Progressive Architecture

August 1973 A Reinhold publication

You know how important a floor is. The right one complements design and adds to the total look of a room.

Grand Central, Armstrong's newest design in Quiet Zone Vinyl Corlon®, is that kind of floor for commercial interiors—a floor with style, durability, and quiet comfort.

What makes Quiet Zone quiet is an exclusive backing of foam vinyl called Cushioncord® that helps muffle noises—the kinds of noises that can create a din in an office. And it's as gentle on your feet as on your ears. You see, the name Cushioncord tells the story because it literally cushions pressure (see insert), making standing and walking a pleasure.

A heavy-duty vinyl wear layer provides Quiet Zone's durability; and a layer of glass-fiber-reinforced vinyl acts as a firming agent and adds resistance to impact damage. Naturally, the wear surface is virtually nonporous, so spills wipe right up. What's more, its rich texture helps disguise seams, scratches, scuffs, and subfloor irregularities.

For more information, just write to Armstrong, 308 Watson Street, Lancaster, Pennsylvania 17604.

Shh. Quiet Zone™ at work, looking good.

83020 Brown

83021 White

83022 Beige

83023 Gold

83024 Green

83025 Gray-Beige

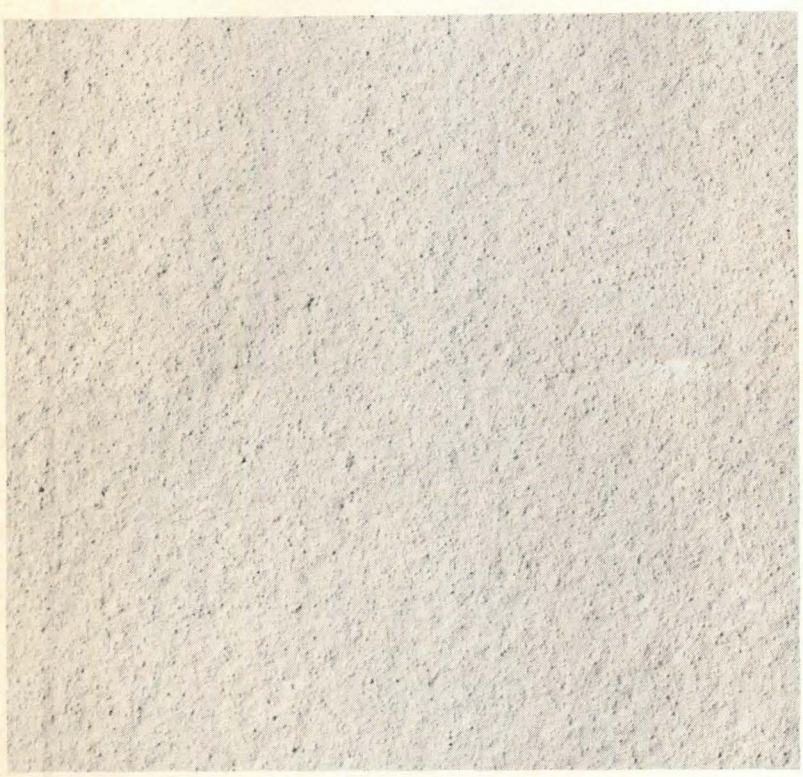
The Quiet Zone pattern illustrated here is called Grand Central. It comes in a choice of these six colors to complement your color scheme.

FROM THE INDOOR WORLD® OF

Armstrong

Circle No. 322, on Reader Service Card

New Glid-Tex® is the stucco-like finish that's really like stucco.



Other finishes look shallow compared to one coat of Glid-Tex.

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With a texture you can see. And feel.

Glid-Tex is water reducible. Sprays on fast and easy. Dries quickly.

Its film is thick, but flexible. Covers up small cracks and pinholes. Leaves a long-lasting, water-resistant finish. With an additive that helps prevent flash rusting over nails, door butts and metal frames.

Glid-Tex is strong, too. Which means it won't crack under pressure when trucked from factory to building site.

We know how good Glid-Tex is because we've put it through every kind of test an exterior coating can take: Weatherometer, Exposure to Rain, Flexibility on Aging, Scrub, Moisture Permeability, Flame Spread Rating.

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Glid-Tex from Glidden.

Glidden

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☆ABP ABC

August 1973

Progressive Architecture

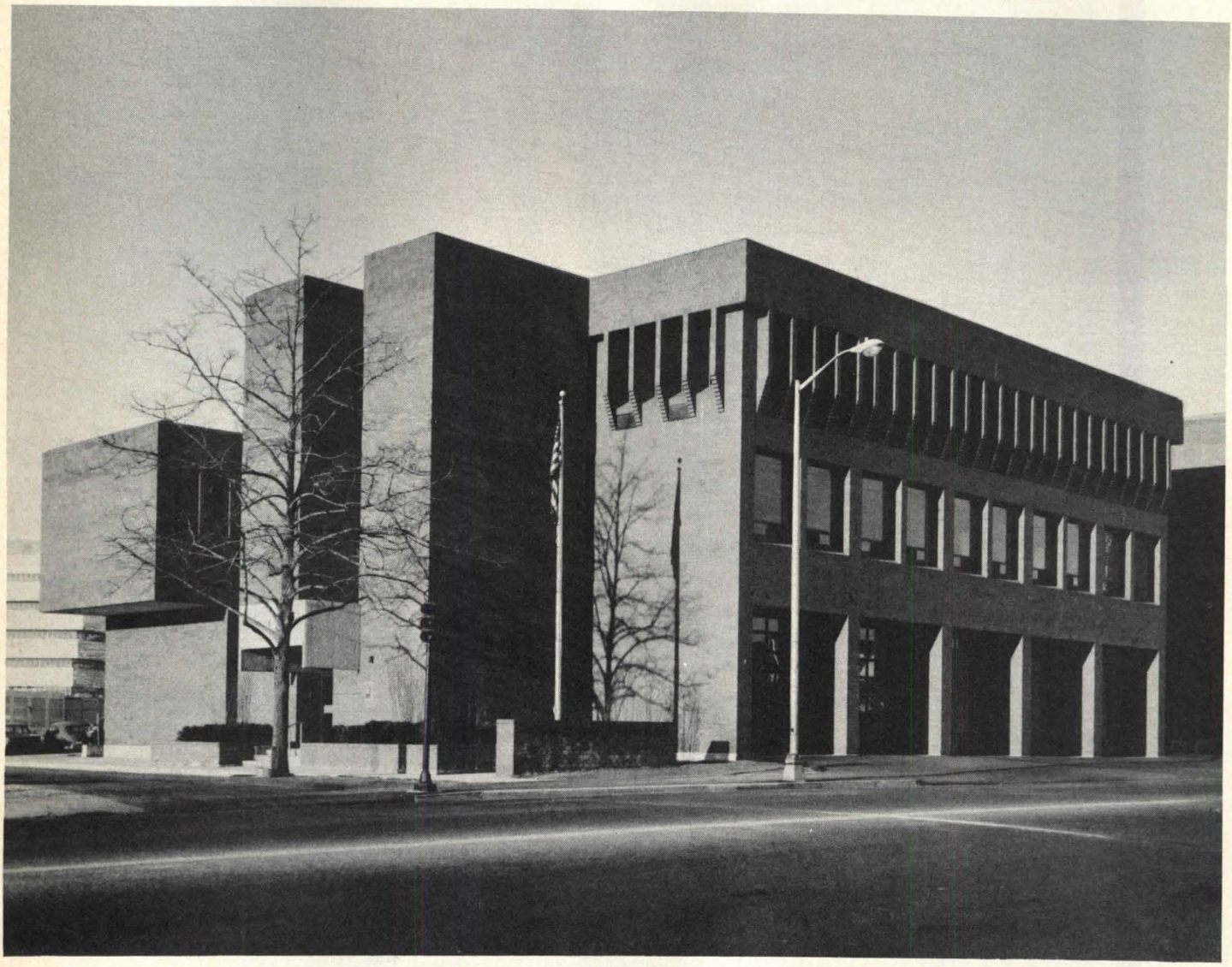
Cover: Classes in session behind prefabricated plastic wall panels of British Olivetti Training Center at Haslemere, England (page 50). Architect: James Stirling. Photo: G. Berengo-Gardin.

AN OFFICE PARK NEAR DENVER

GREENWOOD PLAZA, Englewood, Colo.—This is one of three main buildings of similar design that set the esthetic level of this campus-like office park. The 134-acre site also includes four other buildings completed three more under construction for a diversity of tenants. Dover Elevators are used exclusively. DEVELOPER: The John Madden Company, Denver. ARCHITECTS: Kirkham-Michael & Associates, Omaha. Elevators and dumbwaiters installed by Dover Elevator Company, Denver.

A FIRE HEADQUARTERS IN STAMFORD

CENTRAL FIRE HEADQUARTERS, Stamford, Conn.—The feeling of stability appropriate to an essential public service is strongly stated in the design of this building. Serving as a combination headquarters and fire station, it is an exciting architectural addition to downtown Stamford. Administrative offices are served by an economical Dover pre-engineered elevator. OWNER: City of Stamford. ARCHITECTS: Weinreich & Masciarelli, Stamford. GENERAL CONTRACTOR: A. F. Conte & Co., Inc. Dover Elevator installed by Eastern Elevator Co., New Haven, Conn.



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DOVER elevators

People in P/A

Prentice & Chan, Ohlhausen
Lo-Yi Chan, partner-in-charge of Prentice & Chan, Ohlhausen's new administration building at Unity House (p. 60), and Tim Prentice, the new president of the New York Chapter of the AIA, formed their partnership in 1966. Chan had been with I.M. Pei's office for five years before that, and Prentice (who had worked for Edward D. Stone) had recently returned from a year of folk singing under a cultural exchange grant from the state department. Their first completed job was an upstate New York doctor's office that received considerable attention because it marked the first time acoustical masking had been designed into a building initially, rather than as a later corrective measure.

Before Rolf Ohlhausen joined the office in 1970, he had been a partner in the firm of Glasser & Ohlhausen and, before that, director of Cornell's New York City Program for five years. Among other things, the office is currently working on major housing projects in New York City and Albany for the New York State Urban Development Corporation.

The Oglesby Group, Inc., Oglesby, Wiley, Halford, Johnson; associated architects: Perkins & Will Architects, Inc.
When the Dallas County Junior College District began its ambitious program to build $41.5 million worth of schools within the shortest possible time, The Oglesby Group was chosen to get matters underway in a hurry. Rather than start with a new campus, the commission was to remodel an old department store in the Dallas business district for use as a junior college, now known as El Centro. The Oglesby Group's second commission for the District was Richland College (p. 68), with Perkins & Will Architects, Inc., associated architects.

Partner in charge of the project is Charles William Brubaker, better known as Bill, and best known for a long string of elementary and secondary schools, colleges and universities throughout the country. President of Perkins & Will since 1971, Brubaker was first made a partner in the firm in 1958. He continues to manage and/or serve as design principal for individual projects, a major noneducational one being the First National Bank of Chicago.

A Fellow of the AIA, he has been active on various of its committees, serves as a member of the Board of the Society for College and University Planning, and the Board of the Council of Educational Facilities Planners. He is a graduate of the University of Texas, accredited by NCARB and registered in 12 states.

Marshall County Public Library
Benton, Kentucky
Architects: Lee Potter Smith Associates
Paducah, Kentucky
Project Architect: Gayle R. McGregor
Framing Contractor: Lassiter Plastering Company
Murray, Kentucky

Four good reasons for considering Inryco™/Milcor® light gage steel framing when designing small buildings.

Design freedom, versatility, fast enclosure and economy... the benefits that make light gage steel framing so popular for the exterior walls of multi-story construction... can also be enjoyed on smaller buildings. Here are a few comments from project architect, Gayle McGregor, concerning the library pictured above:

"The variety of possible finishes available was an obvious advantage."

"Site conditions complicated the footings and foundation design. Light gage framing enabled us to cut down on bearing weight."

"We were able to save about one square foot of floor space for every two lineal feet of wall... a value of about five thousand dollars on this small project."

"Prefabricating framing assemblies in the shop saved on-site time and helped us meet a tough winter construction schedule."

"We have gone on to six other projects using the same systems, including an elementary school that ran $15 per square foot compared to the $22 per square foot statewide average for this type of facility."

There are further advantages we haven't covered here. See Sweet's, section 5.3/In; send for catalog 37-1; or let a Milcor representative explain how they apply to one of your projects. Write to: Milcor Division, Inland-Ryerson Construction Products Co., Dept. H, 4069 W. Burnham St., Milwaukee, WI 53201.

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SIMMONS.
10-month, turnkey package.
O'Hare International Tower Hotel.

Interior design: Norman de Haan, A.I.D., Norman de Haan Associates, Inc.
Architect: C. F. Murphy Associates

Only Simmons could put together a package deal like this one—from conception to installation in just 10 months.

In April of 1972, Norman de Haan Associates, Inc., were brought in by Madison Square Garden Corporation to create the interiors of the new O'Hare International Tower Hotel. When plans were finished, in an incredibly short 8 weeks, all guestroom furnishings had been custom designed.

Simmons made them all. Delivered them on time. And worked out a tight installation timetable that allowed the hotel to open in February of 1973, just 10 months from project start.

The Tower presented unusual problems that demanded unusual custom solutions. Noise level was a big one. Simmons helped to solve it with sound-absorbent draperies from Bloomcraft. Carpeting has thick padding as part of the sound-control measures. And all furnishings meet the new flammability standards.

The 981 guestrooms have five carpet colors and six alternate Bloomcraft bedspread and drapery schemes, a tricky record-keeping challenge that Simmons handled without a hitch.

The unusual shape of the building, plus the need for a given number of rooms, made each room relatively small. Headboards with attached lights from Raymor/Richards, Morgenthau that also serve as bedside tables maximize the floorspace. Beds are on easily maintained plinth bases that conserve space. And all bedding is Beautyrest by Simmons.

Thonet created the sleek guestroom case goods. The handsome chairs are by Simmons Living Room Division. Both custom-designed by Norman de Haan, A.I.D. Much of the seating in public areas is from Selig and Thonet.

The lobby is rather long and narrow with glass walls on two sides. Mr. de Haan visually stretched the area with low profile Thonet fiberglass chairs and a Simmons geometric carpet spread throughout the entire area.

In addition there are 63 conference rooms, 18 meeting/banquet rooms, a mezzanine and seven restaurants. Furnished and accessorized for the most part with Simmons products.

The entire interior installation was coordinated by Simmons. It was done in vertical thirds as each section of the hotel was completed, making warehousing, delivery and scheduling of installation operations critical.

Remarkably, it all came together on time. And, Simmons can tailor a complete turnkey package for you.

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SPIRIT OF ST. LOUIS
1927
DOUGLAS DC-3
1936

Views

Photo appreciation
Your color photographs of Curtis-Smith's Newtown Montessori School in the April issue are among the most beautiful and sensitive I have ever seen. The design looks gorgeous, besides.
Howard Barnstone FAIA
Houston, Tex.

Credit due
The photo of the high school designed by James Associates (P/A, June, p. 98) should have been credited to Gregory L. Gammons. In the same issue, on p. 50, Flack & Kurtz should have been listed as prime consultants for the Central Plant and shotcrete cooling tower at Nassau Veterans Memorial Coliseum, Long Island, rather than as mechanical and electrical engineers for the project.

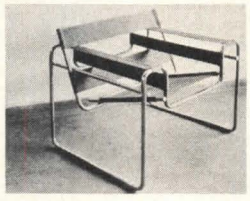
Who's the architect?
Have you noticed that some architectural publications have adopted the policy of burying the names of the architects for a project in the text, instead of listing them at the head of the article, clearly visible to the reader?

As a reader who scans several hundred publications a month, may I applaud and recommend the format where the architect and other key information is clearly visible at the lead-off position of the article? If the calculated effect of the "buried-in" philosophy is to make me read more carefully, it isn't really working in my case—I just get mad.
Robert A. Little, FAIA

Dalton Dalton Little Newport
Cleveland

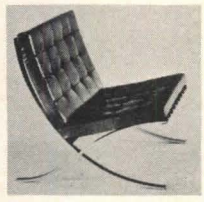
Correction
In the time line accompanying Wolf Von Eckardt's article "The first twenty years" (P/A, June), the Corbusier lounge chair is credited to Mies, while Mies's Barcelona chair is credited to Breuer and Breuer's cantilever chair is listed as Corbusier's.

Von Eckardt's article was extremely interesting and did an outstanding job of tracing the P/A Design Awards history.
Stephen W. Littrell
Topeka, Kan.


Breuer


Corbusier


Breuer


Mies

Circle No. 366, on Reader Service Card →

A VANDAL'S GUIDE TO TODAY'S LIGHTING MATERIALS.

GLASS.

Thick and heavy. But a breeze to break. Often mounted high to deter you but stones or snowballs can reach it. Sometimes enclosed in wire cages. Ugly to look at, still easy to break. Just try small rocks or BBs. Drives maintenance men batty. Disrupts lighting budgets.
CAUTION: Shattering fragments are dangerous.

PLASTIC.

Also known as acrylic, styrene or butyrate. Not as fragile as glass. But even impact grades break, crack, chip, shatter. Still keeps people in the dark, maintenance men on the move. May become an even weaker target with exposure to the elements. Cold can cause hazing. Lacks UL self-extinguishing ratings. Frequently seen distorted by heat.
CAUTION: Since it breaks, it can hurt.

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Don't waste your time. It's virtually indestructible. Many times tougher at sub-zero temperatures than plastics at room temperature. Seen with all types of light sources, all shapes and sizes, indoors or out. Responsible for slashing replacement costs. So rarely seen with maintenance men. Has UL self-extinguishing rating. Look for it soon in high-pressure sodium and mercury vapor luminaires.
CAUTION: Flying objects tend to ricochet.

For a list of manufacturers and a sample of unbreakable LEXAN resin, write Section 194, Plastics Dept., General Electric Company, One Plastics Avenue, Pittsfield, Mass. 01201.

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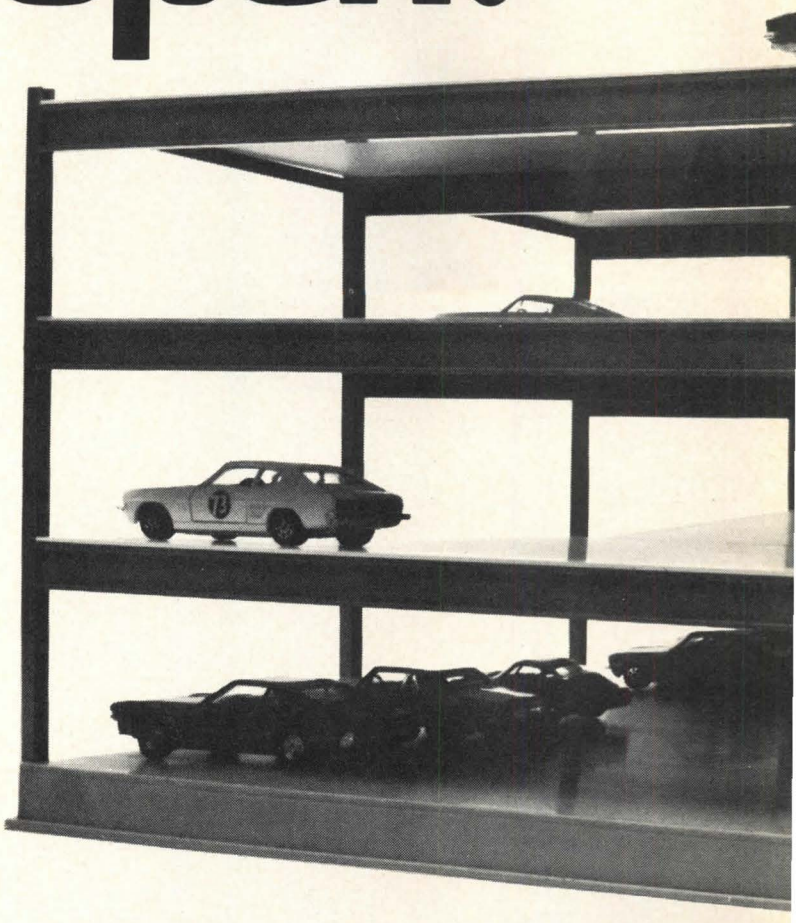
GENERAL ELECTRIC

The future of parking garages is wide open!

(Because the steel-framed, long-span concept gives you more usable space at lower cost.)

Right now, an increasing number of long-span, open-type parking garages conceived in exposed steel are on the drawing boards—and many have already been constructed. For very good reasons.

Steel means fewer interior columns! Long-span, steel-framed structures are lighter, reduce the number of interior columns and need fewer footings. This means more wide open spaces. So, self-parking is easier and attendant-parking more efficient. And with steel, you're not tightly locked-in to a structural plan—you can rearrange the parking layout, and even add more levels at a later date.



Steel parking structures have low fire risk! A recent extensive survey showed that losses resulting from fire in open-type parking garages were insignificant. Realizing this, many cities are permitting code deviations in allowable heights and areas of unprotected steel parking structures. Also, a recent fire test conducted in an actual parking structure in Scranton, Pa., showed no damage to bare steel structured members exposed to the fire. Naturally, with little or no fireproofing necessary, construction costs can be cut considerably.

Just how much can you save? Perhaps as much as $1 per square foot!

Steel goes up faster! Erection of structures with steel can be faster than other systems. Recently, in Detroit, a three-level, open-deck parking struc-

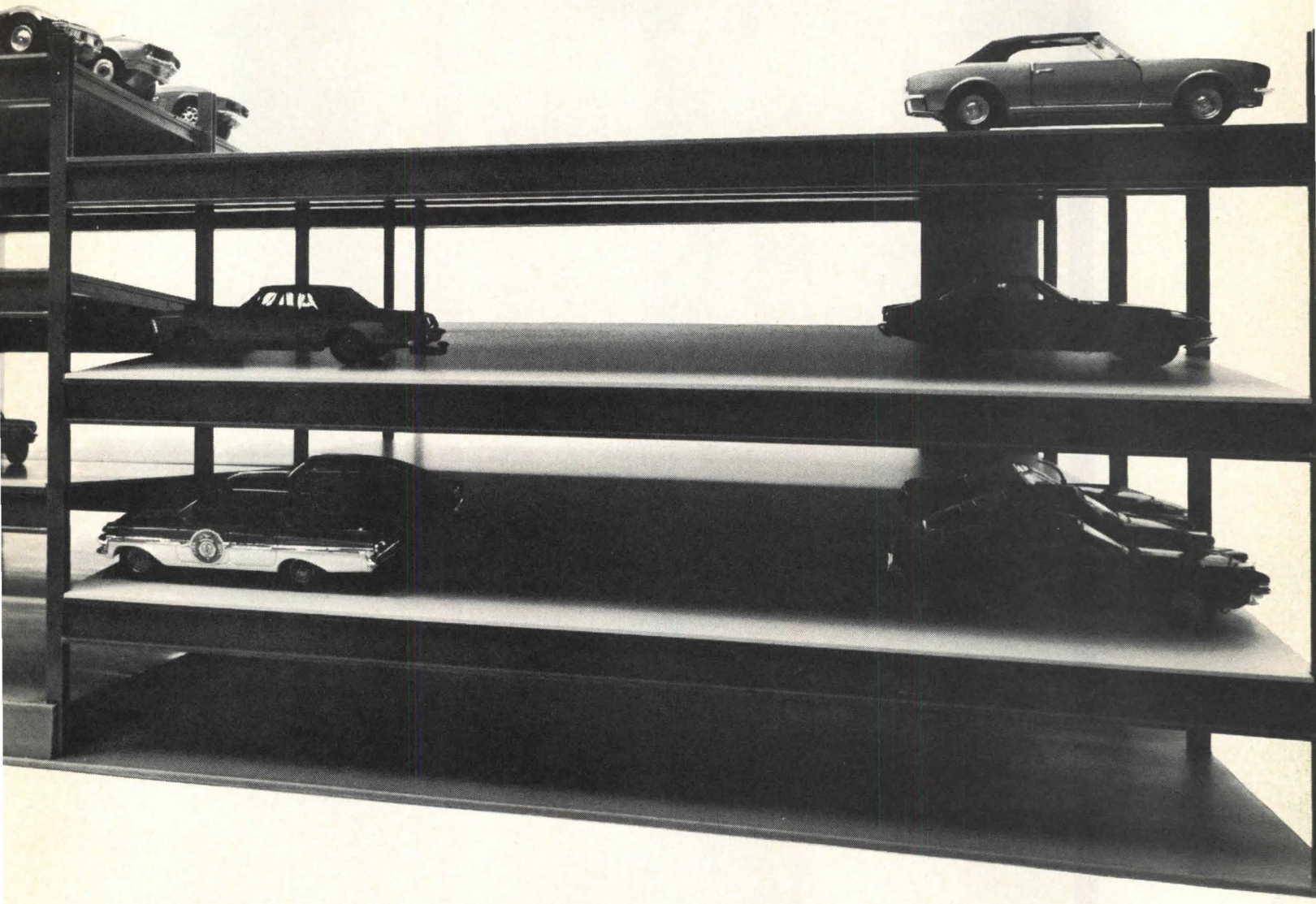
ture with a total supported frame area of 156,800 sq. ft. was finished in just five and a half months. So, you can lower costs by lessening the time it takes to build!

Steel is more economical! Faster construction also means that you can generate cash flow much sooner. With this factor and all others considered, steel framing often turns out to be the most economical system. And with the benefit of more usable space, it is proving to be the most practical and desirable system, too.

Consider erecting your next parking garage with exposed steel... and take advantage of the wide open spaces!

For a copy of our Brochure "Technical Report on Steel-Framed Parking Structures" (ADUSS 27-5264-01) and to find out how we can help you program your next garage, call our nearest sales office and ask for a USS Construction Marketing Representative. Or write to U.S. Steel, Box 86, Pittsburgh, Pa. 15230.

USS TRADEMARK **United States Steel**



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That's a pretty strong promise. But we know we can keep it. That's why we give it to you in writing.

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For an actual copy of the Celotex Inspection & Service Contract and all the details of the program, see your Celotex BUR Approved Roofer, or Celotex field representative, write us direct, or consult Sweet's Architectural Files.

Aluline. Part of the Straessle Intercollection of Switzerland. Now, all Straessle designs are available in this country exclusively from Thonet. The Aluline program is typical of Straessle's elegant pragmatism. Chairs, 2 and 3 seaters and tables of mirror polished cast aluminum in four basic configurations. Upholstery in your choice of subtly colored glove-soft leathers. At the Thonet Center of Design. New York. Chicago. Los Angeles. Dallas. Write Thonet Industries, Inc., 491 E. Princess St., York, Pa. 17405. Phone (717) 845-6666.

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Facad comes in a series of standard panel surfaces, one of which is shown above. It can also be custom molded to afford architectural designers a broad choice of texture, color and pattern.

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Robert Hudspeth, LOF Architectural Consultant, Eastern Region.

LOF architectural representatives have made a tradition of working with top architects to develop new concepts in glazing for contemporary building.

Suspended glazing with glass mullions, as exemplified here in the National Airlines Terminal and the Houston Lighting and Power Energy Control Center, is one of the most recent and exciting challenges to be explored.

LOF's heavy-duty plate glass is an integral part of these systems, adding the strength necessary to make them functional.

LOF's heavy-duty glass products in suspended glazing systems will give you the versatility to meet a wide range of functional and aesthetic requirements. You'll have greater design freedom plus increased strength, safety, visibility and light transmission.

Check the next few pages for some more new views of glazing.

Houston Lighting and Power
Energy Control Center

LOF

EXCITING DESIGNS FLOW

"SUSPENDED GLAZING WAS CHOSEN TO PROVIDE BOTH EXTERNAL SIMPLICITY AND EASY INTERNAL VISIBILITY FOR THE PASSENGERS."

Robert Hudspeth, LOF Architectural Consultant, Eastern Region.

When National Airlines designed their new terminal at Kennedy, their basic consideration was openness. The design called for simplicity in the external appearance and high internal visibility to prevent traffic flow problems.

The greater thickness and strength of LOF's Heavy-Duty Glass used in the suspended glazing system adds functional safety and sound-reduction benefits.

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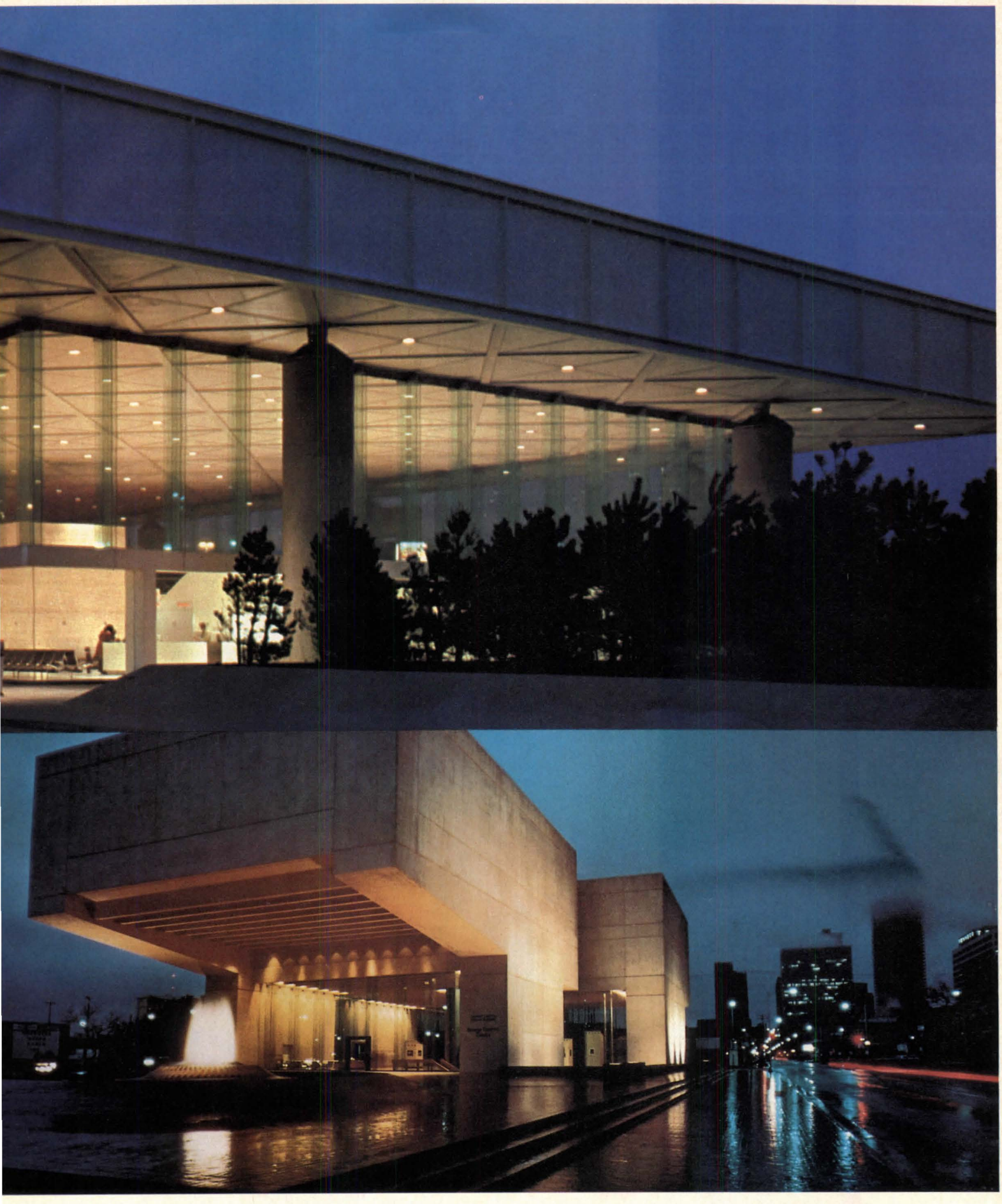
Top and Lower left: Owner: National Airlines. Architects: I. M. Pei & Partners, New York. Building Contractor: John Lowry, Inc., New York. Glazing Contractor: Collyer-Sparks Company, Inc., New York.
Lower right: Owner: Houston Lighting and Power Company. Architects: Caudill, Rowlett & Scott, Houston. Assoc. Architect: Robert O. Biering. Building Contractor: Schneider Construction Co. Glazing Contractor: Collyer-Sparks Co.

LOF

FROM SUSPENDED GLAZING.



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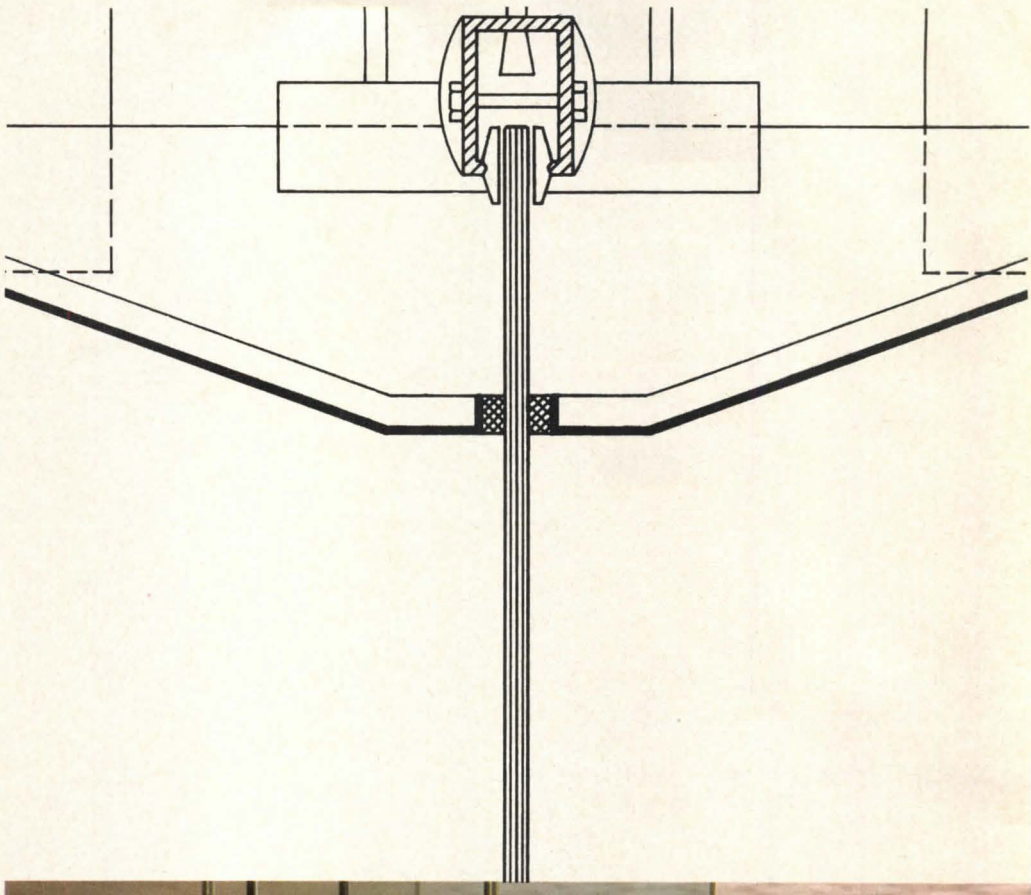
The glass mullions bracing this patented system are assembled using a soft setting adhesive sealant. The absence of metal mullions creates a feeling of visual freedom and light.

For further information on the architectural applications of suspended glazing, write Libbey-Owens-Ford, 811 Madison Ave., Toledo, Ohio 43695.



Houston Lighting and Power Energy Control Center.

LOF

Contents

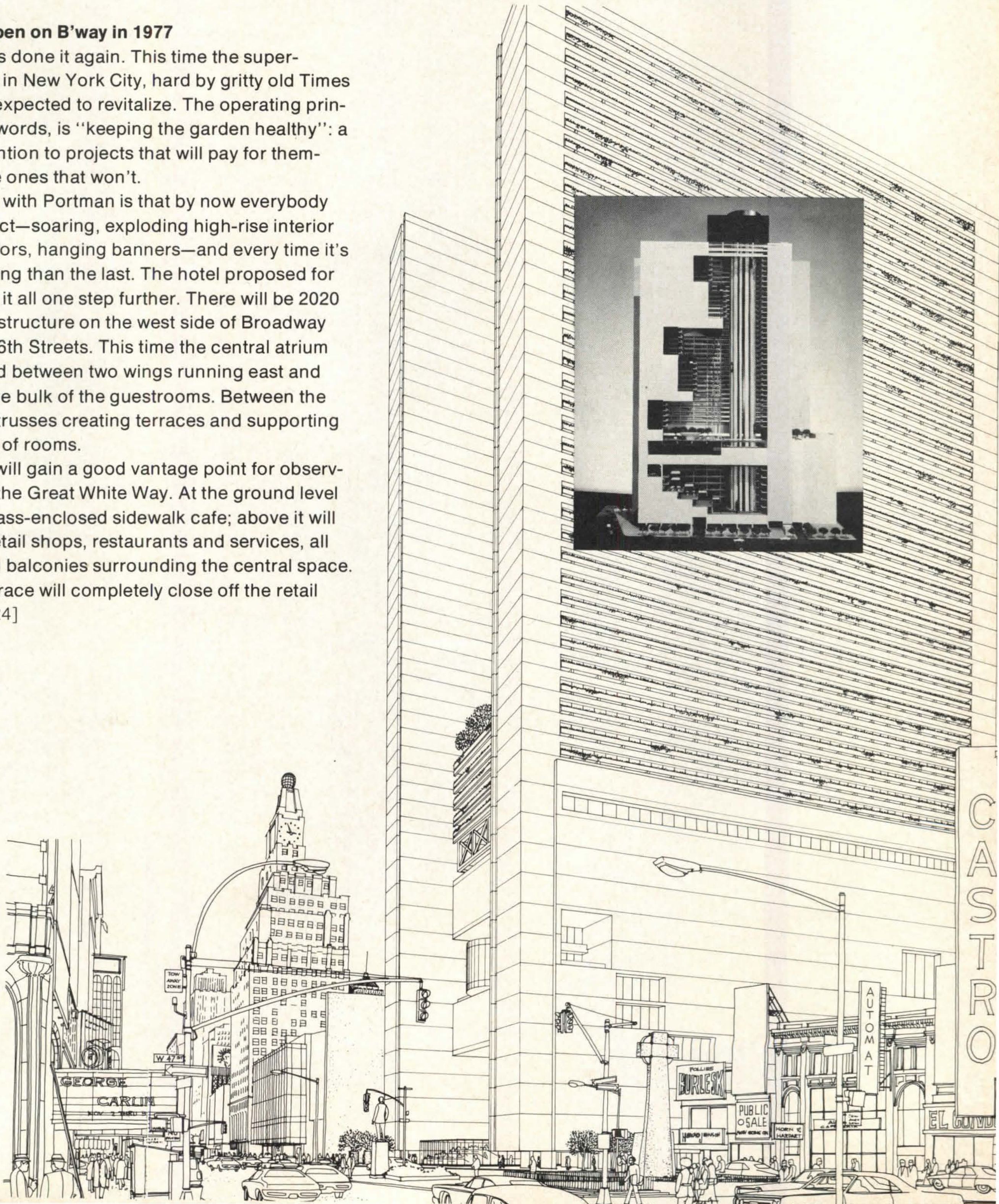
News report

Portman show to open on B'way in 1977

John Portman has done it again. This time the super-spectacular hotel is in New York City, hard by gritty old Times Square, which it is expected to revitalize. The operating principle, in Portman's words, is "keeping the garden healthy": a city should pay attention to projects that will pay for themselves as well as the ones that won't.

The only problem with Portman is that by now everybody knows what to expect—soaring, exploding high-rise interior spaces, glass elevators, hanging banners—and every time it's all more overwhelming than the last. The hotel proposed for New York just takes it all one step further. There will be 2020 rooms in a 54-story structure on the west side of Broadway between 45th and 46th Streets. This time the central atrium space is sandwiched between two wings running east and west and housing the bulk of the guestrooms. Between the wings will be 112-ft trusses creating terraces and supporting skylights and banks of rooms.

People watchers will gain a good vantage point for observing the denizens of the Great White Way. At the ground level will be a 240-seat glass-enclosed sidewalk cafe; above it will be seven levels of retail shops, restaurants and services, all located on recessed balconies surrounding the central space. At the 9th level a terrace will completely close off the retail
[continued on page 24]



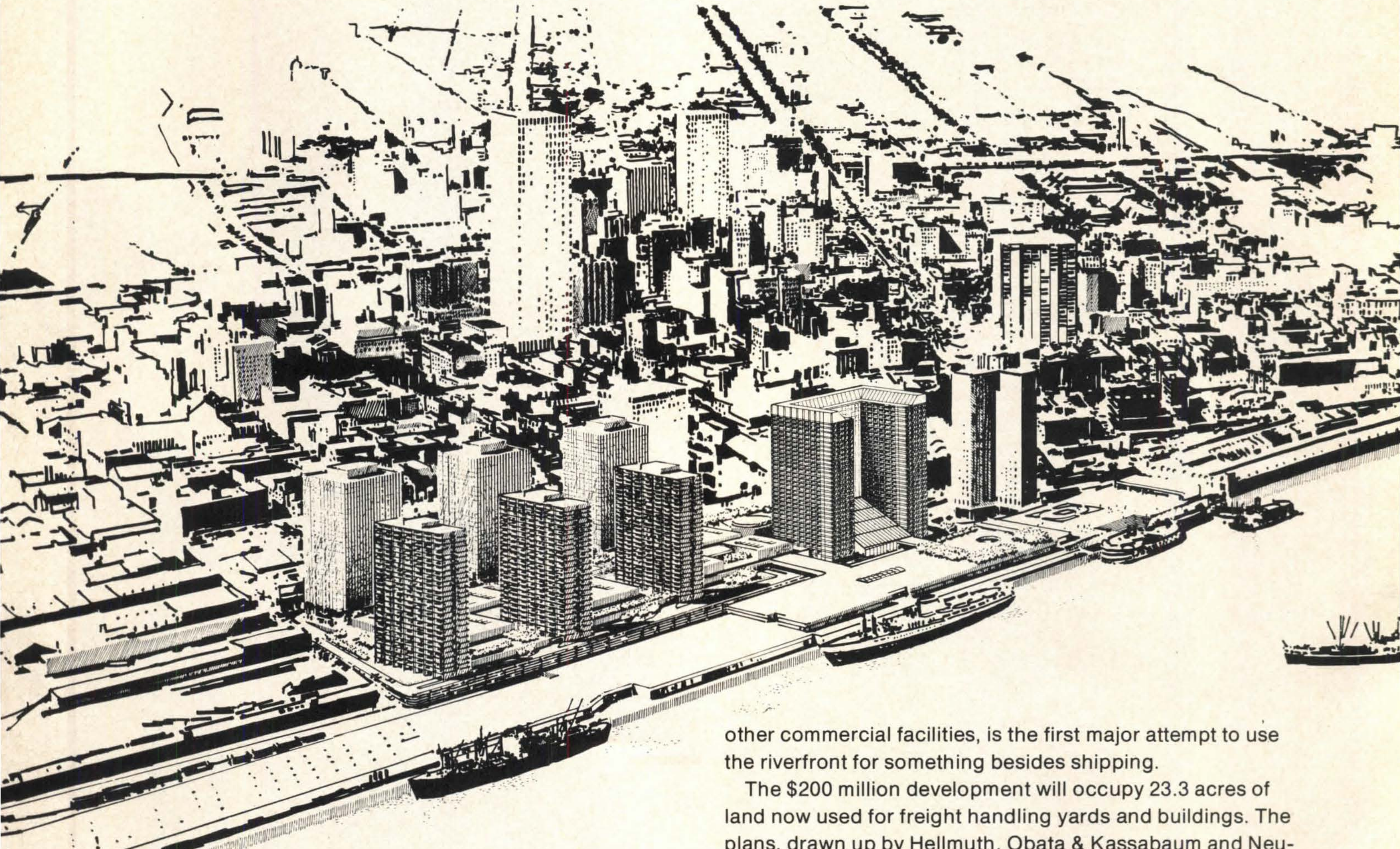
News report continued from page 23

atrium; from it a bridge will lead to another cocktail lounge—one that revolves, giving everybody a look at Broadway and the inside action too. The 10th floor will include an exhibition hall; the 11th and 12th, meeting rooms and a ballroom.

The hotel proper starts at the 13th level, with a registration lobby 35 stories high. Also included: a sidewalk cafe, a coffeeshop, more cocktail lounges, and, on the mezzanine above, a restaurant, a bar and a nightclub. Above all that will be the 2020 hotel rooms, surrounding the central space. Some will be on trusses spanning the space; they will be in five-floor groups, and a series of sloping skylights will be combined with them.

The usual Portman elevators, complete with glassed-in cabs and lots of little lights, will rise along a pillar that runs the height of the atrium. Starting at the street-level plaza, they will run through tubes to emerge into the lower atrium from a pool surrounding the elevator core. After passing through another set of tubes and emerging from another pool, they will be in the registration lobby and its high-rise space. And then up to the revolving roof top restaurant.

Construction on the $150 million hotel is scheduled to start early in 1974; completion is expected in 1977. Exact details of ownership haven't been worked out, and neither has a name for the hotel, but Western International Hotels will run it. Tishman Realty & Construction is construction manager; Syska & Hennessy are mechanical and electrical engineers, with Britt Alderman as consulting mechanical engineer; Weidlinger & Associates are structural engineers. Portman & Associates are the interior designers as well as the architects. Break a leg, John.

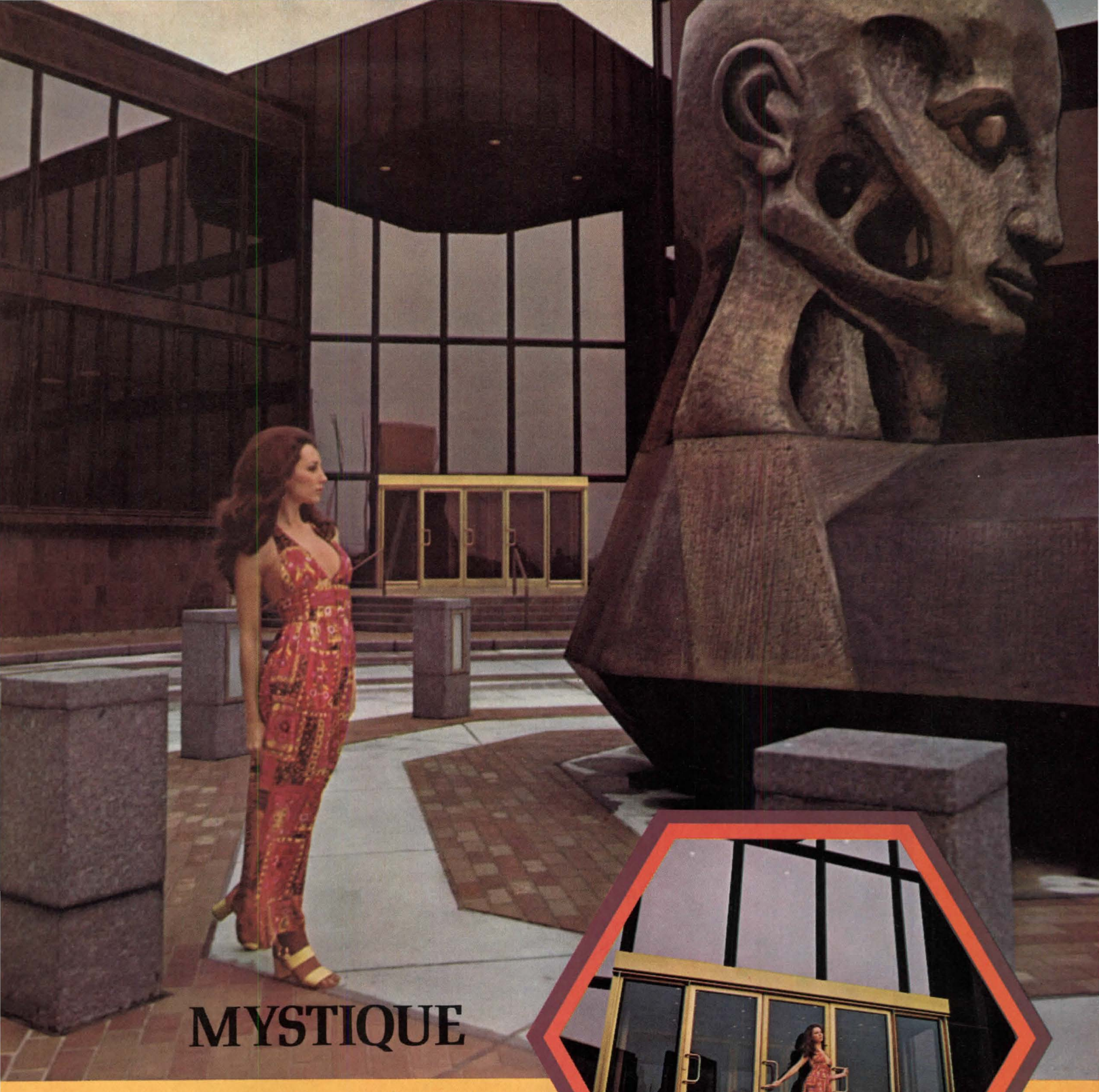


New Orleans: down by the riverside

For about as long as New Orleans has been in existence, its riverfront has been its life; millions of tons of cargo have left for world ports from the New Orleans waterfront. Now as some port operations move to a new modern central port facility, a different type of development is moving into the New Orleans waterfront close to the trade center tower. The International Rivercenter, a complex of offices, apartments and other commercial facilities, is the first major attempt to use the riverfront for something besides shipping.

The $200 million development will occupy 23.3 acres of land now used for freight handling yards and buildings. The plans, drawn up by Hellmuth, Obata & Kassabaum and Neuhaus & Taylor, call for a first phase consisting of a 1200-room Hilton hotel, a 200-unit condominium tower with separate parking for 400 cars, an 800-car parking building, a shopping mall, an enclosed tennis club, restaurants, and a passenger ship terminal above the Poydras Street wharf. The terminal will include shops, restaurants and a plaza overlooking the river. Cost for this first phase is put at $97 million.

Final plans and specifications are being completed, and site work should start soon. The first phase is slated for completion in about three years. Subsequent phases would add two more condominium towers and three office buildings.
[continued on page 30]



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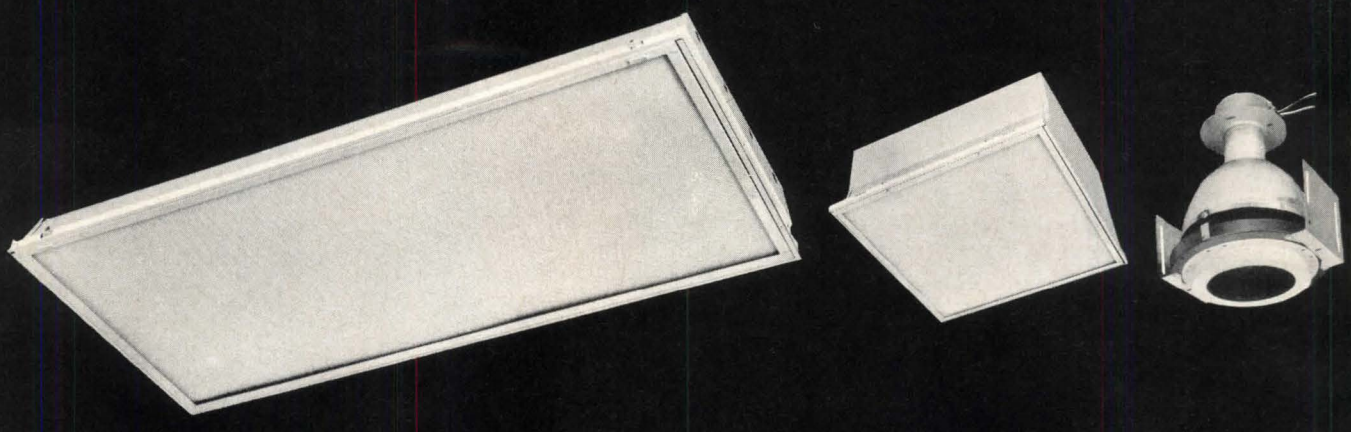

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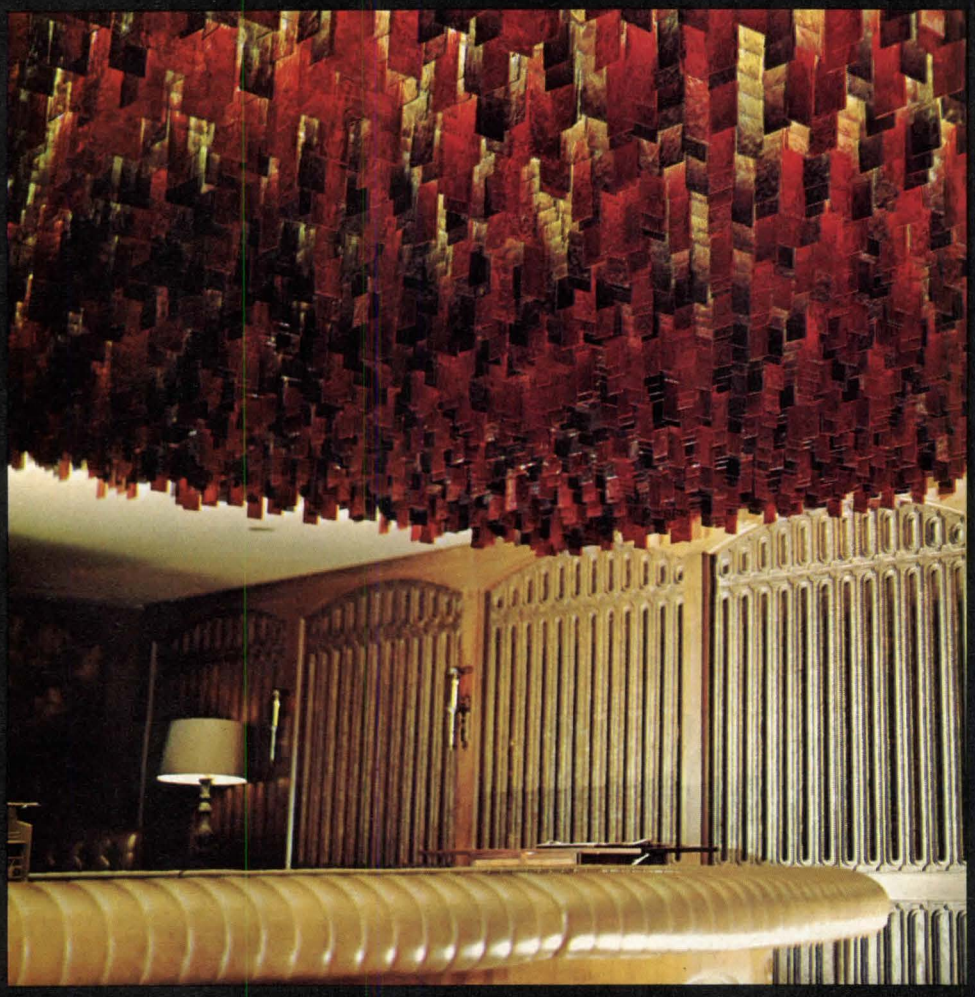

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Wilsonwall System 610 Specifications

Panels:
thickness: nominal 7/16"
surfacing: 1/32" Wilson Art fire retardant laminate (LD1-1971), Velvet finish, all Wilson Art woodgrains and solid colors
core: 3/8" mineral composition
back: .020" fire retardant backing sheet
sizes: 47½" x 96" and 47½" x 120" (other sizes quoted on request)
moldings: extruded aluminum (hidden base moldings, mill finish; face moldings, acrylic coated, standard in Lt. Bronze, Dk. Bronze, Brown and Black)

Wilsonwall System 110 Specifications

Panels: **thickness:** nominal 7/16" **surfacing:** 1/32" Wilson Art laminate (LD1-1971), Velvet finish, all Wilson Art woodgrains and solid colors
core: 3/8" particleboard (CS-236-66)
back: .020" backing sheet
sizes: 15½" and 24" widths; 96" and 120" lengths (other sizes quoted on request)
reveal strips: 1/16" thick Wilson Art laminate; 1/2", 3/4" and 1" widths; 96" and 120" lengths
NOTE: Upon request, panels meeting Class I or Class II fire hazard classification depending upon specific code requirements.

Wilsonwall System 310 Specifications

Panels:
thickness: nominal 7/16"
surfacing: 1/32" Wilson Art laminate (LD1-1971), Velvet finish, all Wilson Art woodgrains and solid colors
core: 3/8" particleboard (CS-236-66)
back: .020" backing sheet
sizes: 48" widths; 96" and 120" lengths (other sizes quoted on request)
moldings: extruded aluminum, mill finish
NOTE: Upon request, panels meeting Class I or Class II fire hazard classification depending upon specific code requirements.

Wilsonwall System 210 Specifications

Panels:
thickness: nominal 7/16"
surfacing: 1/32" Wilson Art laminate (LD1-1971), Velvet finish, all Wilson Art woodgrains and solid colors
core: 3/8" particleboard (CS-236-66)
back: .020" backing sheet
sizes: 15½" and 24" widths; 96" and 120" lengths (other sizes quoted on request)
sizes: 15½" and 24" widths; 96" and 120" lengths (other sizes quoted on request)
NOTE: Upon request, panels meeting Class I or Class II fire hazard classification depending upon specific code requirements.

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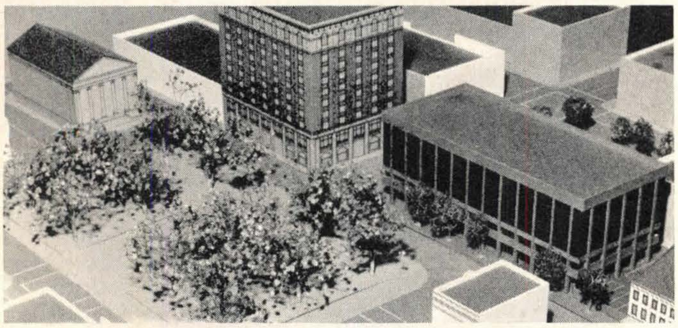
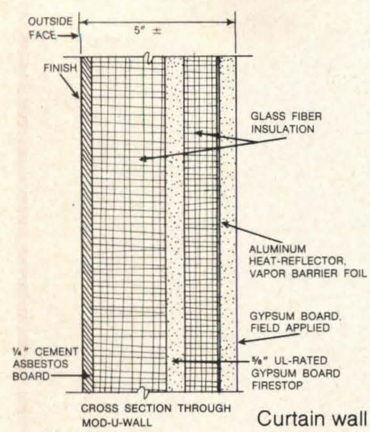
News report continued from page 24



Old Savannah's new addition

Fall River city hall



Curtain wall for lift-slab

Historic downtown Savannah gets first building in 40 years

Savannah, Ga. has been well known for its preservation successes. But the downtown, while well preserved, has not been the scene of any major construction for sometime, and the 83,000-sq-ft Liberty National Bank & Trust Co. building designed by architects Cooper, Carry & Associates is the first major downtown building in 40 years.

In designing the $2 million building, the architects not only had to meet the needs of their client, but had to satisfy the consciences of two historical societies. The brick and bronze glass façade is in keeping with the surroundings and provides a quiet backdrop for Jackson Square, the heart of Savannah's financial district. The bank entrance and storefronts are recessed, and existing concrete sidewalls will be replaced with brick, which will also be used for the floor of the street-level banking area.

Historic Savannah, a group responsible for renovating the downtown area, has plans for narrowing one of the streets bordering the bank site, and broadening the sidewalks, making the bank an initial step in a larger scheme. And the Savannah Historic Review Board, which must approve all new downtown construction, has given its enthusiastic support.

Savannah banks traditionally serve coffee at ten in the morning, and in the new Liberty National Building, the ornate granite archway from the building it replaces will provide a backdrop for mid-morning coffee, which will be served from a table graced with a silver coffee service.

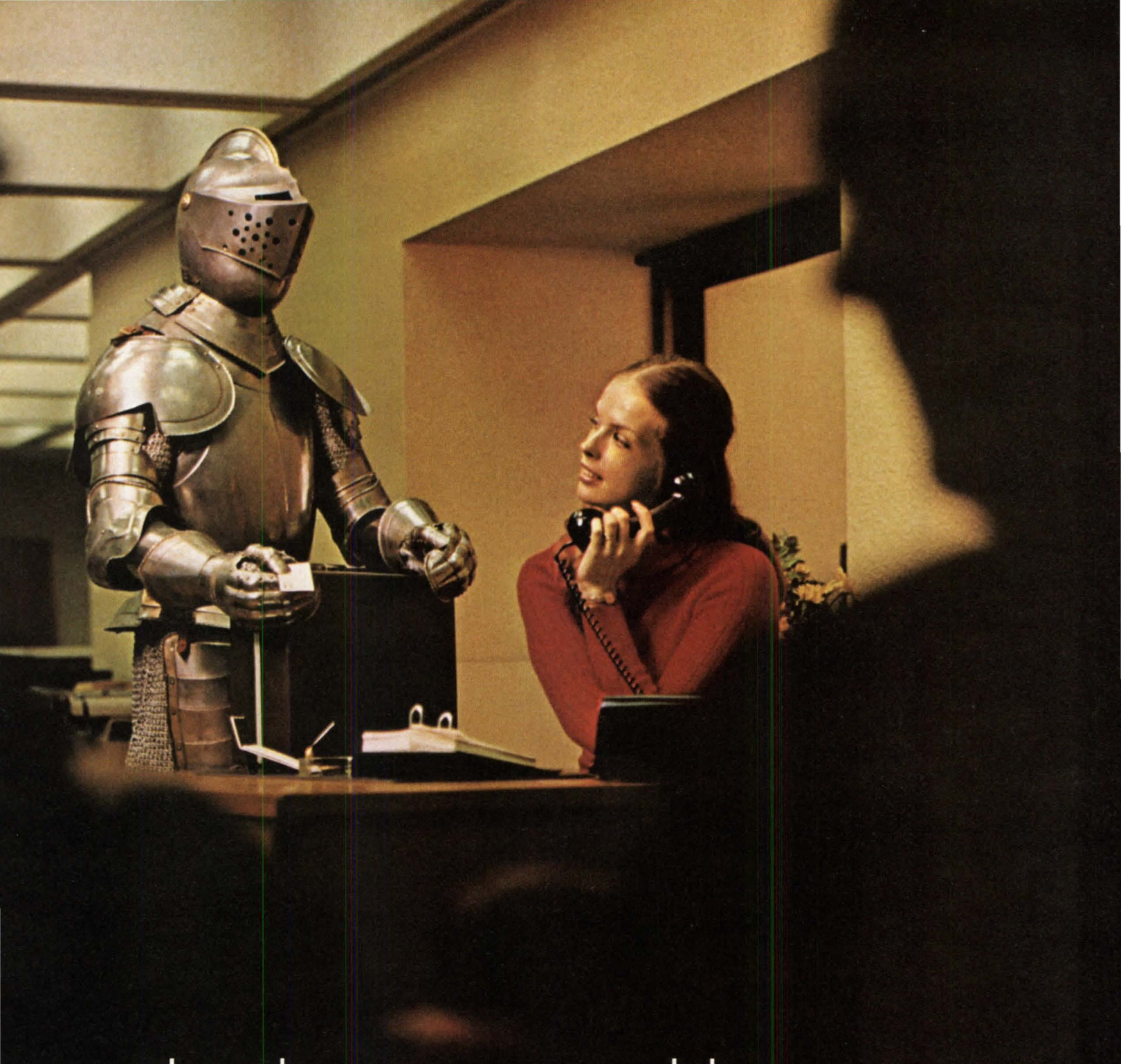
Fall River finally gets its new city hall

For the past 10 years, Fall River, Mass. has been trying to replace its city hall. The original 110-year-old building was torn down when Interstate 195 sliced the town in two; the plan was to put the new city hall above the highway, using the air rights to unite the town, and coordinating federal, state and urban renewal agencies to do this took most of a decade.

The new $6.5 million Fall River City Hall will consist of a six-story administrative building and a connecting two-story city council unit. They will be built over the six-lane federal highway between a pair of bridges. Designs for the municipal government center, by Continental Engineering Corporation, call for the complex to rest on 12 trusses spanning the freeway. The trusses will be 140 ft long and 12 ft high, and the construction will form a 580-ft freeway tunnel. The structures themselves will be of precast concrete and reflecting glass, surrounded by a plaza elevated 10 ft above the local street level. The main building will have 115,000 sq ft of floor space, housing all of the city's administrative offices.

Prefab curtain walls designed for lift slab building

To meet stringent requirements for light weight and high insulating values, shop-fabricated curtainwalls were designed for a 15-story, lift-slab apartment building in Stamford, Conn. At 10 lbs per sq ft., the composite wall weighs one-fifth as much as conventional masonry and has three times the insulating value, or a U factor of .09. Window frames are dark bronze, enamel-coated aluminum, and aluminum reflector foil, backing 3 in. of fiberglass insulation, acts as a vapor barrier as well as additional insulation. A 5/8-in.-thick gypsum plasterboard between insulation layers gives the wall a 1½-hr fire rating, while a light steel frame provides strength to resist wind pressures up to 50 psf on a 10 ft vertical span. Finally, a [continued on page 34]



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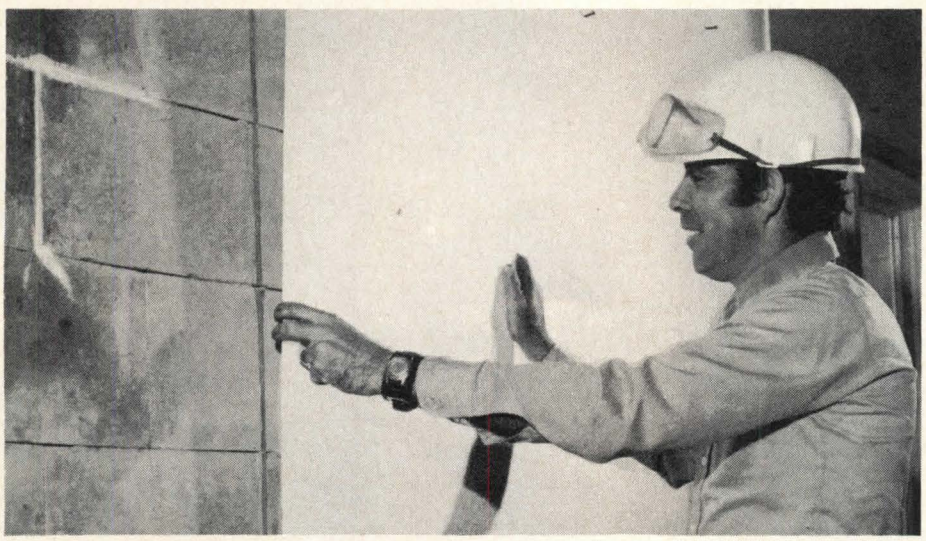
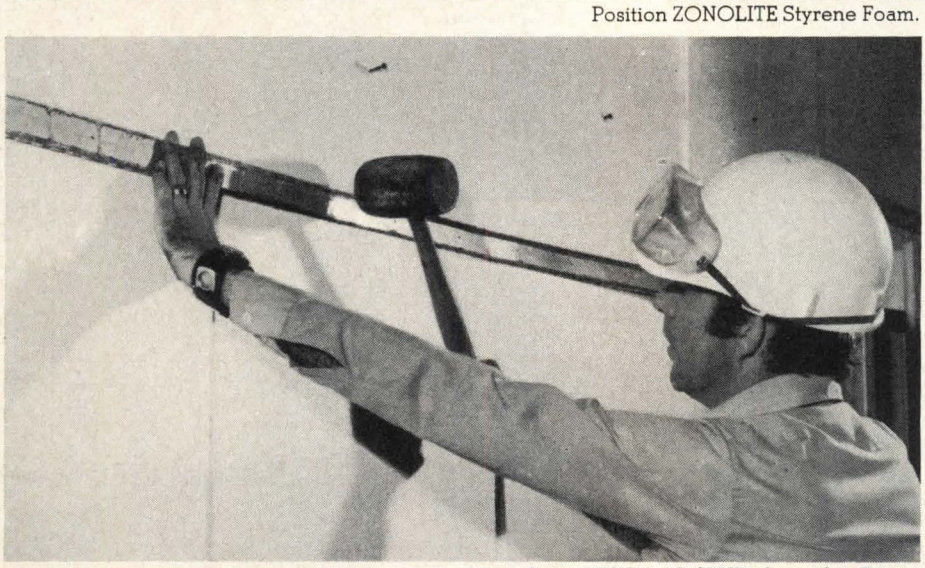


Position ZONOLITE Styrene Foam.



Imbed THERMO-STUD channel in Foam.

Nail through Foam to masonry.

Here's a completely new, mechanical insulation system for masonry walls that are to be finished with gypsum wallboard or other interior treatments.

ZONOLITE® THERMO-STUD.® It eliminates insulation shorts, providing a permanent moisture-resistant barrier.

Yet, installed costs are competitive with other, less trouble-free insulation methods.

Lightweight ZONOLITE Styrene Foam Boards are butted together against masonry walls. They're held in place with serrated THERMO-STUD channels, which are mechanically fastened to the wall.

Troublesome adhesives are eliminated. Drywall can be applied immediately using self-tapping screws through the serrated channels.

Installation is so simple, yet trouble-free.

ZONOLITE THERMO-STUD meets or exceeds power company "U" value requirements of 0.10 or better for wall insulation. "R" values increase accordingly. Result: heating and cooling economies.

Get booklet SF-1 that tells everything you need to know about the ZONOLITE THERMO-STUD system. Contact the ZONOLITE sales office in your area, or write: W. R. Grace & Co., Construction Products Division, 62 Whittemore Avenue, Cambridge, Massachusetts 02140. In Canada: 66 Hymus Road, Scarborough, Ontario.

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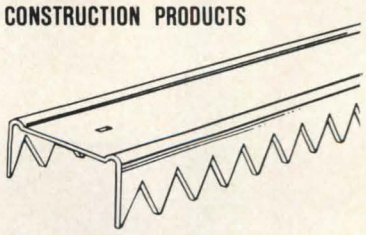

New Amarlite BTI-680 High Rise System gives both concealed and baffled drainage plus thermal barrier!

This new BTI-680 stick system offers several improvements over others designed for high-rise applications, when you desire a vertical accent and thermal insulation.

A new, different kind of horizontal member with cover stiffener makes possible the advantage of concealed and baffled drainage, preventing water from backing into the system.

The vertical mullion design distributes metal more efficiently than similar high-rise systems. So there's more strength per pound of aluminum.

Horizontals run continuous through the verticals, reducing cuts and shelf clips. Installation is further simplified through a "T" design of the bolts that fasten the inside and outside mullion components to each other.

Write for Specification File 8.14 An.

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SPECDATA Available

The BTI-680 features a thermal break solving problems of heat transfer, expansion and contraction, and condensation. New horizontal design with cover stiffener permits concealed, baffled drainage.

News report continued from page 30

¼ in. cement-asbestos board, mechanically fastened to the curtain-wall ribs, serves as the backing for the veneer, in this case dark bronze, fire-glazed finish. Spandrel bands have a fine aggregate, simulating limestone, bonded to epoxy on the cement-asbestos board.

Wall sections were lifted by a truck-mounted winch, welded to continuous angles cast in each slab's top corner, and sealed with compressible rubber gaskets. Interior gypsum plasterboard is anchored to the steel studs.

For the apartment, designed by James Evans Associates, the lift-slabs with flat soffits were cast on the ground in stacks, post-tensioned and hoisted into place by hydraulic jacks. There are no spandrel beams, as exterior columns are set in from the wall line to provide a full collar around each column and to balance loads during jacking. The cantilevered slabs, therefore, require the light (roughly 85 lb per linear ft) walls. Modu-Wall, Inc. fabricated and erected the walls.

CSI celebrates 25th anniversary in Washington

The Construction Specifications Institute turned inward this year, celebrating its 25th anniversary by devoting almost all convention meetings and technical sessions to itself—past, present and future. Speaker after speaker told of early struggles, current activities in promoting greater use of the CSI Format and Manual of practice, and future goals—more documents, more education (both of students and professionals) and some type of materials and product evaluation.

The last item was one of several questions raised during the sessions but never answered: How can CSI, with both professional and industry members, evaluate products? Can CSI pull the whole fragmented construction industry together? Can spec writers and lawyers establish mutual understanding and coordination? What about OSHA? Will the now-voluntary consensus standards come to be enforced by federal law?

The convention, held at the Sheraton Park in Washington, D.C. and billed as "CSI: a dynamic force in construction," attracted more than 3000 persons and 300 display booths. Most exhibitors reported lively attendance throughout the exhibit sessions, which were held separately from technical and business meetings.

A pre-convention banquet, held June 24, officially celebrated the 25th anniversary. Other social events included a "Jazztime Party" at the Army/Navy Country Club, a full program for wives and teenagers, and the annual president's reception and banquet, which closed the convention June 27.

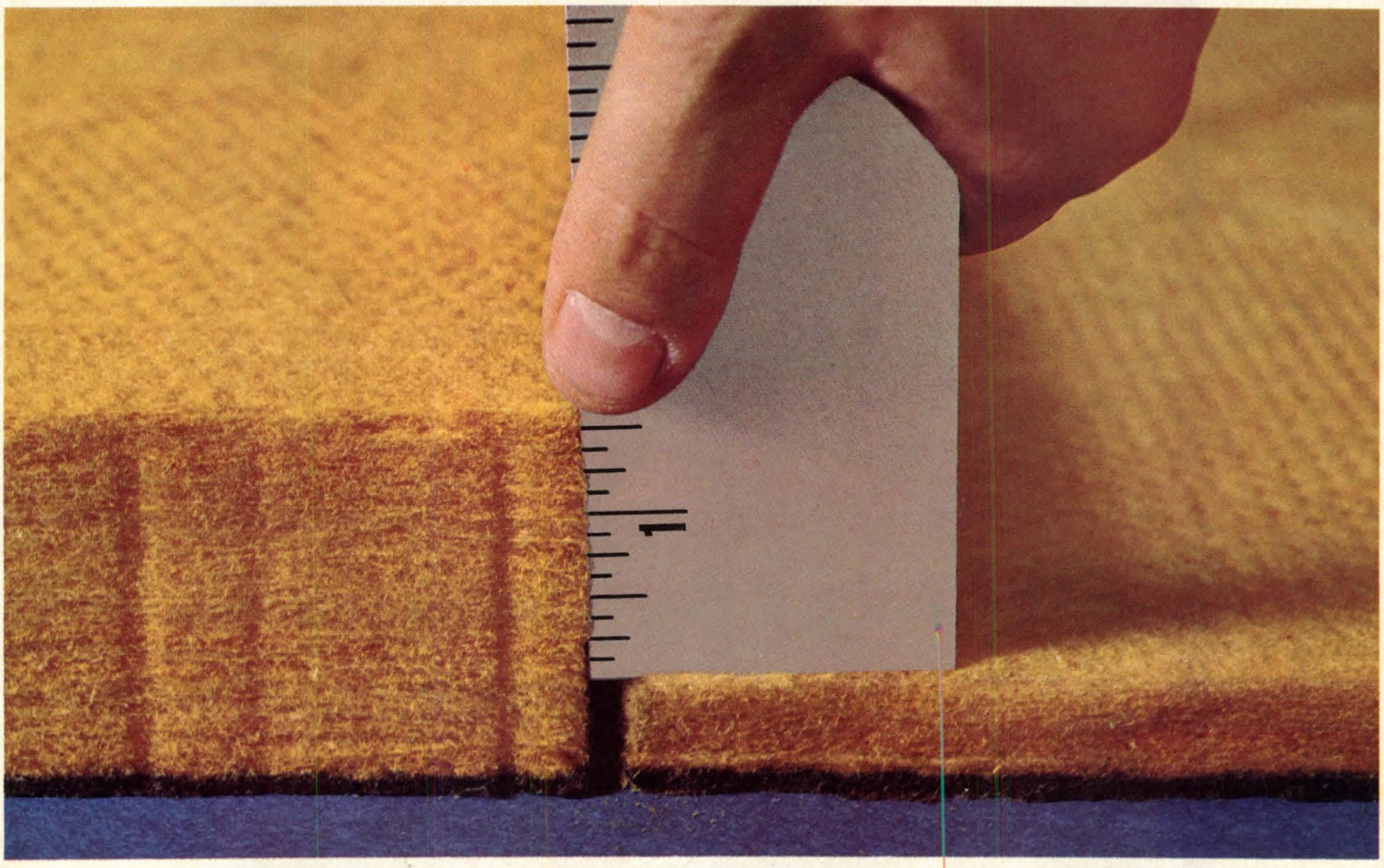
Credit where it's due

Inadvertently, no architect was named in our news story on the John F. Kennedy Library in last month's News report; I.M. Pei & Partners, of course, are the architects.

Balloons, bands mark AIA headquarters dedication

The AIA held a housewarming in June, marking the formal opening of its seven-story, $7.4 million headquarters in Washington, D.C. Past presidents of the Institute were called upon for remarks, and current President Scott Ferebee noted, in [continued on page 38]

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



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

Simply by using 2¼" instead of ¾" of Fiberglas* roof insulation.

These particular savings were figured for a suburban office plaza in the northern climates (zone 1). Factors taken into account were: the normal temperature range of the region, size and type of roof deck, the "U" improvement due to thicker insulation. And the added cost of the thicker insulation.

How much can you and your client save by using 2¼" insulation?

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

Write Mr. R. H. Meeks, Architectural Products Division, Owens-Corning Fiberglas Corp., Fiberglas Tower, Toledo, Ohio 43659.

Energy Conservation Award

Owens-Corning is offering awards to stimulate new designs and ideas for conserving energy. Special Steuben sculptures will go to the three architects or engineers who—according to a panel of independent judges—do the best job of designing buildings that don't waste fuel. For details, write to Mr. Meeks at the above address.

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

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News report continued from page 34

his remarks, that the members of the Institute are committed to being responsible professionals and responsible citizens, with the ultimate goal of insuring that a "nourishing environment is available to more and more of our fellow citizens."

Nancy Hanks, chairman of the National Endowment for the Arts, was also a guest speaker. "We live," she said, "in an age when the memory of great names in contemporary architecture—Sullivan, Wright, Richardson and Burnham, to note but a few—are evoked at the speaker's table while the best of their works are being jeopardized by the pressure of economic opportunism. . . . Though seldom thought of as a means of communication, our buildings are indeed a statement about ourselves—about the value we place on quality and the visual environment and the faith we have in the future."

After the ceremonies (keys to the building were presented to Ferebee by Norman Fletcher, of The Architects Collaborative, who designed the building and S. Peter Volpe, of Volpe Construction Co., who built it) came the celebration. Bands played in the courtyard, balloons filled the air, and guests of the reception were treated to an exhibit of photographs of the new building.

Rooftop study planned

The roof seems to be the next unexplored urban safety valve, and The Cooper Union and Haus-Rucker, Inc. are going to explore it. With the help of a $45,100 grant from the National Endowment for the Arts, Haus-Rucker plans to study ways to make rooftop space a functional part of the urban landscape; Cooper Union will run a course on rooftops.

Haus-Rucker will be the principal project investigator, working with Cooper Union students and faculty on six specific projects during the next 12 months. A survey of attitudes on rooftops is planned, along with the development of a rooftop handbook, which is seen as a guide to developing rooftop space. The handbook will cover legal problems, suggested design solutions and ideas on installing mechanical and electrical components along with a directory of free and inexpensive materials. A laboratory is planned for a New York City rooftop, where ideas, techniques and materials can be tested; also planned is a scale model of a typical existing rooftop landscape. A movie and an exhibition are also planned.

New light bulb uses less electricity for same light

Energy conservationists and watt-watchers in general can take some pleasure in a new light bulb recently introduced by Duro-Test Corp. Filled with the very rare krypton gas (you remember krypton—it's the stuff that wipes out Superman) instead of the commonly used argon, the new bulbs are said to use up to 10 percent less electricity for the same light output as conventional-wattage incandescent bulbs. The krypton gas retards evaporation of the filament, allowing it to burn brighter for a longer period of time.

The bulbs come in two versions. The industrial, commercial [continued on page 40]

New Nordic!
The quiet riffle of a fiord... at excursion fares.

Photo courtesy of Scandinavian Airlines System

Now, AURATONE® brings fresh esthetics to panel and tile ceilings. It's our lusty new Nordic pattern with a texture as riffled as a breeze-swept fiord. As quiet, too. And, almost as fire-resistant. In fact, this micro-perforated mineral fiber ceiling pattern soaks up sound to 55 NRC. Takes you Class A all the way in fire rating and light reflectance.

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News report continued from page 38

and institutional bulbs have a 3500 user-hour life and are available in 54-, 90- and 135-watt sizes, providing the same light output as 60-, 100- and 150-watt conventional long-life bulbs. Bulbs for residential use come in 55-, 92- and 138-watt sizes, designed to replace 60-, 100- and 150-watt bulbs; they have a life of 2500 user-hours as compared to a life rating of 750 to 1000 hours for general-purpose household bulbs.

New York City signs contract for housing over tracks

Penn Central commuter trains rumble through the Morrisania section of the Bronx, their tracks some 20 ft below street level. Now under a turnkey contract recently signed by New York City Housing Authority, the air rights over the tracks will be used for a $38 million public housing project, the largest in the city in eight years.

The project (P/A, Feb. 1972, p. 37) will be designed by The Eggers Partnership, based on the staggered steel truss system developed at MIT. Carmelo Marullo, Eggers' principal in charge of the project, estimates that families will move in within 16 months after construction starts, and that money will be saved, by using the steel truss system.

The project will cover the Penn Central operations, providing for ventilation, lighting and fire exits, and sound insulation will be included to keep out train noises. The project is to be a series of connected buildings, ranging from 11 to 29 stories, and providing 1028 residential units.

Washington report

Focus on safety

As the usual round of "Washington meetings" proceeded to its normal late-summer ending, one point became clearer: The architect is being drawn closer and closer to center stage on the jobsite again, partly by events, partly by his own design. The long-standing public (and construction industry) impression of a "clean-shoes" professional who is more artist than construction man is rapidly going by the boards.

One reason is law and regulation. A two-day session (sponsored by AIA and ASCE) on the effects of the now two-year-old Occupational Safety and Health Act is a case in point.

Emphasized was the fact that the architect must consider the requirements of this law in detail in preparing his designs and specifications. "It won't be enough," in the words of one speaker, "simply to include compliance with OSHA 'by reference' in the specs." The selection of materials, of designs that require certain construction methods, the several hundred professionals were told, must be made with compliance with OSHA in mind.

What's more, conformance to existing building, fire safety and other codes won't be enough. Those codes, with OSHA officials, are designed to protect the general public against hazards such as failure or fire. But OSHA itself is aimed at the day-to-day protection of persons working in the structures, not casual or business visitors. So conformance with a fire code might not answer the "occupational" requirement.

Another example: fire considerations, particularly in high-rise structures. The increasing Washington interest in this subject is shown by efforts of the General Services Administration and other agencies to come up with some acceptable standards that will cover not only the structure, but also the means of confining a fire, access and egress from affected areas, air handling systems that can spread fire, fumes and damage. Important aspects, now coming under close examination, are furnishings and interior finishes—to see that such considerations don't negate the work of structural and safety people, by inserting fire-prone materials.

Calendar

Through Aug. 18. Exhibit of the Italian Art and Landscape Foundation Inc., Phoenix Art Museum, Phoenix, Ariz.

Through Aug. 19. "Low Rise-High Density Housing," Museum of Modern Art. Exhibit of two projects in New York City designed by the Institute for Architecture and Urban Studies as commissioned by the Urban Development Corporation.

Through Aug. 28. "Streets" exhibition, Museum of Modern Art, New York City.

Through Sept. 10. "The Arts and Crafts Movement in America 1876–1916," Renwick Gallery of the Smithsonian Institution, Washington, D.C.

Aug. 12–15. Eighth annual conference of the Society for College and University Planning, Toronto.

Aug. 12–Sept. 23. Exhibition of drawings and prints by Ettore Sottsass, Jr. and Superstudio, Walker Art Center, Minneapolis.

Aug. 15–27. Annual meeting and foreign tour of the Society of Architectural Historians, Cambridge University and London.

Aug. 19–24. Forty-third annual meeting of the Institute of Traffic Engineers, Radisson Hotel, Minneapolis.

Aug. 25. Deadline for entries to American Institute of Steel Construction Awards of Excellence, New York City.

Aug. 28–31. Annual conference of the Urban Regional Information Systems Association, Atlantic City, N.J.

Aug. 29–31. "The Design Activity," international conference, Polytechnic of Central London, London, England.

Aug. 31. Deadline for entries to P/A Design Award Program.

Aug. 31. Deadline for entries to Energy Conservation Awards Program, Owens-Corning Fiberglas Corporation, Toledo, Ohio.

Sept. 1. Deadline for abstracts of papers for the third international symposium on lower-cost housing problems, Montreal.

Sept. 4–14. Ninth triennial meeting of the International Organization for Standardization, Sheraton-Park Hotel, Washington, D.C.

Sept. 7. Deadline for entries to annual awards program of the New York Society of Architects.

Sept. 8–11. Annual convention and exhibit of National Office Products Association, Conrad Hilton Hotel and McCormick Place, Chicago.

Sept. 9–12. Conference on legal aspects of zoning sponsored by the Pennsylvania State University College of Arts and Architecture, University Park.

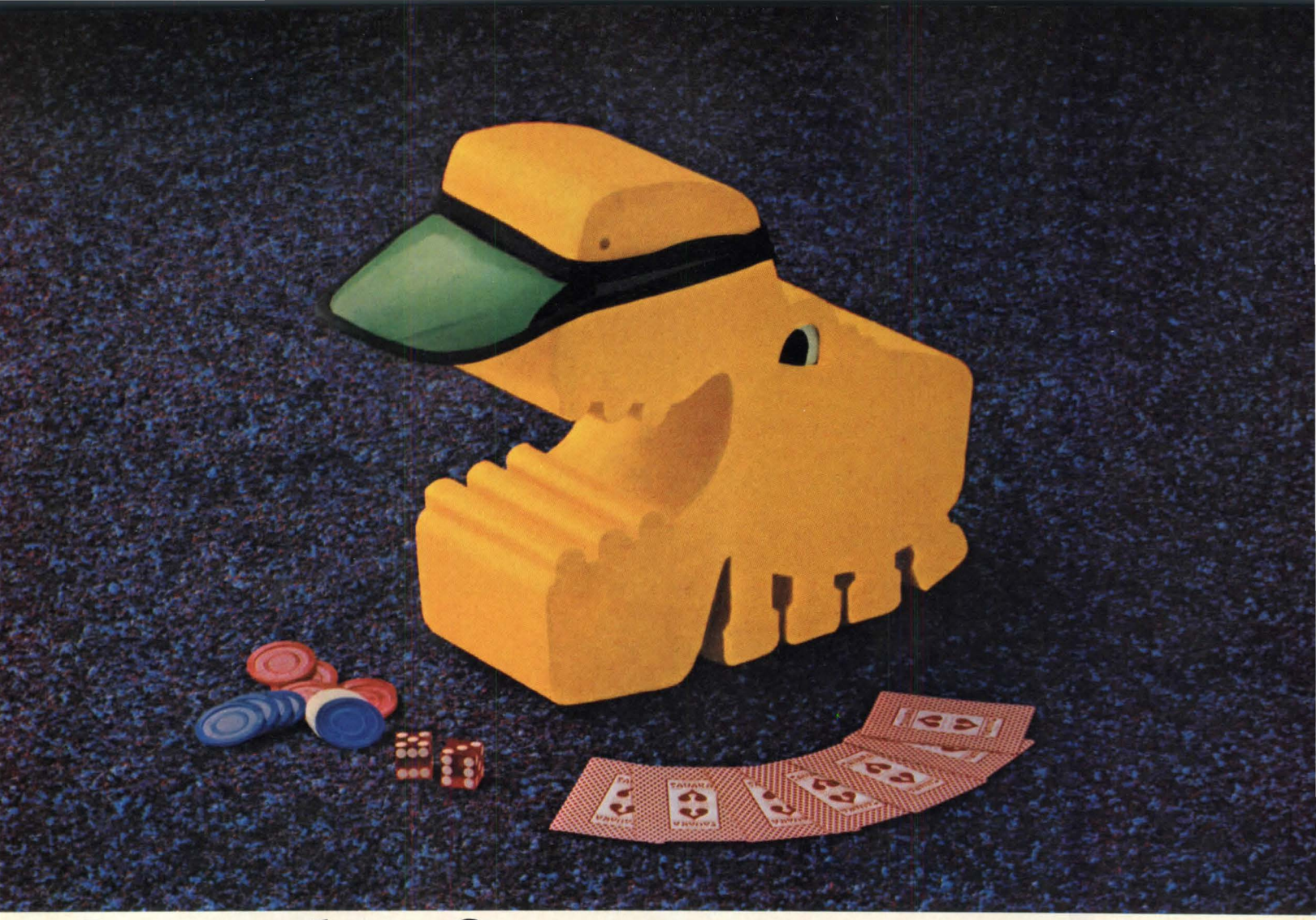
Sept. 9–13. Fourth annual apartment conference of the National Association of Home Builders, Regency Hyatt House, Atlanta.

Sept. 13. Design seminar on use of glued laminated timber for structural framing and decking in buildings sponsored by the American Institute of Timber Construction, Western Forestry Center, Portland, Ore.

Sept. 14–18. National convention of the American Institute of Interior Designers, Fairmont-Roosevelt Hotel, New Orleans.

Sept. 15–20. International Public Works Congress and Equipment Show, Currigan Hall, Denver.

Sept. 18–21. Third conference on psychology and the built environment, University of Surrey, Guildford, Surrey, England.



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Buildings on the way up

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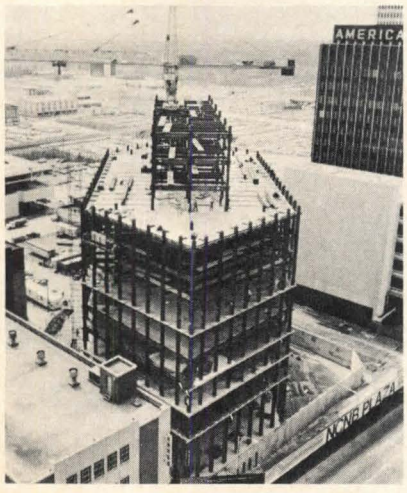

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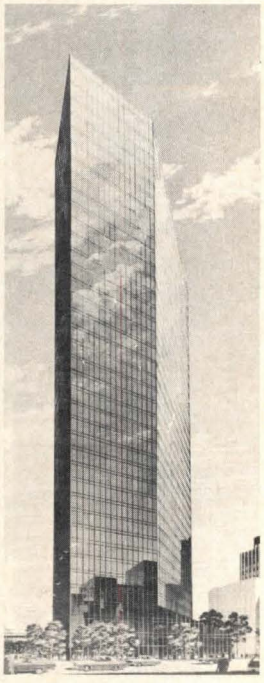

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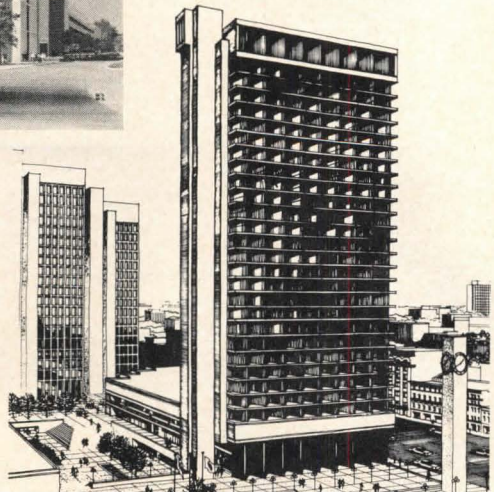

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1 As many as four separate events could take place at the same time in the 220,000 sq ft of exhibit space planned for Chicago-O'Hare International Trade Center. Proposed for a 65-acre site just minutes away from the busy air terminal, the convention center will also provide 180,000 sq ft of space to be filled with 28 meeting rooms, restaurants, a lounge, registration area and offices. To follow: a 1000-room hotel (to be built in two stages of 500 rooms each) and a 20,000-seat arena, both to be linked to the convention center. Parking for 7400 cars and 120 buses will also be provided. Theodore Sente & Associates are architects.

2,3 Block-wide urban redevelopment project in downtown Charlotte gets off to a start with a 40-story headquarters building for NCNB Corp. (North Carolina National Bank). The steel-framed tower, which will have reflective glass on all six of its sides, is the first phase of the project, which will eventually include a hotel and an enclosed shopping mall. Cost is put at $30 million. Architects are Thompson, Ventulett & Stainback and Odell Associates; project is being developed by Crow, Carter & Associates.

4 Linked with Hartford, Conn., Civic Center by an enclosed pedestrian bridge, $13.5 million Sheraton-Hartford Hotel will provide 400 rooms. Civic center itself will contain 1 million sq ft of space, including a coliseum, offices, shops, stores, restaurants and underground parking, all opening onto a large interior court. Architect for hotel is Vincent G. Kling & Partners; along with associate architect Danos & Associates, the Kling firm is also architect for the Civic Center.

5 First phase of development for Shippingport Square, a 4-acre downtown redevelopment project on Louisville's riverfront, will be marked by 29-story hotel. The 3-story base of the hotel will house commercial and retail space; 450 hotel rooms will be provided in the remaining 26 stories, with a restaurant and cocktail lounge on the top floor. When completed, the $37.5 million development will also include an office tower and an apartment building grouped around an outdoor plaza surrounded by shops, restaurants and other facilities. Parking for 225 cars will be provided beneath the plaza. Architects for the proposed development are K. Norman Berry & Associates and Finch Alexander Barnes Rothschild & Paschal, Inc.

6 Convention and civic center for Lexington, Ky. will include 22,000-seat arena, 66,500-sq-ft exhibition hall, 400-room hotel along with retail space, outdoor plaza and off-site parking; an office building is proposed for later. Bluegrass Development Consortium includes architects Ellerbe and Johnson/Romanowitz, Landmark Development Corp., Hunt Development Corp. and Huber, Hunt & Nichols, contractors.

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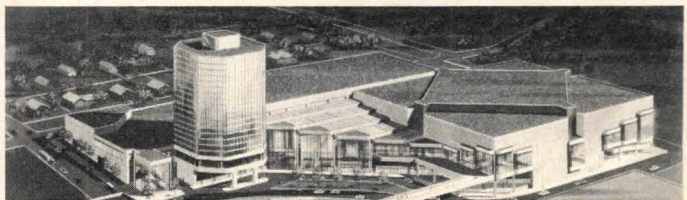

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For more information,write to Mr. R. L. Meeks, Architectural Products Division, Owens-Corning Fiberglas Corp., Fiberglas Tower, Toledo, Ohio 43659.

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Owens-Corning is offering awards to stimulate new designs and ideas for conserving energy.

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For details, write to Mr. Meeks at the above address.

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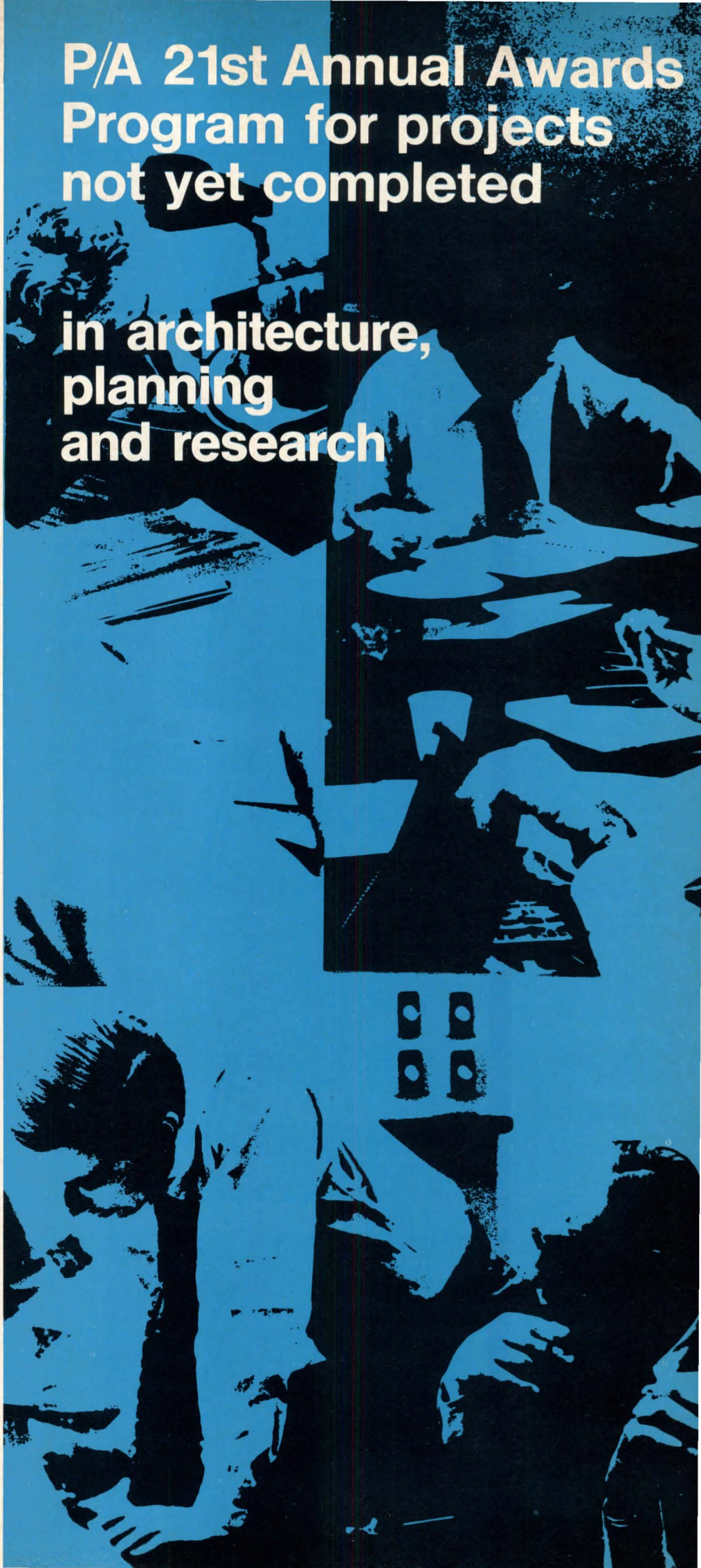
P/A 21st Annual Awards Program for projects not yet completed

in architecture, planning and research



Progressive Architecture announces its Twenty-first Annual Awards Program. Awards will be made to U.S. and Canadian architects, designers, urban planners, other professionals and their clients for projects now in the design stage and scheduled to be under construction in 1974. Any building, group of buildings or urban planning project illustrating definite building proposals will be eligible. *In addition* entries in *applied research for a client* will be accepted from architects or others *if they are applicable to the design or realization of specific facilities or programs and are scheduled to be acted upon within the calendar year 1974.* Qualification of entries in any category depends on the fact that the work is commissioned by a specific client.

Purpose of the Awards Program is to recognize, at the critical early stages, outstanding examples of work being done in the fields that most directly affect the built environment. Recognition will be given to both the entrants and their clients.

First award, award and citation designations may be given by the jury in any or all of the three broad categories: research; urban design and planning; architectural design. Entries will be reviewed for such factors as response to a client's program, site use and development, design excellence, conceptual advances, materials selection and methods of implementation.

The jury: for the Twenty-first Awards Program, P/A has invited the following respected jury members: **Denise Scott Brown,** Partner, Venturi & Rauch, Philadelphia; **John P. Eberhard,** AIA, President, AIA Research Corporation, Washington, D.C.; **Joseph Esherick,** FAIA, President, Esherick Homsey Dodge & Davis, San Francisco; **Herb Greene,** Architect, Professor, College of Architecture, University of Kentucky, Lexington; **Paul Kennon,** AIA, Director of Design and Senior Vice President, Caudill Rowlett Scott, Los Angeles; **Barton Myers,** MRAIC, Partner, Diamond & Myers Architects and Planners, Toronto; **Jaquelin T. Robertson,** AIA, Commissioner, New York City Planning Commission, New York; **John Zeisel,** Assistant Professor in the Sociology of Design, Department of Architecture, Harvard University, Cambridge, Mass.

Judging will take place in Stamford, Conn., during September 1973. Winners of awards and citations will be notified immediately (confidentially) after the judgment.

Public announcement of the winning projects will be made at a presentation in January 1974 at a location to be selected. Winning projects will be featured in the January P/A. As in the past, P/A will arrange coverage of winning entries in news media, particularly in those localities of the award and citation winners. Winners must agree to provide illustrations reproducible in the press.

Submission requirements

1. All submissions *must be firmly bound.* Original drawings, actual models, or mounted

Entry form

Progressive Architecture 21st Annual Awards Program

(Typewriter only, please)

Please fill out *all* parts of this form and submit with your entry. A copy of this complete form may be used when submitting multiple entries.

Entrant:
Address:

Project:
Location:
Client:
Category:
(Entrant file copy)

Entrant:
Address:

Project:
Location:
Client:
Category:
(Number file copy)

Awards Editor

Progressive Architecture

600 Summer Street, Stamford, Conn. 06904

Your submission has been received and assigned number:

Entrant:
Address:

Awards Editor

Progressive Architecture

600 Summer Street, Stamford, Conn. 06904

Entrant:
Address:

(Return label)

exhibit panels will not be accepted, and no material is to exceed 11″x17″ in size. Each project is to be submitted under separate cover; 8″x10″ binders are preferred.

2. Submissions must be accompanied by the *entry form,* to be found on the *left side of this page.* Each entry must have a separate form; reproductions of the form will be accepted. Please fill in (typewriter only, please) *all* appropriate spaces on the form, noting that four parts are required for each entry.

3. No identification of the entrant may appear on any part of the submission, except concealed in an envelope attached inside back cover of binder; entries will be kept anonymous until judging is completed.

4. In addition to the form, please include the following: a brief statement of the program, your solution, description of and reasons for your selection of materials and construction methods, site considerations or other influences on the final proposal (for planning and research submissions, it is important to summarize, in one page, the intent and effect of the work); a statement that the project is not yet completed, and that construction is scheduled to begin before the end of 1974 (or, in planning and research submissions, that the proposals or studies are to be acted upon in 1974); a statement that submission of a proposal gives P/A first rights to publish both the design and the finished project if it wins an award or citation (in the case of research studies, first rights to publication of the results) in the architectural press.

5. Graphic submissions should also include pertinent drawings such as site plans, representative floor plans, sections, details, perspectives and/or model photos.

6. For purposes of jury procedure only, projects are to be classified *by the entrant* in the appropriate space on the entry form. Awards and citations will not be given by categories, but submissions must be divided into comparable groups for judging. For this reason, you are asked to list your submission as one of the following: *Education (Higher), Education (Secondary), Education (Primary or Early Childhood), Housing (Single Family), Housing (Multiple Unit), Commercial (Large Scale), Commercial (Small Scale), Industrial, Religious, Recreation, Health Care, Planning and/or Urban Design, Applied Research.* If no category is listed for your submission, please write in MISC., and it will be placed with comparable entries. Mixed-use entries (part commercial and part housing, for instance) should be classified according to the larger function.

7. Any entry not conforming to the above requirements may be returned to the entrant without being judged.

P/A will guard and return all submitted material. Deadline for mailing is August 31, 1973. Address entries to Awards Editor,
Progressive Architecture
600 Summer Street, Stamford, Conn. 06904

The copper "life safety" fire sprinkler system makes this landmark hotel one of the nation's safest.

Tucson's Pioneer International Hotel was recently remodeled to become the nation's first with copper "life safety" sprinkler protection in every room.

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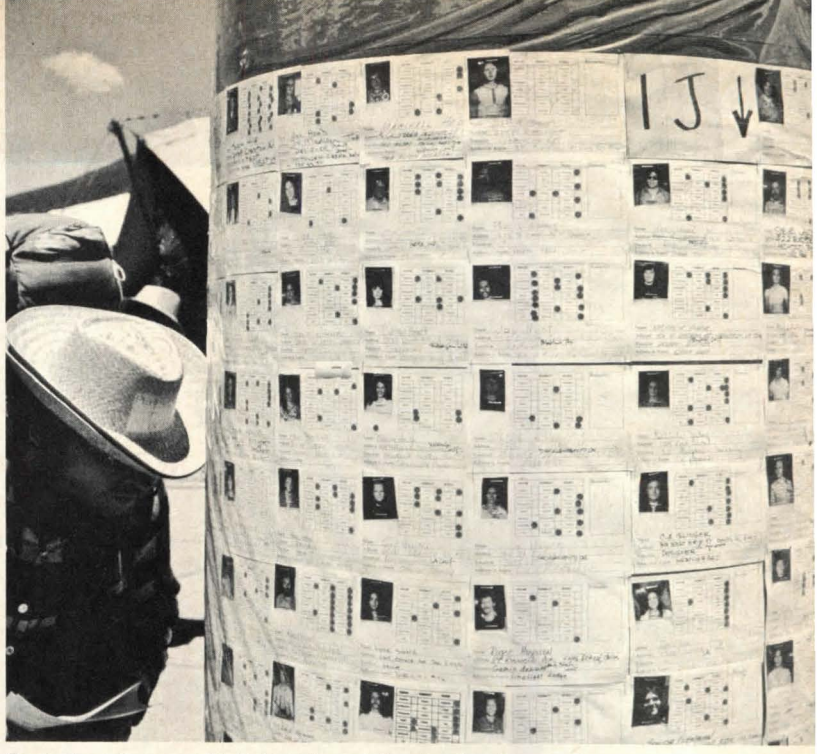
Performance at Aspen

August 1973



Cast of conferees, with Polaroids and thumbnail self-analysis.

There has always been a bit of show business in the annual design conferences at Aspen, Colo. There have been the legendary dome-raisings, kite-liftings and balloon ascents—most of them foiled by rude mountain winds. And there has been the social performance of several hundred conferees (some 1400 this year)—architects, planners, industrial and graphic designers, packs of students and a critical few "others" who converge on Aspen from all over the world to see and hear each other. To some extent, everyone who attends is on stage (Do my jeans look too new? Will my question hit the mark?).

As at an opera opening, some people come mainly to gratify their egos, to rub shoulders with an elite, or to try out for membership in that elite. But for the most part they come to Aspen (I'm convinced) for insights they would not get back in L.A. or Montreal. Every year the organizers of the Aspen conference focus on some aspect of the sprawling field of "design." By programming divergent viewpoints, they succeed—*almost* every year—in giving conferees ideas worth taking home to ponder.

"Performance" itself was the theme of this year's program—performance taken to mean the activity of the creative professional in relation to clients/patrons and audience/users (*not* performance in the sense of measurable output). On the face of it, this theme has little specific identification with architecture—compared, say, to last year's "Making the City Visible," on environment as an educational resource—and this year's event attracted relatively few architects. But architects, like other designers, could afford to give more thought to their roles as performers.

Of course the "Performance" theme became a pretext for introducing people from the "performing" arts: the Boston Theater Group, the American Brass Quintet, film and music critics, and a number of films ranging from Nixon's Checkers speech to Roman Vishniac's microscopic views of living cells in action. Artist Robert Rauschenberg performed by assembling a junk sculpture in public, and conferees could take part in assembling booths, seating, and playthings outside the conference tent, using components carefully programmed by landscape architect Paul Friedberg.

Even some of the theater people shed some light on the architect as performer. Actor James Earl Jones, for instance, had some thoughtful things to say about the motivating influences of vengeance and vindication, of "crooks who kill cops and cops who kill crooks"; we all know architects who are out to prove something. Then there was Congresswoman Pat Schroeder of Colorado, who gave a rousing keynote speech on Capitol Hill role-playing. In her subcommittee of the House Armed Services Committee, she dares to ask *why* we need yet another unrivaled aircraft carrier; might as well ask why we need the World Trade Center or the freeway through San Antonio. Carlos Campbell, a black planner until recently with HUD, spoke of the survival value of *non*-performance for the bureaucrat. British architecture critic Reyner Banham, a perennial at Aspen, spoke about "Architecture and Co-option" (a spiffy title that mystified even him) wherein the architect doesn't challenge the client's program if the client lets him package it to please his professional peers; in sum, "It takes two to make a bum deal."

The most serious misgivings about the architect's performance, as it now takes place, grew out of a group discussion (a not-quite-encounter session) billed as "The Erosion of Self." Never mind that the participants (under the loose guidance of psychologist George DeLeon) were all industrial/graphic designers—or that most of the discussion was uninspired. The premise was that the demands of the client and public, the burdens of administration, etc. constantly chip away at the principles the designer learns at school. There was a good deal of predictable *kvetching* about compromises one has to make, about the frustrations of subordinating self-expression to mere problem-solving. Then designer Sheila de Bretteville upset the whole premise by saying that design is not, dammit, just inhibited fine art; it *is* problem-solving. At times, she protested, she *resents* the attachment to color and composition that she learned in school. When a voice from the floor reminded panelists of their obligation to educate the client, Ms. de Bretteville recommended learning *from* the client, as well. So much for the Erosion of Self.

Maybe this has all been said before. But architects in a time of uncertainty must keep re-examining their roles. In what respects are we performing for clients? for actual users? for peer recognition? To what extent are we covering up "co-option" deals? If we can sort out our motivations and allegiances—and remain aware of them—we can surely perform better, for our own satisfaction and for society's.

John Morris Dixon

The corporate client

Olivetti builds

The Italian-based manufacturer of business machines and office equipment also produces superior architecture on five continents as part of an integrated design program

Many of this century's architectural landmarks have been sponsored by corporations; the names of Johnson's Wax, Seagrams and Lever come immediately to mind. Yet none of the world's major corporations has promoted outstanding design so consistently over the last few decades as Olivetti. In its product design, graphics and advertising, as well as its buildings, Olivetti has set standards that other companies have tried—most of them only sporadically—to follow.

The reasons behind Olivetti's record as a design patron are almost too idealistic to be true: the corporation simply values design itself above any economic return it could yield. Those who doubt can refer to the architectural evidence: buildings like those shown here were obviously not designed just to improve the balance sheet. In the long run, outstanding design may or may not be a competitive asset (and Olivetti's worldwide expansion in recent years shows that it is no liability). Either way, management recognizes a responsibility to employees, customers and public to improve the corners of the world where its buildings, products and advertisements appear. Adriano Olivetti, a social innovator and design connoisseur who headed the company until his death in 1960, was one of the first business leaders to challenge profit as the only proper goal of corporations. He pointed out what the balance sheet had always implied: that profit is a *cost* to the corporation, money due as a return to investors.

Olivetti's mechanism for ensuring good design is uniquely simple for a corporation of such size (74,000 employees, worldwide). Responsibility for the *design* of everything the company produces or commissions rests with one directorate of cultural relations, industrial design and publicity, answerable only to the chief executive of the corporation. Located in Milan, this office is organized as an atelier of designers and architects, under the direction of Dr. Renzo Zorzi.

For a typical building project, the need is identified by the president of one of Olivetti's far-flung affiliates (in 30 countries). That need is then weighed by top management and construction scheduled in relation to overall commitments internationally. At this point, Zorzi and his staff are called upon to find and evaluate potential sites, while officials at the affiliate level develop the program.

The architects are proposed by Zorzi. For a list of candidates, he can draw on his extensive background, his own staff, and a worldwide network of informed acquaintances, both inside and outside the company. (Except in the early years of expansion abroad, when Italian architects designed for other countries, the policy has been to select local architects.) The final proposal is based not just on competence to handle the problem at hand, but on "ability to interpret the culture of the time and place." The roster of architects Olivetti has chosen in this way is highlighted by names like Egon Eiermann, Kenzo Tange, Louis Kahn and James Stirling, but it also includes architects of growing stature such as Edward Cullinan in Great Britain, Richard Meier in the U.S. and Cappai & Mainardis in Italy.

Olivetti's collaboration with the architect once he is selected has inspired more than one of them to call the corporation "the best client I have ever had." The company's performance goes far beyond good intentions, as one of these architects explains it; it includes ample attention to analyzing the program, knowledgeable review at all stages of design, and a thorough understanding of an architect's function.

Throughout the process, Olivetti sees architecture as one aspect of what it calls—using the American phrase—"corporate image." Zorzi and his staff are always in equally close touch with industrial designers (such as Ettore Sottsass and Mario Bellini) and advertising men (such as the irrepressible George Lois, who developed the controversial "Olivetti girl" campaign). They are also responsible for numerous Olivetti-sponsored exhibitions and an extensive publishing program that includes the periodicals *Communità,* in the field of humanities, and *Zodiac,* an international journal of architecture and industrial design.

Olivetti's integration of various design disciplines is well illustrated by their activities in the U.S. Their original 1954 showroom in New York (since dismantled) was a joint effort of Italian architects Belgiojoso, Peressuti & Rogers with sculptor Costantino Nivola, and it is most fondly remembered for its indoor-outdoor, please-touch display of Nizzoli-designed typewriters. The San Francisco showroom (1955) was by graphic designer Leo Lionni and architect Giorgio Cavaglieri (both Italian-born Americans). One of the company's major contributions to architecture in this country involved no design commission at all: it was the purchase and preservation of the former Pepsi-Cola Building in New York, one of SOM's most successful works, as their American headquarters.

Olivetti's "image" is complemented—as it must be—by enlightened employee policies (which have consistently set the pace in Italy) and economic decisions (location of factories in depressed regions of Italy, for instance). Corporate image, in this broader sense, has occasionally produced measurable economic benefits. A recent survey in Japan, for instance, shows that Olivetti—which has been active there only 12 years—is among the top 15 corporations for which university graduates would prefer to work.

Some of us may be uncomfortable with the classification of architecture as one aspect of "image." Yet unless it is part of a broader, conscious program, architecture—for any kind of client—can never fulfill its potential for user satisfaction. [JMD]

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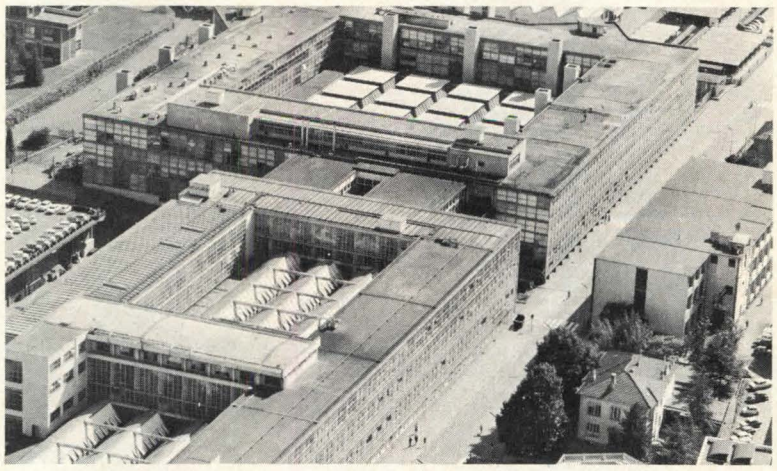

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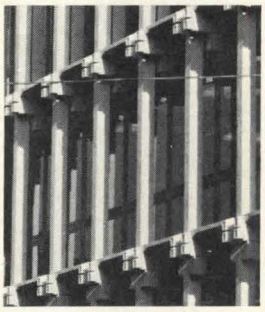

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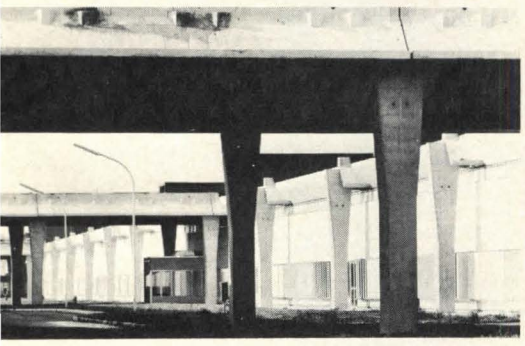

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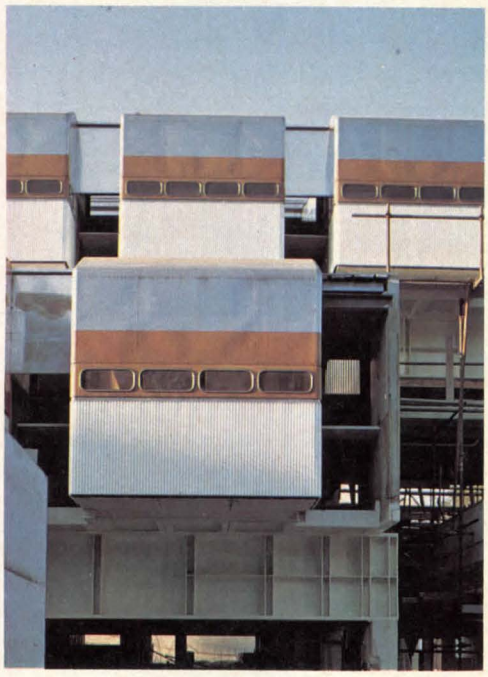

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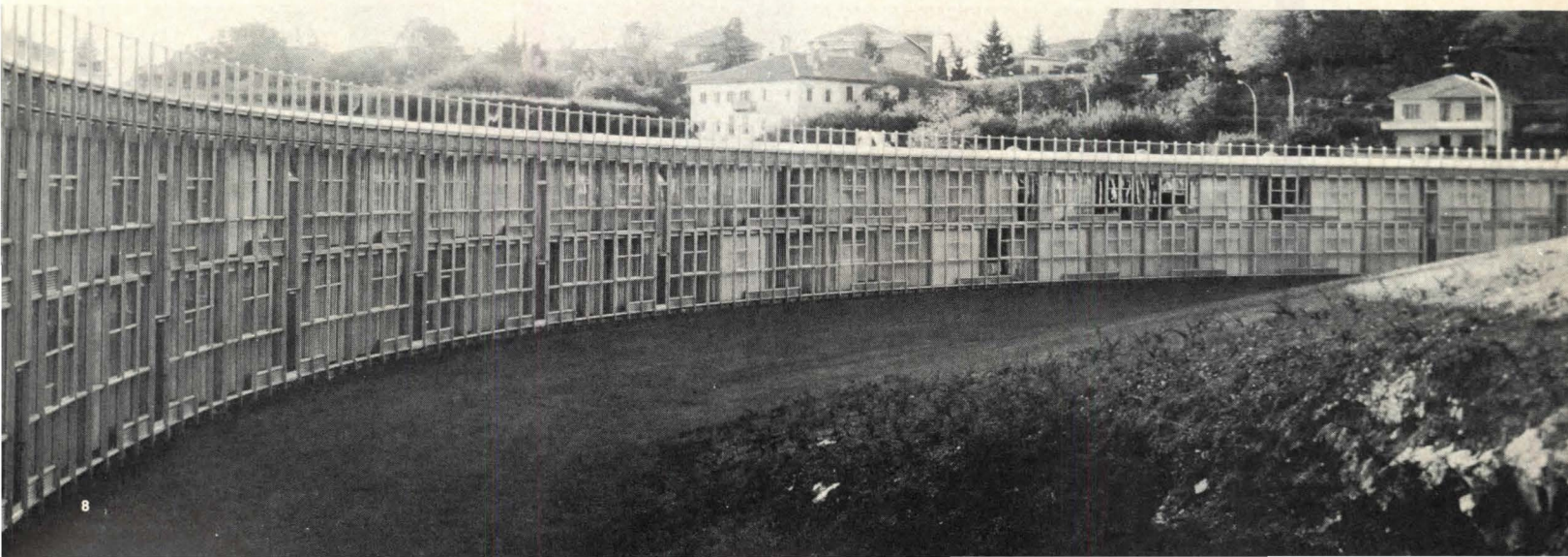

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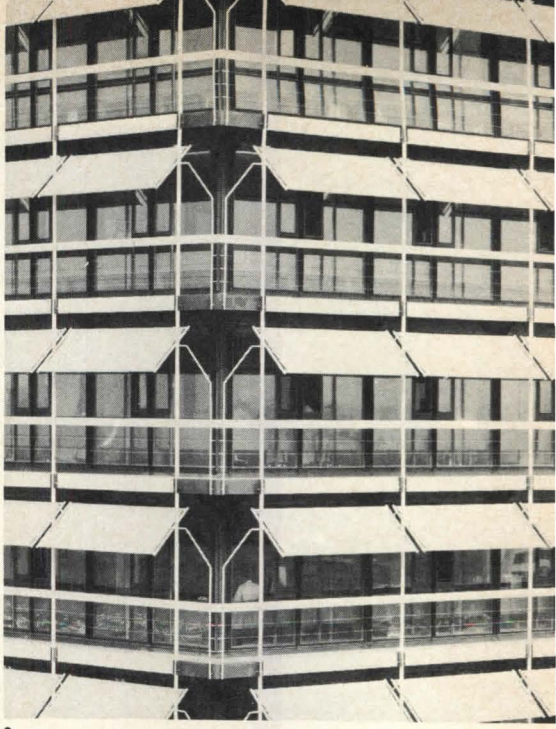

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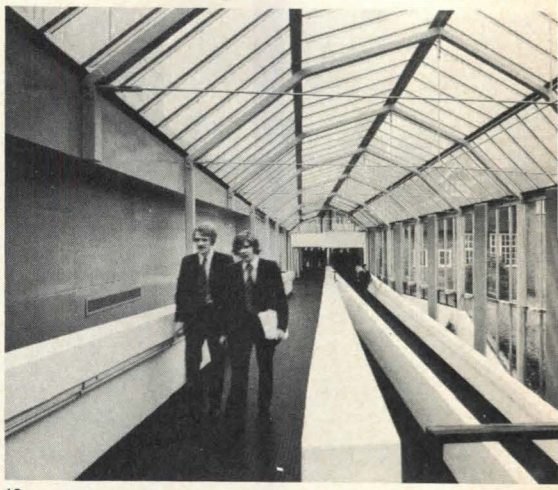
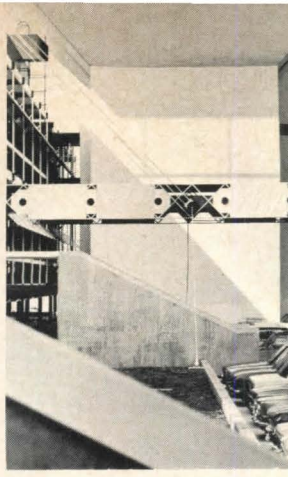


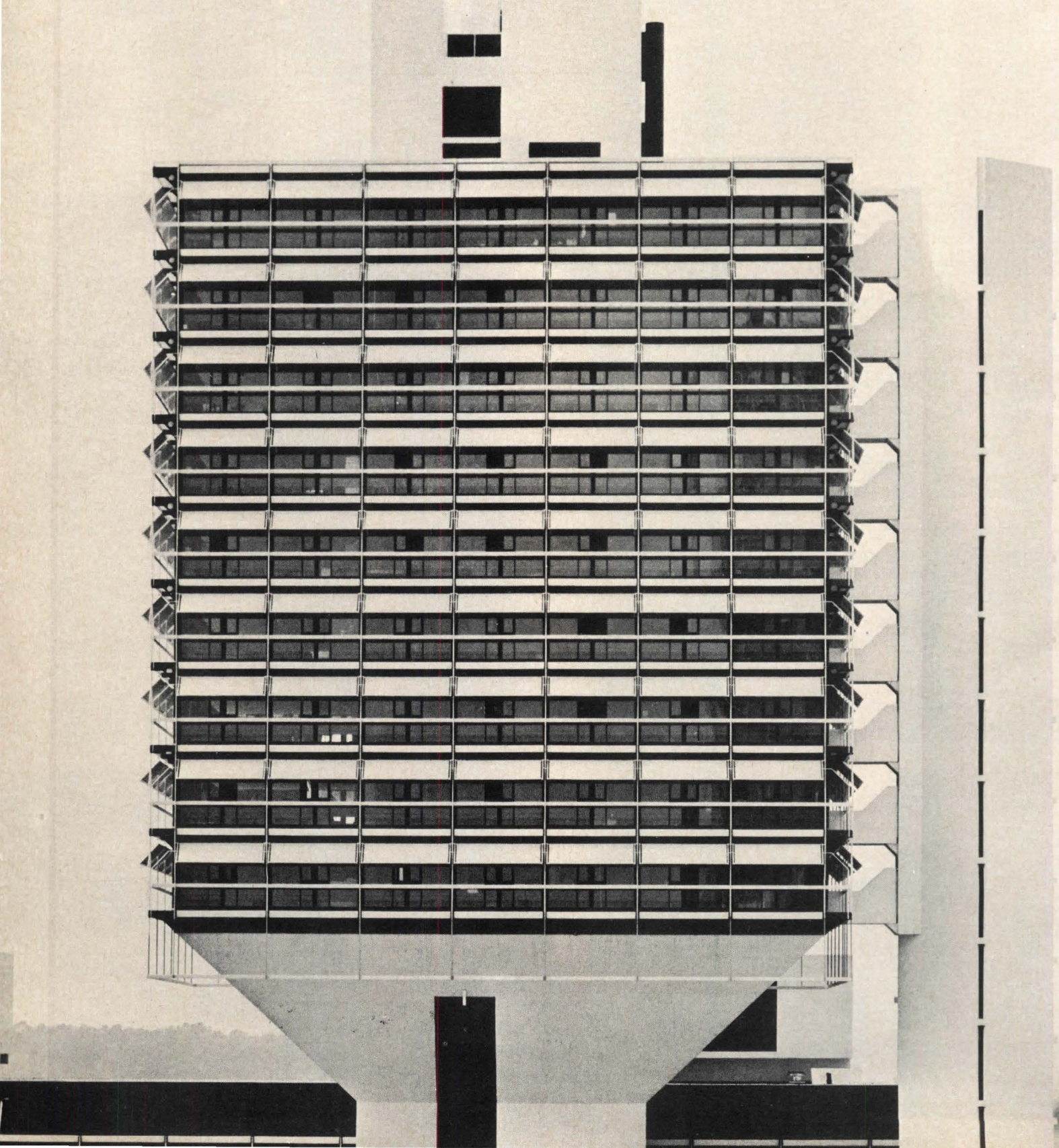
10

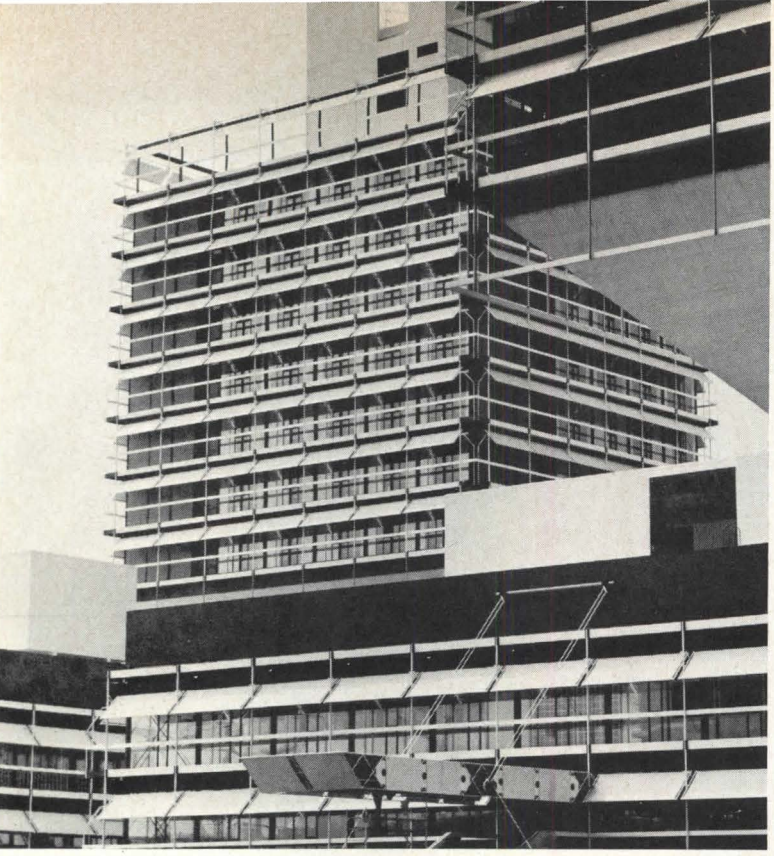
Olivetti buildings worldwide: 1 headquarters at Ivrea, Italy (1964, Fiocchi, Bernasconi and Nizzoli); 2,3 factories at Ivrea (1936–1950s, Figini & Pollini); 4 Olivetti Corp. of America offices, New York, formerly Pepsi-Cola Building (1959, SOM); 5 Florence offices (1972, Alberto Galardi); 6 factory at Marcianese, Italy (1970, Marco Zanuso and Eduardo Vittoria); 7 residential center at Ivrea (under construction, Cappai & Mainardis); 8 apartment building at Ivrea (1972, Gabetti & Isola); 9 headquarters of Deutsche Olivetti, Frankfurt (1972, Egon Eiermann); 10 British Olivetti training center at Haslemere (1972, James Stirling).

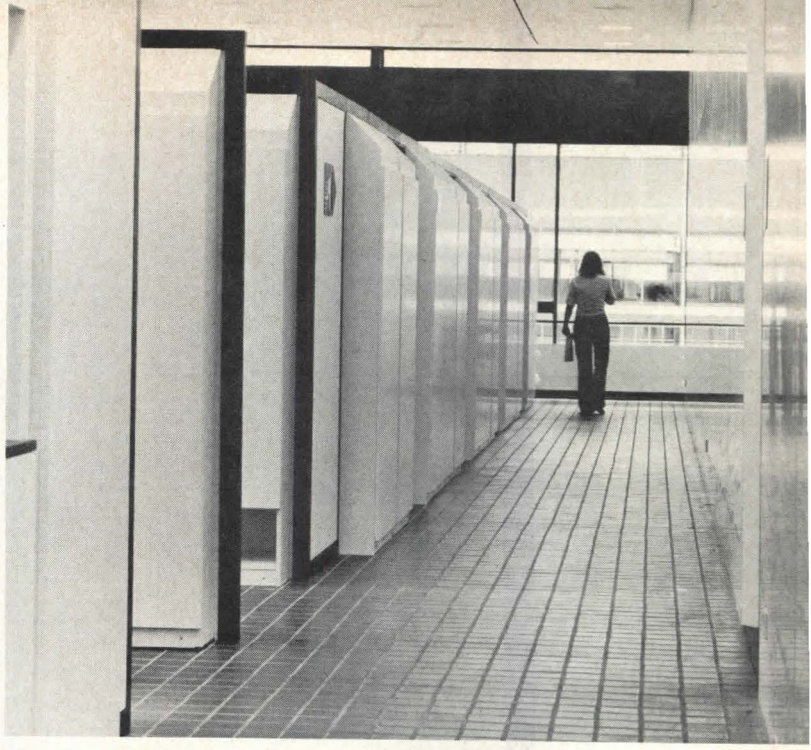
Photographs: RM Fotografia 1,2,3; G. Berengo-Gardin 6,9,10; Gabriele Basilico 5; John Morris Dixon 7,8.

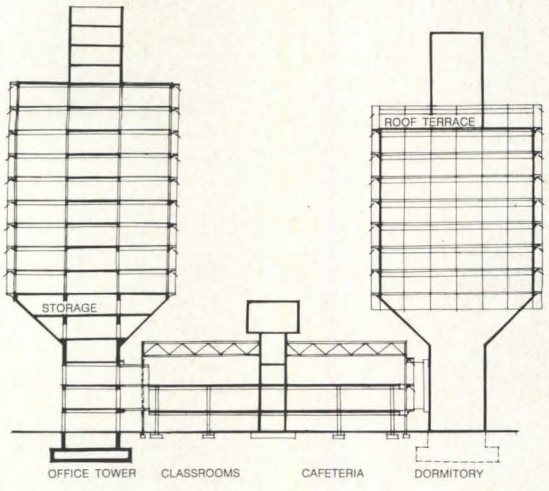


Olivetti builds

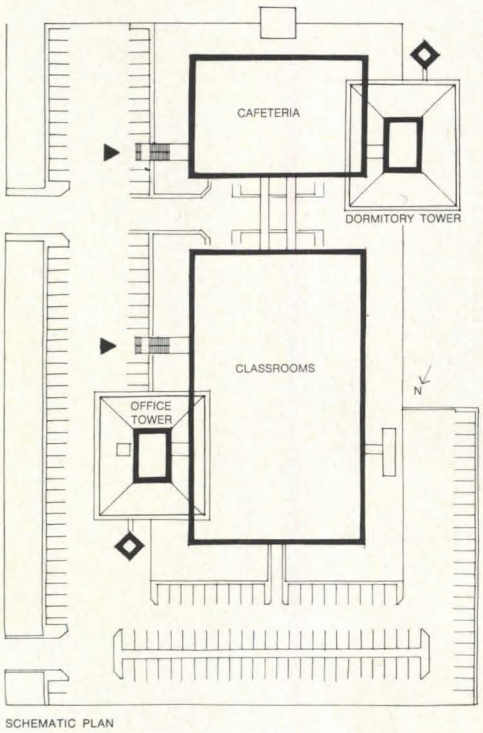








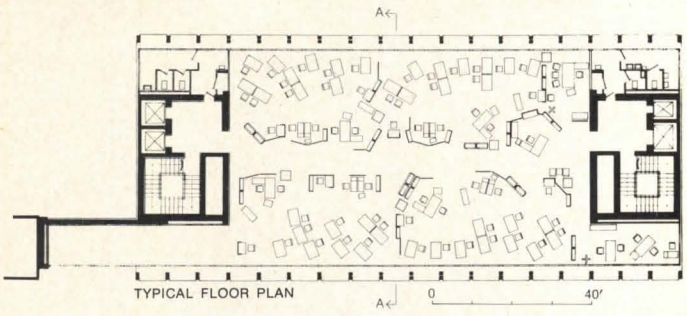
SCHEMATIC SECTION

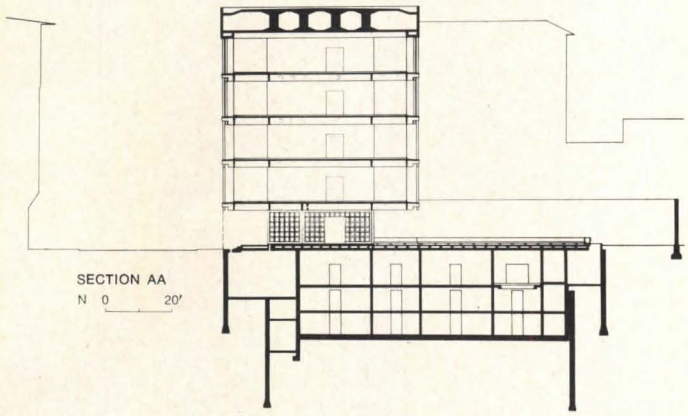


SCHEMATIC PLAN

For its German headquarters in Frankfurt, Olivetti commissioned Egon Eiermann. Completed in 1972, after Eiermann's death, the buildings show the same light, taut expression of steel framing that characterized his best-known earlier works, the German Pavilion at Brussels (1958) and the German Embassy in Washington (1965). Here the spareness of outrigger framing, suspension rods and cables is played against the monolithic concrete forms of the emergency stairs and the angular pedestals that lift office and dormitory towers above cafeteria and classroom blocks. Paint on both concrete and steel intensifies a nautical hull-and-superstructure image. Interiors of offices (top), living quarters (above) and main lobby (below) all have International Style look of clean white surfaces with gray-painted steel and earth-colored tile; ceiling heights and window designs vary, but all windows benefit from angled blinds (right) of synthetic fabric. Photographs: C. Berengo Gardin (except color, John Morris Dixon).

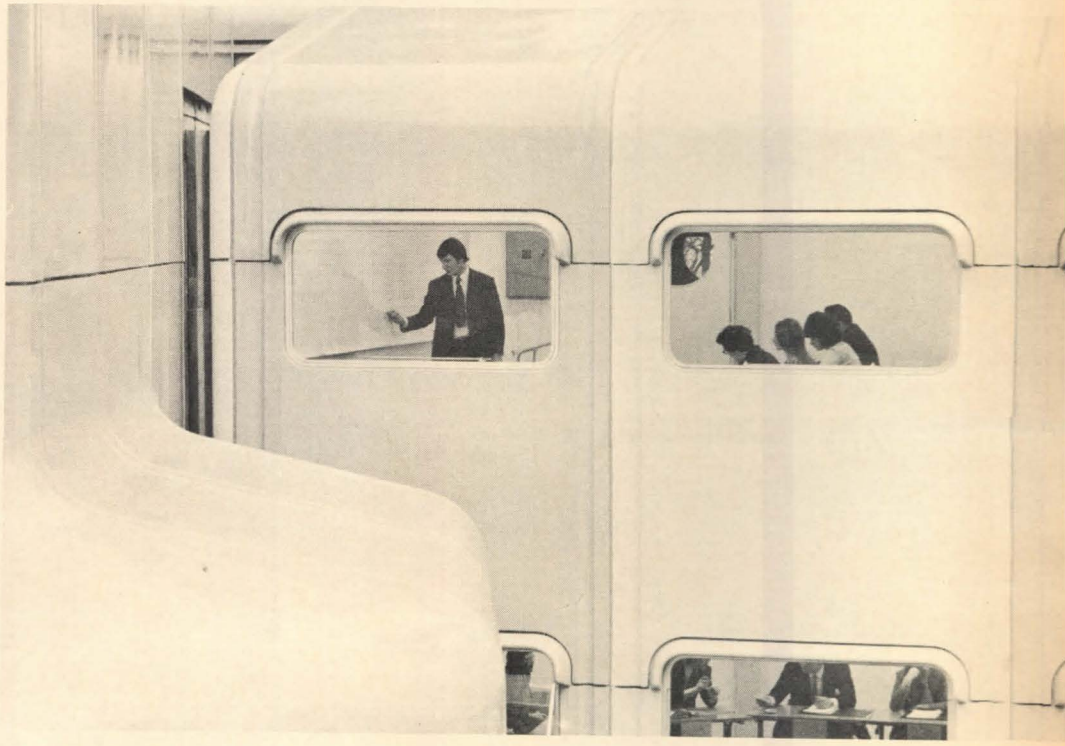
Olivetti builds



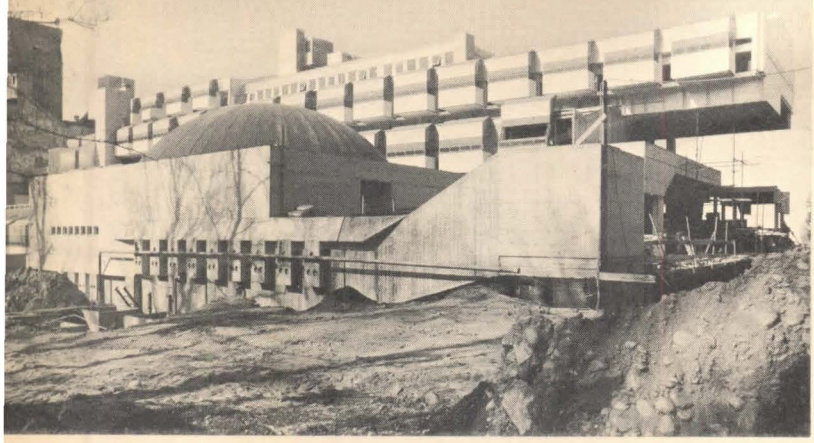


New branch office in Florence, by architect Alberto Galardi, encloses four floors of office landscape (using new Olivetti furniture system by Sottsass) in an envelope adjusted to the massing and scale of surrounding latter-day palazzi. Galardi has scrupulously expressed every joint in the precast structure—and capped every post-tensioning bolt—to get details of Renaissance scale and rationale. End view (right) clearly shows location of roof beams and the two distinct sets of tension columns carrying the office floors. Steel fence along street (right) and glass front wall can both be lowered out of sight to open lobby displays completely to public. Mechanical car-storage space under building roughly equals the volume of above-ground structure. Photos: Gabriele Basilico (right), Pino Abbrescia (below).

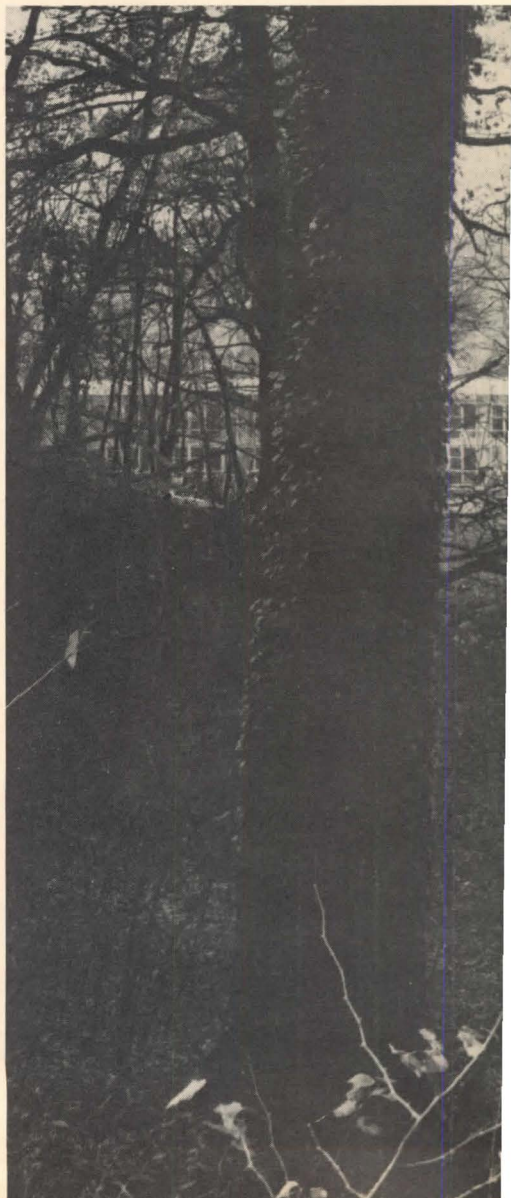
Teaching wing for British Olivetti training center at Haslemere, Surrey, by architect James Stirling, was added to residential facilities in an existing mansion. Two two-story classroom blocks—angled in plan to save existing trees—extend from a glass-enclosed link; the divisible multi-use room at the center of the structure can be combined with this galleria for dances, exhibitions, etc. The whole wing is enclosed with prefabricated panels of reinforced polyester; eaves are eliminated and gutters set at the base of the wall, so that the entire skin works in effect as a roof. Photos: G. Berengo Gardin.



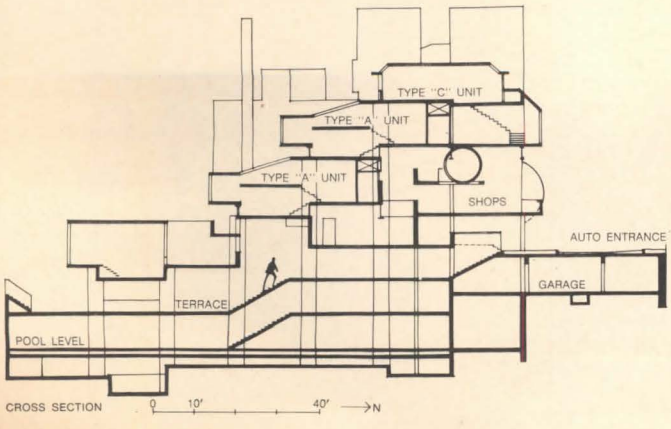
Olivetti builds

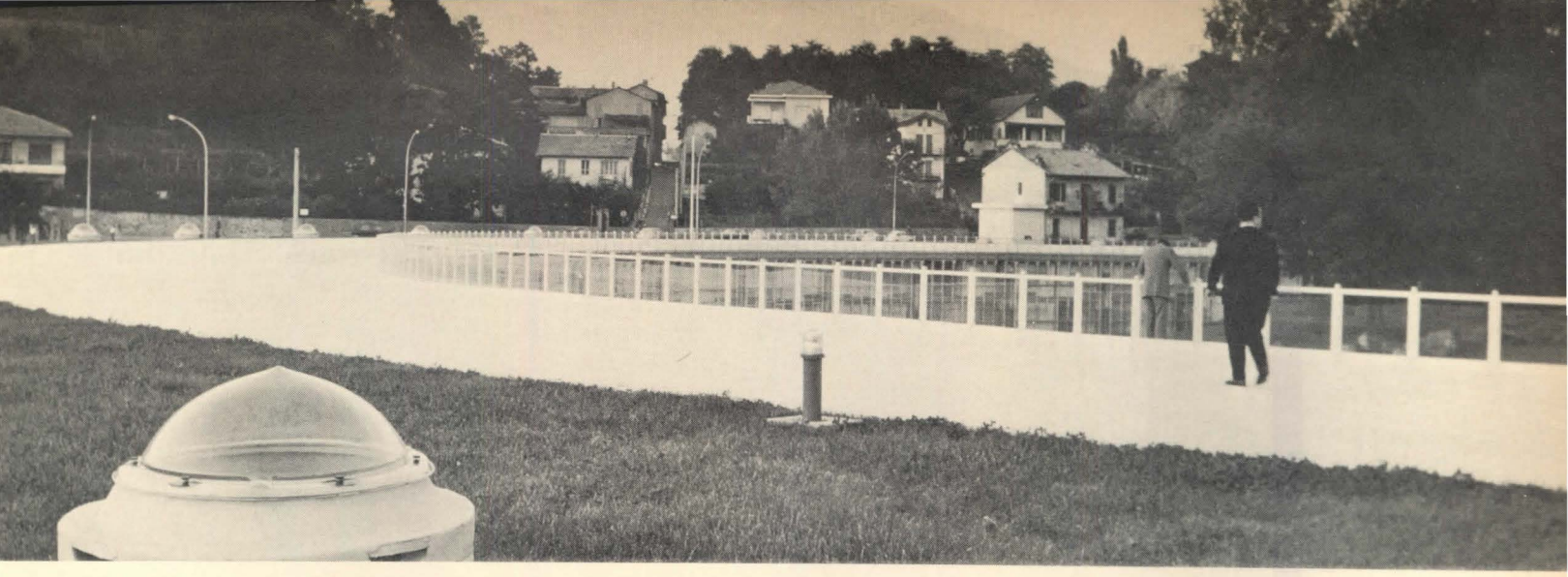


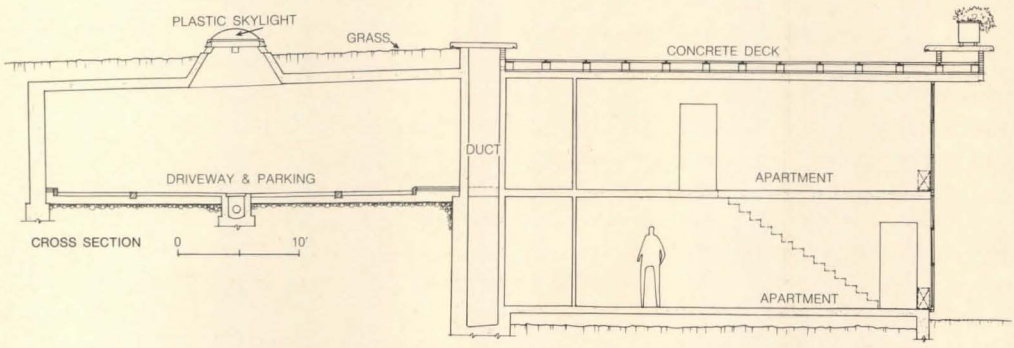
Apartment structure at Ivrea, for employees without families, contains 73 flats and 12 duplex units in a long arc around the base of a rocky hill. Architects Gabetti & Isola have made apartment roofs into a public promenade, linking two parts of Ivrea. Access-parking drive—entered from either end—is concealed beneath grass banks, lighted by occasional plastic domes (see section). Apartment interiors are furnished with modular seating and table units, bean-bag chairs, storage and kitchenette boxes in Pop scale and colors. Photos: G. Berengo Gardin (except top right, John Morris Dixon).



Residential center under construction at Ivrea, by architects Cappai & Mainardis, is an urban megastructure in miniature. Public galleries on several levels connect shops, restaurant, meeting hall, cinema, swimming pool, etc. Upper levels contain 55 "mini-apartments" for employees on short-term assignment, arrayed on tiers overlooking a park. Each unit has several levels, fold-out kitchen equipment, beds and dressing rooms—even a central mini-court—fitted together like a yacht interior. Metal-clad projections—which open to convert studies into terraces (photo above)—give the units the appearance of plug-ins. P/A plans full coverage of this structure in a later issue.



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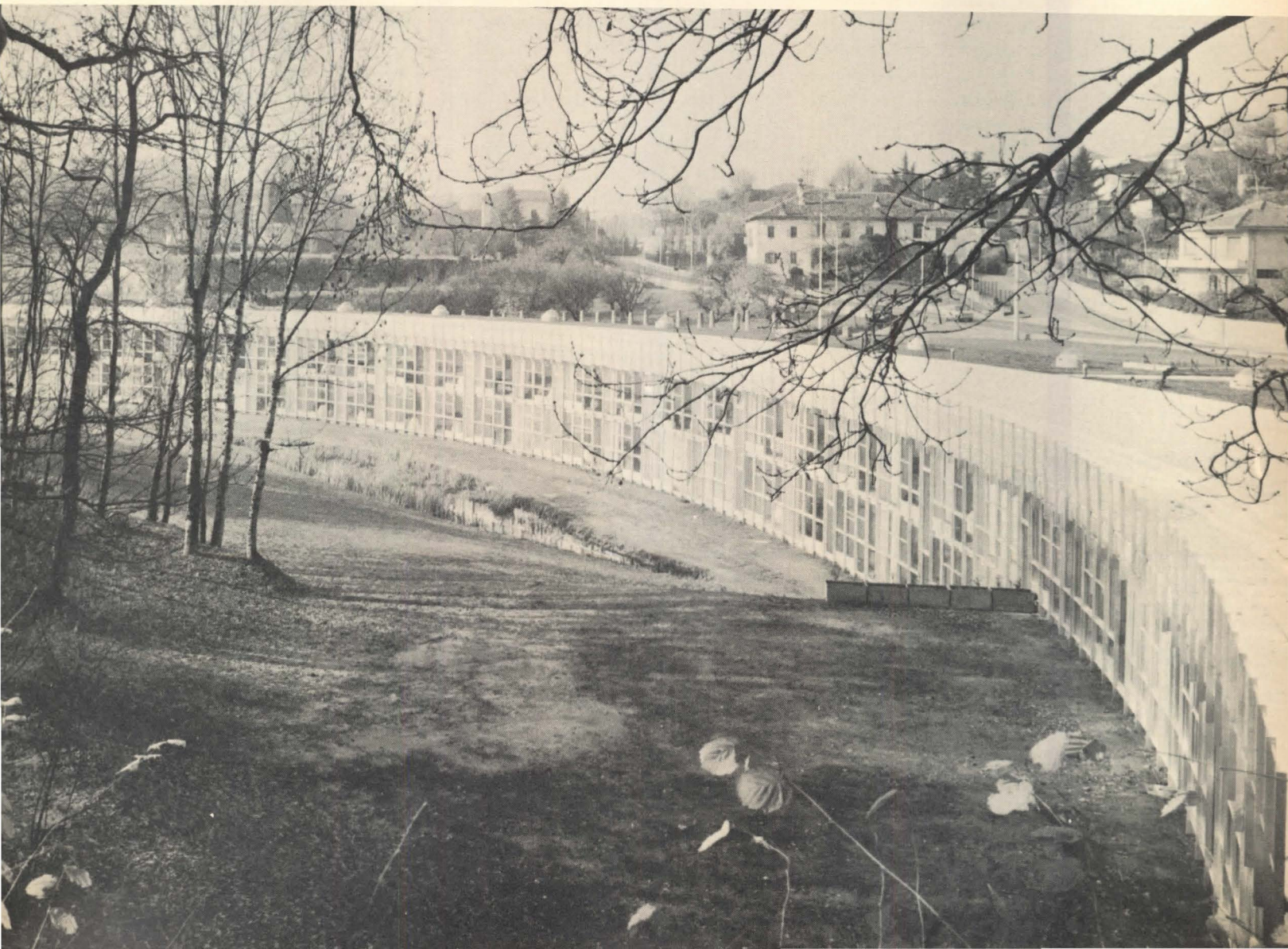


Developing a firm's most valuable asset: its employees

Herschel G. Walters

Like the growth of a firm, the development of valuable employees cannot be left to chance. Small or large, any firm can set up its own organized training program

One of the challenges that faces the management of any growing practice is hiring new employees, whether they are recent graduates or more experienced hands. In either case, the firm seeks a creative and productive person, and the prospective employee wants to see his skills usefully applied and, what's more, further developed. The question is one of balancing the time and cost of breaking in a relatively inexperienced employee against the higher salary requirements of the more experienced ones. For any firm—large or small—this question must be considered, and the answer, for any firm, is likely to be one of economics. The job that is to be filled falls into a given salary range, and it is unwise to fill it with someone whose salary requirements are outside that range. He or she will be either under-qualified or over-qualified, and it's hard to say which will do more damage in the long run.

For the smaller firm, however, it is tempting to feel that there is neither time nor money to carefully nurture inexperienced new employees, and that the task is better left to the big firms who can put a man on a drafting board and let him draw up nothing but bathrooms. Every firm needs employees who can grow with it, and smaller firms can probably quite truthfully claim an extra need for versatile employees who can carry their own weight and then some. But careful selection of prospective employees and a proper and organized program for employee development can make it possible for the smaller firm to develop its own pool of experienced hands.

Quite clearly, there is a breaking-in period for every new employee, whether he is a new graduate or a transfer from another firm. Rigidly structured, formalized training programs cannot always shorten this period, and for small and medium-sized firms, such programs are impractical. Yet the smaller firm need not resign itself to hit-or-miss practices for developing a first-rate technical and professional staff. In fact, if a firm of any size is to have stable growth, it must rely on established procedures for employee development.

At Ferebee, Walters & Associates, these procedures operate at two levels. The first is recruitment where we strive to fully understand the background, abilities and aspirations of the applicant to make sure that our investment in him is justified. At the second level, after he is hired, the nature of the supervision and guidance he receives will determine his successful adoption of the firm's standards and the fulfillment of his personal needs.

Every applicant from a technical school, architectural school or with experience from another firm can be expected to have the needed rudimentary skills. Technical school graduates are usually trained as production employees. For this reason, we pay particular attention to an applicant's detail drawings. Are they legible? Are materials well defined? Are details profiled and pochéd? Are notes adequate? Does his technique appear fast or slow? All of this must be gauged against the limited practical experience of these applicants.

The architectural graduate will normally have a well-prepared resumé and portfolio, which make initial appraisal easier. The orientation of the portfolio may be an indication of how best to apply the applicant's talents. If the portfolio is oriented almost entirely toward delineation, the applicant probably will be most valuable as a designer and presentation man. A thickly bound thesis of written material indicates skill in programming, specifications writing or land planning. A presentation with limited verbage and not too many "pretty pictures" promises a good field observer or production man. All of these talents are required in an architectural office that prides itself in providing clients with the best and broadest scope of service available.

Then, of course, we always look for that most rare of all talents in the architect—salesmanship. If the applicant presents his credentials well, convincing us that his services are going to be an asset to the office beyond those of other applicants, he has great potential as the total architect.

The applicant from another office is the easiest to evaluate. He has a work history which can help pinpoint potential strengths and deficiencies in work habits, attitude or ability. Experienced men should never be hired without checking their references with regard to personality, character, ability, work habits, financial security and emotional traits.

While the resumé and the portfolio permit evaluation of the applicant's potential performance, the interview is our primary source of information about his attitudes and work habits. It is extremely difficult to assess personality traits, but personality plays a large role in the working environment. It is obvious that decorum and discipline cannot be imposed. They are an outgrowth of architecture. An applicant's attitude, diligence and resilience in the face of deadlines show up in discussion of his interests in architecture. Why did he seek architecture as a profession? What does he intend to strive for? Will he persevere to meet inevitable deadlines? Did he complete school projects on time or were they turned in late or incomplete?

Joining the team

Once a young architect becomes a member of our staff, he is assigned to a project team, one of three in the firm led by senior project directors who are registered architects and principals. Under the project director, two job captains, a project designer and a varying number of drafting technicians execute each project.

Assigning the new employee to a team leader, not a department or a succession of project groups, is critical to our employee development program. Instructions, problems and

routine questions are resolved by the direct relationship that exists between two people—architect and architect-in-training. Special talents are quickly recognized, often as early as the initial employment interview, but the experience of the young architect cannot be restricted if he is to fill the team's need for proficiency in design, land planning, architectural working drawings and landscape design.

The architect-in-training's level of responsibility is limited by his particular experience and rate of comprehension, especially during the first year or two. His initial tasks should be very similar to school work, in design and production drawings. This encourages the architectural team to draw on the fresh thinking of the graduate, while acquainting him with the actual duties and responsibilities of the architect. After two or three years of experience, the young architect may be writing specifications, performing field reviews, engaging in client contact and making many project decisions. This growing process requires time and patience on the part of both the employee and his project director, and their efforts are supported by the policies of the firm.

Objective: development into the total architect

Principals, including the project directors, meet every six months to evaluate employees. The general criteria for this evaluation are the quality of the employee's work, his productivity, work attitude and character. The employee's salary is reviewed at this time and upgraded as his performance recommends. But a major result of the evaluation is initiation of remedial action when it appears that an employee has the attitude and abilities to benefit from it.

Further education or tutorial programs can really help a young and inexperienced employee whose deficiencies are not really ingrained. We have had great success, for instance, in improving the appearance of a draftsman's drawings by simply having him duplicate a sample alphabet on his own time in the evenings.

Some problems are more complex, and their solutions require more decisive action. When one of our project directors first joined the firm some years ago, he consistently used detailing that was impractical in the field. In response, we assigned him to field duties for two years to gain an understanding of the problems that a designer can create for masons, carpenters, even painters. We are now convinced that the work of his team reflects what he learned out there.

Job realignment is an efficient and effective means of correcting performance deficiencies related to the employee's experience, but even an unproductive attitude of an employee need not always be handled with a "pink slip." Straight-forward communication is the key. We have one employee who does excellent work; in fact, it is impractically good. What's more, he is slow. We have been candid with him that his work habits keep us from compensating him at a level with his peers. He is free to respond to this situation in whatever way he feels will meet his personal and monetary needs, as long as he meets the firm's standards for quality and performance.

A carefully monitored aspect of our employee development program concerns client communication. This beginning period is a transition from the graduate student's perception to that of the practicing professional. The student rarely experiences the architect-client relationship; the practicing architect is totally dependent on it.

For this reason, we require all professional employees to become skilled in dealing with clients during design, and preparing conference notes and reliable construction status reports. A good client-centered communication program need not be slick, but it must be accurate, thorough and timely. We feel that these procedures can be ingrained in young architects whom we expect to deal directly with the client.

We also encourage participation in professional associations. As the building process becomes increasingly inventive and complex, the ability of small organizations to cope with innovations becomes limited. Through professional association, the architect gains from the best collective thinking available to the profession. While such associations cannot ensure professional competence, they open the door to heightened professional standards, ethics and public esteem.

All of our policies have as their objective the development of architects-in-training into the "total" architect, one who is facile in client relations, design and administration. The firm has explicit guidelines for this level of performance:

1 *Client relations.* The single most important element of architectural maturity is the ability to communicate.

a. The business of the firm is to provide solutions which address the owner's need. Listen with a view toward understanding these needs, and subsequently developing an architectural program which conforms to them.

b. Architecture is a profession of problems, decisions and solutions. Do not depend on the owner to solve problems, and never present problems without alternatives for their solution.

2 *Design.* The design must possess basic characteristics of structural safety, simplicity and standardization.

a. Realize cost savings by accurate design of structural members which can safely sustain anticipated loads. The selection of oversized members to save design time is unfair to the client and the profession.

b. Simplify construction details, because the contractor's ease in comprehending them is directly related to lower construction costs. The repetition of construction details as often as is practical and appropriate saves time in architectural drafting, shop drawings, printing and field work.

c. Use standardized manufactured products and stock material modules for plywood, gypsum board, glass, lumber, masonry, etc., to prevent material waste in construction.

3 *Administration.* Proper management serves the performance and well-being of the firm and its employees.

a. Liability insurance is a significant profit-diluting expense in every firm. While such coverage is a necessity, the competent performance of every member of the firm is the surest and cheapest protection against liability.

b. Overhead is necessary to doing business; waste inhibits doing business profitably. It is an individual responsibility to make the distinction in operations.

Author: Herschel G. Walters is partner and co-founder of Ferebee, Walters & Associates, a 37-man Charlotte, N.C. firm with a broad general practice. His partner, S. Scott Ferebee Jr. is currently president of the American Institute of Architects.

Administration Building, Unity House, Pennsylvania

The other side of skin deep

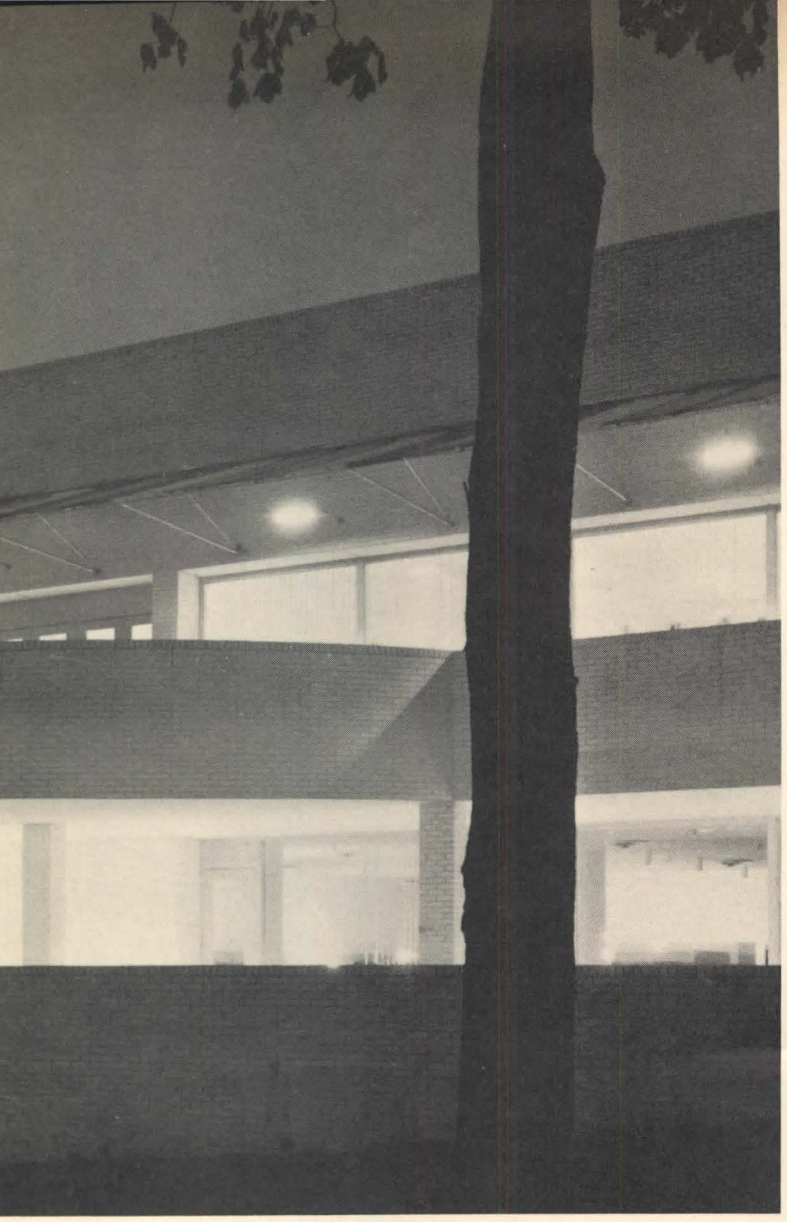
Architects for an administration center at a labor union resort in Pennsylvania solved some old problems with new forms that reinterpret the building's meaning

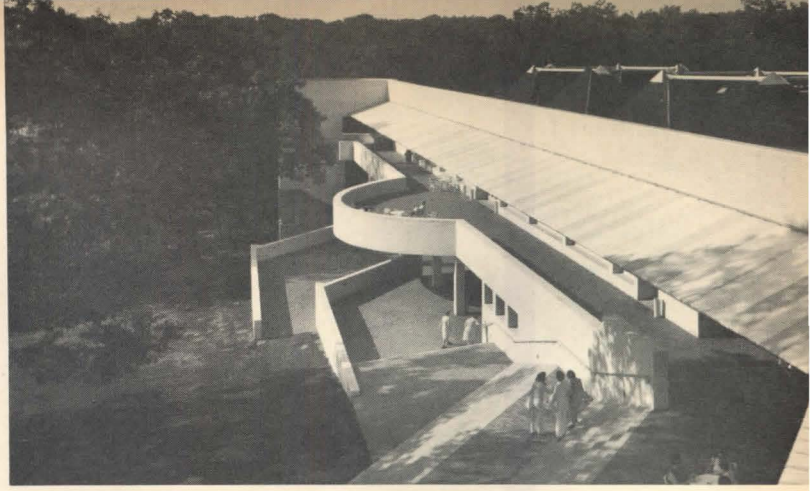
If the past few years in architecture have taught us nothing else—and it would be absurd to suggest they haven't—it is that there is such a thing as meaning associated with architecture. This is not to imply that meaning is something new to architecture, but rather to suggest that even when the sole concern of a building is avowed to be its function, other meanings can be inferred. If, for example, the functional requirements of a tall Mies building could be as well satisfied by any speculative office building, it would seem reasonable to assume that the Mies building was commissioned for reasons other than functional efficiency. On the other hand, some buildings are purposely infused with meanings that often have little to do with how they work. The Venturis have certainly shown this to be true of the architecture of Las Vegas, and Morris Lapidus has taught a similar lesson about Miami Beach. In each case, though, the problem is not simply to accommodate office workers, gamblers or vacationers, but how to accommodate them, which is a problem in meaning.

Prentice & Chan, Ohlhausen's design for the new administration building at Unity House is also deeply involved with meanings. There the meanings and ideas physically expressed in the building were carefully worked out in direct response to a distinct set of hierarchical, egalitarian and ceremonial requirements. These in turn are related to the nature of the place itself—to its respect for the idea of equality while responding to certain notions of rank and privilege at the same time.

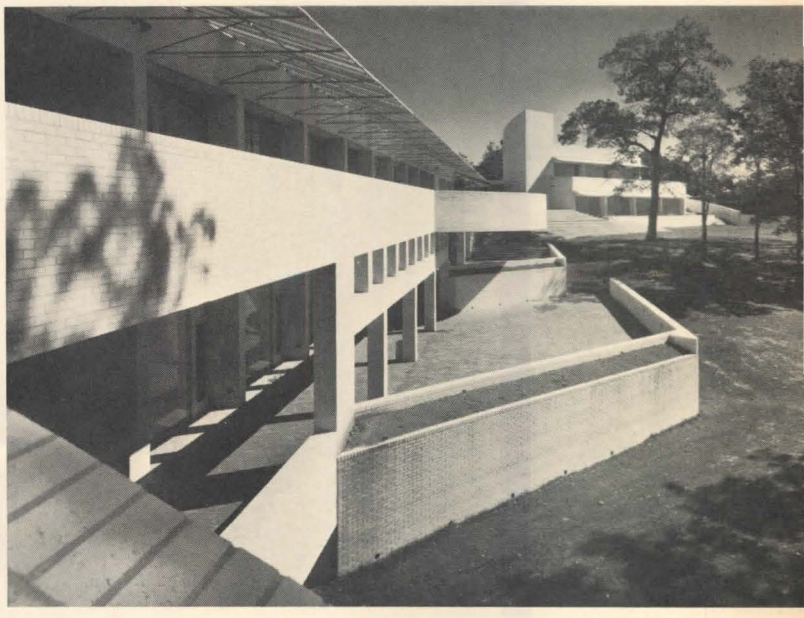
Unity House is a summer resort in the Poconos owned and operated by the International Ladies Garment Workers Union. It is primarily run as a fringe benefit for members, although members of other unions and even non-union people are welcome, at a slightly higher rate. In any case the costs are moderate, in keeping with the resort's purpose of providing an economical summer retreat away from the city for people with limited vacation funds. In addition, Unity House also serves as a conference center for union affairs, which range from local shop meetings to those for high-ranking AFL-CIO officials.

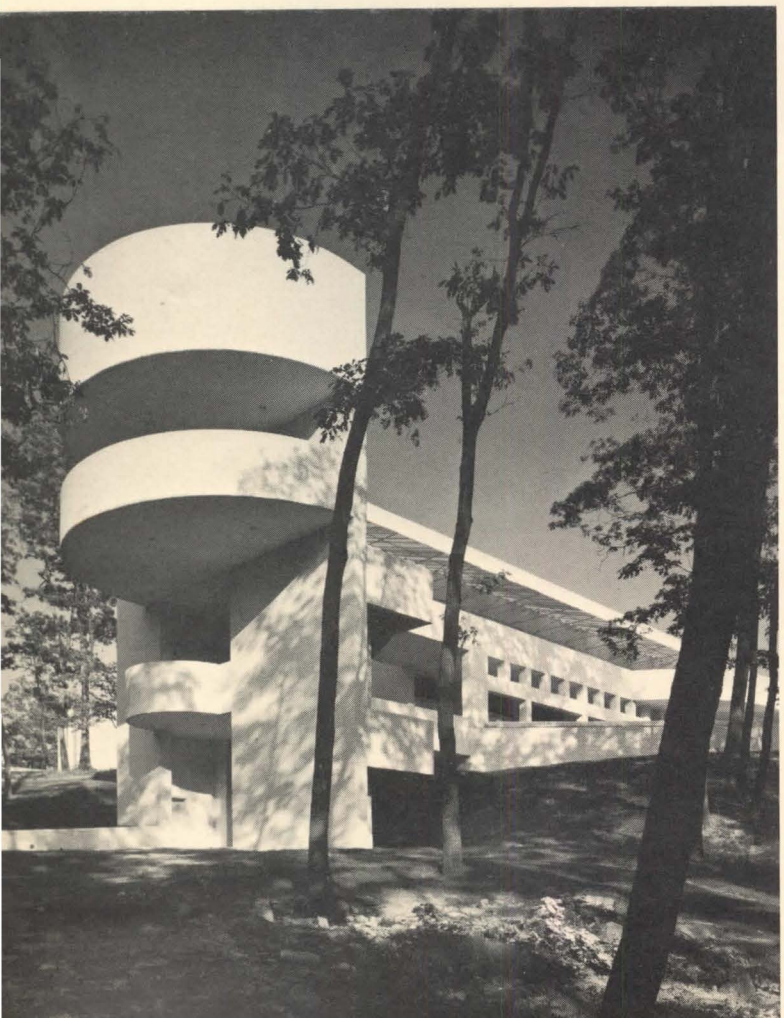
These circumstances had direct bearing on the design of the new administration building. Affecting it too were the remembered shortcomings of the old administration building that once stood on the same site. (It burned to the ground three winters ago taking with it, incidentally, a series of large murals by Diego Rivera depicting the oppression of the masses, which had been commissioned originally for Rockefeller Center but never installed there.) One problem of the old building was the scale of the dining room where 1000 guests were served at once; it was so dark and cavernous under the huge, vaulted ceiling that people complained of feeling lost and depersonalized. Another problem was that the build-





Prentice & Chan, Ohlhausen turned Unity House's new administration building to face the resort's major public open space—a large, shaded lawn. Terraces end in tower (bottom) where elevator descends 40 ft of 50-ft drop to lake level. Whiteness maintains traditional Unity House aesthetic.



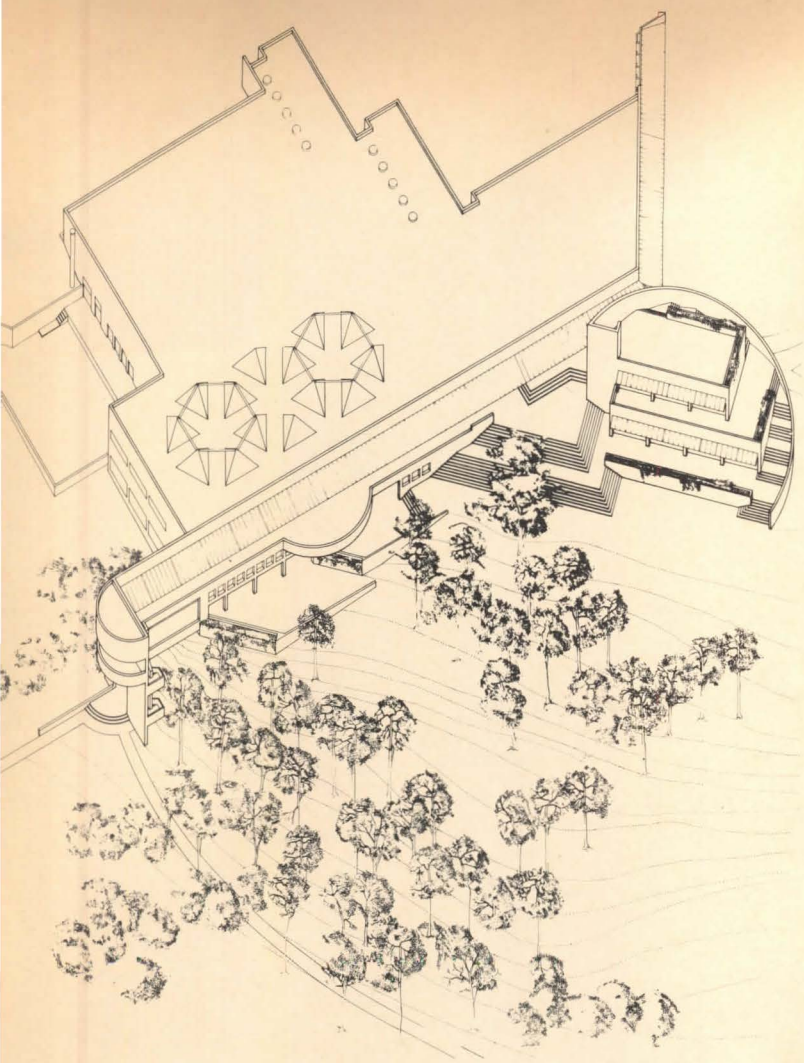


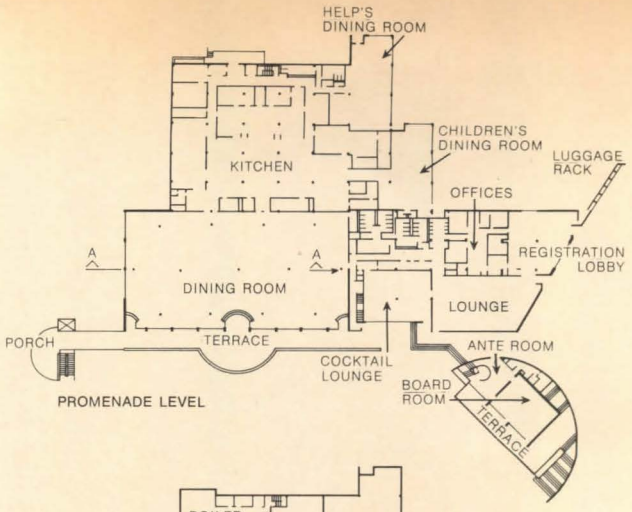
ing in no way acknowledged its spectacular site. Facing the entrance road and parking lot through its large portico, it turned its side to a beautiful, shaded lawn that over the years had become the "living room" of Unity House, the gathering spot that gave a sense of "place" to the whole, large complex. Beyond the lawn at the bottom of the hill, the lake with its boating, swimming and sailing activities was also ignored.

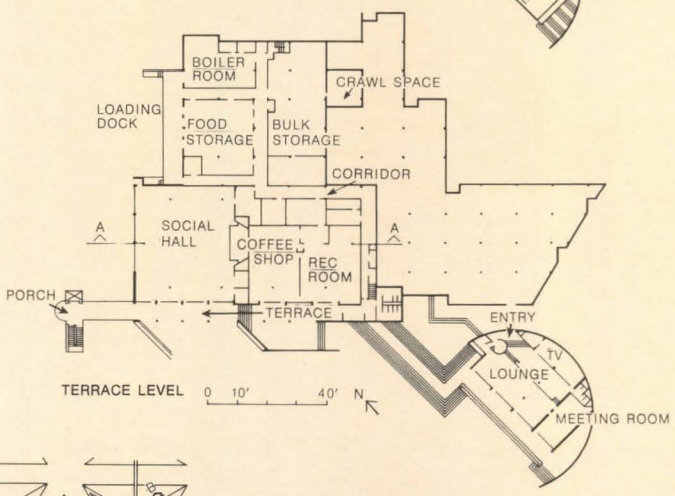
One of the first things the architects did was to face the new building toward the lawn and lake and open up this new front side with large windows overlooking the view. Then, just beyond the windows, a series of balconies and long terraces became a new version of the old portico, but this time they literally spill out onto the lawn in recognition of its importance, and tie the building closely to this special place. Now, without the crowding of the past, hundreds of guests can gather comfortably there for drinks before meals.

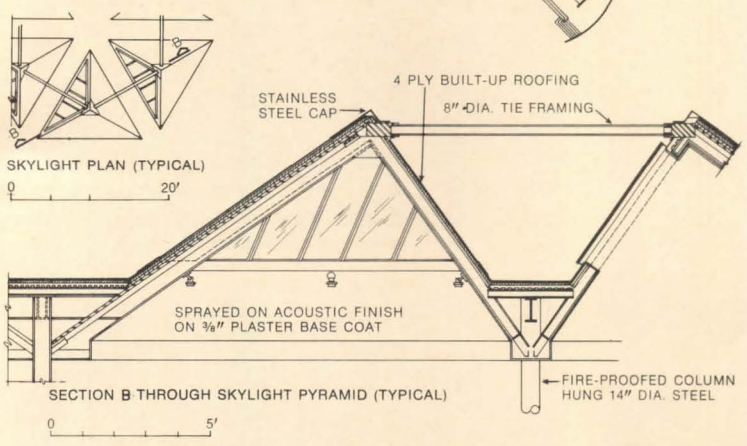
At the end of the building nearest the lake, the terraces terminate in a tower of rounded porches where an outdoor elevator carries the elderly and ailing 40 ft of the 50-ft drop from the building to the lake. This solves an old problem that effectively confined some guests to the upper level of the hill. The terraces have been extended the entire length of the building to become the main circulation path between the major interior spaces, and the only connection between the units that make up the building: Unit A, which contains the large-scaled functions, and Unit B, for smaller-scaled functions.

Although Unit B is smaller than Unit A, it is a much more

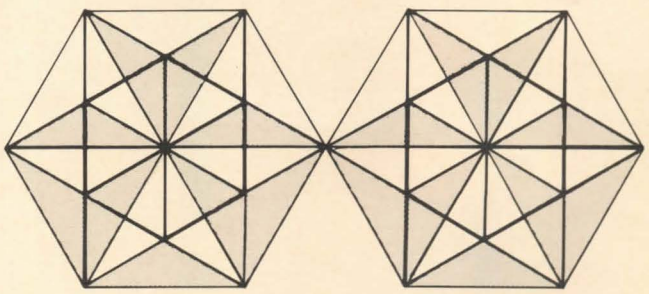


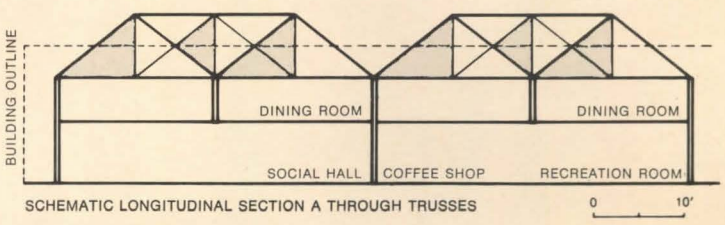






Deep skylights within hexagonal tubular-steel trusses (below) break large dining room into small tentlike enclosures (left), and also allow for column-free space in social hall. All furnishings had to be U. S. made.





boldly articulated form. Yet there are reasons both units were given forms that might at first seem overly sculptural, and these have more to do with psycho-social requirements than with function. From the lake side, the play of curving forms, the cut-outs in the terraces and the cantilevered balconies all come together to form a vivid backdrop, "a stage setting for theater," as partner-in-charge Lo-Yi Chan calls it. "That's what we were trying to create here—theater," he says. "People only come for a short time, so we wanted to make a place that would be as exciting and stimulating as possible."

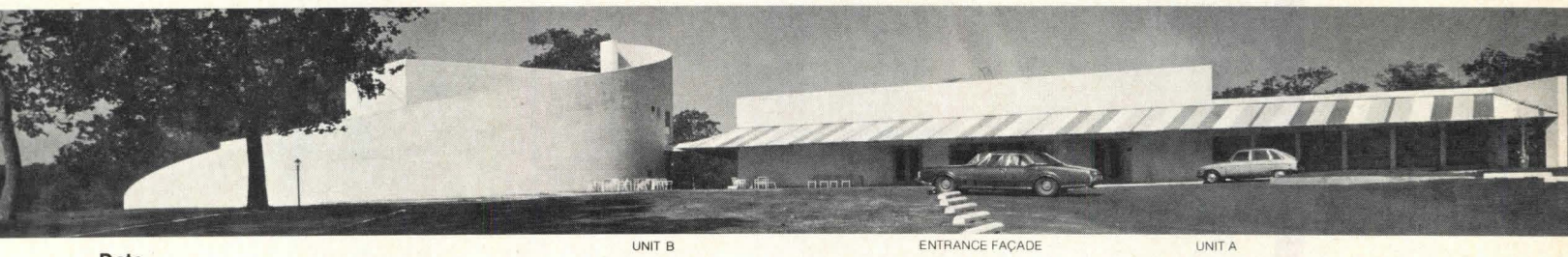
The circular staircase that wraps around Unit B encourages this sense of drama. It was designed, as is any monumental staircase, to enhance the ritual of the grand entrance. Supporting this gesture was seen as an important part of the program at a place where labor union leaders would want to emerge from conferences to meet their constituents with a state of dignity befitting their positions. Certain meanings are also implied in the entrance façade, which purposely has been left somewhat plain to indicate that it is not the main side of the building. From this side Unit A, with its visible luggage storage racks and ample space for bus parking, is immediately recognized as a loading zone (the large registration lobby is just inside). Unit B very obviously turns its back to the entrance road and staunchly keeps it there. What is more significant about this side of the building, though, is not the façades but the space that separates them. The units were purposely pulled apart to leave an opening that would immediately be read not as a major entry to the building, but as an enticement to the activities on the other side.

Inside, the dining room is designed to respond to dual notions of equality and hierarchy. It has only one main entrance—from the terrace—and this requires all diners to pass some strategically located VIP tables before going to their own. The floor of the dining room has been elevated so that the head level of those seated is at the same level as those walking outside. But the most important aspect of the dining room is that it manages to bring a true feeling of intimacy to the enormous space, and allows for a large, basically column-free social hall below it.

Early in the planning stages it was determined that the best place for the social hall would be at the end of the building the farthest away from nearby residential units. This meant it would have to go under the dining room, even though it might have been easier the other way around, since the dining room could have interior columns and the social hall couldn't. But that arrangement would have put the dining room into a space where natural light could never reach its interior. The problem of keeping the dining room over the social hall was solved by consulting engineers David Geiger–Horst Berger, who worked out an unusual system of two hexagonal steel trusses that were actually less expensive to construct than conventional ones would have been.

Each truss is supported on six columns that ring the spaces below the dining room; they rise from ground level, extend through the dining room floor and terminate 9 ft above it. From the center of each truss a "column" in tension descends to the dining room floor to hang that floor from the truss, thus freeing the social hall of interior columns. The lower horizontal members of the trusses, only 9 ft above the dining room, give the appearance of a low ceiling. Within the trusses themselves, glazing and roofing between the vertical members form a system of 35-ft-high pyramidal skylights above the "ceiling" plane. These skylights effectively divide the room into a series of small, tentlike spaces where each holds only six tables in a somewhat intimate enclosure. Now all guests, not only the important and privileged, have a table "by the window." Throughout the room the 13 columns, including the two "hangers," further break up the large area through their convenient use as organizing elements for the many, necessary waitress serving areas.

This is the first summer Unity House has been reopened to full capacity, and a lot of people are going to be surprised when they return. Some may find the new building a little unusual at first, but they'll quickly realize it's as gracious, comfortable and inviting as the old one was. And they'll find, tucked away downstairs, the old Sugar Bowl sweet shop—an institution at Unity House—still there, better than ever. [DM]



UNIT B ENTRANCE FAÇADE UNIT A

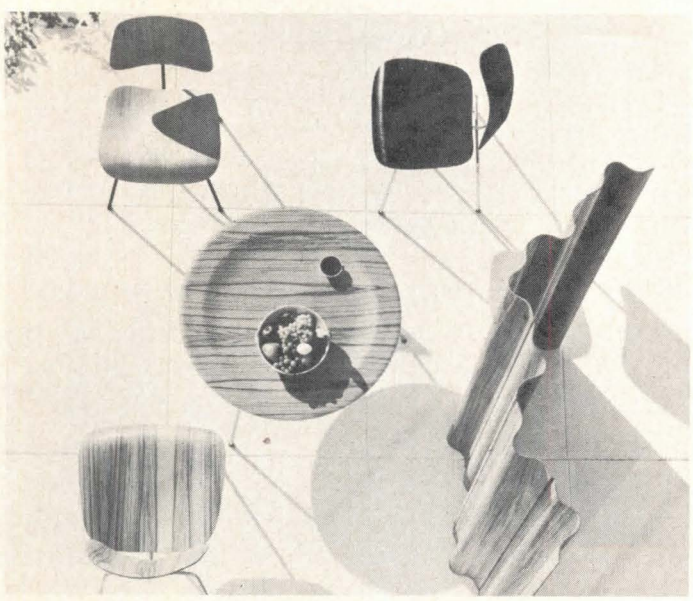
Data

Project: Administration Building, Unity House, Unity House, Pa.
Architects: Prentice & Chan, Ohlhausen, architects & planners; Lo-Yi Chan, partner-in-charge; Martha Carder, Tom Dahlquist, Bernie Danzinger, Ben Mendelsund, Clarese Peterson, Richard Visconti.
Program: two structures containing the main dining, meeting and administrative functions for a 1000-guest labor union vacation center, replacing a building of similar purpose destroyed by fire.
Site: wooded and open gently sloping land leading down to a lake, in the Pennsylvania Pocono Mountains. A large lawn above the lake forms the central space of the resort. The new buildings were placed on the far perimeter of the lawn, looking back to the lake. The site itself, and the preservation of its features (the lawn, trees, slopes and lake), were the major influence on the design.
Structural systems: steel frame was chosen for cost and speed of erection. Pyramid-shaped skylights over the low-ceiling dining room are formed out of two 35-ft-deep, hexagonal, tubular-steel trusses; which allow column-free space in the social hall below the dining room.
Major materials: steel frame, masonry walls; floors and roof of lightweight concrete poured in place on metal deck; interior walls of exposed and painted concrete block; white facing brick on the exterior.
Mechanical systems: separate rooftop heating and cooling units were installed for economy and flexibility.
Consultants: Dalton & Dunne, mechanical; David Geiger-Horst Berger, PC, structural; Nicholas Quennell, landscape.
Client: International Ladies Garment Workers Union through the Pike County Hotels Corporation.
Costs: withheld at request of owner.
Photography: David Hirsch.

An affection for objects

Whether applied to ideas or objects, communications or chairs, Charles and Ray Eames have been exploiting technology as a prime element of design for 25 years

Follow the back streets of Venice, L.A.'s rundown beach community, past wooden Gothic houses, Spanish Colonial stuccos with tile roofs, Greene-and-Greene type bungalows squeezed in between a lumber yard, factories and little shops, and you come to a clean industrial structure enclosing 20,000



The winning design in the Museum of Modern Art's competition (above) was a collaboration between Eames and Saarinen. The molded plywood chairs (left), the first to employ a compound curvature, were produced in 1946. The now-classic lounge chair (below) dates from 1956.

sq ft of space, for over a quarter of a century the office of Charles and Ray Eames.

Inside is the same kind of mixed use as the surrounding neighborhood: furniture design, film-making, preparation of exhibitions. Each project leaves an alluvium. A 1967 film on a proposed National Aquarium (a joint project with Roche & Dinkeloo) left behind a dozen glass tanks swimming with small life of the sea. Ray Eames appears and slides back a shield on one tank to expose an unborn shark moving softly in its transparent egg case. Then Eames comes in and follows the movement of the octopus with his finger on the glass tank. They stand transfixed as if entering into the structures of the organisms.

Left over from films on toys are tables of building blocks, magic lantern slides, an armada of wood and tin vessels sailing on a mylar sea, awaiting a day, as Eames puts it, "when I will have a little time to do a few things I've saved up." Posters abound, some from three decades ago when he first fell in love with the circus. One of his Charles Eliot Norton lectures at Harvard last year was on the circus, its discipline, and that of all nomadic peoples. Now the American Philosophical Society has invited him to deliver its 1974 Penrose lecture on the same subject.

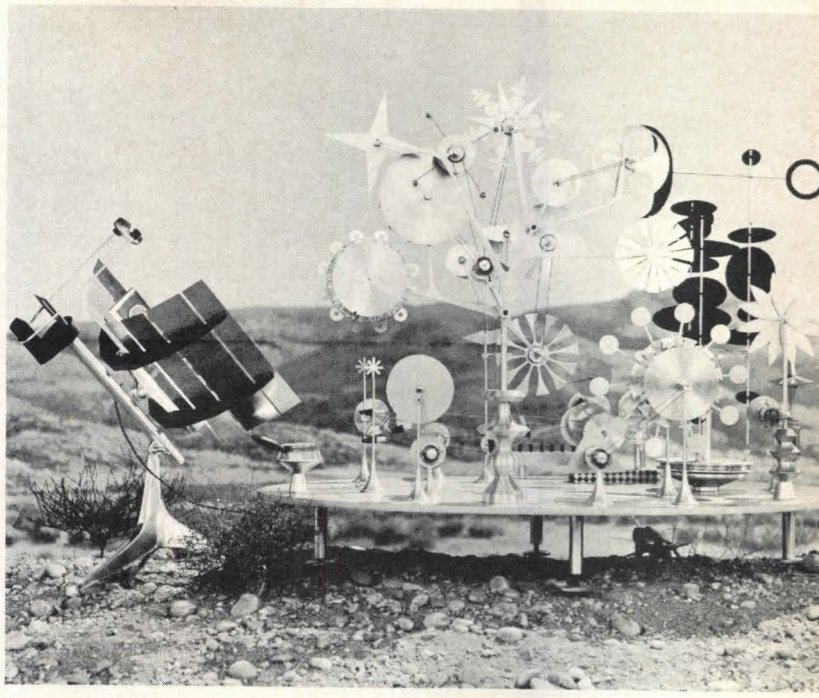
There is a scale model of the IBM Exhibit Center with the recent installation of the Copernicus exhibition. Around work tables are clusters of Xeroxed material being collected for three other shows: a small one on calendar reform which by now has been joined to the Copernicus show, one on Isaac Newton to replace the Copernicus at the end of 1973, another on Jefferson and Franklin to open at the Grand Palais in Paris and return to the U.S. for the bicentennial celebration.

In the furniture workshop, new bases for existing chairs are being studied. On high racks are examples from the past—several versions of the 1946 molded plywood chair, prototypes that never went into production, a chaise on which Saul Steinberg drew a reclining woman.

Eames's design of furniture began in St. Louis as an extension of architecture—for buildings designed by his own short-lived office and a partnership cut short by the depression. Eames designed not only furniture but lighting fixtures, rugs, mosaics, vestments and vessels for a church. He came out of the tail end of the crafts movement, Cranbrook and the Bauhaus and, as Craig Hodgetts says, "he then invented the notion of improvised environment and recognized that if you designed correctly the environment would become like a good auto repair shop."

Eames's first recognition in furniture design came after he left practice and went to Cranbrook on a scholarship, with some teaching duties. By that time he was interested in photography (his father was an amateur photographer) and ceramics (he had built a kiln for himself in St. Louis); he had traveled to Europe and Mexico, had seen folk art, Mies and Corbu. It was 1939, he was 29. Cranbrook was then dominated by the spirit and architecture of Eliel Saarinen, and at the school were Eero Saarinen, Ralph Rapson, Harry Weese, Edmund Bacon, Florence Knoll, Harry Bertoia and Ray Kaiser, the painter-sculptor Eames married in 1941.

When the Museum of Modern Art's newly formed Department of Industrial Design, directed by Eliot Noyes, announced the Organic Furniture Competition in 1940, Eames and Eero, assisted by Ray, collaborated on molded plywood chairs and cabinets. Marcel Breuer, a juror, recalls that he



Solar toy, 1956

The Eames' own house characterizes their loyalty to the framework of a structure of an idea and the variation of objects or images within it. The house has remained almost unchanged since 1948.

was "very positive" about the choice of the Eames-Saarinen entries in two categories for first place.

The program called for furniture which reflected the aesthetic tendencies and technological possibilities of the day—a brave program for a time when quality and handcrafting were synonymous. The machine technology on which the Eames-Saarinen pieces were based was more envisioned than actual, and Eames soon discovered the gap between designing for mass production and finding someone who could produce. The best offer for manufacturing the molded plywood chairs was $75. This put them back in the luxury class that the competition had been set up to bypass. (Less than 10 percent of the population had an income over $5000 a year in 1940.)

Eames's wartime activities developed the technology to produce chairs. With John Entenza, he set up a company in Los Angeles to produce an Eames-designed molded plywood leg splint. Most of the staff were architects and artists—Griswald Raetze, Herbert Matter, Harry Bertoia, Gregory Ain. Ain, known for his fine social housing, had the title Chief Engineer and worked with equipment, he says, which could have come from Renaissance woodcuts of machinery. From splints, production branched out into components for plywood planes.

At the end of the war, the plant went into production of molded plywood furniture, and in 1946 the Museum of Modern Art showed both the famous molded plywood chair and the production process, finally justifying its hopes for the 1941 competition. The crisp doubly curved back and seat, attached to the steel-rod frame by large rubber shock mounts, began immediately to show up in photographs of post-war houses—often three-quarter profile with the back overcut with a lone broad leaf of a philodendron. It was one of the few chairs readily available that was in scale with the new interiors, and often a single one was moved from room to room with the camera, then loaded on the photographer's van to go on duty again.

The chair is still made by Herman Miller, Inc., which has produced the Eames group since 1946, but its sale is limited compared with such high-production pieces as the 1949 fiberglass chairs—singly, stacking or in tandem. Originally the Eames group was used mainly in homes, but today 90 percent go into offices, board rooms, restaurants, airports, etc. What has now grown into a multimillion dollar enterprise gained momentum when the 1950s boom in civic and office buildings created a need for well-designed lightweight seating that would take tough wear. The Eames group met the criteria. Moreover, it reflected the growing weariness with monumentality; and the stackable chairs coincided with the new mobility and impermanence.

Images on film

Films were begun in 1950 with one on toys. Here the magical hand of Ray Eames is strong. She is modest about her participation in furniture design although it is there. Deborah Sussman, long with the Eames office, saw her often come along and "refine a shape." Gregory Ain remembers that in the war production plant Ray could "bring things into relation with one another and could find the inner order in whatever she touched." Alison Smithson wrote in *Architectural Design* (Sept. 1966) "I can see the part played by Ray Eames in all

The Eames staff photographed in front of a mock-up and facing a simulated audience used in determining scale (above) and the office force (below) on the set of a 1960 film "Introduction to Feedback."

that they do: the attention to the last detail of the collected material, the perserverance in finding what exactly is wanted; although the seeker may not know the exact object until it is finally seen."

The films are audacious both technically and in the selection of objects. The Eameses have an affection for objects and a love of facts—a toy, an equation, a computer or an altar. A film on tops says everything there is to know on tops; the films sharpen a fact to the point where it pierces as painlessly as acupuncture. They don't teach, they inform.

In 1944 they were using a technique of fast cutting for slide shows; "A Sample Lesson," with George Nelson and Alexander Girard, 1952, was the first multimedia production. The 1958 "The Information Machine," for the IBM pavilion at the Brussels Fair was multi-image. At the 1959 American Exhibition at the Moscow Fair, "Glimpses of the USA" was a 12-minute presentation of 2200 images on seven screens. Film, slides, animation, graphs, diagrams—all work together to support a central theme.

Of the 50 or so films made in the last 23 years, many were

commissioned by institutions, governments or corporations, including a film for the Smithsonian on its 200th anniversary and the aquarium film for the Department of the Interior. Among the many commissioned by IBM was the 1972 "Computer Perspective." "Powers of Ten," made in 1968 for the Commission of College Physics, is a science-fiction reality of time/space between the nucleus of a carbon atom and the farthest known point in space. The eight-minute zoom from a man lying on a Miami beach into outer space and back ends with an examination of the structure of the nucleus, with chronometers on the split screen registering distances traveled. Craig Hodgetts calls it "a clear exposition and a poem, too. Eames communicates an ethical view of the world."

Images on walls

Work on exhibitions started also in 1950, but it was with the 1961 Mathematica exhibit for IBM that all the Eameses' talents in this field suddenly meshed into what Donlyn Lyndon calls "a vision of complexity." In their exhibitions, he says, "a wall is a manifesto of what architects should try to do. It carries information in all directions, backward or forward, and you make your own connections."

"Nehru: His Times and His India," a 1965 show commissioned by the Indian Government, was unusual for its lyricism in the presentation of visual biography. There was a three-dimensional representation of Nehru's prison cell, through which one could walk, and on whose walls were fastened excerpts from Nehru's prison writings. Like the other shows, it demonstrated the same meticulous care with detail, the love of the object for itself, the imagination in the selection of object or fact, the harmony unexpected juxtapositions, ellipses that give the viewer time to make his own connections.

The exhibitions are usually developed along a time line. The one currently at the IBM Center which celebrates the 500th anniversary of the birth of Copernicus follows the advances of astronomy and relates them to the social landscape of each period. In exhibitions more than in films, the strictness of the framework leaves room for a play of imagination and opportunities to establish human scale. In "A Computer Perspective," of which fortunately there is a permanent record in a book of the same name (Harvard University Press, 1973) there is a handwritten letter starting "Dear Mother," sent by Alan Turing, author of "On Computable Numbers," which, juxtaposed to illustrations of SSEC and UNIVAC, makes the computer very friendly indeed.

But the Eameses have always been experts at using change of scale to surprise the mind and the eye. A case is their own living room. It was one of the early houses to adapt industrial materials to residential use, an *Arts & Architecture* magazine Case Study house; the two-story living room wall of factory sash, sliding glass and solid wall painted in primary colors, the exposed steel beams and decking establish a large scale; countering this is a small quiet sitting corner under one of the balcony bedrooms, and around the space is a shelf holding a changing collection of objects, small and beautiful, fine and folk. At eye level, they invite close examination and handling. "This is," says Charles Moore, "the miniature world the Eameses care so much about." They were the first to fill in the spartan framework so acceptable to modern architecture with a varied and rich content. Robert Venturi claims that the Eameses "reinvented good Victorian clutter. Modern architects wanted everything neat and clean and they came along and spread eclectic assemblages over an interior."

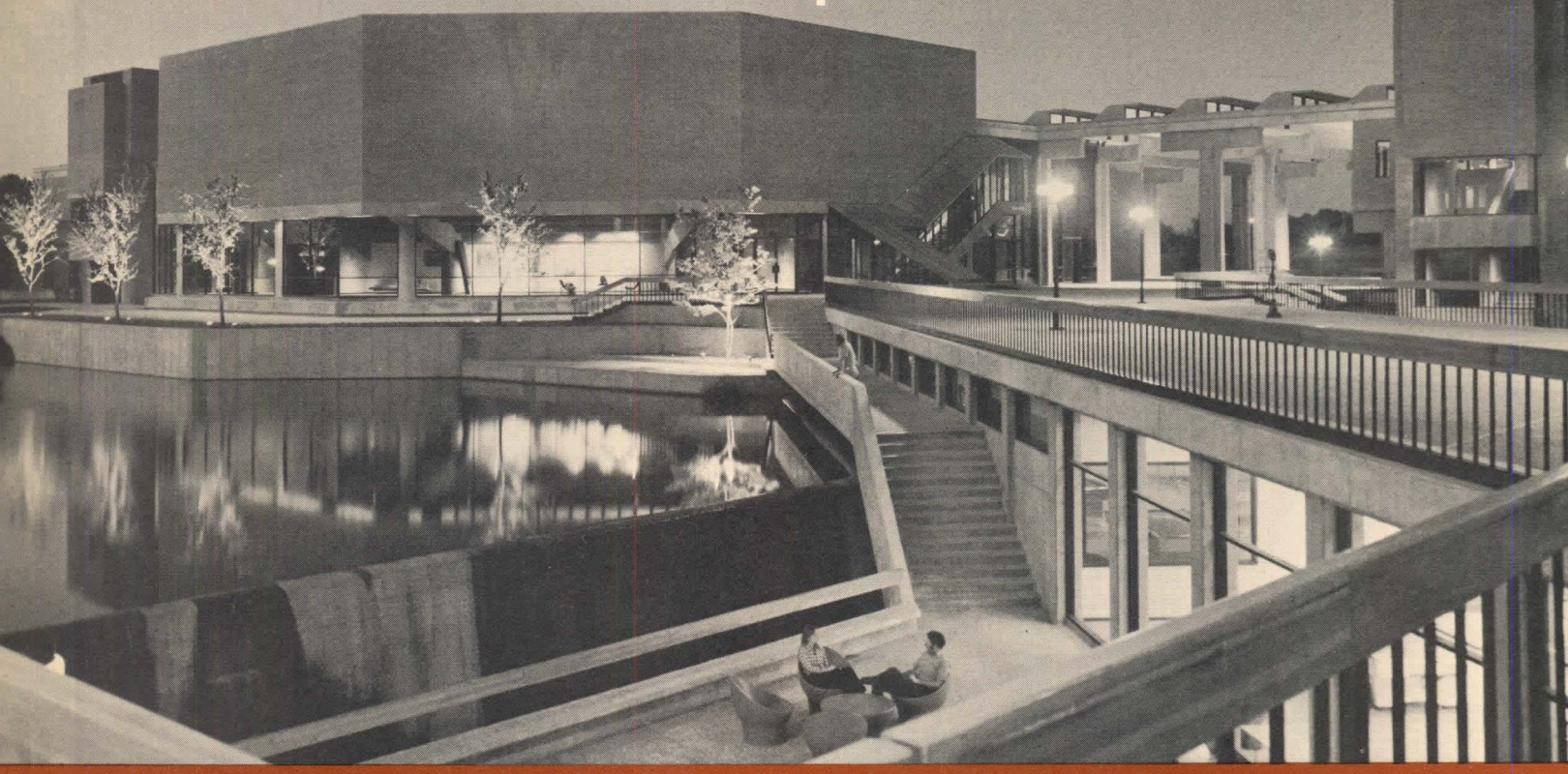
Eames would call the rich content "goods." And, he says, "When goods become one of the new covetables, quality will stop degenerating."

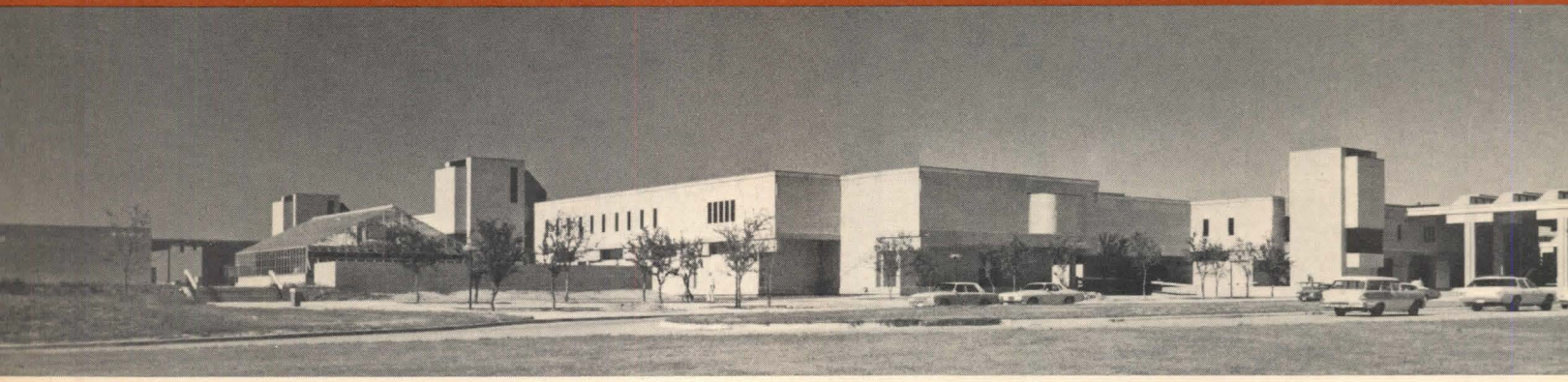
Young designers may call Eames "too harmonious," his chairs "commitments" rather than just useful objects like the Thonet chairs, but all would agree that he was created a new set of covetables. [Esther McCoy]

The IBM Computer Perspective show (left) and the Mathematica exhibit (above) are both organized on a time line which depicts a rich social landscape as related to that particular subject and its context.

Richland College, Dallas County, Texas

Students: new crop for an old farm





Providing for any change in the educational program, architects for a community college in Texas designed a repetitive structural module that alternates narrow service spans with wide spans for 'uncommitted' space

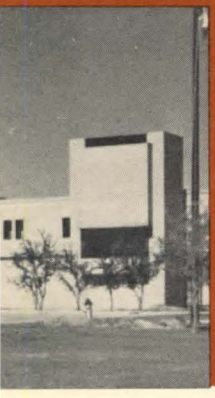
When the city fathers drew up a list of "goals for Dallas" in 1965, they included the deceptively simple phrase, "Develop an outstanding junior college system." With Texas-style enthusiasm, the voters promptly created a Dallas County Junior College District and funded it with a $41.5 million bond issue. Starting by remodeling a downtown commercial building as El Centro Junior College, the District soon embarked on a long-range plan to add six new campuses for 50,000 students by the year 2000. The six are to be spaced in a ring pattern so that, eventually, there will be a campus within 15 minutes of every resident in the 900-sq-mi county.

Other directives in the District's program are that the schools will remain two-year institutions, paralleling the first two years of regular colleges and universities, offer vocational courses to meet the needs of Dallas business and industry and, at the same time, involve the entire community. A further constraint on each building program was that the schools appear finished at the end of each expansion phase, and that the buildings will allow development of new educational programs in the future—a request far beyond the traditional "flexibility" requirements.

The Oglesby Group, Inc., Oglesby, Wiley, Halford, Johnson and Perkins & Will Architects are architects for the Richland campus, located in the northeast part of the county between the towns of Richardson and Garland. The 260-acre site is fairly flat farmland with tree-lined fence rows and a chain of lakes—originally stock ponds—formed by dams on a small stream. One early decision about the site set important parameters for the architectural design: keep its farmland nature and pattern of open fields with trees and shrubs at water

Art and music studios (left), performance hall.

Bridge/Dam houses recreation and student activity spaces.



Meeting program requirements to appear finished after the first stage of construction, Richland College will grow to almost four times present size. Performance hall (top left) overlooks one of the two lakes. View from southwest (left): horticulture, specialized instruction unit, Campus Center, main entrance shelter, administration. Right: planetarium and one of the external stair towers which contain air handling units.

edges and fence rows. This meant that the buildings should be low and "unobtrusive," that landscaping focus on the creek and lakes, and, therefore, so should the buildings.

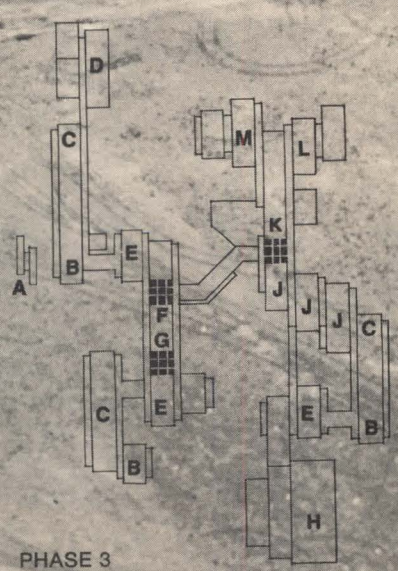
In order to keep the college "student-centered" and avoid problems of its later size (7750 full-time day students), the architects devised a master plan with three academic clusters surrounding central shared facilities. Each 2500-student cluster includes classrooms, faculty offices, seminar and counseling spaces, individual study and student activity areas. The shared facilities are administration, a large lecture hall, science labs, shops, bookstore, theater, art and music studios, gyms, pool, library and planetarium. Seeking to provide a "grand space," the architects lined up the clusters on both sides of the lakes, with a new dam doubling as a footpath to link them. When the campus is complete, major circulation will be shaped like an 8, with the new dam at its center.

College administrators and the architects visualized the master plan as an "educational shopping facility," with the gym and large-group instruction areas corresponding to large department stores in a shopping mall, located so they draw the general student body past areas used by only a few (the specialty shops). Special instruction areas, shops, labs, learning resource facilities and fine arts areas are placed along these major circulation paths. Carrying the window-shopping analogy one step further, many of the special areas have glass walls at the corridor, exposing activities inside.

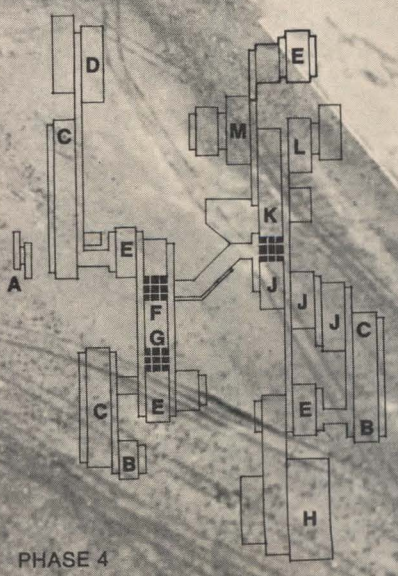
A structural module of alternate 60-ft-wide and 20-ft-wide bays provides all the flexibility that several generations of educational programmers will ever need. Large spaces (lounges, library, shops, labs, classrooms) are located in the 60-ft bays. These designated areas, however, are considered "temporary" or uncommitted; most have no ceilings and all partitions can be moved. Smaller spaces (offices, toilets, seminar rooms) and all circulation are located in the 20-ft bays. Service towers with stairs are outside the module line.

A precast concrete framing system yielded the necessary

Phase 1 construction seen from the air



PHASE 3

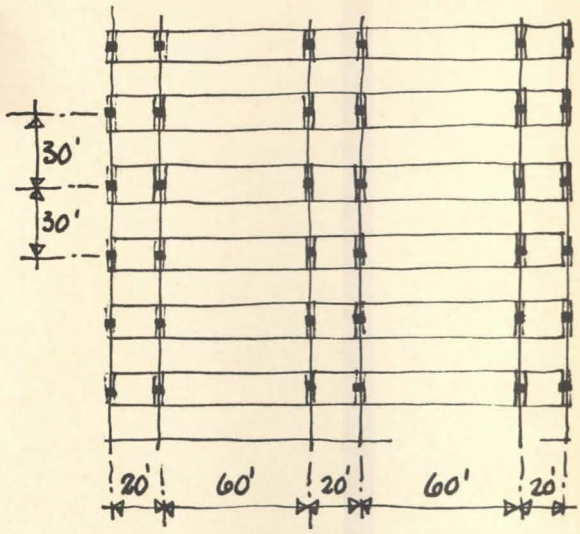


PHASE 4

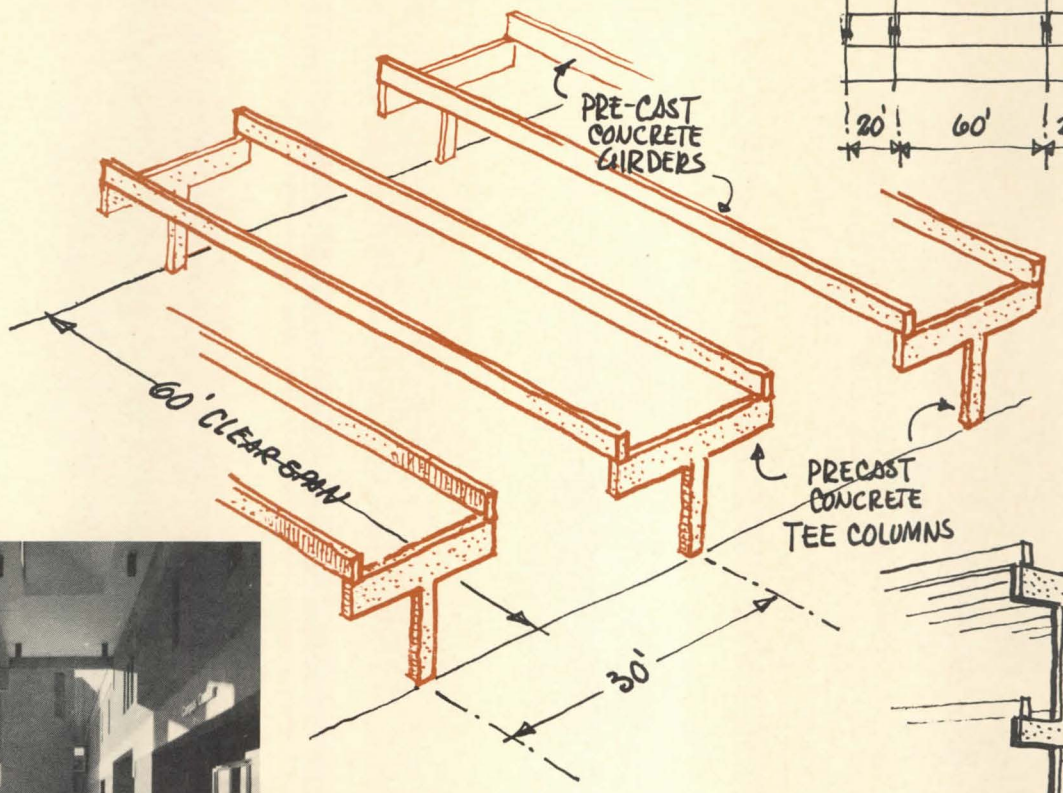
Legend

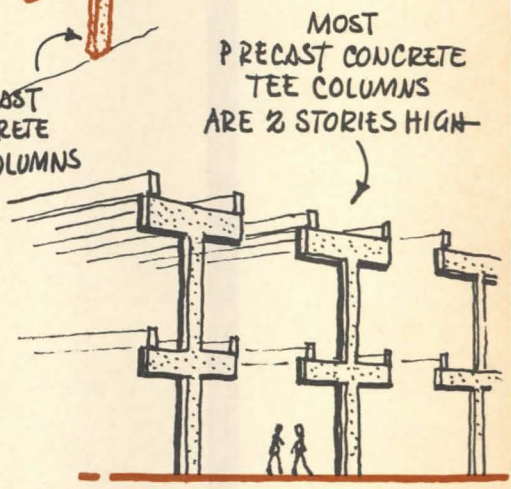
- **A** Horticulture
- **B** Lecture center
- **C** Specialized instruction
- **D** Power plant
- **E** Cluster
- **F** Admissions
- **G** Administration
- **H** Physical education
- **J** Learning resources
- **K** Drama
- **L** Music
- **M** Art

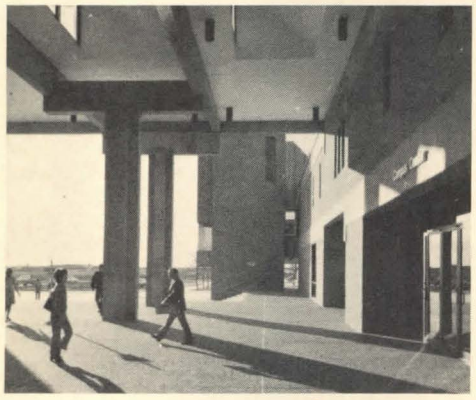
To accomplish the flexible large open spaces, pre-cast concrete was selected for the structural system ...



Factory-made concrete parts are assembled at the site ....

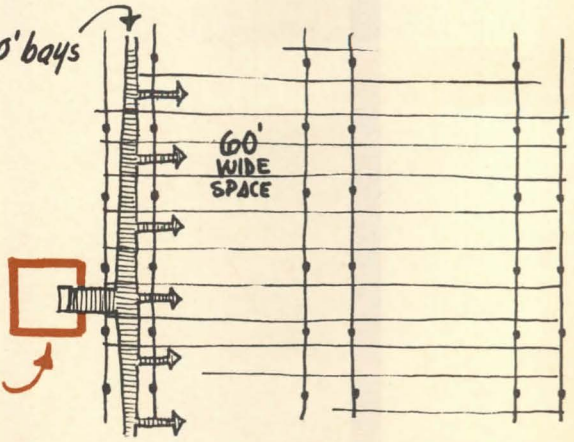






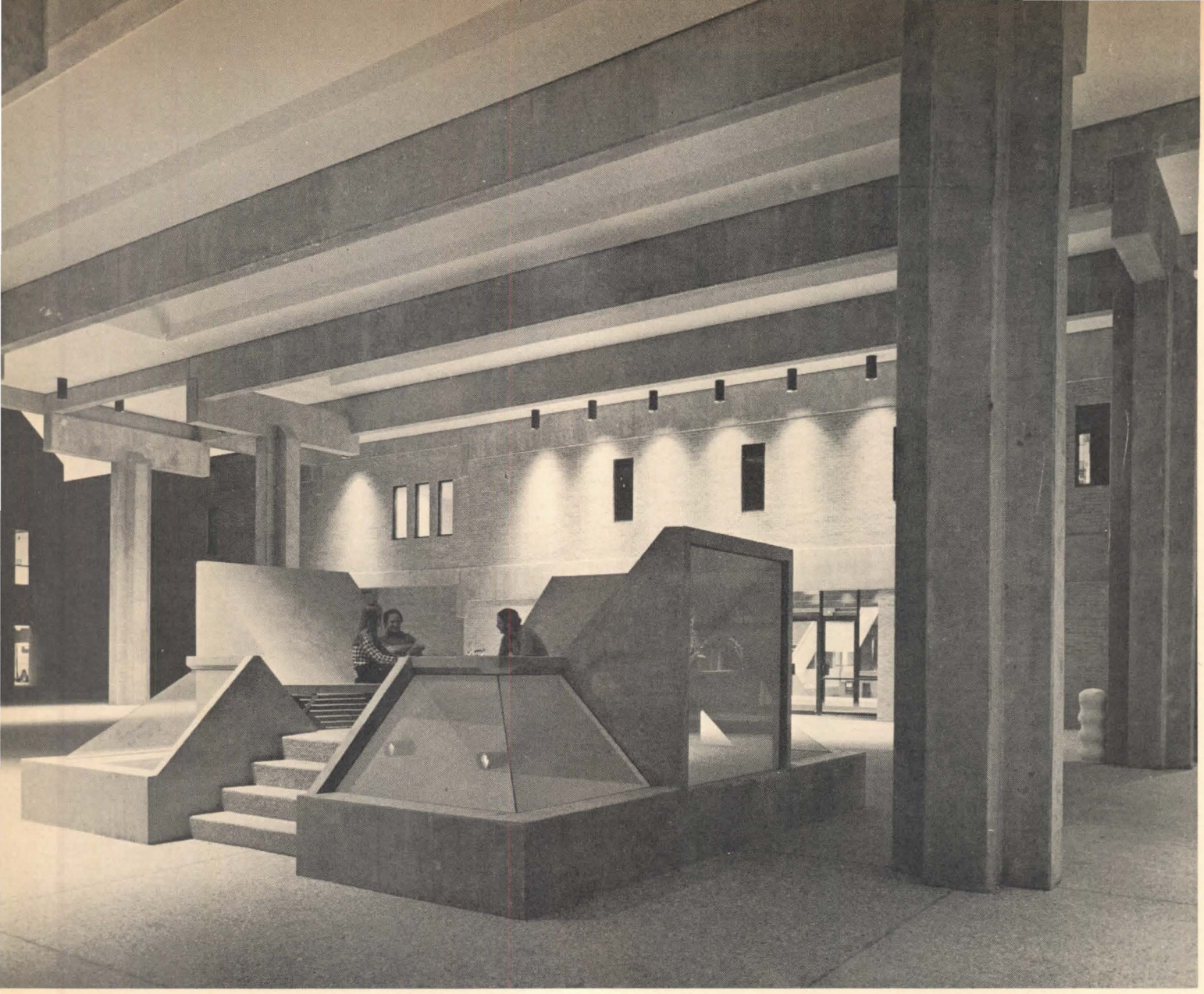
Mechanical and electrical systems were coordinated with the modular structural system ....

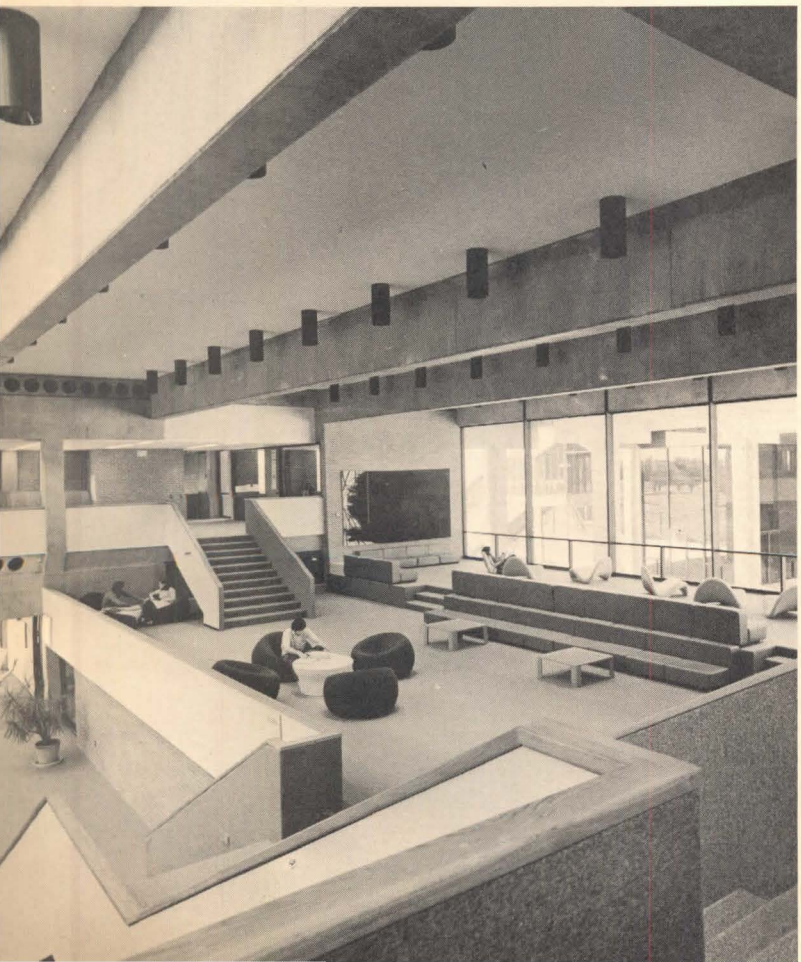
Air-conditioning ducts distribute air in 20' bays ... and air enters 60' wide spaces thru round holes in filler beams.



Air conditioning fan rooms, and stairs, are located outside "useable space" .... in utility towers, around perimiter

Page from Charles William Brubaker's notebook explains the structural system, as does the construction shot opposite (Hank Terry photo). Plans show third and fourth phase of construction.





Concrete lantern in main entrance shelter provides daylighting and view of activities in dining room and study areas below. Conditioned air is distributed through perforated filler beams (left); all large glass areas are sheltered against the Texas sun. Campus Center lounge (below) has north clerestory windows, soft furniture to attract students.

Pedestrian bridge across upper lake leads to specialized instruction unit; so far, no one has fallen in. Existing trees were preserved, more were planted.

spans. Two-story-high tees, 30 ft o.c., support the 60-ft and 20-ft precast beams, 15 ft o.c. Nonstructural filler beams perforated with holes held the structural elements together during construction, but a cast-in-place flat slab then tied all elements together. On the exterior and in the 60-ft bays, tee columns, beams and filler beams are expressed so that the structure reads clearly. Because air is distributed through the holes in the filler beams, spaces in the 60-ft bays are free of ductwork.

Nonbearing brick exterior walls, and interior partitions, are located with freedom and variety—some are on column lines, others inside or outside column lines. This, say the architects, accommodates a wide variety of functional needs and creates interest and diversity in form.

A central mechanical plant furnishes hot and chilled water in underground lines to all campus buildings. The air handling units and their pumps, mixing valves, etc. are located in the top of the service towers to eliminate vibration. From the towers, hot and cold air is delivered to mixing boxes through high-velocity ducts running above the ceiling of the 20-ft bays. The tempered air is then fed through air/light diffusers in the ceiling and thrown 30 ft from each side through the perforated filler beams into the 60-ft bays. [RR]

Data

Project: Richland College, one of the Dallas County (Tex.) Community Colleges.
Architects: The Oglesby Group, Inc., Oglesby, Wiley, Halford, Johnson; associated architects: Perkins & Will Architects, Charles William Brubaker, principal in charge.
Program: two-year college for commuters, designed to appear finished as each of four building phases is completed; eventual size is 7750 full-time students in academic and vocational programs, plus part-time evening students.
Site: 260 acres of rolling farmland in the northeast part of Dallas County; tree-lined fence rows and an existing chain of lakes on a dammed stream were to be retained.
Structural system: tee-shaped precast columns, precast beams, poured in place slabs.
Mechanical system: hot and chilled water distributed from a central plant; air handling units in service towers deliver hot and cold air to mixing boxes.
Major materials: precast and poured concrete, brick, concrete block, gypsum board partitions, carpet, acoustical ceiling tile.
Costs: $12 million ($35.81 per sq ft), excluding site work, landscaping and outdoor athletic facilities.
Consultants: Young Hadawi, Inc., structural: D.W. Torry & Associates, mechanical; C.R. McCreary & Associates, electrical; Raymond L. Goodson, civil engineering; Myrick, Newman, Dahlberg, Inc., landscape.
Photography: John Rogers.

Plastic structures go high-rise

Armand G. Winfield

Extending the theory of air-supported structures far beyond the one-story bubble, Australian professor Jens G. Pohl has produced a high-rise prototype that works

The Pohl theory is based on an inflated flexible tube with sealed ends. Although the tube is nonstructural in its deflated state, it stands upright and becomes load-bearing when supported by a column of air. The skin membrane may need to be reinforced, but the building itself can resist bending, buckling and torsion (P/A, Sept. 1970).

A series of circular floors are attached to the upper membrane by means of a bearing floor. As the column is inflated, these floors will be carried (attached and suspended by cables) upwards as the column grows. A rigid center shaft houses elevators and stairs.

At each floor, stationary walls surround the utility core to provide privacy. Movable screens placed one ft from the exterior skin membrane along the edge of the round floor provide acoustical barriers as well as opaque walls. The screens can be moved on tracks to serve as windows or access to light. Internal partitions are movable or stationary and form rooms, alcoves and/or closets.

Floors are stabilized by air pressure with a live load of 100 lbs per sq ft per floor. The structures can be from 2 to 14 stories high. The normal floor load considered for high-rise construction in Australia is approximately 140 psf. By using only 144 psf (1 psi) internal pressure above the external atmospheric pressure, one entire floor can be suspended. Thus, with internal pressure up to 14 psi (maximum comfort range), up to 14 floors can be suspended in safety.

Some of Dr. Pohl's concerns are for safety from air leaks, pressure failures and fire. Mechanically, there are problems with access to and egress from such a pressurized environment. He is convinced, however, that the safety of his building is on par with similar risks encountered in everyday life.

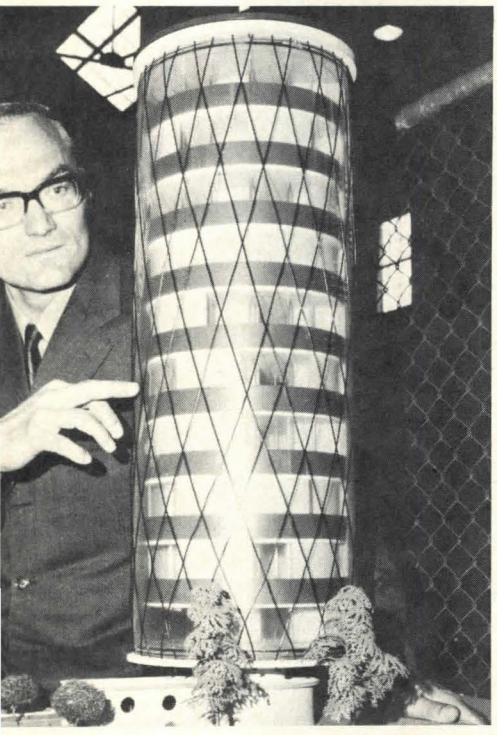
Author: Armand G. Winfield, a plastics consultant, reports on work done by Dr. Jens G. Pohl, formerly of the School of Architecture and Building, University of New South Wales, Sydney, and now teaching at California Polytechnic State.
Photos: courtesy of Dr. Pohl.

Human factors such as living in a compressed air or hyperbaric environment have been studied. Access to the building would be through an airlock tunnel, and it can be assumed that the rate of pressurization, or depressurization, would be slightly less than the time required for a person to walk at a comfortable pace the distance between the airlock doors (30 to 40 ft). The risk of puncture is minimized by the strength of the skin, adequate performance of pressurization plants and standby emergency equipment stored below grade. Fire protection is planned for by use of nonflame-supporting interior plastics floors, partitions, furniture and fixtures and by high pressure standpipes and water lines to each floor. These, coupled with movable screens between the periphery of the floor and the transparent column membrane, could virtually seal off an entire floor in time of emergency.

The perfect skin for such a building is yet to be developed. Although some tough films are available, the ideal skin would be totally transparent without obvious reinforcing members. Some tough films exist, including nylon scrim-based laminates capable of yield strengths up to 1000 lb-in., but these scrims are not clear enough aesthetically and visually for the outer membrane. Dr. Pohl envisions a heavy transparent film approximately .010 in. or less in thickness. The exterior would be supported with a large grid of external tension nets that could sustain forces of 3000 to 4000 lb-in. (strength in tension of 30,000 to 40,000 psi).

Jens Pohl has developed several alternative structures based on variations of his original thesis: one variation has only the circular walls of the tower inflated, with floors suspended within the tower from these walls. Another would consist of a central annular air-inflated core from which floors would radiate; the entire unit would be contained in a continuous rigid membrane. A third would provide for individual floors attached directly to a rigid membrane wall system. A built-in floor system would be developed to benefit from the structural advantages provided by the continuity between floors and building enclosures. These supplementary structures eliminate some of the problems of an air pressurized existence within the tower.

Pohl's concepts are challenging. The existence of air-inflated buildings as storage buildings, exhibition halls, greenhouses, covers over tennis courts and athletic fields is commonplace. He advocates broader uses based on sound plas-



A 10-story scale model, displayed at left by Dr. Jens G. Pohl, was a forerunner of the first full-scale prototype pneumatic structure (above) built at the University of New South Wales, Sydney. At top is a multi-story air supported structure designed by J.P. Montero and built by Cal Poly students in 1973, working under Dr. Pohl, Wes Ward and Montero. It consists of four domes attached to a 16-ft-high column; cables keep the PVC membrane from bulging excessively and stabilize it against wind loads.

tics, pneumatic and mechanical engineering principles.

Based on the success and interest created by the 10-story model, senior architectural students at the University of New South Wales (School of Building) in Sydney completed the first full-scale prototype of a multistory air-supported building in 1972.

The two-story prototype is 20 ft high and 13 ft in diameter. It is surrounded by a crystal clear, ultraviolet-stabilized polyvinyl chloride (PVC) membrane, .020 in. thick, which serves in the dual capacity of structure and cladding. Roof and floor are wood and provide a dead load of 3000 lbs supported by the internal air pressure. To accommodate additional live loads, pressures noted in the preface were used.

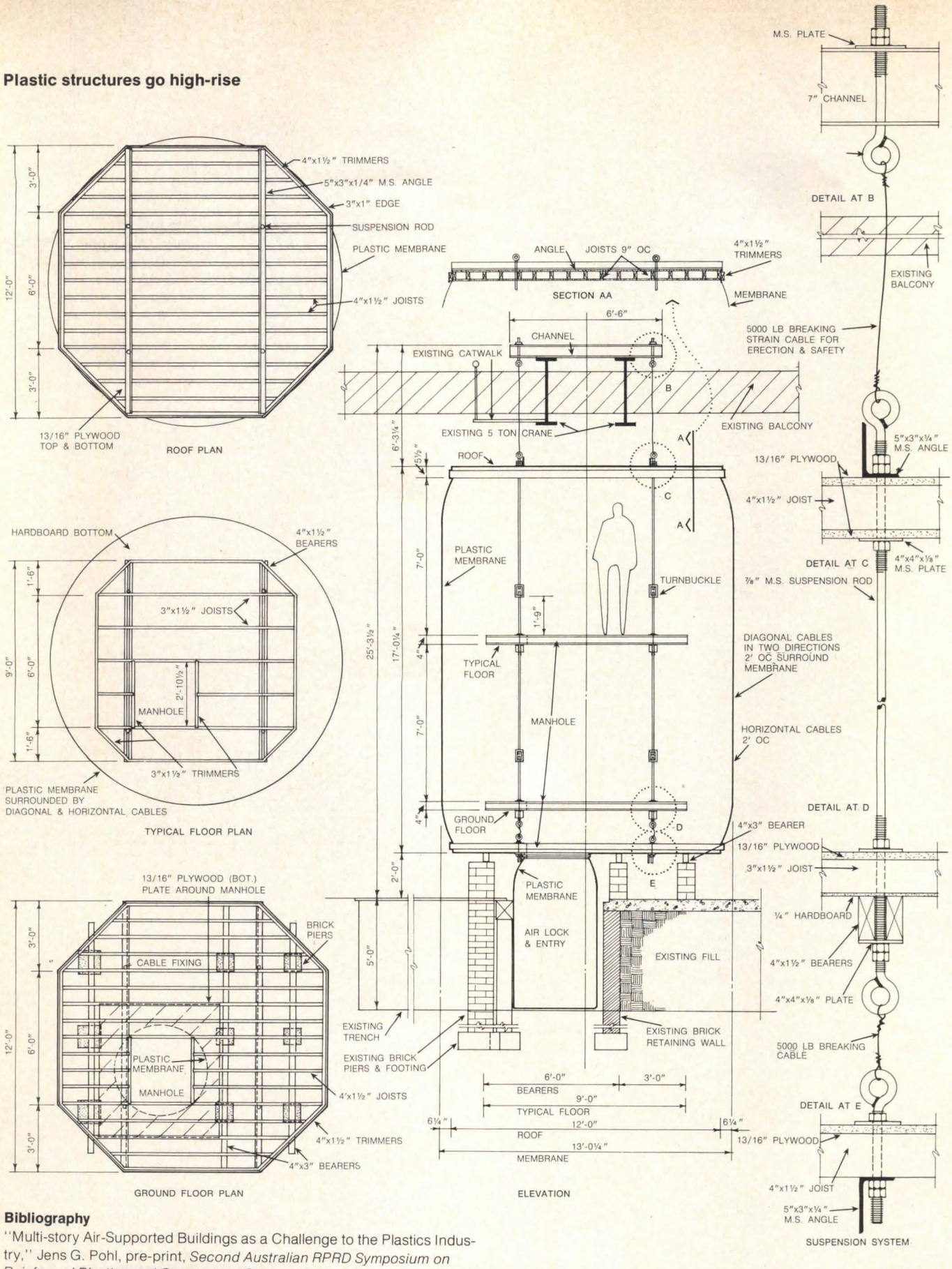
Under these pressures, the PVC membrane would experience a tensile stress in excess of 100 psi. Therefore, to strengthen this membrane and limit the circumferential elongation—and at the same time stabilize the prototype against horizontal force—diagonal and horizontal cables were placed around its perimeter at 2-ft intervals. The difference in modulus of elasticity between the PVC membrane and the steel cables allows the PVC to bulge outward between the cables, transferring primary structural function to the cables. Maximum stress in the PVC membrane was 18 lb-in.

Since the structure had to be erected in the School of Building's Research Laboratory—under an existing crane—a height restriction of two floors with a ceiling height of 7 ft each was imposed (see details, p. 76).

Floors were suspended from the roof by steel suspension rods, and turnbuckles provided a leveling device at each floor. The building was pressurized by a single ¾ hp centrifugal fan, but a secondary fan was added to compensate for air loss from the entry doors. The entrance airlock in this prototype was beneath the floor (due to height restrictions).

Although the prototype must still undergo a series of structural, operational and environmental tests, it is historically significant and tests the practical implications of this new building concept. By its very existence, this prototype demonstrates the feasibility of Jens Pohl's structural theories.

Plastic structures go high-rise



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"Park Towers," The Housing Commission, Victoria, 1969, Melbourne, Victoria.

"Pneumatic Construction Applied to Multi-story Buildings," Jens G. Pohl and Peter R. Smith, *Progressive Architecture,* September 1970, pp. 110–117.

"Multi-story Air-Supported Building Construction," J.G. Pohl and H.J. Cowan, *BUILD International,* Mar./Apr. 1972; pp. 110–118.

First full-scale prototype of a high-rise plastic structure was designed by Dr. Jens G. Pohl and constructed by students at the University of New South Wales. Dr. Pohl is now teaching at California Polytechnic.

There are few unsung heroes in opera, many in architecture. Building-in good sound control, the men who design the hall make the basso more profundo, the speaker more eloquent. They envision a museum that not only enhances the experience of art but also keeps the artworks safe from fire or deterioration. They orient a planetarium to the sky while carefully securing it against the chemistry and moisture of the ground. The fundamentals. Often unsung, but still fundamental.

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Monet and Renoir moved to Fontainebleau to work in the brilliance of its sunlight. A century later, their paintings need protection from sunlight, close control of temperature and humidity, and painstaking precautions against hazards such as theft and fire.

In the imaginative plan of the new Denver Art Museum, the works of Monet, Renoir, Rembrandt, Tintoretto, Matisse, and other masters are exhibited with all of these advantages plus the most important feature of all: an ideal arrangement for people to experience art.

The museum embodies many of the ideas of its director—artist Dr. Otto Karl Bach—on the proper display of art.

Breaking with the European tradition of horizontal Beaux Arts design, the museum galleries are vertically

stacked, six stories tall. Exhibits and viewers alike benefit from a planned limitation in gallery size—two galleries on each floor, none larger than 10,000 square feet.

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California campus of U.
University, 112 apartme
buildings blend graceful
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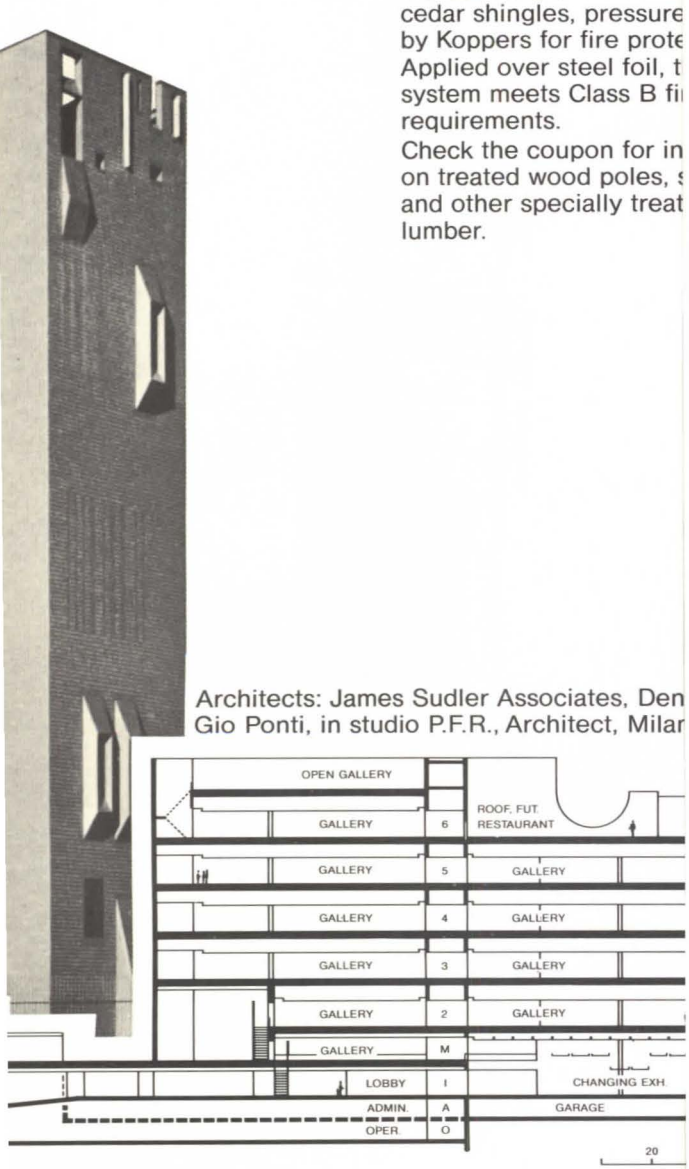
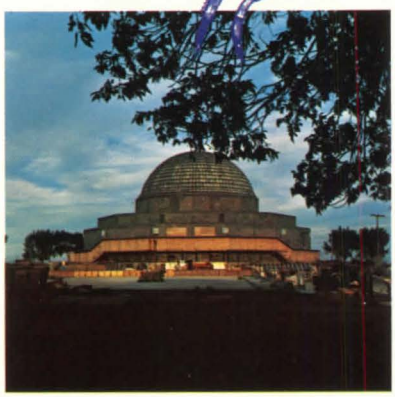


Architects: James Sudler Associates, Den
Gio Ponti, in studio P.F.R., Architect, Milar

Waterproofing the Universe



When cars go under rivers and stars go under ground, the advanced technology of waterproofing comes into its own.

In Chicago, the world-famous Chicago Park District's Adler Planetarium is going underground to add its new Universe Theater plus exhibit space, offices, kitchens, and restaurant —all subsurface, and not fifty yards from Lake Michigan. Situated on a manmade peninsula, the $3.5 million addition is flanked on two sides by the lake and on another side by a nearby lagoon. Architects C. F. Murphy Associates specified that the entire concrete structure be enclosed in a multilayered membrane waterproofing system.

Supplied by Koppers, the system consists of built-up applications of coal tar primer, waterproofing fabric and waterproofing pitch. The Universe may not be high, but it's dry.

In Alabama, Interstate Route 10 tunnels 57 feet under the Mobile River on its way from Jacksonville to Los Angeles.

Central sections of the 4,401-foot tunnel are fabricated steel tubes, floated to the site in sections, sunk, joined, and embedded in concrete. Straddling these at both ends are two 89-foot ventilator buildings, each housing six giant fans to change air in the tunnel completely every three minutes.

To waterproof these structures and the portal arches at each end, the State of Alabama Highway Dept. used a Koppers system of Glasfab,® a coal tar coated woven glass fabric, primer, coal tar pitch, and brick-in-mastic.

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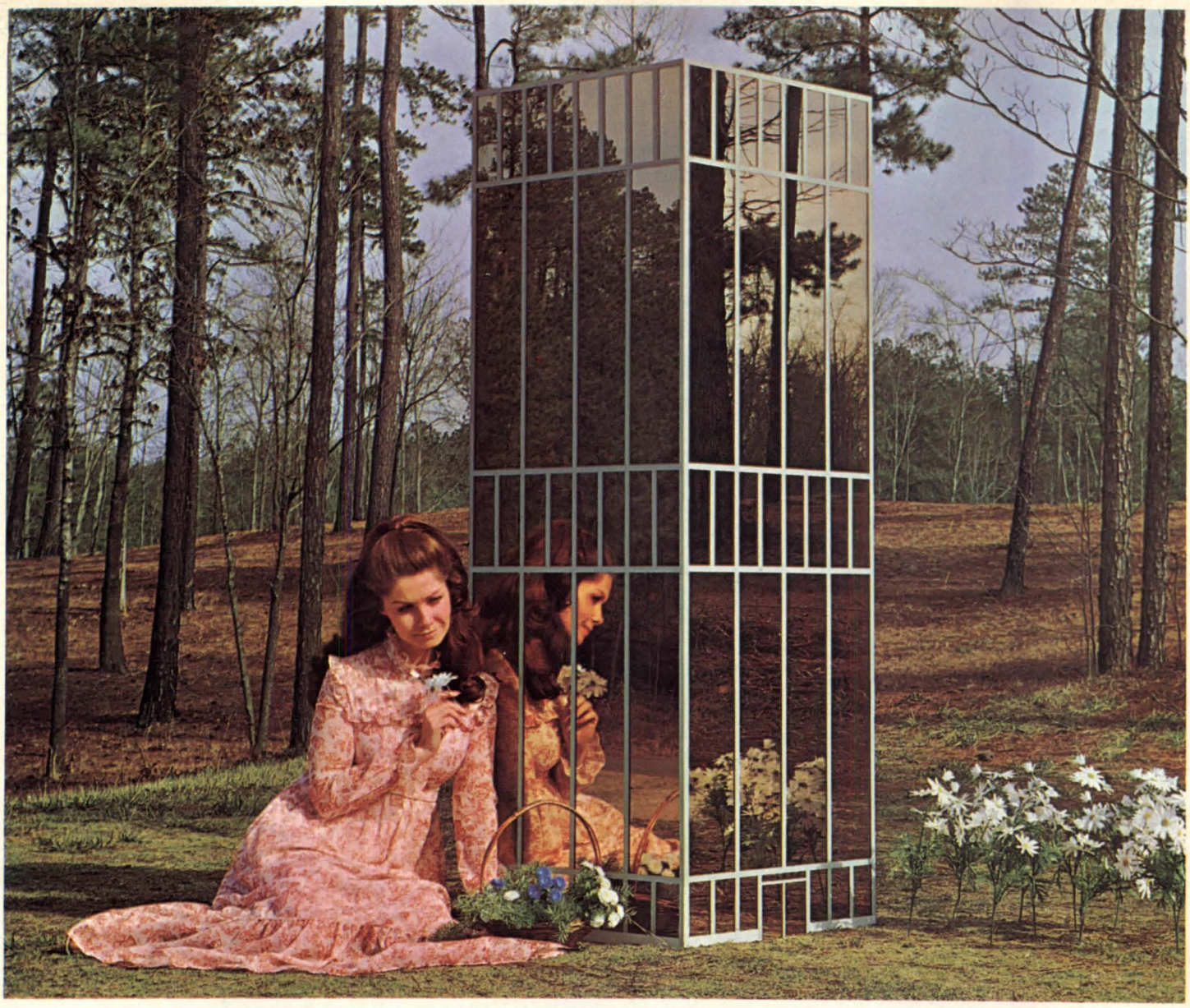

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Compliance with zoning ordinances

Bernard Tomson and Norman Coplan

Although zoning laws are often difficult to interpret, the architect risks forfeiting his compensation if his plans do not conform to applicable zoning regulations

An architect must be knowledgeable concerning the building and zoning restrictions applicable to the site of the prospective construction. If plans cannot be used because they do not conform to legal requirements, the architect risks forfeiting his compensation for the services rendered, or worse. Illustrating such a situation is the Virginia case of *Bott* v. *Moser* (175 Va. 11), in which an architect was denied his fee for preparing plans and specifications for a building to be erected on a certain lot because the plans did not conform to setback restrictions in the applicable zoning ordinance.

There are often, however, serious difficulties in resolving the meaning, interpretation and application of building and zoning laws and in such case, the architect must act warily. The difficulty of statutory interpretation is reflected in a recent decision in New York involving the application of the zoning ordinance of the village of Port Washington (*Franchise Realty Interstate Corp.* v. *Rab*, 340 N.Y.S. 2d 446). The Court had before it the application of McDonald's food chain for a use permit for the construction of a restaurant. The proposed site was in a nine-acre shopping center which housed professional offices, a movie theater, 15 retail stores and two small restaurants. The entire shopping center was zoned as a business district.

The Zoning Board of Appeals of the village had denied the application on the ground that the building project constituted "a place of public assembly" and that there was insufficient parking space for such a building, and on the further ground that "drive-in establishments" may not be granted use permits under the applicable zoning ordinance. The Court, in considering the validity of the ruling of the Zoning Board of Appeals, stated that it was not unmindful "of the general rule that zoning ordinances which restrict the use of private property in derogation of the common law, must be strictly construed, and any ambiguity or uncertainty of ordinance application must be resolved in favor of free property usage."

The first question to be resolved was whether the proposed restaurant constituted a place of public assembly as defined in the State Building Code. If it did, the McDonald's establishment would have insufficient parking space. The Court rejected this finding of the Zoning Board of Appeals, stating:

"It is doubtful that the State Building Code's definition of 'place of public assembly' applies, since the Code relates to construction matters, not land use restriction, and 'zoning ordinances' are specifically excluded from its ambit. Executive Law § 372(4). 'Place of public assembly' is not defined in the Village Code, nor is the State Building Code definition adopted by reference. There are simply no guidelines to indicate that the contemplated McDonald's is a place of public assembly for zoning purposes. The parking spaces available fall within the number required of 'retail stores' generally."

The Court then turned to the finding of the Zoning Board of Appeals that the proposed restaurant was a "drive-in establishment" which use is prohibited under the Zoning Law. A "drive-in" establishment is defined as one which allows food and beverage consumption on the premises but outside of the building. The testimony before the Court was that while there would be no outdoor tables at the proposed facility, by McDonald's own estimate, 10—15 percent of its patrons buy the quick order, portable, and packaged food and beverages, then carry them outside to their cars, and have their snack or meals in stationary automobiles parked nearby, all with the restaurant's permission.

The Court, in rejecting the argument of the applicant that a "drive-in" establishment is one in which there is a "car-hop" service, stated the following:

"There is authority cited for finding that McDonald's is not a 'drive-in' establishment. . . . Yet, the ordinance here appears to permit only those businesses which are 'conducted entirely within a building', thereafter enumerating some specific types of businesses not falling within the permitted classification and being then prohibited.

"The Court does not believe that the proverbial 'car-hop' service is the primary or only determinant for classifying an eating establishment as a 'drive-in'. Any establishment which has a significant component of its business in eating in parked adjoining cars may be characterized as a 'drive-in'. This is particularly so where the manner of packaging and service is designedly conducive to such activity.

"Eating food in cars is not the problem, but rather the increased outdoor activity which it entails. This would seem to be the vice for land use purposes of the commonly known 'drive-in' since it is the rapid flow and the visible presence outdoors of people, with greater opportunity for litter and aggravating noise and activity, which underlies singling out such restaurants as prohibited uses, permitted only upon variance obtainment."

The Court concluded that the Zoning Board of Appeals was justified in refusing the use permit on the ground that the operation constituted a "drive-in" establishment and further found that there was insufficient proof of "hardship or practical difficulty" to support the granting of a variance from the applicable ordinance.

Authors: Bernard Tomson is a County Court Judge, Nassau County, N.Y., Hon. AIA. Norman Coplan, Attorney, is Counsel to the New York State Association of Architects, Inc./AIA.

V.A. Hospital Training Center clad in porcelain-steel

This two-story, 16,000-square-foot educational and training center was recently erected by the Veterans Administration adjacent to the V.A.'s 489-bed hospital in Durham, North Carolina. Here, medical corpsmen are trained to serve as physicians' assistants.

A feature of the steel-framed structure is the use of porcelain-on-steel panels for exterior and interior walls. The terra-cotta-colored exterior walls blend with the brick in the main hospital building. Interior porcelainized walls provide real economy; are virtually maintenance-free, never require painting, are highly fire-resistant and smoke-proof.

All walls of the building are mounted in an extruded metal framing system, on four-foot centers. Bethlehem furnished the sheet steel to AllianceWall Corporation, of Wyncote, Pa., and Alliance, Ohio, who porcelainized and fabricated the panels. The structure was designed by Titan Environmental Construction Systems, Baltimore, closely following V.A. specifications.

Bethlehem BETHLEHEM STEEL

For more than half a century Sargent's old pot type hydraulic door closers have been quietly doing their thing at Old Main, first building completed on the University of Arizona's campus. Installed in 1922, these door closers were chosen in accordance with architect James Miller Creighton's preference for Sargent hardware on all campus doors.

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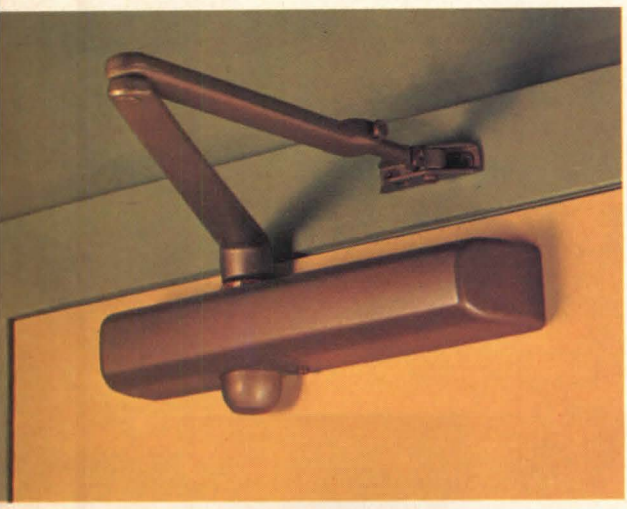

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Performance concept in building—Part I

Harold J. Rosen, PE, FSCI

The performance concept as it relates to systems building is of significance to specifiers, architects and engineers involved in the preparation of specifications

The subject of systems building and the performance concept are currently generating considerable interest throughout the world. It was this interest which led RILEM (International Union of Testing and Research Laboratories for Materials and Structures), ASTM and CIB (International Council for Building Research Studies and Documentation to hold a symposium in Philadelphia during May 1972 which attracted 189 individuals from all parts of the globe. Over 80 papers were presented dealing with 1) establishing the requirements of buildings; 2) the evaluation of buildings; 3) experiences and examples of structures and components designed in accordance with the performance concept; 4) performance requirements of components; 5) evaluation of components; and 6) the performance concept applied to materials. (The proceedings were recently published by the National Bureau of Standards and are available in two volumes from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. SD Catalog No. 13.10:361, Vol. 1 and SD Catalog No. 213.10:361, Vol. 2.)

The current quiet investigation of performance specifications as it relates to systems building and the performance concept in building is being conducted, not by practicing specification writers or manufacturers of building products and systems but, primarily, by governmental agencies and academicians. While CSI has published two documents on performance specifications, they are essentially a restatement of work already performed, mainly by governmental bodies.

It is rather significant that only a handful of participants of the symposium were specifiers. While there are roughly 1500 to 2000 specifiers in this country, 99 percent are not equipped *either by training* or by experience to write true performance specifications. This is not to say that they are incompetent, but rather that we are on the threshold of a completely new concept; that guidelines have not been completely formulated; that test methods to evaluate criteria have not been established; and that the very fundamental definitions of performance have not yet been promulgated because the subject matter is still abstruse.

To pinpoint the foregoing inconclusiveness, the following statement by one of the participants is significant: "The performance concept in building presupposes that we can describe with scientific exactitude what a building or part of a building is to do, and how we propose to measure that performance of the thing before and after delivery and erection. I regret that the majority of persons deriving their livelihood at all levels of the building industry lack sufficient knowledge of building science, the processes of building element manufacture, cost control, design and assembly of buildings and their detailed maintenance and operation, to make judgments required to use the performance approach to building in its pure form. We need not be too concerned for the moment with our collective ignorance, as the rest of the industrial community have for all practical purposes no knowledge of this area."

We can perhaps better understand the ramifications of performance specifications if we examine some of the statements made by several of the participants on the subject:

"The application of the performance concept to buildings is considered as a total treatment of the problem where the influence of all aspects has to be accounted for. The performance concept implies that solutions are wanted which give optimal service under the influence of all factors affecting them in use."

"The performance approach is an organized procedure within which it is possible to state the desired attributes of the material, component, or system in order to satisfy the requirements of the user without regards to the specific means employed in achieving the results."

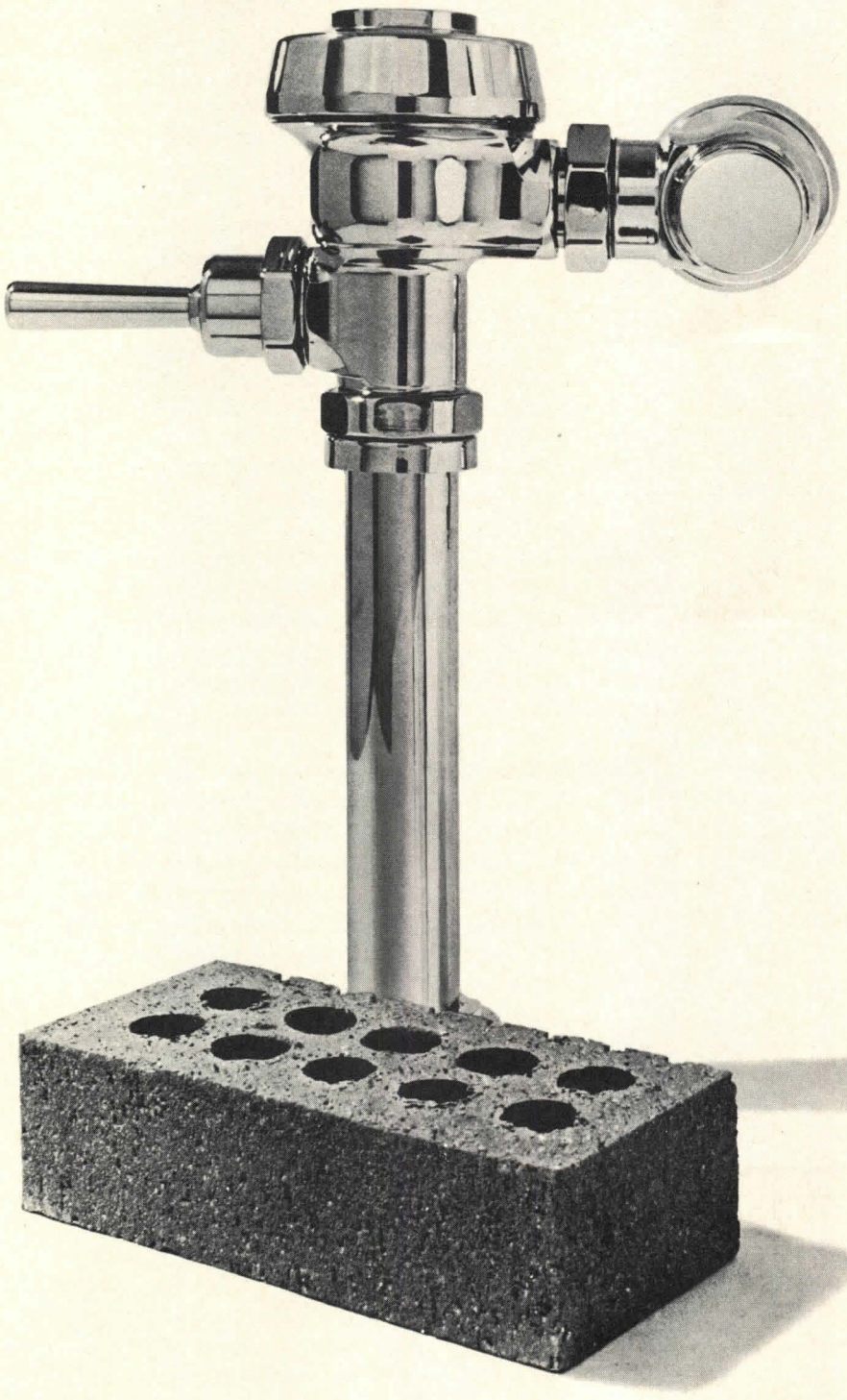
"Without prescribing—and thus delimiting—the means of delivering the performance wanted, the performance approach makes possible the formulation of a statement of what is expected from a material, component or system in terms of performance itself. This statement identifies a requirement, quantifies this in the form of criterion and sets the method or methods of assessing a candidate solution for compliance with the criterion."

These statements are more or less indicative of the nature of performance specifying. One must be capable of understanding the needs of the user so that he can translate the requirements into a set of criteria by which he can specify materials, components and systems that will perform on the basis of life safety, structural adequacy, durability, environmental conditions and interaction of the parts that make the whole.

In Part II of this evaluation, the problem areas confronting the specifier, the manufacturer and the other interested parties will be analyzed.

Author: Harold J. Rosen is Chief Specifications Writer of Skidmore, Owings & Merrill, New York City.

The sure way to save water- without a brick



People have been putting bricks in toilet tanks for years.

It's an old trick that shuts the water off sooner than normal after operation and one which has received a lot of recent publicity.

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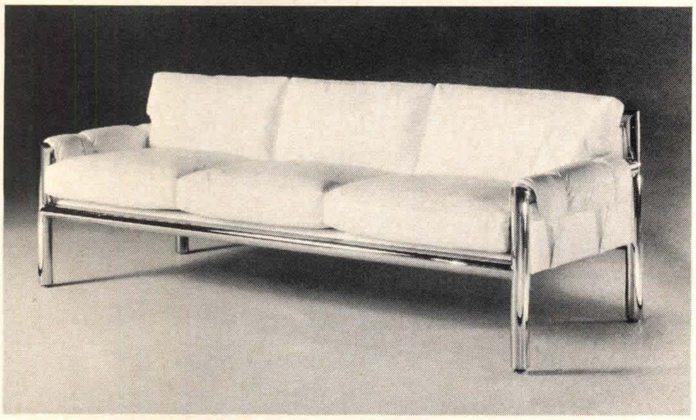
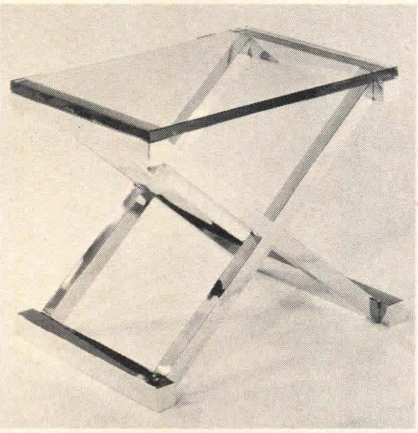
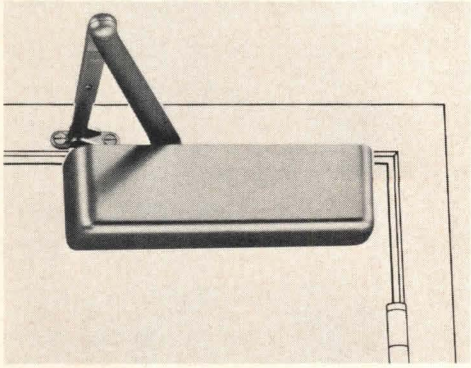


Seating



Stainless steel



door closer

Seating. Sofa is handcrafted, has loose, zippered cushions of dacron-wrapped foam, mirror-chrome 2½ in. tubular steel frame with adjustable floor glides, and comes in full range of colors and fabrics. AGI Industries, Inc.
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Stainless steel and glass are combined in these cocktail tables. All have ¾ in. beveled-edge glass tops supported by 1¼-in.-thick polished stainless steel bases. Sizes include 30″x30″x16″ contemporary square table, 20″x48″x18″ oblong Chinese Chippendale, and a small contemporary table with an X base, 21″x16″x17½″ high. Great Eastern Furniture.
Circle 102 on reader service card

Door closer. Designed to handle a wide range of door sizes and applications, it is described as a heavy duty, nonhanded, nonsized closer that can handle exterior doors 2 ft through 4 ft (not 2 ft through 5 ft as we previously stated erroneously), interior doors 2 ft through 5 ft. It can be mounted on hinge face of door, over the door, on stop face or on a bracket. It is said to eliminate the need for 30 different closers. LCN Closers.
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Wattsaver. Conventional-sized light bulbs using krypton gas are designed to help offset electrical energy crisis. Available this summer for commercial, industrial and institutional use in 54-, 90- and 135-watt ratings with 3500 user-hour life; for residential use in 55-, 92- and 138-watt ratings with 2500 user-hour life. These will provide the same light output as conventional 60-, 100- and 150-watt bulbs while consuming 8 to 10 percent fewer watts. Dura-Test Corporation.
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Modular seating. High-density polyethylene seats are said to be easy and economical to install in stadiums, gymnasiums, pool areas. They may be installed permanently or as free-standing benches or portable bleachers. Frames are extruded aluminum. Vandal-resistant, they will not chip, "bloom," splinter or acquire rough edges; are impervious to temperature changes, air pollution, chemical staining. Seat bottoms are shaped to be self-draining. Four colors allow easy coding or any color can be matched. Sport Seating Company.
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Carpet. A blend of continuous filament nylon with continuous filament olefin, it has a level loop construction that is said to be virtually static-free, easily cleaned and soil resistant. Comes in 10 colors, 12 and 15 ft widths, with jute or hi-density rubber backing. Wellco Carpet Corporation.
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Qasal cladding. Flat, integrally colored white panels composed of incombustible mineral fibers and cement produced in smooth and lightly textured finishes. Sizes up to 64⅝″ x 126″; thicknesses of ¼, 15/32 and 19/32 in. May be blind-fastened and can be cut to size or drilled in the field with conventional tools. Suggested applications include fascias, façades, spandrels and insert panels; soffits; mullions and column covers. Champion International.
Circle 107 on reader service card

Casework. Planning guide illustrates full line of enameled and stainless steel custom casework. Products' standard construction details are rabbeted frames, ball bearing drawer suspensions and welded corners that eliminate overlap and joints. Jamestown Products Division, AVM Corp.
Circle 108 on reader service card

Leatherlike. Vinyl-coated upholstery fabric has special topcoat which gives it a matte finish and slip and the feel of leather, according to the maker. Available in 10 earth-tones and in black and white; 54-in. width and 35-yd rolls. Cleaning requires only mild soap and water. Inmont Corporation.
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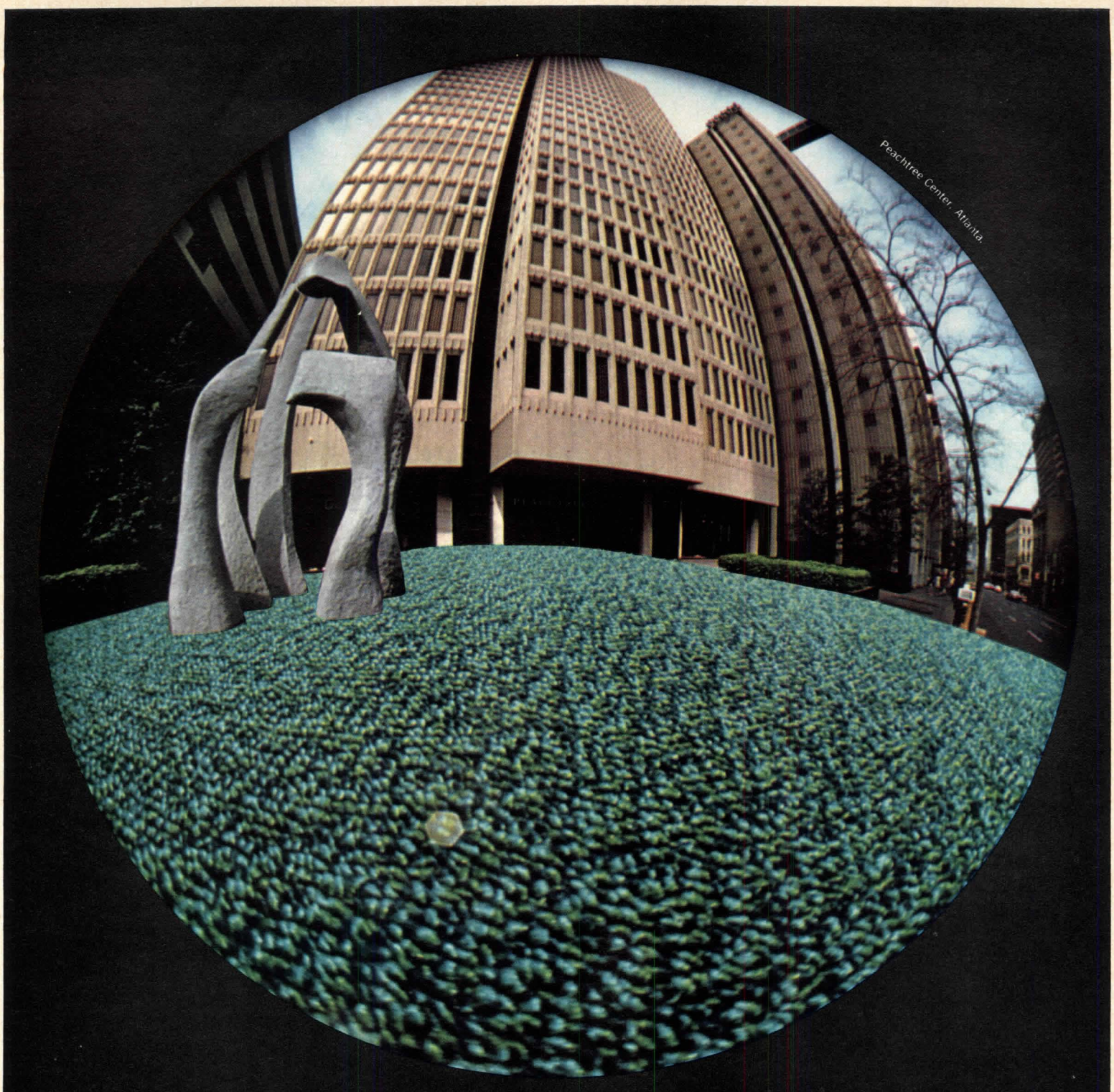
[continued on page 90]



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Products continued from page 88

Electronic security system has three components: a central control unit, a transformer and a sensor that reacts, when properly activated, by unlocking doors, opening gates or sending alarm signals. The operating key—a plastic card—need not be removed from a wallet or purse, but only placed near the hidden sensor, which compares it with a reference key in the central console. The wrong key sets off an alarm. Said to be invulnerable to physical picking, magnetic or electrical jamming. First model, designed for use on a single door, will be available in August. Other models for multiple doors and small businesses will be available later this year. Slage Lock Co.
Circle 110 on reader service card

Fireplaces. Compact, ready-to-install woodburning fireplaces—front-opening and corner models—are complete with built-in damper, divided fire screen and pre-finished one piece surround. Fireplace and chimney units are easy to install in any type of constructions, on any floor. Contemporary free-standing units are woodburning, gas-fired or electric. The Majestic Company.
Circle 111 on reader service card

Literature

Partition systems. Assembled in a keyed Specification Guide are separate sections on panels and planks, doors, custom products and partition systems. Marlite Division, Masonite Corporation.
Circle 112 on reader service card

Copper and copper alloys. 1973 edition of application data sheet gives standard designations and incorporates the unified numbering system for commercial metals being developed by ASTM and SAE. New entries include two oxygen-free coppers, a cobalt-iron modified brass, a leaded red brass, and two leaded tin bronzes. Copper Development Association, Inc.
Circle 113 on reader service card

Sound control ceilings catalog offers 47 descriptive pages of ceiling tiles and panels for industrial and commercial building application. Includes product name, description, sizes available, type of installation required, thermal insulation value, flame spread index, noise reduction coefficient and sound transmission class. Specifications are listed in detail for over 25 different ceiling materials. Johns-Manville.
Circle 114 on reader service card

Metal louvers. 24-page catalog includes dimension drawings, *details, specifi*cations, area tables and performance data curves of complete line of metal louvers for industrial, commercial and institutional buildings. Shown are fixed louvers, operating louvers, mechanical equipment enclosures and sun control louvers that are designed for installation into wood, masonry or metal and are available in a wide range of colors and finishes. Elvin G. Smith Division, Cyclops Corporation.
Circle 115 on reader service card

Liquid membrane. Color brochure points up composition and materials, uses and advantages of waterproofing and joint sealing system for decks, bridges, tunnels and water holding structures. Uniroyal.
Circle 116 on reader service card

Ceramic tile. Eight-page color brochure illustrates sizes, shapes (including 5 in. hexagon and 5⅞ in. valencia), score designs and 21 colors in which tile is made. For residential and commercial applications. American Olean Tile Company.
Circle 117 on reader service card

Curtain walls. Color brochure has section drawings and typical details that are offered as a general guide for curtain wall construction. Also included are vertically or horizontally pivoted window detail drawings. Flour City Architectural Metals.
Circle 118 on reader service card

Open office planning. Maker of furniture, seating and filing systems for office, health care, educational and industrial applications has made available a 32-page booklet describing the benefits of open office planning and how plan may be developed; includes section on acoustics and charts showing proper positioning and distances between office workers. InterRoyal Corporation.
Circle 119 on reader service card

Smoke detector. A 12-page technical report describes tests made to gain knowledge of how smoke flows through door openings under actual fire conditions and study effectiveness of smoke detector positioning for best response. Includes details on test procedures, facilities and results. Drawings and graphs supplement the text. Rixson-Firemark, Inc.
Circle 120 on reader service card

Masters Collection. Authorized and controlled reproductions of the original Red and Blue and Zig-Zag chairs by Dutch architect Gerrit Thomas Reitveld are now available in this country. Both chairs are solid beechwood; Zig-Zag with or without a clear polyurethane finish and Red and Blue in polychrome aniline stains and lacquers with clear polyurethane finish. Catalog available. Atalier International, Ltd.
Circle 121 on reader service card

Roll formed architectural components. Bulletin discusses use of copper alloys for roll formed shapes in windows, curtainwalls and points out advantages: weight reduction up to 70 percent as compared to extruded cross sections; greater shape complexity and longer length possibility; elimination of hand straightening. Copper Development Association, Inc.
Circle 122 on reader service card

Executive furniture. Walnut cube desk series with matching credenza that has choice of interior components. Complete color catalog is available. Cramer Industries, Inc.
Circle 123 on reader service card

Architectural aluminum trims. 1973 catalog shows mansard, gravel stops, fascias, copings and soffits that comprise these trims. Complete specification data with detailed drawings and color chips are also given. Construction Specialties, Inc.
Circle 124 on reader service card

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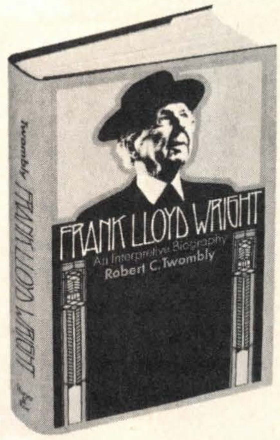
F.LI.W.

Frank Lloyd Wright: An Interpretive Biography *by Robert C. Twombly. New York: Harper & Row., 1973, 373 pp., illus., $10.*

Reviewed by Leonard K. Eaton, professor of architecture at the University of Michigan.

Of the making of books on Frank Lloyd Wright there is no end. This latest effort originated as a doctoral dissertation in history at the University of Wisconsin, and according to the blurb on the dust jacket "... presents a complete look at the man who demythologized American architecture through liberating the concepts of raw materials, the wood and steel, which were his tools." Unfortunately the book is much less than a complete look, although it contains a certain amount of valuable and previously overlooked information. It will probably, in fact, further confuse the condition of Wright studies, which are already in a peculiarly perilous situation.

On the positive side, Professor Twombly, who teaches at City College in New York, has, with uncommon assiduity, read every scrap of material written or uttered by Wright himself, and uncovered several manuscript sources of previously unsuspected importance, notably four important letters in the Harriet Monroe Poetry Collection. He has also carefully examined all the available newspaper sources, many of them quite obscure. His chief difficulty is with the secondary sources. Possibly because of a determination to base his account on what Wright himself said during his lifetime or on what was written about him while he was alive, he ignores many contributions to Wright scholarship which would have altered his interpretations substantially. Among older writers, he tends to denigrate the books of Hitchcock and Manson, which are, after all, pioneering



works. Among more recent historians he admires Vincent Scully and Norris Kelly Smith. The former, he says, has unearthed the architectural, the latter, the intellectual influences on Frank Lloyd Wright. Now Smith, particularly, did write a brilliant and controversial study of Wright, but he was primarily interested in the symbolic aspects of his work and in the intellectual history which they revealed. This, of course, is a legitimate consideration, but it should not be the only concern of a historian dealing with so great a figure. Frank Lloyd Wright as environmentalist is today of as much interest as Frank Lloyd Wright the architectural designer. In his preface Professor Twombly confesses to "... a strong emotional attachment to his work and the valley in which he lived," and he has obviously made an attempt to see as many of Wright's buildings as possible. One cannot escape the conclusion, however, that Twombly is sensitive to only certain aspects of his hero, and that he is completely oblivious to the complexity of Wright's relationships with his contemporaries. (The most recent scholarship suggests that Wright, especially in his early years, may have owed a considerable debt to the English arts and crafts architects.) What, then, is behind the difficulties with this ambitious work?

We may begin with Twombly's recognition that about 1914 a pronounced change occurred in Wright's psychology; thereafter he adopted the public pose of the "persecuted genius" (the author's own excellent phrase). In 1908, he had been reasonably generous to other Chicago architects and to his collaborators in the Oak Park Studio; now he insisted that he "alone, absolutely alone" had developed the prairie residence. Since Professor Twombly clearly recognizes the importance of this remarkable shift in attitude, would it not have been reasonable for him to inquire as to what the exact role of those collaborators was? On the simplest level, he would have found that the welded steel girders, which make possible the daring cantilevers of the Robie House, were the suggestion of the client himself, a true collaborator if ever there was one. At another level he would have found, as H. Allen Brooks has conclusively demonstrated in his magnificent article "Frank Lloyd Wright and the Wasmuth Drawings" (*ART Bulletin,* XLVIII (1966), pp. 193-202), that many of the famous drawings in the *Ausgefuhrte Bauten and Entwurfe* of 1910 were the work of Marion Mahoney Griffin and that others were done by Hugh Drummond. If he had consulted the files of *The Prairie School Review,* he would have found that various other figures were at different times important in the work of the Oak Park Studio. All of this in no way lessens the achievement of Wright himself; he was, after all, the towering genius who pulled everything together. It is impossible to see how anyone else could have created the integrated systems of lighting, heating and ventilation which characterize the best prairie houses and which have been so thoughtfully analyzed by Reyner Banham, another historian missing from the bibliography. Finally, he would not have been led to such curious judgments as that on p. 131, in which he remarks that the work of Purcell and Elmslie was "... obviously dependent on Wright."

The truth of the matter is that Wright was, from 1914, an expert at claiming credit which should properly have been shared with his co-workers. Sometimes these men and women, often people of substantial talent, hit back angrily as in the case of Alfonso Iannelli and the concrete sculptures at the Midway Gardens. Others, like Rudolf Schindler, who had contributed [continued on page 96]

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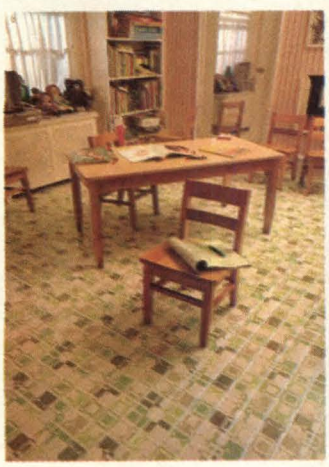

Books continued from page 94

greatly to the success of the Imperial Hotel, suffered in silence. The reasons for this behavior lie deeply hidden in Wright's psyche. Suffice it to say that they are nowhere revealed in *An Autobiography,* which is a great book, but it should be taken as poetry, rather than as narration of historical fact.

When we come to Twombly's chapters on the buildings of the 1930s, which he properly terms "The Second Golden Age," his treatment is somewhat more satisfactory, possibly because of intimate familiarity with the Wisconsin structures, notably the Jacobs houses and the buildings in Racine for the Johnson Wax Company. It would, in fact, be hard to find a better analysis of the Usonian dwelling than Twombly offers. Still, the nagging doubts remain: What was the role of Wesley Peters in this work, what of John Howe? These questions will not, of course, be answered until the archives are opened. One is forced to agree with Twombly's remark that "Olgivanna Wright and the Taliesin Fellowship have more than kept the faith, but their superfluous attempts to ensure his immortality have only detracted from his name and tarnished his legacy" (p. 296).

With regard to the late work of the 1950s Twombly makes one statement which is so astonishing that it, too, must be quoted exactly. On p. 176 he writes, "A handful of apprentices designed accessories in some of his buildings, and by the mid-fifties, when he was able to do very little drawing, he relied on one or two trusted assistants to work out his ideas on paper." Now this may very well be true. It is a question which has concerned many people, but Twombly footnotes it as follows (p. 328): "A Madison architect who visited Taliesin frequently in the 1950s has described to me the activities there." Now this is what Senator Sam Ervin would immediately *classify* as hearsay evidence, and it ought to be labeled as such. To do otherwise is not sound historical practice.

In short, we have here a volume which is all too likely to further befog an already confused situation. Because of this arrogant disregard of the work of Brooks, Banham and various other historians, Twombly has given us yet another distorted picture of Wright. But because of its lively style and its attack on Olgivanna Wright and the Taliesin Fellowship, it may well have many readers. Nonetheless it is not the kind of book on Frank Lloyd Wright we need.

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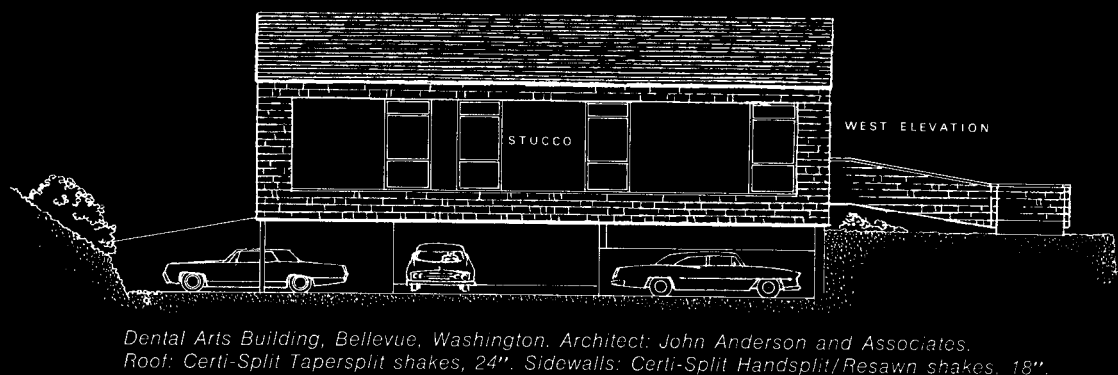

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Notices

Appointments

Geoffrey Freeman has been appointed vice president in charge of the New York office of Elbasani/Logan/Severin.

David G. Margolf has been promoted to vice president-operations at the Los Angeles office of Charles Luckman Associates.

William Bailey Smith, AIA has joined Daniel, Mann, Johnson, & Mendenhall, Los Angeles, as vice president and manager of the Architecture/Engineering Group.

James C. King, PE has been named an associate partner of The Cannon Partnership, Niagara Falls and Buffalo, N.Y.

The Drake Partnership, Architects, Inc., St. Louis, Mo., has announced the following appointments: **Vincent M. Piskulic,** associate vice president and manager of production; **Lawrence C. Hultengren,** associate vice president and director of construction management; **Warren Hauff** and **Shiv Singh,** assistant vice presidents for planning and design; **John Elkin,** assistant vice president for production; and **Jack Lindquist,** assistant vice president for materials technology.

Patrick E. Loukes, AIA has been named vice president of business development for William Simpson Construction, Portland, Ore.

Sidney E. Snyder, AIA, Alan W. Rowland and **Gregory C. Goetz, AIA,** have been named principals of Ossipoff, Snyder, Rowland & Goetz, Architects, Honolulu, formerly Vladimir Ossipoff & Associates.

Gerald Ludwig, PE, has been promoted to an associate of S.W. Brown & Associates, New York City.

Neil E. Pollock, AIA, was named assistant director of design in the Chicago office of Welton Becket & Associates.

Richard Korchien and **Sidney Resnick** have been promoted to executive vice presidents of Saphier, Lerner, Schindler Environetics, Inc., New York City. **Joseph Haran** has been named senior vice president. **Lawrence Lerner** has been appointed chairman of the board.

Gunars Ejups, AIA and **Vytautas J. Usas, AIA** have become participating principals of Gunnar Birkerts & Associates, Inc., Birmingham, Mich.

James Falick, AIA has been named executive vice president and director of new business development of Caudill Rowlett Scott, Houston, Chicago, Los Angeles, New York and Beirut.

Robert H. Laws and **A.M. Minton** have been elected to the board of directors of Gilbert Associates, Inc., Reading, Pa.

William N. Holway has been named a senior vice president and a director of Benham-Blair & Affiliates, Inc., Oklahoma City.

John A. Turnbull has been appointed director of the construction department for Maxwell Starkman AIA & Associates, Beverly Hills, Calif.

Donald J. Millar has been named chief architect and director of construction for Farnsworth, Palmer & Co., Chicago.

Ronald E. Woodward has been named assistant director of architecture of Roe Associates, PC, Hempstead, N.Y.

Don Kennedy has been named vice president of M. Arthur Gensler Jr. & Associates, Inc., San Francisco.

New addresses

Martin Price Architect, 56 E. 53 St., New York City 10022.

Wayne Mucci Associates, 601 Skokie Blvd., Northbrook, Ill. 60062.

Van Ginkel Associates Ltd., 1315 Boulevard de Maisonneuve W., Montreal 107, Quebec, Canada.

DTLuse & Associates, interior design and space planning consultants, 11 E. Superior St., Chicago, Ill. 60611.

A.G. Van Laarhoven, AIA, McLean, Va., has become associated with the Groupe EGAU, 44 Rue Dartois, 4000 Liege, Belgium. He will maintain his United States practice.

Walter S. Fullerton & Associates, 1755 Silverada Blvd., Suite 3, Reno, Nev. 89502.

Teng & Associates, Inc., 220 S. State St., Chicago, Ill. 60604.

New firms

Peter A. Pizzi, AIA and William J. Gallo, AIA have formed **ARCHITECTS II,** 744 Landis Ave., Vineland, N.J. 08360.

Srikanth Gopinath, PE and Dorothy M.N. McClellan, LS have formed **McClellan & Gopinath,** 906 S. Fort Harrison Ave., Clearwater, Fla. 33516.

The firm of **James P.B. Winer, AIA** has been formed with offices at 1821 Sansom St., Philadelphia, Pa. 19103 and Wyncote House, Wyncote, Pa. 19095.

Ivan Chermayeff, Thomas Geismar and Steven Fineberg have established **Art Planning Consultants** at 830 Third Ave., New York City 10022. Headed by Fineberg, APC functions in tangent to the design activities of Chermayeff & Geismar Associates, New York City.

Larry Klein and Edward Noonan have formed **Planning/Design Collaborative,** 600 Davis St., Evanston, Ill. 60201.

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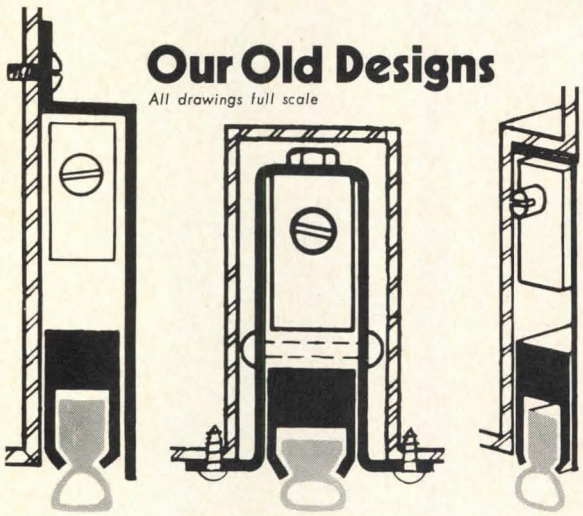

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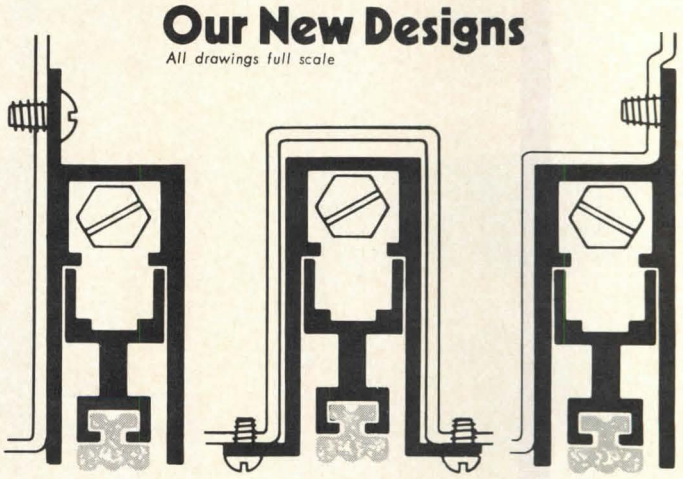

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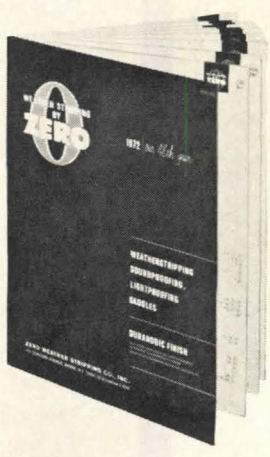

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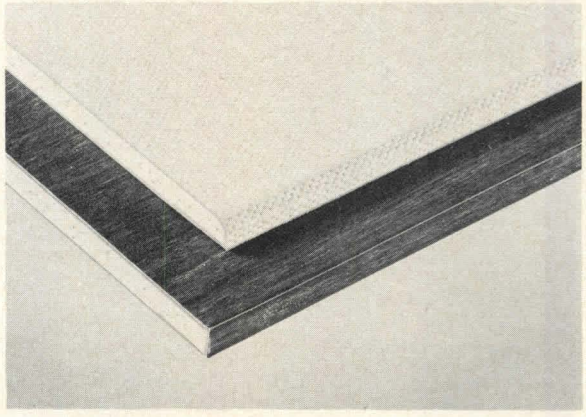

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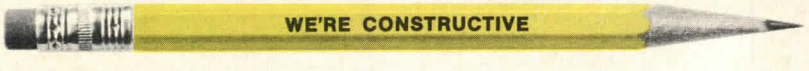

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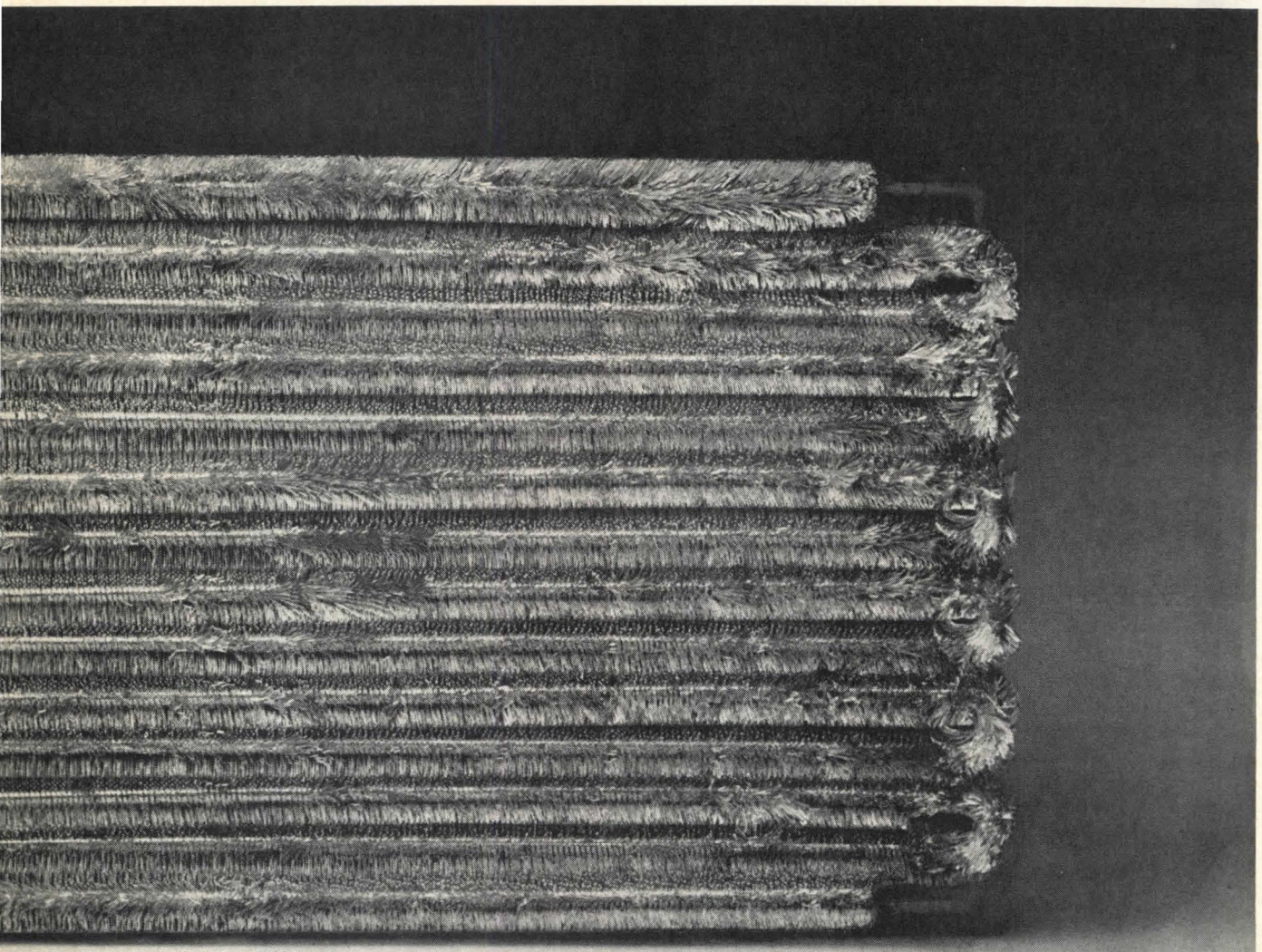

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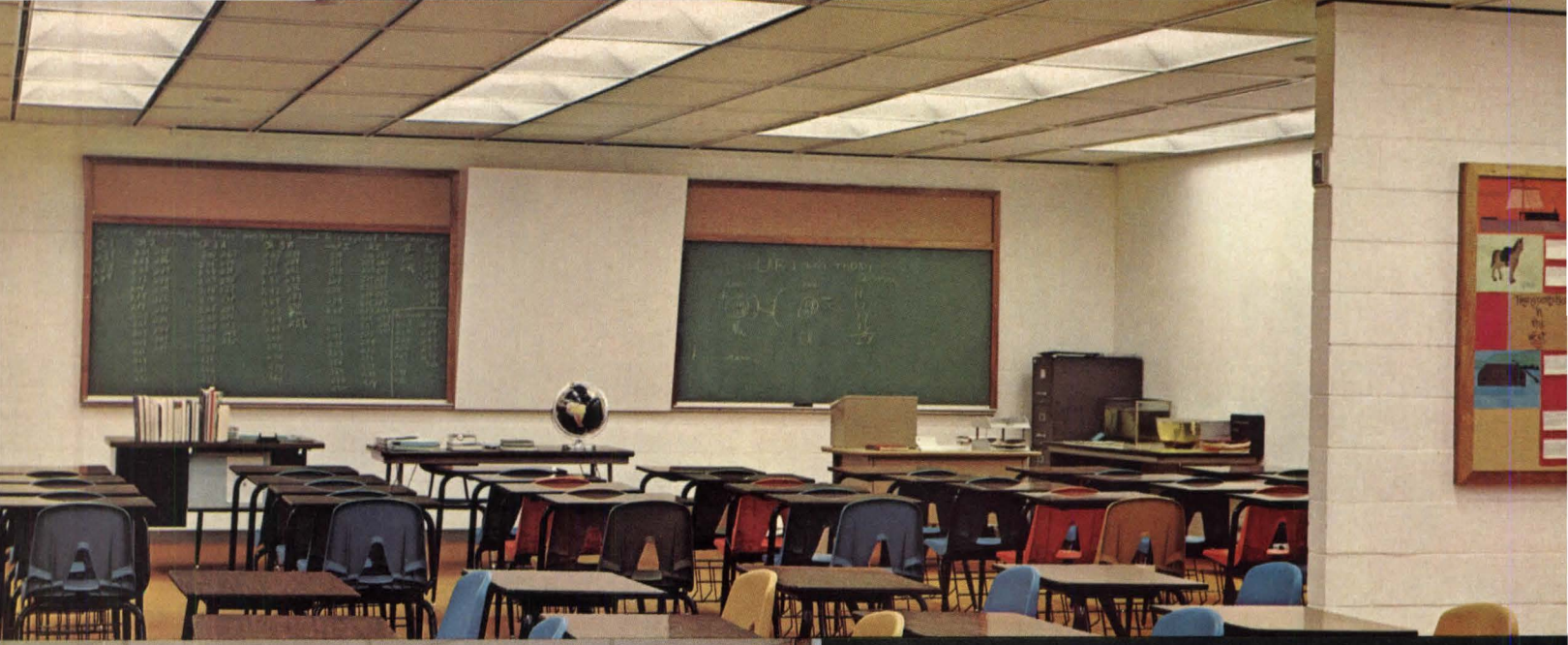

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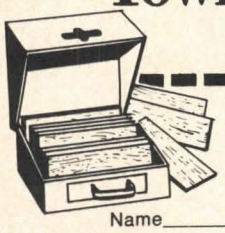

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