems to characterize emerging patterns of consumer behavior and demand, and which is producing a new range of facilities such as community health centers [instead of central hospitals], neighborhood city halls, and convenience shopping centers." Just a few more key points that seem to me particularly important and insightful:

■ "Much of what is now done in the name of housing 'quality' is based on fallacy. When housing 'quality' is translated into grandiose quantitative requirements for floor space, lot sizes and building materials, the results are pernicious, wasteful and ultimately self-defeating, and the result is exclusion—of the poor, the black, the young and the old families."





"Greenwich put up quite a fight about our moving our here until we came around to their way of thinking."

▪ "We are convinced," the Report reads (and this idea will ruffle as many feathers as a similar resolution did at the Detroit convention) "that an effective national growth policy requires that land increasingly be treated as a public rather than a private commodity. . . ." If this concept does indeed ruffle feathers, we must think it through and argue it through because, it seems to me, it is a critical concept if we are going to develop a national policy (or neighborhood policy) that is not at every turn blocked or diverted by the simple greed of land speculators.

▪ The Report wisely tackles—strongly and right from the start (which is the only way)—the matter of "where's the money coming from?" Not to skirt the issue, the report says that "growth units of the sort we propose will not be built . . . unless:

"(1) there is an assured flow of credit at stabilized rates of interest over a sustained period of time. . . .

"(2) low- and moderate-income families are directly subsidized (through income supplements, housing allowances, 235- and 236-type interest reductions, etc.) . . . at a level equivalent to the housing subsidies now provided for higher-income homeowners in the form of tax reductions of mortgage interest and local property tax payments. . . ."

▪ Further, the Report states (and this is one of my favorite ideas), that "The tradition of categorical funding that has long been followed in American government needs to be modified. Above all, the Highway Trust Fund, we think, must be converted into a general fund for community development and greatly expanded."

Well, enough for here. Again, I think that the AIA should be commended by all for having the vision to create a Task Force on National Policy, and its members should be commended by all for having the wisdom and guts (quite apart from taking what must have been an inordinate amount of time away from their practices) to write this Report.

Now, surely you will not agree with all the recommendations and methods of implementing them suggested. So . . .

**Now is the time for all architects to study the report and make up their mind**

. . . as to whether they're for it, or agin' it, and are willing to work to implement it. Let no one after the Convention, as so many did last year, say that "fuzzy headed" decisions were made and resolutions passed. This Report of the Task Force on National Policy deserves the most careful attention by every architect, the most careful discussion and debate within every chapter, the most serious and reasoned voting by every delegate to the Convention; and—if passed overwhelmingly as I think it should and think it will—it deserves the active support of every architect, as a professional and as a citizen.

**Finally, a few more words about the AIA and the Justice Department**

Last month, we reported in the news section what we knew about the pressure from the Justice Department for the AIA to revise its practice standards regarding compensation arrangements. The AIA, in its Memo, has pointed out to members that legal matters really cannot be debated in the press; and we have no new information. But, after a discussion in RECORD's office about possible implications, senior editor Bill Foxhall came up, in a memo, with this train of thought, herewith offered to all involved:

"In thinking about competitive bidding—in general and as it relates to architectural practice, the mind turns to abstractions, and then to the practical consequence of decision:

- uncontrolled monopolies are bad (does anyone think the AIA is a monopoly?)
- pricing collusion among competitors is bad
- free competition is good
- except sometimes—like when price alone tells the buyer nothing about quality

(bread? washing machines? medical services? architectural services?)

- professional services are not goods and cannot be priced as goods
- because no two sets of services by different professionals can be identical for any given job
- professionalism has an inherent ethic of responsibility towards clients, which makes professionals essentially and critically different from entrepreneurs
- laws are not ethics and cannot enforce ethics—or morals either
- antitrust laws are not *for* competitive bidding, they are *against* restraint of trade
- pricing is not bidding
- all architectural presentations to clients are competitive in terms of skill, staff, and experience offered
- most clients want to know about fees before a job is commissioned
- most architects tell them, which leaves the client all the option in the world to take or leave that architect's proposal, either on the basis of the professional service offered or the price proposed
- well, is a pre-commission statement of fee basis—or even a lump-sum quotation—unethical?
- certainly not, if the services are defined
- is it a competitive bid?
- no, not unless identical services (and experience, talent, staff and end product) are the basis for every architect's quotation
- which is clearly impossible
- contractors bid on identical documents for an identical end product
- that's competitive bidding"

There are some fine lines to be drawn, as Bill points out, and one hopes that, in this dispute, they get drawn right. Professionalism, the concept of professionals working as the agent for a client instead of selling a service, is a fragile but critically important concept. It ought to be given up, or taken away, only after the very best minds give it their very best thought on behalf of all the people.

—Walter F. Wagner, Jr.





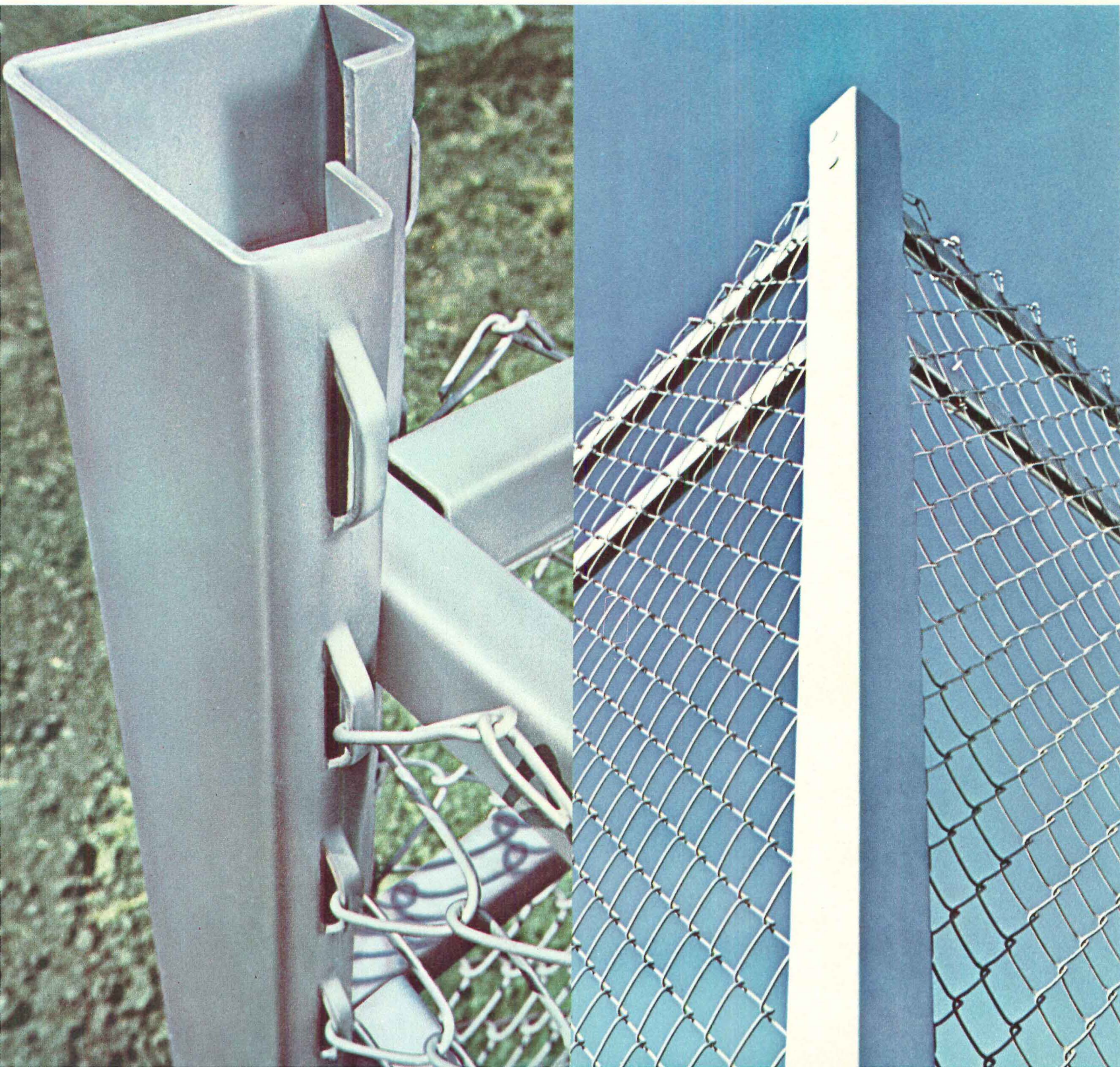
**What's happened to the necessary evil?**



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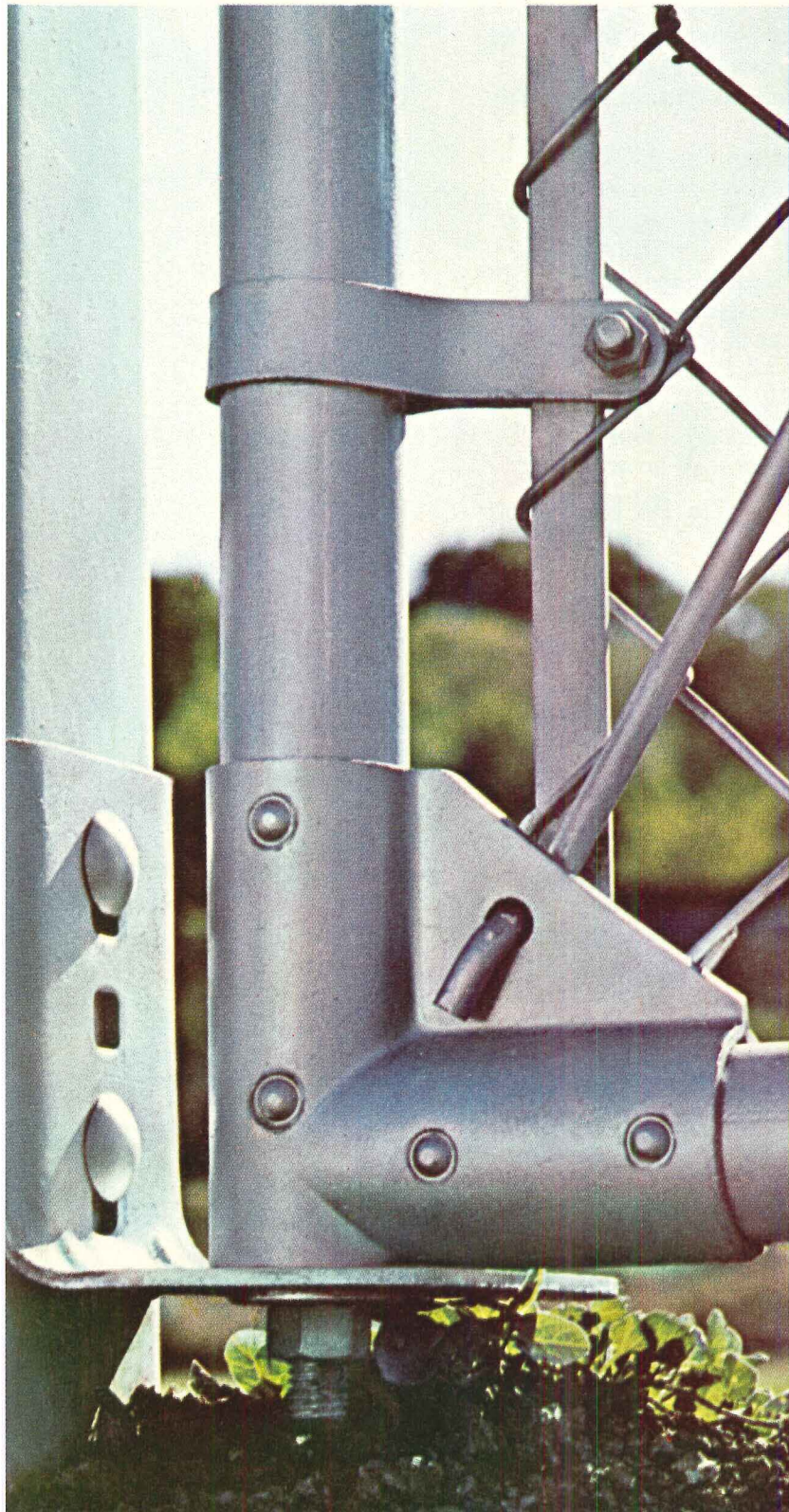


# USS Cyclone Fence

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Gates are a key to fence quality. Most industrial gates are welded. This not only invites rust at the weld . . . it makes for expensive repairs. CYCLONE gates are riveted. Remove a few rivets, replace any damaged part, and you have a new gate. And our adjustable truss rods make it easy to correct sag.

Corrosion protection in a fence is directly proportional to the amount of zinc coating. CYCLONE doesn't take shortcuts. CYCLONE terminal posts, line posts, and top rails, for instance, have a 2-oz. coating . . . not the 1.2-oz. coating often used. Gates and fittings are heavily galvanized. Complete specs on the next page.





# How to specify the new technology in fence:

Basic Specifications\* (Circle one of each):

Height: 6', 7', 8', 9'

Fabric 2" mesh: 6 ga., 9 ga., or 11 ga.

Barbed Wire: 3 strands, 6 strands, none

Top rail or Top Tension wire, Bottom rail or Bottom Tension Wire

Line Posts: 2.7#H or 4.1#H

Fabric shall be zinc coated class II chain link per ASTM specification A-392-68 or shall be aluminum coated per ASTM specification A-491-68. Fabric shall be connected: to line posts with 6 ga. wire clips every 14"; to top rail with 9 ga. wires every 24"; to terminal, corner, and gate posts by integrally weaving into the post or by using 1/4" x 3/4" tension bars tied to the post every 14" with 11 ga. 1" wide steel bands and 3/8" diameter bolts and nuts; to tension wire with 11 ga. hog rings every 24".

Barbed Wire shall have a class 2 aluminum coating per ASTM A-585-69 or a class 3 galvanized coating per ASTM A-121-66 and consists of two 12 1/2" gage stranded line wires with 14 gage barbs and a 4 point pattern on 5" centers.

Top rail shall be 1 1/4" (1.66" O.D.) standard weight pipe or 1 5/8" x 1 1/4" roll formed sections. Top rail shall pass through intermediate post tops and form a continuous brace within each stretch of fence and be securely fastened to terminal posts.

End, corner, and pull posts shall be 2 7/8" O.D. pipe, 5.79 pounds per foot, or 3 1/2" x 3 1/2" roll formed sections with integral fabric loops, 5.14 pounds per foot. Posts for swing gates shall be according to the following gate leaf widths:

		Lbs. Per lineal Foot
Up to 6'	3 1/2" x 3 1/2" roll formed section or	5.14
	2 7/8" O.D. pipe	5.79
Over 6' to 13'	4" O.D.	9.11
Over 13' to 18'	6 5/8" O.D.	18.97
Over 18'	8 5/8" O.D.	24.70

Gate frames shall be 1.90" O.D. pipe connected with fittings riveted at each corner. Each frame shall have 3/8" diameter adjustable truss rods. Gates shall have positive type latching devices with provisions for padlocking; and drive gates shall have a center plunger rod, catch, and semi-automatic outer catches.

All posts, rails, and appurtenances shall be hot-dipped zinc coated steel per ASTM specifications A-120-65, A-123-66 or A-153-65, whichever is applicable. Pipe posts shall have tops which exclude moisture. End, corner, pull, and gate posts shall be braced with the same material as top rail and trussed to line posts with 3/8" rods and tighteners. Each post shall be set in a concrete foundation of 1-2-4 mix having a minimum diameter of 9" or three times the diameter of the post and at least 36" deep. Line posts shall be evenly spaced 10' or less apart.

Standard tolerances apply. Installation shall be by experienced fence erectors, on lines and grades furnished by owner.

\*Non-restrictive specifications

**USS Cyclone Fence**  
USS & Cyclone are registered trademarks

For more data, circle 6 on inquiry card



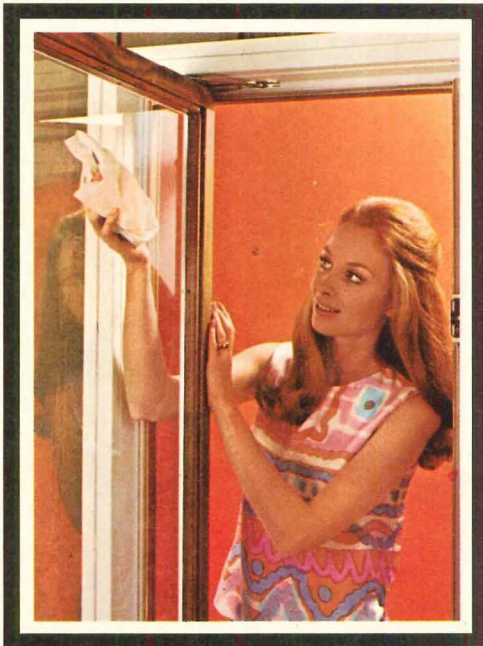


# Caradco...

## puts buyer excitement in wood casement windows

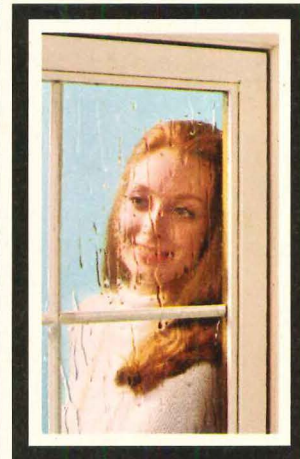
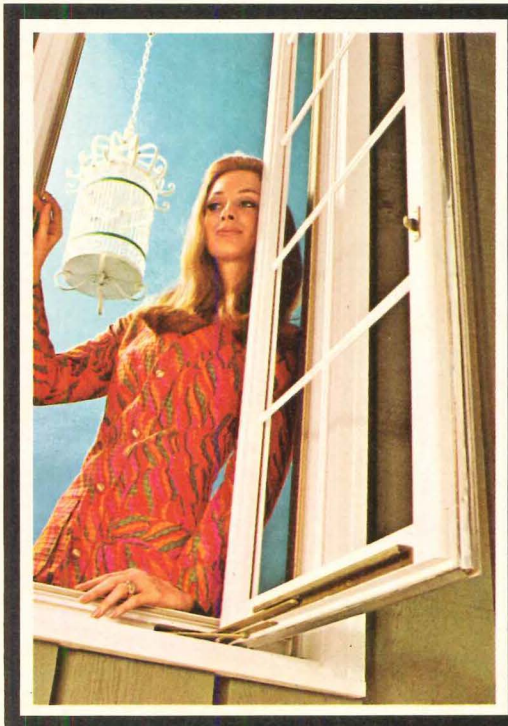


**EXCITEMENT**  
Unique modular system permits arrangements that complement any exterior.



**EXCITEMENT**  
A full 90° opening for easy inside-outside cleaning.

Exciting charm, exciting versatility. You get both in the Caradco C-200' casement. Plus all these bonus features that make the Caradco package an even better buy:



**EXCITEMENT**  
Double weather-stripping seals out cold, heat, dirt.

**EXCITEMENT**  
Permanent, leak-proof vinyl glazing assures all-weather comfort.

concealed hinges, gold-tone operators, factory-priming outside, screens, grilles (storm panel version). Excitement! To make it happen, see your Caradco dealer.

**Caradco**  
**Window and Door Division**  
Scovill

Main Plant, Dubuque, Iowa 52001/Hainesport Assembly Plant, Hainesport, New Jersey 80836/Ohio Assembly Plant, Columbus, Ohio 43204

For more data, circle 7 on inquiry card



# The subdued approach to Reflective Glass

With the increasing use of reflective glass for outstanding solar control and lower operating costs, more and more buildings are sticking out in harsh, metallic glare.

Now, Shatterproof Glass Corporation has developed a refined, subdued Reflective Glass that still offers the benefits of the harsh reflective glasses.

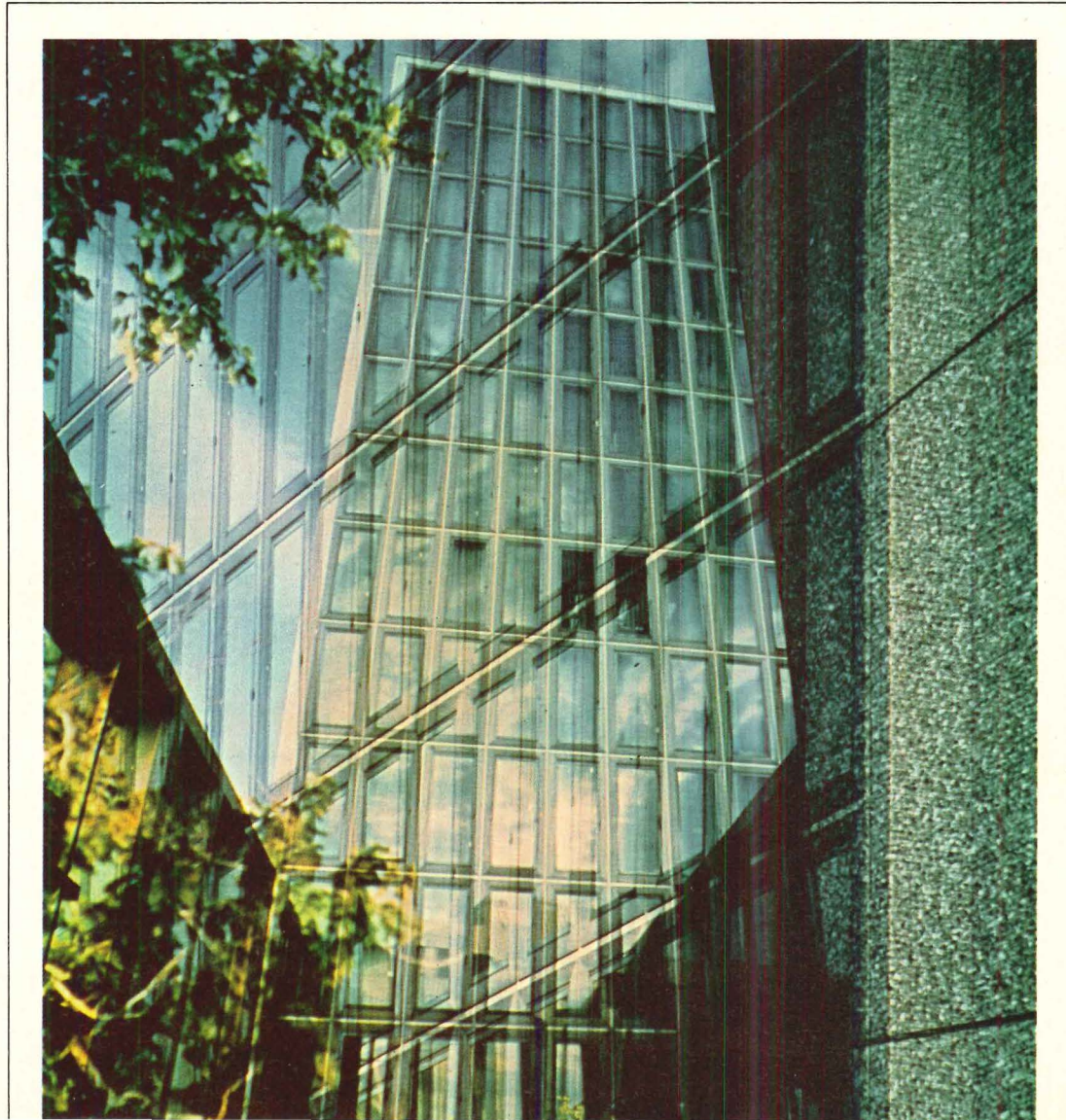
... Manufactured in three configurations—Insulating, Laminated and Monolithic—for complete versatility.

Depending on the type specified, it can also provide thermal control, sound control, security and safety benefits. Available in subdued tones of bronze, gold, gray and chrome ... in the largest quality sizes in the industry.

To learn more, write for our Reflective Brochure, Shatterproof Glass Corporation, Dept. 101A, 4815 Cabot Avenue, Detroit, Michigan 48210. Phone: 313/582-6200.

*For more data, circle 8 on inquiry card*

**Shatterproof**  
GLASS CORPORATION *Architectural Division*





# OUR CARPET STANDARDIZATION PROGRAM SAVES YOU MONEY.

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.



 **Commercial Carpet Corp.**  
 10 West 33rd Street  
 New York, N. Y. 10001  
 Dept. AR-2

**Attention: Mr. Walter Brooks**

Please have a corporate specialist call on me.

Please send more information about your program.

Name: \_\_\_\_\_

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

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

Address: \_\_\_\_\_

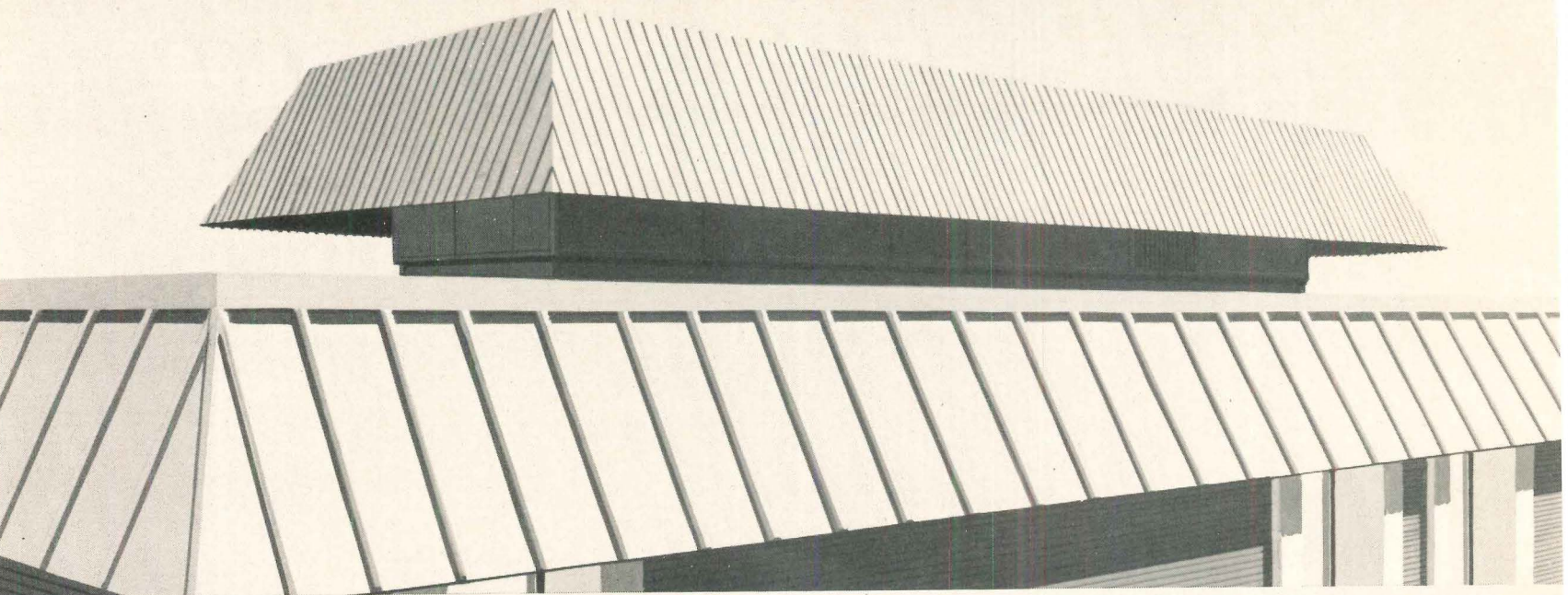
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State: \_\_\_\_\_ Zip: \_\_\_\_\_

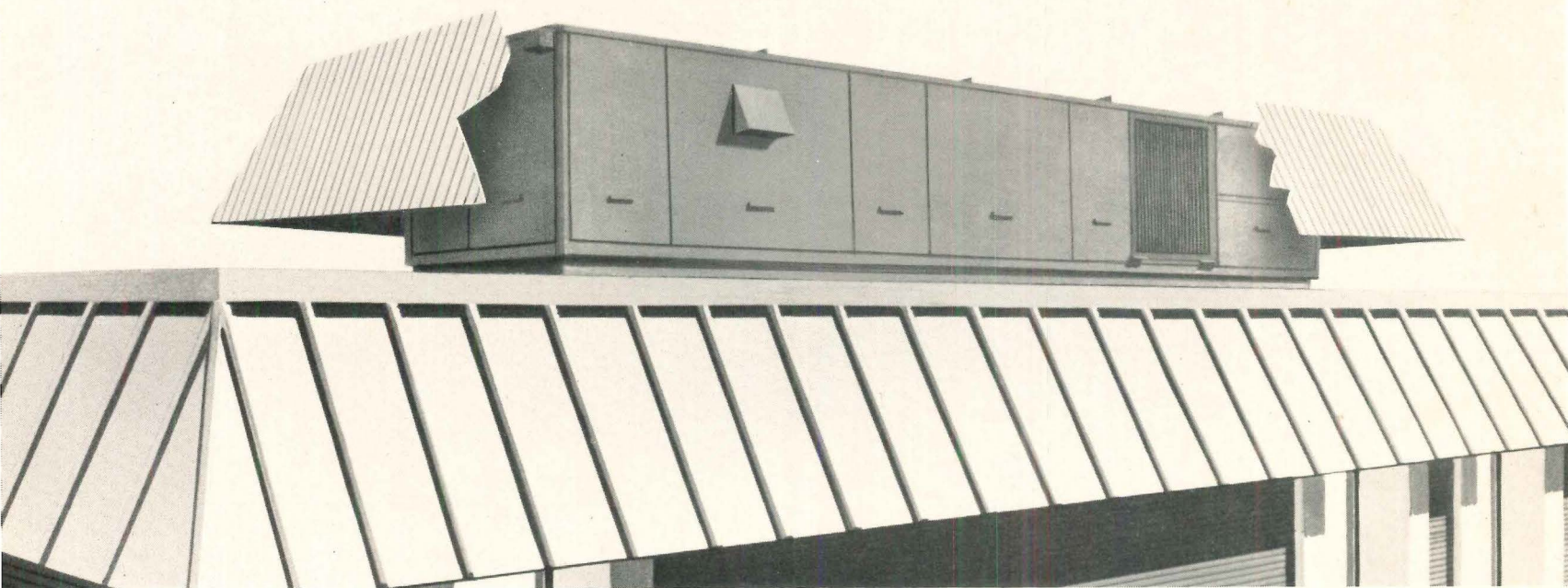
For more data, circle 9 on inquiry card



# 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.

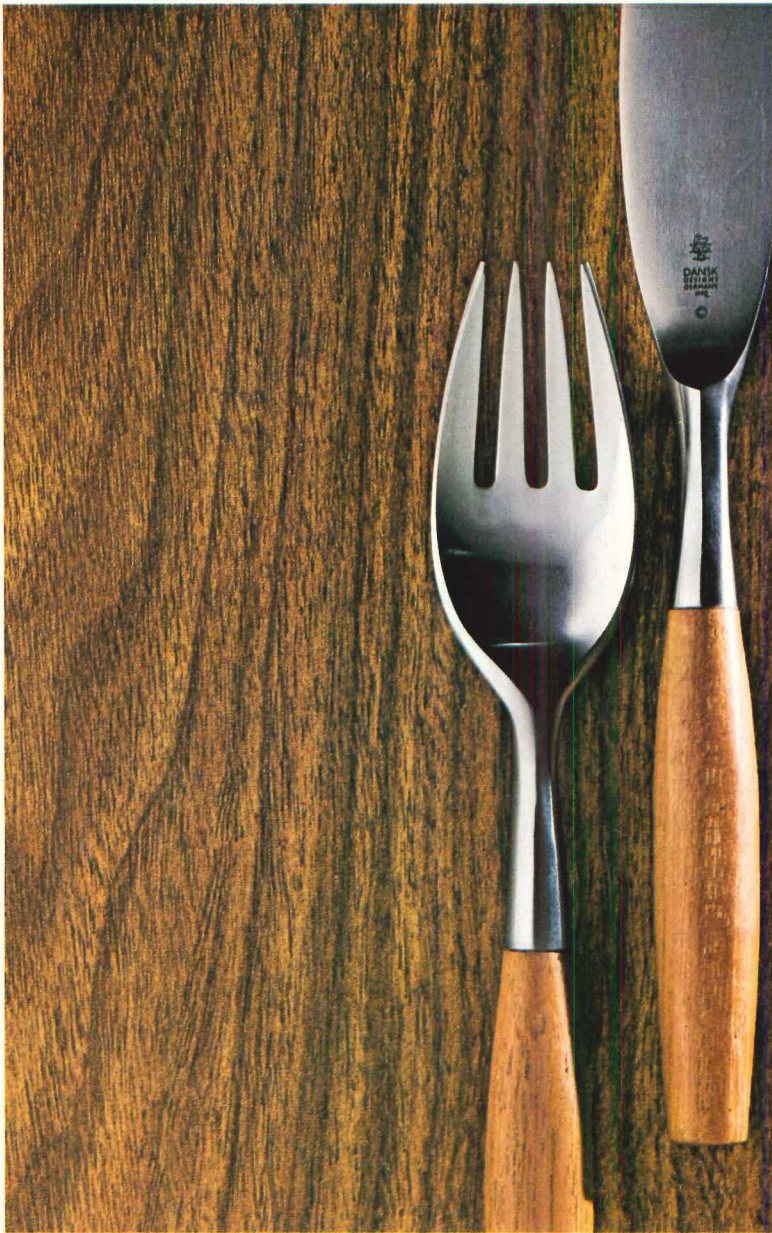
**Better Air is our Business.**



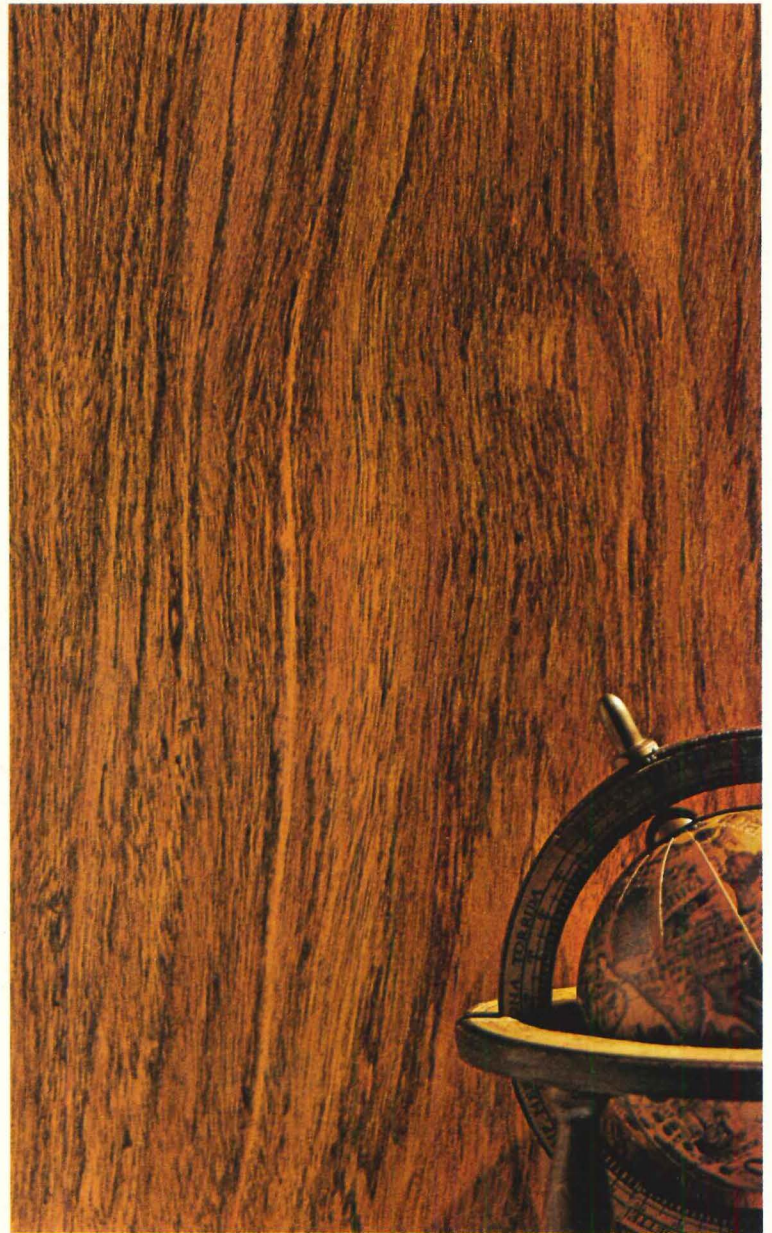
American Air Filter

**AIR HANDLING PRODUCTS AND SYSTEMS**





Allura Walnut, 310



Mozambique, 430

# Quatramatic!

## The new generation in woodgrains.

Quatramatic — an exclusive new process developed by Formica that results in a fidelity and definition in laminated plastic never before possible. It gives tone and color a new richness, grain a new depth.

You can see this in the light, bold, natural look of Allura Walnut. The vivid tones and realistic distressing of Pecky Pecan. The rich, exotic character of Mozambique.

Quatramatics are clearly a cut above other laminates.

And the beauty of it all is — when you specify one of these bold new woodgrains you're specifying the tough, durable surface that FORMICA® brand laminate is known for. A suede surface that resists scuffs, dents, scratches and chips — stays bright and new looking for years — never needs refinishing. From a selection of over 100 different colors, patterns and woodgrains.

We've created a new generation of woodgrains. Now it's your turn. Call your Formica representative today, write Dept. AR-2, or consult the Sweets Architectural File 6.14Fo.

**Leadership by design**




laminated plastic

© 1972 Formica Corporation, Cincinnati, Ohio 45202 • subsidiary of



For more data, circle 11 on inquiry card





AREALUME

## Stonco introduces a new concept in architectural illumination: geometric area lighting.

### **Why a geometric approach?**

Until now, most outdoor and area lighting fixtures bore little or no relation to the geometry of the building they were lighting.

Awkward, bulky shapes clashed with the architecture, and were difficult to adapt to modern building planes and angles.

### **Stonco's innovation**

Stonco has changed all that. We've designed the first complete series of architectural area lighting fixtures

that are geometric, flexible, modular ... and harmonize perfectly with today's building styles.

### **Back to fundamentals**

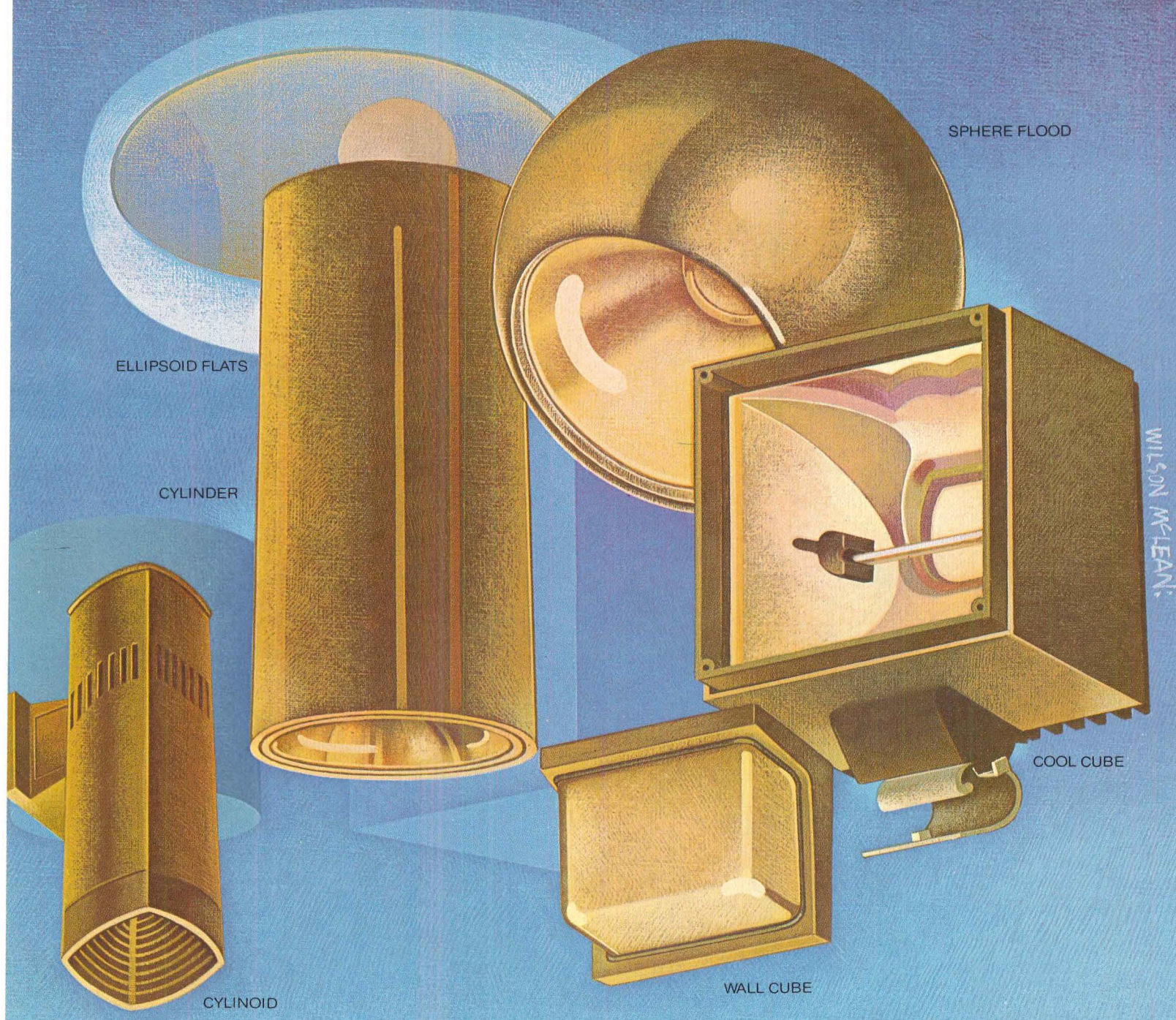
We did it by going back to the basic shapes of modern architecture—the cube, the sphere, the cylinder. Then we designed fixtures with clean, uncluttered lines to match these geometric forms. Now, by selecting from a wide choice of new Stonco lighting fixtures you can design area lighting as an integral

part of your building plan.

### **A brilliant example: Cool Cube**

Consider the quartz area flood. Most conventional types are distracting in shape, unfinished in appearance. But Stonco designed Cool Cube—up to 1500W of tungsten halogen lighting—as a compact cube that has all the inherent quality a fine building exterior demands. It's made with extruded aluminum satin-polished and anodized to a deep bronze





SPHERE FLOOD

ELLIPSOID FLATS

CYLINDER

WILSON M-ELEAN

COOL CUBE

CYLINOID

WALL CUBE

finish. And a new socket design, integral with the housing, provides a more efficient heat sink.

**Plus a square luminaire**

Another example: the usual outdoor bracket is rounded, bulky and a problem to adapt to walkways and tunnels. Not Stonco's new Wall Cube. We fashioned it as a crisp, square unit that mounts in almost any position on any surface to direct all the light you need, wherever you need it.

**And, for variety...**

To relieve the rectangular look, Stonco also offers you architectural-quality fixtures in other basic shapes: cylindrical area floods, new Arealume<sup>®</sup> pole-top designs, Cylinoid Downlights<sup>®</sup>, prismatic and opals. All are styles to blend into your plan, alone or in combination with other Stonco geometric fixtures.

**How can you learn more?**

Our new brochure, "The Shape of

Architectural Lighting," illustrates all the styles, features and options that the latest Stonco geometric area fixtures offer you. For your copy, simply circle the reader service card. Or write for details to Keene Corporation, Stonco Lighting, 2345 Vaux Hall Rd., Union, N.J. 07083.

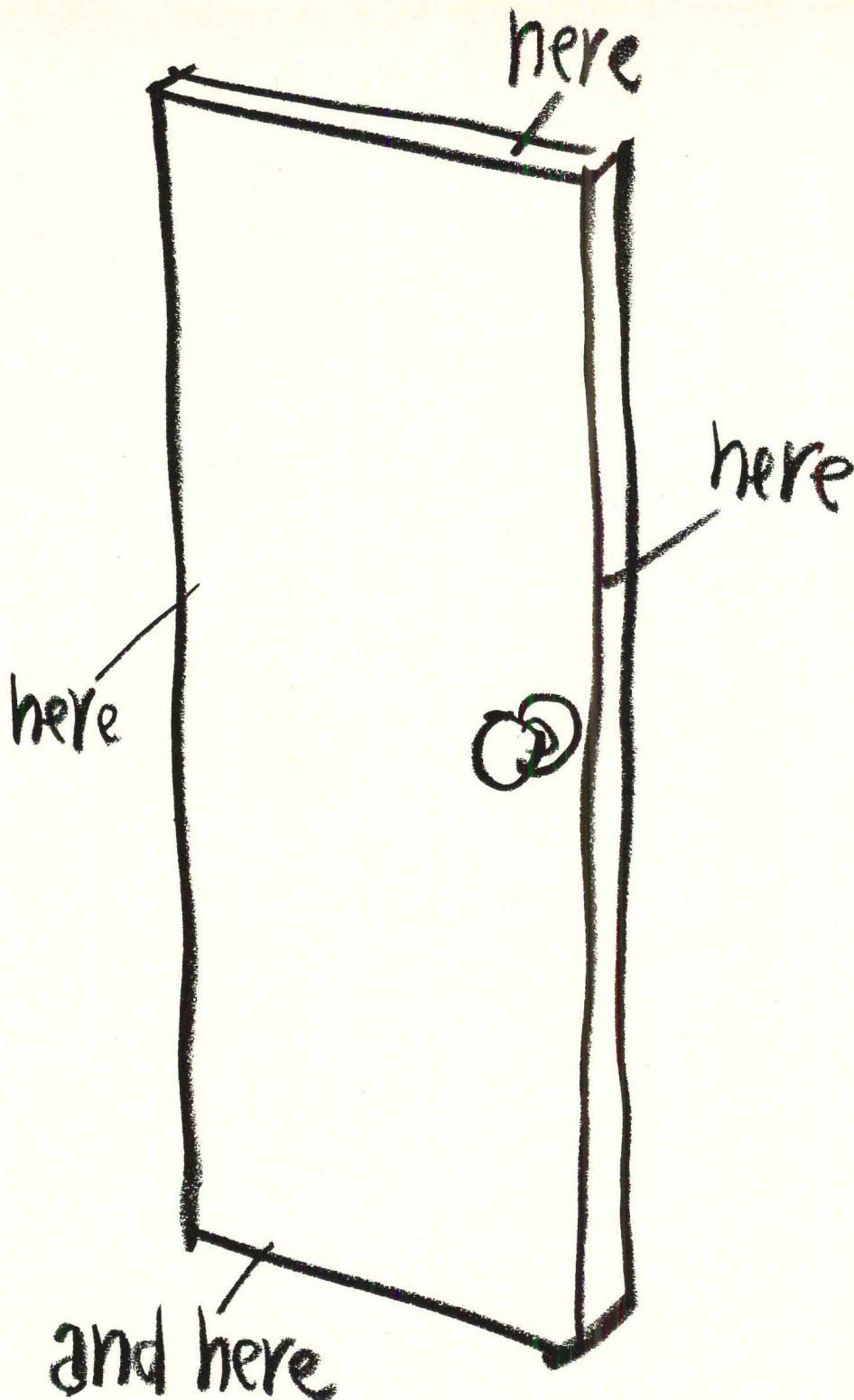
**KEENE**  
CORPORATION

**STONCO LIGHTING**

**We've just begun to grow.**

For more data, circle 12 on inquiry card





## Announcing several small changes in our 3/4-hour fire door.

You can now match the wood on the top, the bottom and the side edges of this door with the wood on the face.

There used to be two choices for the edges, Birch or Maple. (Have you ever tried to make Birch look like Oak?) Now you have seven choices for edges and face veneer: Cherry, Teak, Birch,

Oak, Walnut, Lauan and Elm.

Another small but important change. This door doesn't have (or need) fire retardant treatment, which eliminates the possibility of unsightly stains bleeding through the finish. (The mineral core, not the fire retardant treatment, is what makes this door an

effective fire barrier.)

Of course, you can still depend on these unchanging features: a UL rating for Class C openings, sizes to 4x10 feet, lifetime interior guarantee and incombustible mineral core.

For complete details, write Weyerhaeuser, Box B-8826, Tacoma, Washington 98401.



**Weyerhaeuser**

*For more data, circle 13 on inquiry card*





# Great performer at Woodfield Twin Theatres: MILSTAR<sup>®</sup> carpet by Milliken

Nothing was stinted on new theatres at the world's largest enclosed shopping center, Woodfield Mall, Chicago. The owners, ABC Great States, Inc., insisted on the finest theatre equipment and furnishings. The carpet is the dramatic "New Directions" pattern in MILSTAR, Milliken's totally new concept in commercial carpeting with exclusive features vital to high-traffic areas:

Longer Wear. Fuse-bonded into liquid vinyl plastisol, providing resilience and wear equal to or better than the finest tufted and woven constructions.

Less Maintenance. Impermeable soil-barrier back traps dirt on surface, contains liquid spills in pile, makes cleaning easier.

Permanent Tuft Lock. Superior to any other cut pile construction.

Artisan-Dyed™ Colors. Unique Milliken process produces color-fastness and lightfastness well above industry standards.

Ease of installation is another feature. When the carpet is cut from the back, seams are virtually invisible... a particularly important factor to the appearance of patterned carpet.

MILSTAR "New Directions" carpet pile is 70% Acrilan<sup>®</sup> acrylic fiber/30% super lightfast nylon. Other patterns and grades are available, including coordinated solids, stripes and tweeds. For complete details, call or write Deering Milliken, Inc., Contract Carpet Manager, LaGrange, Georgia 30240. (404) 883-5511.



## MILLIKEN

Floor Covering Business, LaGrange, Ga.



# 10 Valuable Cost Savers

## in American-Standard Thru-The-Wall Units

### OPERATING COST SAVERS

**1. Twin motors save you power costs other units waste.** Some Thru-The-Wall units have only one motor that operates on high wattage all year 'round for both heating and cooling. But American-Standard uses two motors . . . and they can save you plenty in power costs. Here's why.

Motor #1 powers the condenser fan. That means it only operates during the cooling season. And it runs on medium wattage not high.

Motor #2 is a low wattage motor that powers the roomside fan for heating and cooling year 'round. Low wattage means low power costs during the heating season. Also, motor is located in the room air stream so heat dissipated by the motor is added to the room.

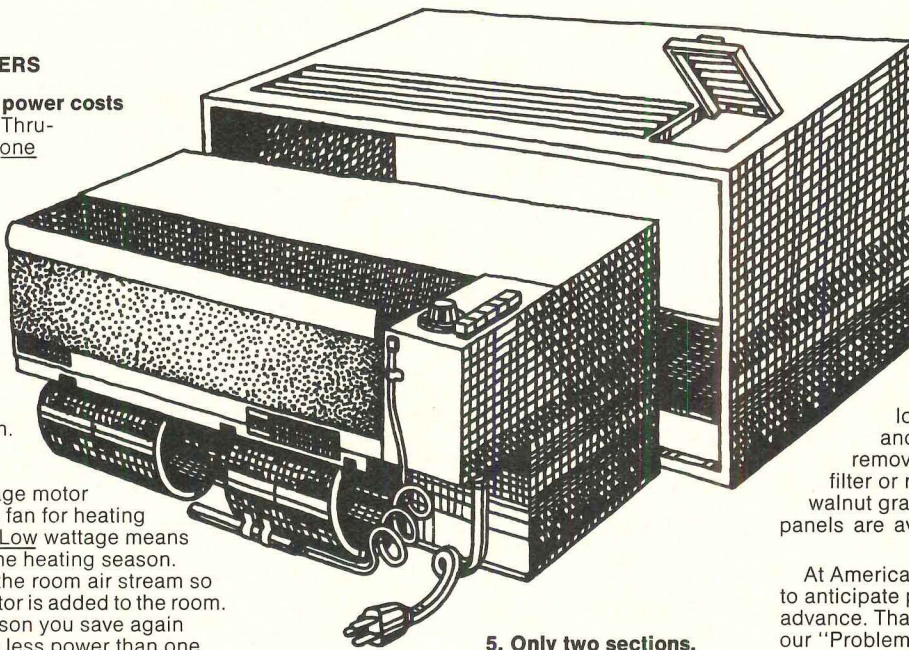
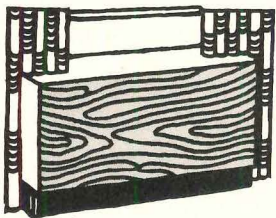
During the cooling season you save again because both motors use less power than one high wattage motor in other units. Also, the condenser fan motor only operates when compressor is running, about 30% to 40% of total cooling hours. The result is much less power use and quieter operation both inside and outside a building.

**2. More cooling per dollar.** A unique system of balanced components in our Thru-The-Wall units results in a high BTU/watt efficiency. And that means better performance and lower cooling costs.

**3. Special control systems cut operating costs.** Our Front Desk Set-Back System lets you shut down unoccupied rooms from a central source. It's a big factor in reducing costs for hotels and motels. And the Sentinel Control System provides office buildings with automatic shut-down after working hours and automatic random start-up the following morning.

### INSTALLATION COST SAVERS

**4. Takes little floor space.** These space-saver units go anywhere. Fit any wall thickness. Can be installed at floor level or any height above it. They're only 17" high. And only 8" of cabinet need project into room.



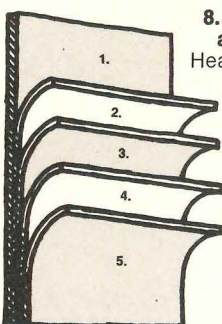
### 5. Only two sections. No ducts.

Wallsleeve and interior cabinet are combined into a single component that's quick and easy to install. Also, the compact chassis contains both the heating and cooling systems. So you have fewer installation problems and lower installed cost.

**6. Fits existing heating systems.** Modernization is easy with American-Standard Thru-The-Wall units. There's a wide choice of models that tie-in with existing steam or hot water heating systems. And there's also a complete range of sizes with electric heat.

**7. Installs room by room.** You don't have to air condition the entire building all at once. Units can be installed room by room as funds become available.

### MAINTENANCE COST SAVERS



### 8. Special multi-stage, anti-corrosion finish.

Heavy gauge steel, used for all components, is first zinc coated. Then it's treated with a 5-stage phosphatizing process. Next, it gets a special chromite coat. And finally, a tough baked acrylic finish for maximum corrosion resistance.

**9. Replace chassis in 5 minutes.** Periodic maintenance can easily be done by the building superintendent. No licensed engineer required. But if a unit ever needs repairs, entire chassis can be replaced with a spare in five minutes or less.

**10. Built to last... easy to maintain.** Components are made of heavy-duty steel... 14, 16 and 18 gauge. Maintenance-free exterior

louer is made of heavy anodized aluminum. Front panel removes without tools for cleaning filter or removing chassis. Beautiful walnut grain textured vinyl steel front panels are available.

At American-Standard, we take the trouble to anticipate problems and solve them in advance. That's why we believe you'll find our "Problem Solver" Thru-The-Wall units are far less expensive in the long run than any other kind you can buy.

And we have a complete range of products for all kinds of jobs. Large or small. New construction or modernization. High rise or low rise. For more details, fill out and mail the coupon below.



3

## The problem solvers

American-Standard Commercial Air Conditioning  
1300 Federal Blvd.,  
Carteret, New Jersey 07008

Please send me more information on your Thru-The-Wall units.

For future job.

For job now in progress.

Also send free copy of full-line catalog.

Name \_\_\_\_\_ Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City & State \_\_\_\_\_ Zip \_\_\_\_\_

Phone Number \_\_\_\_\_

ASK YOUR AMERICAN-STANDARD REPRESENTATIVE ABOUT OUR "FAVORITE SON" INCENTIVE PROGRAM.



# KINNEAR ROLLING DOORS

click with modern building design...  
a perfect picture of economy, efficiency  
and dependable protection.

At Polaroid Corporation's new Waltham, Massachusetts plant, the clean, uncluttered look of Kinnear Rolling Doors blends beautifully with the long, low modern lines of the building's design. But behind that trim facade stands a door engineered to survive time, trucks, weather, fire, wear, and crow bars.

Kinnear developed the interlocking metal slat rolling door over 75 years ago. Today we have perfected it to give years of carefree service,\* coil compactly above the opening, withstand wind, snow and rain, block the spread

of fire, and provide a tough barricade against riot and crime. And for extra efficiency especially suited for electric motor operation! A few of the good reasons many companies from coast to coast turn to Kinnear for dependable rolling doors.

For a better focus on how Kinnear Rolling Doors will look on your next project, request our complete catalog showing: Rolling Doors, Fire Doors, Grilles, Counter Shutters, Overhead Doors, and Electric Openers. They will fit any opening, building type, or architectural design harmoniously.

\*Check your Yellow Pages or Sweet's, then call your Kinnear representative. Ask him about our "Registered" Life-Extension Plan for "sudden-service" on damaged doors. It'll click with any building maintenance department.




## KINNEAR CORPORATION and Subsidiaries

1860 Fields Avenue, Columbus, Ohio 43216  
Factories: Columbus, Ohio 43216 • San Francisco, California 94124  
Centralia, Washington 98531 • Toronto, Ontario, Canada

Polaroid® by Polaroid Corporation

For more data, circle 16 on inquiry card





# DAMP LOCATIONS

The National Electrical Code now requires that fixtures mounted in damp locations carry a specific approval of Underwriters Laboratories. Increasingly in the future, inspectors are going to insist that fixtures comply.

Prescolite has many models in both Recessed and Surface series that meet the N.E.C. requirements and carry this U.L. Damp Location label.

Whether your plans call for Recessed or Surface fixtures, Ceiling or Wall—the man to solve your lighting problems is your Prescolite representative!

**PRESCOLITE**

1251 Doolittle Drive, San Leandro, California 94577



**A U.S. INDUSTRIES COMPANY.**  
And that makes a world of difference.



## Now you can specify KALCOLOR® aluminum in gray. Or gray. Or gray.

New #50 KALCOLOR aluminum sheet and extrusions are now available in light gray, medium gray and dark gray.

A perfect addition to our other KALCOLOR aluminum colors of gold, light amber, amber, statuary bronze and black.

Soft, subtle shades of gray that are unmistakably KALCOLOR aluminum. Finishes that are gem-hard, corrosion-resistant and unsurpassed in sun-fastness and color uniformity.

Pick one. Or any of the other colors. But specify KALCOLOR aluminum. It's made only by a unique, integral-color hardcoat anodizing process developed by Kaiser Aluminum. No dyes are used. And no other integral-color system can match its quality.

Your projects will look better for it. And so will you.

(KALCOLOR aluminum in gray is already being used on a number of impressive buildings around the country: Los Angeles' CNA building, New York's 919 Columbus Circle building, the Academic Sciences building at West Point, the Seattle-Tacoma Airport (remodeling) and the Jefferson Plaza building, Columbia, S.C.—to name a few.)

For color samples of new gray KALCOLOR—and list of approved KALCOLOR aluminum anodizers—write to Architectural Marketing Manager, Room 2142 KB, Kaiser Center, Oakland, CA. 94604.

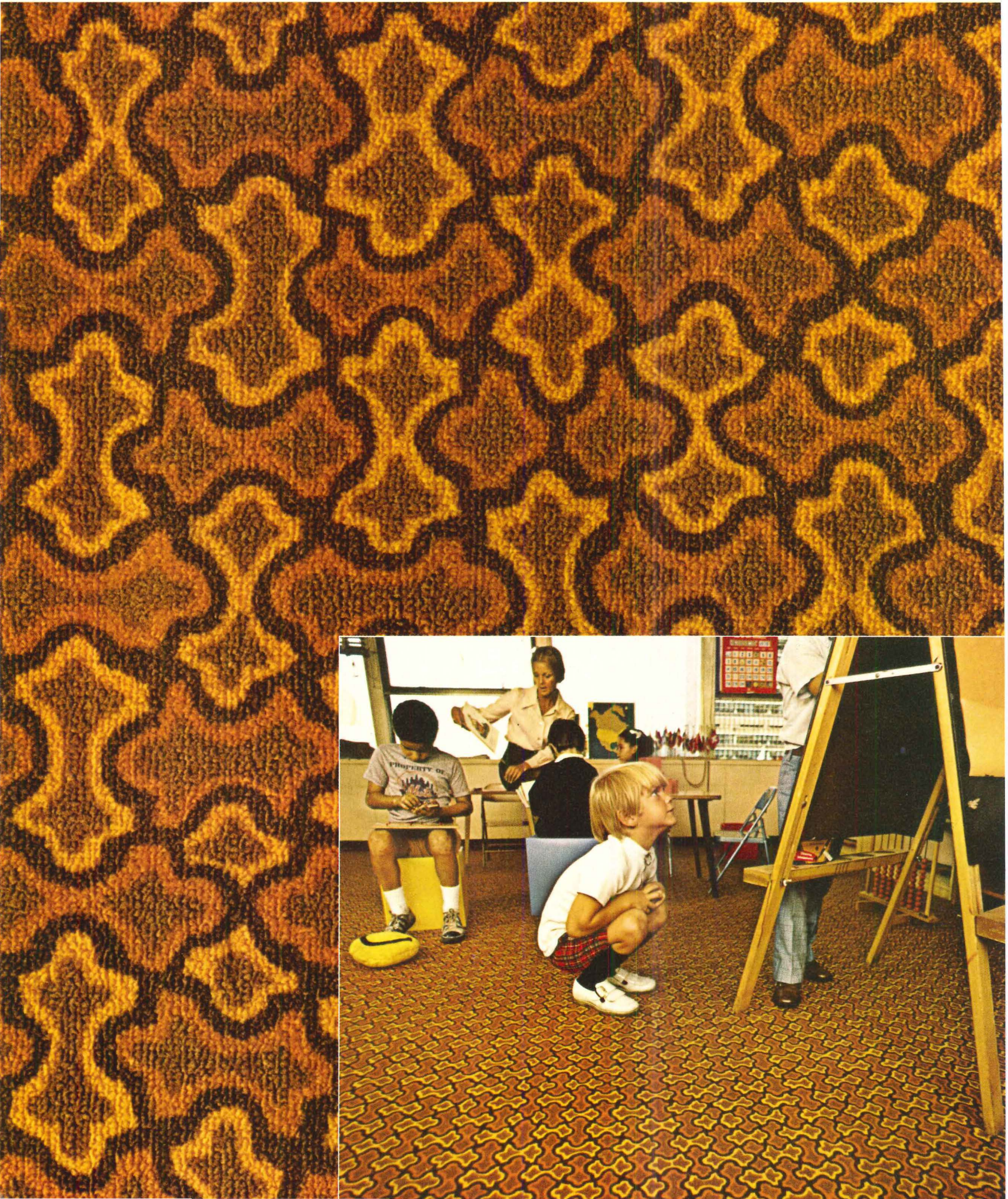
See our Aluminum in Architecture catalog in Sweet's Architectural File. Index No. 5.1/Ka.

# **KAISER ALUMINUM**

*For more data, circle 18 on inquiry card*



# A school needs





# pretty-tough carpet.



CARPET—BAROQUE BY MAJESTIC

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.

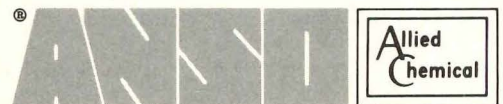
Some look like May flowers. Some like stained glass. Some like abstract art. They're part of our Masterworks Styling Program. And if these original designs don't meet your requirements, Allied Chemical will create exclusive designs that do.

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.

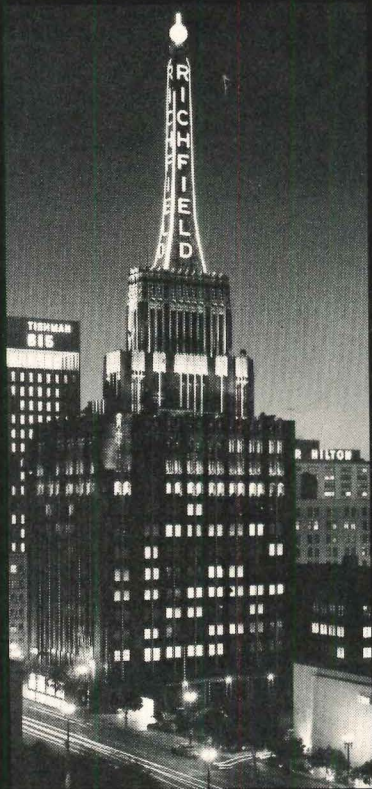


**ANSO nylon makes pretty-tough carpet.**

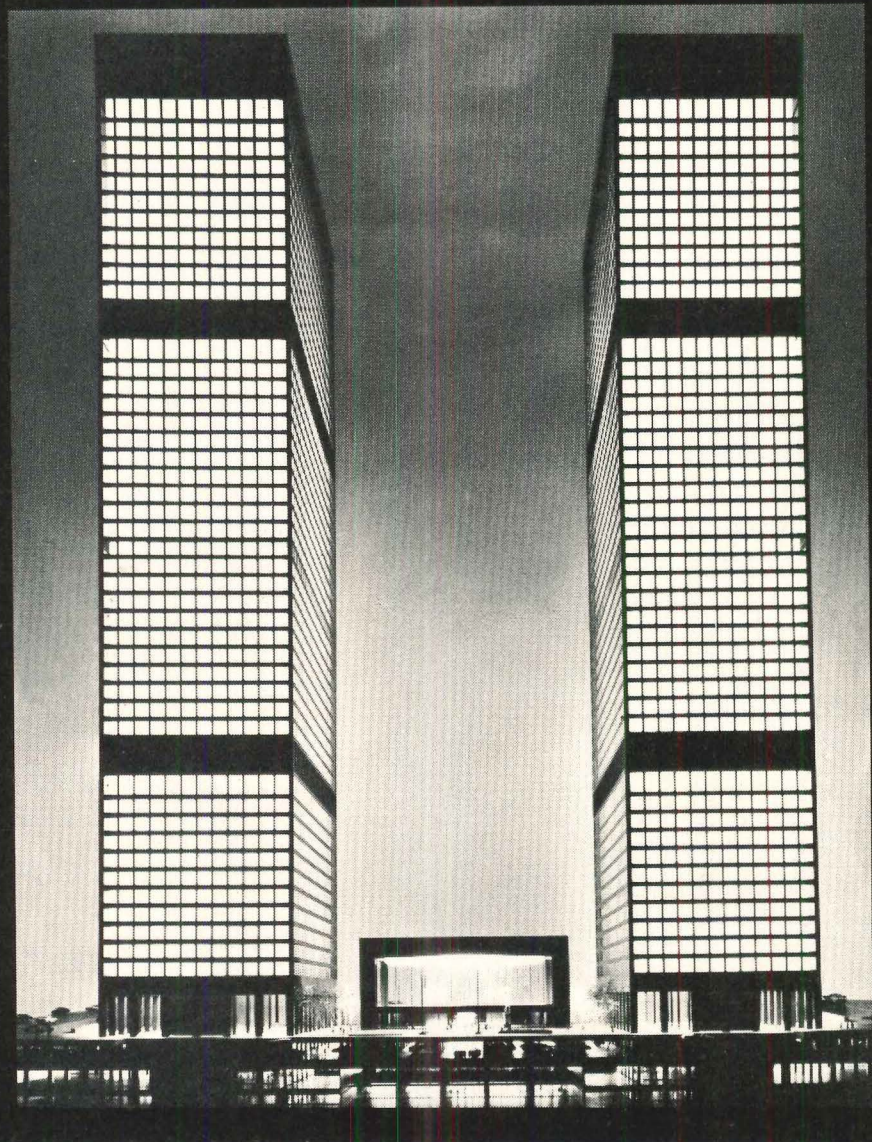
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In 1958 they sealed the old Atlantic Richfield headquarters with LP<sup>®</sup> polysulfide polymer.



In 1971 they demanded that the new Atlantic Richfield headquarters be sealed with LP<sup>®</sup> polysulfide polymer.



It always makes sense to ride a winner.

Case in point: the spanking new Atlantic Richfield Plaza whose designers and builders specified that it be waterproofed with a sealant based on Thiokol's LP<sup>®</sup> polysulfide polymer.

The reason for their decision? A polysulfide-based sealant has proven to be a winner. In fact, it has been doing just that for the past 14 years at Atlantic Richfield's former headquarters building nearby in downtown Los Angeles.

The choice, then, was both obvious and logical. Why not go with a sealant that had successfully withstood years of punishment in an environment that often contains more than its share of corrosive pollutants?

But, at Thiokol we don't rest on past accomplishments alone. Granted, sealants based



on our polymer have performed flawlessly for more than 20 years. Yet that doesn't stop us from continuing a Seal of Security Program which aims to see that they'll last even longer in the future.

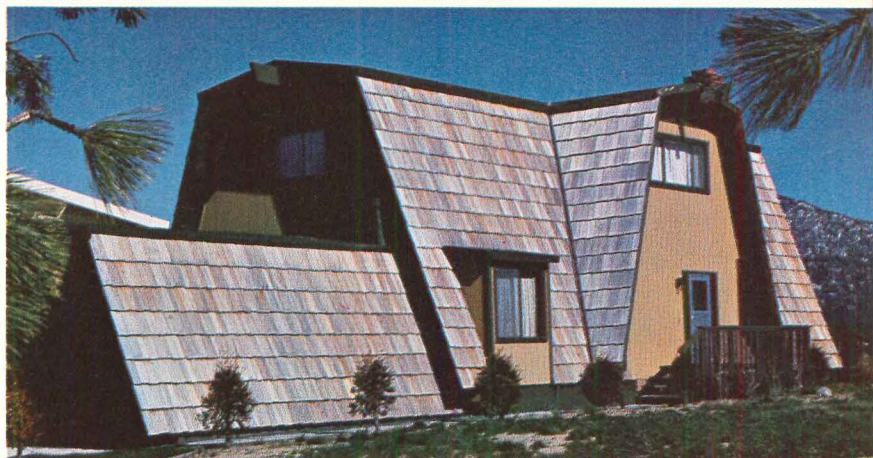
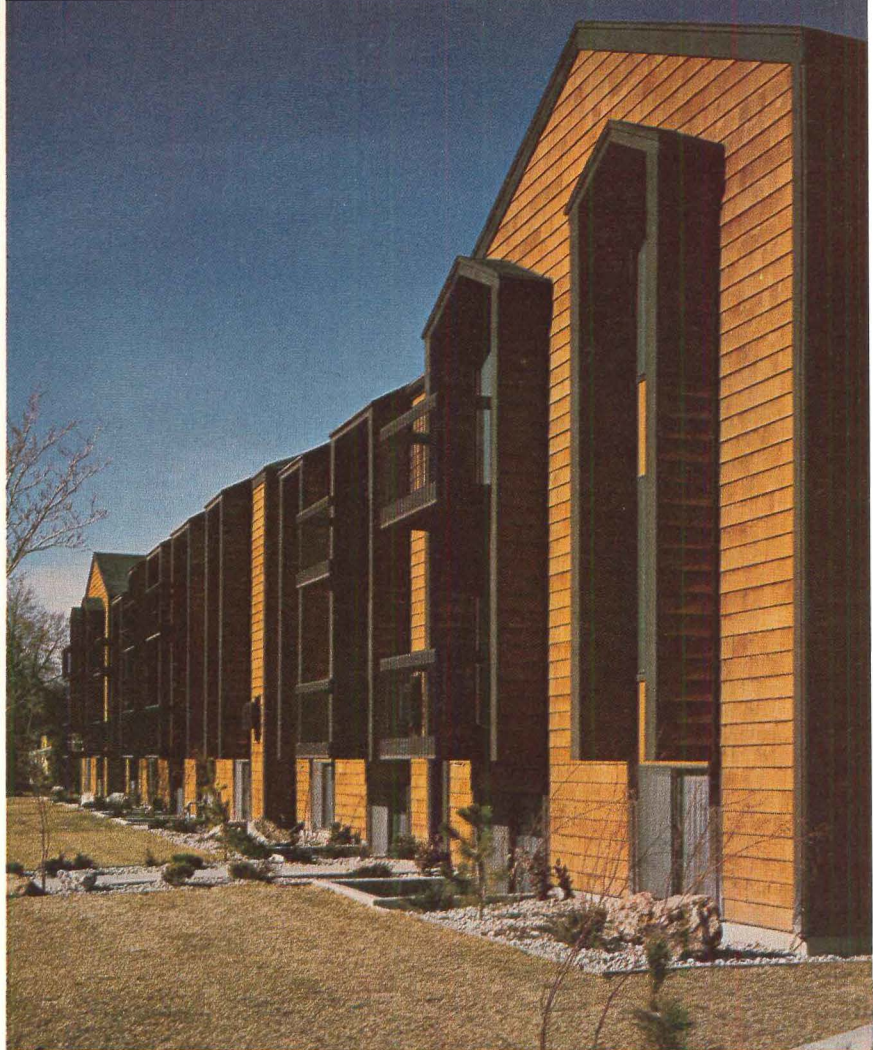
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*Upper Left: Alexander Charles Lamas, Architect, Atlanta, Ga.*

*Upper Right: Ronald Molen, A.I.A., Salt Lake City, Utah*

*Lower Right: Harvey Bennett, Lake Tahoe, Calif.*

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## News in brief

**Pietro Belluschi, FAIA, has been awarded the 1972 Gold Medal** of the American Institute of Architects. He will be presented with the award—the highest bestowed by the 24,000 member national society—at the national convention in Houston, May 7-10.

Other winners for 1972; Fine Arts Medal, sculptor George Rickey; Industrial Arts Medal, architect Charles Eames; Allied Professions Medal, landscape architect Ian McHarg.

**Nationwide construction costs registered an average 7.8 per cent gain for the twelve month period ending September 30 1971** according to figures released recently by the F. W. Dodge division of McGraw-Hill. Highest gains (8.3 per cent) were registered in New England and the Mississippi River/West Central Regions. Increases of 8.0 per cent were noted in metropolitan New York/New Jersey and the Northeast regions. The Southeastern and South Central states experienced a 7.6 per cent gain while the Pacific Coast and Rocky Mountain states showed the smallest rise, 6.9 per cent.

The impact of Phase II, not reflected in current data, is expected to show up in the next semi-annual survey to be taken in the early spring.

**The AIA has announced the formation of two new commissions** to oversee government relations programs and to direct activities in the area of professional responsibility to society. The Government Affairs Commission, William Marshall, Jr., chairman, will concern itself with legislation affecting the architectural profession. The Community Services Commission, Van B. Bruner, Jr., chairman, will assume the functions of the 1971 Task Force on Professional Responsibility to Society.

**HUD has announced its Fifth Biennial Award Competition for Design Excellence.** Awards will be made for winning entries in two categories: Project Design and Urban Design Concepts. Eligibility is restricted to work finished since January 1 1967, and to projects undertaken with a HUD financial assistance program. All entries must be postmarked not later than March 31, 1972. For entry forms and further information, write Fifth Biennial HUD Design Awards Program, Department of Housing and Urban Development, Washington, D.C. 20410.

**The Cosanti Foundation announces that applications are now being received for Arcosanti 4**—a series of six-week workshops beginning February 7 and extending through early November 1972. Participants will be involved in the phased construction of a huge structure designed by Paolo Soleri under whose direction the work will proceed. Applications are available from the Cosanti Foundation, 6433 Doubletree Road, Scottsdale, Arizona, 85253.

**The Center for Advanced Visual Studies of the Massachusetts Institute of Technology is offering a limited number of grants to professionals in the visual arts.** According to Institute Director Gyorgy Kepes, "The Center's main purpose is to explore new artistic objectives of civic scale and environmental dimensions." Applications should be made directly to Center for Advanced Visual Studies, Massachusetts Institute of Technology, Cambridge, Massachusetts 02139.

**Six important legislative issues**—transportation, labor relations, land use policy, housing and community development, Federal contracting, and redirection of research and technology policies—will form the core of the 1972 Public Affairs Conference. In a new format, conference attendees this year will have the chance to attend several of the six seminars, which will be led by Congressmen and their aides who are forming the government's policies in these key areas. Sponsored annually by AIA and the Consulting Engineers Council, the conference will be held March 13-14 at the Statler-Hilton Hotel, Washington, D. C.

**The Associated General Contractors and the American Institute of Architects now find themselves at odds** over a recent AIA board of directors action which approved revision of AIA Document A401, the subcontract standard form of agreement between contractor and subcontractor. AGC takes the position that AIA should assume a "hands off" policy regarding subcontract forms involving contractors and subs but AIA says it was merely updating its own form and that in this age of changing conditions in the building industry its members might well have to deal with subs more directly than they have heretofore.



## Report of the National Policy Task Force

"This report is about America at its growing edge. It outlines a set of policies that can enable this nation—as a responsible member of a threatened world of nations—to shape its growth and improve the quality of its community life.

The strategic objective of these policies is a national mosaic of community architecture designed to be in equilibrium with its natural setting and in sympathetic relationship with its using society."

*So begins the AIA's National Policy Task Force Report which has now been accepted in principle by the Institute's board of directors and will be presented to the membership at its upcoming convention in Houston, May 7-10. This important document focuses on some of the cankers of growth and urges significant reforms in many areas of American life.*

"Machines have pushed men off the land and into deteriorating cities where they have been imprisoned by rising prejudice and dwindling opportunity. Others have been left behind, trapped in the forgotten hamlets and hollows of rural America.

"The nation has been polarizing into richer and poorer, black and white, growing suburbs and declining cities, neighborhoods of higher and lower status and some with no status at all. . . .

"Jobs have been separated from housing, forcing families to spend more money on highway transportation than on homes and more time on the road than with each other.

"Land, money, and building costs have priced more and more Americans out of the conventional housing market. . . . Construction has lagged. . . . Abandonment of existing stock in the older cities has picked up at a threatening rate. . . . Land has become a negotiable commodity and tossed carelessly into the game of speculation for profit. Once in the market, not only its use but its very existence is subordinated to the highest bidder and shortest term gain.

### ARCHITECTURE THAT COULD BE LETHAL

"The social distortions in the development of our communities are reflected in our built environment. For much of what we have built, largely since World War II, is in-

human and potentially lethal. We cannot long endure an environment which pollutes air, water, food and our senses and sensibilities.

"At the same time that our growth has created an environmental crisis, the governmental process for dealing with growth has been scissored into bits and pieces. Whatever energies and resolves Americans can muster to shape their growth and salvage their environment are dissipated in an almost infinite chain of separate and conflicting consents which have to be negotiated in order to do the public's business. Just when the nation most needs its enterprise, creativity and an overriding sense of community, stymie and cynicism become the order of the day."

*Some of these growing pains are doubtless unavoidable. And in a pluralistic society that values free choice, a unified attack on any problem is hard to mount. The Task Force acknowledges these difficulties but makes an eloquent plea for corrective measures that begin with a consistent policy for national growth—a policy that accurately reflects our values:*

" . . . What has been missing is the public competence that makes both our values and our policies credible: laws with teeth; programs with money behind them; public officials with the power to act. . . ."

*Earlier population projections now appear to be inflated while housing starts have risen dramatically.*

"It is not the numbers we should be concerned about, but the quality of living and the choice of life style that are opened to Americans whoever they are and however many there may be. This is what we believe Americans mean when public opinion polls regularly report that a majority of them say they'd prefer to live in smaller communities. . . . Neighborhoods that are safe, neighborhoods that are within easier reach of jobs and a richer mix of community life and services, neighborhoods small enough to have some identity of their own, where no one need be anonymous while attaining the privacy Americans have always yearned for.

"It follows, we think, that the

*A thoughtful proposal by the profession that sets out in nine sections a creative response to many of the problems that have plagued this nation's growth and threaten its future*

measuring rod of national growth should be the quality of our neighborhoods, and the assurance that neighborhoods—even when they change—will not deteriorate. The neighborhood should be America's "Growth Unit. . . ."

"Our own guess is that most of America's expected growth from now until the end of the century will occur within existing metropolitan areas—whether all of us would like that to happen or not. The economics and the politics of radically changing that pattern are too difficult; they may well be impossible. . . .

"We therefore conclude that American growth policy should concentrate on improving the present and future condition of our existing metropolitan areas. Within these areas we believe the first priority should go toward improving the condition of the older core cities, more especially the condition of those trapped in poverty and the squalor of declining neighborhoods. . . ."

### GROWTH AND REGROWTH

"We think it folly to try urban renewal in the older, denser neighborhoods before moving and relocation room is made ready elsewhere. . . . We believe that no national growth policy will work unless there is a broader base for financing the facilities and services that are necessary for more livable communities. The local property tax is no longer enough. We have exhausted it, and now it is crippling us.

"Similarly, we are convinced that an effective national growth policy will require broader perspectives, and in many cases larger governmental jurisdictions. . . . And while these broader capacities are developing, we also see the need for more citizen control and participation at the neighborhood level. Neighborhoods have been swallowed up in the growth and change of urbanizing America. The exact forms and functions of neighborhood government can vary; but national growth policy cannot do without the sturdiness and savvy of grass-roots support. We see no contradiction in simultaneous transfer of power upward to broader-based levels of government and downward to the neighborhoods. It is not power which is being subtracted—it is capability which is

being added.

"Finally, we are convinced that an effective national growth policy requires that land increasingly be treated as a public rather than a private commodity; this is true particularly of land that lies in the path of growth or that otherwise is crucial to the community's well-being: open space, flood plains, coasts and shores, etc.

"We favor public acquisition and preparation of land in advance of development. We believe that the appreciating value of urbanizing land should be recycled into the costs of developing, serving and maintaining it. We believe in many cases leasing rather than outright sale would be desirable for land acquired and assembled by public action."

### BUILDING AT COMMUNITY SCALE

" . . . The Growth Unit does not have fixed dimensions. Its size in residential terms would normally range from 500 to 3,000 units—enough in any case to require an elementary school, day care, community center, convenience shopping, open space and recreation. . . .

"Larger communities—up to and including free-standing new towns—should be built as multiples of these Growth Units—allowing, of course, for an emerging hierarchy of additional services and facilities, such as high schools, community colleges, hospitals, regional shopping centers, mass transit, and utility systems.

"The neighborhood Growth Unit relates just as much to the rebuilding of America's older cities as it does to new growth on open land. . . . The Growth Unit is based firmly on the principle of open occupancy and equal access to facilities and services. Moreover, by linking growth and regrowth both outside the central cities and within them, the nation can find an orderly way out of its segregated living patterns and the haunting tragedy of its older cities."

### BARRIERS TO ORDERLY GROWTH

*Building new communities at a larger scale has proved hazardous in the past. Many constraints that now exist must be removed to make the Growth Unit a practical increment. No real progress in this direction is possible unless:*

"a) there is an assured flow of credit at stabilized rates of interest



At the same time that our growth has created an environmental crisis, the governmental process for dealing with growth has been scissored into bits and pieces

Land has become a negotiable commodity and tossed carelessly into the game of speculation for profit

The network of transportation and communication corridor should be the essential basis for comprehensive planning within the proposed communities

Livability does not come by accident; even free choice requires design

over a sustained period of time; b) low- and moderate-income families are *directly* subsidized (through income supplements, housing allowances, "235"- and "236"- type interest reductions, etc.) at a level equivalent to the housing subsidies now provided higher-income home-owners in the form of tax deductions of mortgage interest and local property tax payments (plus what economists call "imputed rents"); c) state governments retrieve sufficient control over local building, zoning, and health regulations to insure an adequate supply of land for large-site development—and also land permanently reserved for open space, ecological balance, and communal use."

#### FRONT LOADING

"Building at neighborhood scale requires front money equal at least to 40 per cent of the total investment, with no appreciable return on that early investment coming until the fifth to the 15th year. Few are in a position to advance that kind of money and to wait so long for a return. . . . Public supports will have to be expanded greatly, both at Federal and at state levels. . . ."

#### THE PUBLIC INFRASTRUCTURE

"Another barrier is the shortage of public funds for the necessary infrastructure and community services. We propose that the Federal and the state governments plan and construct networks of utility corridors, including transit, water, sewage, electricity. These would constitute the skeleton of utilities on which Growth Units could be fastened. . . ."

#### PROPERTY TAX

"America's dependence on the local property tax is especially hurtful. By tying practically all costs of community development to local ratables, it causes undue hardships on the builder and the citizen alike. The apparent answer is to move toward broad-based taxation at state and Federal levels. . . ."

#### REVENUE SHARING

"Any sharing of revenue by the Federal government with the states should be conditioned on certain reforms, including a restructuring of the property tax system, zoning

and building codes, and reallocation of infrastructure costs. . . ."

#### CATEGORICAL GRANT PROGRAMS

"The tradition of categorical funding that has long been followed in American government needs to be modified. Above all, the Highway Trust Fund, we think, must be converted into a general fund for community development and greatly expanded."

#### USING THE GROWTH UNIT IN COMMUNITY DESIGN

*The commitment to community design must be long-range and tenacious but flexible enough to embrace the following principles:*

1. Equilibrium: the design should be economical in its consumption of natural resources. It should minimize the emission of harmful effluents and encourage emissions that tend to replenish natural resources. . . .
2. Symbiosis: the design should provide a beneficent and nourishing relationship between the physical environment and its using society. The surest means of attaining this relationship is to encourage community participation in the design process.
3. Satisfaction of Spiritual Needs: the design must satisfy the individual user's need for reassuring symbols that speak to him from the natural setting and from architecture within this setting. . . ."
4. Expansion of Locational Options: just as the national strategy emphasizes freedom of choice of location, design of Growth Units should reduce barriers based on economics or race or age. This means that transportation, industry and commerce must be placed with attention to their social consequences.
5. Expansion of Qualitative Options: the design mosaic must provide a rich variety of living environment, matching the variety of life styles within our society.
6. Open Space Preservation: community design must preserve open space at all geographic scales from the national to the local. Certain areas should be precluded from development either because of natural features that are hazardous to residents or where development would threaten ecological balance or recreational values.
7. Historical Preservation: our his-

toric heritage must be preserved from destruction or erosion, if a sense of individual and community identity is to survive. Preservation of historic buildings and communities will require the discovery of new uses as original uses become obsolete. . . .

8. Public Investment as a Key to Development: public utilities and facilities can be used to determine settlement patterns. Both nationally and at the level of a single Growth Unit. The network of transportation and communications corridors should be the essential basis for comprehensive planning within the proposed communities and for their external connection with the existing community fabric. . . .

9. Amendable Architecture: the design should provide a physical fabric that is amendable by its occupants to accommodate changes in life styles, technology and economic circumstance.

10. Reduced Cost of Shelter: design should seek to reduce the cost of housing. . . . The design should take maximum advantage of the reduction in governmental constraints which must be a part of a national growth strategy. . . . The unearned increment in the value of land should be recaptured by the public, instead of becoming part of the inflated cost of shelter as it does now.

11. Experiment with Change: each Growth Unit can be a laboratory for new applications of technology and design. . . . The behavioral sciences can be involved in the development of a more sophisticated basis for establishing user needs. . . ."

#### THE GROWTH UNIT AND THE URBAN CRISIS

*If present growth patterns continue, existing metropolitan areas, which now account for half the nation's population, will absorb an increasingly high percentage of population growth. The Report urges a policy for alleviating urban ills by redirecting some of this growth.*

1. The governments involved immediately should assemble one million acres of land for community development within the core cities and mostly in the metropolitan periphery. . . . The appreciating value of this land—realized by lease and sale over the next 30 years—would be enough to cover its original cost plus a large pro-

portion of the costs of preparing the land for development.

2. A third of the nation's growth during the next 30 years (20 million) could be accommodated on these one million acres at average densities of 20 persons per acre—far under the present densities of troubled core cities, and within range of current consumer choice and economic feasibility.

3. The building block of this development would be the neighborhood growth unit—averaging 3,000 dwellings, 8-10,000 persons—built either singly or in multiples which over time would be fitted together into larger satellite communities.

4. The development of these growth units should be staged to provide relocation and elbow room for the restoration of older neighborhoods in the core area. . . .

5. The social mix of these neighborhoods would be ensured by housing subsidies and allowances covering housing rental costs exceeding 25 per cent of family income. . . .

6. Federal, state and local governments would join in planning and paying for the necessary infrastructure—particularly transportation and utility corridors which would weave these Growth Units into the existing fabric of metropolitan life.

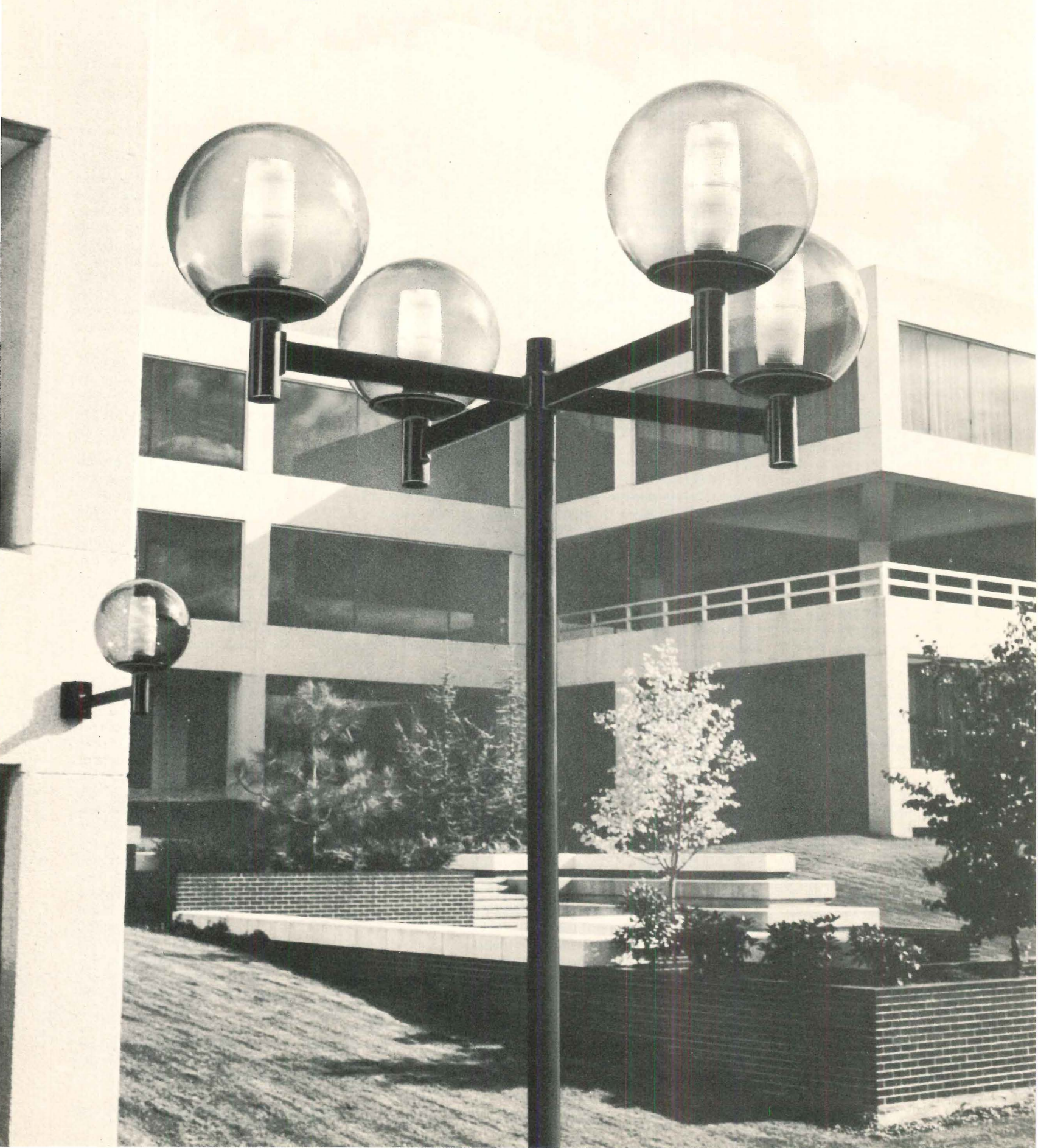
7. Zoning and building codes for these Growth Units should be developed jointly by the three levels of government, with the states taking a strong initiative."

*Community building will be a challenge to all of us and will require the best efforts of each of us. . . ."* But if we are to achieve some coherence and not let freedom vanish into chaos, we have no alternative but to deal with all the tumbling forces and facts of the here-and-now, and then find levers that have the power not only to move but to win majority consent. What we urge is that the nation see and grasp the Growth Unit as part of a national strategy—to make of this country what it can and must be, a society confident and united enough to enjoy the richness of its diversity. Livability of that kind does not come by accident; even free choice requires design."

*For some thoughts on this report, its urgency and possible impact, see Editorial, page 9.*

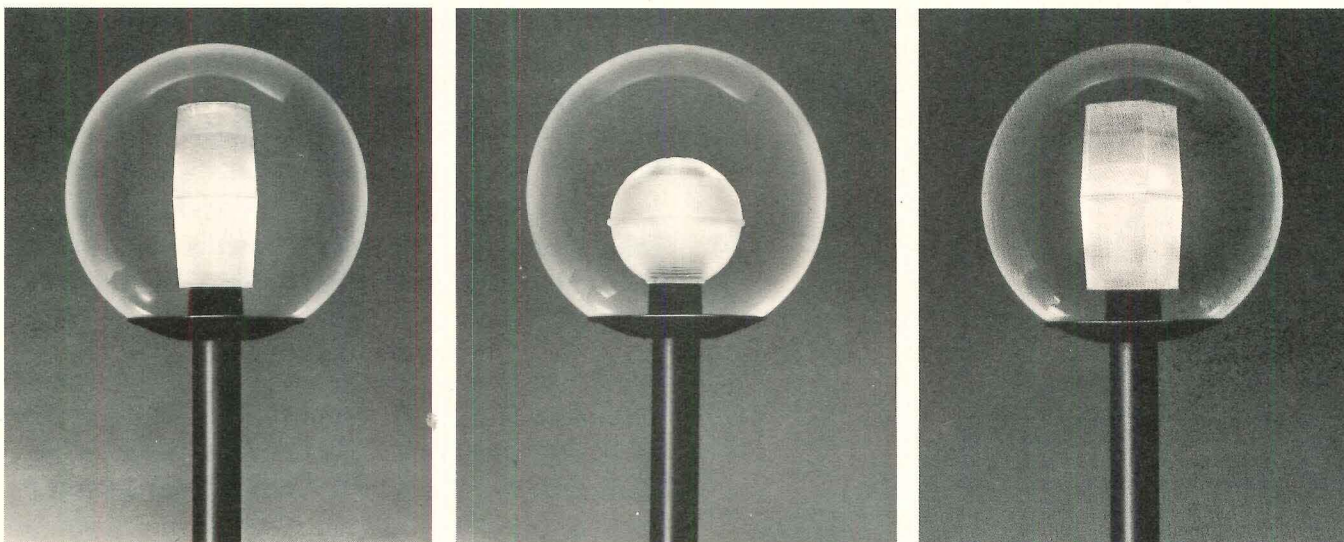


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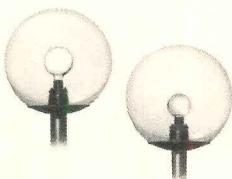


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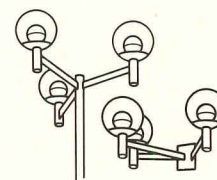
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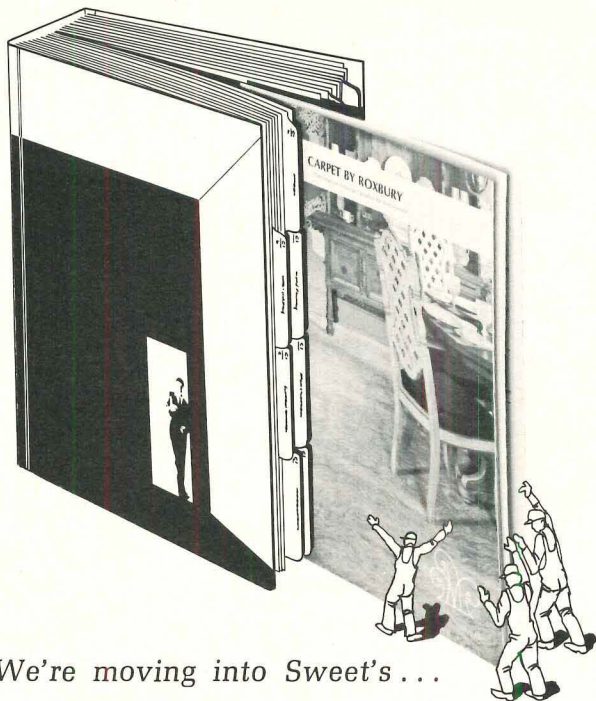
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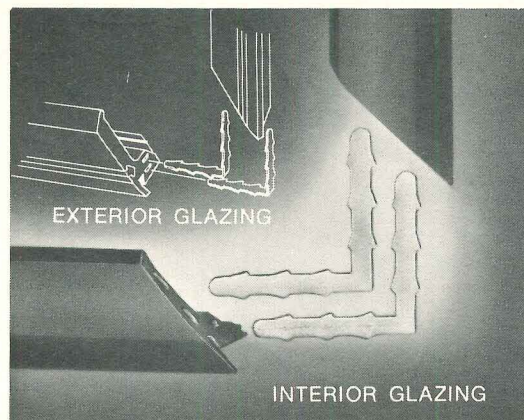
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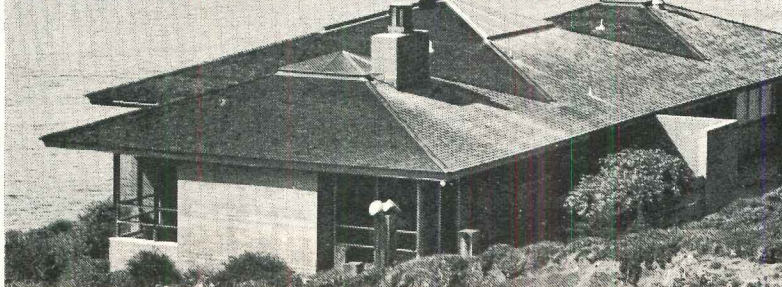
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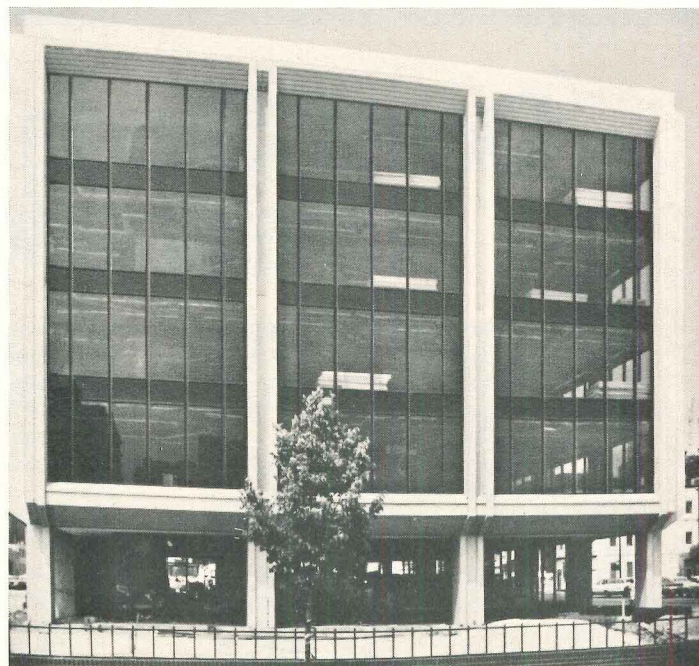
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Clark Art Center Theatre, Rockford College, Rockford, Illinois. Architects: The Perkins & Will Partnership. General Contractor: Gúst. G. Larson & Sons, Inc. Dover Stage Lift installed by Lamps Elevator Sales and Service, Inc. Hedrich Blessing photograph.

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For more information, see our catalog in Sweet's Files. Or write Dover Corporation, Elevator Division, Dept. A-2, P. O. Box 2177, Memphis, Tenn. 38102. In Canada: Dover-Turnbull.



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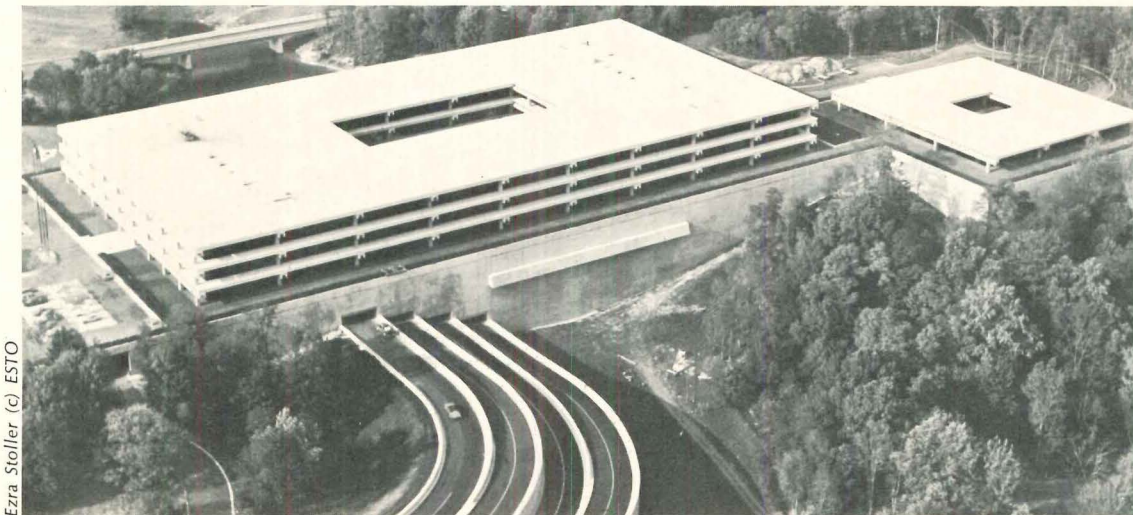


**The Prestressed Concrete Institute cites eleven structures for 1971 awards**

The annual awards program of PCI, established to "recognize excellence in design using precast concrete and prestressed concrete to achieve aesthetic expression, function and economy," has singled out eleven structures as winners of equivalent top awards for 1971. In addition to the buildings shown below, the winners included: Florida State Museum, University of Florida, Gainesville by architect William Morgan in association with Forrest M. Kelley, Jr. (RECORD, Sept. 1971, pages 121-126); Headquarters Building for Department of Housing & Urban Development, Washington, D.C., by Marcel Breuer & Herbert Beckhard and The Nolen & Swinburne Partnership (RECORD, Dec. 1968, pages 99-106); Indiana University Libraries, Bloomington, by

The Eggers Partnership with James Associates; Lyndon Baines Johnson Library and Sid W. Richardson Hall, University of Texas, Austin, by Skidmore, Owings & Merrill with Brooks, Barr, Graeber & White (Record, Nov. 1971, pages 113-120); Memorial Medical Center, Sterling Heights, Michigan, by Savin Wycoff Phillips, Inc.; Office building for The North Carolina Farm Bureau Federation, Raleigh, by Owen F. Smith; Philadelphia Veterans Stadium by Hugh A. Stubbins, Jr., in association with Stonorov and Haws; Stafford Road Interchange, Pacific Highway, Washington county, Oregon, engineered by Oregon State Highway Division.

Jurors were: Robert F. Hastings, (chairman); Gordon R. Arnott; Oscar F. Bray; William W. Caudill and J. Caldwell Wilson.



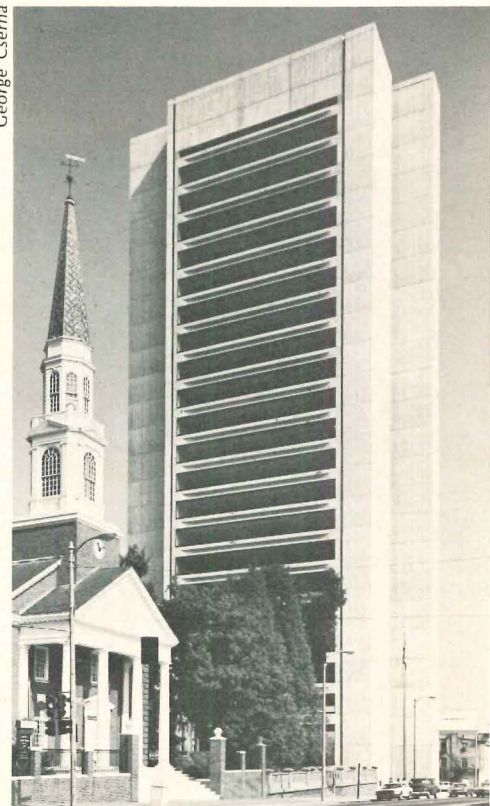
Ezra Stoller (c) ESTO

**American Can Co. Headquarters** in Greenwich, Conn. by Skidmore, Owings & Merrill (Gordon Bunshaft, partner in charge) consists of main and executive office buildings, both rectangular doughnuts with central

courts. Skillful siting preserves nature and residential scale. The main building on a hilly area, bridging a ravine, reveals only four of its nine stories above ground. The five-story 1,700-car underground garage acts

as a dam forming a lake overlooked by the sixth or terrace floor containing cafeterias and lounges. The top three floors are offices. The executives' building is one story above an underground garage.

George Cserna



**American Life Insurance Building**, Wilmington, Del., by I. M. Pei & Partners is a 22-story office tower with a post-tensioned, double floor structure which acts both as a finished ceiling and plenum. The 73-ft. clear-span floor system is supported on exterior concrete core walls that contain vertical air-distribution shafts. The jury commented on the good shadow lines on the exterior from the channelized effect of the window areas, and on the building's elegance and simplicity.

C. Wade Swicord

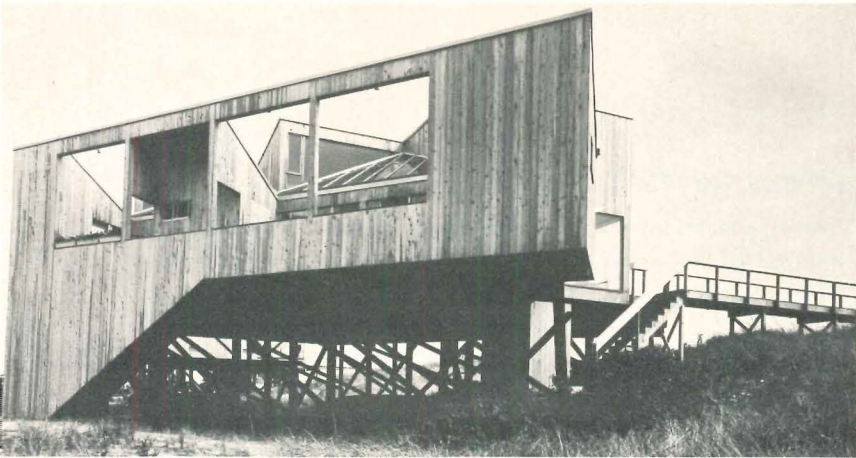


**Offices for Barrett Daffin and Figg, Architects, Engineers, Planners, Inc.**, Tallahassee, Fla., designed by themselves, were cited by the jury for their "use of standard precast, prestressed structural elements to achieve large inside areas of completely flexible open space." 8,300 sq ft of usable office space is spanned by 12-in.-deep pretensioned joists 20-ft. long which bear on 3-ft.-9 in.-deep pretensioned girders.

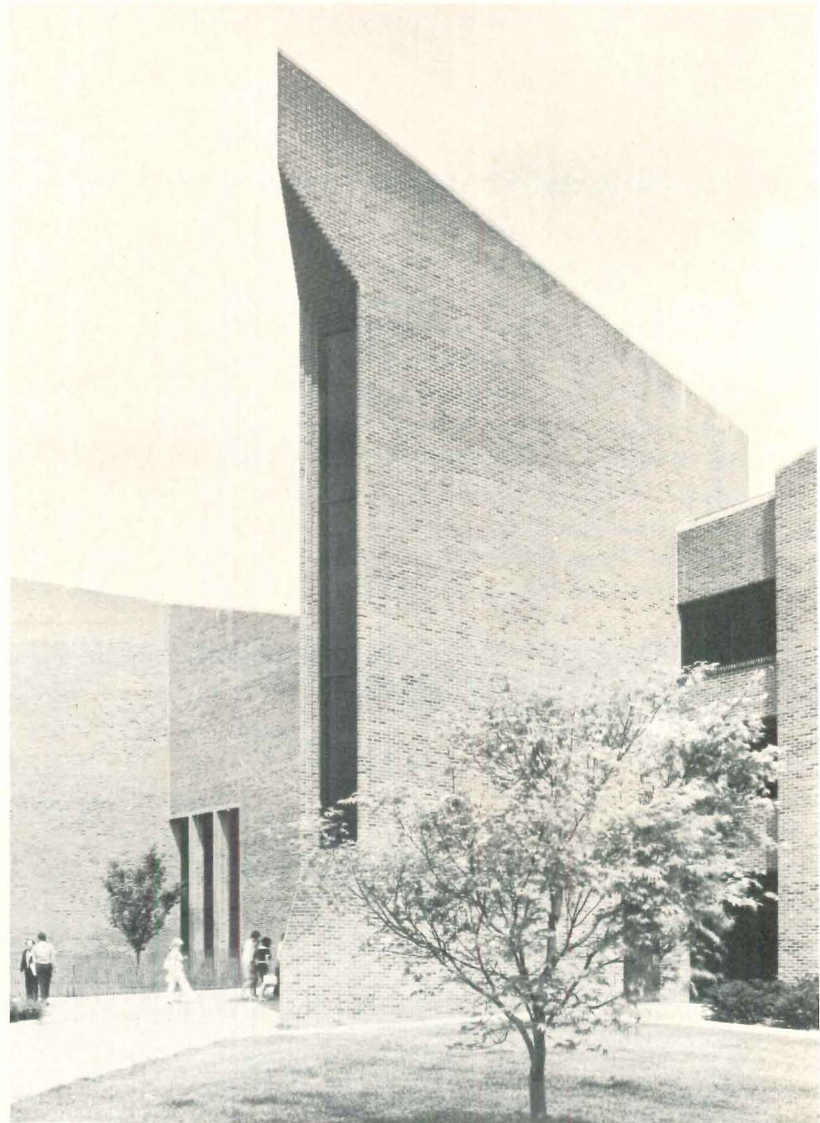


**Top New York State Association of Architects 1971 Awards** went to five projects (four are shown below) which received Certificates of Merit. Not shown is the Buffalo College Library, State University College, Buffalo, New York—a crisp, well articulated brick and concrete structure by The Perkins & Will Partnership,

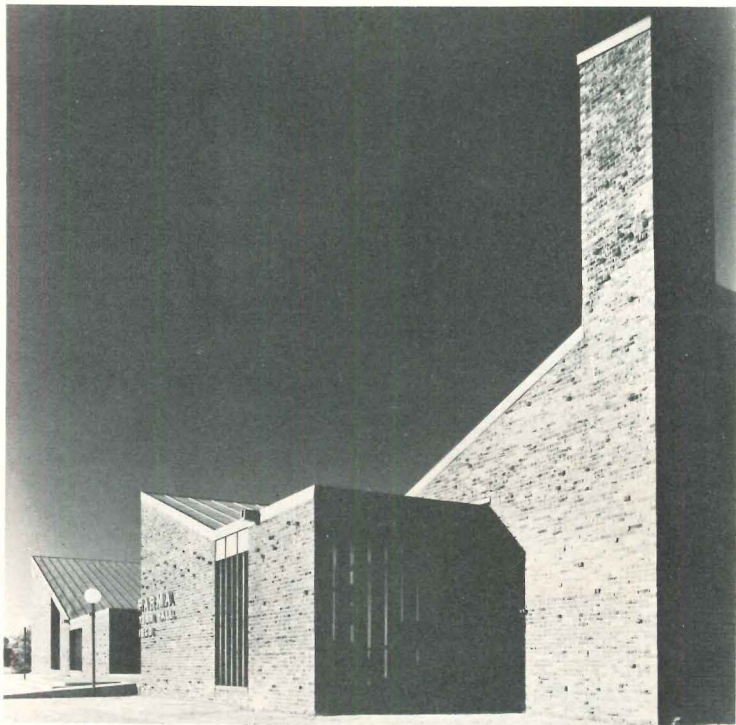
architects. The jury included Leo Kornblath (chairman), Dr. Arnold A. Arbeit, Theodore A. Biggie, Jr., Milton Glass and Arthur Rosenblatt. The five merit awards, plus eight Honorable Mentions, were selected "for their ability to express the solution to a problem and for achieving a higher architectural purpose."



**The Kalman Klein House**, Westhampton Beach, New York, by architect Stephan Marc Klein, was cited by the jury as "an exciting house rising on stilts over the Atlantic Ocean dunes (which) offers a world of interest with dramatic angles, vistas, slopes and lighting. Surprising contrasts of opened and closed areas stimulate discovery and enjoyment. . . ."

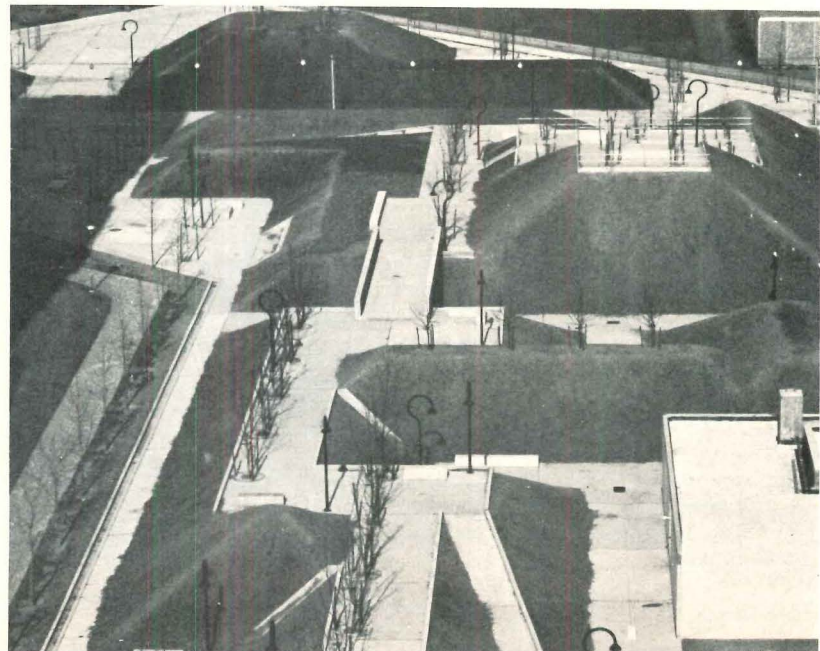


**The Adelphi University Student Center**, Garden City, New York, by architects Warner, Burns, Toan & Lunde, was selected for its "high visibility (which) marks it as an informal and busy center of activity. It is a distinct departure from campus lecture hall type buildings in its successful endeavor to express the informal atmosphere of the commuter students and faculty who enjoy the building. The interior focuses on a three-story well with balconies.



**The Parma, New York, Town Hall**, by architects Corgan & Balestiere, was commended for "containing all the facilities for town meetings and offices required by a small, active town in a cluster-type building which reflects an interesting residential character."

**The Rochdale Park and Playground**, Queens, New York, by architects Richard G. Stein Associates, is a 10-acre park serving a school and a housing development for a variety of summer and winter activities. The jury noted that "the flat site has been turned into a series of hills for physical separation and visual relief. The design is well disciplined by horizontal and vertical modules which relate slopes, lines and levels."

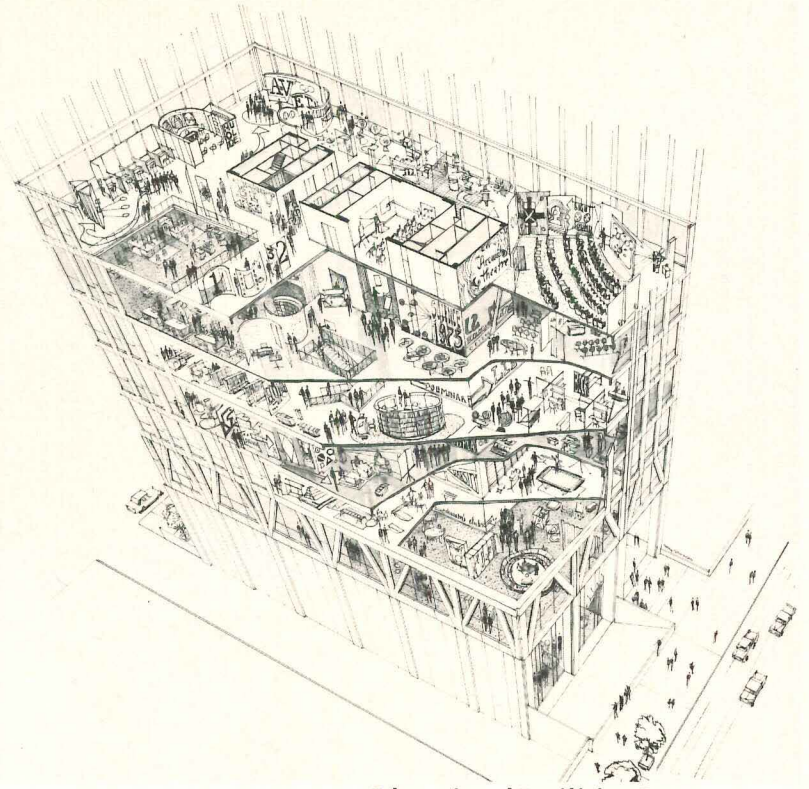




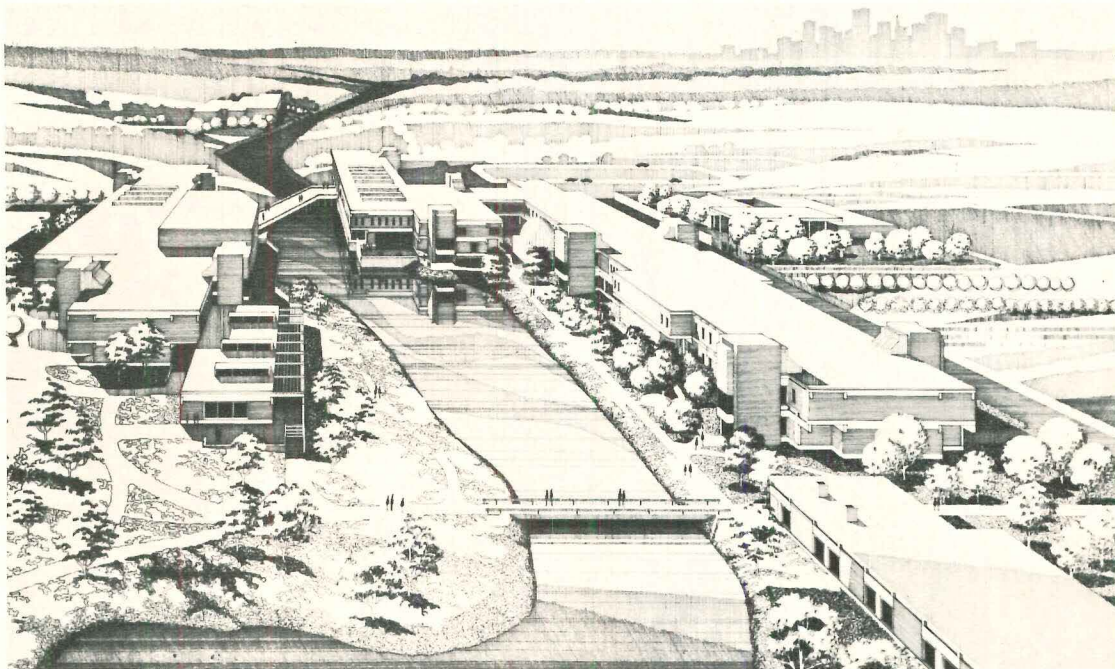


**The North Carolina Blue Cross and Blue Shield Headquarters Building**, by architects Odell Associates Inc., displays a new shape for reflective glass buildings—a 500-foot-long, 100-foot-wide rhomboid. Now being constructed on a 39-acre tract

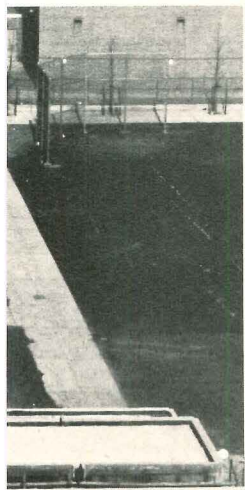
between Durham and Chapel Hill, the building is planned for occupancy in early 1973. It will provide about 225,000 sq ft in four stories and a service basement; enclosed offices cluster around six central cores with open clerical areas.



**Educational Facilities Center**, planned for Chicago's North Michigan Avenue, by Perkins & Will Corporation, will be a 34-story, \$30-million building devoted to educational products, systems and facilities. Six floors (sketch above) will be "learning arcades" to study products in real classes.



**Richland College**, the fourth campus for the Dallas County, Texas, Junior College District, is scheduled to have its first phase for 5,000 students completed by June. The design has alternating spans of 60 feet (flexible space) and 20 feet (circulation and service) pre-cast columns and beams, and 5-inch poured-in place slabs. Architects were The Oglesby Group, Inc., Oglesby, Wiley, Halford; and The Perkins and Will Partnership, associate architects.



**2 New York Plaza** (at right in the adjoining photo) completes the third and final building in the New York Plaza complex at the southern tip of Manhattan. The entire complex was sponsored by the Sol G. Atlas and John P. McGrath investment partnership. Architects for this new 40-story tower are Kahn and Jacobs, with Nevio Maggiora as project designer. The building contains a total of 1,300,000 sq ft, including a shopping level (reached by a sunken plaza) beneath the building's five-foot podium. The aluminum-clad structure has a steel frame with 40-foot spans, crossed-braced steel center core.



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Or else we replace the entire carpet, free of all charges, including the cost of installation.

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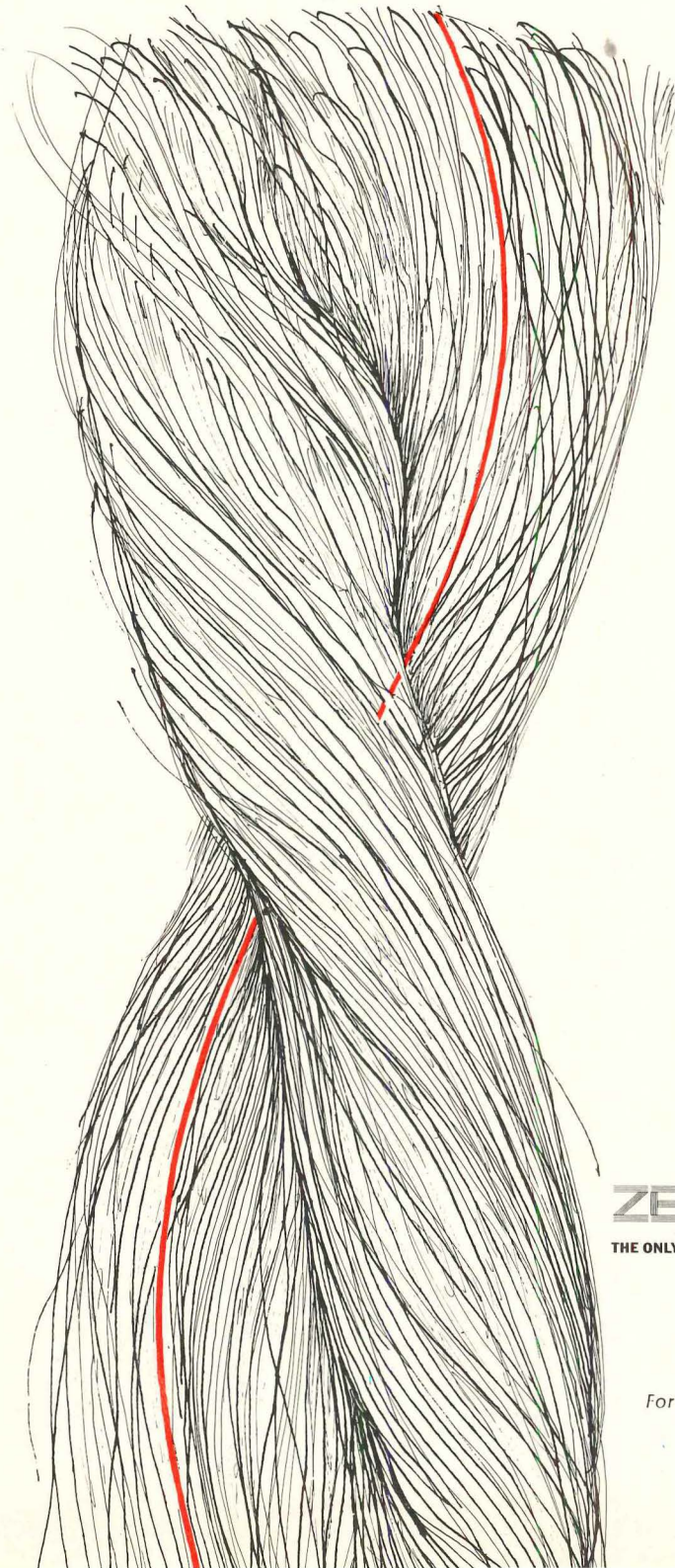
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Zefstat is a registered trademark of Dow Badische Company.

Dow Badische Company guarantees to the original purchaser that a carpet made with Zefstat will not generate static in excess of 2,500 volts down to a relative humidity of 20% at 70°F. (The threshold of average human sensitivity is considered to be 3,000 volts.) This anti-shock feature is guaranteed for the useful life of the carpet or five years, whichever is sooner.

If the anti-shock performance fails to meet the above standard and if human comfort is adversely affected by static generation, the purchaser must notify the manufacturer and make the carpet available for testing by Dow Badische Company. If failure is verified by our tests, the carpet will be replaced, free of all charges, including the cost of installation.

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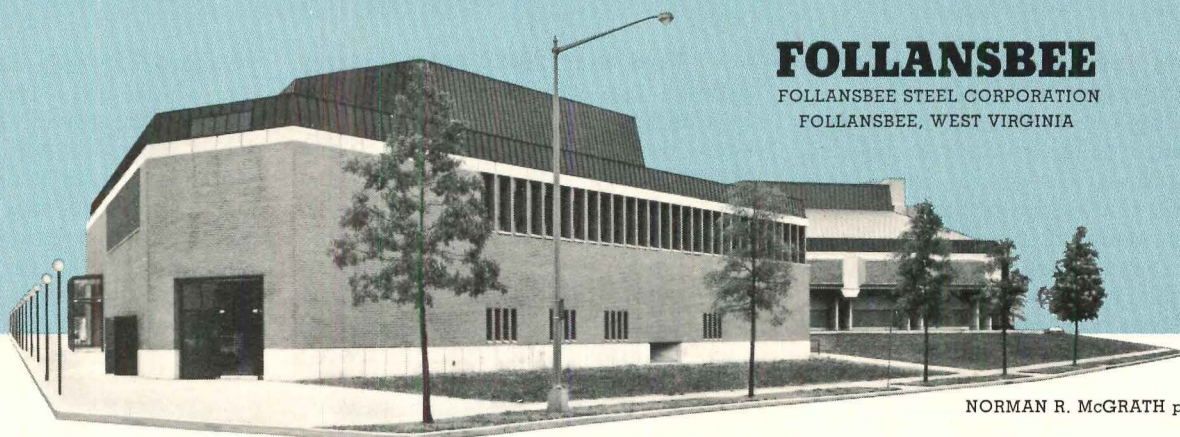
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Professional critics have been virtually unanimous in regarding Harry Weese's Arena Stage as a major landmark in American architecture. Wholly original in concept, superbly functional, and elegant in detailing, it has "an ambiance which suggests that magic is made, after all, in a working place," as one commentator remarked. Among other significant developments which were foreshadowed in this exciting structure was the utilization of roof perimeters as an important element in contemporary design, particularly when executed in metal.

Our initial gratification when Mr. Weese and his associates selected Follansbee Terne for these roof areas has thus merely been enhanced with the passage of time. And we were therefore doubly gratified, nearly a decade later, when Terne was again specified on the adjacent Kreeger Theater, a building of comparable distinction.



**FOLLANSBEE**  
FOLLANSBEE STEEL CORPORATION  
FOLLANSBEE, WEST VIRGINIA

NORMAN R. McGRATH photo

KREEGER THEATER, WASHINGTON, D.C. WITH ARENA STAGE IN BACKGROUND.  
ARCHITECT: HARRY WEESE AND ASSOCIATES, CHICAGO, ILLINOIS, WASHINGTON, D.C.  
ROOFER: MATHY COMPANY, FAIRFAX, VIRGINIA.

*For more data, circle 29 on inquiry card*



# How to make a waterproof deck that's really waterproof.



Almost any bitumen, elastomer or membrane is waterproof.

Trouble is, it takes more than a waterproofing product to build a leakproof deck or plaza. Since most attempts to waterproof the traffic surface are doomed to failure, we think it's more important to get rid of water from each level of deck construction.

Here's a step-by-step method that does just that.

First, use a liquid waterproofing product that can be applied to the best-engineered concrete on the job site — the structural slab. Since the liquid adheres to the slab it will eliminate any lateral migration of water . . . just in case it penetrates the seal.

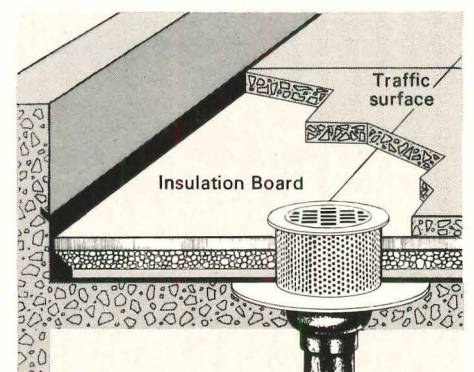
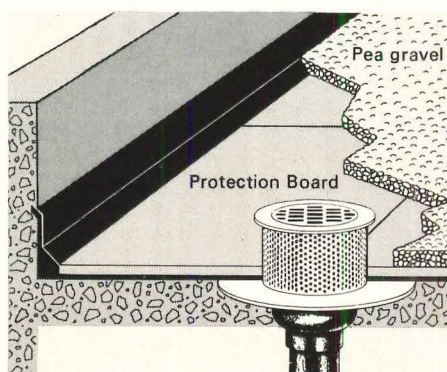
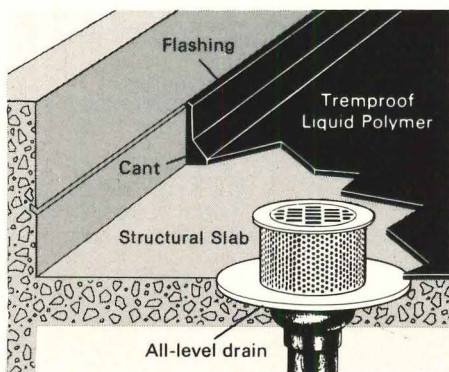
Next, protect the waterproof layer with a 1/8" thick asphalt-impregnated board. That will prevent any punctures that could otherwise

be caused by job-site activity.

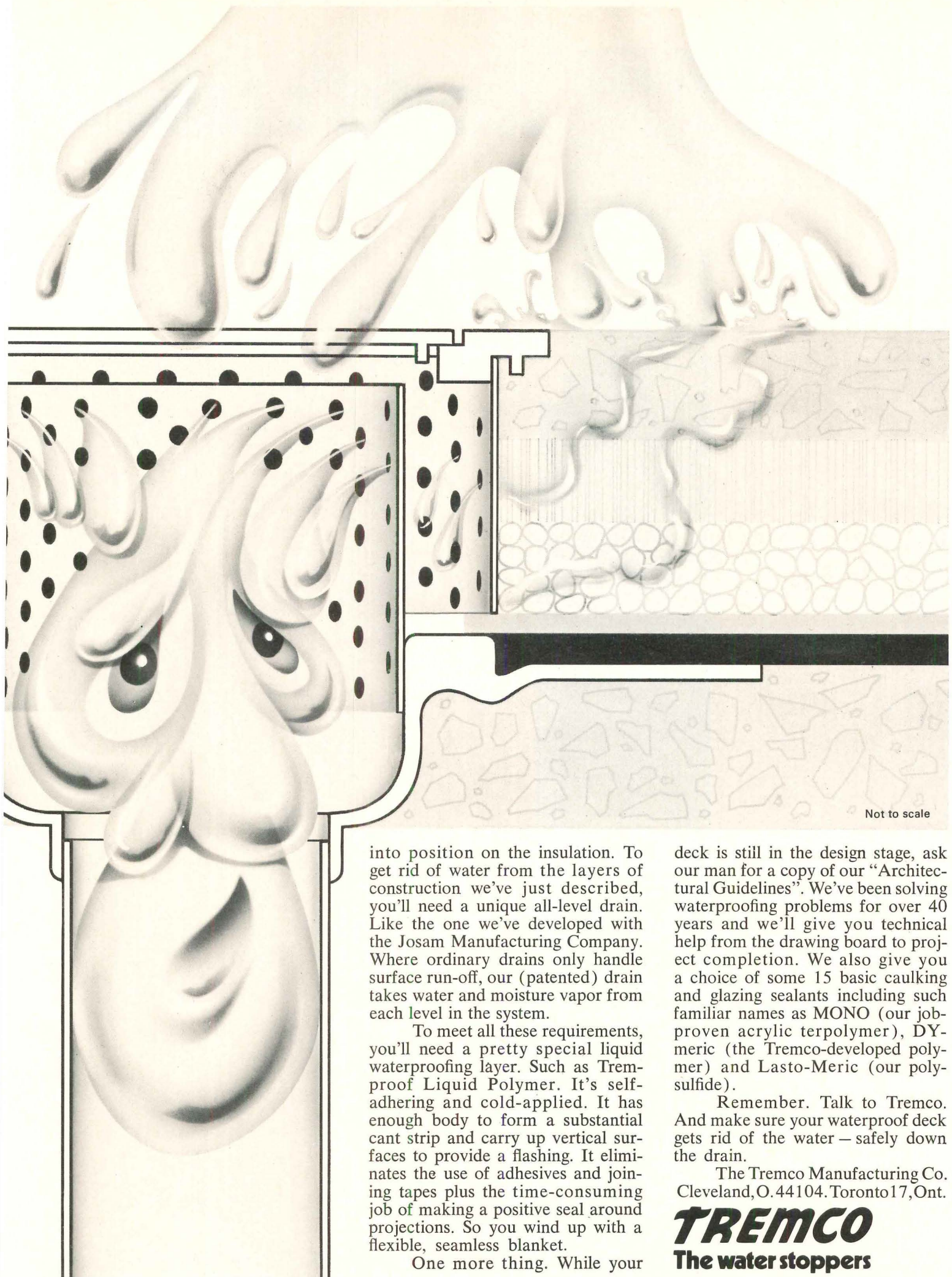
Now add a 1 1/2" to 3" layer of washed pea gravel to act as a percolation layer that will collect transient water and carry it to the drain.

Then, put the insulation on top of the percolation layer. This will protect both the structural slab and the waterproofing system against stress caused by thermal variation.

Finally, put the traffic surface







into position on the insulation. To get rid of water from the layers of construction we've just described, you'll need a unique all-level drain. Like the one we've developed with the Josam Manufacturing Company. Where ordinary drains only handle surface run-off, our (patented) drain takes water and moisture vapor from each level in the system.

To meet all these requirements, you'll need a pretty special liquid waterproofing layer. Such as Tremproof Liquid Polymer. It's self-adhering and cold-applied. It has enough body to form a substantial cant strip and carry up vertical surfaces to provide a flashing. It eliminates the use of adhesives and joining tapes plus the time-consuming job of making a positive seal around projections. So you wind up with a flexible, seamless blanket.

One more thing. While your

deck is still in the design stage, ask our man for a copy of our "Architectural Guidelines". We've been solving waterproofing problems for over 40 years and we'll give you technical help from the drawing board to project completion. We also give you a choice of some 15 basic caulking and glazing sealants including such familiar names as MONO (our job-proven acrylic terpolymer), DYmeric (the Tremco-developed polymer) and Lasto-Meric (our polysulfide).

Remember. Talk to Tremco. And make sure your waterproof deck gets rid of the water — safely down the drain.

The Tremco Manufacturing Co.  
Cleveland, O. 44104. Toronto 17, Ont.

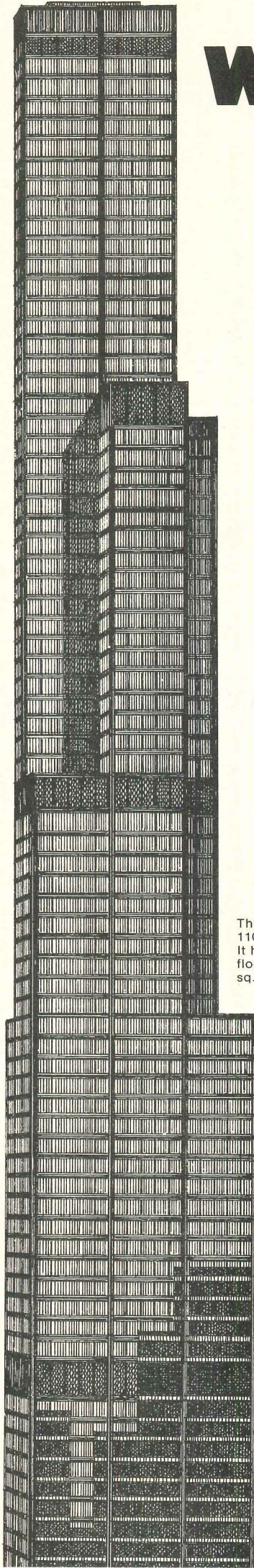
**TREMCO**  
The water stoppers

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# The

# world's tallest

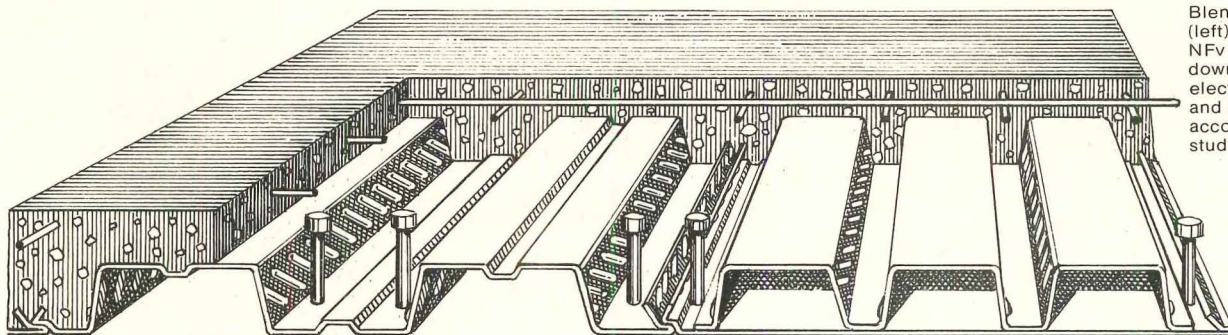


The new Sears Tower soars 1450',  
110 stories, over Chicago's loop.  
It has 4.4 million sq. ft. of gross  
floor area, and some 3.7 million  
sq. ft. of Inryco Hi-Bond Deck.

Owners: Sears, Roebuck and Co., Chicago  
Architect/Engineer: Skidmore, Owings & Merrill, Chicago  
General Contractor: Diesel Construction, Chicago



# building needed a new kind of floor deck.



Blend of Type 3" V (left) and Type 3" NFv holds costs down, provides 5' electrification module and large deck voids to accommodate headed stud shear connectors.

Lightweight slab deck and trusses are joined together for a composite slab/truss floor system that resists superimposed loads.


Plans for Chicago's new Sears Tower called for composite trusses 75' long and 4' deep, spaced on 15' centers, creating clearspan interior bays 75' square. This required a composite floor slab system that could span 15'. Our Inryco® Hi-Bond® Celluflor® Type 3" NFv met the criteria, but because it is 100% cellular, cost was an obstacle.


Inryco engineers worked out a solution: Inryco Type 3" V Hi-Bond Deck. Compatible with Type 3" NFv, but non-cellular and therefore less costly. With the same Hi-Bond lugs that unite deck and concrete securely. The same exclusive V lock joint that serves as an integral shear connector. And ample room for headed stud shear connectors for the composite trusses. Blending 32" wide Type 3" V and 28" wide cellular Type 3" NFv provides a 3-cell module every 5' that is used for electrification, telephone and signal.

This composite floor system carries well in excess of the

80 psf superimposed load required. And because the deck immediately serves as a work platform for all trades, erection is fast, and free from delays.

Your projects may not be as gigantic as the world's tallest building. But whatever your floor deck problems may be, chances are an Inland-Ryerson specialist can help you. He's backed by an engineering department known for ingenuity and readiness to help in testing and design. You can reach him at our office nearest you. Or write for our floor deck Catalog 21-1 to Inland-Ryerson Construction Products Co., 4033 West Burnham Street, Milwaukee, Wisconsin 53201. You'll find us in Sweet's Catalog, Section 5.

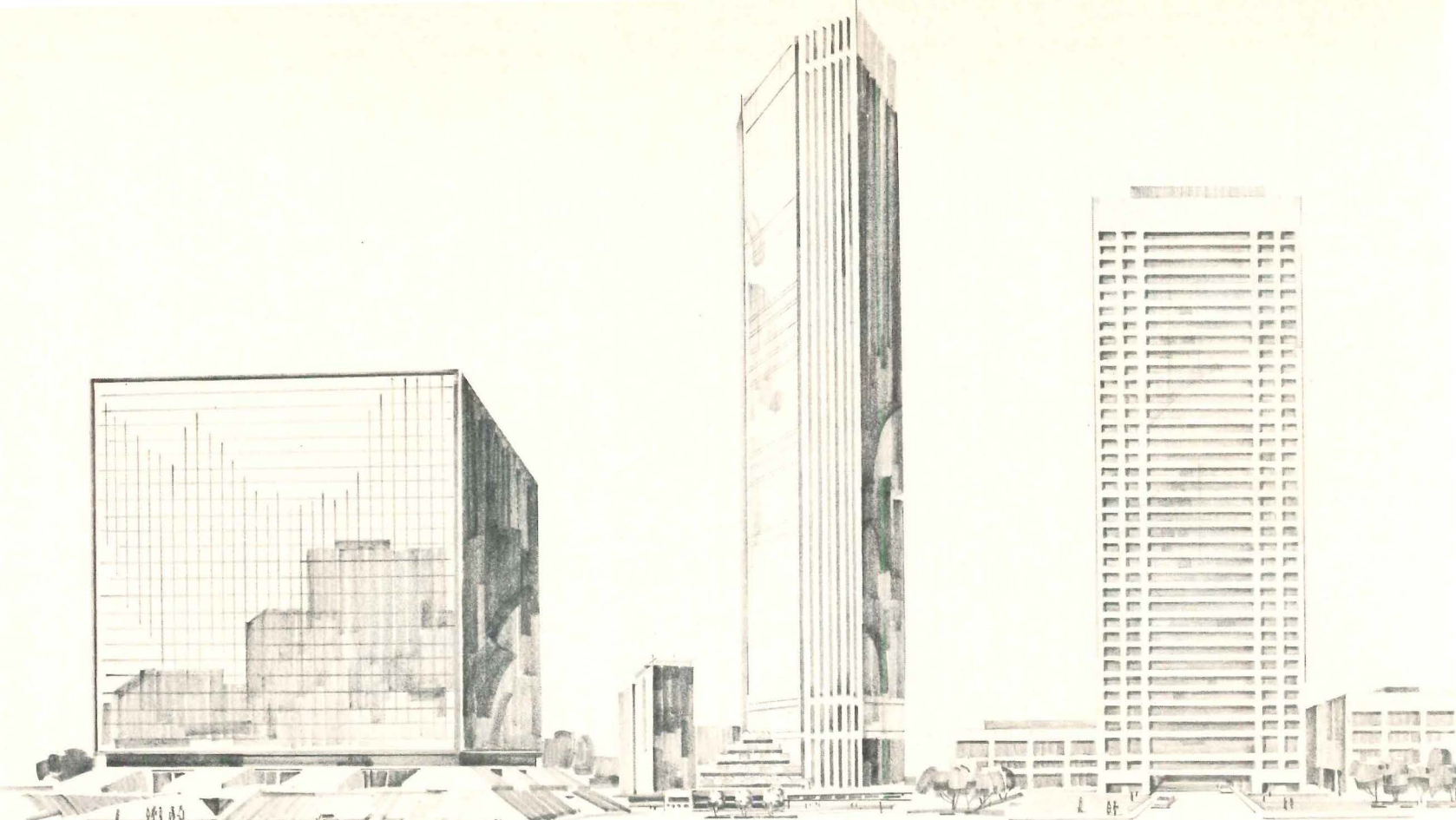
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project.**





SEARS ADMINISTRATIVE OFFICE BUILDING  
Alhambra, California  
Architects: Albert C. Martin and Associates

I.D.S. BUILDING  
Minneapolis, Minnesota  
Architects: Philip Johnson and John Burgee (New York)  
Edward F. Baker Associates, Inc. (Minneapolis)

MARINE MIDLAND CENTER  
Buffalo, New York  
Architects: Skidmore, Owings & Merrill  
(San Francisco)

## What Metaledge Corewall did for these buildings, it can do for yours.

Gold Bond Metaledge Corewall™ is the fast, strong, inexpensive gypsum panel system for enclosing elevator shafts, stairwells and other vertical chases.

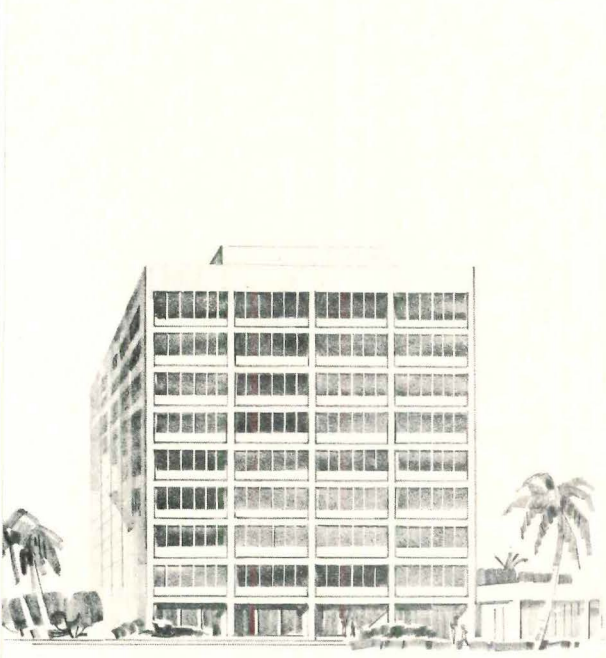
The panels have built-in edges, are installed from the corridor side only and are mill-laminated to desired lengths up to 16'. These features provide rigidity, eliminate scaffolding and reduce on-site cutting.

Slim (2½" thick) and lightweight (10.5 pounds per square foot), Metaledge Corewall reduces foundation and structural steel requirements. You can add an average of ½ square foot more usable space per lineal foot of shaft enclosure.

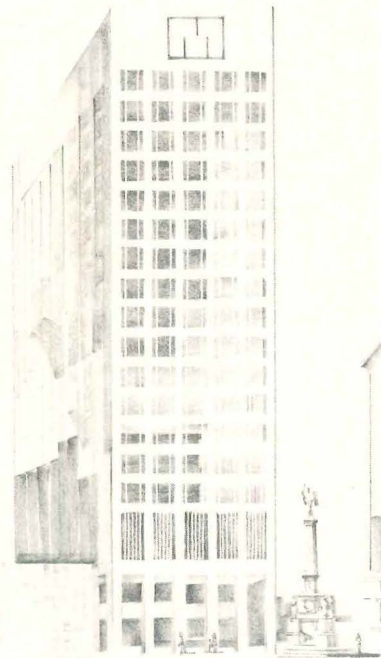
The system withstands high-speed elevator air pressure — offers up to 4-hr. fire rating and STC's in the 40's.

Do your next building (and yourself) a favor. Specify Metaledge Corewall — another constructive product/answer from Gold Bond. Talk to your local Gold Bond man. Or write National Gypsum Company, Gold Bond Building Products Div., Dept. AR-22G, Buffalo, N.Y. 14225.

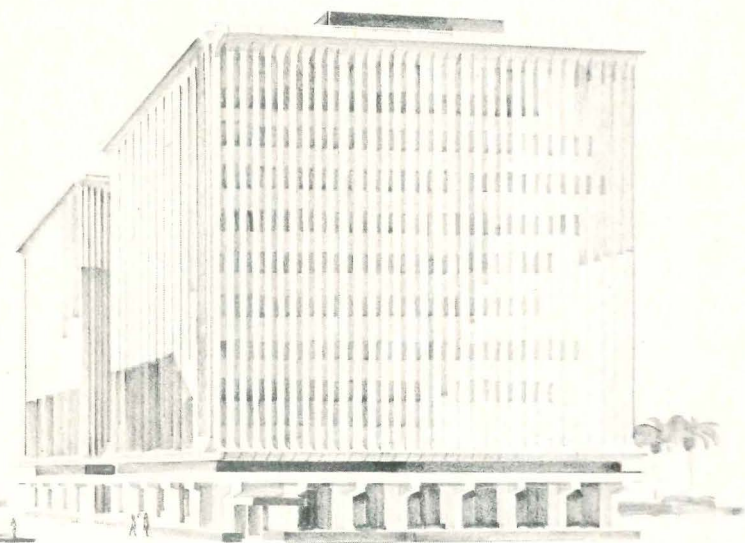




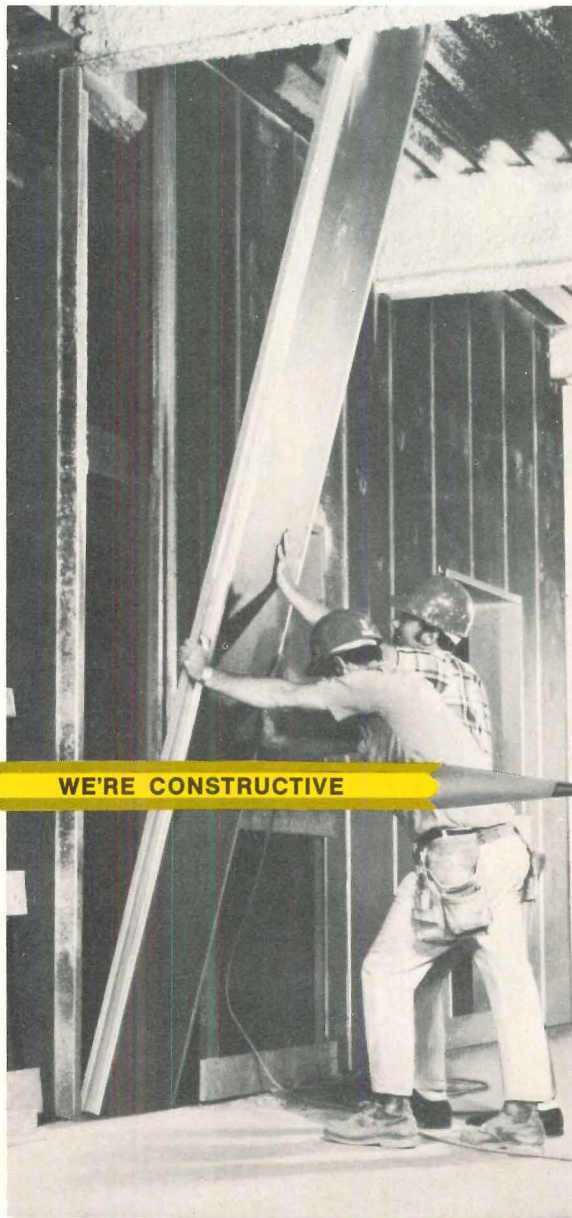
**HILTON OFFICE TOWER**  
Pasadena, California  
Architects: Curtis and Rasmussen (Akron)



**MECHANICS BANK BUILDING**  
Worcester Center, Massachusetts  
Architects: Welton Becket and Associates



**WILSHIRE DOHENY PLAZA**  
Beverly Hills, California  
Architects: Maxwell Starkman A.I.A. and Associates



Metaledge Corewall goes up in one piece — one step. Constructed in "ship-lap" configuration, panels have water-repellent surfaces. Offset long edges come with 24-gauge hot-dip galvanized steel channels attached. Panels are progressively attached to 2 x 2-inch, 20-gauge tracks with 2-5/8-inch self-drilling screws. Corewall is faced with any combination of regular gypsum wallboard, Fire-Shield Wallboard, M.R. Board or Durasan® to meet specific fire rating, acoustical rating, aesthetic or job requirements.

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ance of expert All-weather Crete application and its exceptional performance for years to come.

Consider the importance of roof and plaza insulation . . . hidden from sight, covered by membranes and wearing surfaces, applied over every conceivable sub-strate, this insulation is asked to perform many functions. Contact your local AWC specialist to assist you. Use his special knowledge on your next building project. (There's no obligation, of course.) If you don't know his name, write us — we'll have him contact you.



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## Photo-drafting: time-saving aid to quality

The expanding adaptation of photographic processes to architectural and engineering drafting has been accelerated by development of versatile films, paper and emulsion products in large sizes together with camera, offset and xerographic equipment that can reproduce with dimensional stability over wide areas. For example, polyester film in drafting room sizes comes in clear, matte or opaque finishes on which sharp black line (or tone) can be either erased or washed off when alterations in hand-drawn ink are desired. Sensitized papers and even tracing cloth can be similarly treated.

Savings in drafting time, especially for repetitive, partially repetitive or mirror-image detailing, can be enormous, once the drafting staff becomes accustomed to "thinking photography." The staff finds itself freed for the creative aspects of the drafting process, and both the quality of detailing and the freedom from human error are enhanced.

Improved communication among architects, engineers and contractors for the various trades takes advantage of techniques unique to the photo-drafting process. That is its ability to produce "shadow" or halftone prints of basic plans upon which mechanical, structural and/or electrical systems can be drawn in black line. This permits easier reading of the systems and

gives more positive assurance against interference of one system with another.

A 16-step case-study example of how the process was used on one project by Gruzen & Partners is reported on the following pages by Rolland D. Thompson, partner in charge, and Allan Johnson, designer and job captain for the project. The architectural firm worked very closely with Louis DiPaolo, vice president of Reprostat Corporation, in adapting potentials of the photo-drafting process to the stringent time-urgencies of the project.

The architects point out that they made no investment in cameras, light tables or any special equipment or personnel for this project. Most sizeable cities have firms well equipped for the photographic and reproduction portions of the process who can work efficiently on a fairly large regional basis. Gains in drafting efficiency and quality pay for the service, and the design professionals do not have to go into the reproduction business.

The example deals with the working drawing phase of a college science building as the phase the most demanding of drafting time and detail. Following is the report by Rolland Thompson and Allan Johnson, based on a slide presentation they have used for both internal and external communication.

### 16 steps in the photo-drafting technique

Production of the working drawing phase of an architectural project is one of the most costly and time consuming of any of the project development phases. This plus the fact that today's architectural graduate has little interest in repetitive chore work at the drafting board spurred our own interest in photo-drafting.

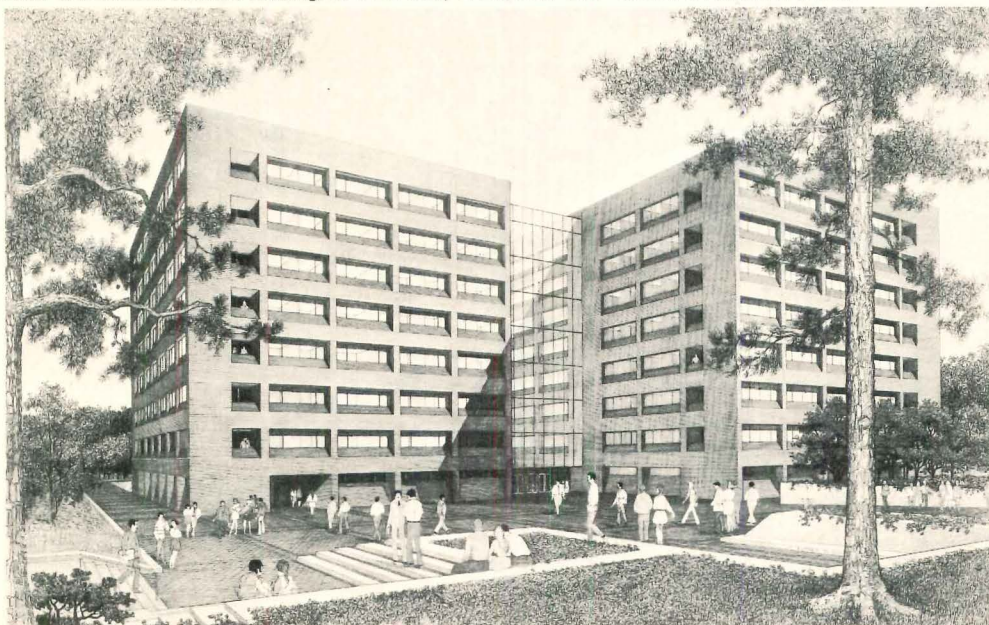
Photo-drafting is more than the simple reproduction of drawings by photography. It is the actual production of complete drawings by the photographic assembly of repetitive parts and the improvement of communication by photo techniques of tone and contrast. This is not to say that the draftsman/designer is to be replaced by the camera, but rather that camera techniques must become an additional skill used by the draftsman in order to produce better drawings faster.

During the past four years, Gruzen & Partners, architects, planners and engineers, of New York City, have been developing photo-drafting techniques suited to the requirements of various projects. As a result of this research, management decided to run a case study on a particular project in order to uncover problems and establish criteria for future projects.

The project selected was the Social and Behavioral Sciences Building at Stony Brook, Long Island. The client, State University Construction Fund of New York, informed the architects that this project was to be a multi-story academic building that would house a minimum of eight different departments of the University. The project was begun on August 26, 1970 with a partial occupancy desirable in the fall of 1972.

The 16 steps that follow represent the organization and planning of this particular project using photo drafting. These steps serve as a guide in the production of an architectural project and strongly emphasize early planning and decision making in order to use these techniques to their fullest extent. Many of the drawings on the following pages have been cropped to preserve detail at the necessary reduction and demonstrate the method rather than content of the plans. The architect's logo, also part of each print, has been trimmed off for the same reason.

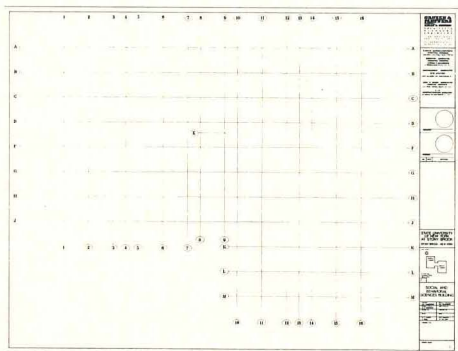
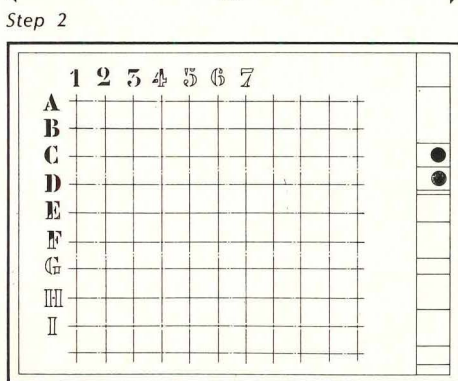
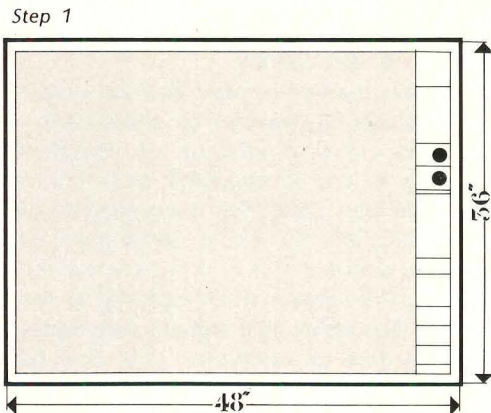
Social & Behavioral Sciences Building, SUNY at Stony Brook, New York—Gruzen & Partners Architects





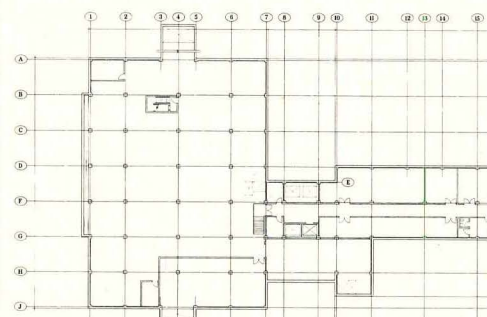
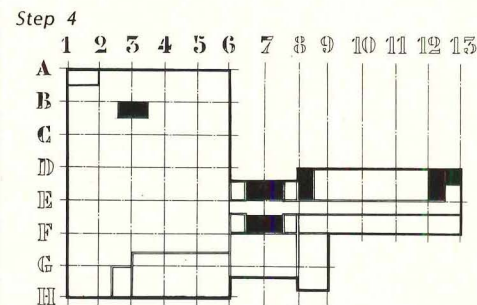
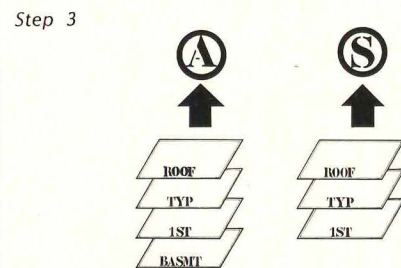
**STEP 1.** Standard sheet is developed using paste-up photography, tape and ink. It is reproduced as a washoff polyester (mylar) film, matte both sides, using a film negative. The negative can be used to print standard sheets by the offset printing process (when large quantities are needed). Note: When using photo drafting techniques (wash-off polyester paste-up drawings), fewer standard printed sheets are necessary.

**STEP 2.** Structural framing grid should be determined by the architects and engineers showing column centerlines and numbers. This grid must be derived from the building plan even if the structural system (concrete, steel or precast) has not been determined pending analysis of comparative cost. The grid should be drawn in ink for better photographic reproduction of the future generations of drawings.



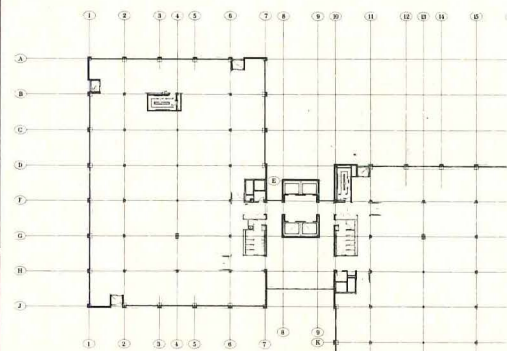
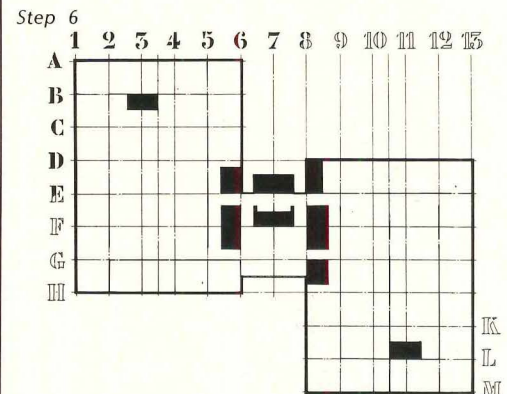
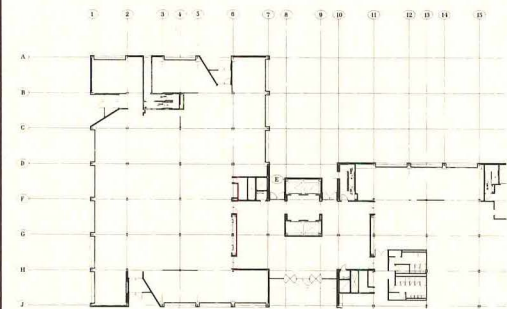
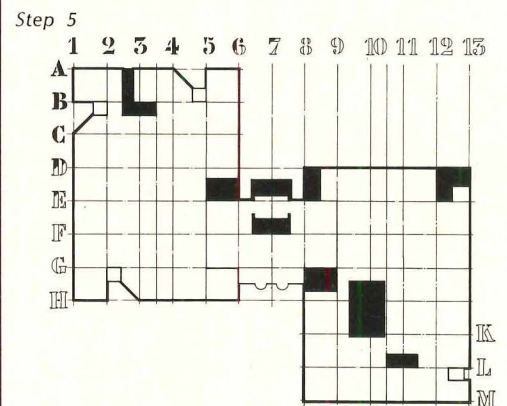
**STEP 3.** Architect must then analyze the building design to determine the number of different types of floor configurations. In the Social and Behavioral Sciences Building at Stony Brook, these are the basement, first, second through eighth floor and roof plans. The structural engineer must determine the number of floors that he can use the basic grid on which to draw typical framing plans (—) in this case the first, typical and roof plans. The architect then sends the basic grid drawing to the photographer for solid line washoff polyester films (seven were needed for the SBSB), four to be used by the architect in developing the above mentioned plans and three to be used by the structural engineer in his development of the typical framing plans.

**STEP 4.** Architect then develops basement plans showing stairs, elevators, mechanical services, exterior walls, interior partition layouts, drinking fountains, fire hose cabinets, columns, and mechanical openings in the exterior walls and slab above. If the mechanical rooms were to be located on an intermediate floor or the roof, the same principal of developing the drawing would apply. At this stage of development the drawing should not show interior dimensions, door numbers, room names or numbers, because this would interfere with the mechanical/electrical and structural developments on the future generations of drawings.



**STEP 5.** Architect develops first floor plan showing the perimeter architecture including material indication. Stairs, elevators, mechanical services, toilets, and other special items such as wind bracing should be shown at this stage of development. However, no exterior dimensions need be shown on the drawing at this stage. On the SBSB, the first floor plan was given to the HVAC engineer at this stage of development to be used for a typical riser diagram as fan coil units were being used as the perimeter mechanical system.

**STEP 6.** Simultaneously the architect would develop the typical floor plan, the same as in Step 5 above, and in addition, indicate the location of the corridor system.

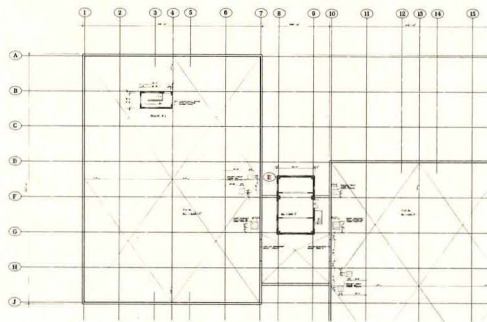
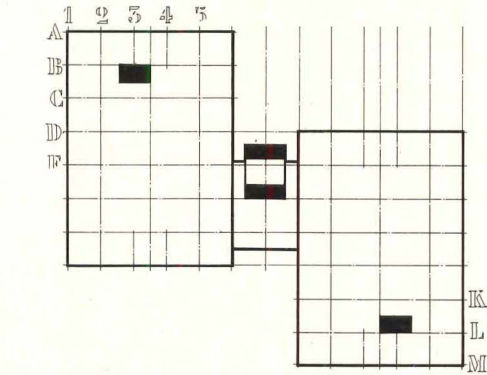




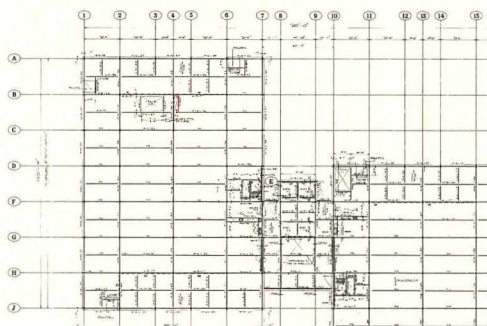
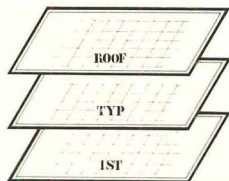
**STEP 7.** Architect develops roof plan showing parapet, stair and mechanical penthouses and roof accessories. Note: The level of development for Steps 5, 6, and 7 are very important so as not to make the future drawings cluttered when the mechanical engineers develop them into working drawings.

**STEP 8.** Structural engineer develops the first floor, typical and roof plan into typical framing plans for each of these respective floors.

Step 7

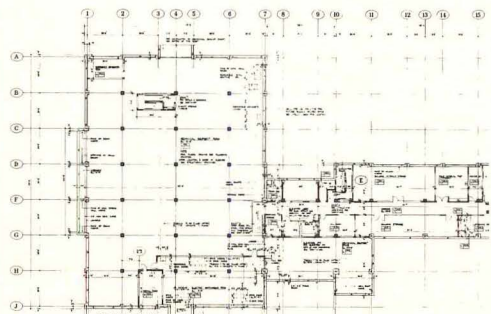
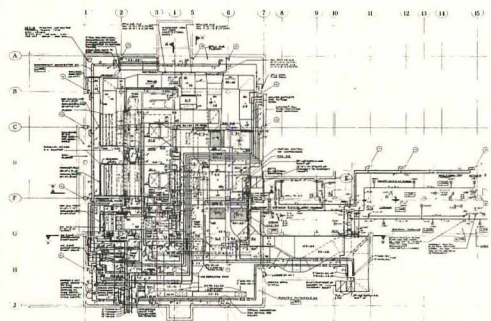
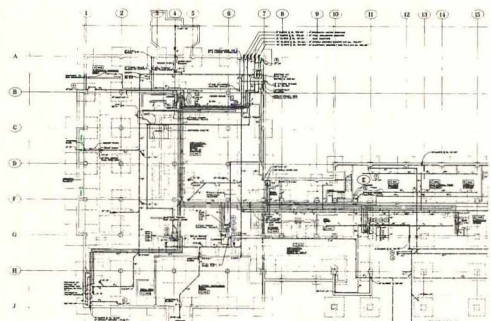
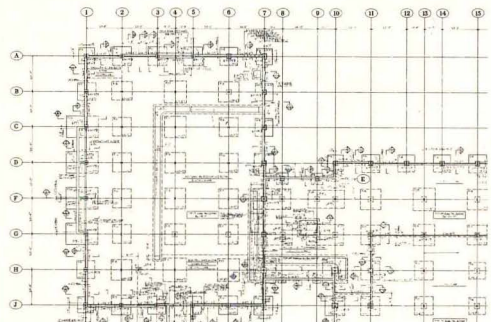
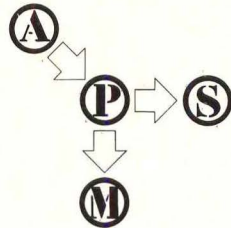


Step 8



**STEP 9.** Architect sends the developed basement plan to the photographer for a solid line right-reading wash-off polyester for the structural engineer, so that he can prepare a final foundation and footing plan. The mechanical engineer receives four shadow print reverse-reading polyester copies (one for each trade; HVAC, plumbing, lighting and power) for him to prepare layouts of the various mechanical systems. Since all drawings thus far have been photographically reproduced from the same basic drawing, which was drawn by the architect, coordination level is at 100 per cent.

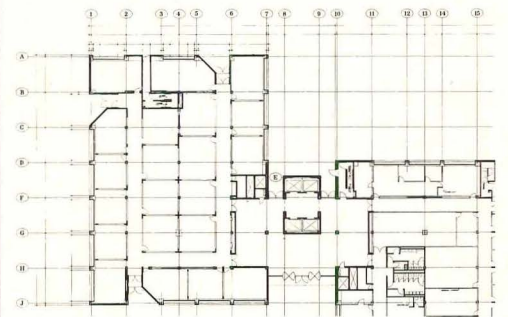
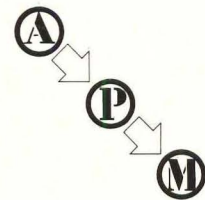
Step 9



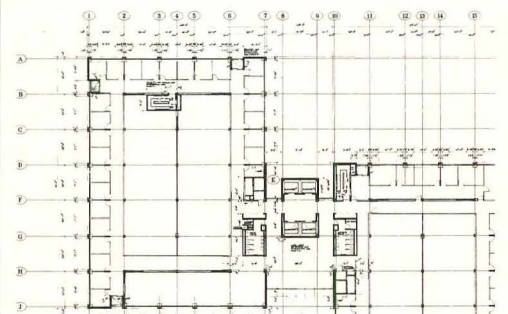
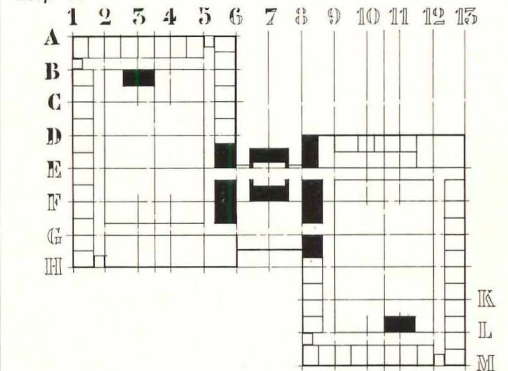
**STEP 10.** Architect sends first floor (which should now show partitions, door swings, drinking fountains, wet columns, fire hose cabinets, and electric panels) and roof plan to the photographer for two sets each of shadow print reverse reading polyester film copies for the mechanical trades to develop into working drawings.

**STEP 11.** Architect then develops the typical floor plan, showing the interior (partitions, door swings, and the above mentioned fixed items) of the most repetitive offices and various research spaces. This drawing should show no interior dimensions, door numbers, room names or numbers. Note: At this level of development, exterior dimensions can be put on the drawing as it will be photographically repeated the number of required times.

Step 10



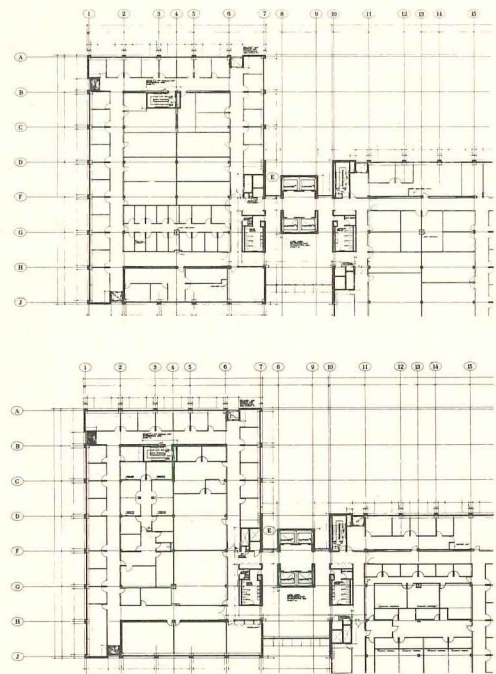
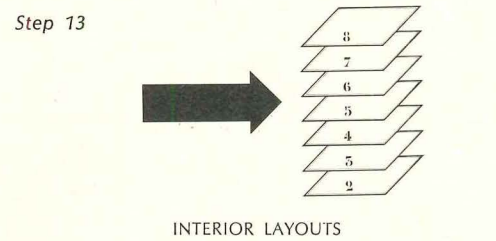
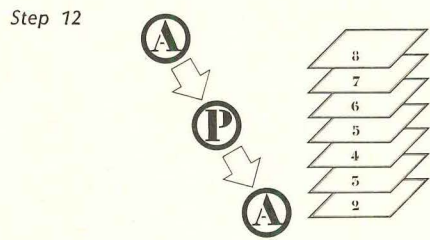
Step 11



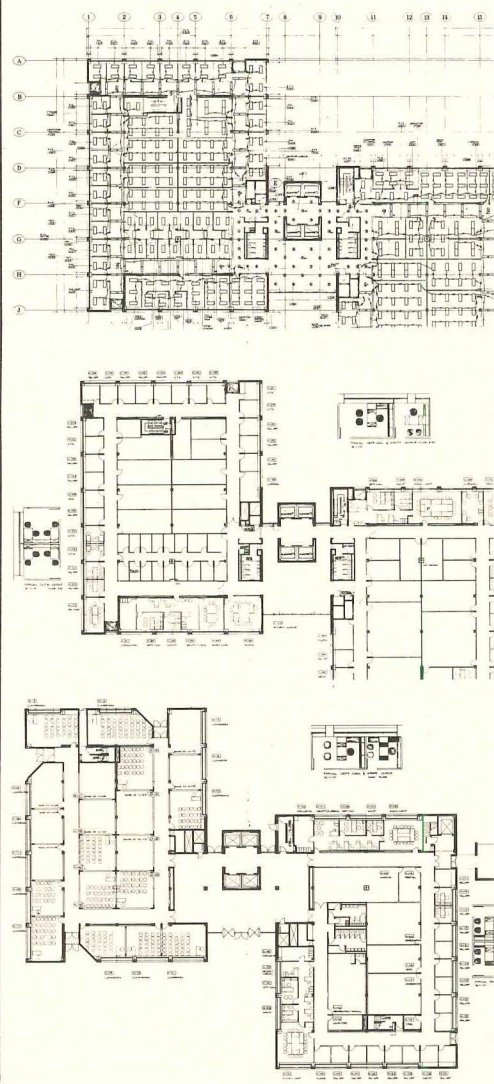
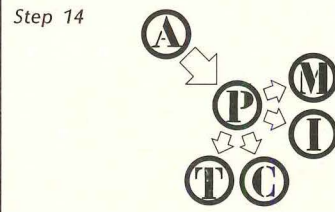


**STEP 12.** Architect sends the typical floor plan from Step 11 to the photographer who produces seven solid line washoff films and one shadow print reverse reading of this typical floor. Eight will be used by the architect in his further development and one will be used by the HVAC engineer as a typical floor riser diagram working drawing.

**STEP 13.** Architect develops each plan (second through eighth) into its final interior layout required by the function of a particular department. Note: A minimum of additional partitions and door swings have to be added to each floor in the future development since the basic drafting was repeated by photography.



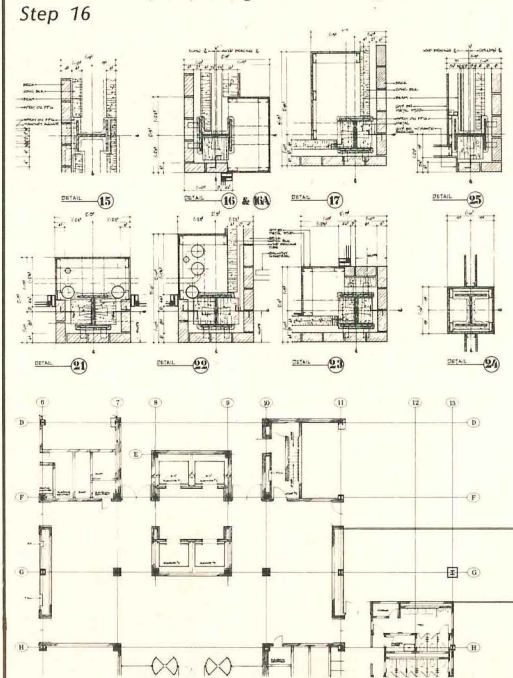
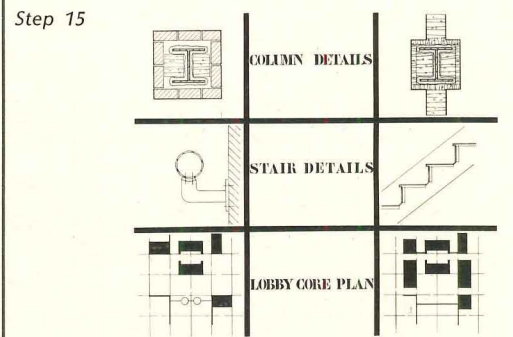
**STEP 14.** Architect then sends each of the seven typical floor plans showing the department layout to the photographer. The photographer then produces 28 floor plans (shadow prints) for the mechanical engineer, one set of plans for each of the four trades (HAVC, plumbing, lighting and power). The first floor plan was received in Step 5. In addition, the photographer produces three sets each (solid line right-reading polyester copies) of the eight floor plans, one set for the interiors consultants, one set for the telephone company to prepare his departmental assignments. Approximately 60 drawings have been reproduced from the typical architectural plan. The number of drawings that can be photographically reproduced for any one project would be determined by the number of consultants on the team and the amount of repetitive floors in the project. The drawings can now be developed into the final working drawings showing room names, numbers and door symbols.



**STEP 15.** Paste-up drafting, a term that all architects are familiar with in some form, was used as an additional skill in producing the working drawings: This method allows the architect to determine sheet layouts and gives him the flexibility of revising details until late in the project. Specialized area which must be shown at larger scale; i.e., interior and reflected ceiling plans, can be enlarged by the camera into solid line or shadow prints for paste up use by the architect or engineer. On the Social and Behavioral Sciences Building, the interiors consultant used a large scale blow-up of the lobby for interior design studies. Sepia prints were made of these plans for pasting onto a cardboard model. From this model, presentation slides were made.

Photography was again used in preparing the polyester cover sheet for the set of working drawings by combining a rendering of the project with paste-up titles. The title sheet was also a paste-up using office standard abbreviations and symbols that were on clear polyester film.

**STEP 16.** The architect, who is the project coordinator for all consulting engineers, should make it clear to other consultants that photo drafting can also work for them. An example of this is the landscape architect preparing the site plans and having them photographed for use by the site utilities engineer. This step is not illustrated.





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Liquid Natural Gas. It allows us to bring the vast gas supplies of the world right to our shores. And supplies another answer to the country's increasing energy needs.

AMERICAN GAS ASSOCIATION.



For more data, circle 34 on inquiry card



## 1971 in review: insight on the outlook

An annual gain of 15 per cent or more in the value of total construction contracts doesn't occur in the industry very often. You have to go all the way back to 1955, to find the last time that happened. More significantly, gains of 40 per cent or better in the housing segment of contract construction are even rarer. You have to go back five years further, to 1950, for the last increase of this magnitude. Both of these things happened to the industry in 1971. The gain in the total was the direct result of the housing surge.

Housing began gathering momentum just before the economy as a whole hit bottom during 1970's second half. By the time 1971 began, it had established a strong base upon which to build. The reasons for the surge in housing last year are not hard to find. The demand had been there for some time. It began piling up in the mid-sixties when the booming economy began to exert pressure on credit markets, crimping housing's source of financing and holding the rate of starts below the level of needs. Government efforts to curb inflation by restricting the money supply further aggravated conditions in the housing markets during this period. Between 1965 and 1970, total housing starts were held below 1.5 million in every year but one.

The 1970 recession changed all that. Weaknesses in the demand for business loans, and a decline in the buying confidence of consumers turned the trend around as far as credit conditions were concerned. Commercial and industrial loans were virtually flat in both 1970 and 1971. And, a "wait and see" attitude on the part of consumers resulted in an eight per cent savings rate in both 1970 and 1971—up from six per cent in 1969. The volume of time and savings deposits, which had been declining since late 1968, turned around in early 1970, and grew by some \$75 billion before the end of 1971, a gain of more than one-third. This build up in the vaults of Savings and Loan Associations and other thrift institutions was reflected in steadily declining mortgage interest rates from mid-1970 through most of 1971.

The government also played its part in the 1971 housing boom. Due mainly to effective implementation of the programs

of the Housing Act of 1968, and subsequent legislation, Federally subsidized housing, which never made up more than 10 per cent of the total previously, pushed up to nearly 30 per cent of that total in both 1970 and 1971. Also, more effective operating procedures have given agencies like GNMA, FNMA and FHLBB stronger tools in insuring a more even flow of mortgage funds.

Set out carefully in the fertile field of backlogged housing demand, nurtured by a record flow of savings deposits, and protected from the aphids and cutworms of competing economic priorities by a heavy dusting from Federal programs, 1971's housing crop yielded a bumper harvest of some two million conventional housing units.

Both apartments and single family units shared in 1971's strong advance, as housing needs were finally matched up with the means to satisfy those needs.

The recession that triggered the massive money in-flows at the Savings and Loan tellers' windows, setting the stage for the housing surge, did not treat some of the other construction categories quite as kindly in 1971.

Compared with 1970 levels, the hardest hit of all the construction markets last year was industrial building. Following the general trend in the economy as a whole, the seasonally-adjusted figures for this category declined sharply during 1970. They began to level off by early 1971, though, and showed some slight improvement during the second half. But, there was not enough improvement to avoid a decline of some 30 per cent between the two years. The reasons for this stiff 1971 decline in industrial building lay entirely with the recession, and the declining profits curve and excess plant capacity that accompanied it. A manufacturer still invests in periods such as this, but it's usually to make the capacity that he has more efficient, rather than to add to it. And, that usually translates more into machinery than it does into expanded plant facilities.

The recession affected some other categories too, particularly offices and store building. But here, the impact was not as direct as it had been in the industrial area. It's true that the demand for new office space was influenced by the weakness in business conditions, but this was really of

less importance than the lingering effects of the 1968-1970 office building boom. A large overhang of unrented office space in a number of the nation's major cities last year provided little incentive for any major new ventures in this area. The 1971 value of office contracts managed to squeeze out a gain over 1970, but just barely.

Store building was buffeted by two opposing trends. On the one hand, retail and wholesale sales slowed down, thus diminishing the incentive to invest in new outlets. On the other hand, however the massive gains in the housing area stimulated a relocation demand for new retail facilities. 1971 ended with the relocation demand factors stemming from the growth in housing firmly in control. Store building ended the year with a 10 per cent gain, but, more importantly, the seasonally-adjusted figures were pointing to further sharp expansion into 1972.

For those construction types that generally fall under the designation "institutional" building—schools, hospitals and religious structures, primarily—1971 turned out to be a fairly good year. Like housing, these building types are sensitive to general credit conditions. And, as is also true of housing, the group, taken together hasn't seen much in the way of growth since the mid-sixties.

The institutional total pushed ahead 10 per cent during last year's period of credit ease, though, with hospitals turning in the biggest gain. Of the institutional categories, hospitals tend to be the least affected by general credit availability. Due largely to the existence of strong public financing programs, like Hill-Burton, this building type has had a better track record than institutional buildings generally during the late sixties.

The 1971 gain in educational structures was slightly under ten per cent, but it was the best performance for this category since 1966. Restrictions in the credit markets have not been the only problems facing educational building in recent years. Declining enrollments in the elementary grades, combined with slower rates of growth at the secondary and college levels have put a severe limit on the near-term potential of educational construction. Like housing, 1971's gain in educational building must be viewed more as making up for a few years of artificially suppressed activity. But, unlike housing, it is not a sign that the future will be strong also. This category has some lean times ahead.



*Announcing:*

# A Unique Training Facility For Architectural Specifiers

## THE BUILT-UP ROOFING SYSTEMS INSTITUTE

The Built-Up Roofing Systems Institute is a new concept in the construction industry. A facility to train architects and engineers in the technology of built-up roofing systems.

The Built-Up Roofing Systems Institute is sponsored by Johns-Manville to fill a long-standing need in the building construction field. An institution where members of architectural and engineering staffs can acquire the knowledge to design and specify built-up roofing systems without having to rely on outside factors who may or may not be objective and unbiased.

In the complex technical and legal structure of contemporary building, the designer is being held responsible for performance as well as design. The proper design of built-up roofing systems and their supporting substrates should be among his basic tools.

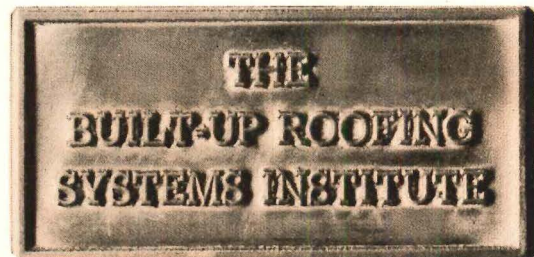
It is to enable the designer to acquire these tools that J-M is sponsoring the Institute. Over 100 years of experience in built-up roofing and the most comprehensive product line and research facilities in the built-up roofing industry enable J-M to give meaningful evaluations of materials and

processes and objective instruction in their specification and use.

The Built-Up Roofing Systems Institute is not a trade association or a seminar. It is a serious, objective, comprehensive training school. A course of intensive instruction in the design of built-up roofing systems; insulations, roof membranes, vapor barriers, flashing and the proper design and use of supporting structures and decks.

The Institute, a product of long-term planning at J-M, will be housed in the new J-M facilities in Denver, Colorado. Training sessions will commence in 1972.

Further details on this unique training facility, which we believe to be the first and only of its kind, will be released in the near future.



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Another big plus for *Hide-A-Spray* is its competitive price. This, combined with its other outstanding features, provides a top quality airless spray paint system that saves time, money . . . and returns a hand-

some profit. In fact, Mr. LaValley was so pleased with the results that his future plans include *Hide-A-Spray* Interior Flat Latex on similar projects.

For additional information on *Hide-A-Spray*, write PPG Industries, One Gateway Center, 3W, Pittsburgh, Penna. 15222.

PPG: a Concern for the Future

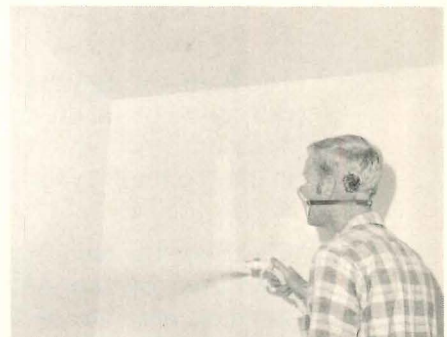
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The Project:  
Westgate Village, 230 Units, Crafton-Ingram Section, Pittsburgh, Penna. Contractor/Builder: Mellon Stuart Company, Pittsburgh, Penna.



Taped and spackled joints and nail holes in this corner quickly disappear with one pass of airless sprayed *Hide-A-Spray* Interior Flat Latex Paint.



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After a touch up of *Hide-A-Spray*, accidental scrapes and scuffing from furniture or equipment movement quickly disappear.



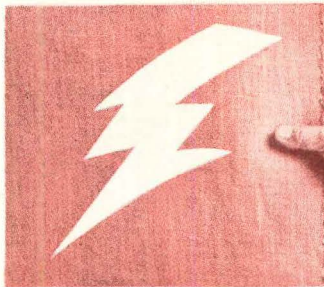
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We take out the problems caused by static electricity. All the shocks, volts, jolts; the discomfort and annoyance. We do it with Brunslon™, a static-control yarn. We don't make carpeting, but we supply Brunslon to the people who do—a total of 72 of the nation's leading carpet makers. Make sure the carpeting you specify contains Brunslon. Get in touch with us for a list of carpet manufacturers who feature Brunslon.



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AR-2

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Push-to-trip, an exclusive feature with Square D breakers, permits testing of the tripping mechanism at any time, without special test equipment and without removing the circuit breaker from the panelboard.

NH1B lighting panelboards from Square D have full Integrated Equipment Rating—branch breakers and panelboard are tested together as well as in component form—to assure you of reliable operation.

Easy to install Mono-Flat® fronts are standard on these panelboards. They are good looking, mount flush to

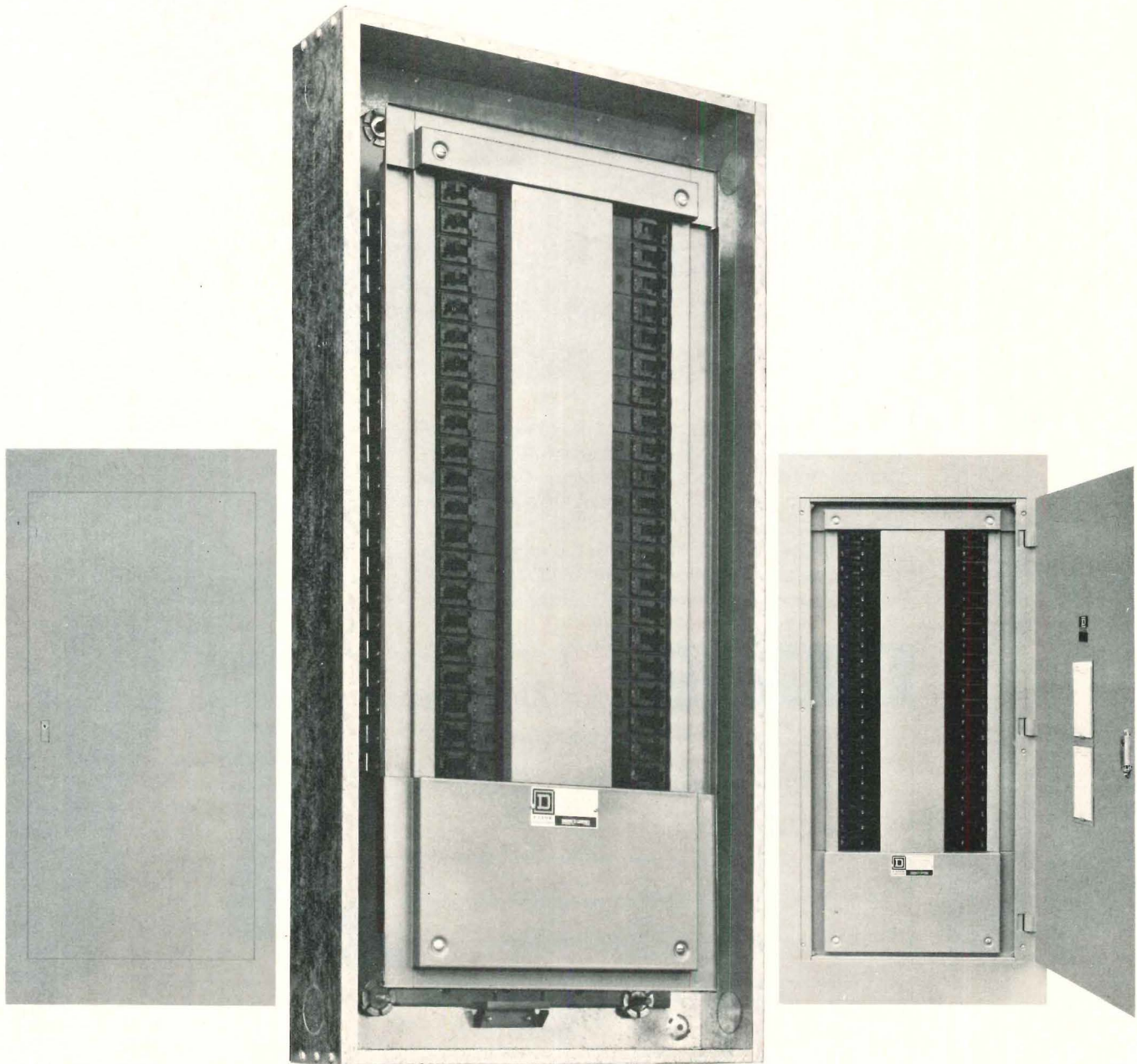
the wall and are people-proof to discourage tampering!

If you're putting in a high voltage lighting installation, make it easy on yourself and keep your customers satisfied with NH1B lighting panelboards from Square D. For specific engineering data, contact your nearby Square D Field Office. Or write Square D Company, Dept. SA, Lexington, Kentucky 40505.



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Here is CUBO, designed and manufactured by Harvey Probbler. The look is loungy — soft, squashy, casual, comfortable — ideal for composing imaginative seating clusters in lounges, lobbies and living rooms. CUBO is based on a square seat module with floating back and arm elements locked securely in place with concealed steel connections. Dust-trap pockets between seat and back are entirely eliminated. If ever necessary, CUBO's covers can be changed in a matter of minutes.

CUBO is made of steel reinforced 'self-skinned' urethane foam, clad in a puffy coat of dacron. The Probbler formulated urethane is inherently fire retardant and self-extinguishing (ASTM-1692 test method). Design and construction patents are pending.

CUBO's legs are deeply recessed to avoid scuffing and for easy floor maintenance. For slippery floors, we have rubber couplers that prevent the units from separating. Or, CUBO clusters can be bolted to ebonized wood bases. CUBO tables come in seven sizes and two heights to align with either seats or backs, and in a broad range of durable finishes. We will be pleased to send you literature. Why not drop us a note on your professional letterhead.

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**CHURCH AND LANDSCAPE COSTS**

Below are cost guide lines for church equipment and general exterior landscaping items.

Church equipment can vary widely due to design and selection of materials. These costs are based on a medium to good quality range.

Landscaping also is subject to considerable variation with local conditions and over-all level of quality.

**Church equipment**

Pews, hardwood with kneelers	34.00 LF
Pews, hardwood w/o kneelers	30.00 LF
Altar rail, hardwood	12.00 LF
Altar rail, wrought iron	10.00 LF
Altar rail, aluminum	16.00 LF
Altar, hardwood top	18.00 SF
Altar, oak	32.00 SF
Altar, marble with pedestal	60.00 SF
Lecturn and pulpit, hardwood	1,600.00 EA
Confessional, single	1,400.00 EA
Confessional, double	2,000.00 EA
Confessional doors, add	250.00 EA

**Landscaping costs per square foot**

Top soil, 6-in. deep	0.10-0.12
Seeding, mechanical spread	0.11-0.14
Grass sod, 1-in. thick mat	0.25-0.30
Flagstone, 2-in. on 2-in. mortar on 4-in. conc. base	3.80-4.00
Flagstone, 2-in. on 2-in. sand, no conc. base	3.10-3.50
Brick laid on 2-in. sand-cement on 4-in. conc. base	3.15-3.65
Concrete pavement, 4-in. thick on 6-in. stone base	0.80-0.90
Asphalt driveway, 2-in. on 6-in. stone base	0.55-0.65

1941 average for each city = 100.00

**FEBRUARY 1972**

Metropolitan area	Cost differential	Current Indexes				% change last 12 months
		non-res.	residential	masonry	steel	
U.S. Average	8.4	368.1	345.7	360.7	351.7	+ 8.43
Atlanta	7.8	465.5	438.9	453.8	444.3	+ 8.65
Baltimore	8.0	388.9	365.6	378.9	369.2	+ 9.36
Birmingham	7.4	336.5	313.0	326.0	320.2	+ 7.17
Boston	8.9	367.3	347.1	364.3	353.3	+ 10.09
Buffalo	9.3	416.5	391.1	410.7	397.4	+ 9.06
Chicago	8.5	425.4	404.5	410.9	404.3	+ 8.41
Cincinnati	8.7	391.8	368.7	382.7	373.2	+ 10.72
Cleveland	9.6	421.9	397.0	412.2	402.4	+ 9.27
Columbus, Ohio	8.5	395.7	371.5	384.7	377.0	+ 7.21
Dallas	7.7	361.8	350.3	355.5	347.7	+ 9.34
Denver	8.3	397.9	374.4	394.2	380.2	+ 6.67
Detroit	9.6	414.9	395.3	413.2	398.5	+ 8.49
Houston	7.7	353.7	332.1	345.3	339.0	+ 7.86
Indianapolis	8.0	343.3	322.3	335.7	328.5	+ 9.45
Kansas City	8.3	349.8	330.5	340.0	332.5	+ 9.28
Los Angeles	8.3	410.3	375.1	398.8	390.8	+ 10.71
Louisville	7.6	363.0	340.9	355.0	347.5	+ 9.25
Memphis	7.6	342.7	321.9	332.4	328.0	+ 5.01
Miami	8.1	390.0	371.7	381.0	372.2	+ 8.85
Milwaukee	8.6	423.7	397.8	418.3	404.5	+ 7.41
Minneapolis	9.0	401.8	378.0	394.0	383.1	+ 9.79
Newark	9.0	366.9	344.5	362.1	352.8	+ 7.40
New Orleans	7.3	346.9	327.4	342.1	334.2	+ 7.11
New York	10.0	405.4	376.9	391.4	382.7	+ 8.02
Philadelphia	8.5	379.7	361.7	373.0	364.7	+ 8.13
Phoenix	7.8	208.0	195.3	200.9	198.0	+ 10.82
Pittsburgh	9.0	366.7	345.0	359.7	349.6	+ 10.59
St. Louis	8.7	381.1	359.7	376.6	364.9	+ 8.96
San Antonio	7.8	144.7	135.8	141.3	137.8	+ 4.01
San Diego	8.0	145.8	137.0	142.3	139.5	+ 5.51
San Francisco	9.2	524.4	479.3	520.2	504.1	+ 10.01
Seattle	8.8	368.4	329.7	366.0	351.3	+ 4.67
Washington, D.C.	7.9	347.4	326.3	336.7	330.0	+ 10.85

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	392.3	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.





# The eye takes the first step.

The floor is  
Brigantine™ Vinyl Corlon®.  
The color is char brown.  
And as it stretches in front  
of the eye, interior lines  
and shapes are brought together.  
Unified.

That's the design value  
only a floor can offer.

Brigantine Vinyl Corlon  
is one of many Armstrong floors  
being used by architects and  
designers. Our floors are chosen  
because they help achieve  
a coordination of elements.  
A sense of "total architecture."

We offer enough different floorings,  
in an unprecedented collection  
of patterns and styles,  
to work with almost any concept  
or budget. And we can provide  
the technology you may need to  
bring an interior design idea to life.

Please write us for whatever  
information you may need.  
Armstrong, 301 Rock St.,  
Lancaster, Pa. 17604.

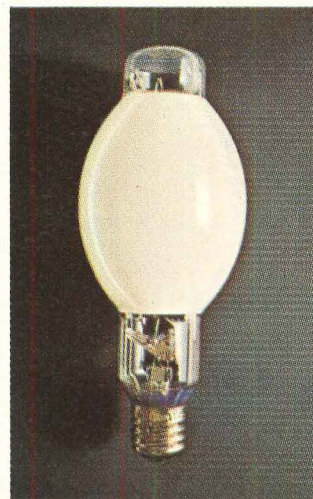
**Armstrong**

*For more data, circle 1 on inquiry card*





**This unretouched photo of the Ethan Allen finishing plant was taken with no other lighting but Metalarc/C's.**







This photograph taken with Daylight Kodachrome II®; no filters.

Ethan Allen makes a famous line of American traditional furniture, and it's all "open stock."

That means Mrs. Housewife can buy a bed today and a matching dresser 5 or 10 years from now. So there's nothing more important for Ethan Allen than to make sure the colors of their furniture are always perfectly matched.

They make sure with Sylvania Metalarc/C's.

These metal halide lamps are an important part of their quality control program.

They put out a powerful light that's

balanced to give the effect of broad daylight. Everything looks natural in this light, so it's easy to match and inspect colors.

(In fact, the light is even better than daylight, because it stays the same morning, noon and night.)

Metalarc/C's also put out a tremendous amount of light for the wattage they consume. This is great for the company, because it keeps the power requirements low.

Another nice thing: our newest Sylvania Metalarc/C's are now rated for 15,000 hours. So they'll last about

6 years, figuring a 10-hour workday and a normal work year.

This Ethan Allen plant has standardized by installing 218 four-hundred-watt Metalarc/C's all over.

And nothing could be better than standardizing on daylight.

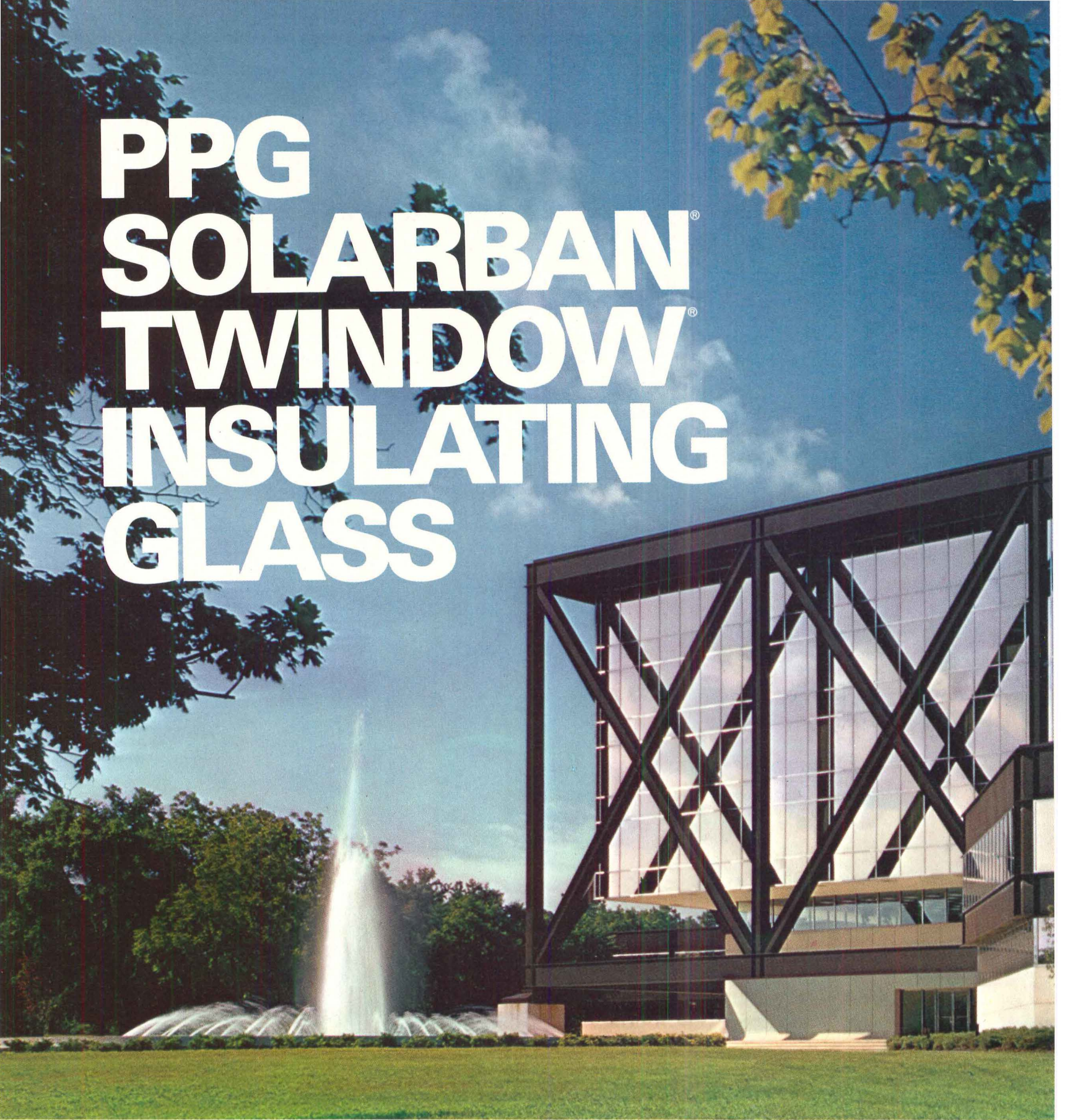
*For details, call your Sylvania representative or local distributor (in the Yellow Pages under Lighting)—or write to Sylvania Lighting Center, Danvers, Massachusetts 01923.*

**GTE SYLVANIA**

For more data, circle 42 on inquiry card



# PPG SOLARBAN<sup>®</sup> TWINDOW<sup>®</sup> INSULATING GLASS



*PPG Performance Glass creates a beautiful, comfortable corporate home for Burlington Industries.*

This new headquarters building nestles in a parklike setting—"a glass cube suspended in a steel cradle."

The architect selected PPG's Solarban 575 (2) Twindow Insulating Glass to complement and reflect the massive structural steel shapes. And in doing so, he was also able to ensure optimum performance values for the owners. From indoors, the glass reduces brightness of sun, sky and

clouds. So visual comfort is increased. In addition, the exceptional ability of Solarban Twindow Units to reduce solar heat gain and conducted heat loss results in substantial reductions in heating and air conditioning equipment costs.

See PPG about Solarban Twindow Glass—or the others in our family of Performance Glasses for your next building. Early in the design stages.





There's a PPG Glass that you can use as an active design medium to meet esthetic considerations, increase occupant comfort and contribute to a return on investment.

Write PPG Industries, Inc.,  
One Gateway Center, Pittsburgh,  
Pennsylvania 15222.

Owner: Burlington Industries, Inc., Greensboro, N.C.  
Architect: Odell Associates Inc., Charlotte, N.C.

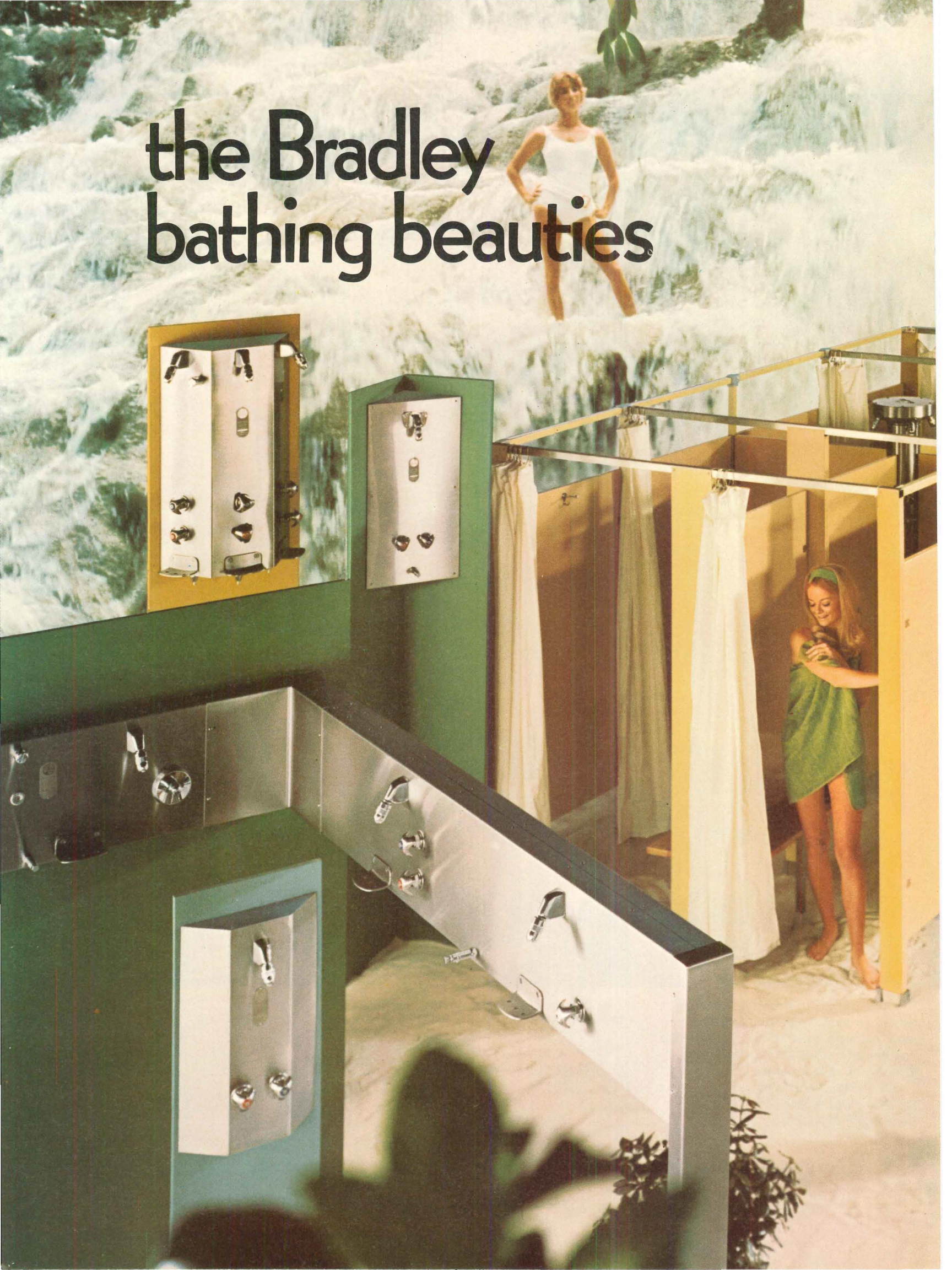
**PPG: a Concern for the Future**




*For more data, circle 43 on inquiry card*



# the Bradley bathing beauties







Column showers that serve up to 6 people with one set of plumbing connections. Multi-Stall units for privacy at low cost. Modesty-Module® showers with dressing rooms. Econo-Wall, Panelon® and single person wall and corner showers. Bradley offers you the widest choice of models for maximum flexibility. Bradley showers cut installation costs and time. Save space and money after installation because they serve more people in less space than ordinary showers. Vandal-proof and built for years of rough use.

Bradley showers . . . they're beauties when it comes to serving crowds of people the fast and easy way. See your Bradley washroom systems specialist. And write for latest literature. Bradley Washfountain Co., 9109 Fountain Boulevard, Menomonee Falls, Wisconsin 53051.

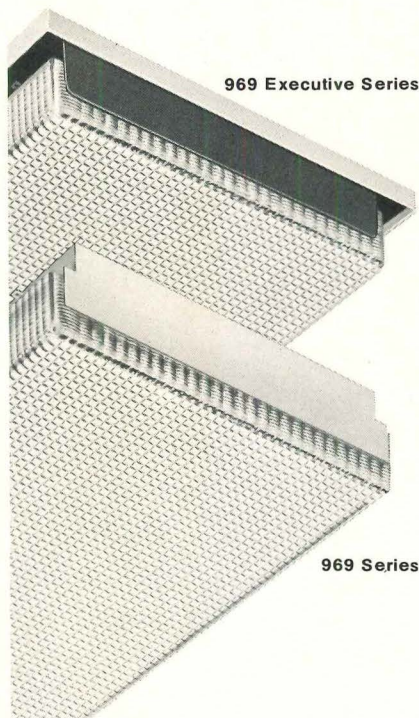
more bright  
ideas from  
**Bradley**



Leader in Washroom Fixtures and Accessories.

For more data, circle 44 on inquiry card

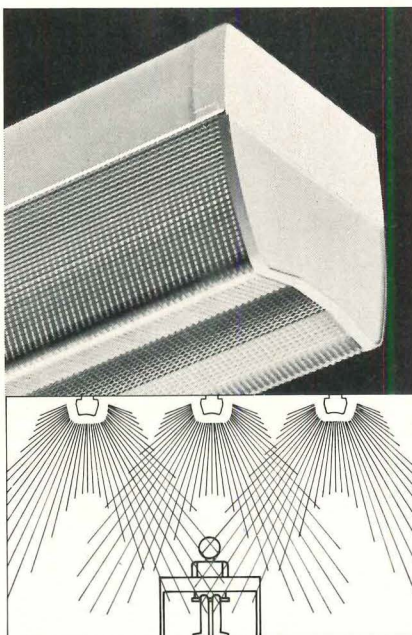




**LPI 969  
Luminaires.  
Superb  
light control at  
a reasonable cost.**

**Injection-molded lens.  
Surface mounting.**

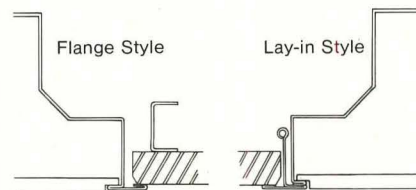
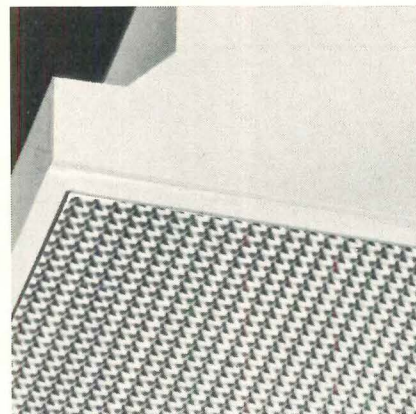
Rugged and attractive new LPI 969 luminaire series provides glare-free, uniform illumination with very low surface brightness. Wrap-around diffuser is injection-molded of clear acrylic, made exclusively for LPI by Holophane. Has three optically precise prism systems (sides, ends, and bottom) for superb light control. Hinges from either side, and stays perfectly aligned. Available with or without decorative black outline trim frame in 4-foot models for two or four lamps. An 8-foot unit without trim frame is also available, for two lamps in tandem (total 4 lamps). All for 40W Rapid Start lamps, individual or continuous-row surface mounting. Ask for 969 Series specifications.



**LPI Percepta.  
Side lighting from  
an overhead  
system.**

**Injection-molded lens.  
Designed to eliminate  
veiling reflections and  
glare in classrooms.**

Ordinary classroom lighting produces veiling reflections that substantially diminish "see-ability". LPI's Percepta has a unique injection molded diffuser design (Holophane Series 6200 Controlens®) that effectively eliminates reflected glare in a classroom lighting system without reducing the illumination level. With side lighting that comes from overhead luminaires. And, compared with even the most efficient of conventional wraparound fixtures, Percepta's higher ESI (Equivalent Sphere Illumination) levels and uniformity result in lower operating and owning costs. Percepta is 6-1/2" wide, in 4-foot and 8-foot lengths for one or two 40W Rapid Start lamps. With all of LPI's traditional quality construction features, of course. Ask for LPI Percepta bulletin with full photometric data and specifications.



**LPI troffer with  
self-framing  
Perm-Align  
Controlens®.**

**Extra rigid construction.  
Injection molded lens.  
Full module of light.**

Multiple bends and exclusive LPI double-thickness hemmed side and end diffuser seating flanges give this troffer great rigidity. It holds the critical dimensional tolerances needed for perfect seating of the lens. The injection-molded Holophane Perm-Align Controlens® has an integral ledge on all four sides to nest perfectly in the troffer with no light leaks. The self-framing design provides a full module of light, with no lamp images or ballast channel shadow. A unique, spring-loaded lens-centering device at each end of the troffer supports and centers the lens—releases by finger pressure for troffer servicing—without tools. Troffer offered in 1'x4' 2-lamp or 2'x4' 4-lamp (for 40W RS lamps), lay-in or flange styles, dished or flat diffusers. Ask for complete data on LPI Perm-Align troffers.

*LPI designs for extraordinary performance*

LPI offers a wide choice of fluorescent luminaire types and models to meet a wide variety of specific application requirements—without compromising on lighting function and overall luminaire performance. Nor on quality: LPI luminaires are thoughtfully engineered and ruggedly built for trouble-free installation and long in-service performance. There is an important difference in luminaire quality—a difference you can see. Ask your LPI representative or write for data on luminaires that are function-matched to your application.



Lighting Products Inc., P.O. Box 370, Highland Park, Ill. 60035

1-214  
\*Holophane Company, Inc.

For more data, circle 45 on inquiry card





## In restaurants and drive-ins Bally Prefab Coolers and Freezers are accepted as the standard for walk-in refrigerated storage

Bally Prefabs can be assembled in any size for indoor or outdoor use from standard panels insulated with four inches of urethane foamed-in-place. Easy to add sections to enlarge . . . easy to relocate. Factory refrigeration systems for every temperature from 35° cooling to minus 40° freezing. Stainless steel, patterned aluminum or galvanized finishes. Subject to fast depreciation. (Ask your accountant.) Write for 28-page booklet and urethane wall sample. Bally Case and Cooler, Inc., Bally, Pennsylvania 19503.

There's an  
evolution in the  
kitchen



© 1971 ALL RIGHTS RESERVED.



# Advanced Climate Control is for the Low Rise, too

## PROFESSIONALS AT WORK

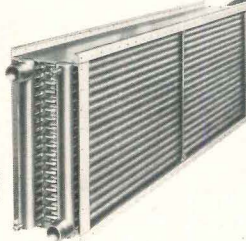
Architects: Jenkins-Wurzer-Starks  
 Consulting Engineers: Barnard & Maybeck with technical representation: A. I. McFarlan Co., Inc.  
 Air conditioning Contractor: The Bellam Corporation  
 General Contractor: John B. Pike & Son Inc.

Heat recovery system harnesses the dual versatility of "DEEP" AEROFIN COILS. Using energy more efficiently starts with alternate heating/cooling service of "wide range or deep" Aerofin Heat Transfer Coils—in this Central Trust Company branch bank, Rochester, N. Y.

Internal heat gains, including a computer center, produced a "break even" temperature of  $\pm 13^\circ$ , dictating an all-air heat recovery system. Aerofin's "deep" coil/fan system permits higher chilled water cooling and lower hot water heating temperature differentials.

Aerofin "deep" coils are critical components for high-technology heat recovery systems. Some designs allow smaller pipes,

pumps, valves, less insulation and operate on standard refrigeration equipment. If you have air conditioning budget problems—look to dependable Aerofin "deep" coils for promised savings. Offices in Atlanta, Boston, Chicago, Cleveland, Dallas, New York, Philadelphia, San Francisco, Toronto, Montreal.



Type C chilled water coil

Type RC (removable header one end and return bends opposite end used in structure).



# AEROFIN

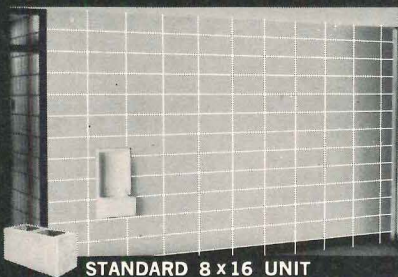
CORPORATION • LYNCHBURG, VIRGINIA 24505

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

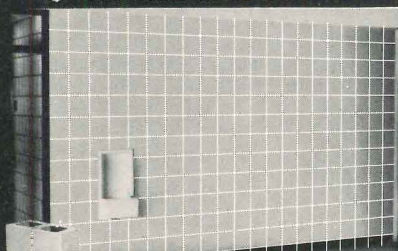
## change scale with the economy of 8 x 16 block!

...with these  
SPECTRA-GLAZE®  
SCORED BLOCK  
(or create your own)

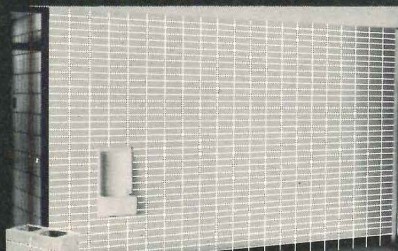
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 & other countries by  
 THE BURNS & RUSSELL CO., Box 6063,  
 Balto., Md. 21231.  
 Design and other  
 Scored faces. 48 colors.  
 Truck delivery direct to job site.



STANDARD 8x16 UNIT



8x8 SCORE



BRICK SCORE

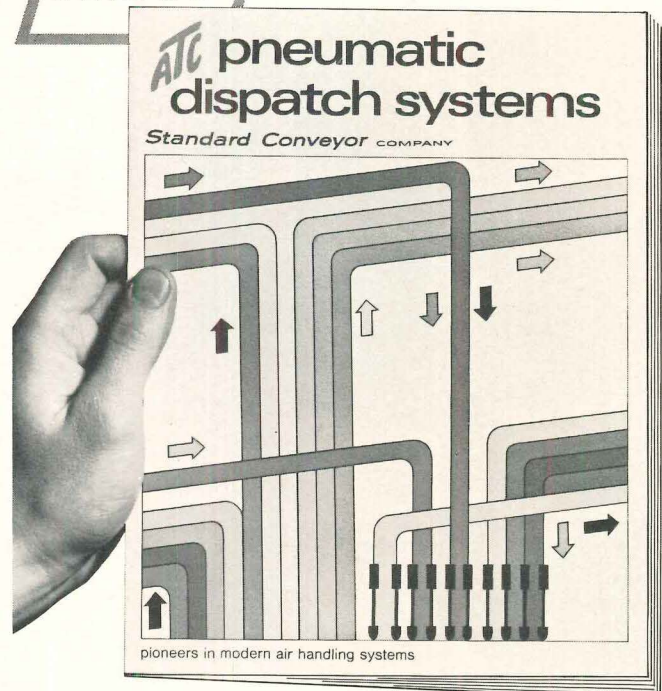


glazed  
concrete  
block

For more data, circle 47 on inquiry card

# NEW

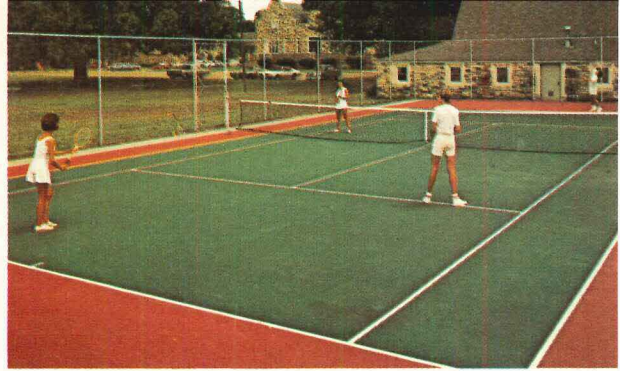
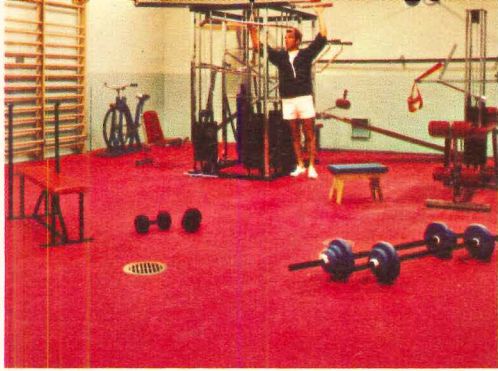
## All you need to know about



**Get your free copy!** Describes, illustrates new type automatic tube systems featuring greater dependability, quieter operation. 12 pages. **Standard Conveyor Co., 312-B Second St., North St. Paul, Minn. 55109.**

For more data, circle 48 on inquiry card

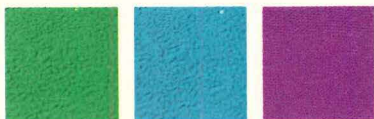




# Robbins SPORT-TRED<sup>®</sup> is the any-color synthetic surface ... indoors and out

It's also the one that's solid vinyl—superior to laminated vinyls and filled urethanes. It won't fade, change color, shrink, absorb stains or show undue wear patterns under normal use. Over one million square feet have been sold coast to coast.

Architects, coaches, players and school and club officials praise its appearance, playability, versatility, durability. Court markings are applied with special compounded paints that stay on without scuffing or smearing.



**Robbins**  
**SPORT-TRED<sup>®</sup>**

**SEND COUPON FOR FULL INFORMATION AND FREE SAMPLE.**

RobbinsSPORT-TRED, Box 16902-AR, Memphis, Tenn. 38116  
Please send me a free sample and full information on Robbins SPORT-TRED synthetic athletic surfaces.

Name \_\_\_\_\_

Position \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

**Robbins**

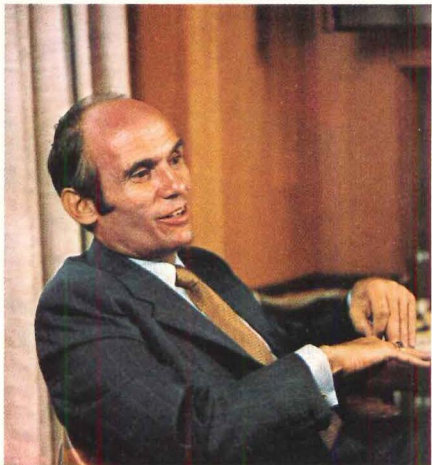
Division of Cook Industries, Inc. **CI** World Leaders in Athletic Floors

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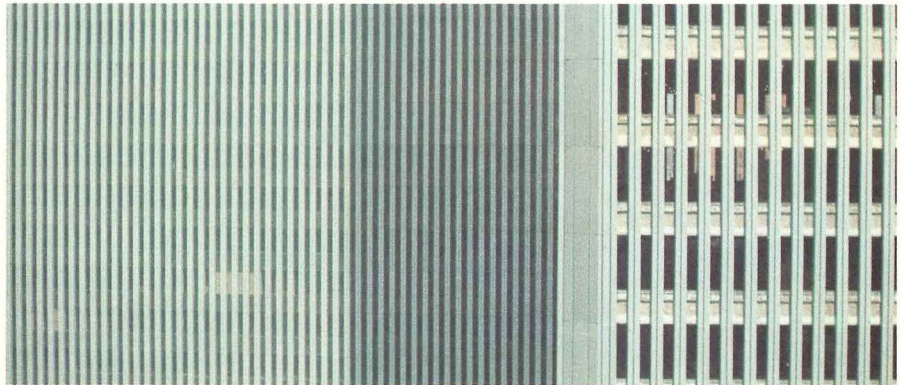






**Consultant and general contractor John Tishman (Tishman Realty and Construction Company, Inc.) evaluates the World Trade Center wall system:**

"Our recommendation of aluminum as the Trade Center curtain-wall metal was largely the result of our own experience with aluminum wall systems in the many buildings we've built for others and for ourselves. "To begin with, we knew that aluminum



would give us a structurally sound wall system.

"We also knew that maintenance costs on an aluminum curtain wall would be negligible, which created a favorable combination of ultimate and first costs of the metal.

"And we had every reason to feel that anodized aluminum would give the Trade Center the smooth finish we wanted.

"It appears that our judgment was correct. Every indication is that the Trade Center's aluminum wall system will fulfill all the exceptional specifications it was designed to meet.

"The building is also exceptional in the design correlation between exterior and interior. The exterior metal wall comes through, to give us a crisp

guideline for interior finishing. And the 40-inch module of windows and columns is much more flexible for interior layout than the typical four- or five-foot module.

"In effect, then, the refinements of the curtain wall provided by Cupples Products Division of H. H. Robertson Company contributed to the efficiency of the trades responsible for interior finishing, another example of the interrelated planning of the building team. On a project like the Trade Center, total involvement of the building team is vital."

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.

**Change for the better with Alcoa® Aluminum**



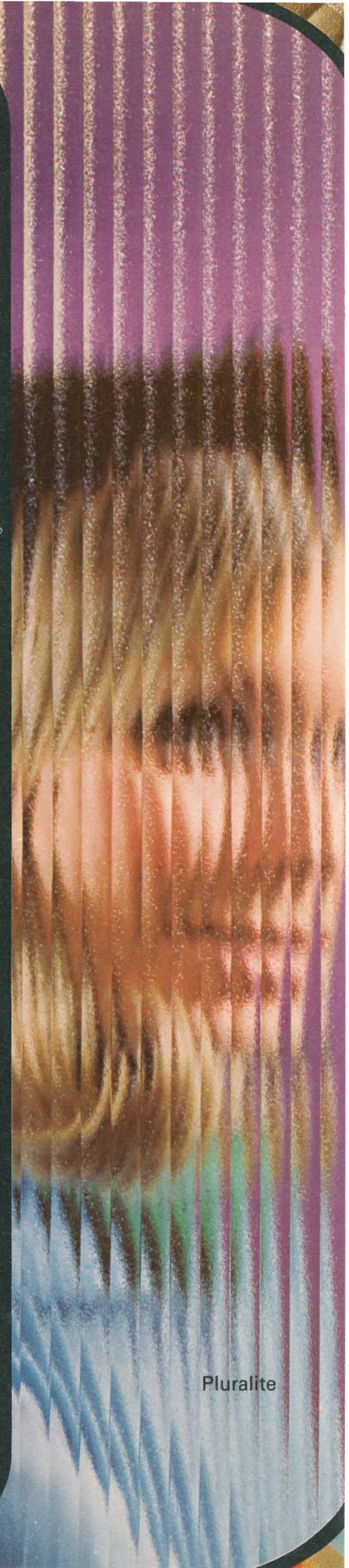




Hylite



Syenite



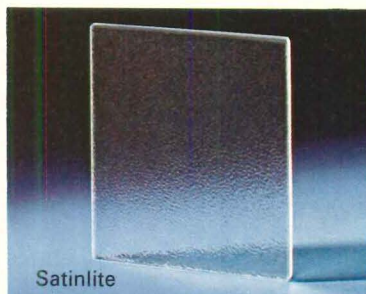
Pluralite



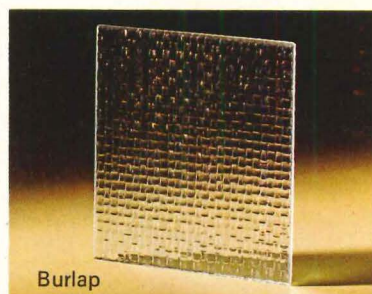
Selections  
that give  
imagination  
full sway

MISSISSIPPI  
PATTERNED GLASS

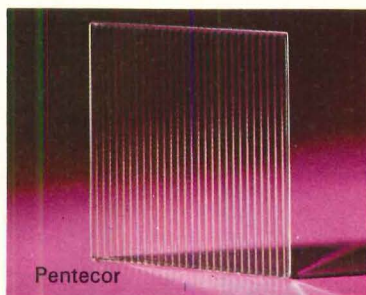
Let light work for you through patterns that give every object exciting new angles of interest. Panels and partitions reveal the passing view. But textures blend with lights and colors to soften the image and give design emphasis. Mississippi patterns by CE GLASS give refreshingly new concepts to windows and walls. Obscure patterns are available to give privacy to any desired degree. CE GLASS has the wide range selections so there's never a limit. Imagination can have full sway whether for contemporary or traditional, or for strictly functional or highly decorative purpose.



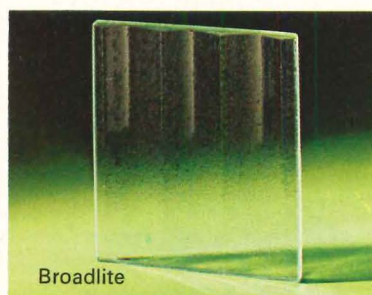
Satinlite



Burlap




Pentacor



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Mississippi patterned glass by CE GLASS is available from leading distributors of quality glass in the principal cities of the United States and in Canada from Canadian Pittsburgh Industries, Ltd., Glass Division. For further information or samples, contact our office nearest you or write CE GLASS, 825 Hylton Road, Pennsauken, N. J. 08110 or call 609-662-0400.

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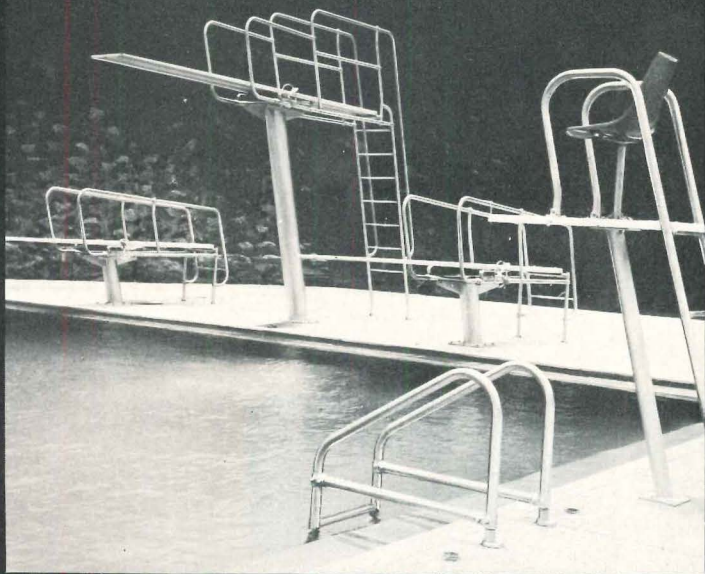
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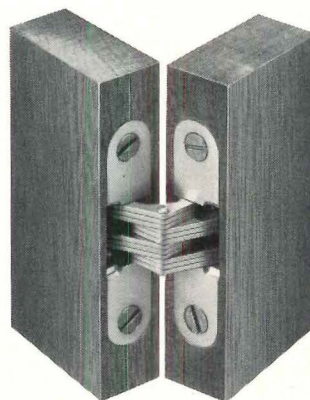


**BRUNING**

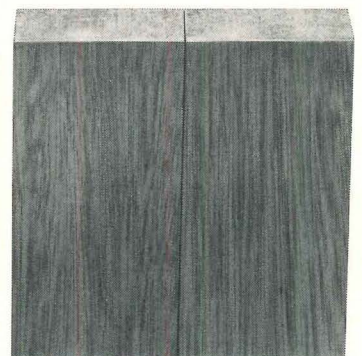
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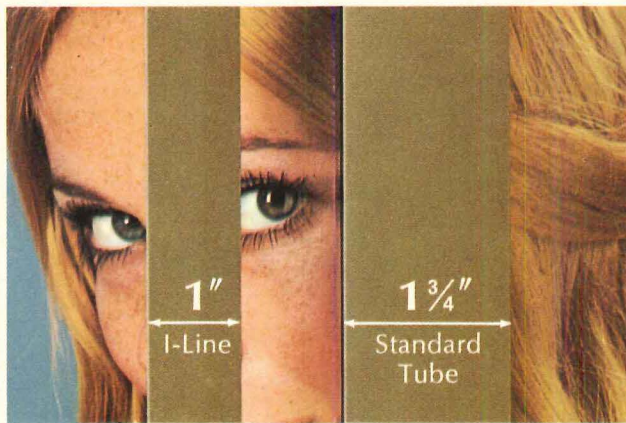
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KAWNEER introduces

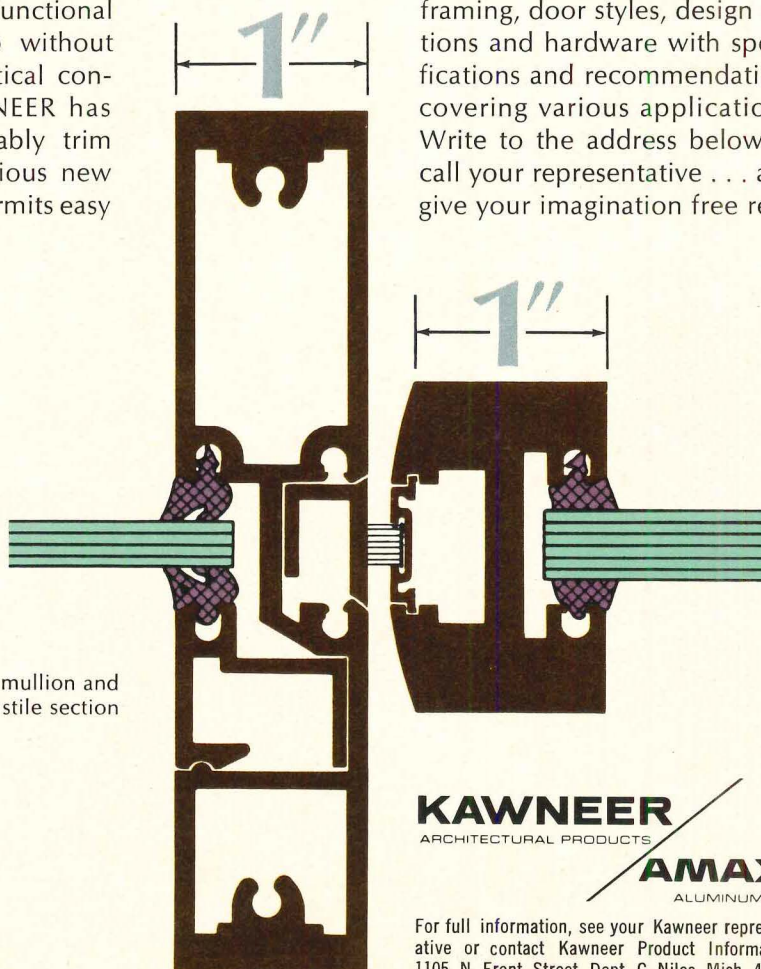
**i** line



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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 $\frac{3}{4}$ " 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

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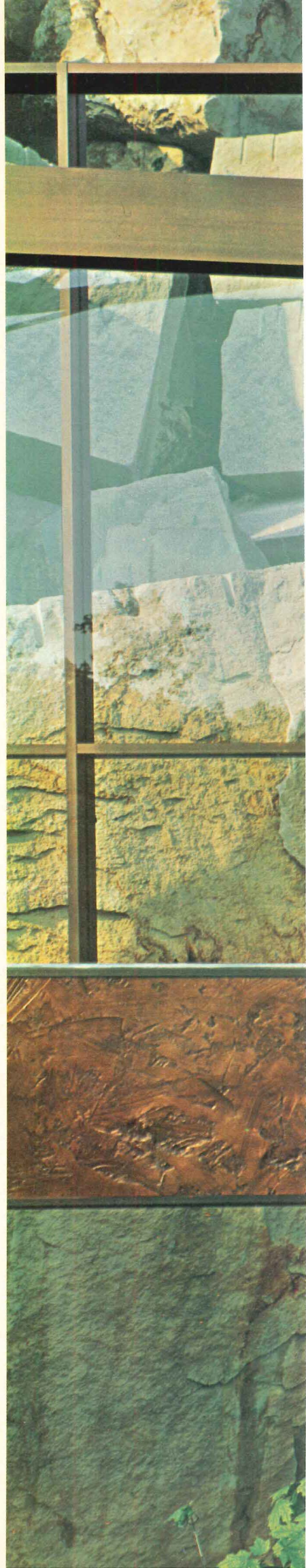


Typical vertical mullion and door stile section

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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.

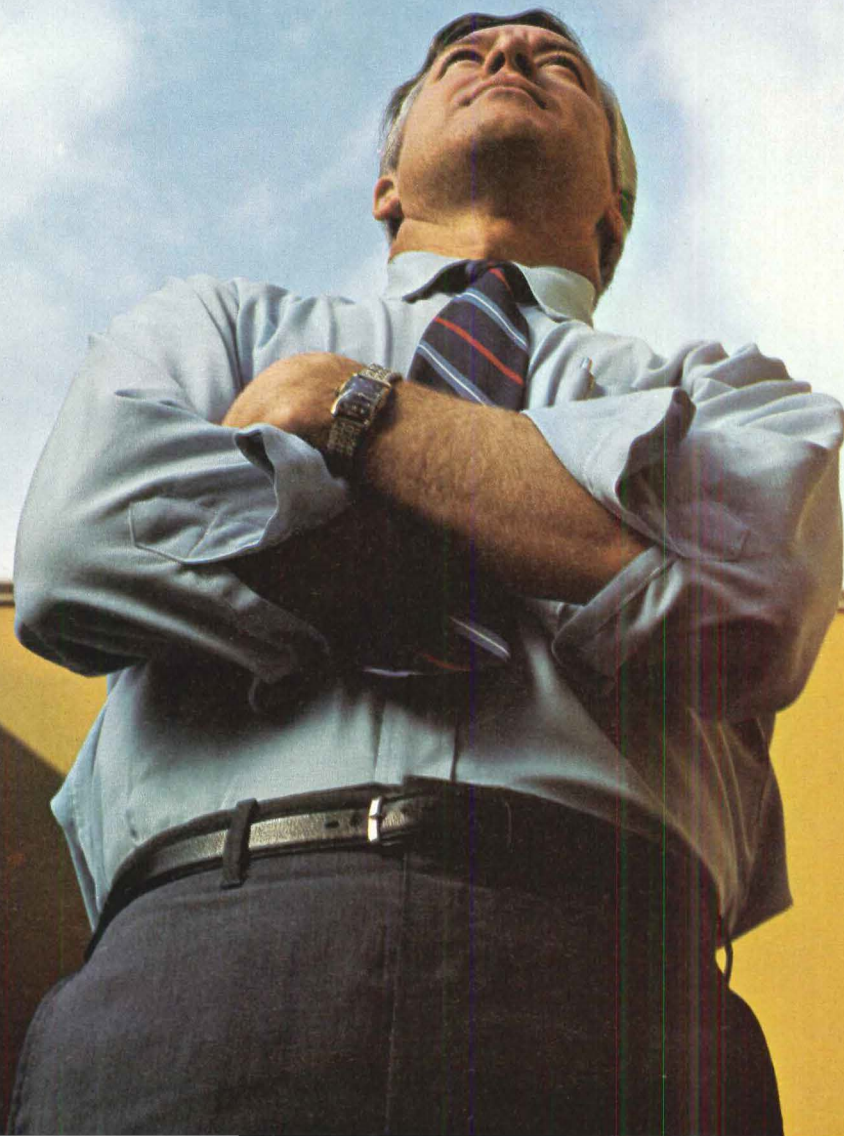








If you've  
always felt that  
high-performance ceilings  
are an infringement  
on good design...  
take heart.





# Now there is **COMPAC** the ceiling of the 70's.



Compac is the *complete* ceiling that comes in a carton!

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DANIEL BUILDING (main floor), Birmingham, Alabama  
ARCHITECT: Lawrence S. Whitten & Son

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Here today, gone tomorrow.



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The man? Possibly. The office? Certainly, if your client wishes. Because it's a Steelcase Movable Wall System office.

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For more information, visit one of our showrooms located in major cities. Or, write for folder 5-190, Department G, Steelcase Inc., Grand Rapids, Michigan; Steelcase Canada Ltd., Toronto.

**Steelcase**

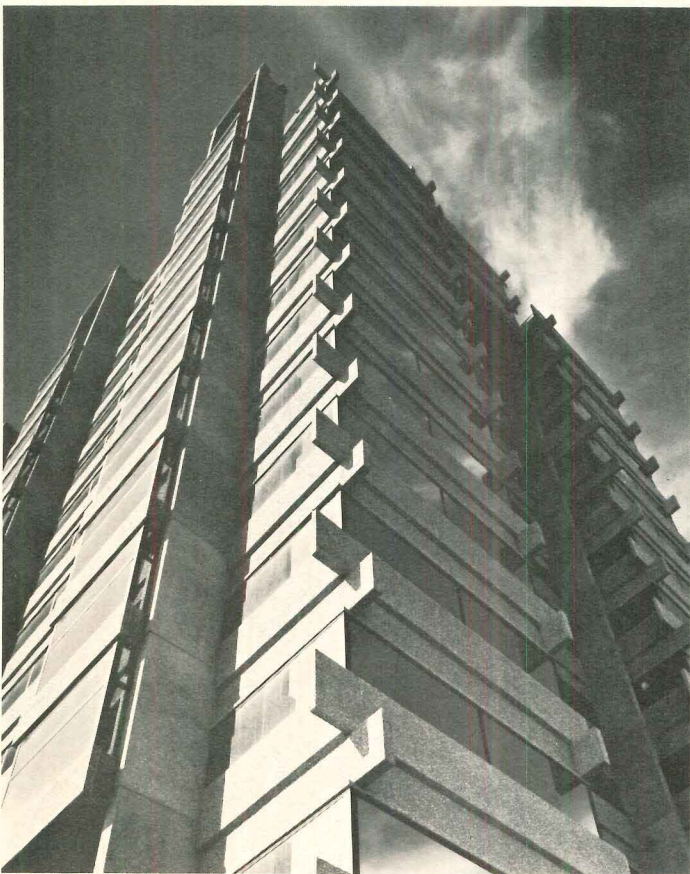
Furniture that works for people who work

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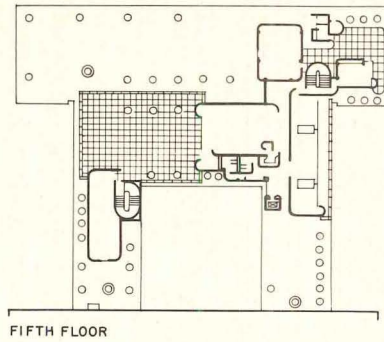
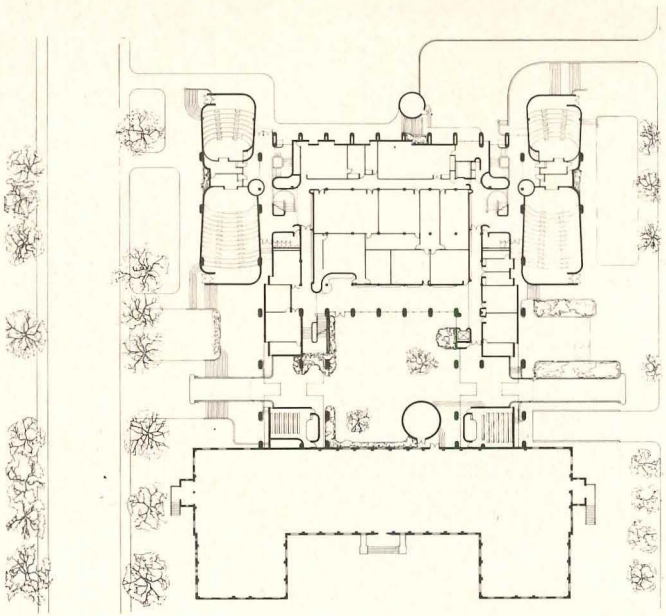


## TWO PROJECTS BY PAUL RUDOLPH—

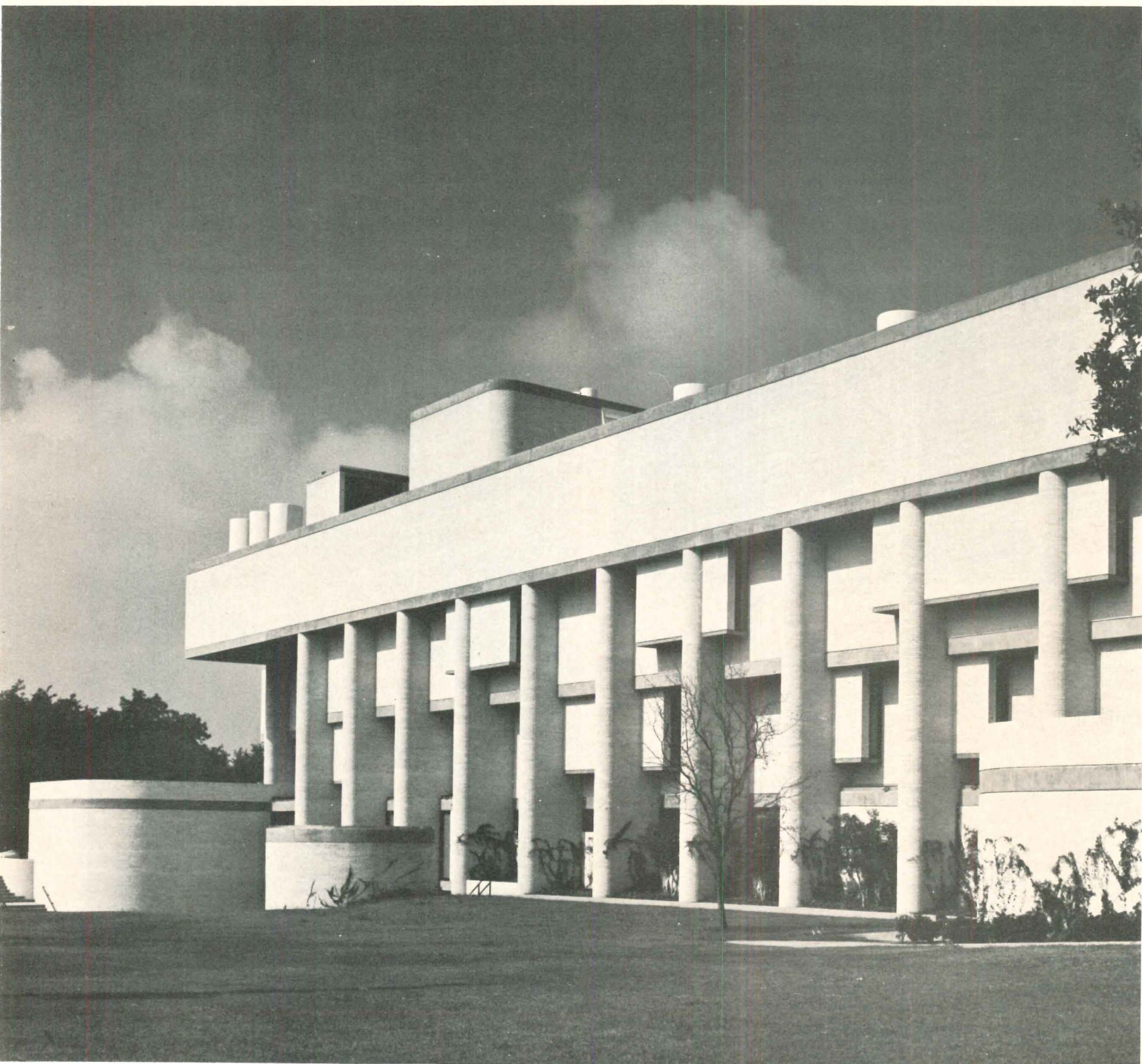
a large physical sciences complex for Texas Christian University in Fort Worth which exhibits his masterful handling of form and scale, and an almost totally precast office building in Dallas which is both vigorous and inventive.



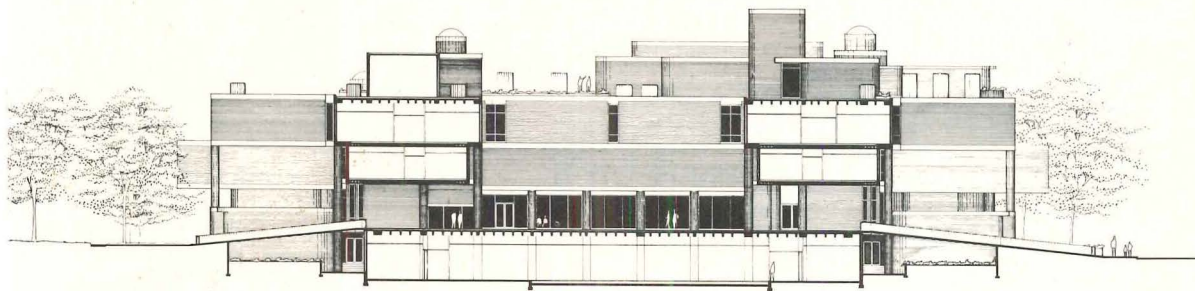




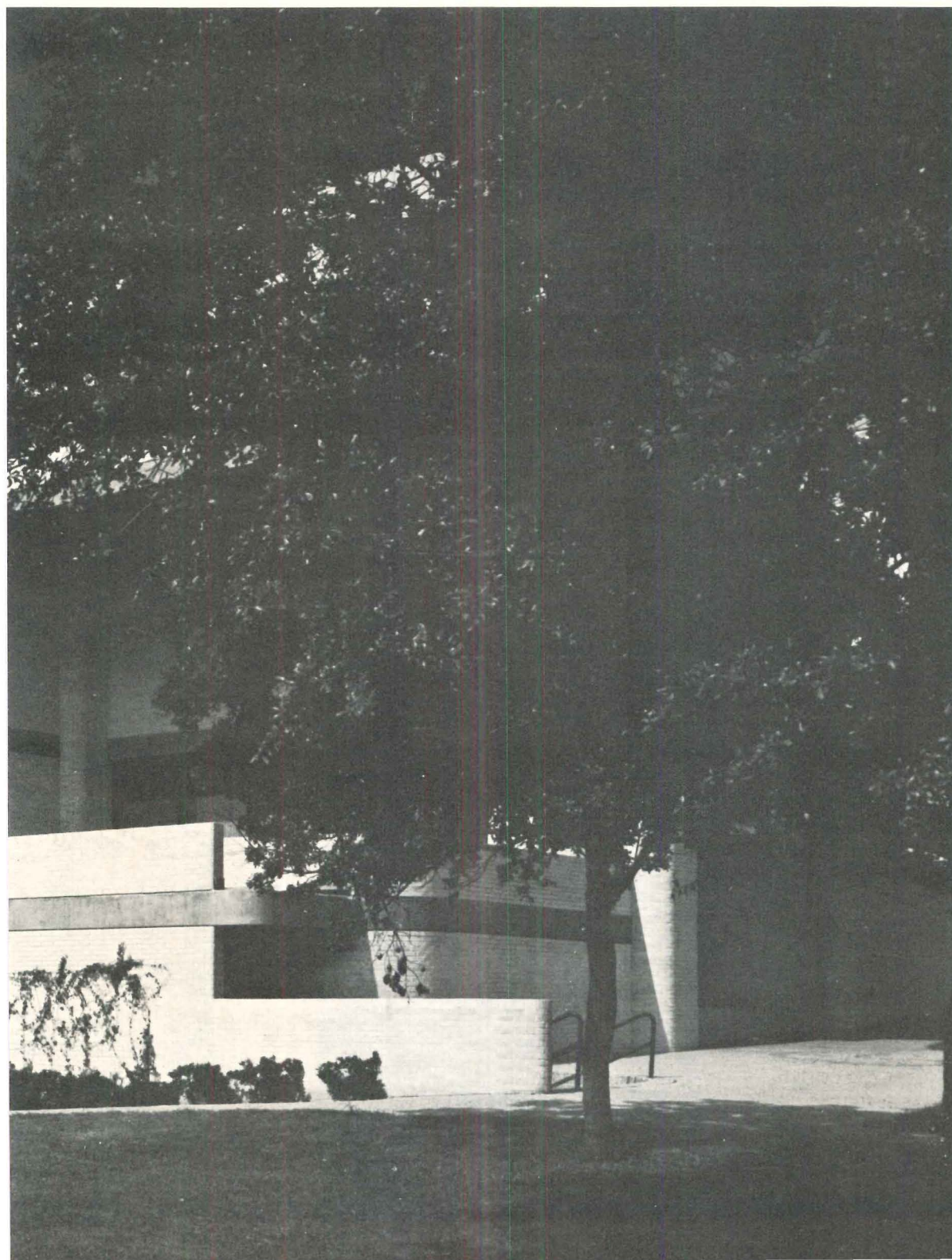
The photograph (below) is of the downhill facade. At the left and right are the gently curving walls of identical lecture halls. The ten piers extending to the fourth floor terminate in the projecting continuous plane which conceals the chemistry labs, acts as a cornice and serves as a transition between the strongly patterned walls of the first three floors and the free forms of the fifth floor penthouse. As the plans and section indicate, the building is U-shaped forming an open court at the second floor level. The court is also the roof of the first floor computer center and is reached by ramps at opposite ends.







Yukio Futagawa photos



**The new physical sciences building for Texas Christian University is huge, voluminous and ample—yet surprisingly human in scale**

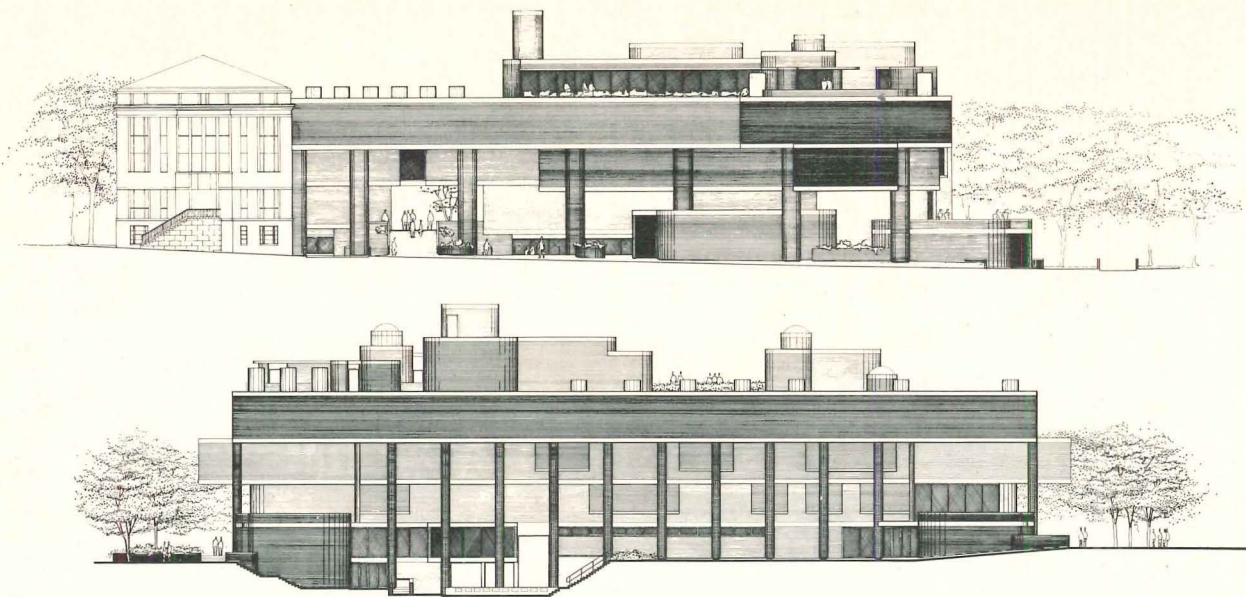
Reducing a mammoth building's apparent size while retaining its required capacity is an architectural exercise most designers don't even attempt. Too many recent facilities built to accommodate the extensive square foot requirements of today's science buildings are bloated giants in poor scale with their settings and users.

The five-story, \$5 million Sid W. Richardson Physical Sciences Building has been designed to house the departments of chemistry, geology and physics; the TCU computer center; glassblowing, electronics and machine shops; six lecture halls; and administrative offices. An intricate mix of undergraduate classrooms, doctoral research laboratories, interdepartmental laboratories, faculty offices and informal lounges, it contains almost 150,000 square feet. It is almost twice as large as the earlier science building (80,000 square feet) to which it is attached, but it does not overpower its neighbor.

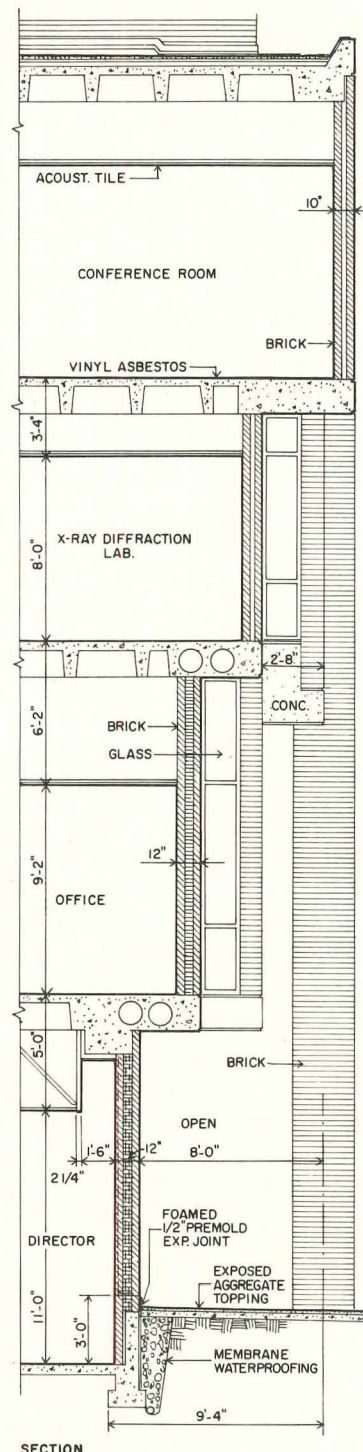
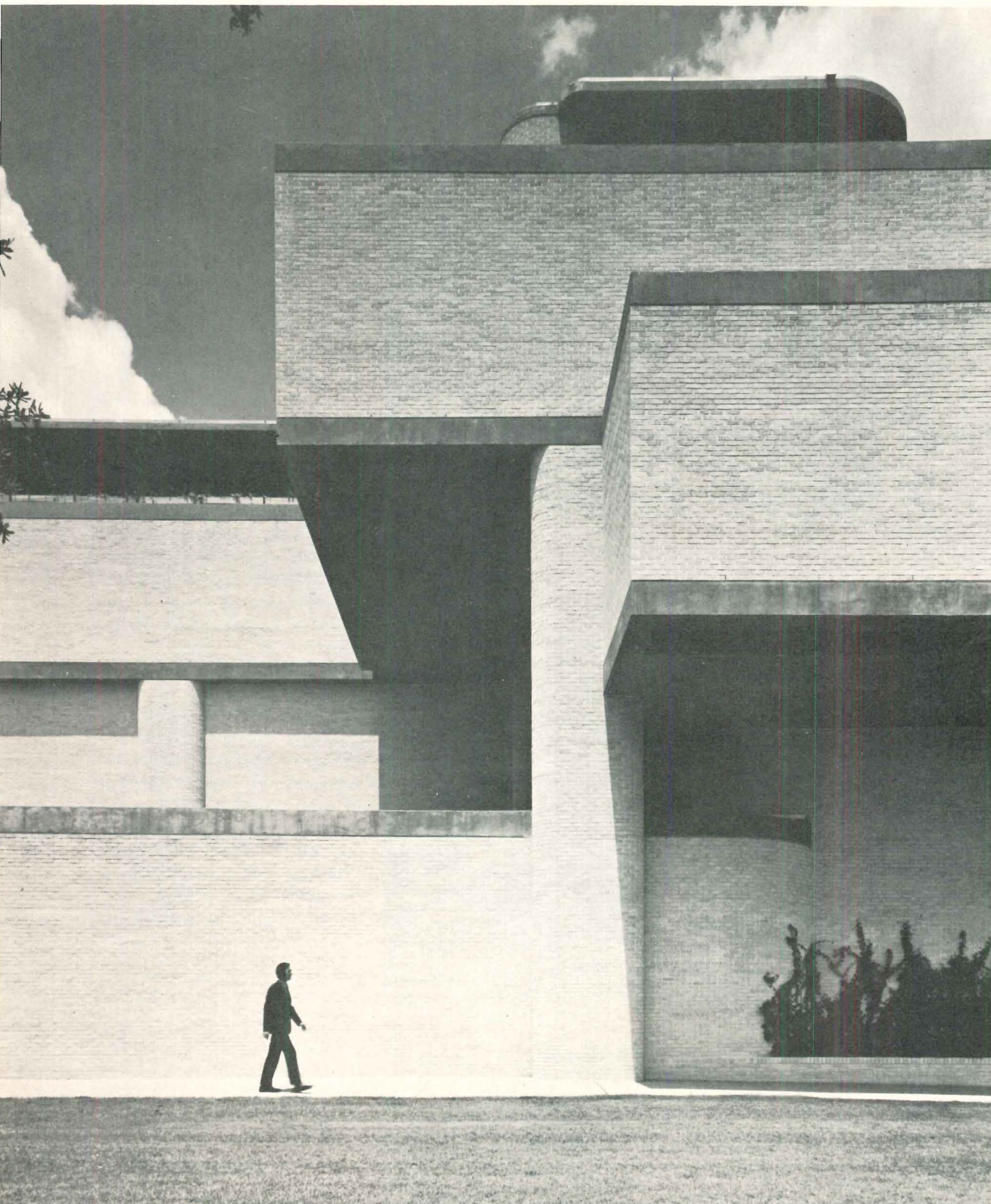
Architect Paul Rudolph, by skillfully organizing the elements of the new structure, has designed yet another building of great spatial complexity and richness creating an appropriate and diverse scale for its users and their activities as well as for the surrounding campus.

THE SID W. RICHARDSON PHYSICAL SCIENCES BUILDING, Texas Christian University, Fort Worth, Texas. Architect: *Paul Rudolph*; associated architects: *Preston M. Geren, Architect & Engineer & Associates*; structural engineers: *Terry, Rosenlund & Company*; mechanical engineers: *Yandell, Cowan, Love and Jackson, Inc.*; landscape architects: *Carter & Burgess, Inc.*; general contractor: *Albert L. Smith, Inc.*

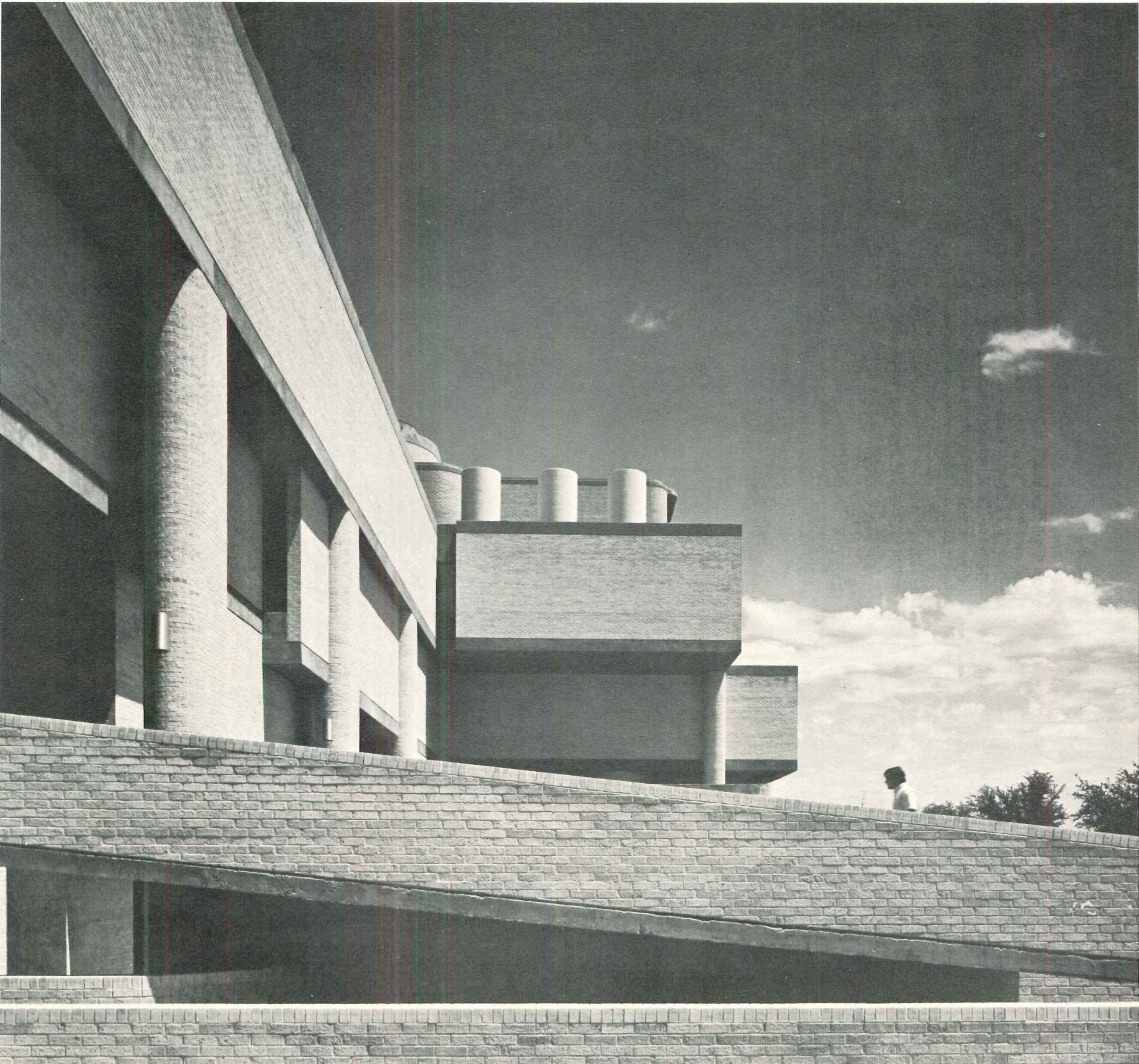
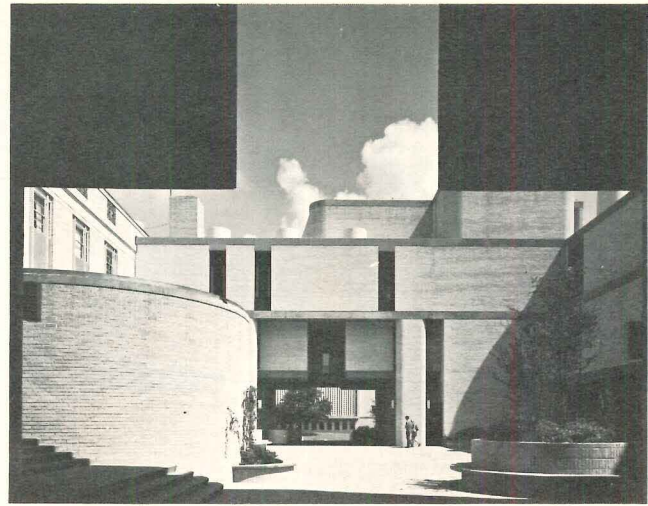
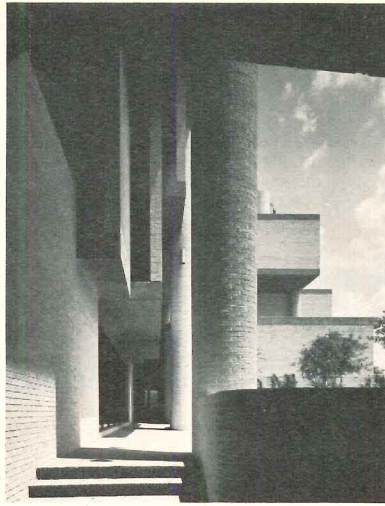
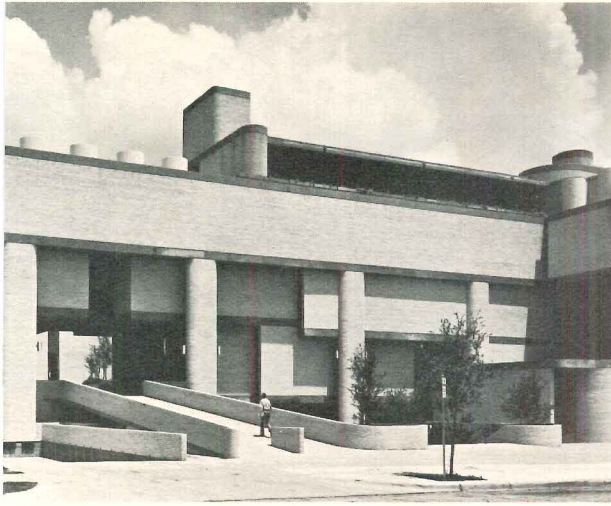




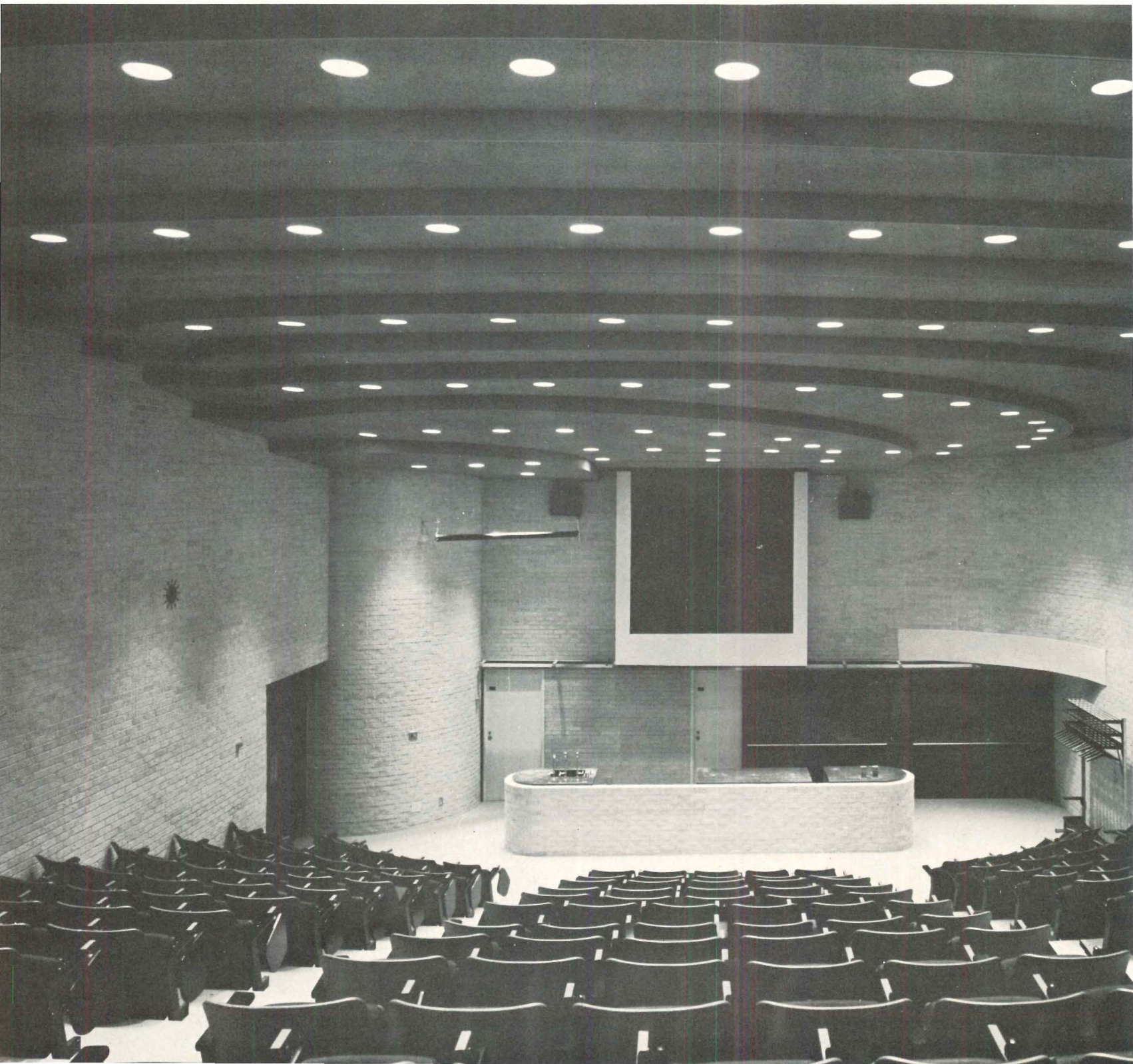
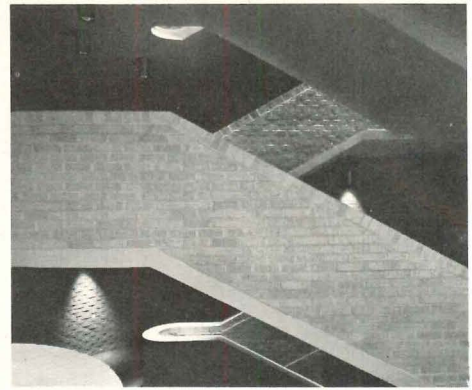
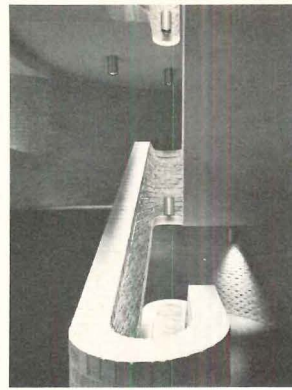
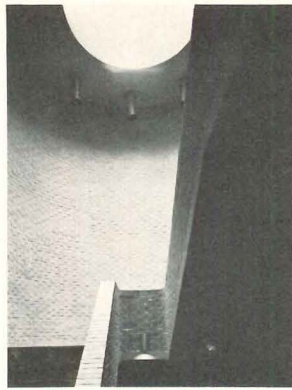
At first glance Rudolph's building appears to be windowless but, as the wall detail (below) indicates, where interior daylight is needed, the projecting wall planes have floor to ceiling glazing at their edges. The columns consist of single or paired poured-in-place concrete round columns furred by brick cavity walls which provide ample room for the concealment of ducts. The effect of Rudolph's broad overhangs is heightened by the sharp shadows cast by the strong Texas sun. The courtyard photo (opposite page, top right) was made from the top of an entrance ramp.





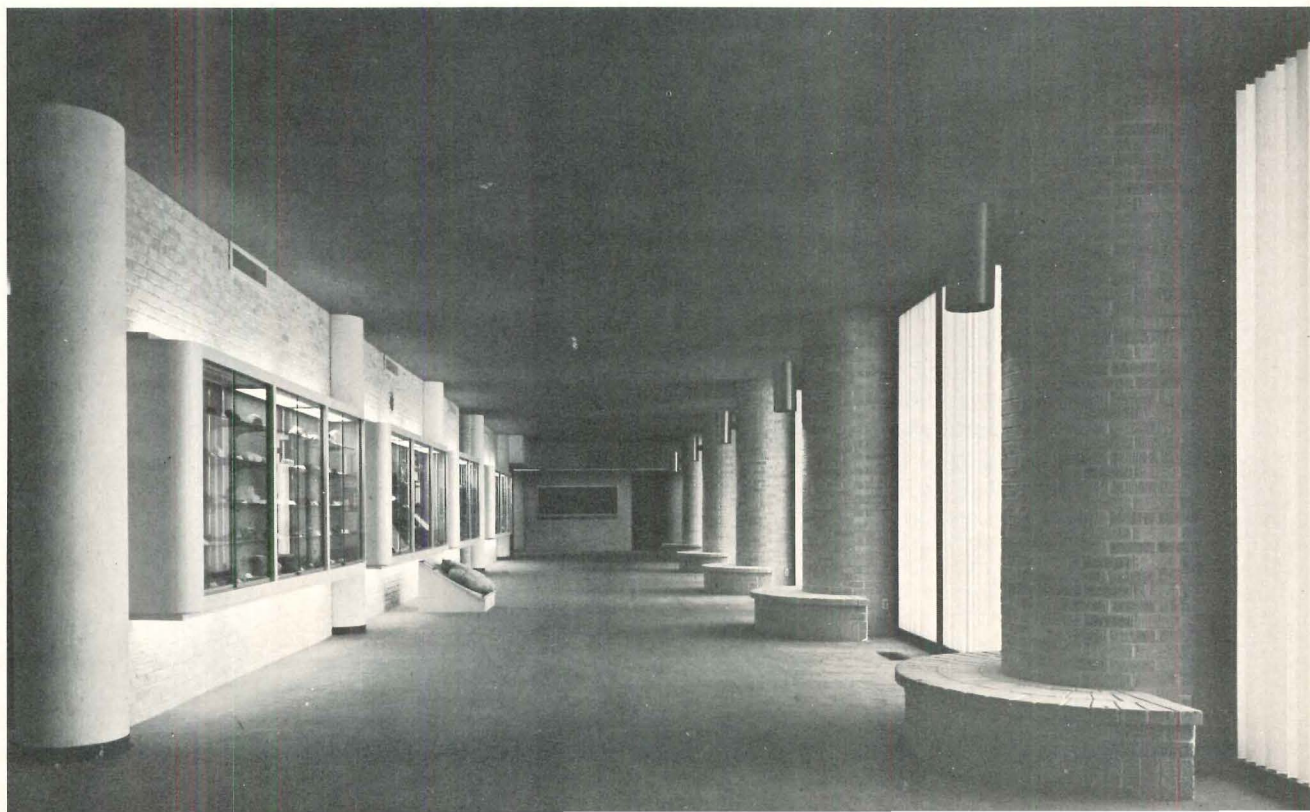
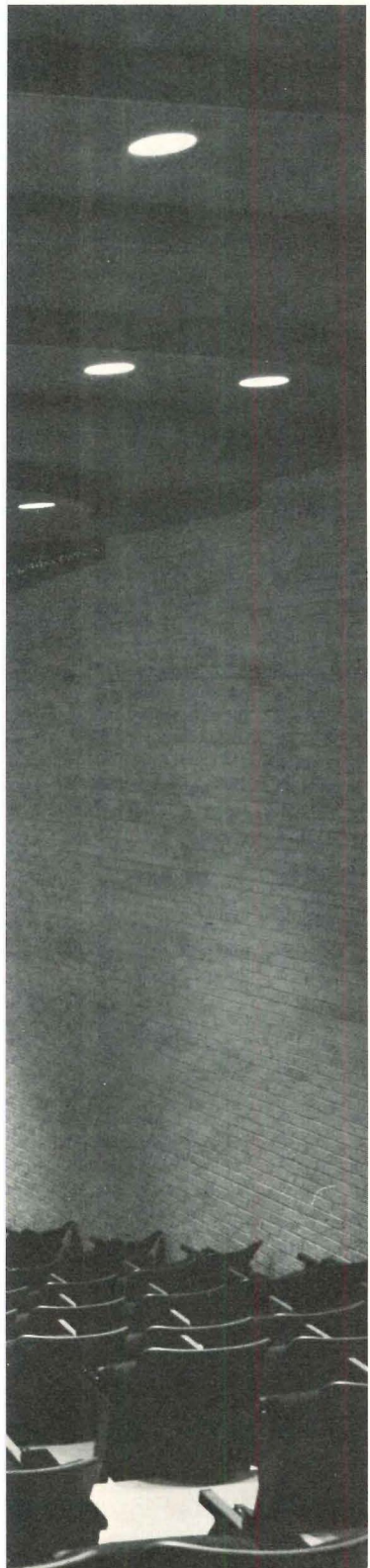
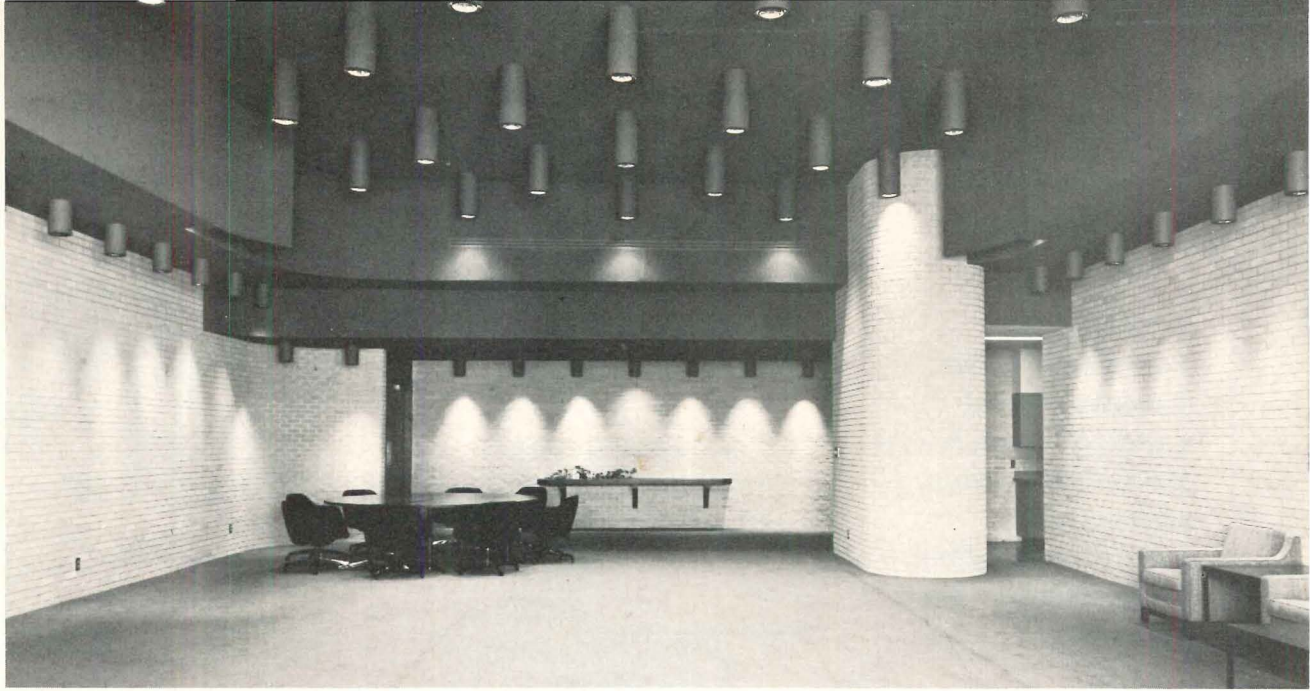






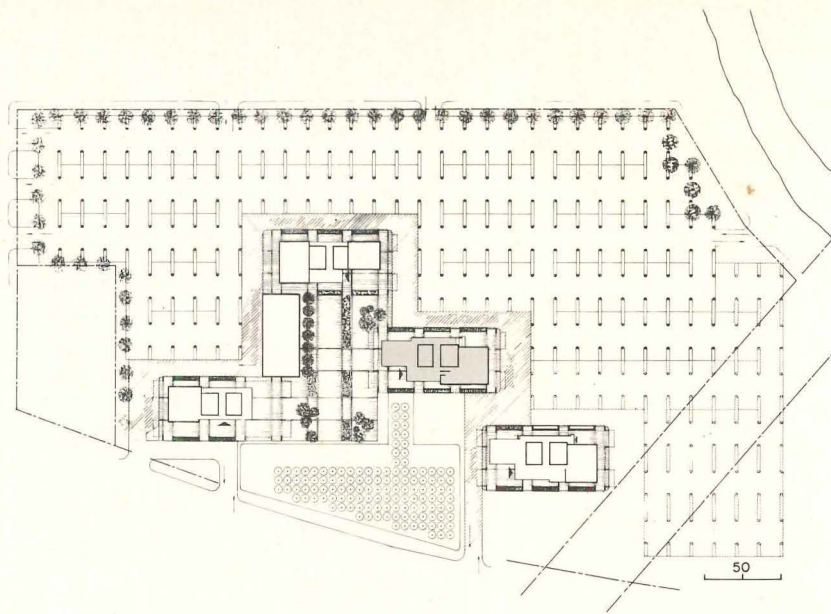
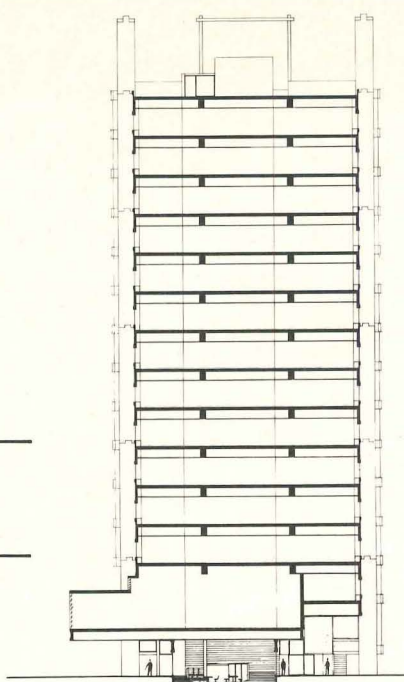


Stair details are shown at left. The stairs are elegantly curved with broad landings. They have been designed to give generous views of the life of the building as seen from above and below. The lecture hall (below) is one of the large pair symmetrically placed on opposite ends of the complex. The other lecture halls are similar in form though smaller. Generous meeting and lounge areas encourage informal communication between the faculty and students and provide contrast with and relaxation from laboratories, classrooms and other work areas. The principal lobby (below) opens upon the courtyard.





**According to Paul Rudolph this 16-story precast concrete office tower—the first of a group of four to be constructed in Dallas—is in essence a big log cabin "**

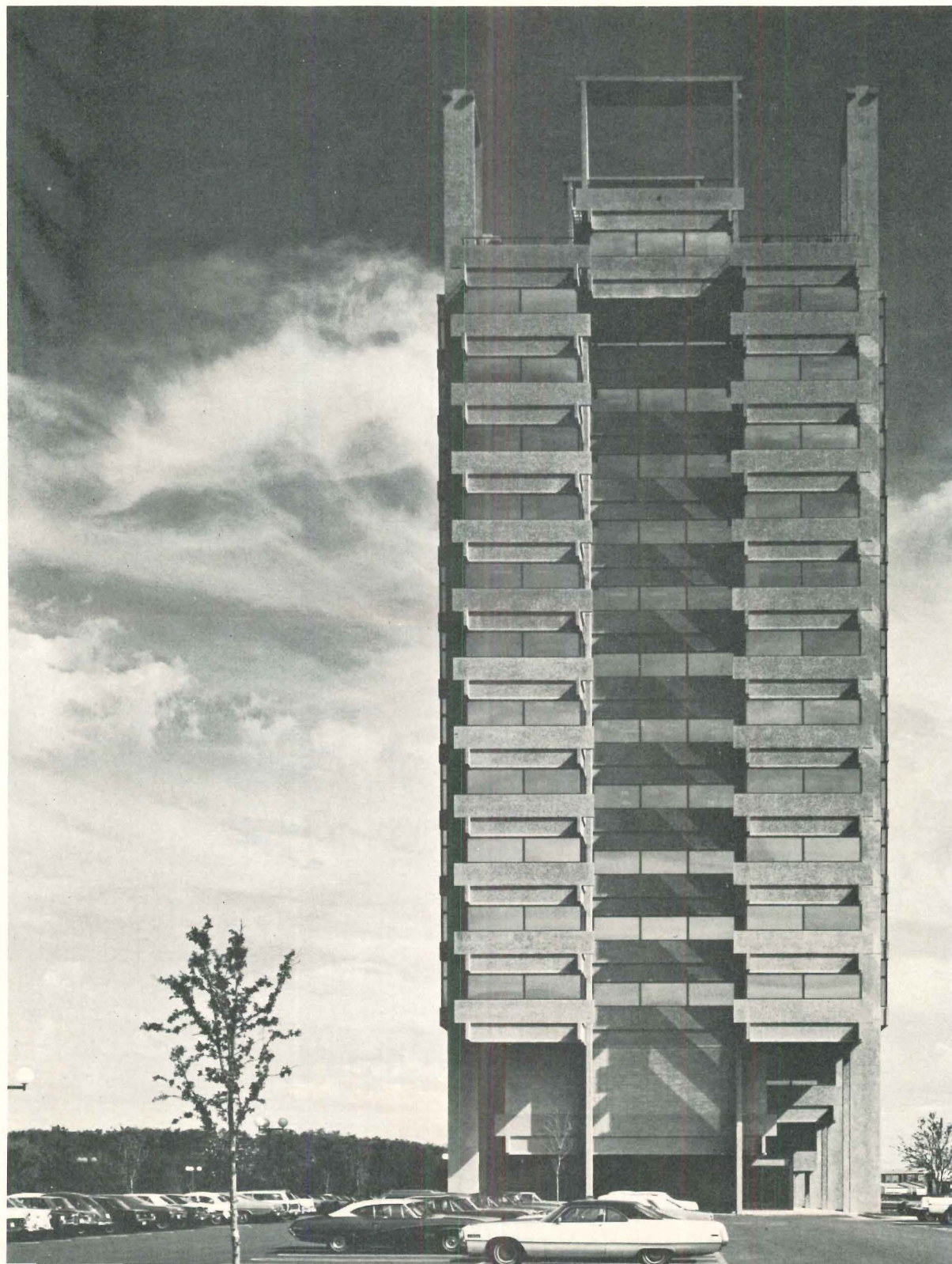


Except for the floors within the core this 130,000 square foot high rise structure is totally precast—columns, spandrels, floor-planks and core walls. The structure and the exterior exposed aggregate finishes are integral. On the interior, however, the structure is completely revealed only in the lobbies. On all other floors there are hung ceilings. The windows are mirrored glass.

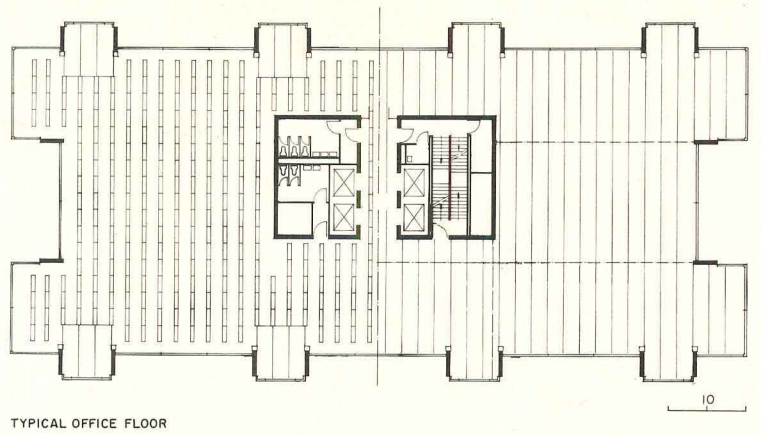
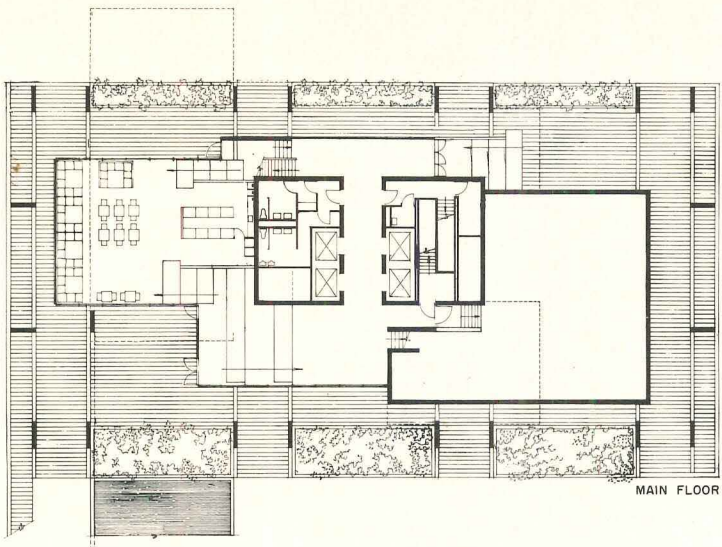
As can be seen in the typical floor plan (above right) the building has a two-part core with a double stair case, elevators, lavatories and service space. The plan has been drawn in the right hand portion to indicate the linear system of construction and in the left hand portion to show the ceiling lighting grid. The floors are column free. Sixteen corners occur at every typical floor instead of the usual four, providing four times as many "corner offices," a definite advantage for a speculative office building.

When complete, the complex will consist of four high rise buildings and a two-story element containing shops and stores. Unfortunately, as the site plan indicates, the budget did not permit the construction of underground parking and the buildings will be surrounded by a sea of cars. A second tower, almost identical to the first will soon be under construction.

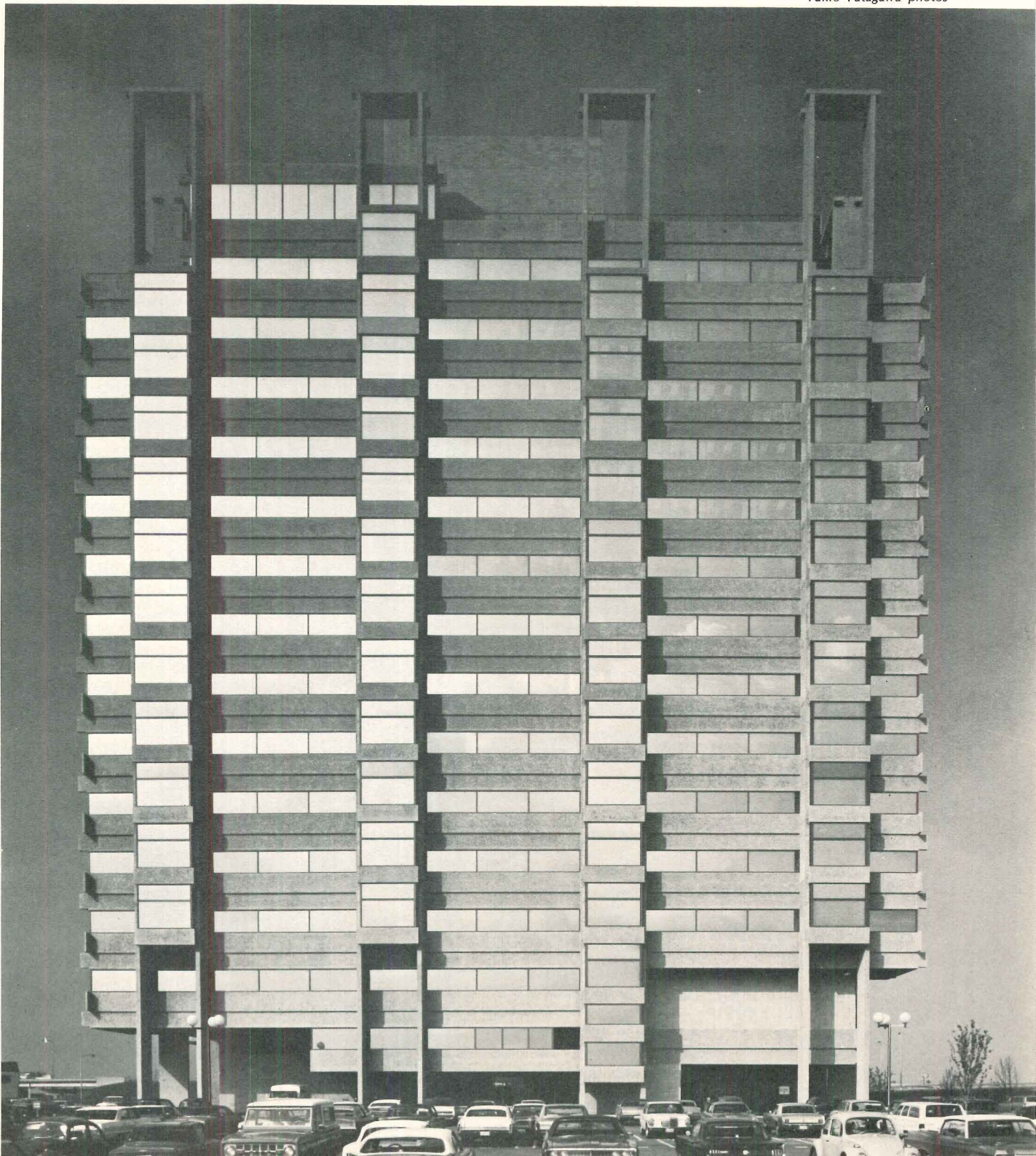
BROOKHOLLOW PLAZA, Dallas, Texas. Owner: Brook Hollow Properties, Inc. Associated architects: Paul Rudolph and Harwood K. Smith and Partners; structural engineering consultant: Sepp Firnkas; structural engineering advisor: T.Y. Lin & Associates-Dallas; mechanical and electrical engineers: Herman Blum Consulting Engineers; general contractor: Hayman-Bryant-Andres.



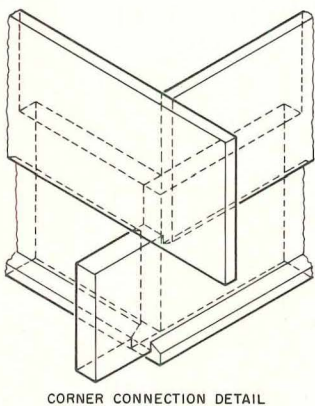
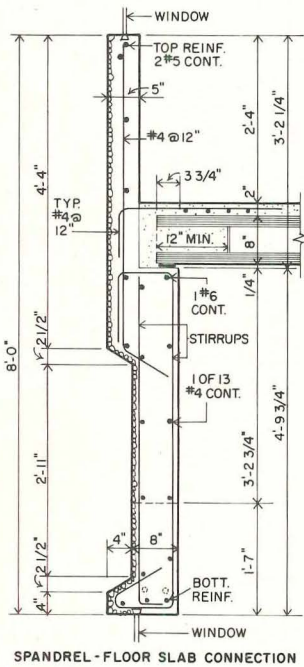
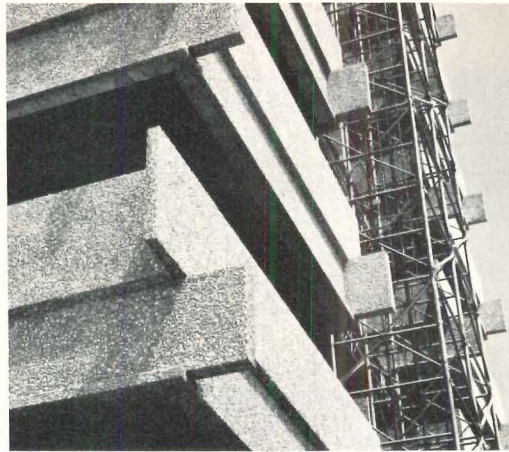
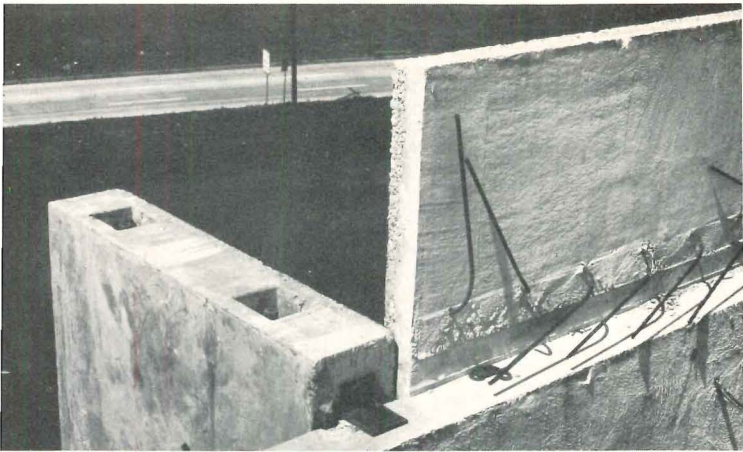
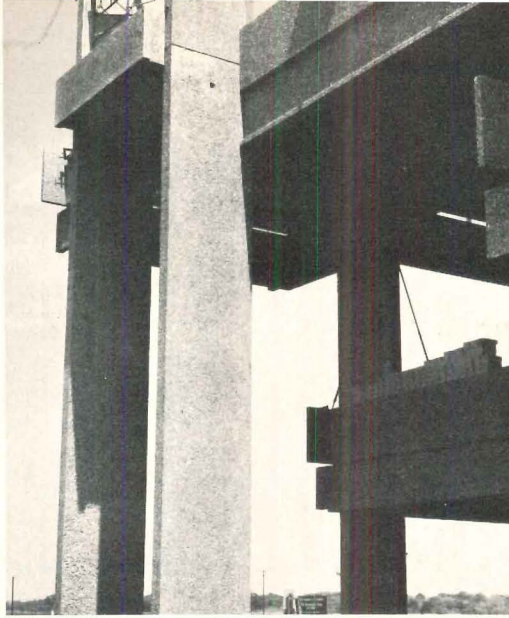
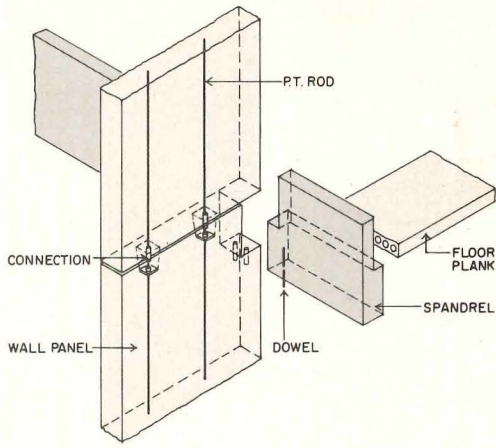




Yukio Futagawa photos

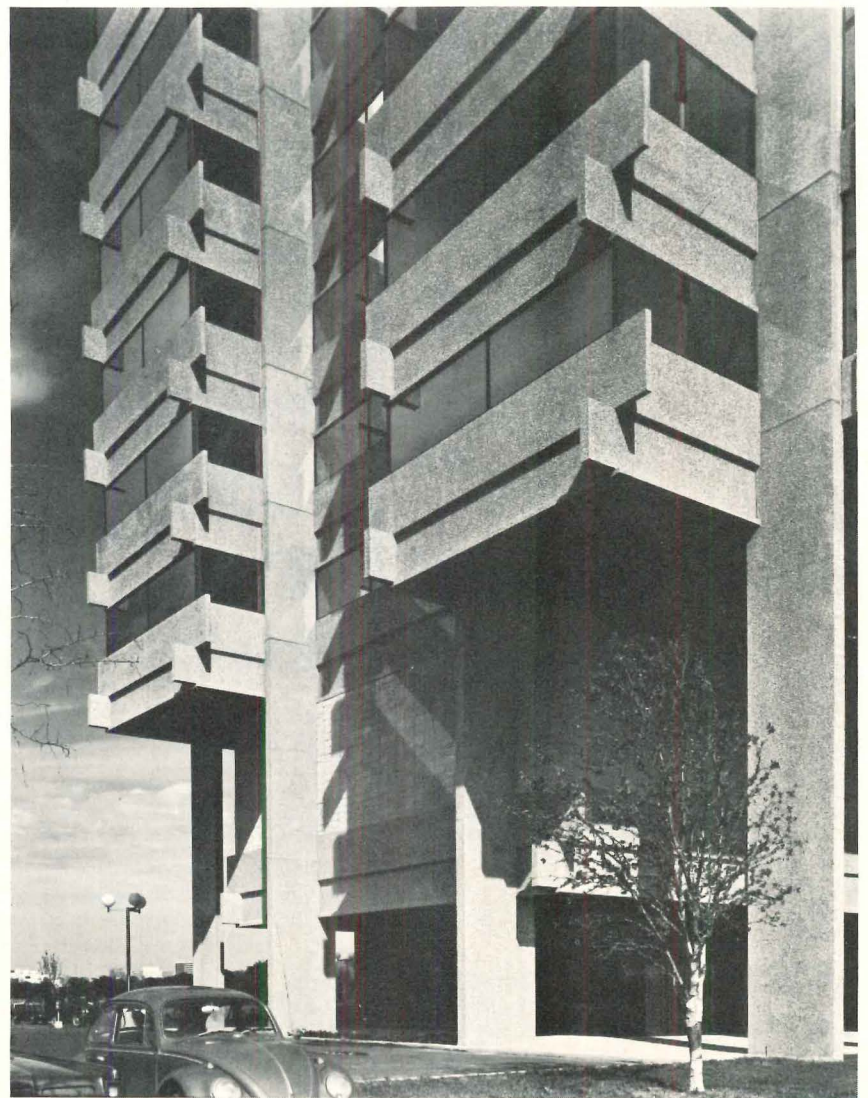






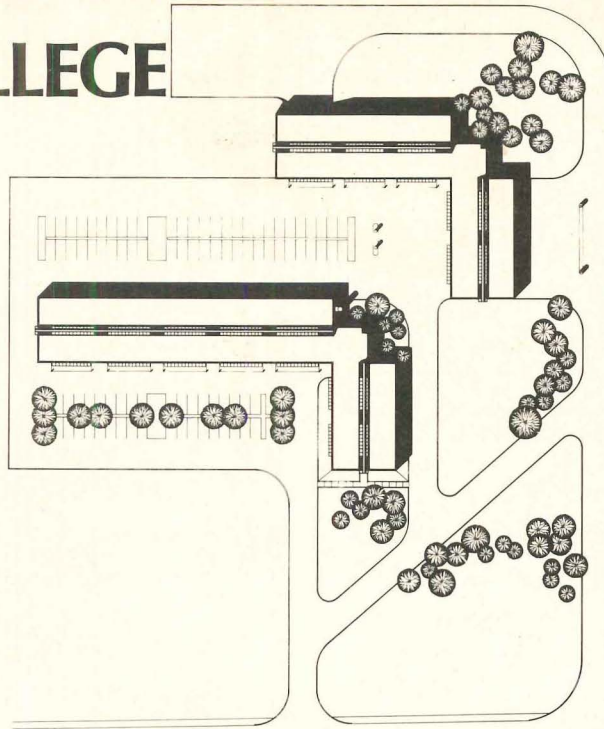
Brookhollow Plaza's owning company is a subsidiary of Texas Industries, Inc. who produce among other products, cement, concrete block and ready mix. TXI was subcontractor for the casting and erection of all the precast components. The basic structural design was developed by consulting engineer Sepp Firnkas based upon the modular wall and floor system he has developed for housing (top detail). On the Brookhollow project his bearing walls have become 8-ft-high column supported spandrels as shown in the detail drawing at left and in the photos.

There are 20 post-tensioned exterior columns 6 ft wide by 1 ft thick on the building's long dimensions and 7 ft by 1 ft at the ends. At one of the corners (top photo) the columns have been engineered to extend 43 ft without bracing. Rudolph's precast joint (detail below) is not only handsome, but it represents an advance over the usual butted or mitered precast connections which require extremely fine tolerances. "In this design I have celebrated the joints" explains Rudolph.



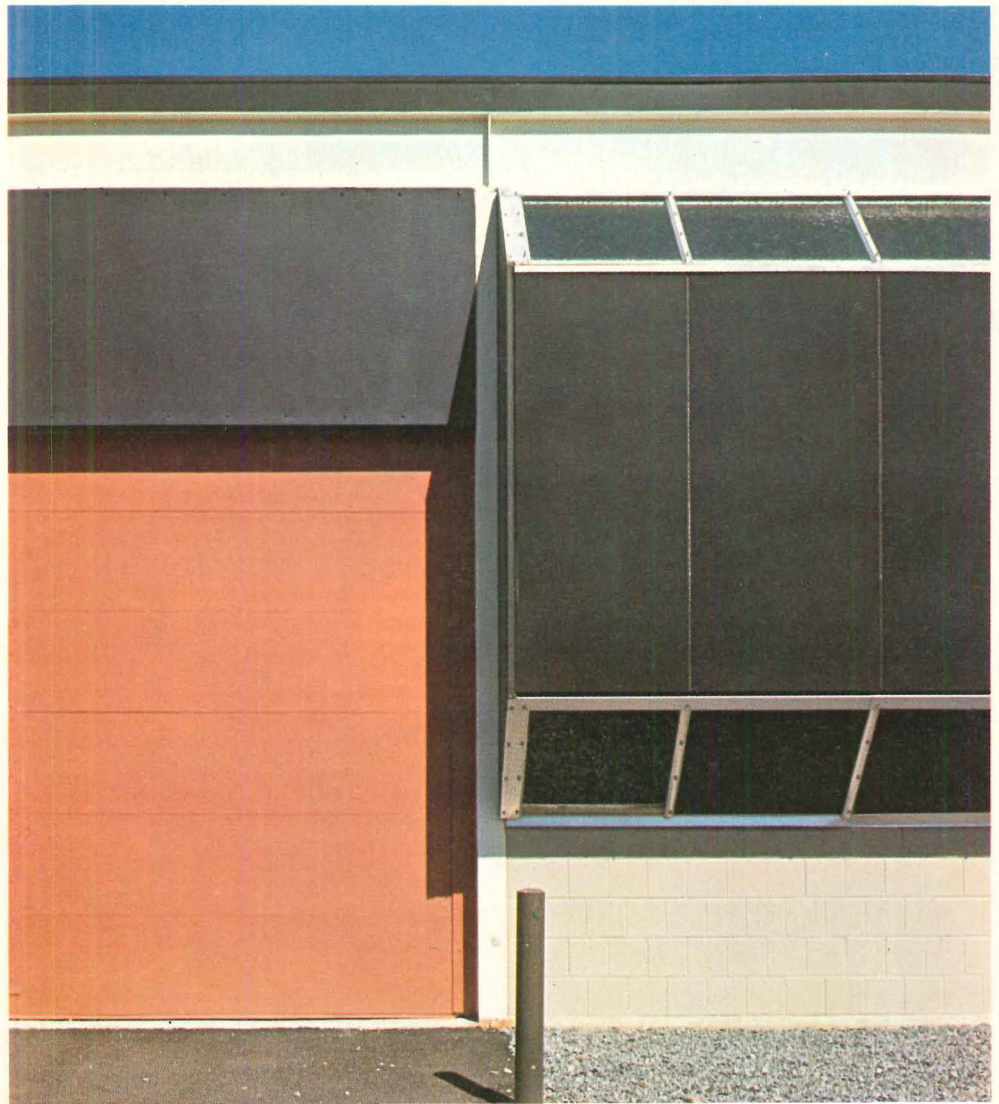


# UTILITARIAN FLEXIBILITY FOR OLD WESTBURY COLLEGE



A new college within the New York State University system has been created at Old Westbury, Long Island, and the service structures on these pages, designed by James Stewart Polshek, are the first buildings to be completed there. The land for Old Westbury is a former Long Island estate: 800 acres of beautiful rolling wooded grounds. This service group, built to house the campus maintenance staff and its vehicles, is separated by half a mile from the main first-phase complex of classrooms and dormitories, still in construction.

These two nearly identical buildings (see site plan, left) have the right "feel" for utilitarian structures: light steel and glass, an obvious module of structural members that regulates the repetition of doors and windows necessary on the facades, and blunted, "open" ends that are clearly designed to allow for expansion. The painted metal of the many garage doors (below) adds broad, bright color to the exterior walls, and the interior vehicular yard created by the siting of the two buildings keeps most of the messy activities of this maintenance area contained—





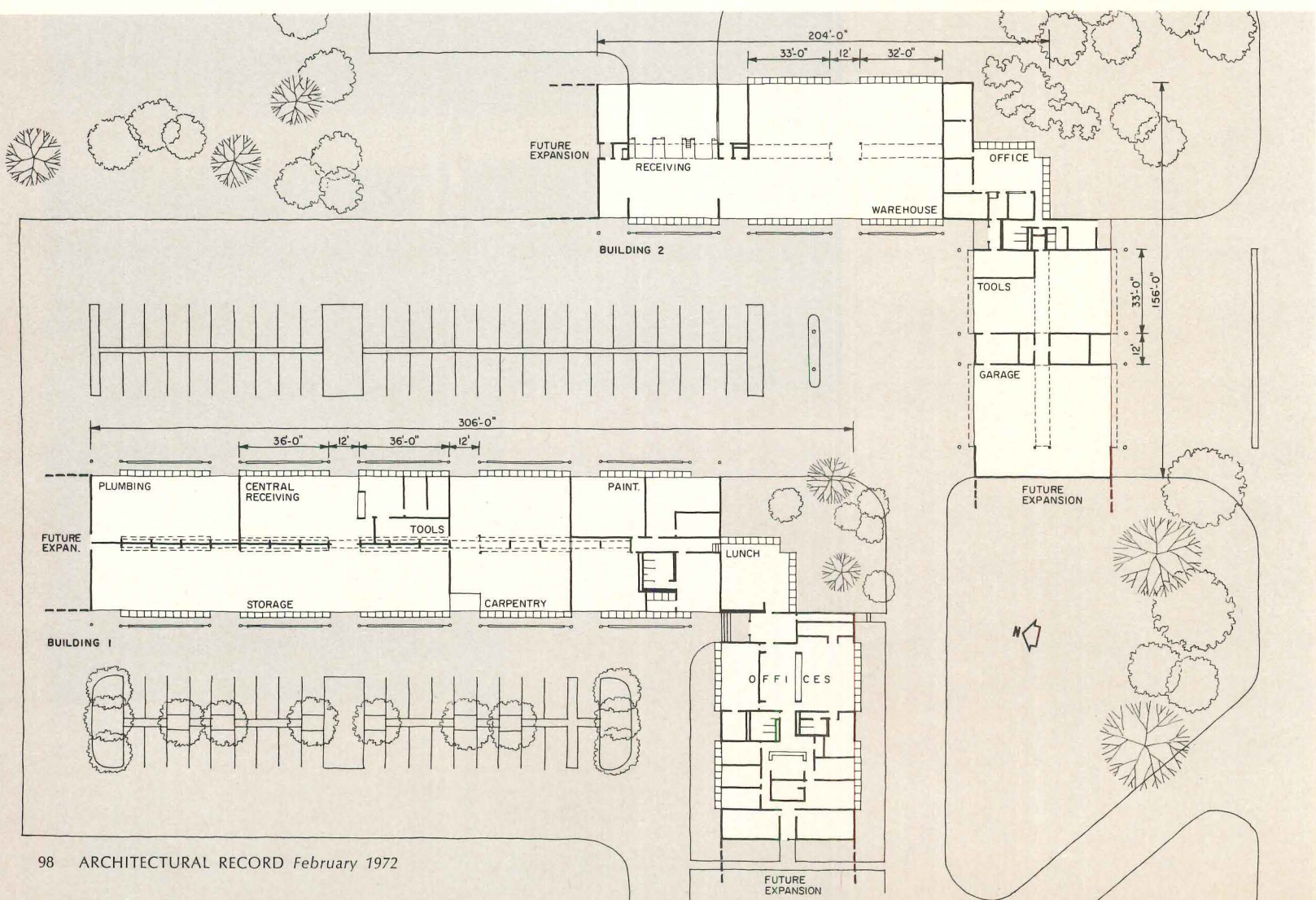
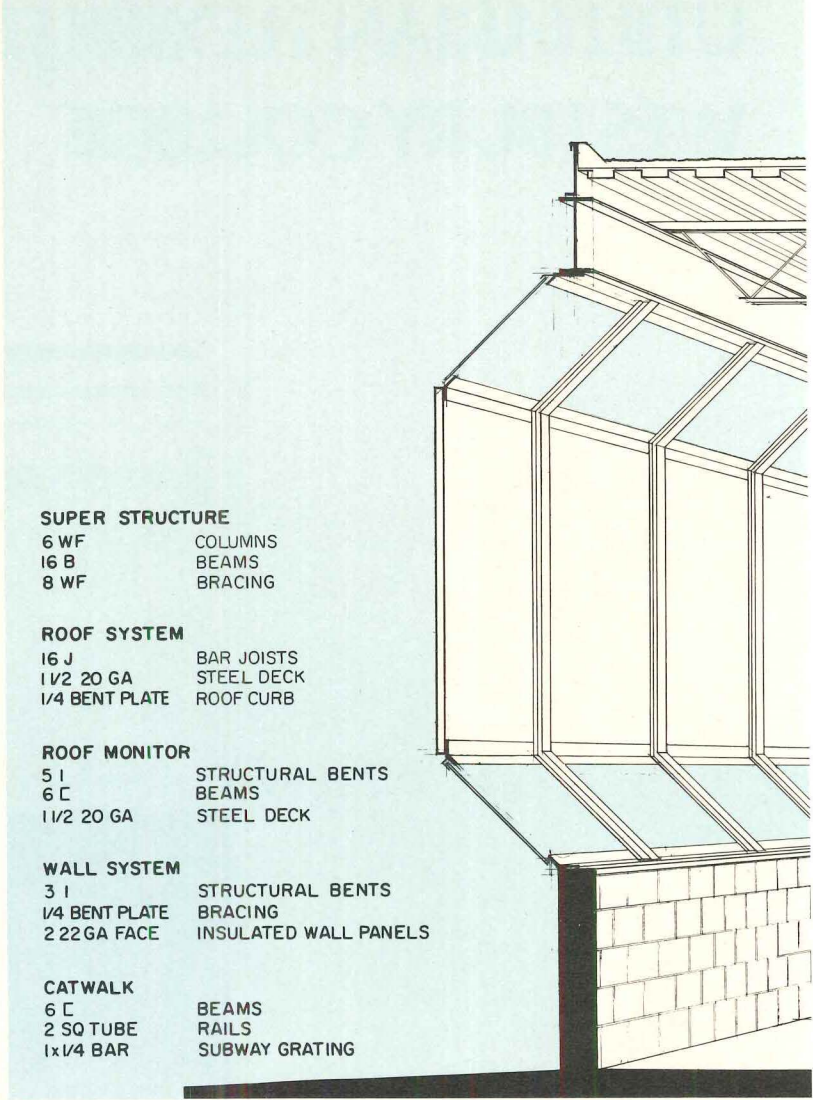
separated from the gentler environment around it.

Polshek has tried to design a building system capable of satisfying the demands of an indeterminate program, which sometimes needs to house large objects, sometimes needs to store small ones, and sometimes needs to provide spaces for rough maintenance work or light office work. The key to creating these universalized spaces is the cross section, shown at the right. Both buildings are based upon it, and it allows facade variations (such as larger or more frequent garage doors) without altering the basic system of the section itself. The width-dimensions on both buildings are identical; and the fifty-four foot total width is divided into 24-6-24-foot parts. The 6-foot-wide central spine defines the zone of internal skylighting, gravity ventilation, mechanical system piping or ductwork, and the people-circulation route. People can walk on the catwalk seven feet above the floor for nearly the entire length of both buildings, and the intention was to allow free circulation that would not be compromised by large storage areas or crowded

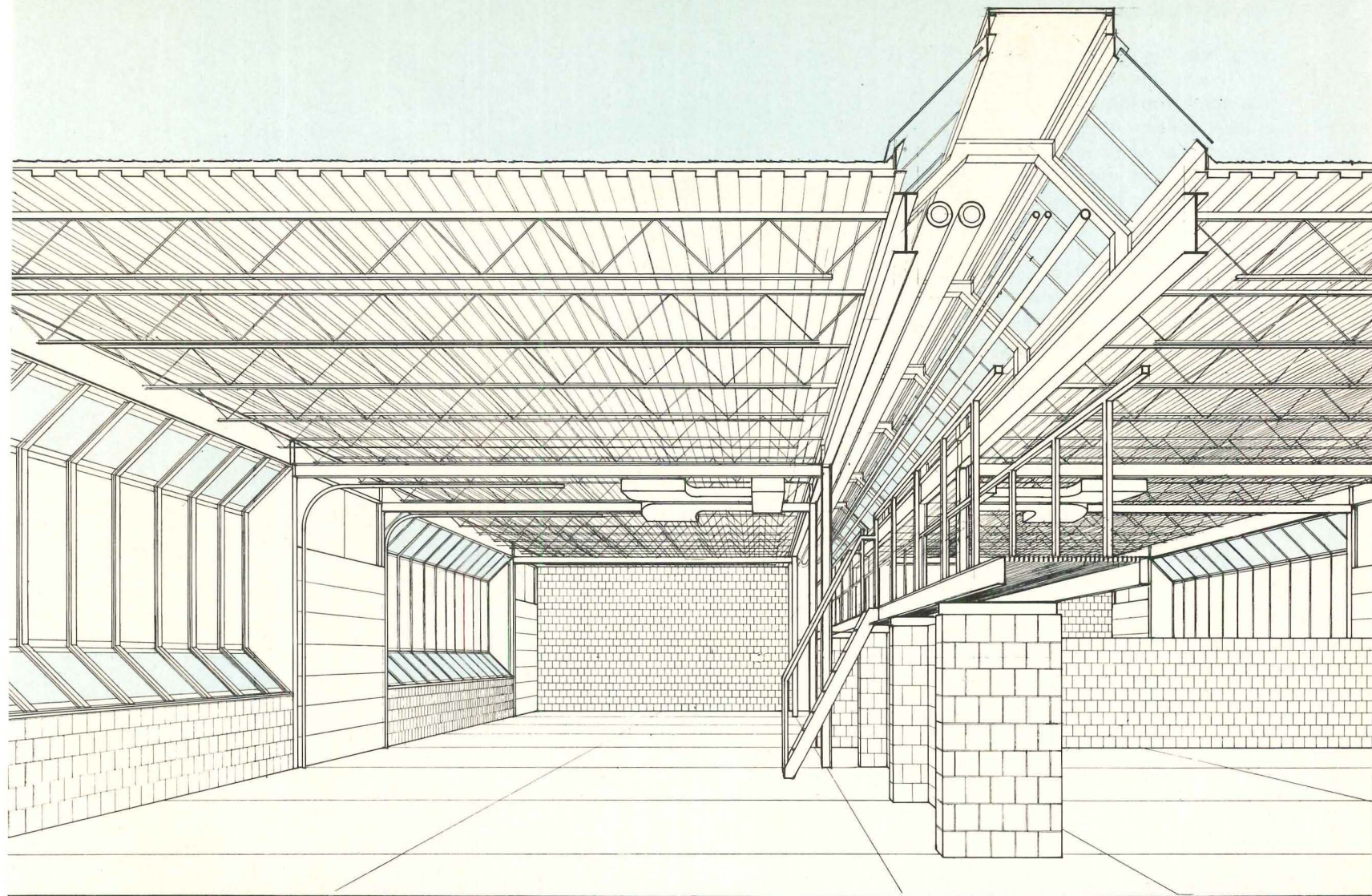
work spaces below. In plan, there are alternating 36- by 24-foot and 12- by 24-foot bays; vehicular and personal access doors occur in the 12-foot widths, with basic work areas in the larger spaces. The resulting 6 feet by 12 feet center spine bays are used for all electric controls and support the unit heaters and air conditioning.

The junction areas from which the wings grow (color photo, below) are basically people-spaces, with major entry doors and group-use areas. The basic window unit that projects out from the wall on all the wings, is exactly reversed at the junction areas, projecting inside from the wall (see photos, page 100). Among other things, this reverse projection solves the problem of handling an inside corner.

Using steel, time allowances could be accurately determined, erection sequences were established early, and consequently the buildings were finished within the budget. Further, the image of lightness, quick responses and flexibility has been successfully projected in the design; it is an industrialized image associated with storage buildings, quick-sales areas





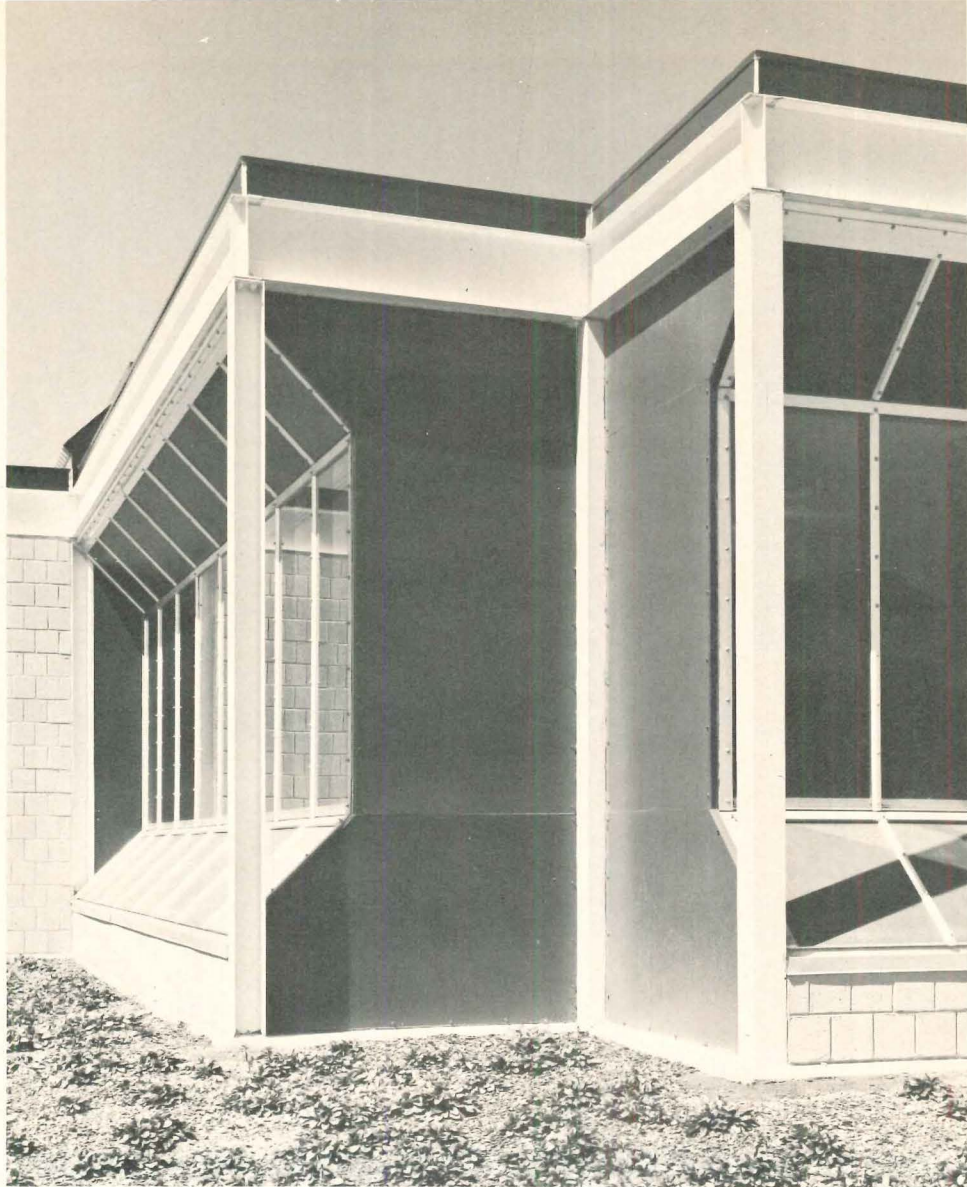




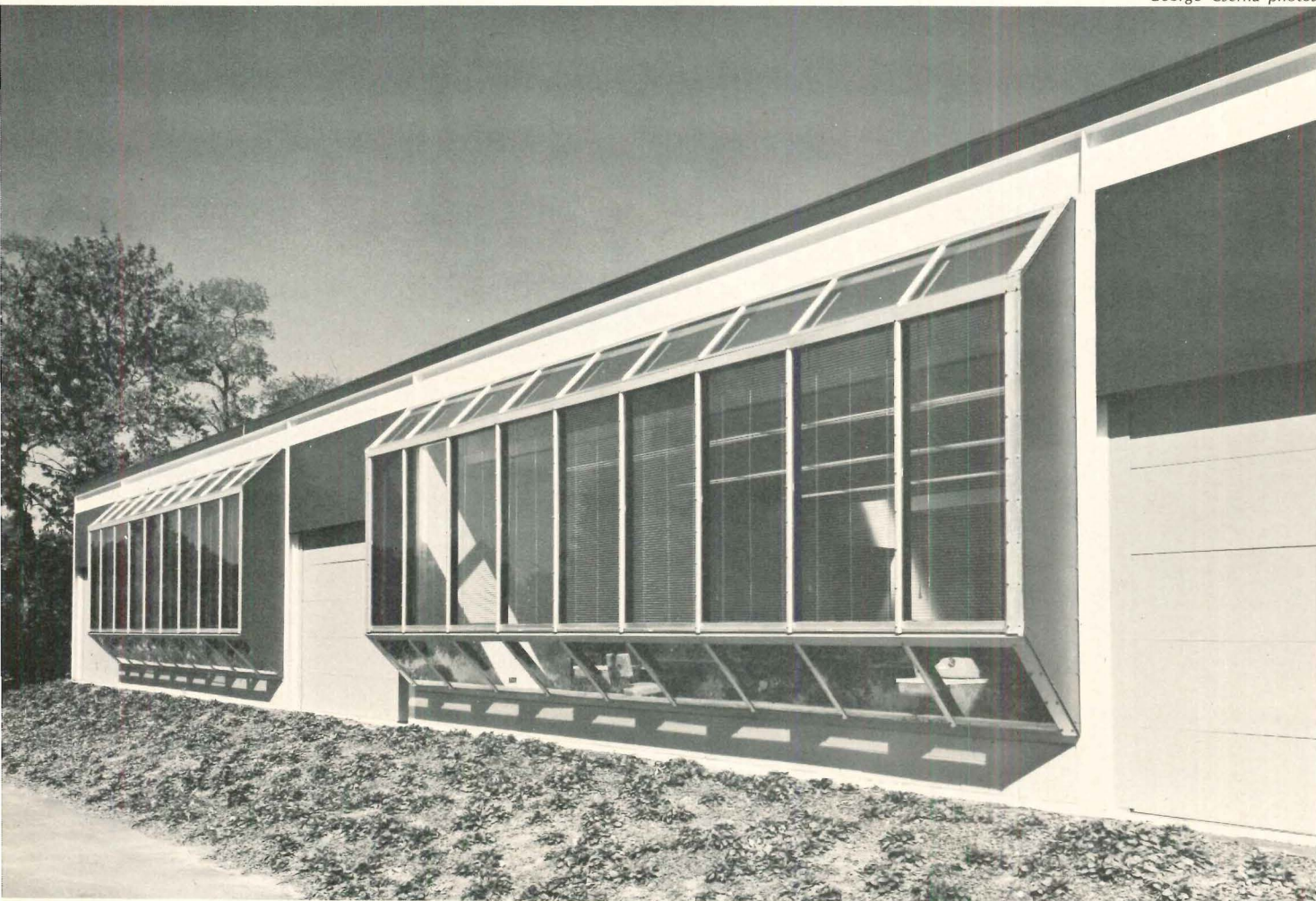
## OLD WESTBURY BUILDINGS

along busy highways, and new-car showrooms, but it works fine here as multi-use space at a new college. And interestingly, these service buildings are now being used as temporary facilities for classrooms and faculty offices. The materials storage area in Building 1 is now the college library, student affairs and admissions are in the office portion of Building 1, and the entire west wing of Building 2 is now faculty offices. The service buildings have adapted to this temporary use easily and inexpensively, and when the unavoidably delayed academic complex is completed at Old Westbury (by fall, 1972) the service buildings will return to their original function as a maintenance center. Meanwhile, it has been nice for the college to have such architecture around.

SERVICE BUILDINGS, Old Westbury College, Old Westbury, Long Island. Architects: *James Stewart Polshek and Associates*; *James Stewart Polshek*, project architect; *Joseph L. Fleischer*, associate-in-charge. Mechanical engineers: *Benjamin & Zicherman & Associates*; structural engineers: *Pfisterer, Tor & Associates*; landscape architects: *Currier, Andersen, Geda*; contractor: *Schumacher & Forelle, Inc.*



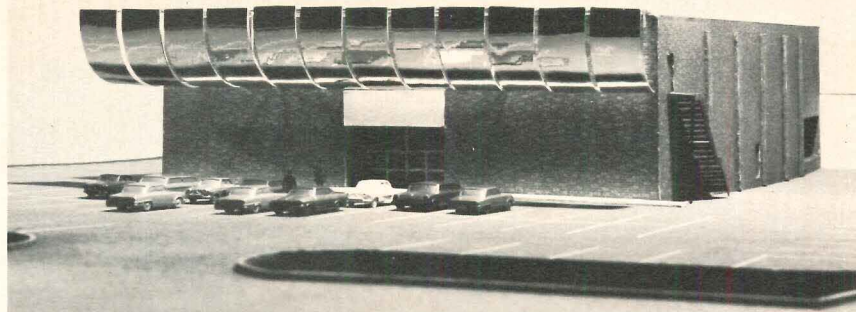
George Cserna photos





# New concepts for public spaces combine art and architecture

*SITE (which stands for Sculpture In The Environment) Inc. is a group of young sculptors with some new ideas about urban spaces. "Architects think we're sculptors and sculptors think we're architects, and we're neither; we're somewhere between." Six of their commissions, some being built and some still projects, are shown on these four pages.*



## Best Products, Inc. Richmond, Virginia

Sidney Lewis, president of Best Products, was convinced by SITE to try something more adventuresome than a sign for his appliance store (right) on a typical commercial strip. From five designs—to a \$25,000 budget—he chose the peeling wall (bottom right) which is now under construction. One proposed solution (top right) was to reflect, as an attention getter, all the color and activity in the parking lot on an enormous curved screen of stainless steel panels mounted across the top of the building. Practically, this might enable people to spot empty parking spaces.



*This store and the concepts for enlivening it typify SITE's goal: "to bring the ingredients of fantasy, conceptual transformation and visual excitement to dull and unimaginative urban situations. SITE is united by the conviction that sculpture, conceptually realized to involve a total site, is preferable to the decorative placement of object-art in architectural settings."*



The floating roof (second photo down) was the preferred design until SITE realized—with their consulting engineers, Mario Salvadori and William J. Davis—that the structure of the building was inadequate to support it.

The colonnade of color (center) conceived as a contemporary heraldic entry, thrusts the facade into the distance with an exaggerated perspective of stripes.

The final, peeling solution, again using the substance of the building, is a play on concealing and revealing, as well as suggesting the store as package. A high-bond mortar will be used in the left vertical curl and a shaped steel plate bolted into the right corner will be faced with brick. Taylor & Parrish, Inc. are the contractors.





**Education Place  
University of Northern Iowa,  
Cedar Falls, Iowa**

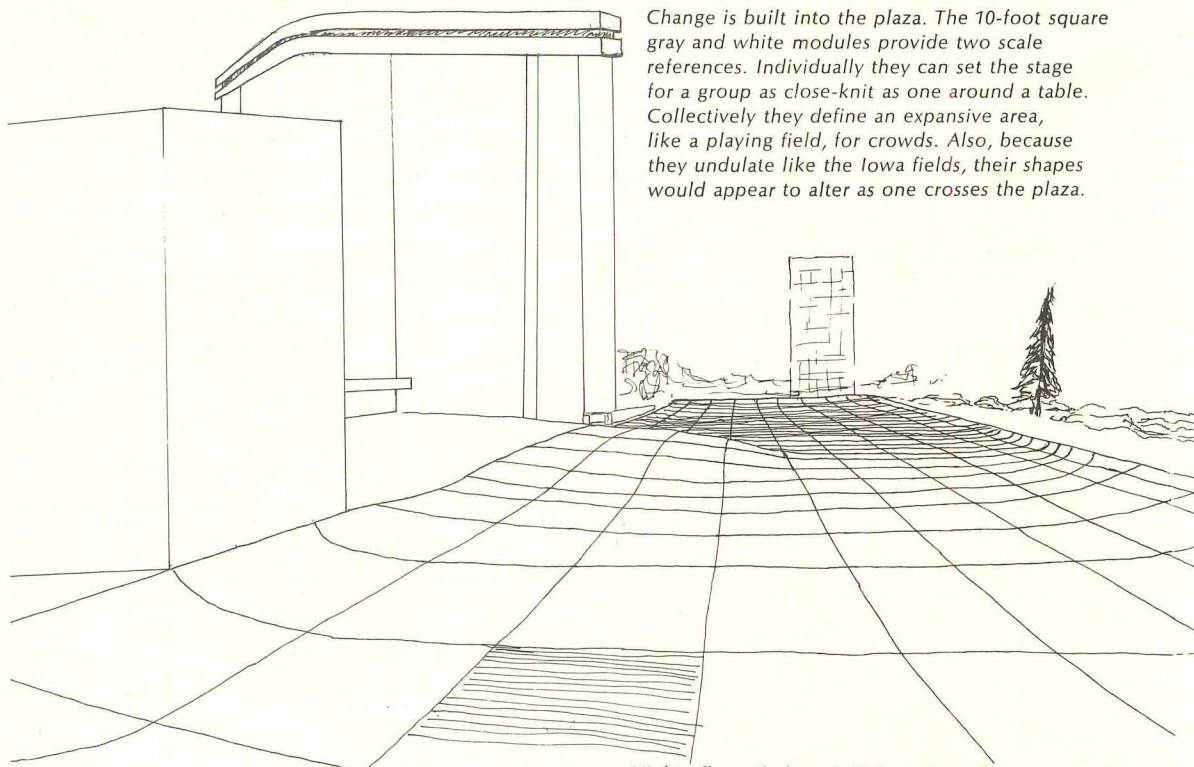
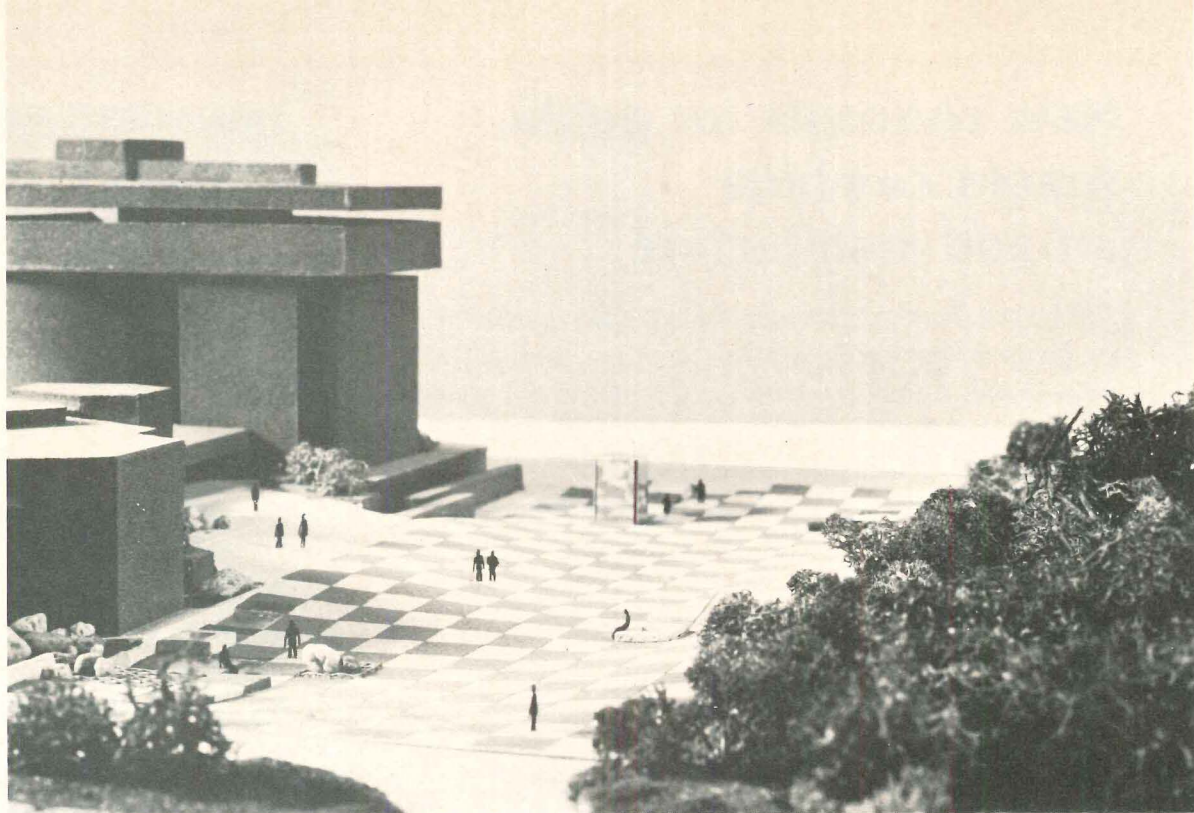
The art committee of the University of Northern Iowa, retained SITE to make a design for the essentially quadrangular space left between the education building (by Thorson Associates, architects), two dormitory towers and a media center.

SITE decided to base their design on the comprehensive grid pattern which is fundamental to the master plan of the campus (by Caudill, Rowlett & Scott) and on the Iowa landscape, as seen from a plane, which of course is strongly checker-boarded by farm fields.

The 350- by 150-foot space slopes 15 feet alongside and 9 feet away from the education building. Initially the University had thought of a staircase to handle these level changes. SITE suggested instead, since the other open space on campus was ruled by rectilinear and tree-lined paths, to provide an undulating space which could be approached and traversed freely, and accommodate the grades without a highly directional element such as a stairway.

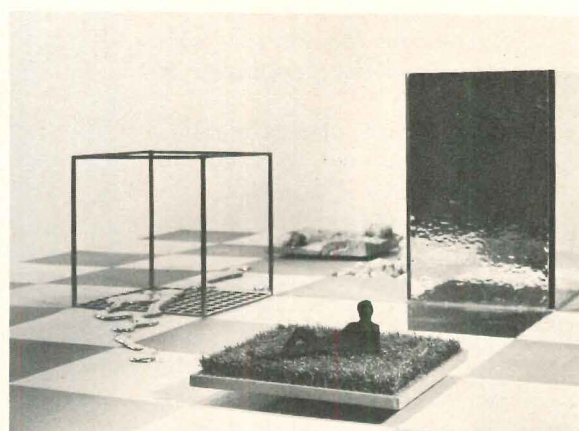
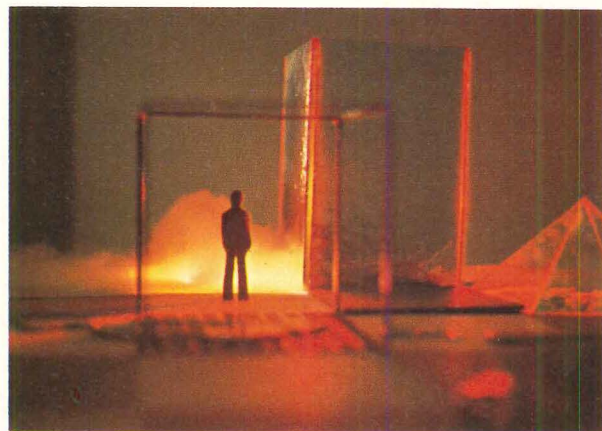
This sense of freedom and flexibility pervades the design of the modules (below and opposite) to be "plugged into" the plaza. A system of electrical, steam and water outlets, pole holes and removable modules throughout the space would enable a great variety of things to happen. SITE, with these module designs, intends only the start of a changing series; to suggest ways that the plaza could be developed and changed by the students.

One of the chief themes for the variable modules is to point up native materials, vegetation and climate. SITE noticed students sitting near steam outlets for warmth; and decided to pipe steam out into the plaza. They thought some squares could melt snow. They also wanted to substitute, for the usual overhead campus lighting, "surprises of light"—dispersed sometimes by plastic shapes or steam from underneath the modules. And to delight the ear they would provide wind chimes, falling water and recorded sounds from a *son et lumiere* beacon.

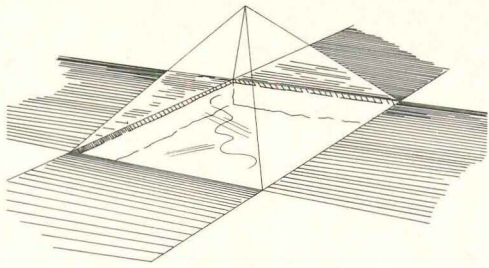


Change is built into the plaza. The 10-foot square gray and white modules provide two scale references. Individually they can set the stage for a group as close-knit as one around a table. Collectively they define an expansive area, like a playing field, for crowds. Also, because they undulate like the Iowa fields, their shapes would appear to alter as one crosses the plaza.

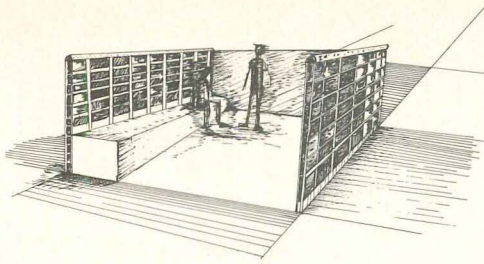
Night effects (below, left) include a glowing square of glass blocks; steam jets lit from below; a reflective beacon split at its corners to pour out light. Below, right is a grass square which revolves on a turntable; a space frame or room without walls "glued" to the plaza by poured metal; a native rock pile; and the beacon.



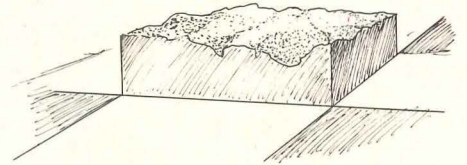




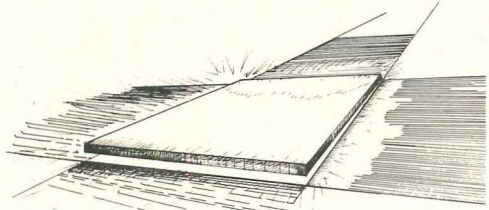
*Glass prism over water*



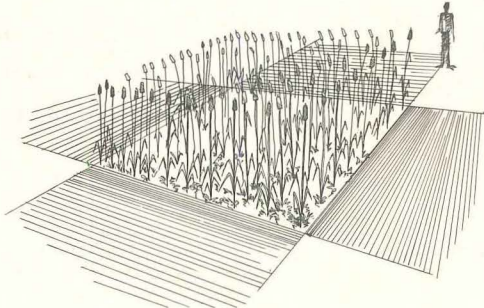
*Evaporative cooling area;  
water trickling through reeds*



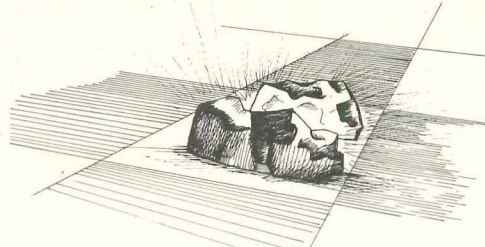
*Elevated, rough-cut native stone*



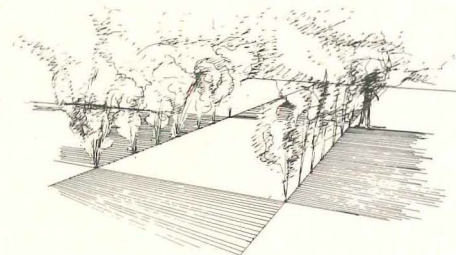
*Raised square lighted from beneath*



*Earth square planted with corn*



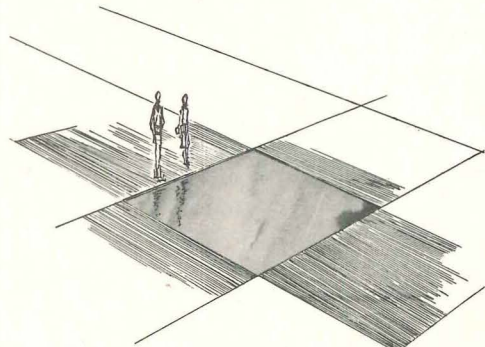
*Illuminated native stones*



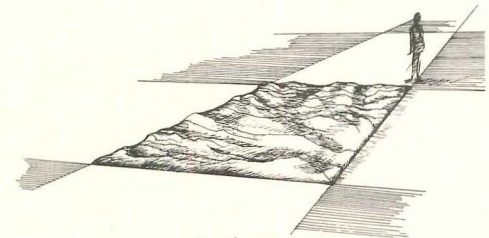
*Steam square*



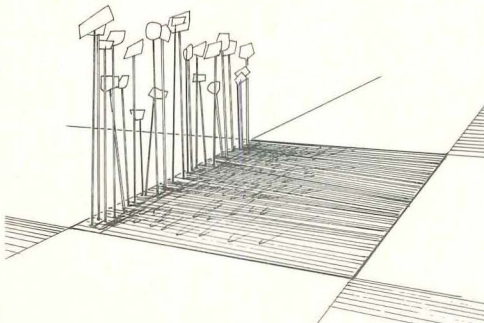
*Suspended wind chimes*



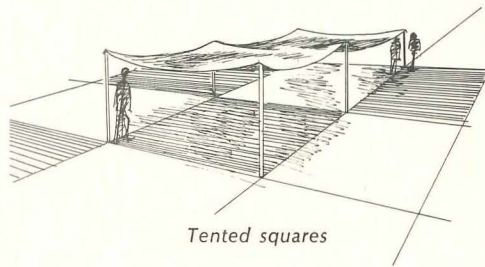
*Stainless steel or mirror  
reflection square*



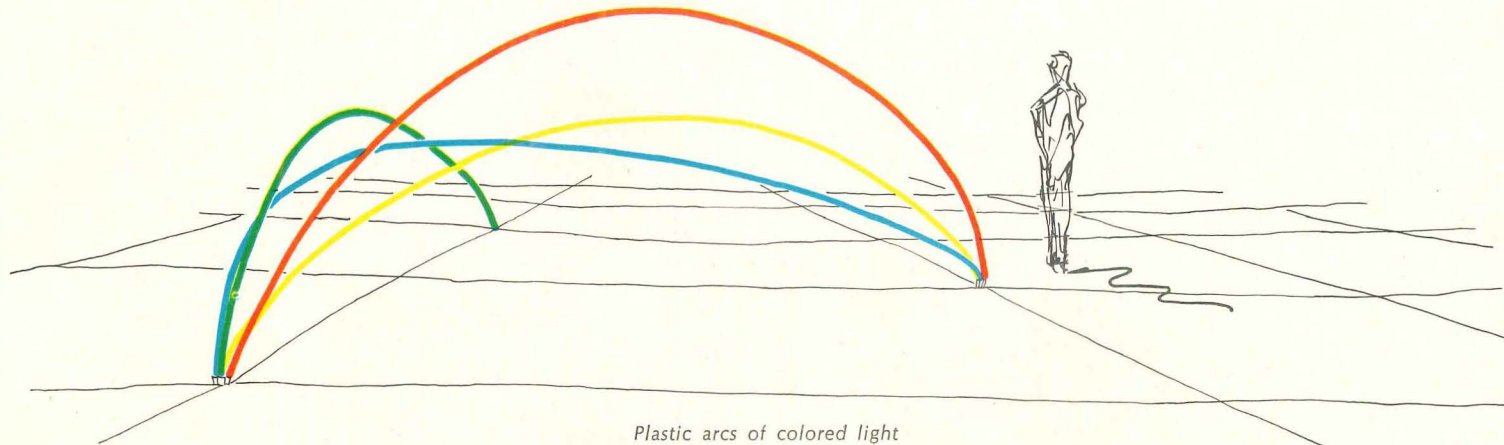
*Earth square*



*Standing wind chimes*



*Tented squares*



*Plastic arcs of colored light*



## Peripheries, plazas and SITE procedures

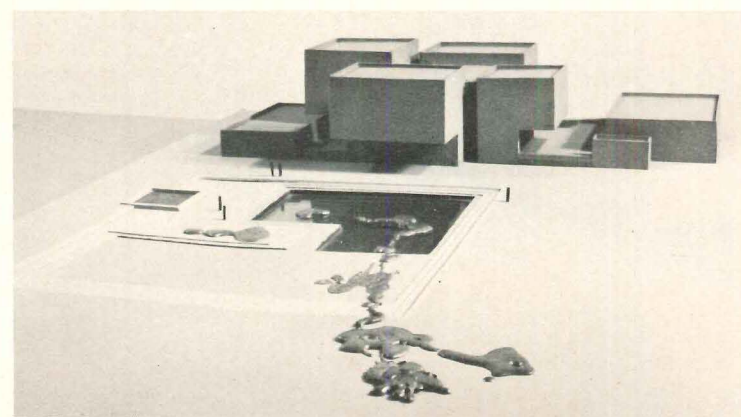
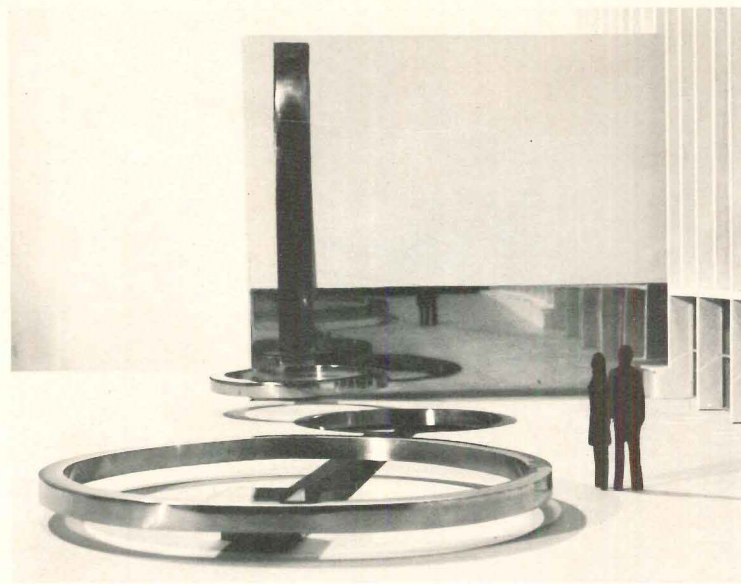
At first David Ornstein, planning director of the Peekskill, New York Urban Development Corporation, thought the blank brick walls of this HUD-insured middle-income project (A) needed some color. He sought a painter who, in turn, referred him to SITE. SITE was given the left-over space at one corner of the project—where some thought of putting a fountain—to work with. Their solution, which will be put in place this Spring, aims to restore to this project a sense of the surrounding landscape. The concept of "melting walls" derived from some Italian fountains which emerge directly from the bases of their buildings. SITE would like to have streams of brick flowing into the adjacent street paving and carry the idea into the playgrounds as well. Consulting engineers are Newman and Doll.

Other projects are detailed in the caption, right.

The Peekskill project illustrates particularly well how the members of SITE feel they differ from other artists. First, they have taken on a practical, everyday problem. Secondly, as they put it, "While the studio artist's attention turns continually inward, tending to produce a series of self-portraits, the site-oriented artist reaches outside of of himself to find a solution for the specific environment."

SITE is both a profit-making and a non-profit organization. Its lectures and some design, contracting and research services are funded by grants from the National Endowment For The Arts, the Rockefeller Brothers Fund, the Samuel H. Kress Foundation and the New York State Council On The Arts. Under the auspices of the latter, SITE is offering free design consultations to community groups in New York who cannot afford design fees. Because their work is difficult to categorize, they find that construction funds for their projects come from various sources including art, landscaping, paving, parks and utilities budgets. —Janet Bloom

SITE, Inc., New York City. Co-directors: Dana Draper, Cynthia Eardley, Nancy Goldring, James Wines. Photographers: Lynn Elman, Michelle Stone. Coordinator: Alison Sky.



SITE's design for this lonely plaza passageway on the south side of The Metropolitan Opera House (B, B-1) at Lincoln Center in New York emphasizes human scale by the use of a reflection mural, a 30-foot-wide stainless steel panel mounted on the extension of the backstage area. This will mirror the bottom part of the high mullions along with the floating and buried stainless steel circles which extend 100 feet in front of the reflecting wall. This won a Design in Steel Award from the Iron and Steel Institute. The Everson Museum of Art (C) in Syracuse, New York—by I. M. Pei—in SITE's view "defies the use of a conventional sculpture solution in the plaza area." Thinking that any competing sculptural shape would be overwhelmed by and detract from the building, SITE chose a plaza-hugging understatement of molten aluminum. For a Midwestern university's science center SITE has designed a concrete amphitheater (D) which brings human scale to a space dominated by the huge blank window walls of the scientists' offices. Based on an expanding universe concept, it consists of grey and white concentric ramps whose elevations change, over a 9-foot range, in a totally irregular way. It will seat outdoor classes—a previously envisioned functional requirement of which SITE had not been informed—and be a perpetual stage. On an otherwise lush campus, this spare and highly formal use of concrete will provide a concentrated experience and, as a bonus, it will require no maintenance.



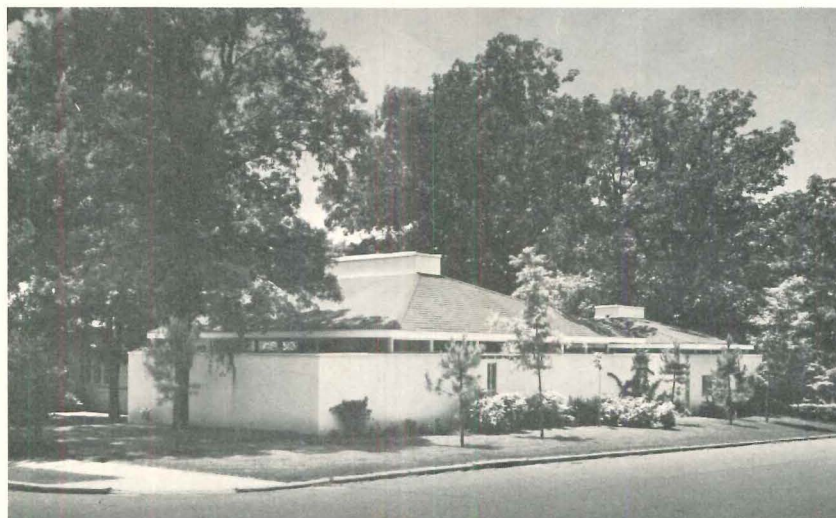
# HOUSE REMODELINGS THAT RESHAPE LIVING PATTERNS AS WELL AS SPACE



1 PARTRIDGE HOUSE, WESTON, MASSACHUSETTS



2 ORCHARD HOUSE, ST. LOUIS



3 WITTENBERG HOUSE, LITTLE ROCK

In the recent RECORD survey, "Practice problems in remodeling," (published in the December 1971 issue, pages 106-111), house remodelings not surprisingly revealed themselves to rank as the most common remodeled building type for architects. Modernized houses constituted 106 of the 645 projects reported by representative architectural firms responding to the RECORD questionnaire. Though the dollar value of each house is not impressive relative to large-scale jobs—such as schools or hospitals—the popularity of the work suggests its importance not only to beginning or small firms. For the total dollar value of all house remodelings in the U.S. is an impressive amount. This should continue in view of current high property and new construction costs and the renewed public interest in preserving older structures and neighborhoods. As the houses shown here indicate, renovation work can be as highly creative as totally original design. This is especially true in family homes where new living patterns are adventurously adopted while retaining the value of old associations and traditional forms.

Included here are three projects for detached houses which illustrate a high quality of work being done in successful solutions to both recurrent and unusual problems: how to adapt a visually appealing building—in the case shown, an old New England stone barn—for new use (Partridge house); how to provide for owners who need a bigger house for a bigger family but do not want to give up their old location (Orchard house); how to adapt a conventional house to a busy street and an urban site (Wittenberg house).

—Anne L. Buerger



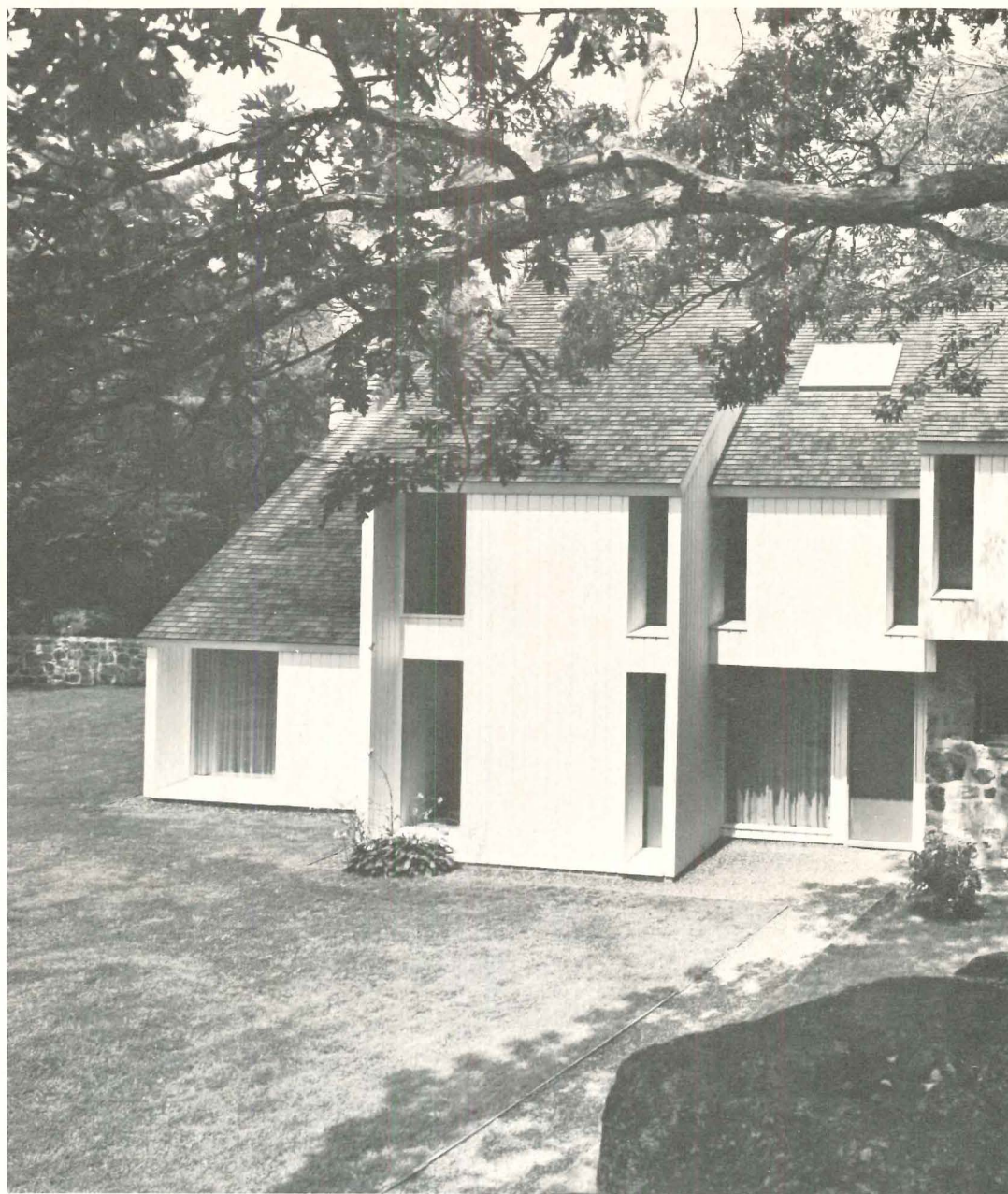
## An old stone barn influences contemporary house for a New England country site

In designing and building for his own family, architect Lawrence Partridge had no original intention of buying an existing building to remodel as a home, but an old New England barn with its beautiful glacial stone foundation and walls had a compelling appeal. Together with program and site, the scale and character of the parts of the 1890 structure which were saved established the scale and character of the design.

The stepped slope of the site suggested the roof relationships of the three new sections which were added to the existing structure (the rest of the barn was demolished). Thus, the fragmented appearance of the house was in part planned to reduce the scale of these walls. In the photo of the rear of the house, right (the front is shown on page 105), the old building can be seen on the right. The various wings contain, from the left of the photo, dining room; kitchen and a bedroom; stair-hall; and, in the old building, family room on the lower level, with two bedrooms and bath located on the second floor and a workroom office on the third. An arrangement of fixed insulating glass window, bifolding storage cabinet, wood door ventilator and screen was designed for use throughout the house, further contributing to the strong exterior rhythm and scale. Roughsawn fir shiplap siding painted white and a white cedar shingle roof respect a New England vernacular and offset the original walls. Contrasting interior materials include natural wool carpeting for living areas, natural red oak trim and drywall, painted white, except where glacial stone walls are left exposed.

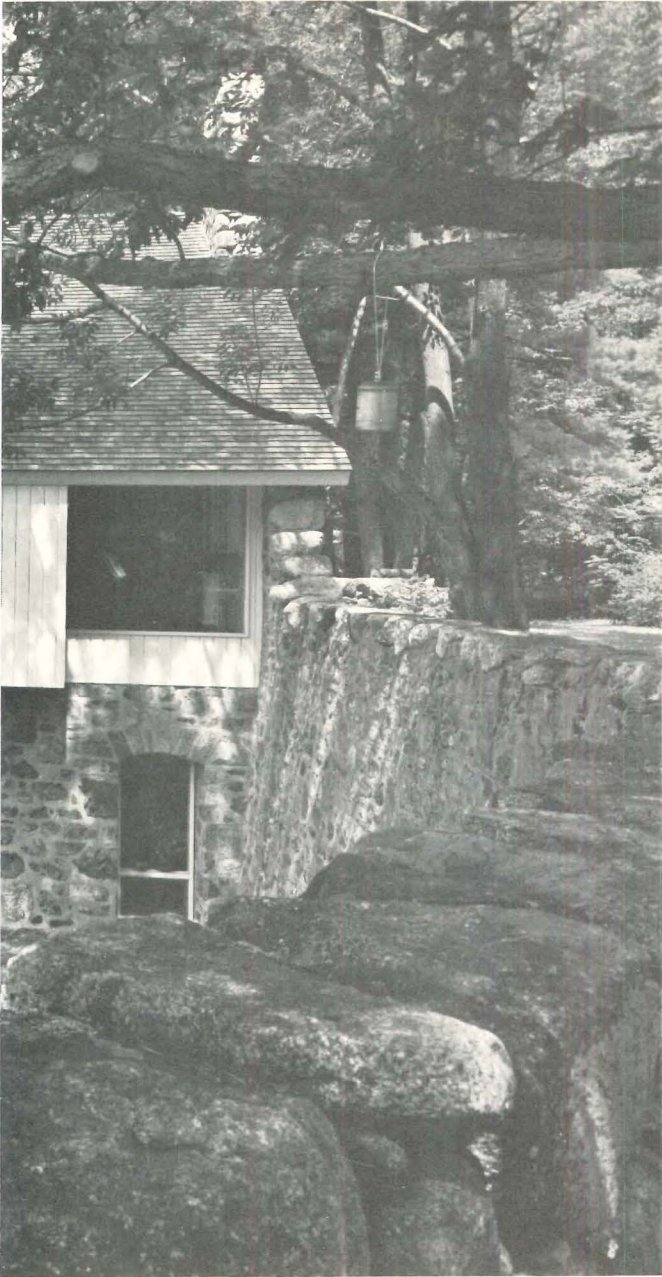
ARCHITECT'S OWN HOUSE, Weston, Massachusetts. Owner and architect: Lawrence Partridge; engineers: Arthur Choo (structural); Terenzio Genovesi (heating and ventilation); contractor: Costa Limberakis.

1

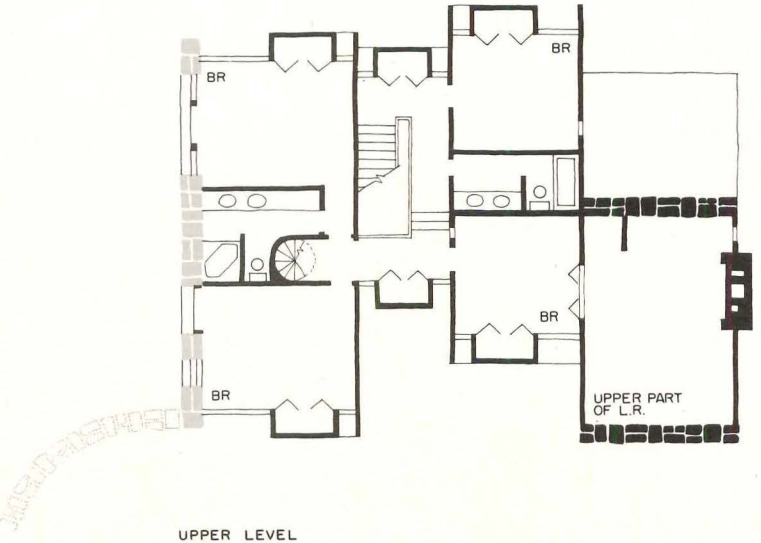
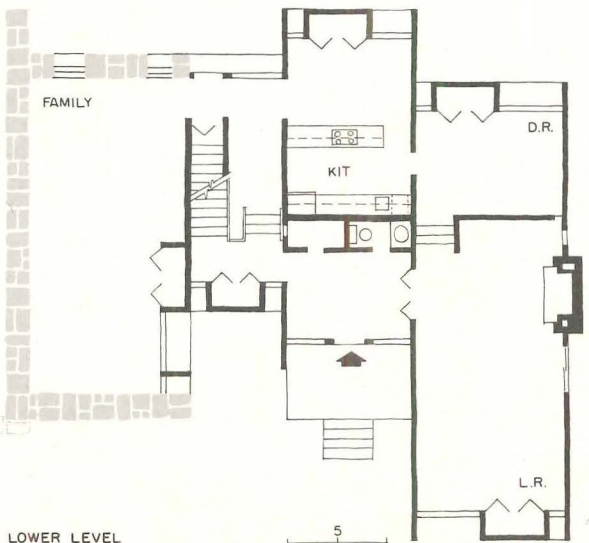


Louis Reens photos





The living room (photo above) reaches a dramatic 23-foot height. The photo is taken from an upper-bedroom opening designed to provide added ventilation for the living and dining rooms. At right is the master bedroom whose curved windows are openings of the original wall.





## Old house, new wing and site are integrated by strong detailing and design

2

The owners of this extensive renovation needed what amounted to a new house in addition to their existing one to provide bedrooms for four children, and a variety of living, entertainment and art display areas, as well as the usual mechanical and storage space. As the old house was somewhat nondescript in appearance (the gray stone exterior and asphalt roofing are visible to the far left of the large photo), it was primarily the existing site with its desirable urban location and country atmosphere that made the owners decide to remodel rather than move. Old and new wings are related primarily through zoning, with unusual visual unity nevertheless achieved in a free but sympathetic use of reinforced, board-formed concrete and copper trim as major materials. The interior of the old house was extensively remodeled, a terrace added to extend living outdoors and some rooms reassigned for specialized use. The addition, containing well-zoned children's bedrooms and the new family areas required, is organized as a separate wing to take fullest advantage of the potential of the site and offer unusual contrast in use and character to the existing rooms. Flooring is slate or narrow maple boarding. Wall surfaces are painted white and lit by recessed wall washers and major skylighting to provide display space for the owners' painting and sculpture collections. Painted wood doors and cabinets—supergraphics are used on children's doors and other areas—provide color as unifying element throughout.

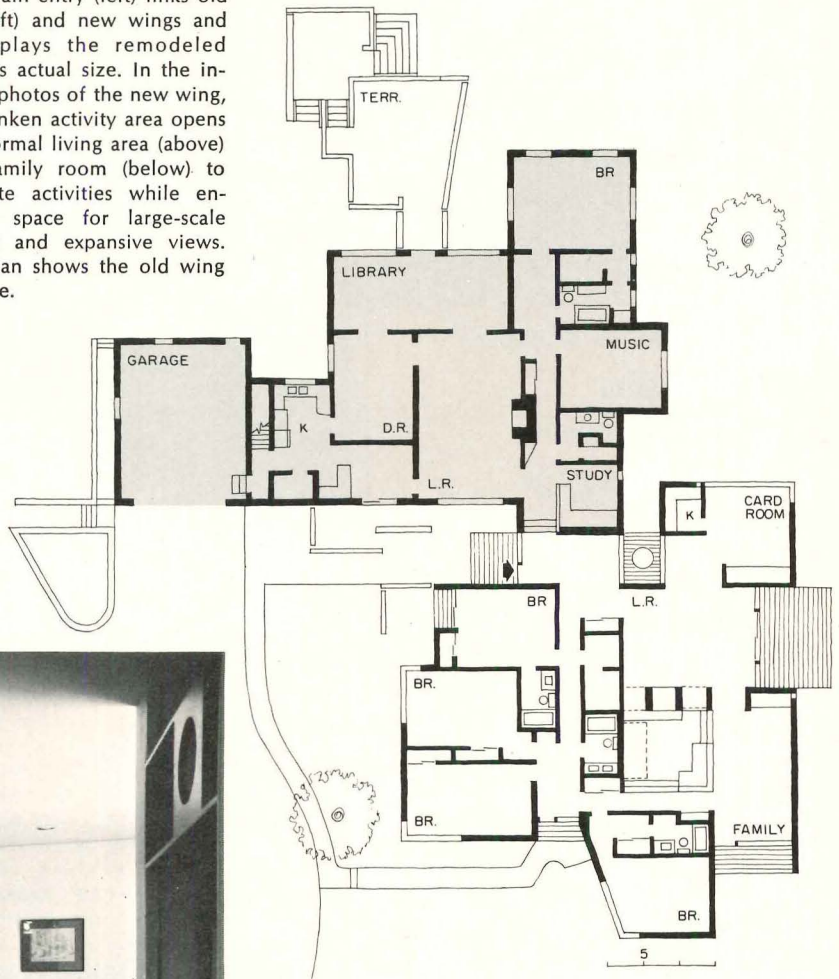
ORCHARD HOUSE, St. Louis. Owners: Mr. and Mrs. Robert H. Orchard; architect: George Anselvicius of Anselvicius/Rupe; associate and landscape architect: George Dickie; engineers: Al Alper, Len Henson (mechanical); interiors: George Anselvicius; contractor: Eugene Alper Construction Co.







The main entry (left) links old (far left) and new wings and underplays the remodeled house's actual size. In the interior photos of the new wing, the sunken activity area opens to a formal living area (above) and family room (below) to separate activities while ensuring space for large-scale parties and expansive views. The plan shows the old wing in tone.



Mac Mizuki photos





### A glass-walled house addition gains indoor-outdoor space and privacy

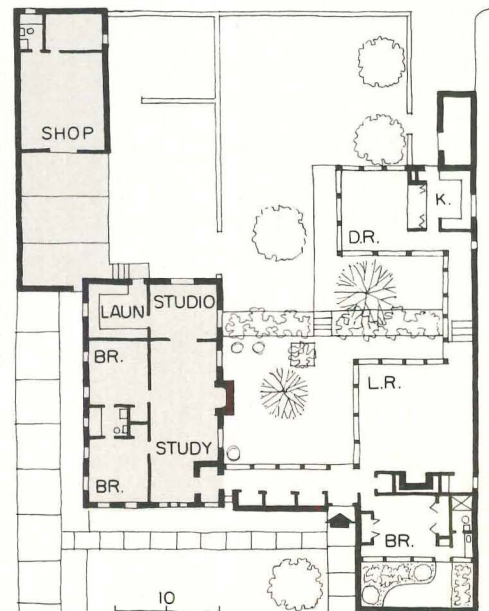
Using a typical, small cottage-style house on a corner lot as the secondary wing, architect Gordon Wittenberg designed this house for his own family in part to solve typical problems of adult-teenage zoning and added space. To this end, the adjacent lot was bought. By wrapping the addition, containing living areas and master bedroom suite, around the property to the setback line, the architect was, moreover, able to put to use outdoor space and gain privacy, light and variety of spaces the original house lacked. Glass-walled living and dining pavilions open up the house to the nearly-enclosed court, while the street-corner side of the new wing (small photo) is closed off with a high stucco wall.

WITTENBERG HOUSE, Little Rock, Arkansas. Owners: Mr. and Mrs. Gordon G. Wittenberg; architects and engineers: Wittenberg, Delony & Davidson, Inc.

3



A secluded dining terrace (above) was formed by wrapping the new wing around it as a buffer from the street. The shop, formerly a garage, was integrated into the scheme by garden walls. Precious city trees were carefully preserved by the courtyard scheme. The old house (toned in plan), whose shuttered windows are visible in the photo below, survives as the children's wing.



Frank Lotz Miller photos



# THE ENVIRONMENTAL RESPONSIBILITY OF THE ARCHITECT

BY MAX O. URBAHN, FAIA

In this article by the new president of The American Institute of Architects, architects are called upon to recognize a new professional obligation as architectural counsellors to the public

There has probably never been a time in the history of architecture when a great public issue so closely coincided with the fundamental concerns of architects.

When the quality of human environment becomes a national issue, architects have an opportunity for a kind of public leadership they have never, in this country, had before. And we have, for our own work, a new climate, which could become far more hospitable to our continuing, day-by-day efforts to build a more humane environment.

After years of crying in the wilderness about constraints to environmental quality, architects now have a vast potential audience in a public which has—at last—made a political issue of environmental squalor.

How do we reach this public audience?

How can we, as architects, help the public to understand and deal with the real issues affecting the future quality of the human environment?

How can we, as architects, help shape public policies which encourage, rather than inhibit, the development of a more humane environment? These are very tough questions, and I cannot tell you that I have the answers. I am, however, convinced that these questions embody the great new challenge to this generation of architects. And I hope to persuade you that we should devote a great effort, from today on, to searching together for effective answers.

Let me begin by telling you why I believe architects have a professional as well as a civic obligation to take up these questions.

Why should we? I could tell you that the future of architecture depends on it, and I suspect that would be pretty close to the truth.

But I would rather enlist your support on behalf of the human condition; and so I submit to you that architectural intervention is needed if people are to control the process of designing their future habitat. The alternative, clear and present danger, is that the process will control them.

If you are inclined to consider that I am being presumptuous in proposing architectural intervention, I would just remind you that it has always been the highest function of architecture to interpret human needs and aspirations in the design of buildings for individual—or corporate—or government—clients. So I am only proposing that we must now act as architectural interpreters for the public, for non-clients, as we have in the past for our own clients. Perhaps we must even help the public design new kinds of “clients” who will build the kind of environment it wants. At least we can help them develop their environmental programs.

You might also argue that nobody has asked us, as architects, to intervene. And you would be right. The politicians want instant answers, not hard questions. The public wants magic solutions, not higher taxes. And there are so many volunteers—some selfless, some self-seeking—with instant answers and magic solutions. When authorities on the human habitat are sought, the media find homebuilders, or realtors, or—more lately—systems analysts, psychologists, sociologists or (currently most fashionable of all) ecologists. The testimony of architects is considered prejudiced if not irrelevant.

So, neither public nor politicians are asking for our involvement in the great national debate on the environmental crisis? I submit to you that we must intervene anyway: We must become counsellors to the public in its concern with environmental quality.

We must help the public understand how cities really get built.

We must help the public understand what “the housing problem” really is.

We must help the public understand what kinds of decisions affect the quality of all the built environment.

We must help the public understand how many kinds of separate decisions determine the quality of the built environment.

We must help the public understand how decisions affecting the built environment really get made.

We must help the public understand the full spectrum of environmental costs.

We must help the public understand that higher cost does not necessarily equal extravagance, and that lower cost does not necessarily equal economy.

We must help the public understand the consequences of its own decisions.

We must help the public understand the variety of environmental alternatives available to it, and the costs and consequences of each.

We must help the public to make effective choices about its own environment by equipping it to make the critical decisions, and on the basis of fact, not myth.

Let me emphasize that I am not suggesting that architects alone are equipped to deal with the environmental crisis. But I am suggesting that they are better equipped than any other single profession or discipline to guide the public debate on the critical questions which relate to the future quality of the built environment. And I believe that architects must perform this public service simply because it is needed and because there is nobody else to perform it.

If you doubt this, consider some of the striking limitations of the current public debate on environmental policy.

It is fragmented. It is dominated by a combination of specialists (whether scientists or engineers) and environmental amateurs (whether politicians or systems analysts or lobbyists for well intentioned conservation organizations, each with its special interest). So in public discussion the various issues are effectively isolated from each other. Air pollution, water pollution, waste pollution, visual pollution, noise pollution, “population pollution,” the housing problem: All are approached as separate, and often conflicting, prescriptions for one particular aspect of the environmental crisis. We have inherited an earth with polluted atmosphere, waters and land as a result of separate decisions, separately arrived at, and separate goals, separately conceived. Now it seems we are in grave danger of attempting to solve our present environmental problems in the same way.

The environmental debate is confused by the great “priorities” mystique, the widespread illusion that all human needs can be rated on some cost-benefit scale and then acceptably dealt with in some sequen-

This article is based on the keynote address at the Illinois AIA regional conference, Peoria, Illinois, on October 23, 1970. It now suggests the philosophical basis of the 1972 program of the AIA, with its new campaign, begun with the work of the AIA Task Force on National Policy (See News Reports page 36), to influence public environmental policy.



tial order. While it may be true that "we can't have everything," it is also true that we can't always choose "priorities"; sometimes we have no option but simultaneous response to many human problems. People will not accept food as a substitute for housing, nor jobs for health care, nor clean air for security from physical attack, foreign or domestic. We delude ourselves when we behave as though they would.

The public debate is afflicted by a new kind of sectionalism, or provincialism, a matter not of geography but of philosophy, which segregates urban problems from rural problems, majority problems from minority problems, white problems from black problems, problems of the poor from problems of the rich and all those in between, and which now even seems to threaten to separate man from his place in the ecology of the environment. Man must, he is incessantly told, limit his future development for the benefit of the eco-system. It is almost as though he were not, in fact, part of the eco-system.

And, perhaps most disturbing of all, there is among the amateur environmentalists what might be called the cult of limitation. We are encouraged to believe we can solve our environmental problems only by limiting 1) population; 2) consumption; 3) production; and 4) human choice.

History does not offer much encouragement to this theory, providing countless dismal examples of human misery and degradation under conditions of limited choice.

But, the rejection of history, on the *ad hoc* theory that past failures created present problems and history therefore has nothing to teach us, is another current fashion: So contemporary theory is too often unrelated to any real knowledge of how the problems of the past compare with the problems of the present.

In this time of supreme human crisis, the public debate is dominated by well-meaning amateurs and specialists, when what the situation demands is the approach of the professional and the generalist. Let me offer you some words of a distinguished scientist who is also a philosopher, the biologist René Dubos, professor at the Rockefeller University in New York City,\* which seem to me to speak to us as architects very clearly and very eloquently. First, two passages from his 1969 Pulitzer Prize-winning book, "*So Human an Animal*":

"The physical forces of the environment are forever changing, slowly, but inexorably. Furthermore, all forms of life, including human life, are continuously evolving and thereby making their own contributions to environmental changes. Since's Man's nature leads him to search endlessly for new environments, and for new adventures, there is no possibility of maintaining a *status quo*. Even if we had enough learning and wisdom

to achieve at any given time a harmonious state of ecological equilibrium between mankind and the other inhabitants and components of the spaceship Earth, it would be a dynamic equilibrium, which would be compatible with Man's continuing development. The question is whether the interplay between Man and his natural and social surroundings will be controlled by blind forces, or whether it will be guided by deliberate, rational judgement . . ."

"The ability to choose among ideas and possible courses of action may be the most important of all human attributes; it has probably been and still is a crucial determinant of human evolution . . . While every human being is unique, unprecedented and unrepeatable, by virtue of his genetic constitution and past experiences, his environment determines at any given moment which of his physical and mental potentialities are realized in his life. Free will can engender acts of freedom only to the extent that past and present conditions make it possible to actualize concepts and anticipations . . . Since the physical and social environment plays such a large role in the exercise of freedom, environment should be designed to provide conditions for enlarging as much as possible the range of choices. This applies to social planning, urban or rural development, and all the practices that affect the conduct of life."

Then, two passages from Professor Dubos' article in the Spring 1970 issue of the *Smithsonian Quarterly*:

"Surprising as it may seem, most cities of the Western world are less densely populated today than they were in the Middle Ages, and during the Renaissance, or even a century ago. The population density in American cities—even in New York—is lower than it is in the cities of continental Europe and Asia. . . The painful experience of crowding so common in the prosperous industrial countries comes from the greater impact made on the environment by the modern city dweller."

"Now that social and technological changes are too rapid for the spontaneous development of successful adaptive responses, modern societies will have to depend on conscious design for the achievement of fitness. I prefer to speak of 'design' rather than 'planning' because I want to emphasize the need to create social and ecological patterns in which the potentialities of persons and places can achieve expressions which are humanly desirable."

All of us architects have been making our own efforts in our own work to help shape public opinion and public policy. As the degree of public concern about environmental quality begins to improve the architectural climate, we will, perhaps, become even more conscious of what we might call—say—the "environmental quotient" of our own buildings: That is, the particular responsibility of every building we do to its neighbors as well as its owners, to the creation of the kind of "architecture for community" to which Clarence Stein was calling his colleagues—and exemplifying in his own work—more than forty years ago.

The Institute has been providing us

with some new tools which will strongly support our efforts to establish an effective dialogue with the public: the Urban Design and Development Corporation, which was developed as a potential resource for all architects and all communities from the smaller to the larger. And the urban design assistance teams, which can be a resource for architects in any community when visiting professionals may help get attention for an architectural point of view in need of such support. And very importantly, our governmental affairs program which is being vastly expanded and expertly guided by our executive vice president, William L. Slayton, toward a far more active effort at influencing policy at every level of government.

Perhaps there ought also to be some public conferences, organized by architects, to generate public discussion and inform public opinion on environmental issues. Perhaps every chapter of the AIA should sponsor a community conference on environmental quality and organize not only its own members but its fellow citizens to analyze community problems and develop community goals. Perhaps every AIA chapter and region ought to issue a kind of annual report on environmental quality. And perhaps these chapter reports should be the basis for an annual national AIA Conference on environmental quality and an annual AIA national report to the President on environmental quality.

We must find new ways to communicate, as professionals, on matters of public concern, and ways to do it that enlighten public policy. We must find ways to let the public know we are a professional resource on problems relating to the built environment. We must—at least some of us, at least for some part of our careers—be willing to be the public client, at least to the extent of really informing the public client. I think more of us, for at least some period of time, must be willing to be bureaucrats; and all of us, all the time, must find better ways of supporting those architects who effectively fill the basically bureaucratic—but essential—role of architect as public client. We must learn to regard architects in public service as very much first-class, not second-class, citizens of the architectural world. We must learn to regard architectural counselling, as well as architectural performance, as a high level of architectural practice.

Architects must help the public fulfill its need for visualizing its aspirations. Architects and artists, poets and philosophers, have always been the interpreters of the hidden meanings of life and of the common aspirations of humanity. They have expressed the unity of human faith founded on the diversity of human choice.

In the crisis of our time, the environmental responsibility of the architect is nothing less.

\*Professor Dubos is now Professor Emeritus of the Rockefeller University and University Professor in the Division of Natural Sciences at the State University of New York's College of Purchase, N.Y.



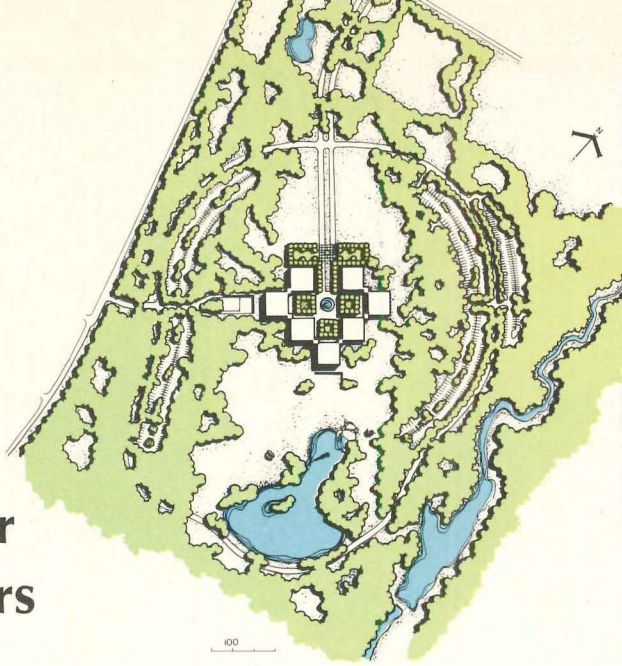


## Suburban office buildings

Suburban sites for office buildings—particularly for corporate headquarters offices—have advantages that make them unusually attractive to many, but not all, kinds of companies. Less expensive land (and therefore the capability to buy a larger tract), more space for expansion and for parking, an exceptional degree of amenity for employees are the obvious advantages. All four of the companies whose suburban offices are involved in this study wanted and needed more space for immediate and future needs, and were seeking to provide their employees with better working conditions. Each got what it wanted—and more, economically and psychologically, and the sites they found are not only spacious and beautiful, but they are within an hour's travel, or less, of the downtown business district. Although the communities to which they have come may be concerned about the additional public services to be provided, communities can count as benefit extraordinary the preservation by such companies of open spaces on their outskirts.—E.K.T.



## From Park Avenue to an old polo field: a lush new setting for PepsiCo's headquarters

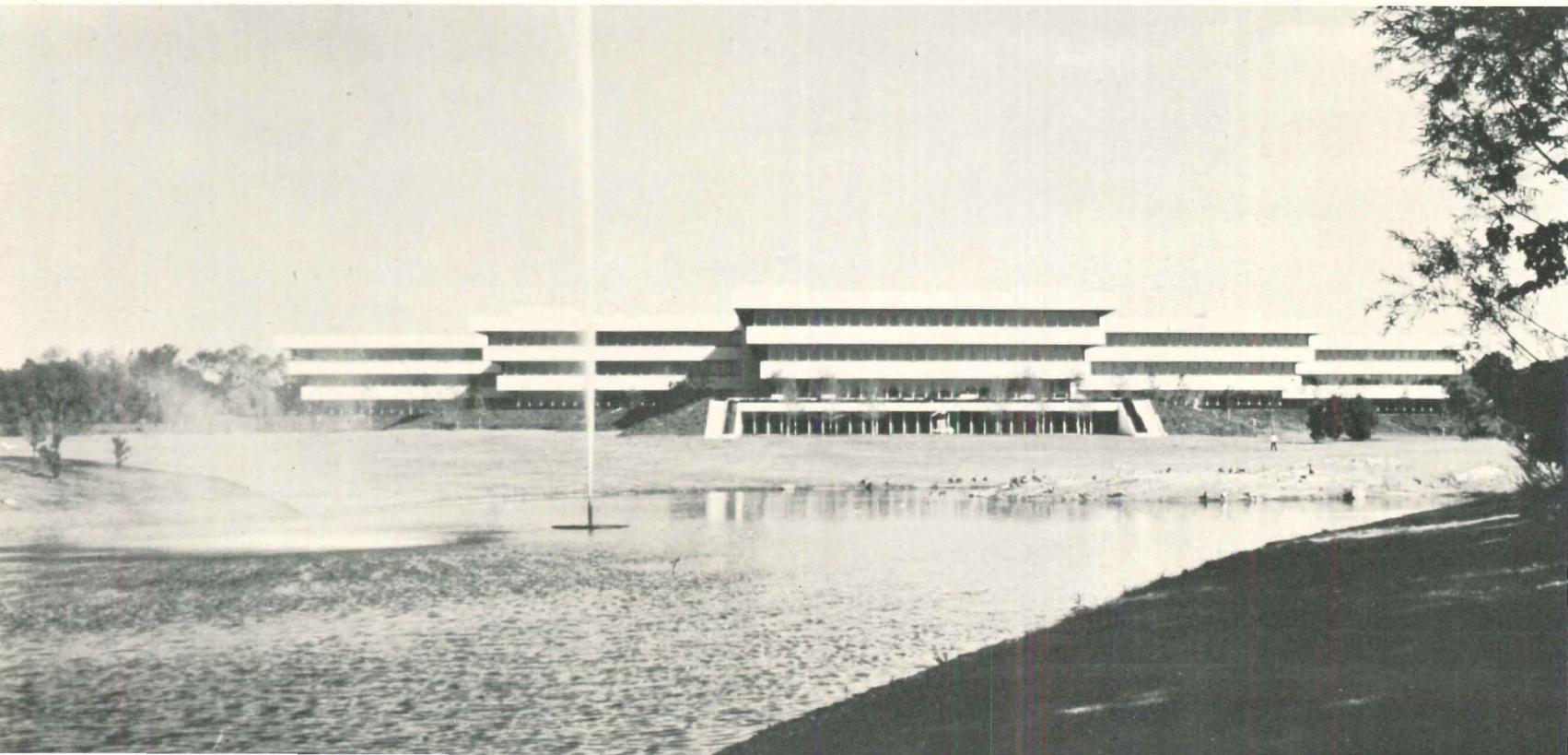


PepsiCo's move from New York City to Harrison, 30 miles north, was conditioned by its need for more space—difficult to find and expensive in the city—and by its decision to house most of its divisions in one location. The company was fortunate in the property it acquired, a 112-acre site ringed with woods and easy to build on, that had been a polo club. The size and character of the site, reinforced by the local zoning code restricting building heights to 40 feet, suggested a low building or buildings rather than one tall building. Edward D. Stone Associates developed a series of seven three-story buildings which were set on a mounded site to give the complex prominence in the otherwise flat landscape. The buildings are arranged in stepped formation along a great formal entrance court off which open smaller courts, sunken between each group of three buildings. This skillful interplay of buildings and open spaces, of created and natural areas, blends formal and in-

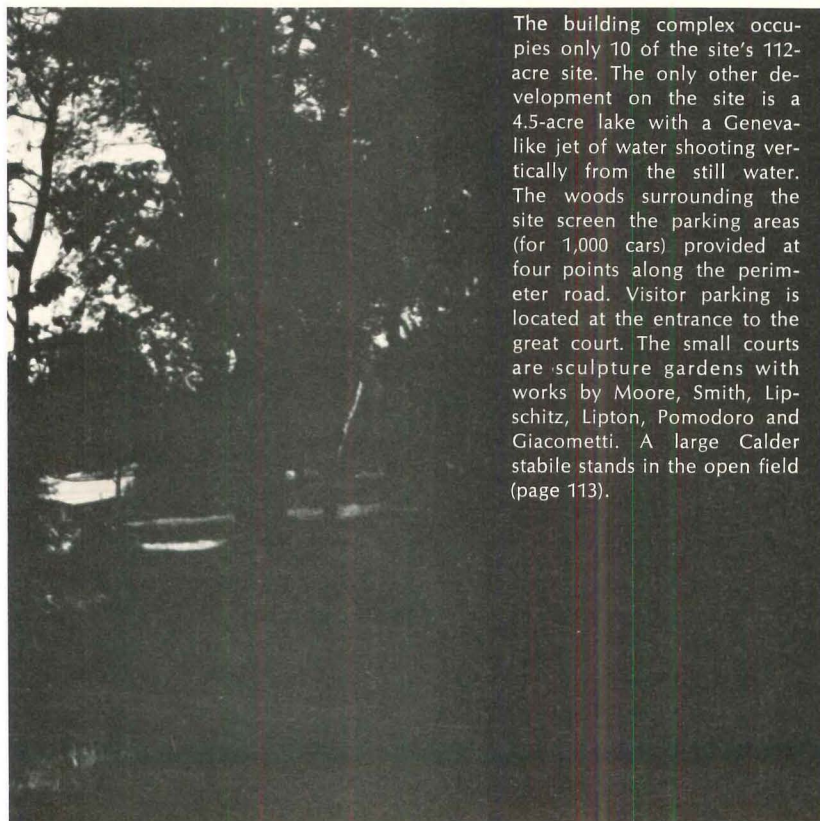
formal, urban and rural, in a worthy setting for a company's world headquarters offices. Each building is connected with its neighbor, but barely so: the buildings touch only at corners where towers containing elevators, stairs and corridor, accent the point of contiguity. Patterned precast concrete panels are used to enrich the exterior walls of the towers and fascias of the building overhangs. In addition to meeting current needs of the company, the seven-building complex provides a pleasant means of expanding office spaces. The ultimate development allows for addition of similar structures to all but the central building, creating also additional courts.

PEPSICO, INC., WORLD HEADQUARTERS, Harrison, New York. Architects: *Edward Durell Stone & Associates*. Engineers: *Fraioli, Blum & Yesselman*, structural; *Jaros, Baum and Bolles*, mechanical/electrical; *Segner & Dalton*, site mechanical and electrical; *Goodfriend-Ostergaard Associates*, acoustical consultants. Landscape architects: *Edward D. Stone, Jr., & Associates*. General contractor: *Turner Construction*.

Ezra Stoller © (ESTO) photos



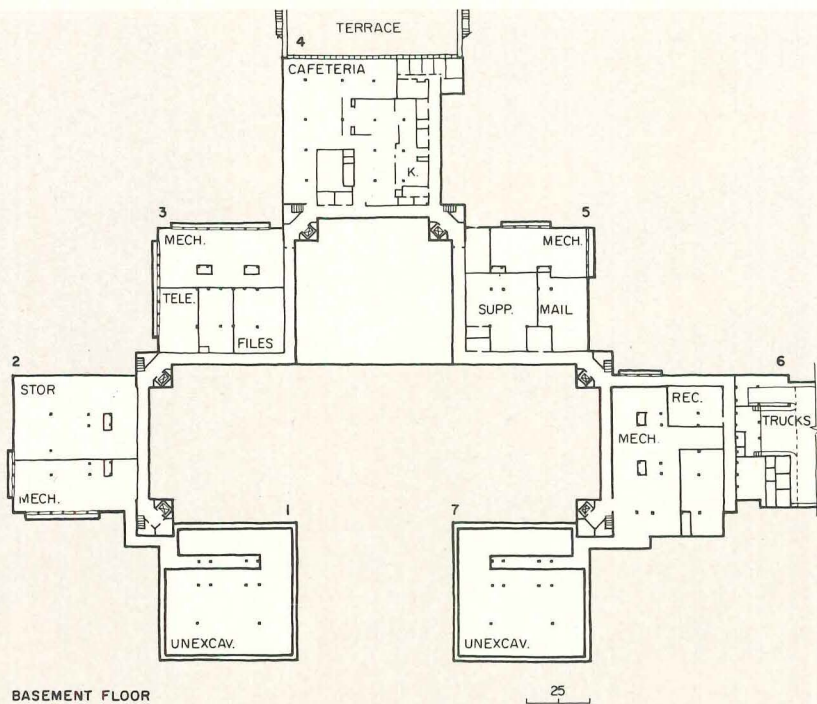
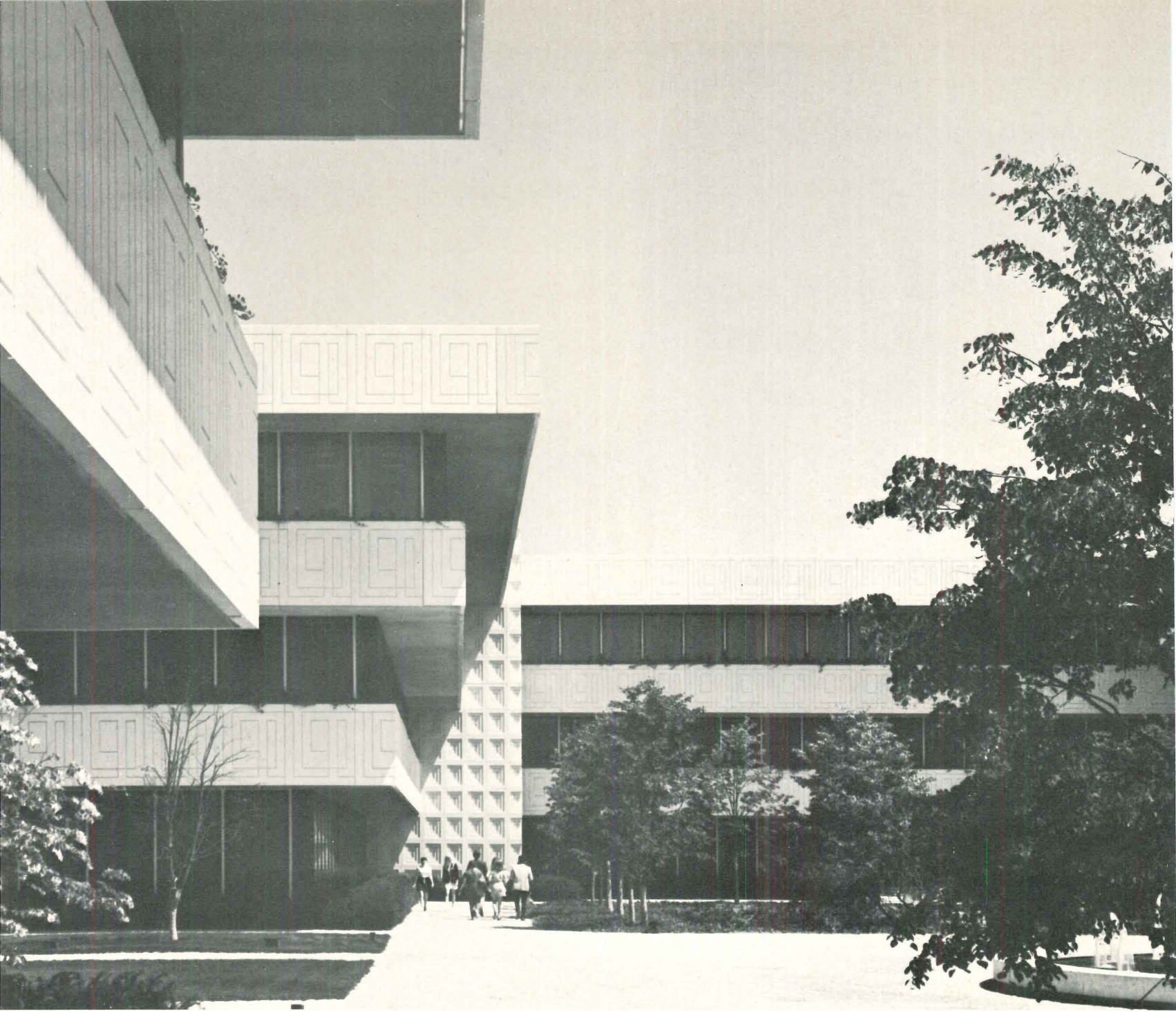




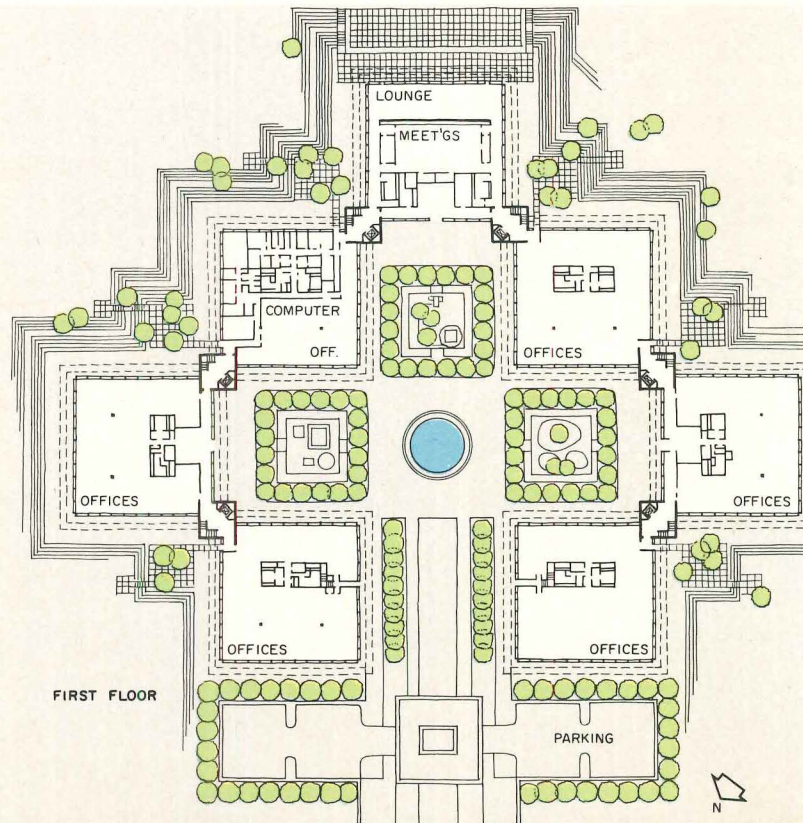
The building complex occupies only 10 of the site's 112-acre site. The only other development on the site is a 4.5-acre lake with a Geneva-like jet of water shooting vertically from the still water. The woods surrounding the site screen the parking areas (for 1,000 cars) provided at four points along the perimeter road. Visitor parking is located at the entrance to the great court. The small courts are sculpture gardens with works by Moore, Smith, Lipschitz, Lipton, Pomodoro and Giacometti. A large Calder stabile stands in the open field (page 113).





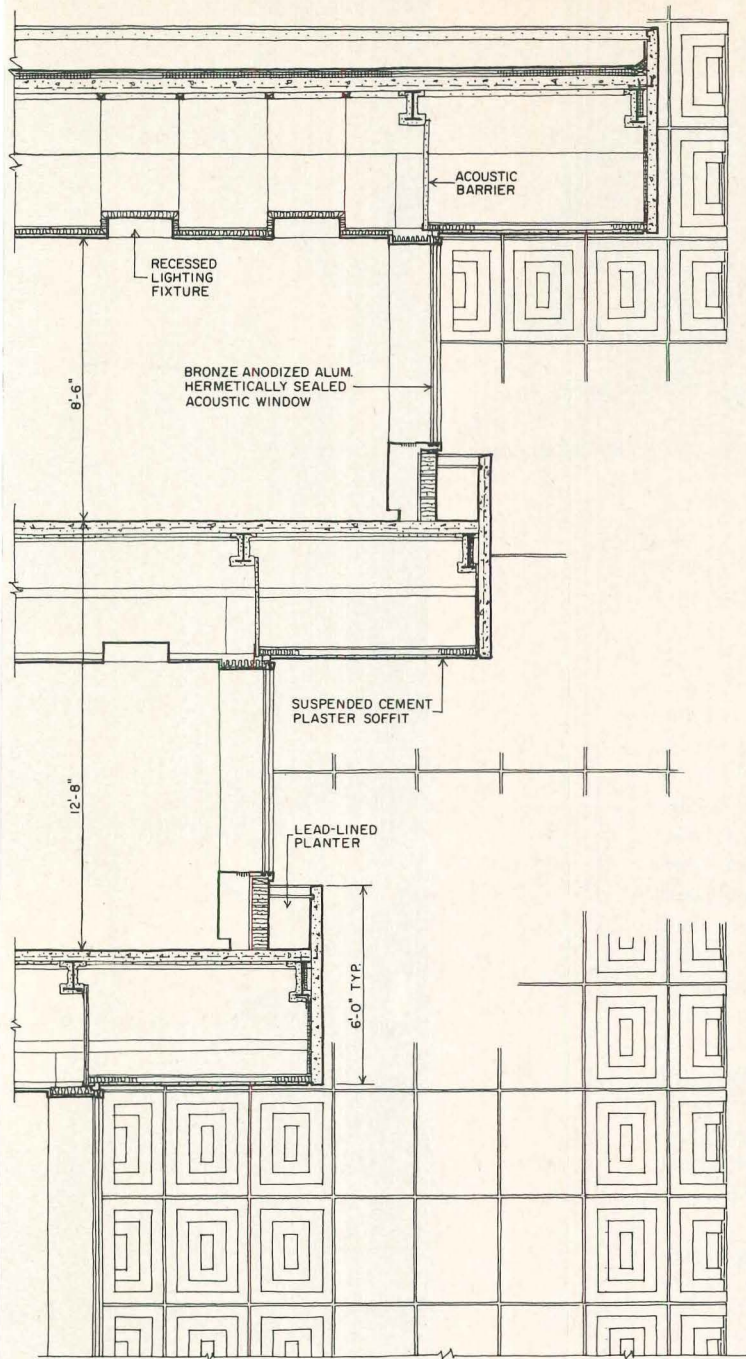


BASEMENT FLOOR

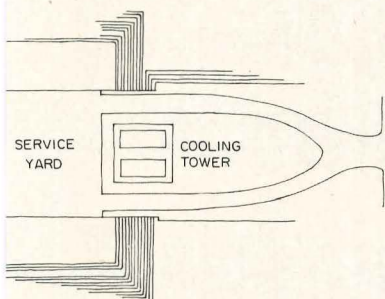


FIRST FLOOR



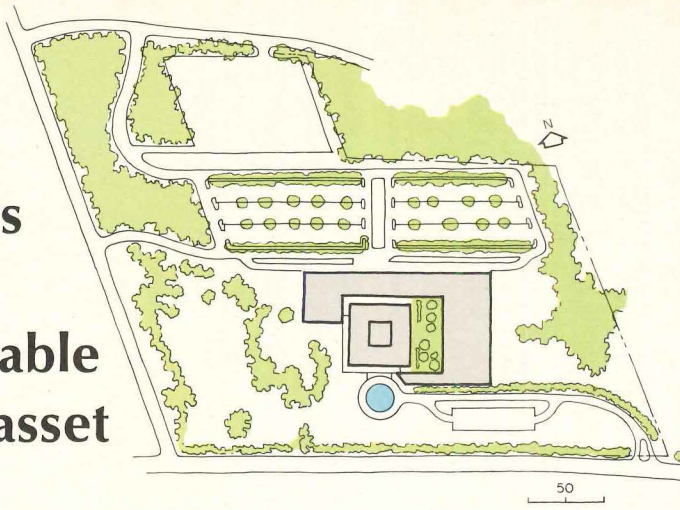


Circulation—from building to building and from floor to floor within each building—is concentrated in towers placed at points where buildings touch each other. At each floor a pleasant lobby is developed with stairs, elevator, and corridor connecting buildings. The area of each succeeding floor is increased, producing a protective overhang (detail, left) above each band of windows. Dining rooms (below) on the basement floor open onto a large terrace from which stairs lead down to the park. All furnishings in public spaces (including dining rooms) were architect-designed.





## World headquarters on former estate is close in, expandable and a community asset



This handsome corporate headquarters complex for the world's largest textile manufacturer unites in one location its various divisions, formerly scattered around Greensboro, North Carolina. The site for the new complex, a 34-acre former estate, is within that city's limits and near its downtown, but it has all the advantages of a more suburban location. The principal requirements given the architects were to design a building that would project the company's image and would provide flexibility and expandability for its future needs. The resulting building is actually two structures, separate but joined by bridges at three points. The six-story tower houses executive and personnel offices; a two-story (plus one floor below grade) building which surrounds the tower on three sides, contains divisional offices, meeting rooms and cafeteria. The most dramatic feature of the complex is the exposed steel frame of the tower with its six-story-high trusses. Within this frame, reflective glass walls—170 feet wide on each face—mirror the huge trusses in a pattern that appears to double their number. The frame achieves a four-hour fire

rating by virtue of a seven-foot separation from the walls of the building, and the installation of a ring of sprinklers in the soffit offers protection from heat build-up due to possible upward radiation of flames. All exposed steel is shop-painted with a long-life coating except for the roof grid frame which is of weathering steel. The low building also uses reflective glass for its bands of windows, combining this with plate steel spandrels and fascia. The entire design is based on a five-foot module: this is used for the structure, the integrated lighting pattern, air conditioning and heating distribution and controls, power and communications facilities, partitions, and built-in and movable furnishings. The buildings were constructed in 20 months on a CPM schedule, with design, fabrication of steel components and actual construction paralleling each other.

BURLINGTON CORPORATE HEADQUARTERS, Greensboro, North Carolina. Owner: *Burlington Industries, Inc.* Architects and engineers: *Odell Associates Inc.* Interior design: *Odell Associates Inc.* Landscape architects: *Odell Associates Inc.* General contractor: *Daniel Construction Company.*

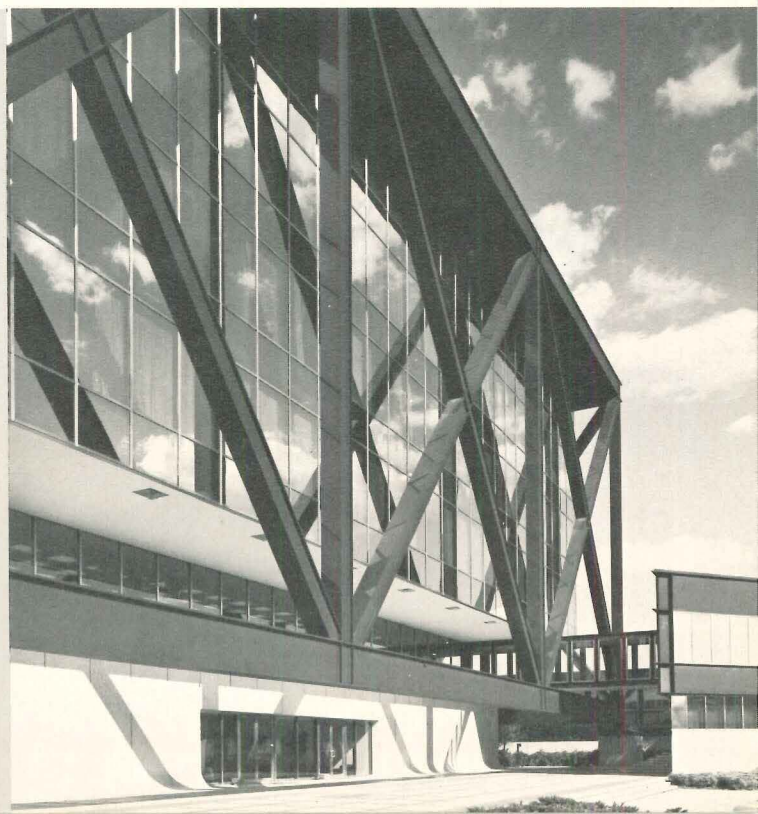
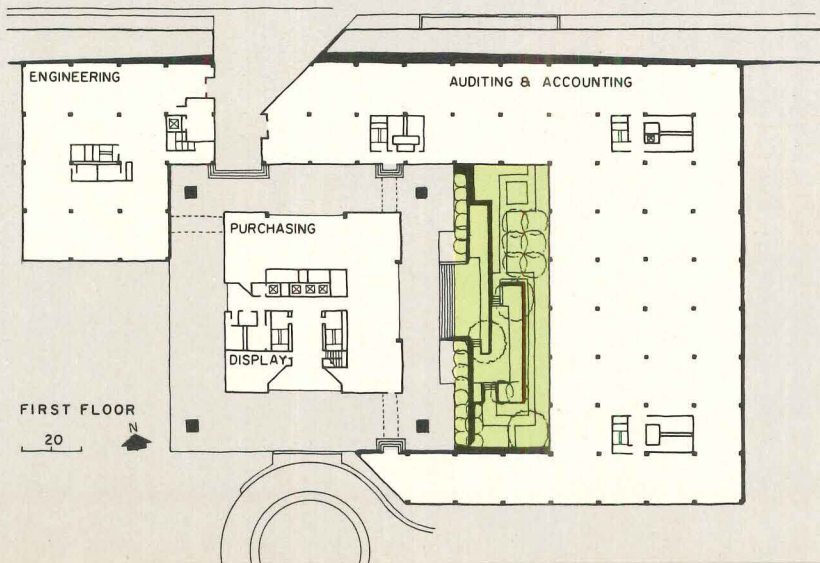
Gordon H. Schenck, Jr. photos







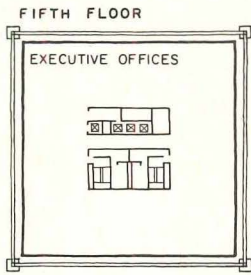
The entrance road circles a large fountain with a 70 foot diameter pool and jets that go up to 35 feet. The tower building is entered through a richly landscaped and terraced court between the tower and the low building. Three bridges connect the buildings.



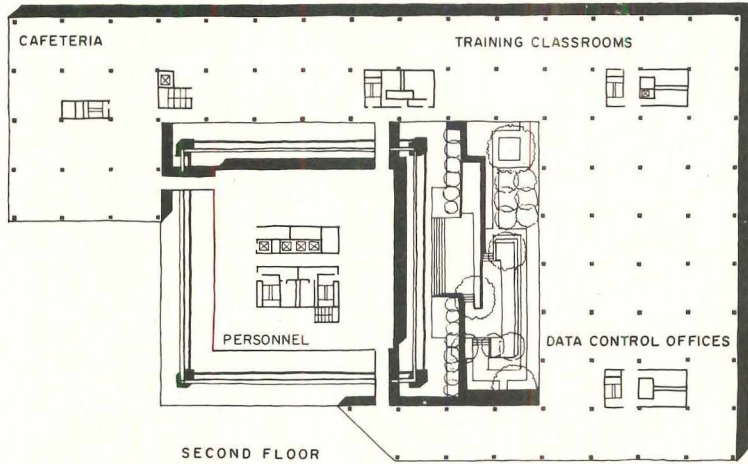




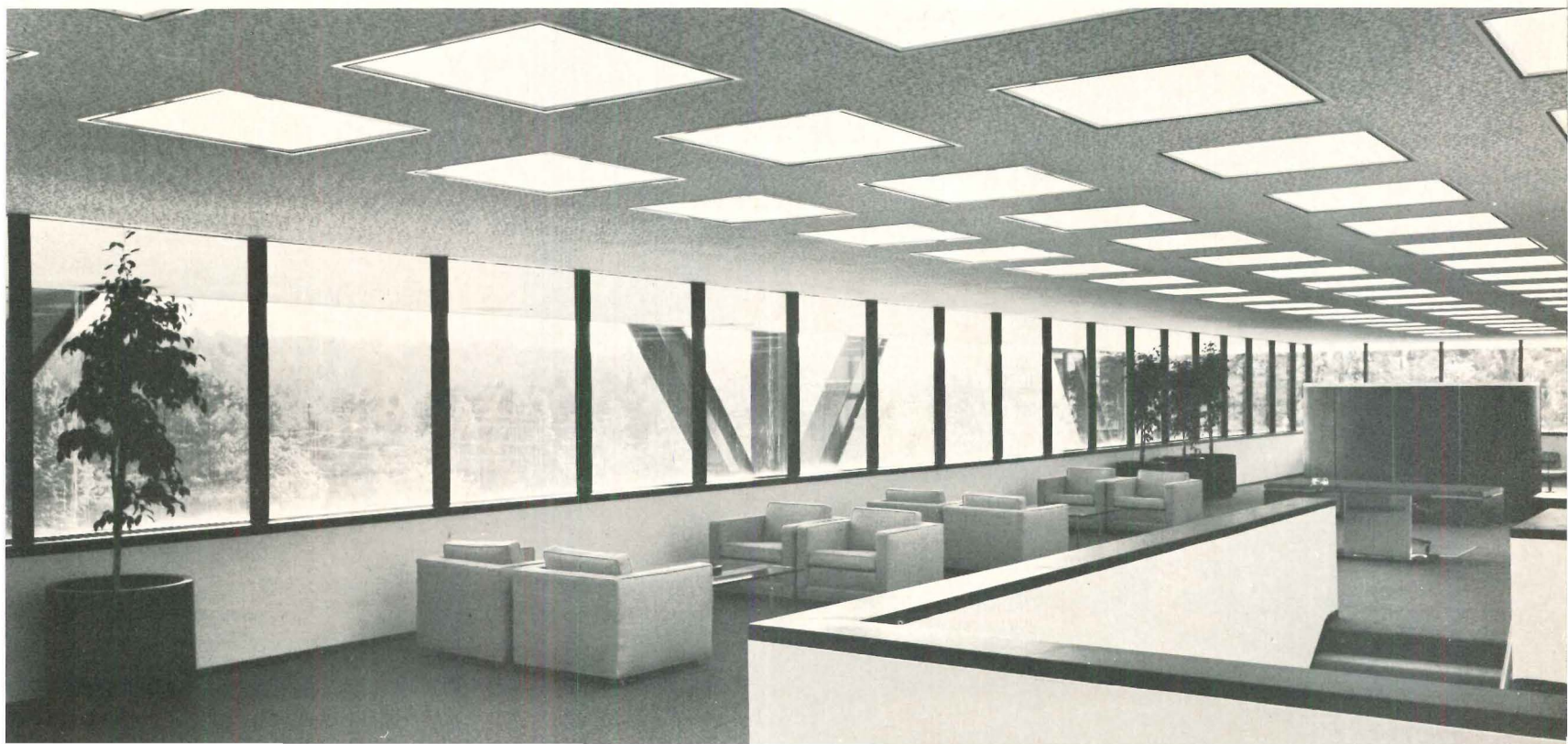




Burlington made its move to a suburban location in part to provide its 1,000 employees with more pleasant surroundings. The expansive site and the delightful entrance courtyard with its intriguing sculpture, "Mayo," by Irish sculptor Robert Costelloe, provide open space on two scales. Ample parking, for visitors at the front, for employees at the rear, is provided. Interiors are pleasant in their own way,



enhanced by works of art in various media: paintings, banners, prints are used in reception areas (top right), cafeteria (center), and in offices. In the tower, all vertical transportation is centralized in a 60-foot core, with open stairs for between-floor communication (shown at right, below).



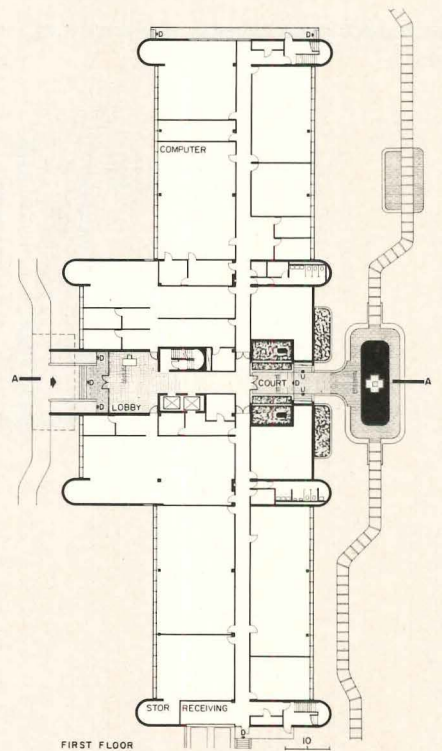
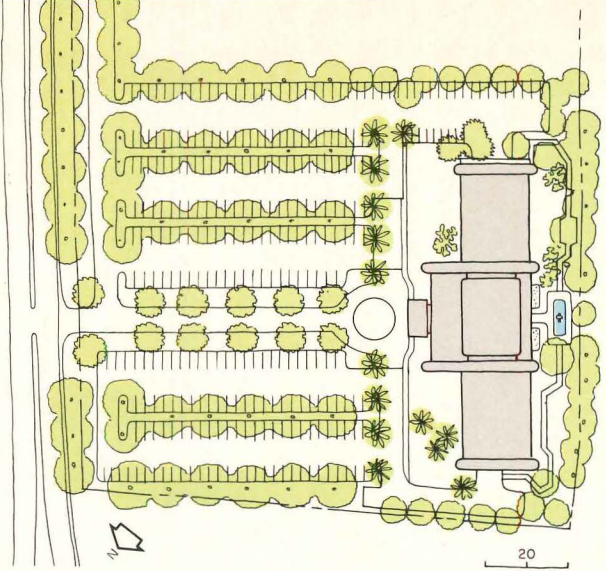


# Insurance company move to suburbs results in better employee conditions and more flexible office space

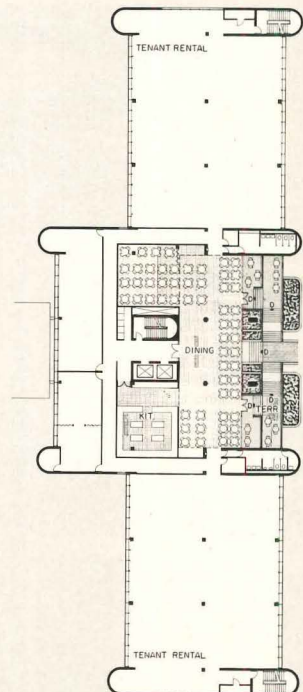
Prompted by the need for more space and greater flexibility in its use, and by the desire to improve its employees' working conditions, California Casualty moved to a suburban location from its downtown San Francisco offices. Its new facilities not only meet those essential needs but provide rental space into which the company can eventually expand. The site is rectangular in shape, one long side fronting on a major thoroughfare, the other opening onto a golf course of unusual natural beauty. By making the building rectangular also, and by placing it at the rear of the site, parking was provided at the front, convenient to the street entrance. More important to the building's occupants, it preserved unimpeded the views to the golf course. The rear of the building's center portion is quite open, especially at the second floor where the dining area is located. From this level, stairs lead to the landscaped sitting area adjacent to the golf course. Since there is a six per cent slope to the site, the garden area is slightly higher than the entrance lobby, to which it is connected by a corridor. The building was initially envisioned by

the owners as almost twice as large as it ended up being. The original design premises, however, were found to be valid when the sizes were proportionally reduced. The rounded towers or "pods" which break the building length into thirds, were retained even though the smaller floor area did not require so many support facilities (contained in these towers), since they repeat on the front an important design element on the rear, and they provide interesting variations in office space. Large open spaces for office use, with central corridors, proved the simplest and most effective way of providing for the company's needs and for rental space. Executive offices on the fourth floor include a balcony in the rear center portion, sheltering the dining terrace.

HOME OFFICE FOR CALIFORNIA CASUALTY INSURANCE GROUP, San Mateo, California. Owner: California Casualty Indemnity Exchange. Architects: John Carl Warnecke and Associates, John Carl Warnecke, director of design; Carl Russell, partner in charge; Ronald Rossi, project architect. Engineers: Wildman and Morris, structural; Ralph E. Phillips, Inc., mechanical/electrical. Landscape architect: Michael Painter. General contractor: Cahill Construction Co.



FIRST FLOOR



SECOND FLOOR

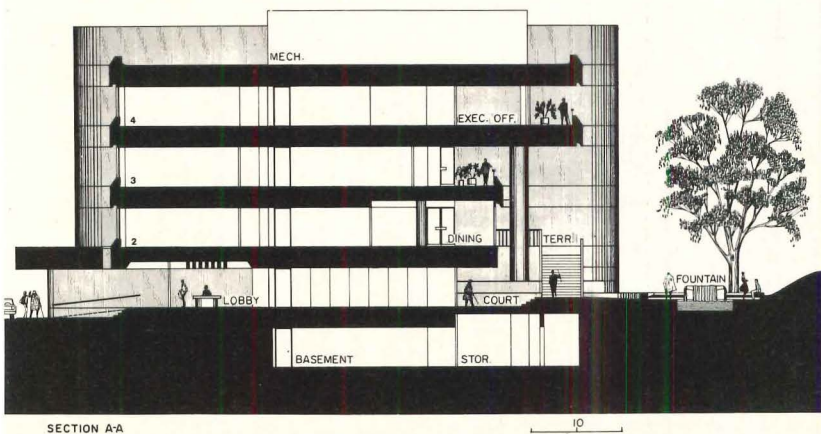


Robert Brandeis photos





Broad stairs and a series of terraces lead from the second floor dining room and its terrace to the informally landscaped sitting area, a pleasant place for noontime relaxation. The building exterior is buff colored concrete with deep vertical ribs, and anodized aluminum spandrels. At night strip lights under each spandrel emphasize horizontality.





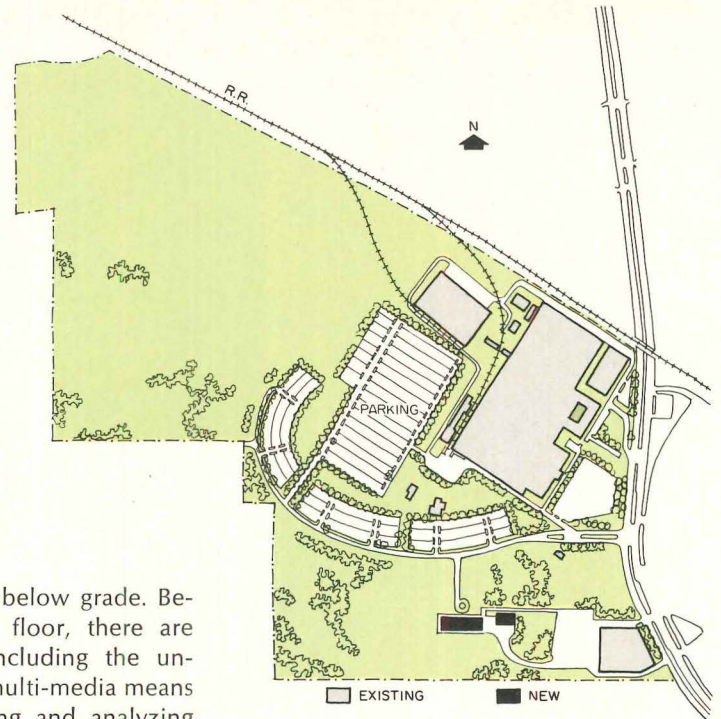
## Labs, workshops and division offices in park-like setting at edge of city

The environmental systems building is the first structure in the implementation of the master plan for development of the extensive Emerson Electric Company "park" on the outskirts of St. Louis. It is a multi-function building, in itself a working demonstration of many of the company's products. Included in its facilities are laboratories for product research, workshops to which architects and engineers can come for tests of mechanical and electrical designs, displays of products, and specially designed places for presentation of programs on lighting and air distribution to professionals.

The building in which all this takes place is a six-story (height limit for the area) rectangular structure of simple form but rich effect. The warm dark color of the weathering steel frame (an unusual application of the material) and spandrels, complemented by the gold reflective glass walls, the precise detailing and the elegant proportions, contribute to this effect. The main entrance is at grade but on the third floor of the building: the first two floors, containing laboratories and work-

shops (see page 128) are below grade. Besides the lobby on this floor, there are other public facilities, including the unusual Rotunda display, a multi-media means of demonstrating, teaching and analyzing lighting conditions which can be extended to provide actual experience of particular light effects; the cafeteria; and exhibits of the company's products in the field of interior climate design. The fourth and fifth floors each contain general offices for a company division, and are planned to meet two kinds of space needs: conventional, for which floor-to-ceiling movable partitions provide enclosed space; and open with modular furnishings. Work locations were set by computer survey.

ENVIRONMENTAL SYSTEMS BUILDING, EMERSON ELECTRIC COMPANY, St. Louis, Missouri. Architects: Hellmuth, Obata & Kassabaum, Inc.—Gyo Obata, principal in charge of design. Engineers: LeMessurier Associates, Inc., structural, foundation, soils; HOK Associates, Inc., mechanical/electrical; Bolt, Beranek & Newman, Inc., acoustical; Seymour Evans Associates, Inc., lighting. Interior design: Hellmuth, Obata & Kassabaum, Inc. Graphics: HOK Associates, Inc. Rotunda display: Obata Design, Inc. Landscape architects: HOK Associates.



Since the company's products are so closely related to the building field, the building naturally uses its products extensively both inside and out. Outside, special installations demonstrate electrical means to comfort and safety: brick terraces, walks and patios are kept snow- and ice-free; incandescent and mercury vapor fixtures, recessed in the ground, installed in overhang and in bollards, or pole-mounted, illuminate the building and nearby trees, as well as driving, parking and pedestrian ways.

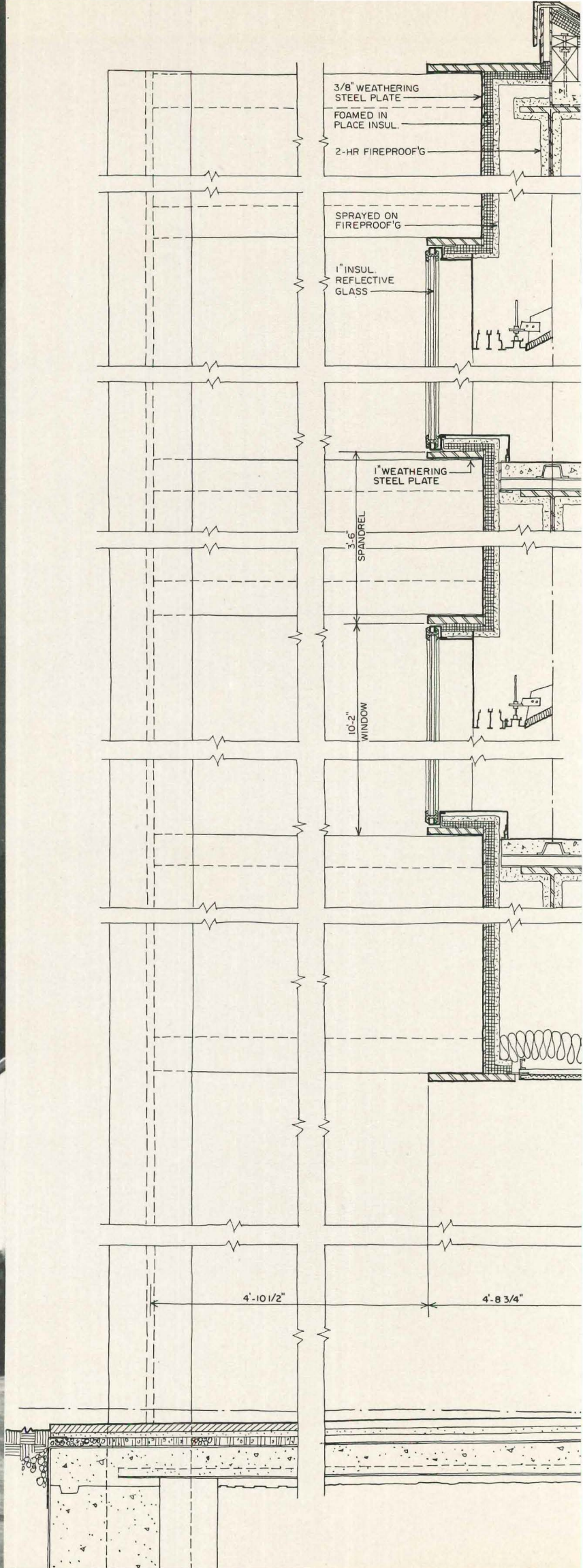
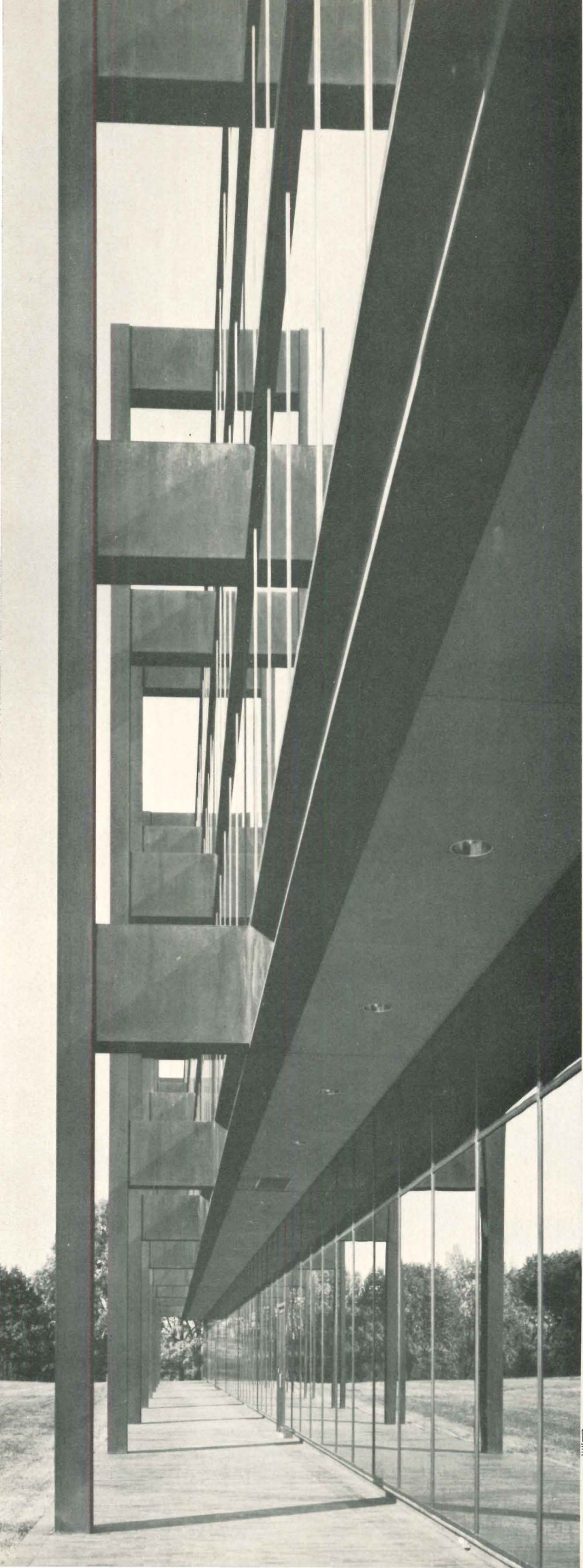


George Cserna photos





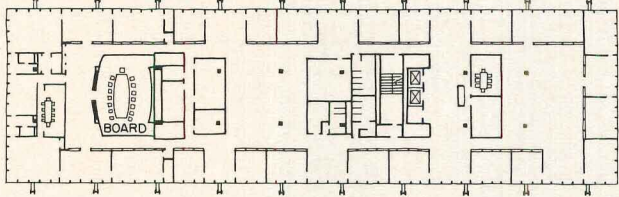




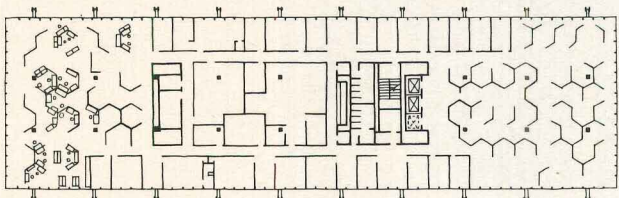


The exposed steel frame (left) is of weathering steel, an unusual application of the material, chosen for both its warm color and its industrial look. Separation of the columns from the curtain wall achieves the required fire rating. Weathering steel spandrels and reflective glass—gold, to complement the steel color—make up the curtain wall. All surface temperatures on glass, walls, floors, etc., are kept at a minimum 55 deg

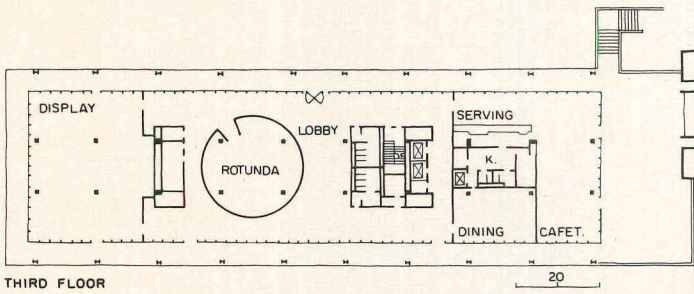
level in winter so work stations next to glass are comfortable. The cooling load in summer was found to be reduced by use of the reflective glass. The lobby (top right) is at grade but is actually on the building's third floor, as is the cafeteria (center). Lighting in these spaces uses company products and ceiling systems. General office areas (bottom right) are open-planned for use of a system of movable modular furnishings.



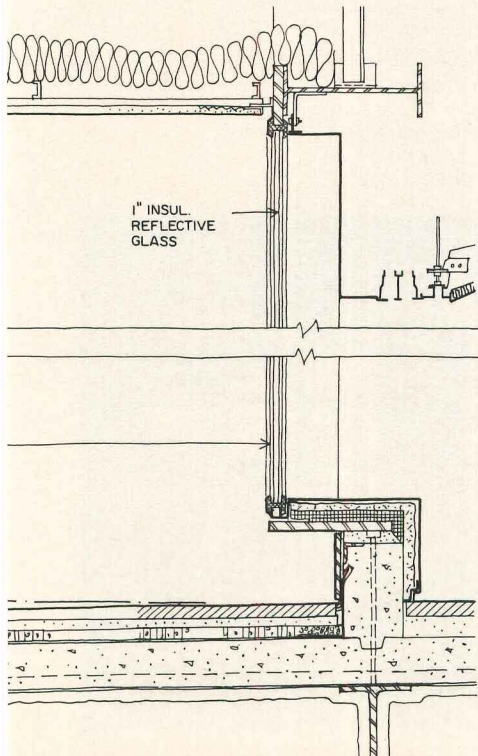
SIXTH FLOOR (OFFICES)



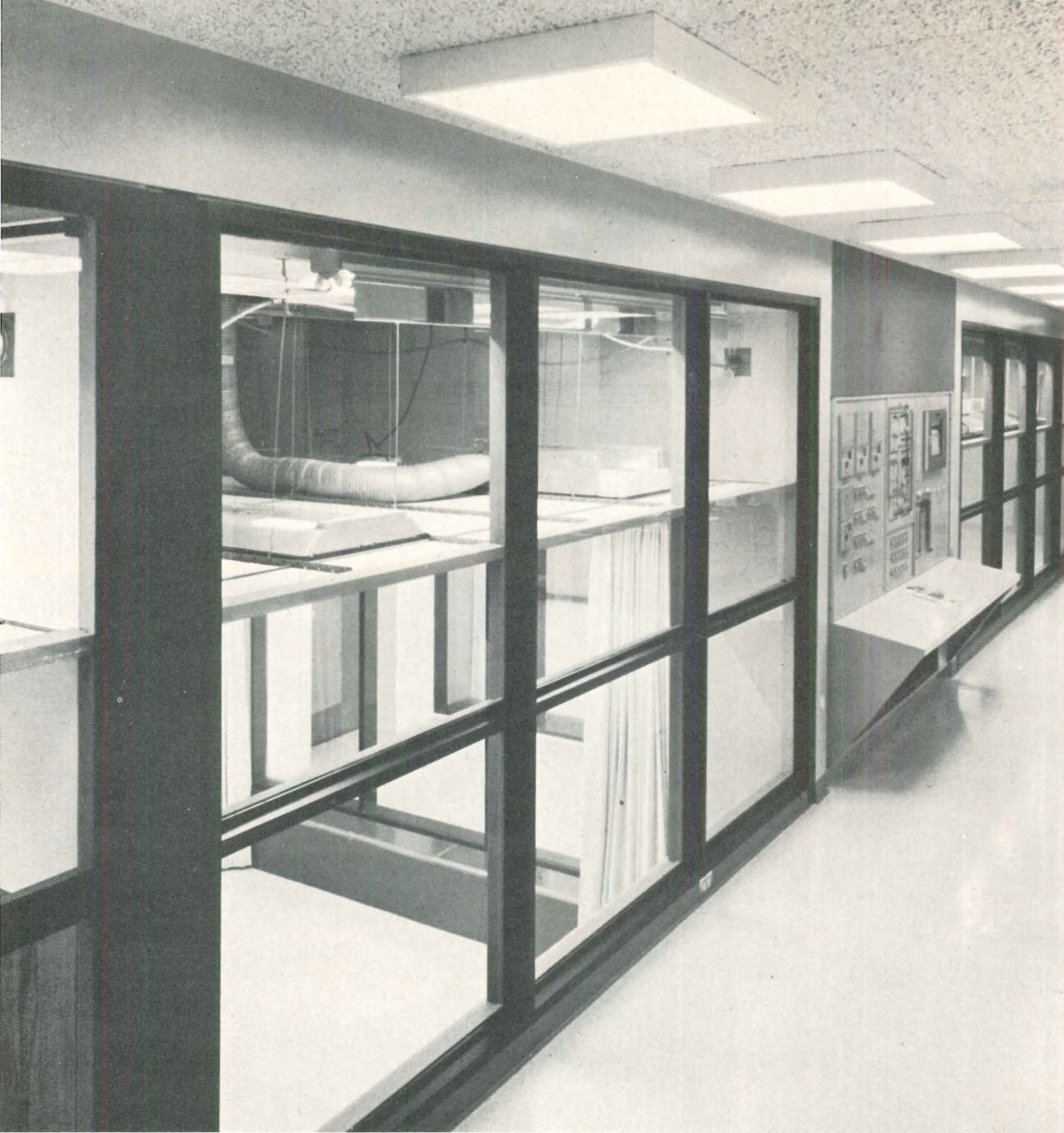
FOURTH FLOOR (OFFICES)



THIRD FLOOR





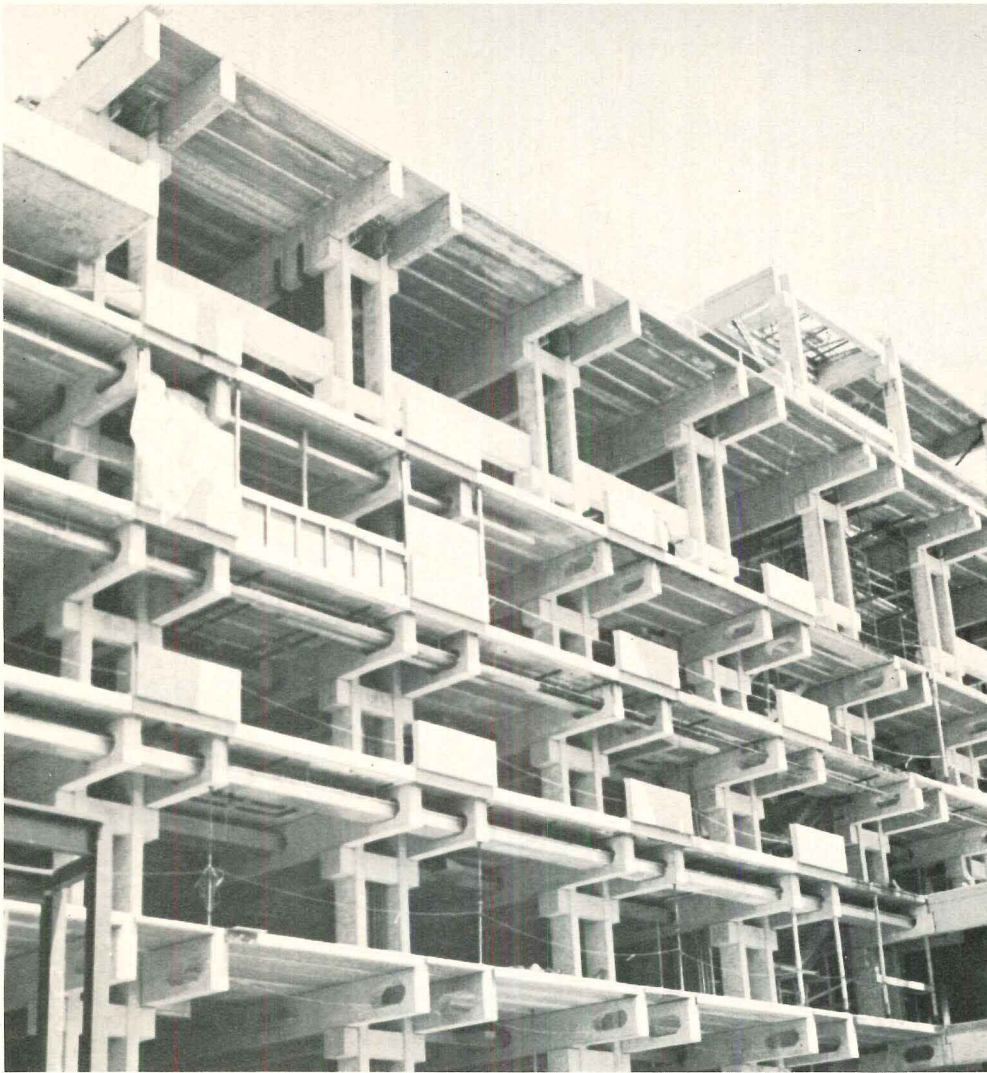


Communication, education and demonstration are essential parts of the building's function: workshops such as that shown above enable architects and engineers to test mock-ups of mechanical and electrical designs. The auditorium (left, below) is for presentations; the multi-media Rotunda (right, below) is a theater-in-the-round of lighting experiences.





## SCIENCE CENTER IS PRECAST FOR FAST ASSEMBLY



Harvard University Science Center,  
Cambridge, Massachusetts  
Architects: Sert, Jackson and Associates  
Consulting structural engineers:  
Lev Zetlin Associates, Inc.  
Consulting mechanical and electrical engineers:  
Syska & Hennessy, Inc.  
Cost consultant and construction management:  
Turner Construction Company



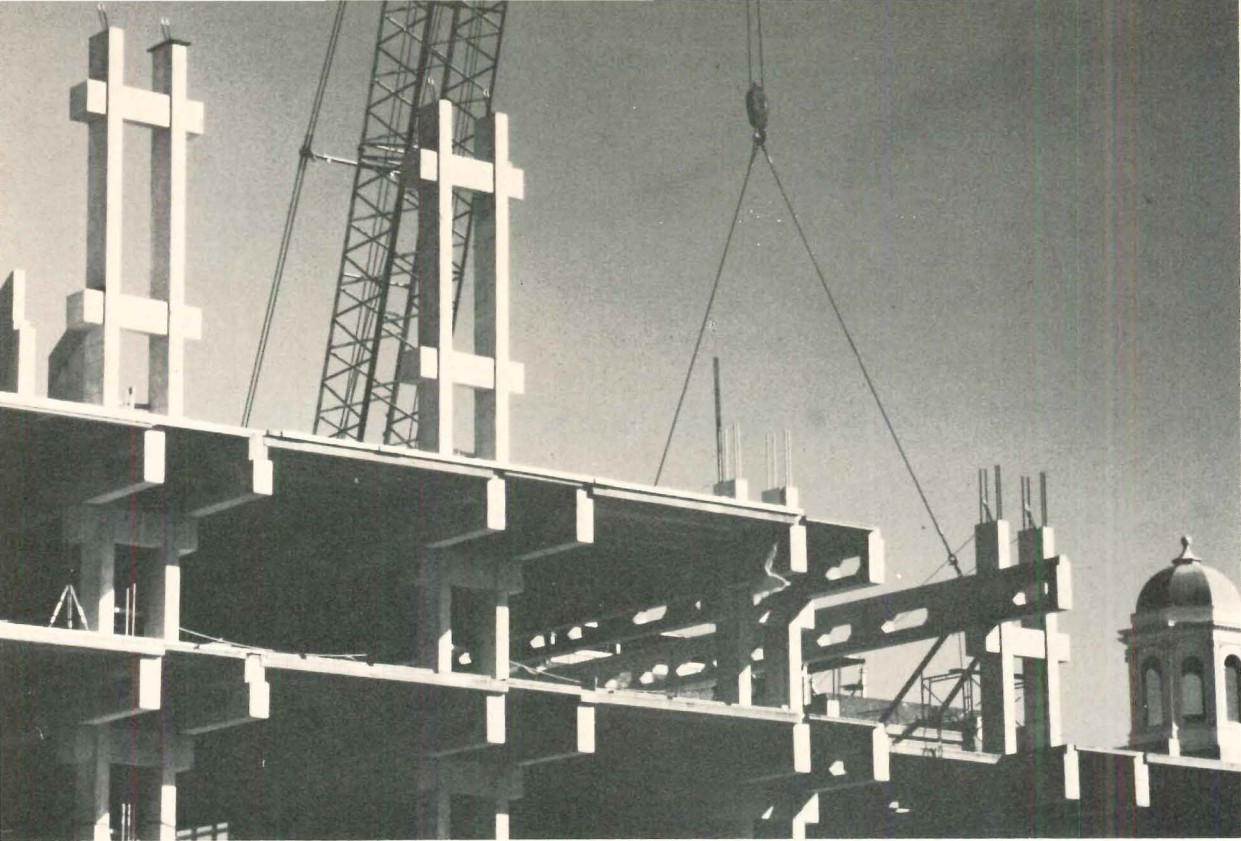
When, after years of fund raising, Harvard University received a \$12.5 million gift in June 1968 toward their projected Science Center, the administration wanted to move ahead quickly. Construction of the \$17.7 million facility began in the summer of 1970, and completion is scheduled for the fall of 1972. Contributing to the speed of construction was the precast concrete framing. Structure for the 400- by 60-foot laboratory wing was erected in seven months. Precast concrete is used everywhere except for the structure—which is steel—that houses four demonstration theaters, and the special basins and supporting structures—which are in-situ concrete—for the three roof-top cooling towers. These cooling towers serve a below-grade chilled-water plant that will provide air conditioning not only for the Science Center, but, eventually, for all of the Harvard campus.

Besides the laboratory wing, the complex includes a theater building, a large stepped-down structure for the mathematics department, a science library, and a low portion for administrative offices.

The University signed a negotiated contract with Turner Construction Company for cost-consulting and construction-management services. Based upon nearly complete working drawings, Turner's estimate was that the building would cost \$19 million; the University's budget was \$17 million. A number of things were done to cut costs, and among them were: 1) structure and mechanicals are left exposed in the laboratory wing; 2) concrete fill over the precast decking will serve as the finished floor in the laboratory wing; 3) partitions are dry wall rather than block in the laboratory wing; 4) ductwork for fume-hood exhaust is galvanized with an interior coating, rather than stainless steel; 5) air-conditioning zoning was cut to a minimum (for example, there is no zoning for exposure; 6) two-pipe fan-coil units are used for classrooms; 7) clear glass is used rather than tinted (operable sash is provided in the laboratory and classroom wings).

The faculty wanted clear space in the laboratory wing, even though there were to be offices along the corridor that is located along the south side of the building. Early on, a poured-in-place framing scheme was considered, utilizing precast decking. Three rows of columns were con-

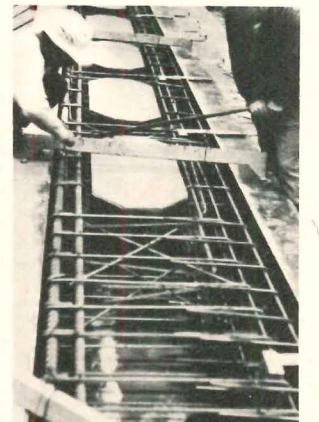
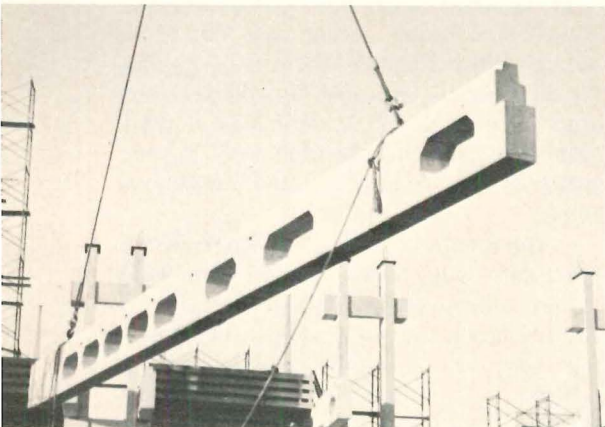
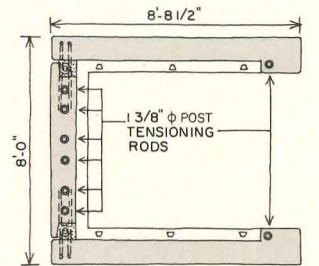
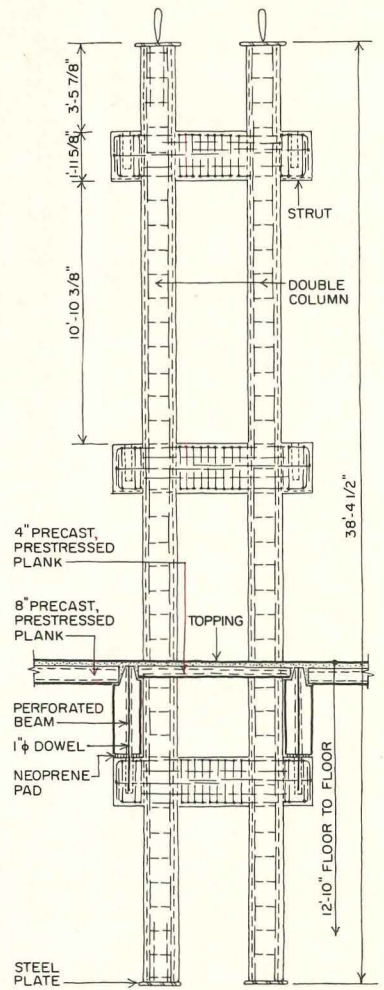
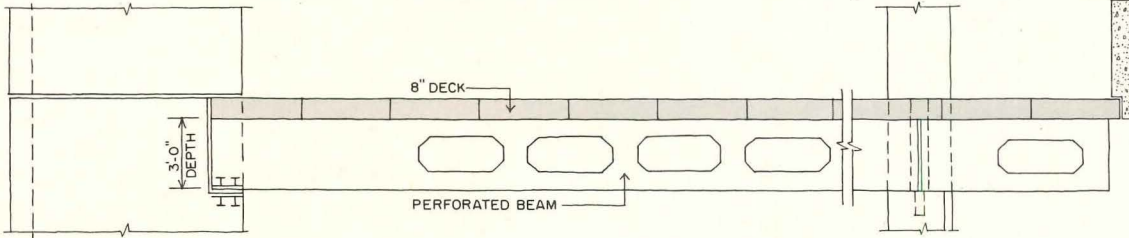




The fully precast frame of the laboratory wing is comprised of "ladder" columns (in three-story-high units) on one side of the 60-ft deep building and U-shaped post-tensioned mechanical shafts on the opposite side—spanned by perforated concrete girders which support prestressed,

hollow-core decking. The columnar elements are on 24-ft centers. The "ladders" are used two-high, and are connected by threaded rods and leveling nuts as shown below. Wind forces are taken by the post-tensioned shafts which have six 1 3/8-in. rods in the outer face. The shaft

units were cast in three separate pieces and joined as shown in the detail. Faculty wanted a 9-ft depth from floor to under side of beams; with the girder being 3-ft deep to the offset, the prestressed decking, 8 in., and the topping, 2 in., floor-to-floor height is 12 ft 10 in.







templated. The corridor was cantilevered 10 ft; the next row of columns came 15 ft away, along the office partitions; and they were followed by 35 ft of clear lab space to the third row of columns.

But many of the columns came at awkward locations, and the faculty argued that the presence of the interior columns inhibited flexibility. Turner was concerned about uncertainties with respect to the cost and construction time for poured-in-place concrete. Furthermore, the Boston area is a favorable market for precast concrete as there are several local companies.

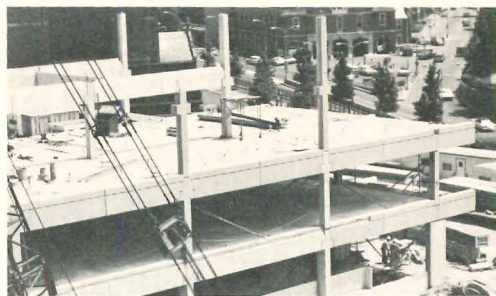
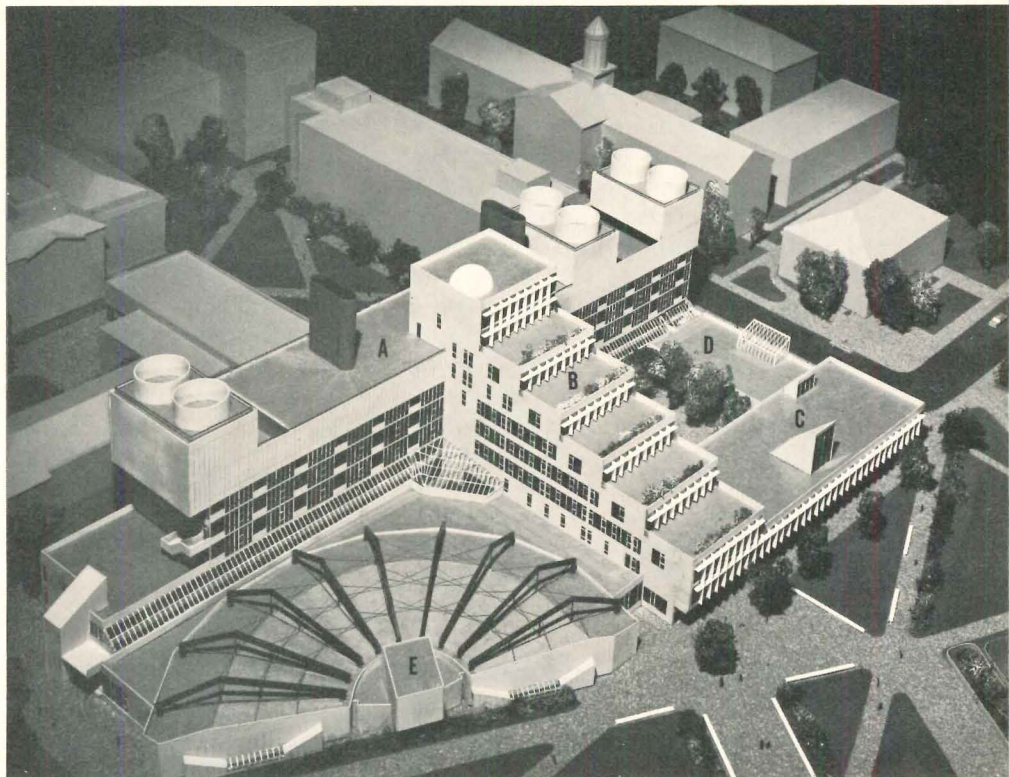
#### **Pairs of long perforated girders give a 50-ft clear span for the laboratories**

The structural solution to the laboratory wing, developed by engineer Lev Zetlin, was a totally precast system with 3 ft-8 in. deep, 60-ft long reinforced concrete girders—perforated for utilities—spanning between “ladder” columns on one side of the building and post-tensioned, U-shaped concrete shafts on the other. The girders, which cantilever 7 ft over the single corridor, are used in pairs (7 ft apart) on 24-ft centers. The 24-ft module is a convenient one for the laboratory layout (fume hoods are generally on 12-ft centers).

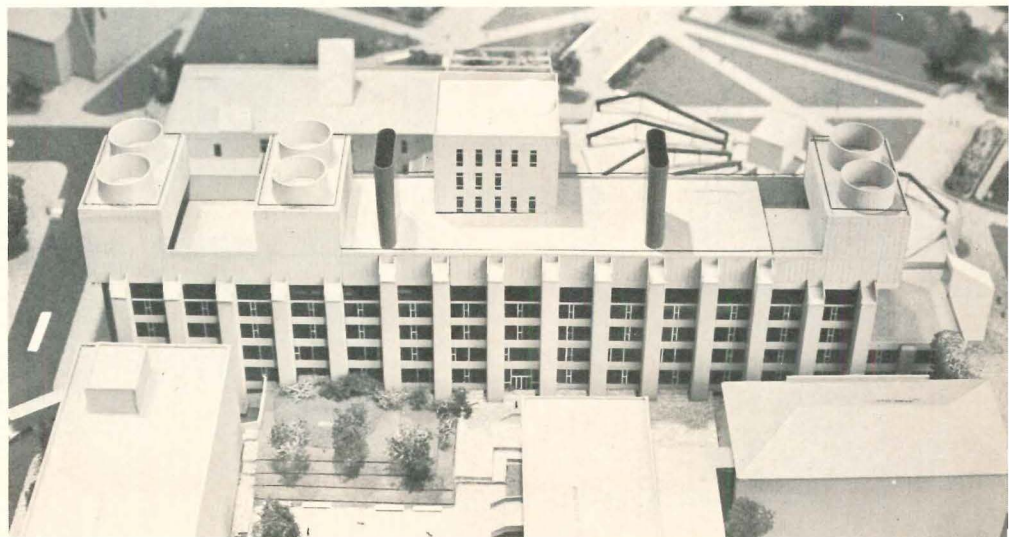
The heavily-reinforced concrete girders have a maximum of penetrations—considering what could be permitted structurally. The penetrations are not always utilized, but for economic reasons, all girders were made the same.

The “ladder” columns were cast in units three stories high, and have haunches to carry the perforated girders. The girders are “simply” supported on the haunches, being dowel connected. The time-saving arrangement used for joining an upper “ladder” column to the lower one involved using steel plates, threaded rods and leveling nuts, as can be seen in the photo and the drawing across page.

Wind loads on the laboratory wing are taken entirely by the post-tensioned concrete shafts, themselves; no rigid-frame action has been employed. Post-tensioning force was designed to prevent any tension



The Science Center is comprised of a laboratory wing (A), a classroom wing for the mathematics department (B), a science library (C), administrative wing (D), and a structure housing four demonstration theaters (E). Atop the five-story lab wing are structures to house three cooling towers. At left is “simply-supported” precast frame used for the math wing. Wind resistance is provided at elevator and mechanical shafts.



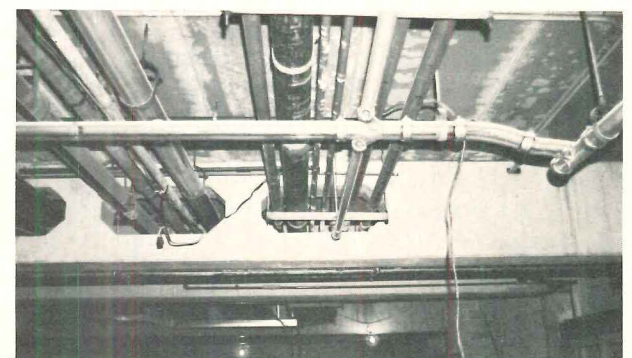
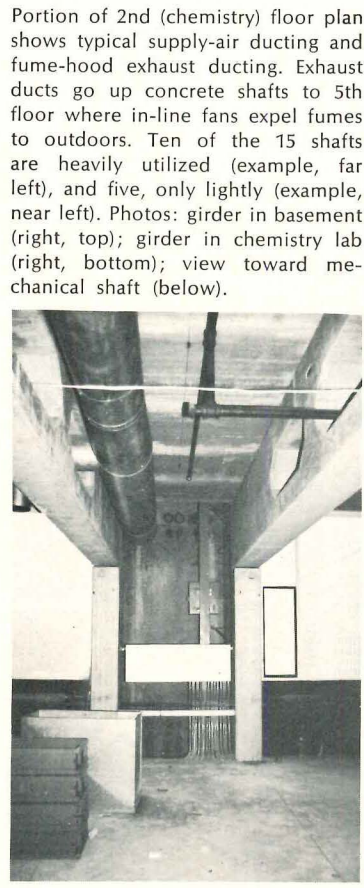
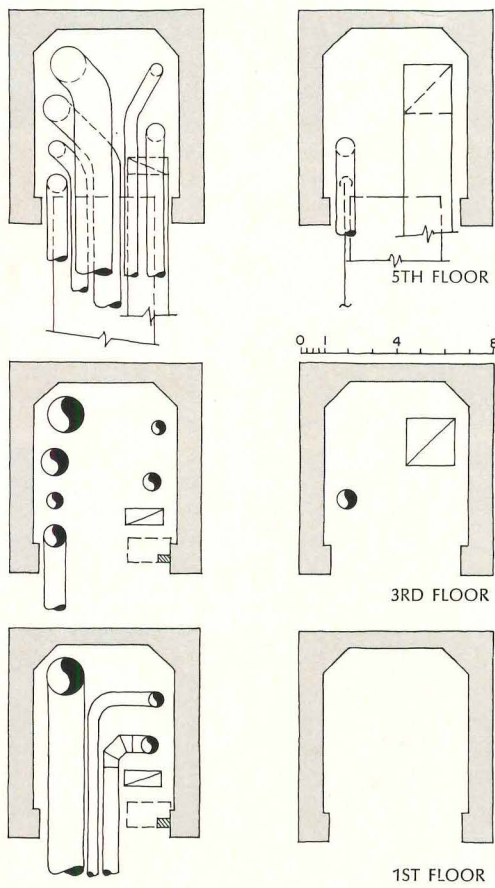
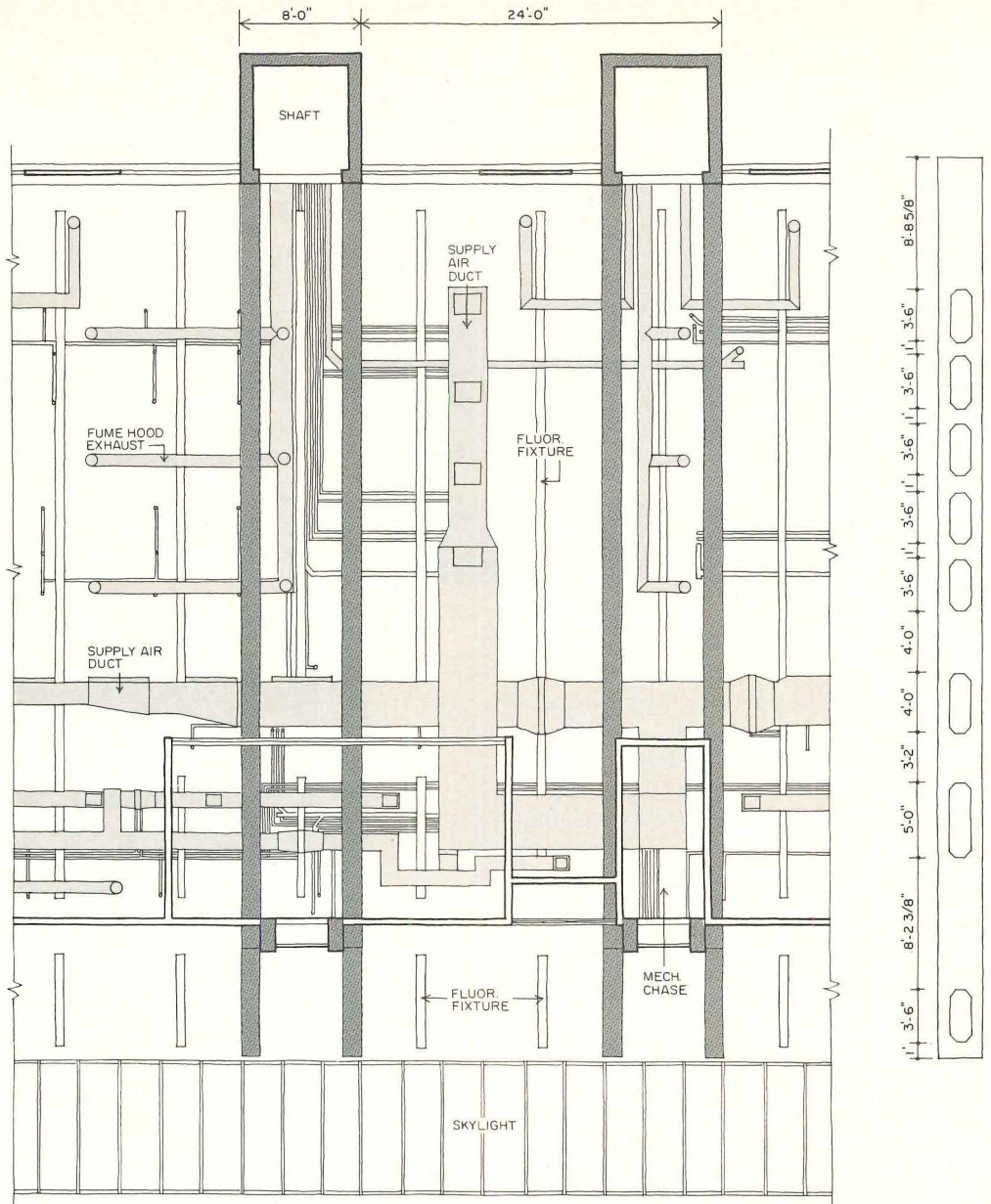


from occurring in the outer faces of the shafts when loaded by the "design" wind.

**Arrangement of supply chases means some long duct runs in the laboratory wing**

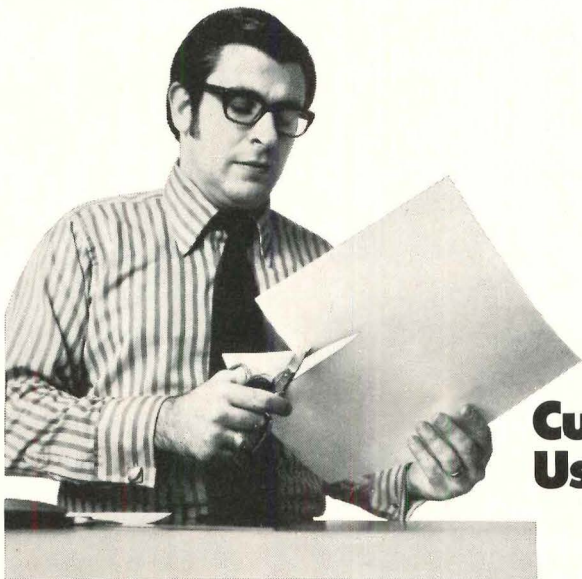
Given the choice, mechanical engineers would prefer that the ceiling space in complicated buildings such as laboratories and hospitals be clear of structural impediments. It is difficult—and sometimes impossible—to organize the myriad utilities in coherent, repeatable, modular arrangements. One approach is to have a large number of vertical shafts and short horizontal runs serving each laboratory module. When the plan precludes this, then the engineer hopes to have as many large openings as possible in beams and girders—and even then, tight conditions may occur.

The Science Center laboratory wing has 15 mechanical shafts, 24 ft apart, with 6- by 8-ft interior dimensions, running from the basement to the fifth (mechanical) floor. Mainly they are used for ducts handling exhaust from fume hoods, (12 ft apart) but they also carry some plumbing and electrical risers. On the opposite side of the building, 6- by 12-ft chases for supply air ducts are interspersed between office areas and are spaced 48 ft, 72 ft, 96 ft and 120 ft apart, which obviously results in some long horizontal duct runs, some fairly large duct sizes, and some fairly large reheat coils to be fitted in. There are also small chases at each of the "ladder" columns for piping. In the chemistry laboratory areas supply air is 100 per cent fresh air, and all exhaust is taken through the fume hoods.





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The architects estimated that a steel space frame would go in place for between \$5.00 and \$6.00 per sq. ft. This was considered too costly so the engineering firm of Ketchum, Konkell, Barrett, Nickel & Austin of Denver was retained to work with Trus Joist engineers in developing a new type of space frame.

The resulting open area measured 300 ft. x 102 ft. with an 18 ft. overhang around most of each building to provide covered space for outdoor classrooms as well as an exterior corridor.

The roof area of the two schools totaled 95,700 sq. ft. The entire roof structure of both schools including the space frame, laminated beams for carrying members and plywood roof deck went in place for under \$3.00 per sq. ft. This resulted in a minimum of \$200,000 in savings when compared to the cost of a similar steel structure.

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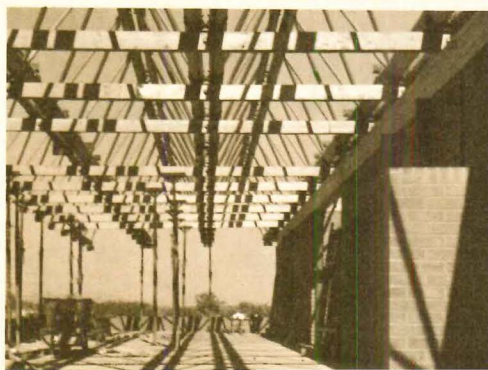
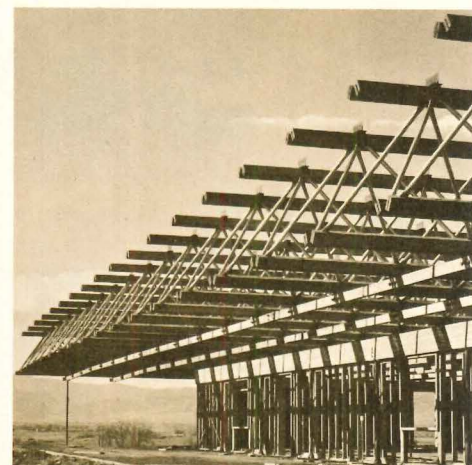
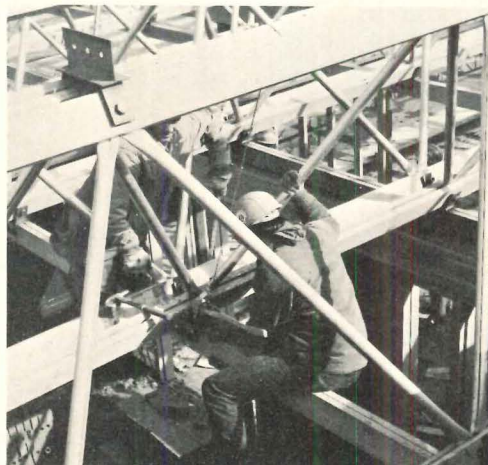
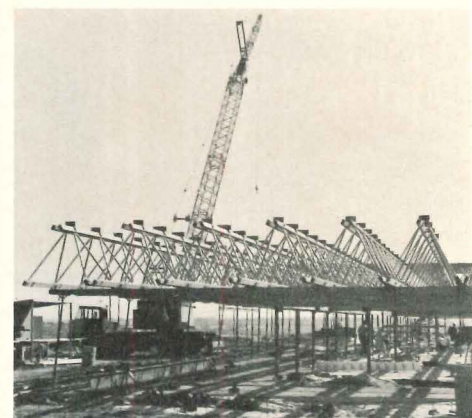
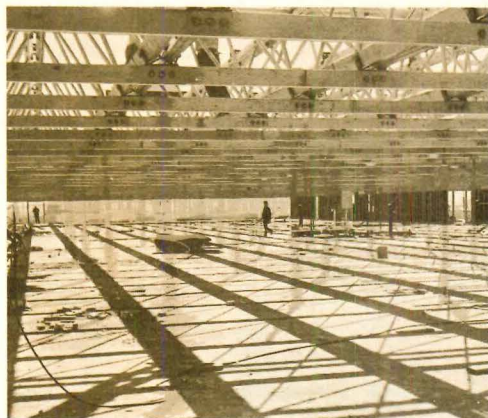
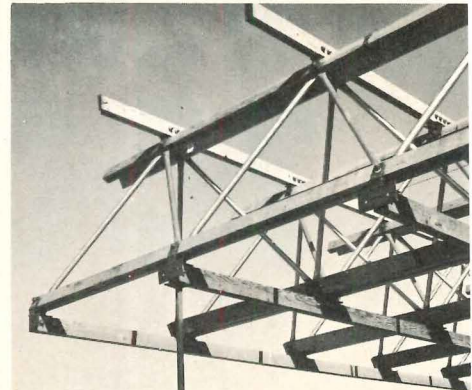
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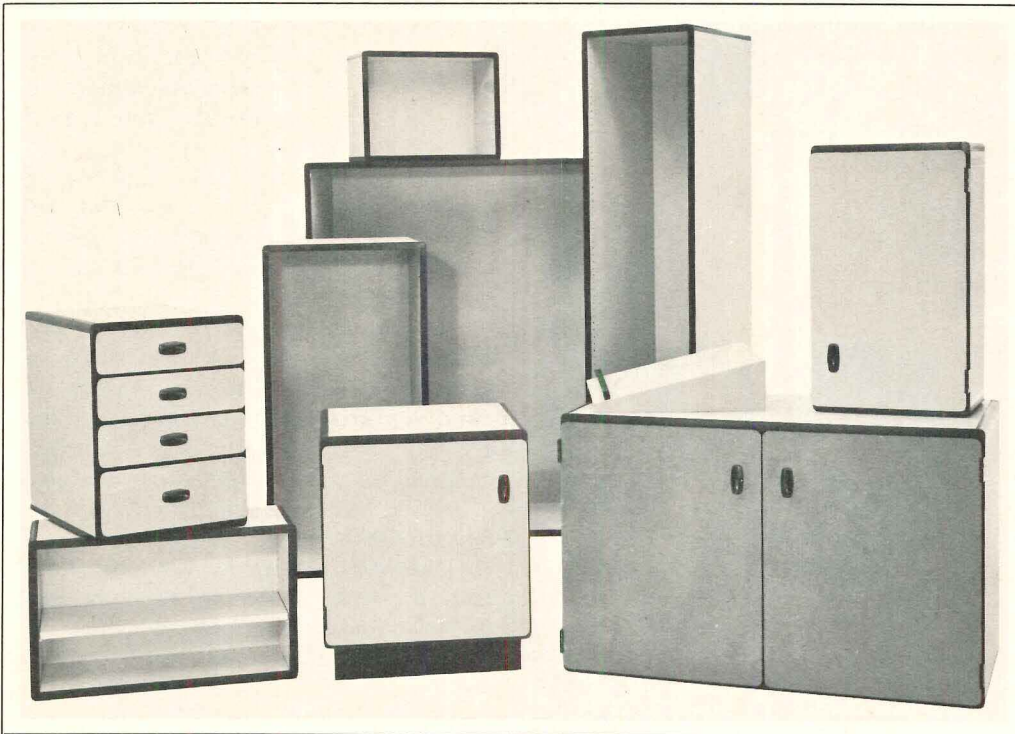
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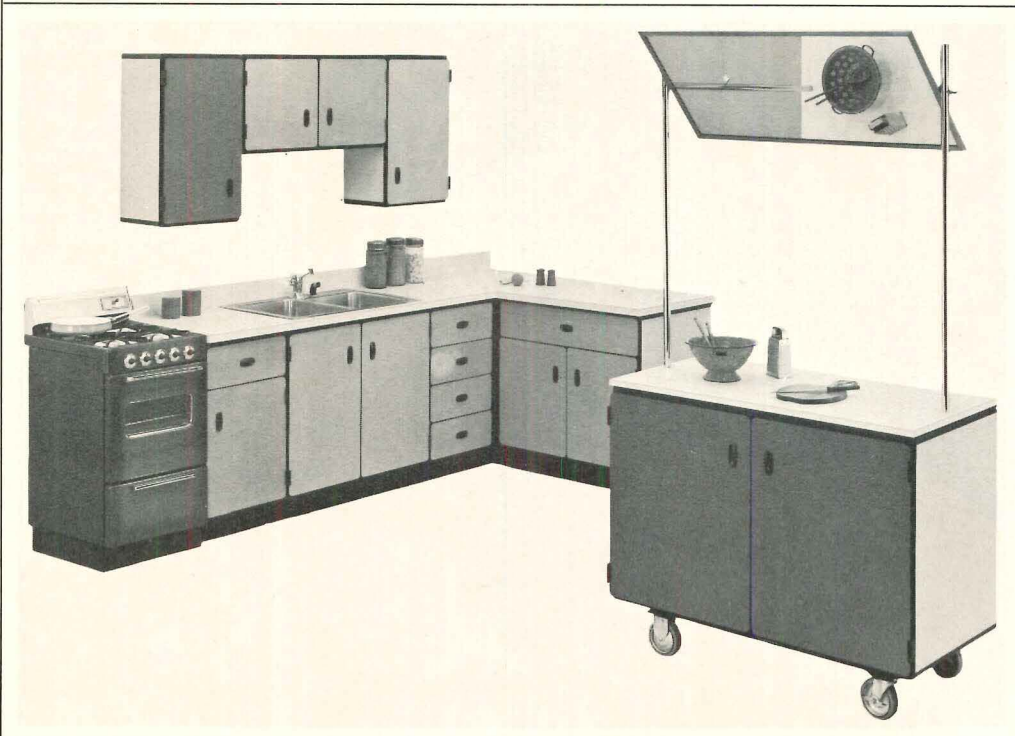




**Modular furniture meets rigorous demands for flexible school spaces**



Storage shells, or cabinets (above), are open-face, box-like modules available in a number of sizes, and may be used singly or stacked. Openings around the edge of every panel accommodate components such as doors and drawers. Corner kitchen (below) has cabinets fixed to walls and on floor bases, with counter-top surface and sink. Mobile demonstration unit has cabinets on a caster base.



The Spectra Series is a line of modular furniture designed for standard school use, open-plan schools and other applications where lightweight, mobile, multi-functional furniture is required.

The Spectra Series includes a coordinated group of furniture (Spectra II); space dividers (Spectra I); and modular cabinets, or storage shells, which receive a selection of components, accessories and surfaces (Spectra III).

The storage shells, or cabinets, are adaptable in themselves. Individual modules can be used singly, stacked, fixed to walls, or placed on casters or bases. Every shell surface is a potential top. A long, narrow unit can be used horizontally as a low, counter-top cabinet or vertically as a tall storage unit.

Spectra III components, accessories and surfaces include drawers, doors, shelves, tote trays, writing and counter-top surfaces, clips for holding shelves, guides for drawers, dividing channels for vertical panels, and hinges. Precision-drilled holes spaced in 1½-in. increments around the inside edge of every cabinet panel allow flexible positioning of components.

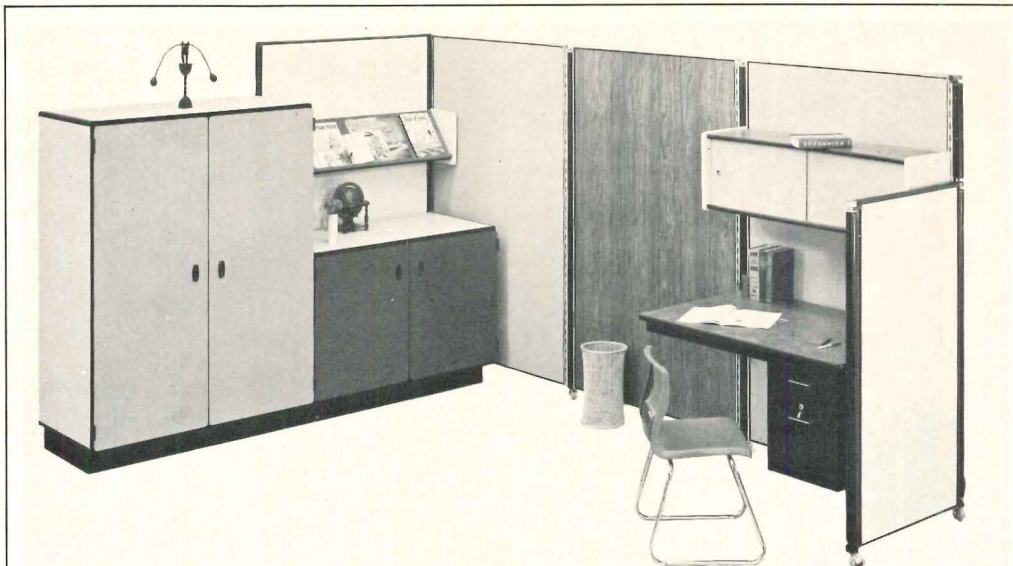
Cabinets are easily modified after installation by adding or removing doors, drawers, or shelves. All modules are designed to receive a variety of interchangeable interior and exterior components. Shells and components are available in a wide range of sizes.

Spectra III features two engineering advancements. Lightweight panelized construction and *Spectra-Mold* corners, a construction method using no nails, screws, or glues, produce shells weighing approximately 30 per cent less than conventional, particle-board panels and a shell which is three times stronger than cabinetry with conventional joints. A finished shell becomes a molded integral unit which retains its form.

All surfaces of Spectra III cabinets are plastic-laminated for stain and wear-resistance. Five compatible colors are available for backs, doors, and drawer fronts. A neutral color is standard on all interior and exterior shell surfaces. A variety of working surfaces is available for units with special tops. All Spectra III cabinet surfaces are compatible with Spectra I space dividers and Spectra II school furniture.

Spectra II furniture includes basic chairs, chair desks, tablet-arm chairs, and





activity tables. Plastic shell seats of every chair feature a distinctive curve at the juncture of chair back and bottom designed for maximum seating comfort over periods of time. Simultaneously, chairs stack easily. Basic chairs are offered in eight heights and three graduated shell sizes. Chairs are available with four conventional legs or a "sled" design base consisting of light-weight, rounded steel structures which move easily from area to area across carpet or floor.

Activity tables are available in round, rectangular or trapezoidal shapes. Both activity tables and desks feature T-shape legs which allow lateral movement without tipping, and both accommodate tote trays or tote desks as drawers.

Tote desks are unusually versatile components. Equipped with plastic handles, they can serve as portable desks placed on the floor, a student's personal briefcase, or storage cabinets.

Spectra I space dividers provide sight and sound barriers for use singly or grouped as study carrels or teacher stations. Surfaces include tackable vinyl, and a writing and projection surface. Dividers, mounted on casters or glides, are movable.

Fixed furniture compatible with the Spectra Series is also available.

Cabinetry is made by Mutschler, furniture and space dividers by Peabody, both divisions of Modernfold Industries, an American Standard company ■ Peabody/Mutschler, North Manchester, Ind.

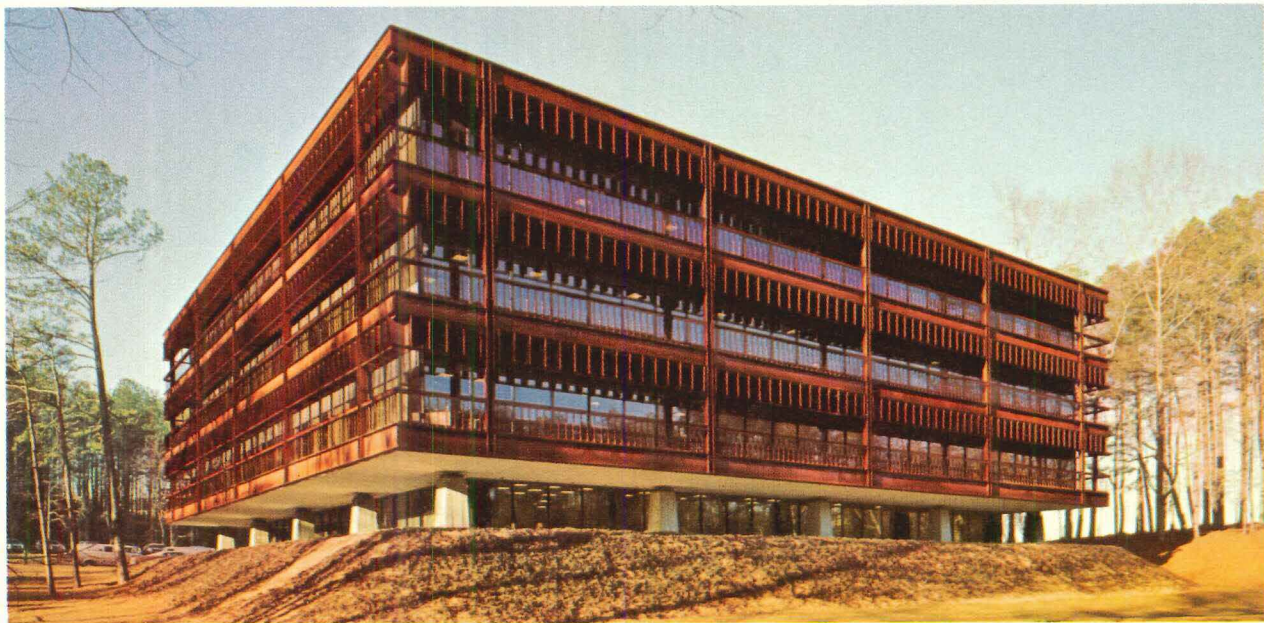
Circle 300 on inquiry card  
more products on page 148

Accessories supplied with space dividers in this teacher station (above) include a magazine rack, overhead cabinet, writing surface and drawers. Chairs (center) feature design curve for comfort, and easy stackability. An angled counter-top combined with four modules creates a work station (below). Study carrel uses space dividers with accessories. Mobile file box is simply a shell on casters.





# Fluid-filled exterior columns let the beauty of bare steel show through.



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In order to retain the honest look of a bare steel frame, the designers avoided conventional exterior fireproofing methods, and filled the columns with fluid.

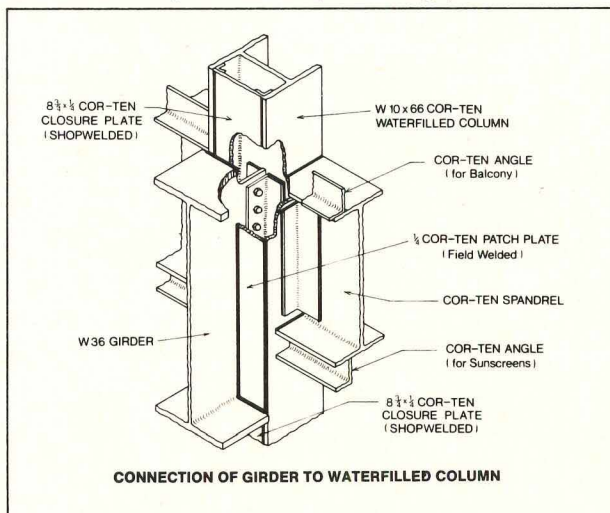
The W 10 x 66 exterior columns are filled with 1,800 gallons of water, antifreeze, and rust inhibitor.

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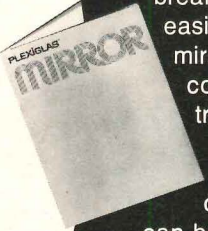


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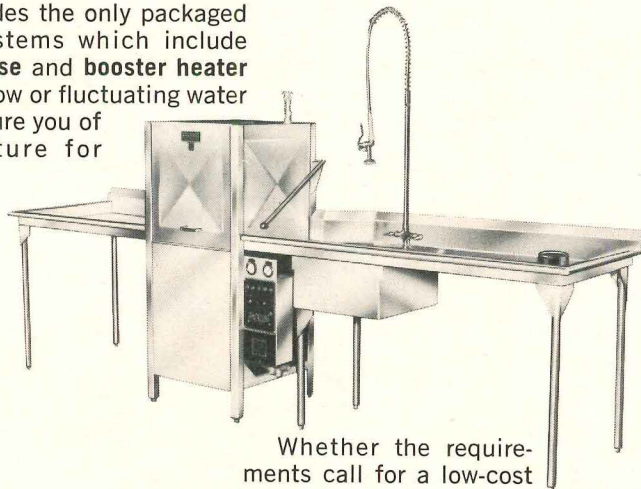


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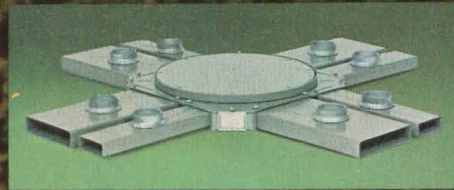
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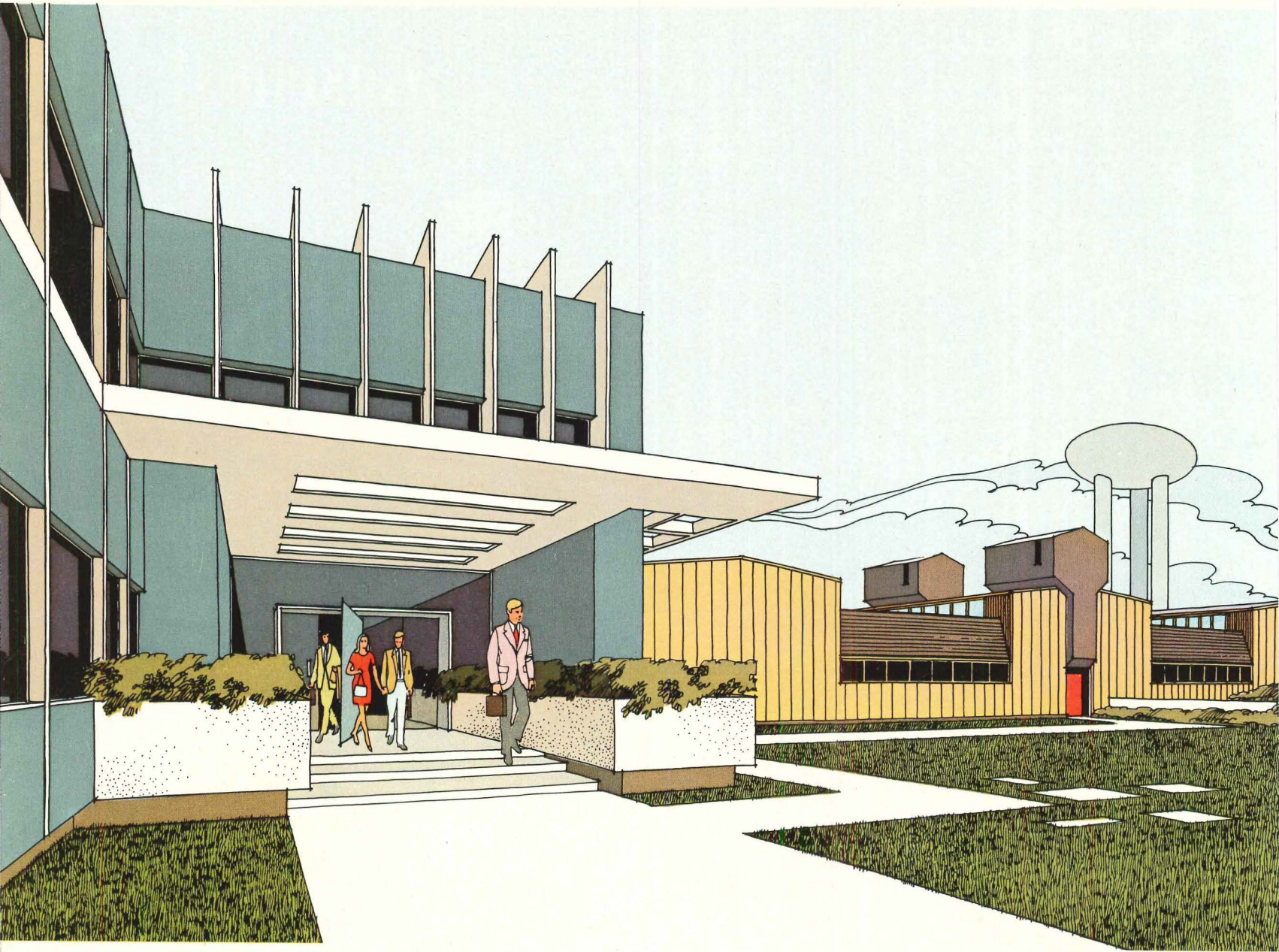
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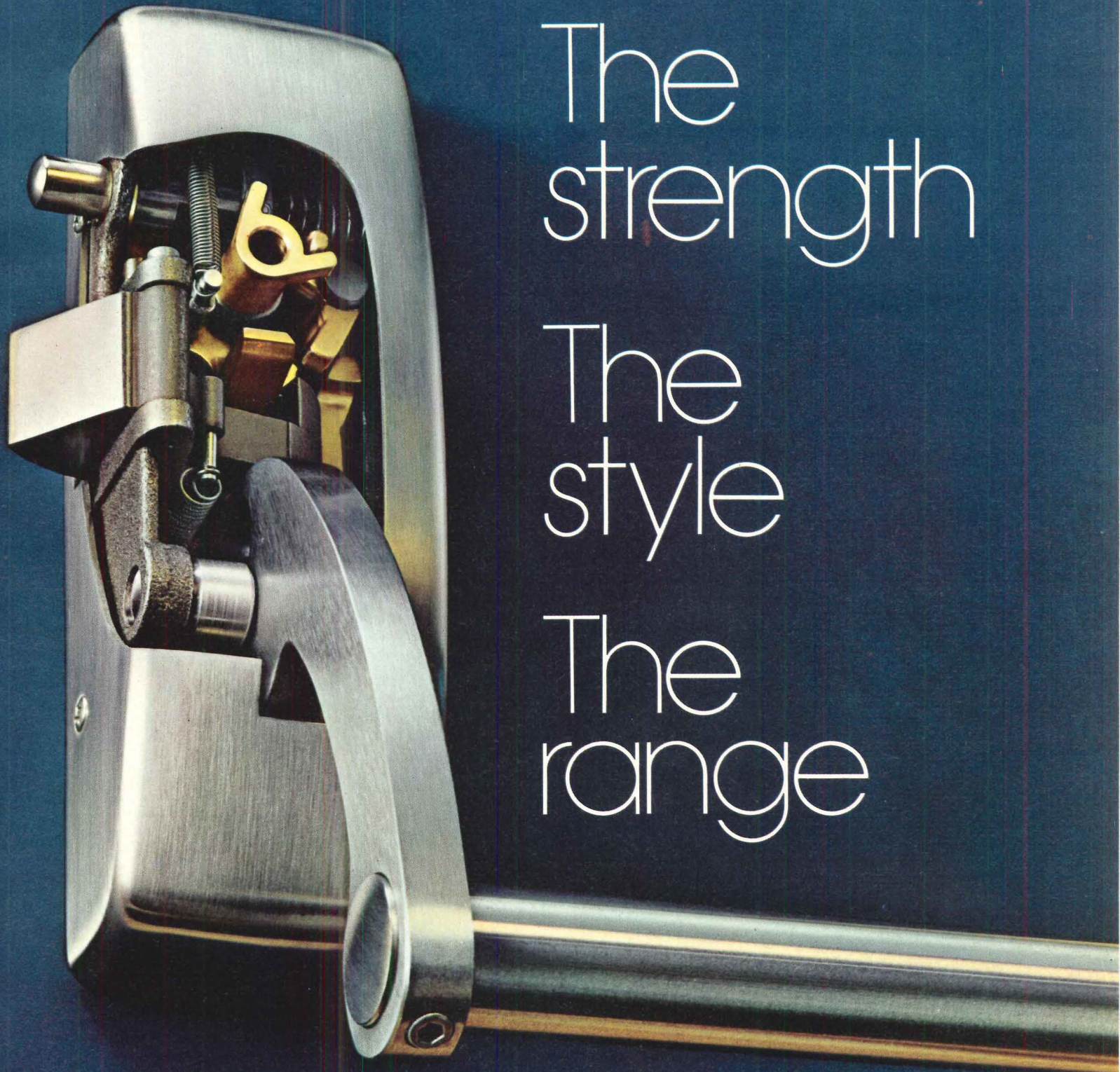
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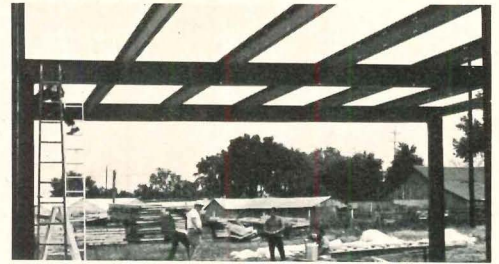
continued from page 136



**LATERAL FILE** / Two-drawer unit comes in 30-, 36-, and 41½-in. widths. Interlock system prevents one tray from opening while the other is extended. File accommodates letter- and legal-size folders. ■ Mosler, Hamilton, Ohio.  
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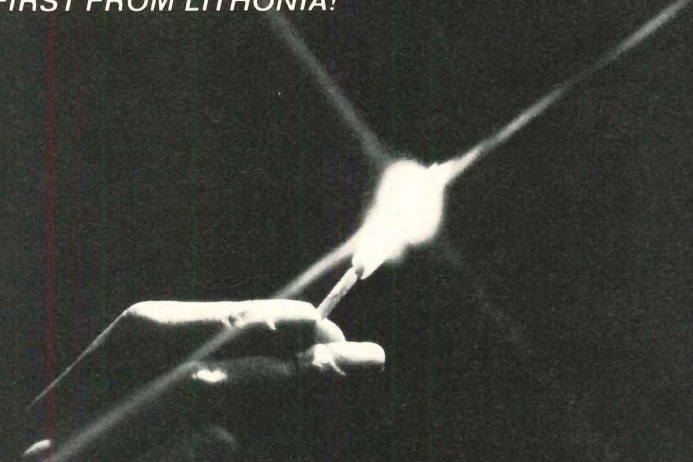


**LAMPS** / Shades are molded in Plexiglas and trimmed with chrome, and are available in five colors. ■ Lis King, Montclair, N.J.  
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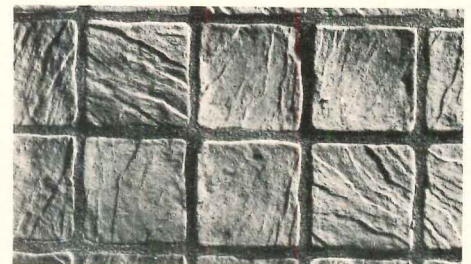
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**FURNISHINGS SYSTEM** / Basic elements are a tuck-away queen-size bed mounted in a "fifth wall" or partition, and a companion table which stores halfway into the partition as a nightstand. By day, it is unfolded into a desk table. ■ Sico, Inc., Minneapolis.  
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**LIGHTING SYSTEM** / H.I.D. 400-watt mercury luminaires recessed on 6-ft centers in alternate coffers comprise the system. In the installation shown here, nine fixtures achieve a lighting level of 240 footcandles. ■ Holophane Co., Inc., New York City.  
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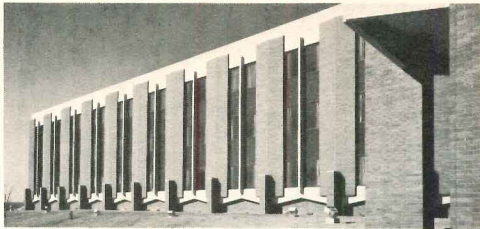


**CLAY TILES** / Sculptured surface, irregular edges and subtle shadings create a weathered look. Tiles are available in 12-in. square sheets. ■ Latco, Los Angeles.  
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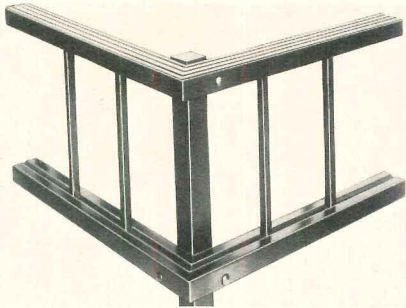
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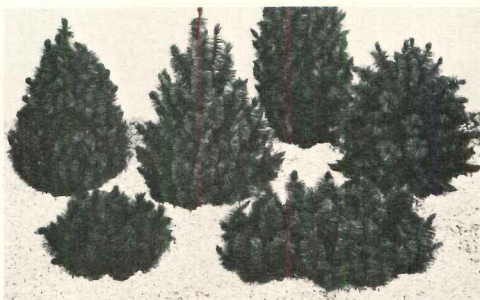
**STEEL WINDOWS** / These 35-ft tall windows were installed in five sections. Three sections of clear glass are interspersed with two of opaque spandrel glass, resulting in a vertical unit that functions as both window and window wall. ■ Hope's Windows Inc., Jamestown, N.Y.

Circle 307 on inquiry card



**BALCONY/STAIR RAIL** / Aluminum alloy rail eliminates the need for welded joints by using patented interlocking aluminum extrusions. ■ Pico Safe Stairs Co., Hyattsville, Md.

Circle 308 on inquiry card



**ARTIFICIAL SHRUBBERY** / All styles anchor easily to soil, solid concrete, crushed stones or gravel. A complete maintenance-free line is available. ■ Marathon Carey-McFall Co., Philadelphia.

Circle 309 on inquiry card



**COMPOSITE FLOOR SYSTEM** / Components include a series of non-cellular and cellular sections for floors with integral electrical raceways on several modules as well as integral secondary air distribution ducts. The system, when used in composite beam construction, can provide significant savings in structural steel costs. ■ H. H. Robertson Co., Pittsburgh.

Circle 310 on inquiry card

more products on page 160

# We're doing something about high-rise garbage.

Apartment building owners and developers are the people most adversely affected by recent legislation restricting the use of refuse incinerators.

Faced with the alternative of upgrading present equipment or installing a system that complies with the new regulations is a tough choice.

Belgium Standard has made the choice easier by developing a line of refuse compaction equipment custom designed for any size apartment building.

Refuse fed into the compactor by hand or through conveniently located garbage chutes is compressed down to one-quarter of its original volume and packed into easy-to-handle plastic bags or two to six cubic yard metal containers.

Belgium Standard Compaction Systems eliminate air-polluting emissions, operate virtually maintenance free, and are usually less expensive than upgrading existing incineration equipment.

We're doing something to alleviate the problems of high-rise garbage.

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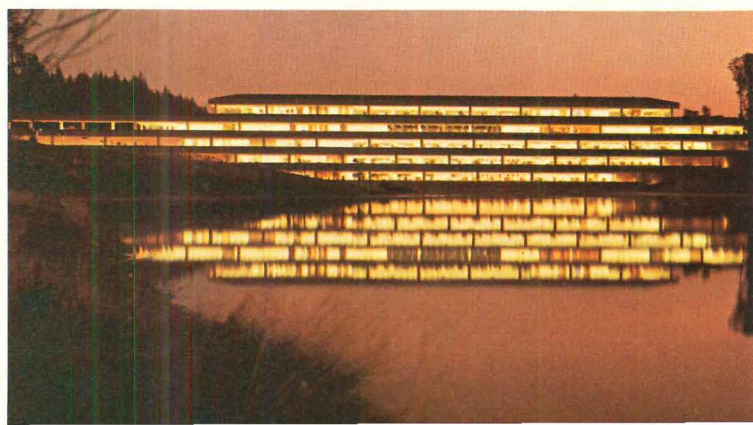


The Weyerhaeuser Building, Tacoma, Washington  
Owner: Weyerhaeuser Company  
Architects: Skidmore-Owings & Merrill, San Francisco  
Glazing Contractor: Cobbledick-Kibbe Glass Company, San Francisco  
General Contractor: Swinerton & Walberg, San Francisco

## Clear, heavy-duty glass gives the new

Architects Skidmore-Owings & Merrill took a not-so-new product — clear glass — and gave it a new twist in the Weyerhaeuser Corporate Headquarters building. Result: long, uninterrupted expanses of glass that afford a magnificent view of the surrounding countryside.

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## Weyerhaeuser Building a non-stop view.

up to 10' x 25'. So we had no problem supplying the 12' x 7' lights called for here—in ½" thickness.

With glass that thick, the architects were able to butt the vertical edges, seal them with ¼" of silicone and eliminate mullions.

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send you glass strength information so that you can design buildings with non-stop views. Simply contact your L-O-F Architectural Representative or Architectural Department, Libbey-Owens-Ford Company, Toledo, Ohio 43695.



**Libbey-Owens-Ford**

*For more data, circle 69 on inquiry card*





**Building:** GENEVE TOWER  
Cedar Rapids, Iowa

**Architects:** Smith, Voorhees, Jensen Associates  
Des Moines, Iowa  
(These gentlemen have found Glaros panels so successful that they have also specified them for a \$4,300,000 high school complex in Des Moines.)

**General Contractors:** Rinderknecht Construction Co.  
Cedar Rapids, Iowa



# We'll send you a piece of this apartment building. Free.

## To introduce you to the Glaros Insulated Metal Panel system.

If the name Glaros sounds Greek to you, it's okay. Not too many architects have heard of us.

But we're convinced once you look at our insulated metal panel system, you'll never use our competition.

And, you'll be as eager to specify our panels as the architects who designed the apartment house on the left.

Our panels are solid insulated building panels, 16" cover width, with rigid, foam-in-place urethane insulation bonded to two metal skins.

But there, all similarity with other urethane or fiber glass insulated metal panels ends.

The exclusive, patented\* Glaros interlocking joint is a *true interlocking joint* that has *no thermal conductance at the joint*. (See the small photo and note what other benefits it offers to architects.) This means absolutely minimum penetration of air or moisture, with uninterrupted insulating effectiveness at the joint.

But there's more to the Glaros story.

1. Better insulation with a .061 "U" factor. The only 2" panel with this insulating value. It would take three 2" fiber glass panels

\*U S. Patent No. 3,535,844

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2. Longer spans. In fact, up to 16.4' clear span, longest span of any 2" foam insulated panels. Eliminates unsightly girts.

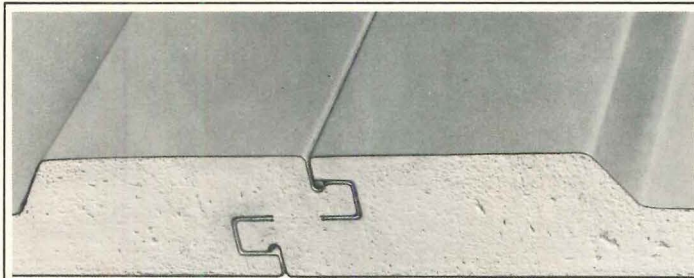
3. Surface designs and colors. Your choice of four different panel designs in either smooth or stucco embossed surfaces (and matching flashings). Many standard or custom colors in long-life paints, laminates, or vitreous finishes. And either high-strength steel or Cor-Ten in lengths up to 30' or aluminum in lengths up to 18'.

4. Finally, the Underwriters Laboratories, Inc. Label for 25 Flame Spread or less classification, plus Factory Mutual acceptance.

All of this makes Glaros panels perfect for schools, high rises, and every other kind of residential, commercial, institutional, or industrial building.

The next step is to send for a sample and see for yourself. Write Don Schmuck, V.P. Sales, or call him at 412-351-4117.

If you don't agree they're everything we say they are, give us a piece of your mind.



The exclusive Glaros interlocking joint means no through thermal conductance. No exposed fasteners. No field caulking. No wind vibration problems. No water or air infiltration. No loss of joint seal due to expansion or contraction. And, no expensive erection costs. Send for this sample.

 **GLAROS**  
Products, Inc.

Clara Street, Rankin (Pittsburgh), Penna.

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ARCHITECTURAL RECORD February 1972 157



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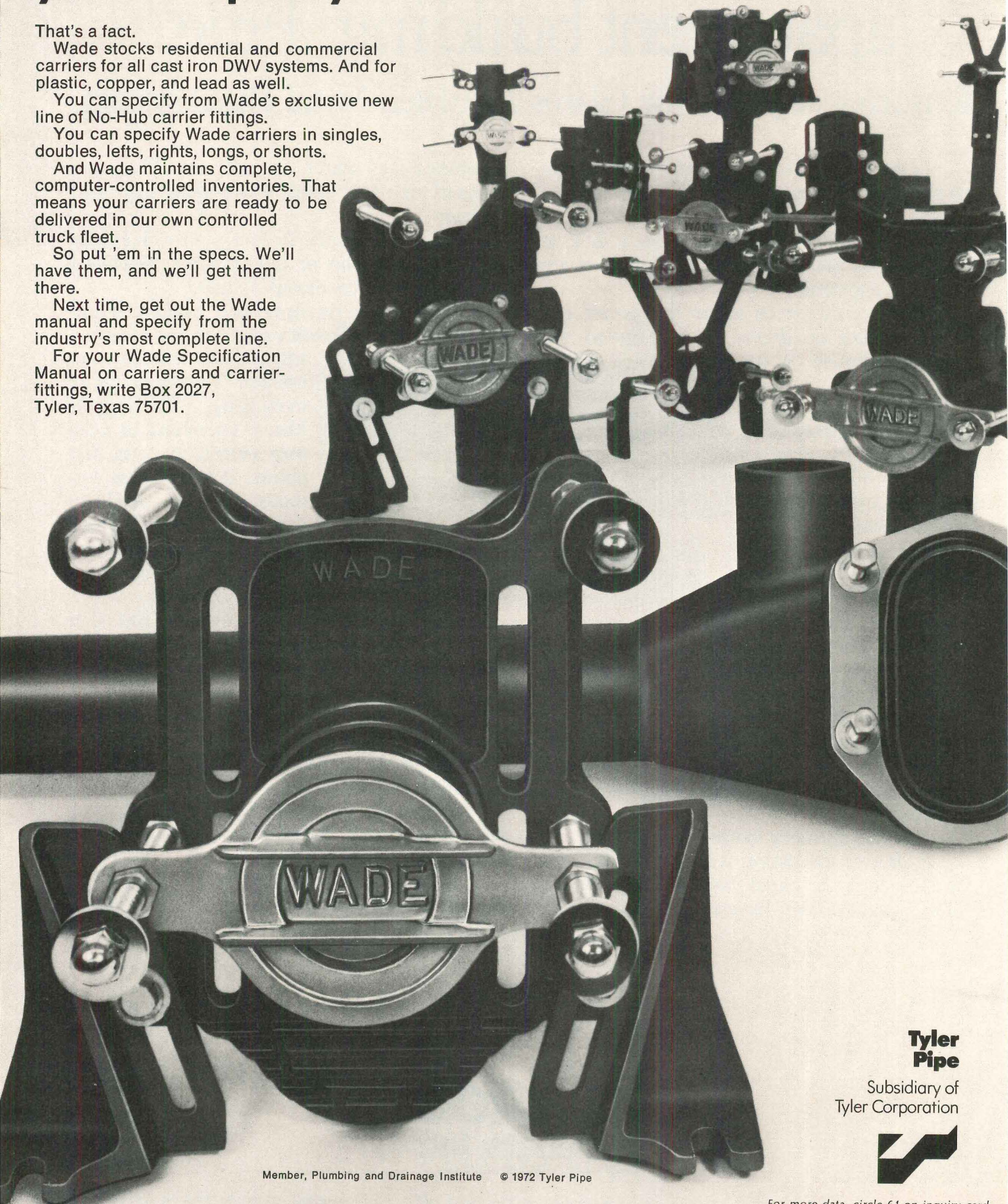
You can specify Wade carriers in singles, doubles, lefts, rights, longs, or shorts.

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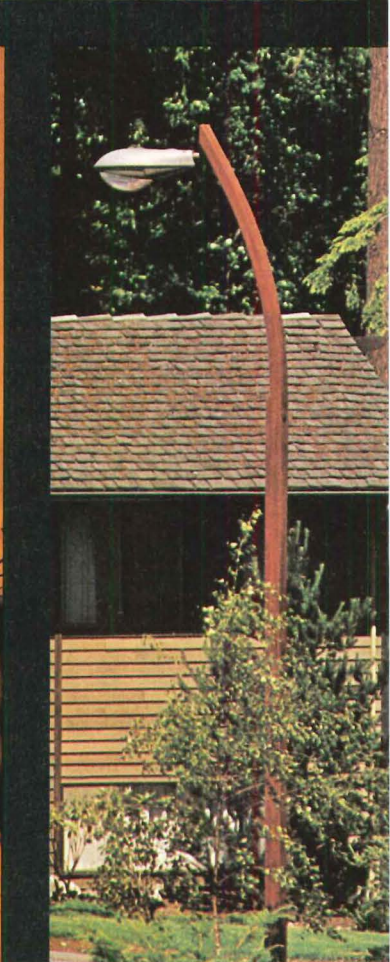
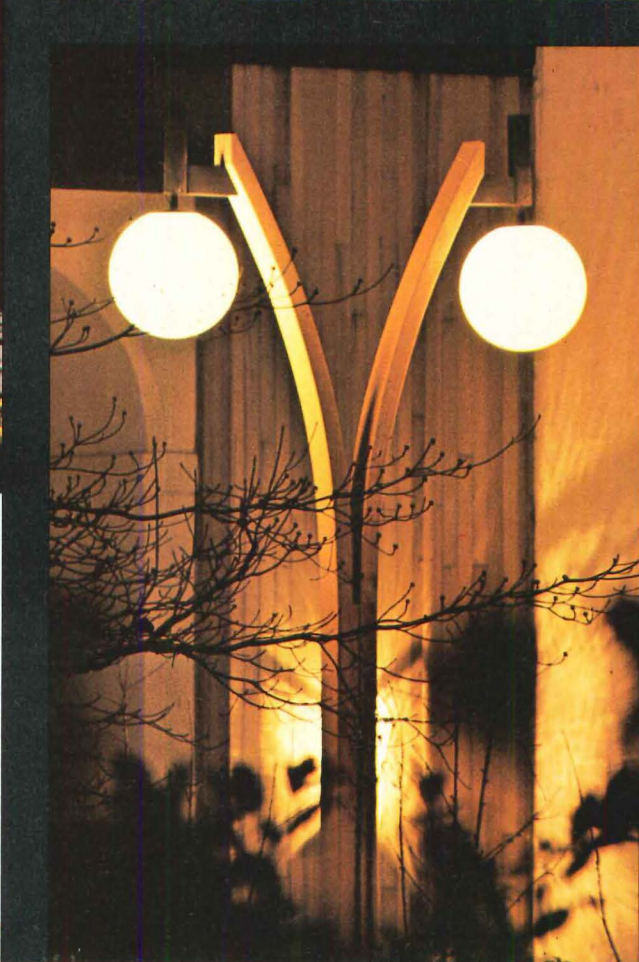
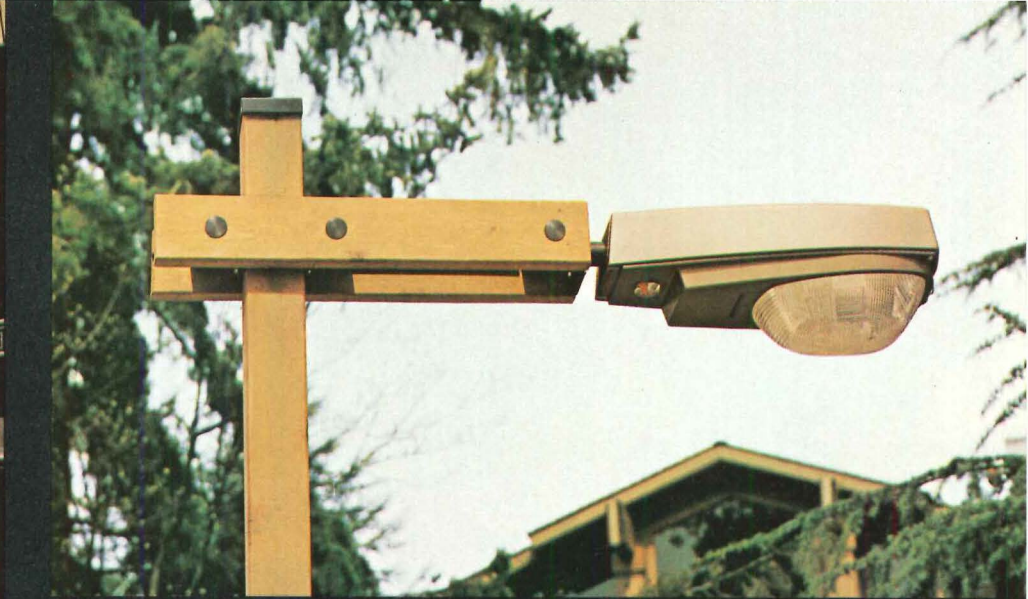


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**Weyerhaeuser**

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Architects - Rich, Lang & Cote, Inc.  
 Engineer - Hubbard, Tracey & Blakeley  
 General Contractor - Thos. O'Connor Co.  
 Plumbing & Heating - P. J. Riley & Co.

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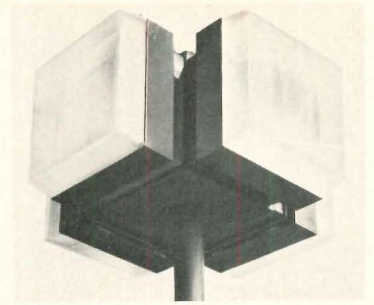
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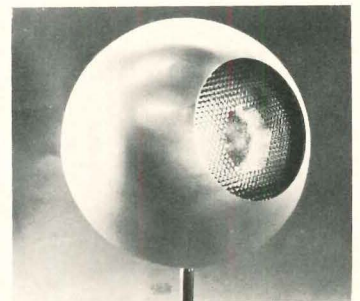
**OUTDOOR LIGHTING FIXTURE** / Luminaire can be wall-mounted, pole-mounted singly or in clusters, or used as a component of street furniture. Mounting hardware and ballast housing are concealed. ■ Holophane Co., Inc., New York City.

Circle 311 on inquiry card



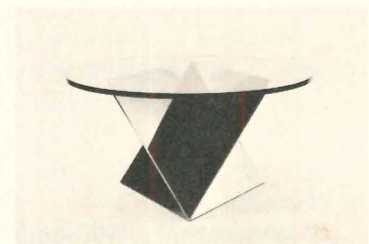
**INSULATION PANELS** / Developed to withstand light vehicular loadings above occupied areas, panels are lightweight, easily installed, and accept hot mopping with asphalt pitch. ■ Apache Foam Products, Linden, N.J.

Circle 312 on inquiry card



**LIGHTING FIXTURE** / Applications include accent, decorator or display lighting. Matte black, white or polished finishes are available. The 8-in. diameter fixture can be adjusted to horizontal and vertical positions without tools. ■ Keene Corp., Wilmington, Mass.

Circle 313 on inquiry card



**TABLE** / Two stainless steel planes intersecting at 90-degree angles form a base for a round, glass top. Designer is Charles Wincock. ■ Scope Furniture, Inc., New York City.

Circle 314 on inquiry card

more products on page 168

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For more details, write for our new terrazzo brochure. Medusa Portland Cement Company, P.O. Box 5668, Cleveland, Ohio 44101.

\*Cost Study was conducted by Terrazzo Tile and Marble Association of Canada.

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SIDEWALK,  
NEW YORK, N.Y.**

Art Design: Alexander  
Calder, Paris, France.  
Terrazzo Contractor:  
Foscato Bros., Hunting-  
ton Station, L.I., N.Y.



# WHY you should specify a Terrazzo floor.

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Architect: Lane, Riebe, Weiland, Ann Arbor. Gen. Contractor: A. Z. Shmina, Detroit. Terrazzo Contractor: Palombit Tile Co., St. Clair Shores.





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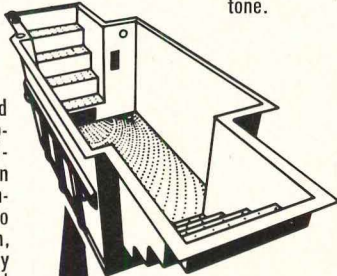


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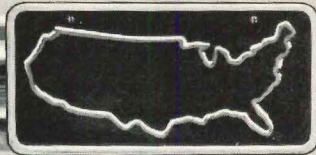
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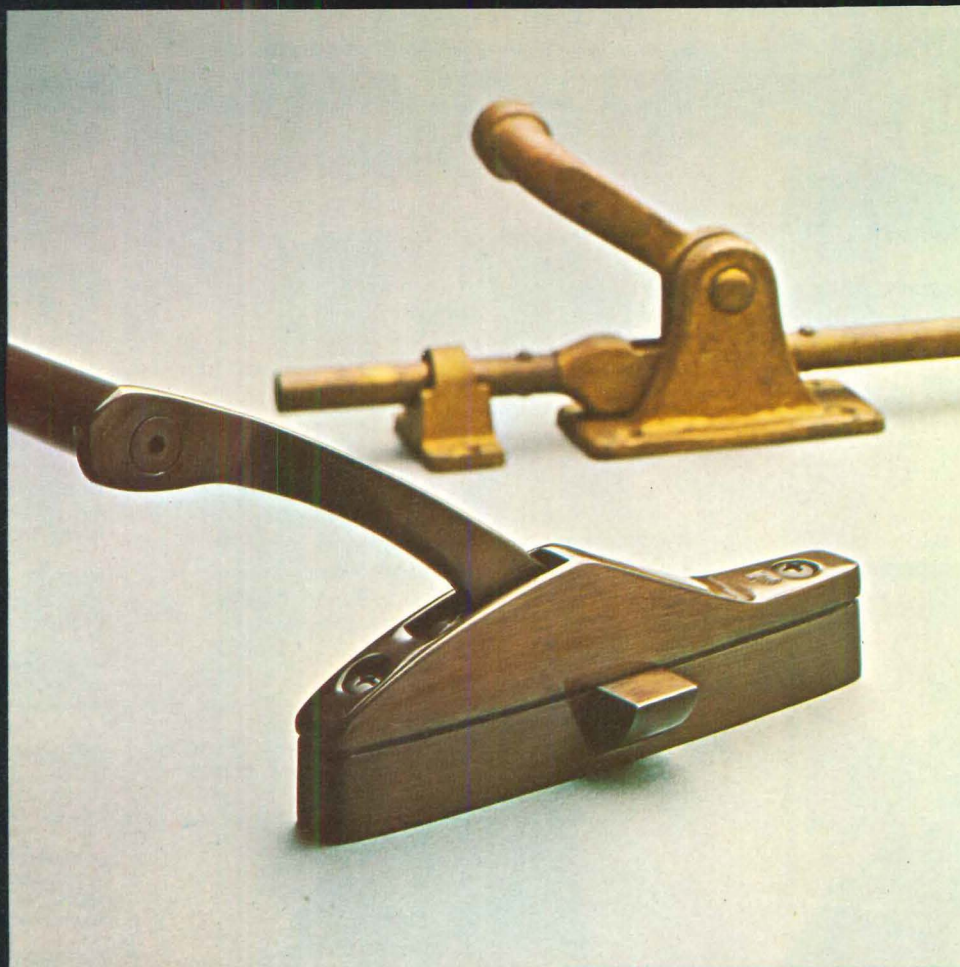
See catalog in Sweets. Write for Bulletin L-7175, specifications, application data.

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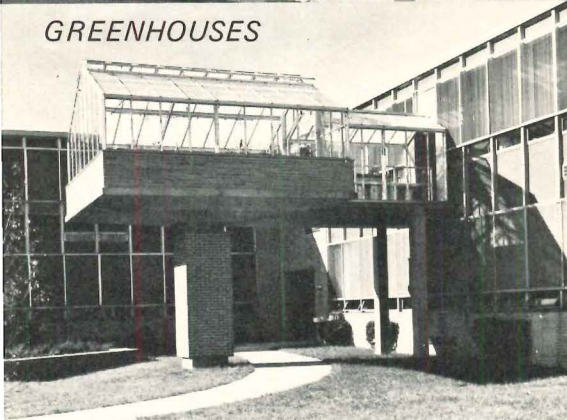
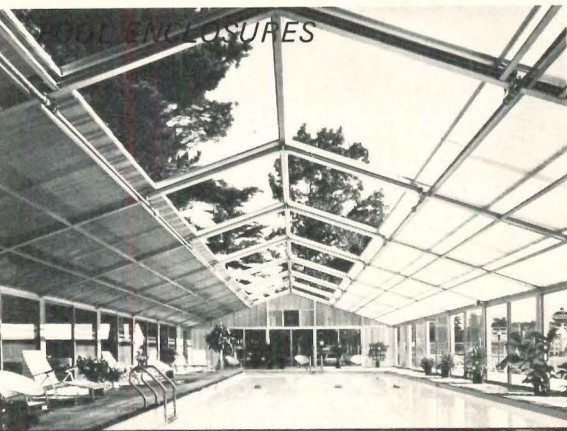


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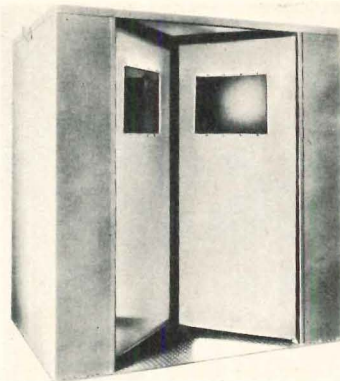
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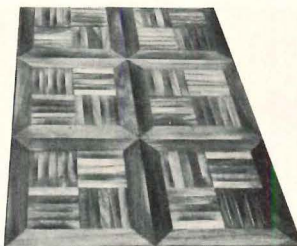
**REVOLVING DOOR UNIT** / Preassembled and ready for on-site installation, package consists of four weatherstripped doors constructed of plywood faced with aluminum sheets. The entire unit is furnished with an enamel finish. ■ J-R Greene, Inc., Clifton, N.J.

Circle 315 on inquiry card



**WASH CENTER** / Foot-pedal operates temperature and volume control valve. Factory-assembled unit recesses in a 5-in. wall. ■ Bradley Washfountain Co., Menomonee Falls, Wis.

Circle 316 on inquiry card



**HARDWOOD FLOORING** / The manufacturer recommends Asian Ironwood flooring for use in heavy traffic areas. Other applications include on-grade and radiant-heated floors. ■ Bangkok Industries, Philadelphia.

Circle 317 on inquiry card



**MODULAR CEILING SYSTEM** / Developed to meet the demands for reduced floor to ceiling space in high-rise office buildings, system allows rearrangement of acoustical, lighting and air distribution components without additional hardware or experienced mechanics. ■ Armstrong Cork Co., Lancaster, Pa.

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Is aggregate distribution uniform? Is the aggregate graded and blended to achieve desired color and texture effects? How about matrix color? Are there any noticeable voids? (Mo-Sai has special techniques to assure uniformity of texture and color in aggregate and matrix, and uniform depth of aggregate exposure by the unique Mo-Sai process.)

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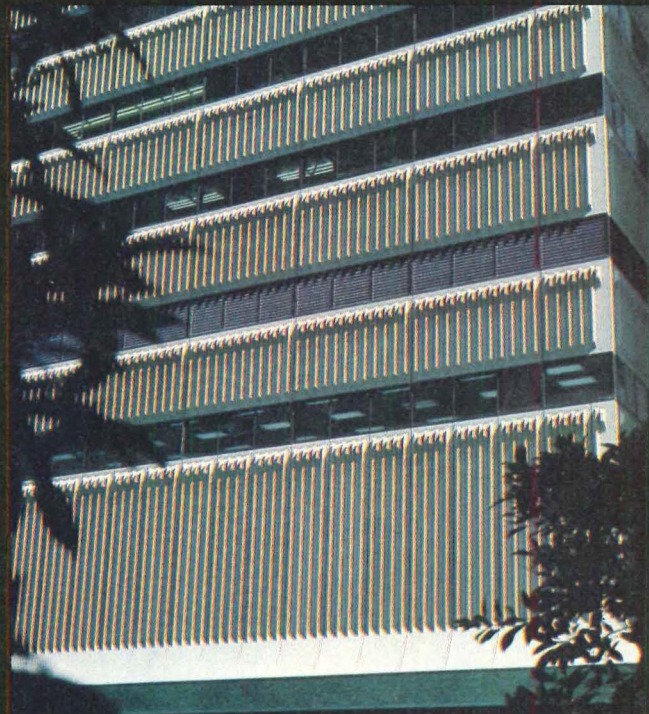
How will the building look five, ten, or twenty years from now? (Some Mo-Sai projects have been erected for more than thirty years—and show little signs of



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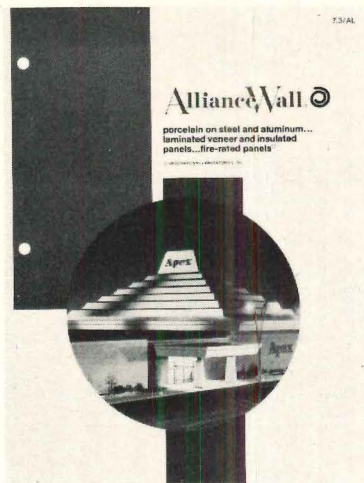


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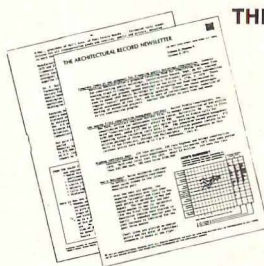
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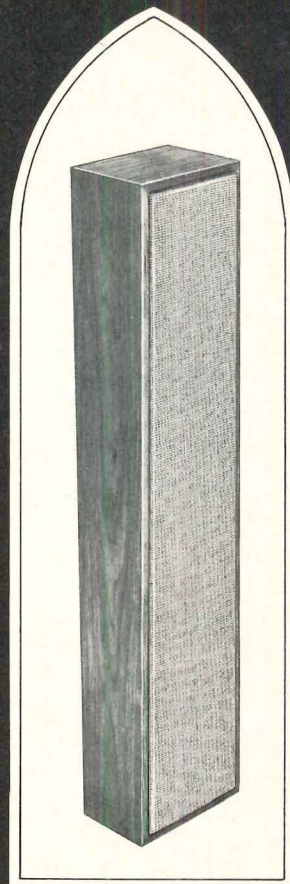
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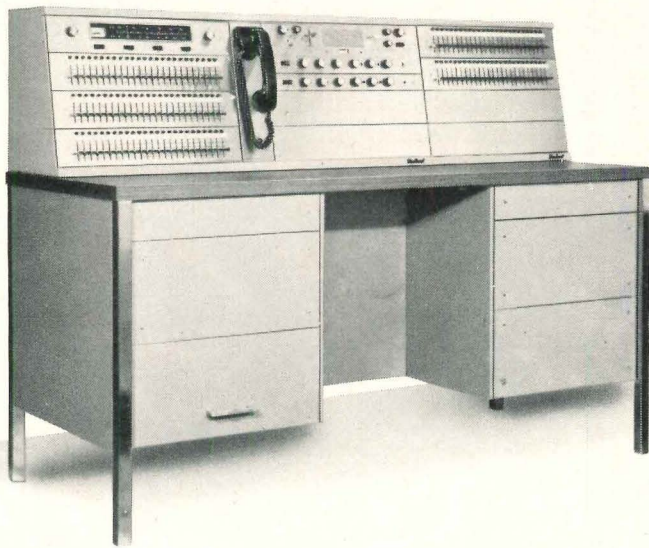
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## OFFICE NOTES

### NEW FIRMS—FIRM CHANGES

Robert Doak Davis is president and Harrison Lewis Whitney is executive vice president of the newly formed firm **Organization for Planning and Architecture**. The company has moved to new offices at 1094 South Marengo Ave., Pasadena.

Duchscherer and Oberst, consulting engineers, announced the formation of a new partnership organization that is expanding into the fields of architecture and planning. **Edwin R. Schackleton Jr.** is joining the Buffalo-based firm as a full partner. The local organization changed its name to **Duchscherer and Oberst and Shackleton** as of January 1, 1972.

**L. E. Tuckett, AIA** announces that he has joined in full partnership with his firm's former associate, Bennie Thompson. The new firm now occupies larger quarters at 441 Lexington Avenue, New York City.

The firm of **Banwell, White & Arnold Architects, Inc.**, formerly The Office Of Roy W. Banwell, Jr., AIA has recently been formed in Hanover, New Hampshire.

**Albert Schunkewitz, Architect** is now located at a new address: 715 Park Avenue, East Orange, New Jersey 07017. Their New York office is located at 140 Cedar Street, New York, New York 10006.

**Morrison Gottlieb, Inc.**, in order to have larger space and better facilities, has moved from 40 East 49th Street to 555 Fifth Avenue, New York, New York 10017.

**Helm Roberts, AIA, AIP**, announces the new location of his office at 153 Walnut Street, Lexington, Kentucky 40507.

The architectural partnership of **Meier and Thompson** has relocated its offices to 6101 North College Avenue, Indianapolis, Indiana 46220.

**Warren Platner Associates Architects** has moved to larger quarters at 18 Mitchell Drive, New Haven, Connecticut 06511.

The office of **Gwathmey Siegel Architects** is now located at Carnegie Hall Building, 154 West 57th Street, New York, New York 10019.

**Warren Gilbert & Associate, AIA** is pleased to announce that Stanley G. Gould, AIA has been made a partner. The firm, under its new name, Gilbert & Gould, A.I.A. is now located at 168 Jackson Street, San Jose, California 94112.

**Robert L. Bailey**, a designer in the Portland offices of Skidmore, Owings & Merrill, architects, has been named a participating associate.

**H. Royce Mitchell** has been named vice president for new business development for Heery and Heery, Architects and Engineers.

The Office of Mies van der Rohe announce the designation of two new associates: **Ian Lea and Rainer Schildknecht**.

**William W. Caudill, FAIA**, has been  
*continued on page 188*



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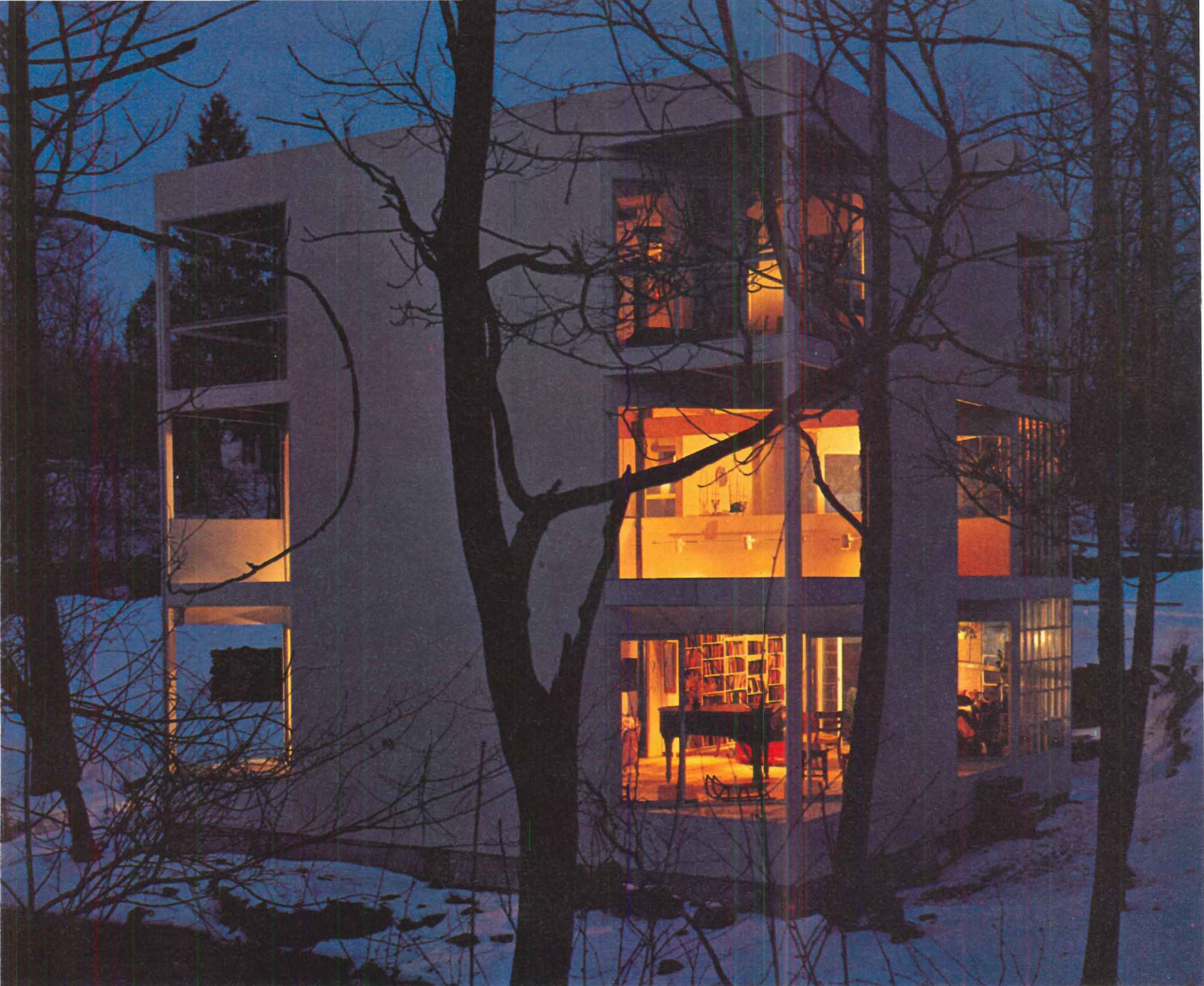
For more information contact: GAF Architectural Dept. AR-22 140 W. 51 Street N.Y., N.Y. 10020.



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(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 Freiwall. (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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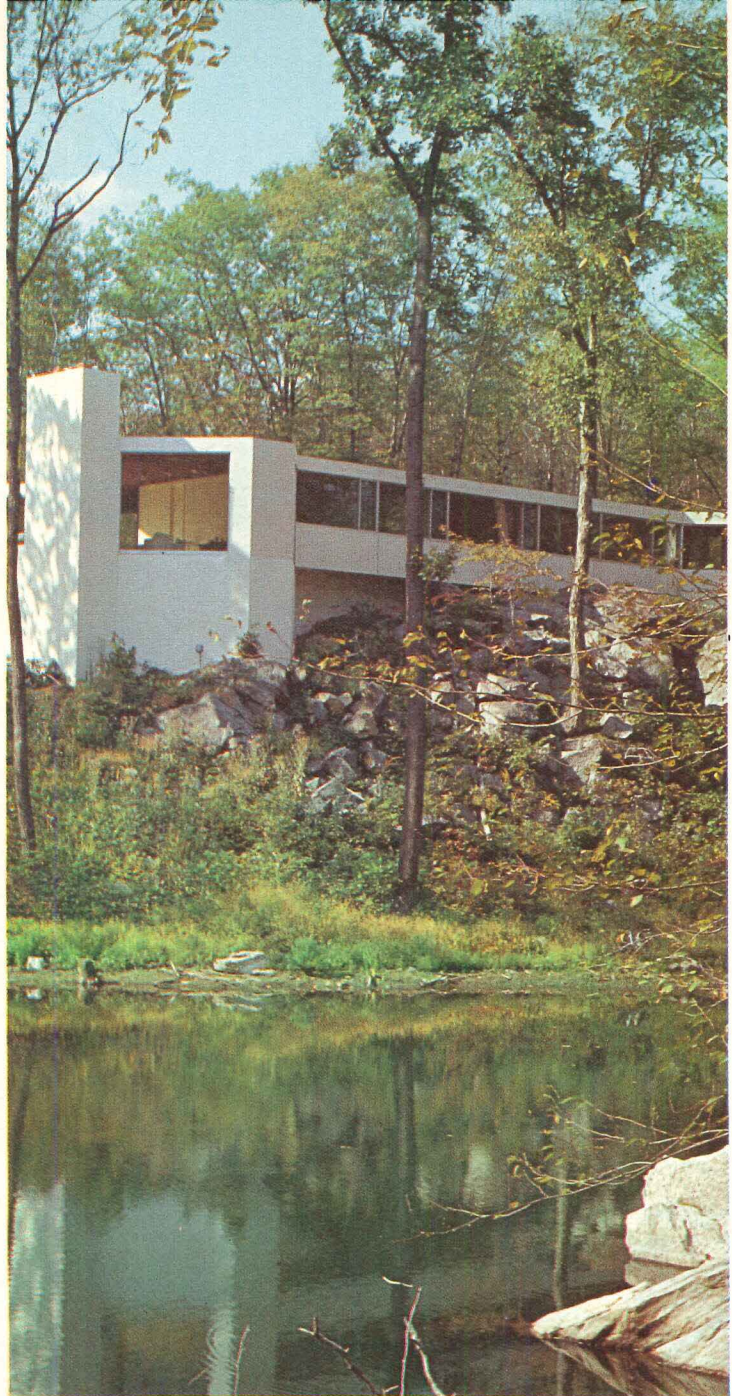
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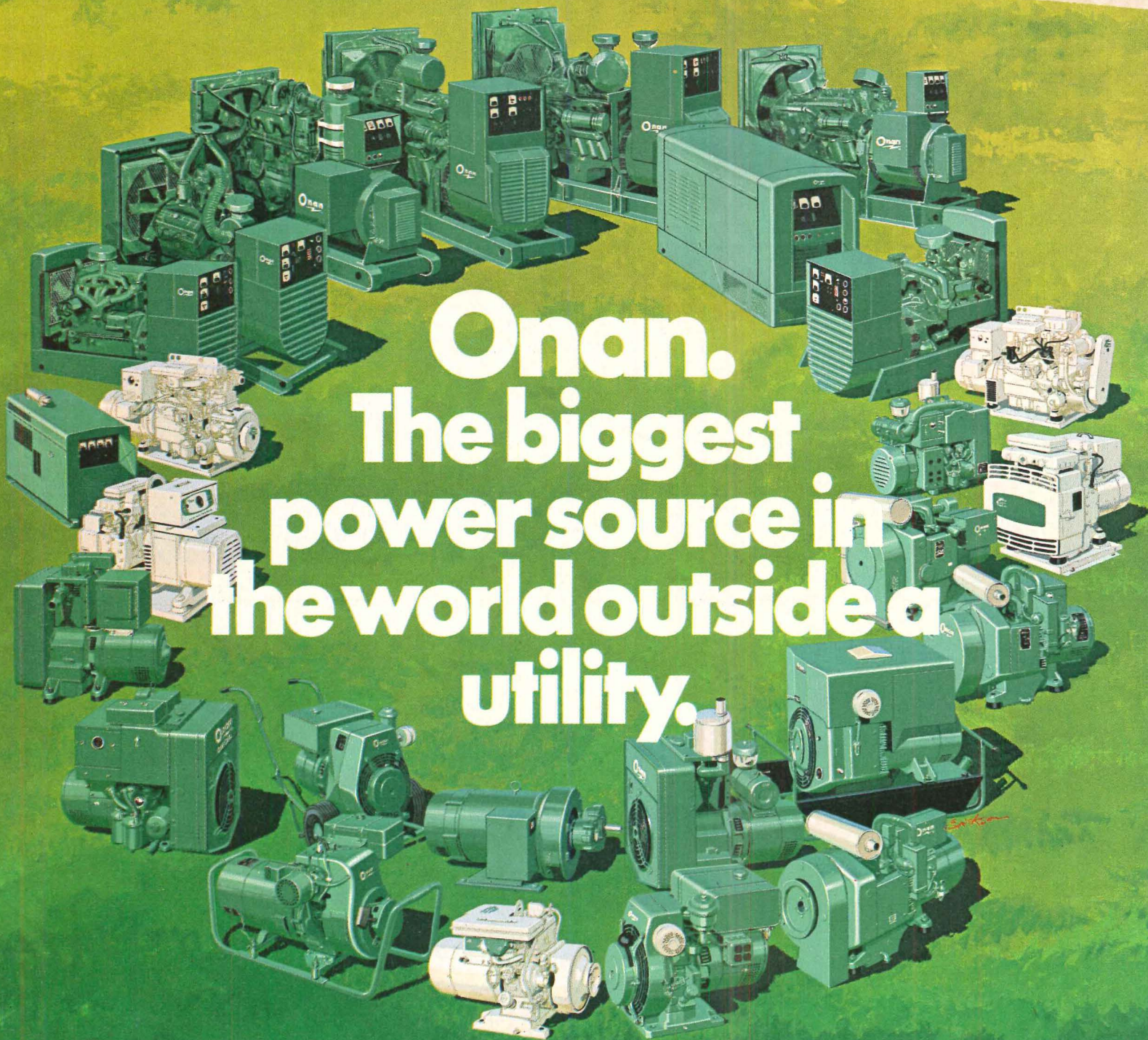
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# SPEED QUEEN Commercial Equipment

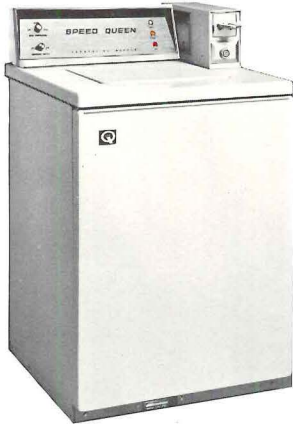
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## washer

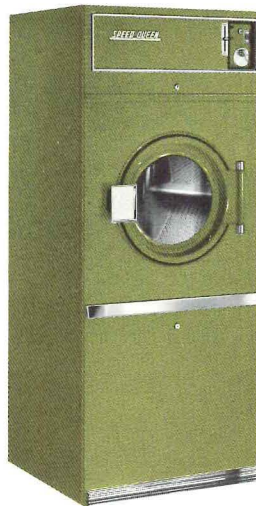
### FEATURES

Cycle Cue Lights—Wash, rinse and spin—tell user what cycle washer is in. • Pre-selection of Wash Water Temperature—User can set switch for hot, warm or cold wash water. • Automatic Lint Removal—Washer has 3-way lint and grit removal system • Stainless Steel tub—Stainless steel has been specially recommended for care of durable press garments. • Agitator has 210° stroke. • ARC-CUATE® Transmission—Simple, dependable. Used in over ten million Speed Queen washers. • Removable Top and Front Panels. • Available in Harvest Gold, Avocado and White.

## Hy-dry gas tumbler dryer

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## dryer

### FEATURES

Temperature Selector—User can select "Delicate", "Normal" or "Air Only". • Drying Cycle from 15 to 60 minutes in coin-operated models. • Cylinders—A choice of Stainless Steel or zinc coated drum. • Poly-V-Drive—Direct drive from motor to drum • Door Latch—Bayonet type. Door opens 180°. • Panel Light & Start Button—Indicator light operates when dryer is running. Push-to-start button must be depressed each time dryer is operated. • Available in Harvest Gold, Avocado and White.

## Routemaster "maximum security" tumbler dryer

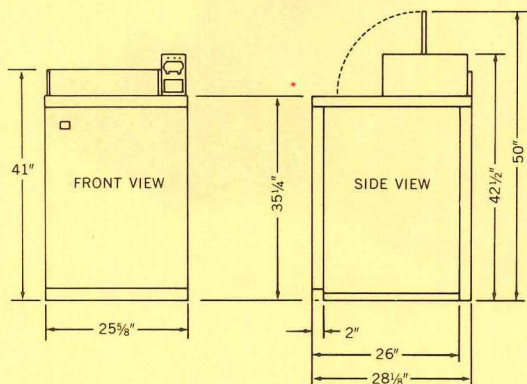
### FEATURES

Available with or without coin meter. Specially designed for Route Operation. Standard Equipment: Coin-metered model has durable press cool-down adjustable by owner from 2 to 6 minutes... single coin meter... locks on coin vault, top access panel, and lint panel. All models have double-wall construction... door interlock... pushbutton temperature selector... signal light... high temperature limit control... air flow switch... gas pressure regulator (natural gas only)... self-cleaning lint screen... automatic back-draft damper... adjustable feet... choice of any color at no extra cost.



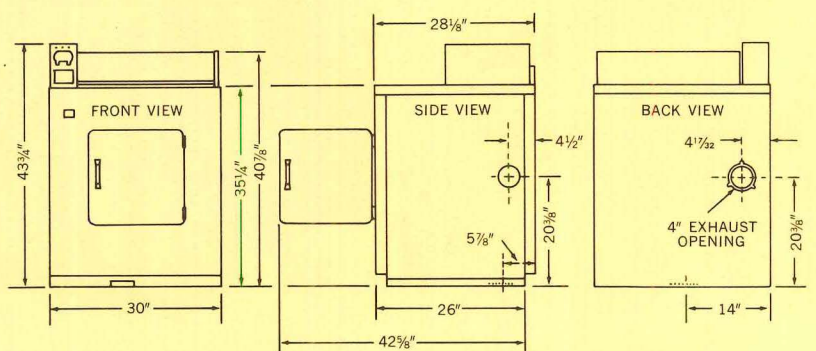
## washer

Washer has 3/4 inch connection for water mixing valve. Two water inlet hoses supplied with washer. • Drain hose is five feet long. One inch inside diameter. • Power cord has three-prong U.L. approved plug for connection to a grounded cycle electrical circuit. • Dimensions are without leveling legs. • Standpipe should not be high in relation to washer than shown above.



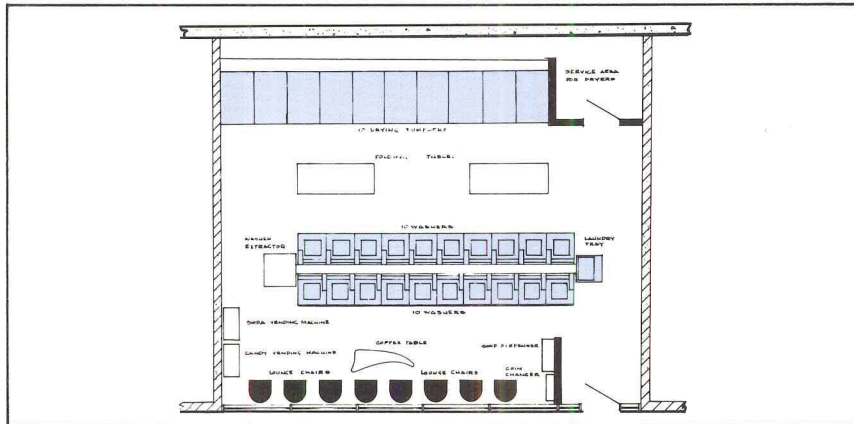
## dryer

Dryer can be exhausted in any direction, out rear, either side or base. • Gas dryers available for either natural or LP gas. Power cord is furnished (115/60/1). • Electric dryer requires 240/60/1 or 208/60/1 electrical service. • Dimensions are without leveling legs.



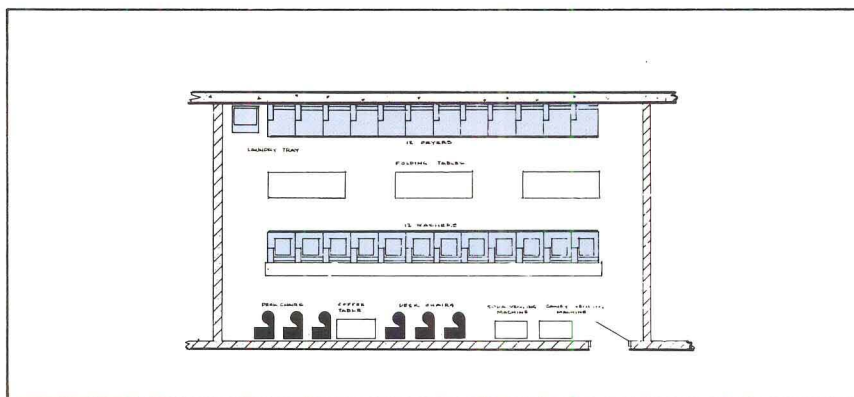


# PLANNING REQUIREMENTS



## HIGH RISE APARTMENT

This plan is for a typical 400 unit high rise apartment building. The plan suggests twenty washers, twenty drying tumblers and one washer extractor. This plan presupposes one central laundry room for the entire building. Some very tall apartment buildings will space smaller laundry rooms throughout the living area of the building.



## COLLEGE DORMITORY

Modern coin-operated laundry equipment by Speed Queen has been especially designed to launder durable press garments—so popular with college-age people. This typical laundry facility for a large 500 student residence features twelve washers and twelve dryers.

## General Room Information

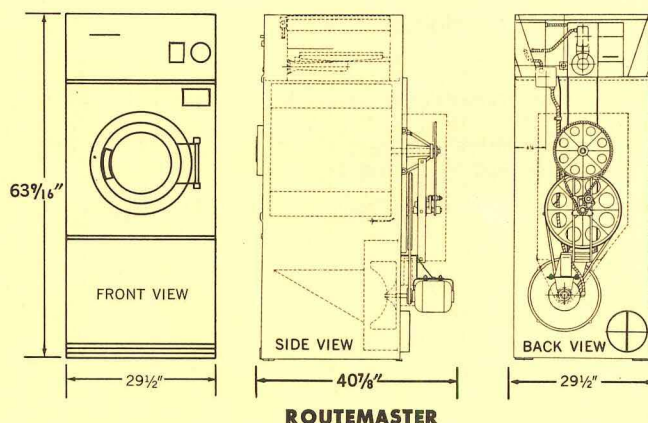
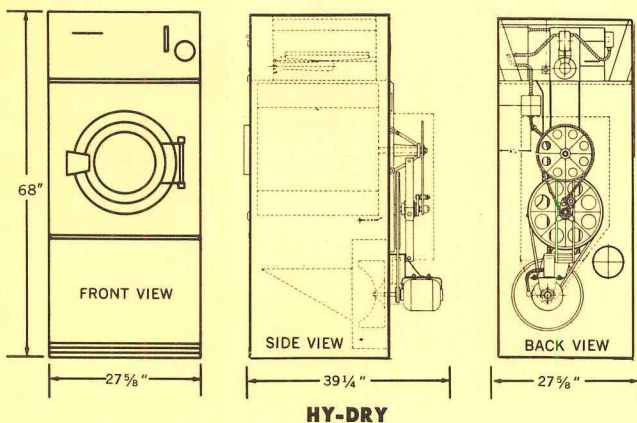
1. Determine the size of the laundry room by allowing a minimum of 25 square feet per machine.
2. Top loading automatic washers do not require a concrete slab.
3. Show the floor as concrete having a trowelled finish and sloped toward the floor drain. At least one floor drain should be provided in each laundry.
4. Provide a minimum clearance of 8' between floor and overhead pieces.
5. Washtubs are not required. However, if they are installed, provide adequate space for them and for the tenant using them. Such space shall be in addition to that recommended for each machine.
6. Locate dryers on outside walls since long ducts increase the installation cost and are less effective for proper venting.
7. If fewer than five pieces of laundry equipment are installed, show them placed side by side.
8. Provide sufficient lighting, preferably fluorescent.

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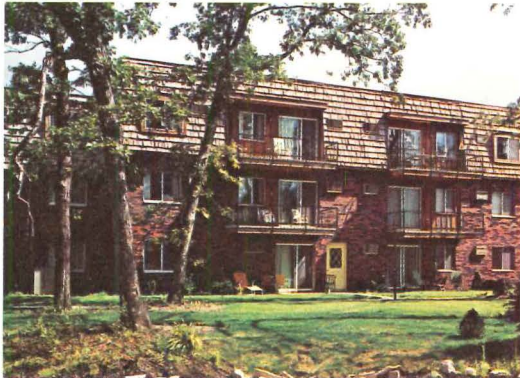
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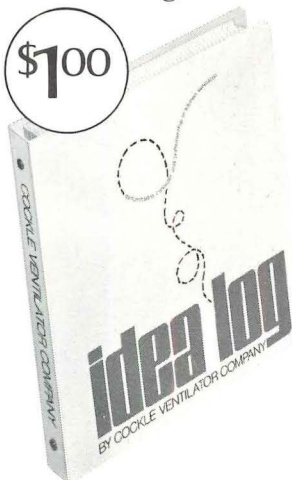
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*continued from page 174*

named president of Caudill Rowlett Scott, Houston-based architectural, planning and engineering firm.

Walter Scholer and Associates, Inc., Architects, Engineers and Planners announce the election of **Lee A. Cole, Jr.**, and **Timothy V. Moore**, a registered professional engineer as associates in the firm.

Karl Treffinger and Associates, Architects is pleased to announce that **Bruce G. Sloan** and **Allen Cristofani** have become associates.

Curtis and Davis, Architects announce the appointment of **Frank J. Abbadessa**, **Frank G. Battipede**, and **Eduardo Leoncallo** as associates in the firm.

Broome, Selig & Oringdulph, AIA, one of Portland's well-known and expanding architectural firms, has elected two new partners and two new associates. BS&O's newly-elected partners are architects **John L. Henslee** and **Dennis J. O'Toole**. The newly-elected associates are architects **Donald T. Ross** and **Richard K. Spies**. The firm will now be known as **Broome, Selig, Oringdulph and Partners, Architects & Planners**.

The Board of Directors of Smith, Hinchman & Grylls Associates, Inc. announce the appointment of **Mr. Merrill M. Bush, P.E.** as a vice president of the corporation.

## BOOKS RECEIVED

SCHINDLER (a Studio Book—Pioneers of Modern Architecture), by David Gebhard. The Viking Press, New York, 1972, 216 pp., illustrated, hardcover, \$7.95.

PUGIN (a Studio Book—Pioneers of Modern Architecture), by Phoebe Stanton. The Viking Press, New York, 1972, 216 pp., illustrated, hardcover, \$7.95.

TOTAL DESIGN, Architecture of Welton Becket and Associates, by William Dudley Hunt, Jr. McGraw-Hill, New York, 1972, 244 pp., illustrated, hardcover, \$22.50.

ANONYME SKULPTUREN, A Typology of Technical Constructions, by Bernhard and Hilla Becher. George Wittenborn Inc., New York, 1972, 200 pp. (approx.), illustrated, hardcover, \$15.00.

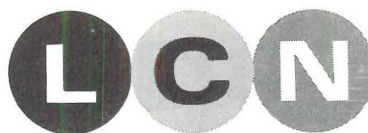
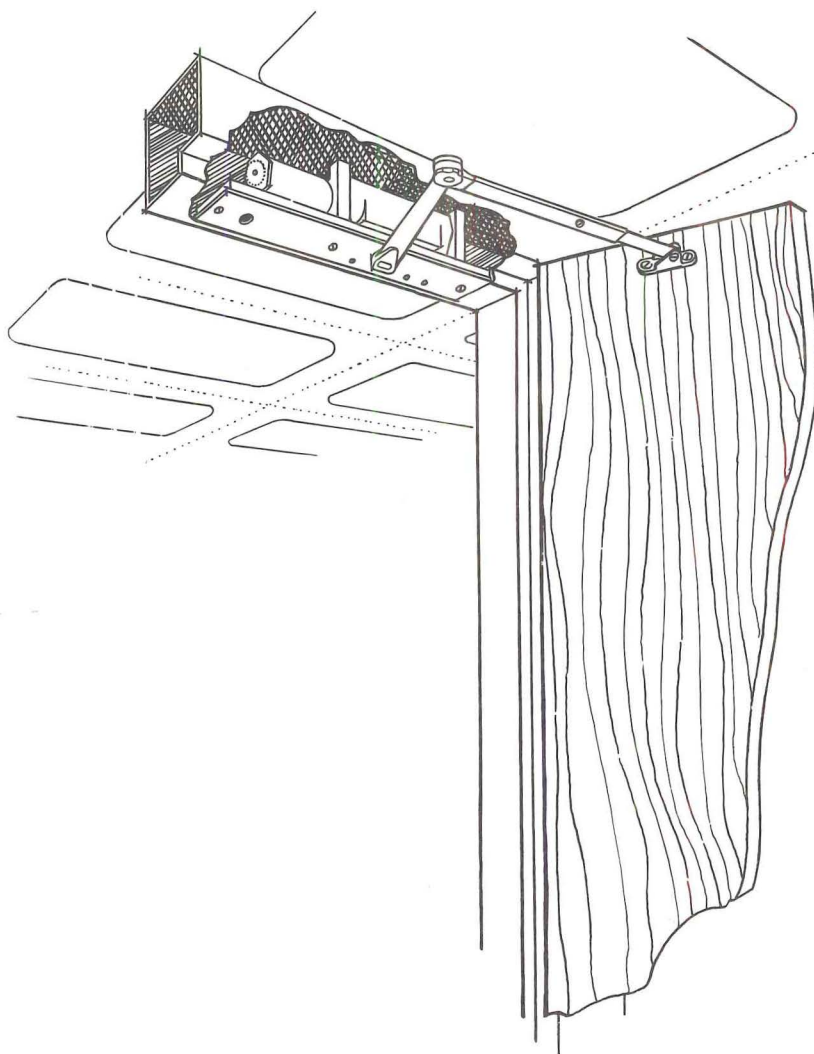
NEW FURNITURE 10, by Gerd Hatje and Elke Kaspar. Praeger Publishers, New York, 1972, 159 pp., illustrated, hardcover, \$17.50.

William Walsh Junior High School,  
Framingham, Mass.

Edward J. Tedesco Associates, Inc., Architects

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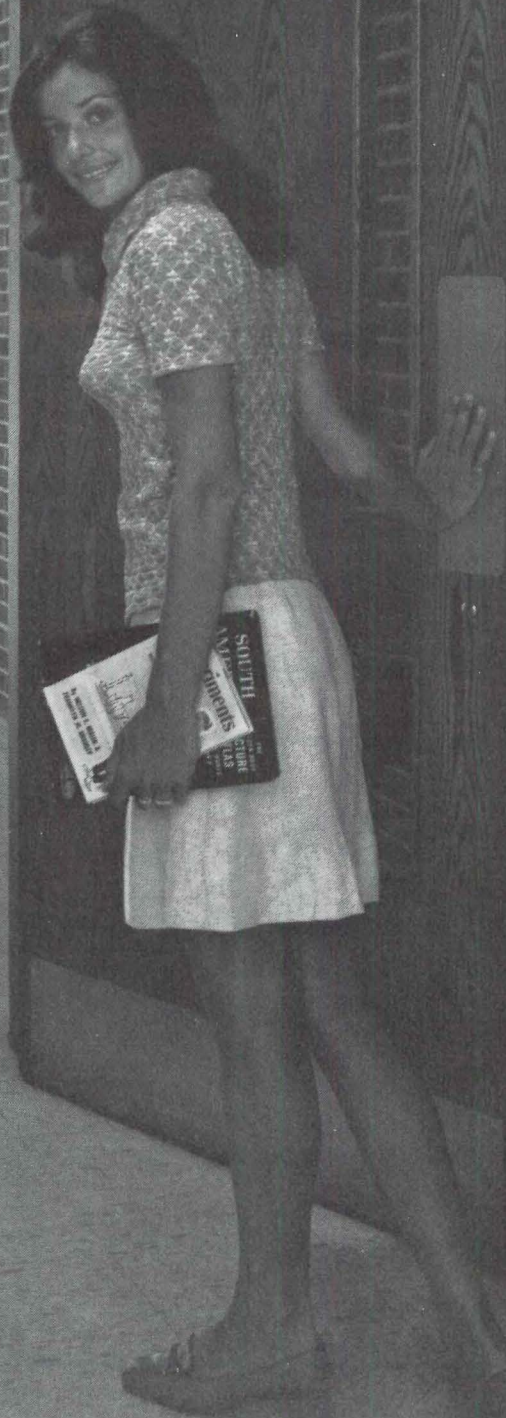


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- ⑧ AIRPORTS—BUILDING TYPES STUDY 413  
Master planning; Landside/airside traffic; terminal  
facilities; other design work 16 pgs. B&W 1.00 per copy
- ⑨ AIR CONDITIONING: A NEW INTERPRETATION  
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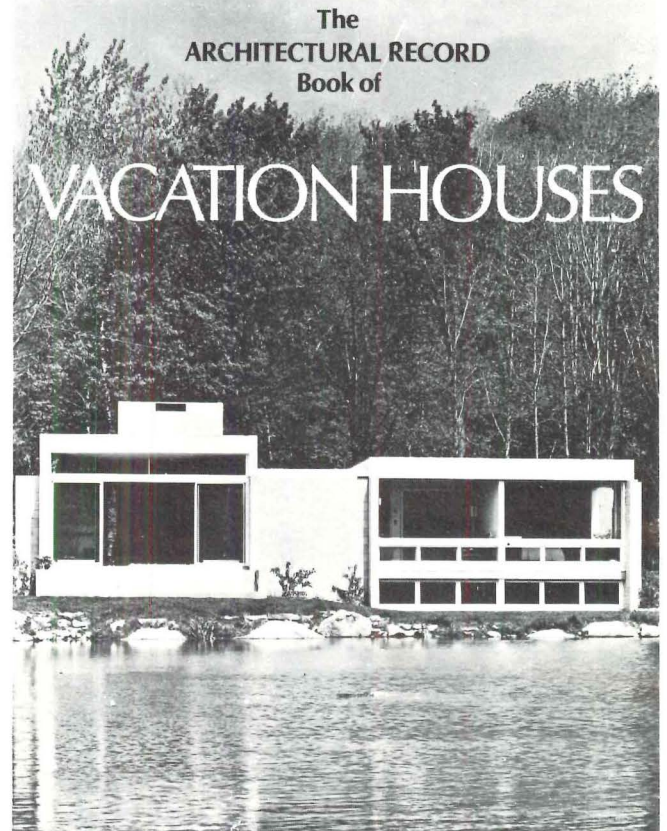
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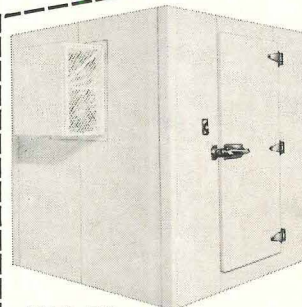
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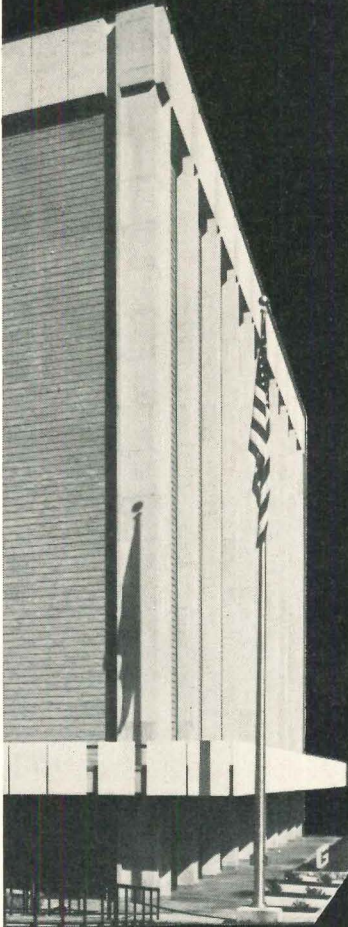
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## OFFICE LITERATURE

For more information circle selected item numbers on Reader Service Inquiry card, pages 199-200

**CHALKBOARD** / An unbreakable porcelain-on-steel unit guaranteed for 50 years, or the life of the building in which it was originally installed, is described in a 4-page brochure. ■ Alliance Wall Corp., Wyncote, Pa.\*

Circle 400 on inquiry card

**HOTEL MANAGEMENT SYSTEM** / Features including a continuous display of house count, room type locator to speed up registration and immediate detection of conflicting reports, are discussed in a brochure. ■ Varian/TALIX, Sunnyvale, Calif.

Circle 401 on inquiry card

**PNEUMATIC WASTE HANDLING SYSTEM** / A high-velocity conveying method which carries materials in any direction is described in a 12-page brochure. Use of the system is not restricted to new buildings. ■ ECI Air-Flyte Corp., Fairfield, N.J.

Circle 402 on inquiry card

**HOTEL/MOTEL FURNITURE** / A line including beds, night stands, wall units and desks is presented in literature. All units have plastic laminate surfaces. ■ R-Way Furniture Co., Sheboygan, Wis.

Circle 403 on inquiry card

**MOBILE STORAGE SYSTEM** / A system utilizing one aisle to service a battery of racks is described in literature. Racks glide back and forth on steel tracks. ■ Dexion Inc., Woodside, N.Y.

Circle 404 on inquiry card

**CLASSROOM CLIMATE CONTROL**/Self-contained air conditioning units for school applications are described in a brochure containing installation photos. ■ American Air Filter Co., Inc., Louisville, Ky.

Circle 405 on inquiry card

**SIDING**/Redwood applications in commercial and residential structures are featured in a brochure giving complete technical information. ■ Simpson Timber Co., Seattle.\*

Circle 406 on inquiry card

**WALL SYSTEM**/Features include concealed fasteners which preserve the exterior panels, self-flashing windows, and elimination of panel splicing for installing accessories. ■ Marathon Metallic Building Co., Houston.

Circle 407 on inquiry card

**SKYLIGHTS**/Single- and double-dome models made of one-piece molded fiberglass are shown in a bulletin. Skylight ventilators and translucent wall louvers are also illustrated. ■ Williams Bermuda Corp., Alhambra, Calif.

Circle 408 on inquiry card

**INDUSTRIAL DOORS**/A 12-page catalog features electrical, air-powered, and manually-operated models. Doors designed for special operations such as clean rooms, radiation rooms, and sound isolation areas are described. ■ Clark Door Co., Inc., Cranford, N.J.\*

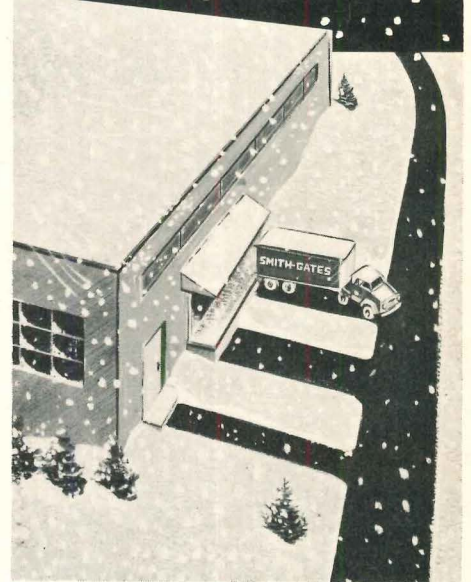
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\*Additional product information in Sweet's Architectural File

more literature on page 198

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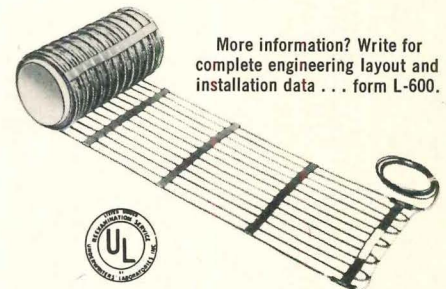
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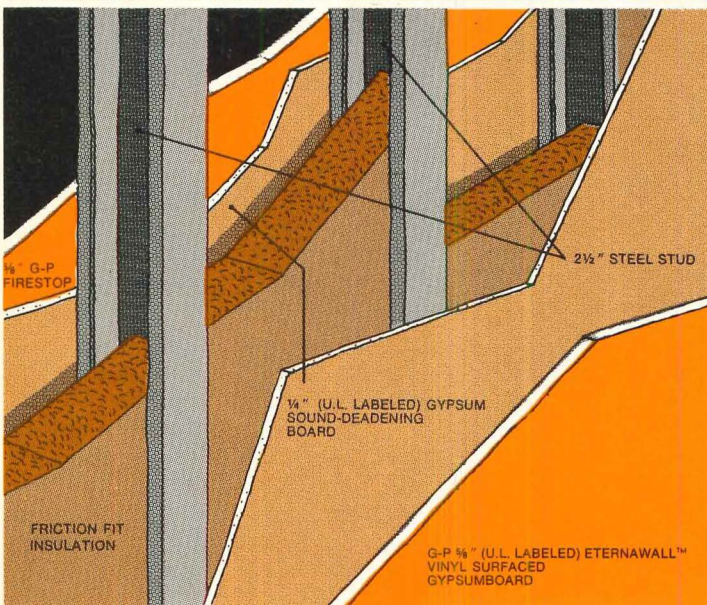
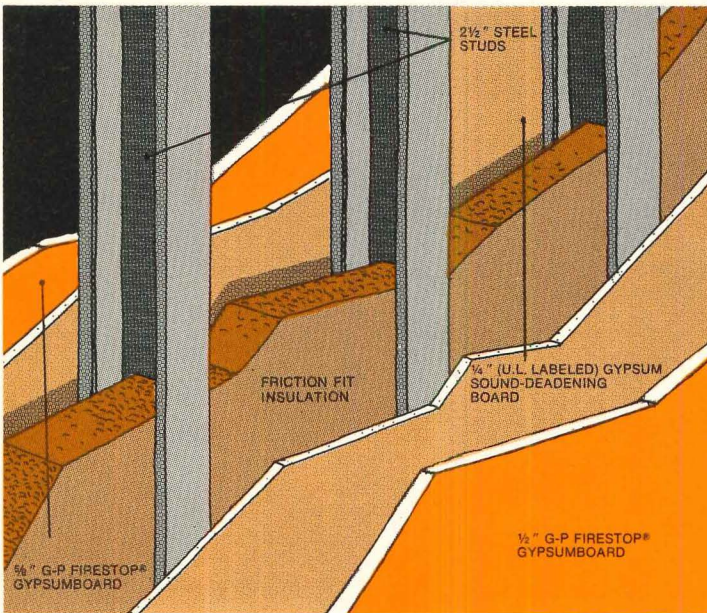
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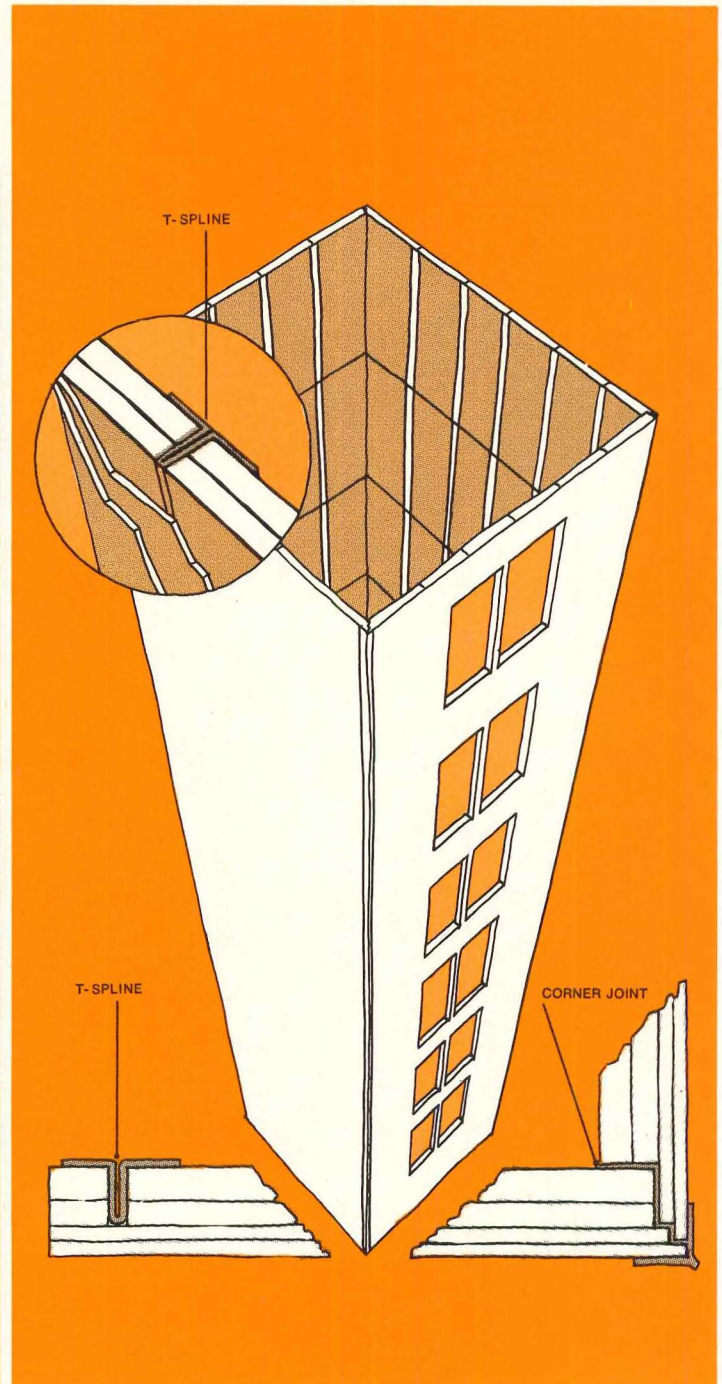


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# ADVERTISING INDEX

Pre-filed catalogs of the manufacturers listed below are available in the 1972 Sweet's Catalog File as follows.

- A Architectural File (green)
- I Industrial Construction File (blue)
- L Light Construction File (yellow)
- D Interior Design File (black)

## A

- I AA Wire Products Co. .... 38
- Aerofin Corp. .... 74
- A-I Alliance Wall Corporation .... 170
- A-D Allied Chemical Corp.,  
Fibers Div. ....28-29
- A-I Aluminum Co. of America ....76-77
- Amarlite Products Division .... 39
- American Air Filter .... 18
- American Gas Association .... 57
- A American Standard .... 24
- A AMF—Paragon Electric .... 187
- A-L Andersen Corp. ....2nd Cover-1
- Architectural Record ....32-1, 176-177
- Argos Products Co. .... 172
- A-I-L-D Armstrong Cork Co. .... 65
- AVM Corporation, National  
Industries Div. .... 173
- A-L Azrock Floor Products Div. .3rd Cover

## B

- A Ball Corp. .... 172
- A Bally Case & Cooler, Inc. .... 73
- A-I BASF Wyandotte .... 187
- Belgium Standard  
Industries Ltd. .... 153
- A-D Berven of California .... 166
- A-I Bradley Washfountain Co. ....70-71
- Bruning Co., Charles .... 80
- A-D Brunswick Corporation .... 61
- A Burke Rubber .... 192
- A-I Burns & Russell Co. .... 74
- Business Week Guide ....PB 10

## C

- A-L Caradco Division of  
Scovill Mfg. Co. .... 15
- A-I Carey Company, Philip .... 191
- A-D Carpenter & Co., L.E. .... 170
- A-I-L Carrier Air Conditioning .... 57
- A Celotex Corp. ....149-152
- A Clark Door Co., Inc. .... 172
- Cockle Ventilator Co. Inc. .... 187
- A Combustion Engineering—C-E  
Glass Division ....78-79, PB 9
- Commercial Carpet Corporation . 17
- A Cyclops Corp. ....6-7

## D

- A-I Day-Brite Lighting Div of  
Emerson Electric ....84-85
- Deering-Milliken .... 23
- A Dover Corp., Elevator Div. .... 40
- A-D Dow Badische Co. .... 44
- A-I Dow Corning Corp. .... 163

## E

- Eastman Kodak Co. .... 133
- A Emhart Corp. .... 167

## F

- Fife, Inc., Richard .... 142
- Florists' Transworld Delivery ....PB6
- A Follansbee Steel Corp. .... 45
- A-L-D Formica Corp. .... 19

## G

- A-I-L-D GAF Corp., Floor Products Division  
Georgia Department of Industry  
& Trade ....PB10
- A-I-L-D Georgia-Pacific Corporation .... 195
- Gestetner ....PB11
- GTE-Sylvania I C Lighting ....66-67
- Goodyear Tire & Rubber Co.  
Industrial Products .... 32

## H

- A Haws Drinking Faucet Company .. 171
- A HC Products Co. ....181-182
- A-I Hillyard Chemical Co. .... 193
- Holophane Co., Inc. ....36-37

## I

- Ickes-Braun Glasshouses Inc. ....168
- A Inland-Ryerson Construction  
Products Co. ....48-49

## J

- Jackson Products Co. Div. of  
Alco Standard Corp. .... 142
- A-I-L-D Johns-Manville .... 59

## K

- A-I-L-D Kaiser Aluminum & Chemical  
Corp. .... 27
- A Kalwall Corp. .... 187
- Kawneer Co. ....82-83
- A KDI Paragon .... 80
- A-I Keene Corp.,  
Sechrist-Lighting Div. .... 8
- A-I Keene Corp.—Stonco Div. ....20-21
- A-I Kinnear Corp. .... 25

## L

- A LCN Closers, Inc. ....188-189
- A-I-L Libbey-Owens-Ford Co. ....154-155
- Lighting Products, Inc. .... 72
- A Lithonia Lighting .... 148
- A Lyon Metal Products ....PB15

## M

- A Maintenance, Inc. .... 166
- A Massey Seating Co. .... 192
- Medusa Portland Cement Co. ... 164
- Mercedes-Benz of North America,  
Inc. ....PB7
- Miller Company .... 179
- Mo-Sai Institute, Inc. ....168-169

## N

- National Industries Div. .... 173
- A-I-L-D National Gypsum Co. ....50-51
- A Nor-Lake, Inc. .... 192

## O

- A-I Onan Div., Studebaker Corp. ... 178
- A Otis Elevator Co. .... 165

## P

- Pella Rolscreen Co. ....161-162
- Pennwalt Chemicals Corp. .... 81
- Pinecrest, Inc. .... 187
- A-I-L-D PPG Industries, Inc. .... 60
- A-I-L-D PPG Industries Inc.—  
Coatings & Resins .... 144
- A-I-L-D PPG Industries, Inc., Commercial  
Glass ....68-69
- A-D Prescolite Mfg. Corp. .... 26
- Prober, Inc., Harvey .... 63
- Process Solvent Co. .... 194
- A Pyrotronics, Inc. .... 2-3

## R

- Rauland-Borg Corp. .... 174
- A-I Republic Steel Corp. ....146-147
- A Robbins Flooring Div. .... 75
- A-L Rohm and Haas Company .... 142
- A-D Roxbury Carpet .... 39
- Ruberoid .... 175
- A Russwin, Div., Emhart Corp. .... 167

## S

- A Sargent & Company .... 145
- A Shakertown Corp. .... 31
- A-I Shatterproof Glass Co. .... 16
- Sheraton-Boston Hotel ....PB10
- Sheraton-Park-Hotel &  
Motel Inn ....PB12
- A Silbrico Corp. .... 52
- A-I Sloan Valve Company ....4th Cover
- Smith Gates Corp. .... 194
- A-I Sonoco Products Company ....PB3
- A Soss Mfg. Co. .... 80
- A-L Speed Queen, Div., of  
McGraw-Edison Co. ....183 to 186
- Square D Company .... 62
- A Standard Conveyor Co. .... 74
- Steelcase Inc. .... 86
- Sweet's Catalog Service .... 197
- Sylva-Gard Co. Ltd. .... 39

## T

- A-I-D Taylor Co., The Halsey W. .... 160
- A-I Thiokol Chemical Corp. .... 30
- A Tremco Mfg. Co. ....46-47
- Trus Joist Corp. .... 134
- Tyler Pipe Industries .... 158

## U

- Unicom Systems, Inc. ....PB13
- A-I U. S. Steel Corp. .... 141
- A-I U. S. Steel Corp.—  
Cyclone Fence Div. ....11-14
- A-L Uvalde Rock Asphalt Co. ....3d Cover

## V

- A Vinyl Plastics .... 187

## W

- Walker/Parkersburg Div. of  
Textron Inc. .... 143
- Wang Laboratories, Inc. ....PB5
- W. A. Scheaffer Pen Company  
A Textron Company ....PB7
- A Welded Tube Co. of America .137-140
- A-I-L Weyerhaeuser Company ....22, 159
- A-I-L Weyerhaeuser Venture Co. ....32-1
- A Wheeling Corrugating ....156-157
- A Wiedmann Industries Inc. .... 166



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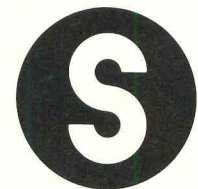
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# CLASSIFIED SECTION

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## OFFICE LITERATURE

*continued from page 194*

**SILICONE WEATHERPROOFING/A** system consisting of the company's standard silicone rubber weather coating with the addition of an evenly applied layer of a ceramic-colored granule is described in literature. ■ General Electric Co., Waterford, N.Y.\*

*Circle 410 on inquiry card*

**GLASS DECORATION / A** technique for placing decorative and functional imagery on glass surfaces is described in literature. A variety of special effects can be produced. ■ Eastman Kodak Co., Rochester, N.Y.

*Circle 411 on inquiry card*

**FLOORING/A** complete line of vinyl, asbestos tile, asphalt tile, feature strip and cove base is presented in a 16-page catalog. ■ Azrock Floor Products, San Antonio, Tex.\*

*Circle 412 on inquiry card*

**ALUMINUM FACADE SYSTEM/A** 6-page brochure describes a concealment system for the manufacturer's roof-top multi-zone air handling units. Components include facade frames and fascia panels. ■ American Air Filter Co., Inc., Louisville, Ky.

*Circle 413 on inquiry card*

**STEEL SHELVING / A** complete line of units that assembles without tools, nuts or bolts is described in a 16-page catalog. A line of accessories permits individual design for special storage applications. ■ Equipto, Aurora, Ill.

*Circle 414 on inquiry card*

**LIGHTING UNITS / Six** models of mercury vapor, mobile, and flood-lighting units are illustrated in a 4-page bulletin. Mobile systems are to be used wherever temporary or emergency lighting is needed. ■ Koehring Co., Milwaukee.

*Circle 415 on inquiry card*

**VENTILATING LOUVERS / A** complete line of extruded aluminum and formed metal louvers is presented in a 20-page catalog. Models include stationary, adjustable and automatic supply and/or exhaust wall and door louvers for all types of applications. ■ H&C Mfg. Co., Tucson, Ariz.

*Circle 416 on inquiry card*

**OFFICE SEATING / Two** lines featuring traditional styling are presented in a 12-page catalog. Executive, secretarial and guest chairs are among the types shown. ■ Emeco Industries, Inc., Hanover, Pa.

*Circle 417 on inquiry card*

**COMMERCIAL COMPACTOR / A** unit capable of handling all four classifications of waste materials is described in a 4-page brochure. Heavy duty cartons are used as waste receptacles. ■ Trans-World Compactors, Inc., Kansas City, Mo.

*Circle 418 on inquiry card*

**SNOW-MELTING SYSTEM / The** design and installation of a copper tube system in a wide range of applications is covered in a 12-page brochure. ■ Revere Copper and Brass Inc., New York City.\*

*Circle 419 on inquiry card*

**WATER COOLERS / More** than 46 models are described in a recent catalog. Coolers with refrigerated compartments, and units for special industrial applications are included. ■ Ebco Mfg. Co., Columbus, Ohio.\*

*Circle 420 on inquiry card*

**WASHROOM EQUIPMENT / An** office building planning guide includes a check list of washroom accessories recommended for use in five office building areas. The company's line is featured. ■ Bobrick Washroom Equipment, Inc., New York City.\*

*Circle 421 on inquiry card*

**OFFICE LANDSCAPE SYSTEM / A** group of flexible wall panels and a line of components and accessories are described in a 24-page booklet. ■ Westinghouse Electric Corp., Grand Rapids, Mich.

*Circle 422 on inquiry card*

**CARPET SPECIFICATIONS / A** 12-page booklet gives detailed information on how to specify various grades of anti-static contract carpet. Information on commercial grades of carpet made with various blends of synthetic fibers is included. ■ Dow Badische Co., New York City.

*Circle 423 on inquiry card*

**PLYWOODS FOR CONCRETE FORMING MANUAL / A** case history section illustrates new developments in concrete forming. Current design data and reference material for those engaged in formwork design or construction are included. Cost cutting tips are given. ■ American Plywood Assn., Tacoma, Wash.

*Circle 424 on inquiry card*

**METAL FABRICATION / A** heavy duty commercial, industrial and institutional ornamental and miscellaneous fabricating service complete from design to erection is described in a brochure. Typical fabrications include window frames, doors, walls, railings and stairwells. ■ Handcraft Metals Corp., Cleveland.

*Circle 425 on inquiry card*

**LIGHTING / A** line of acrylic spheres for indoor and outdoor lighting is presented in a brochure listing dimensional data and complete mechanical and optical details. ■ Plaskolite, Inc., Columbus, Ohio.

*Circle 426 on inquiry card*

**ALARM EQUIPMENT / Over** 350 intrusion and fire alarm products are described in a 64-page catalog. Items range from simple open-loop hardware to ultrasonic, radar, and infrared intrusion detectors. Six pages of application notes for alarm equipment are featured. ■ Mountain West Alarm Supply Co., Phoenix.

*Circle 427 on inquiry card*

**ELEVATOR PLANNING GUIDE / Comprehensive** directions for specifying efficient and economical elevator systems for commercial and institutional applications are given in a 16-page booklet. The company's computer-controlled analysis and adjustment of car distribution is discussed. ■ Armor Elevator Co., Milwaukee.\*

*Circle 428 on inquiry card*

*\*Additional product information in Sweet's Architectural File*