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FOUR PROJECTS BY HARDY HOLZMAN PFEIFFER ASSOCIATES
THE WORK OF THE 1972 GOLD MEDALIST PIETRO BELLUSCHI
BUILDING TYPES STUDY: CHILD CARE CENTERS
FULL CONTENTS ON PAGES 4 AND 5

ARCHITECTURAL RECORD

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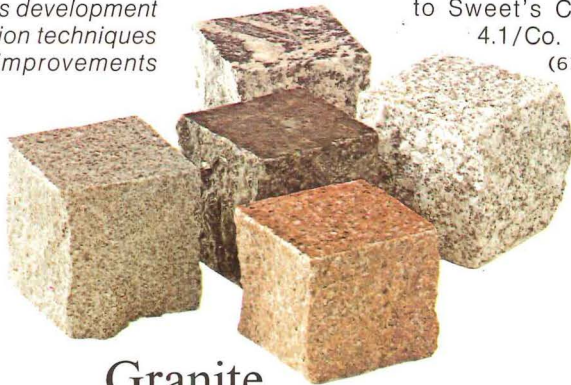
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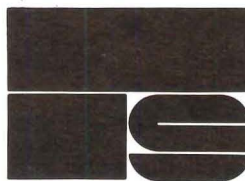
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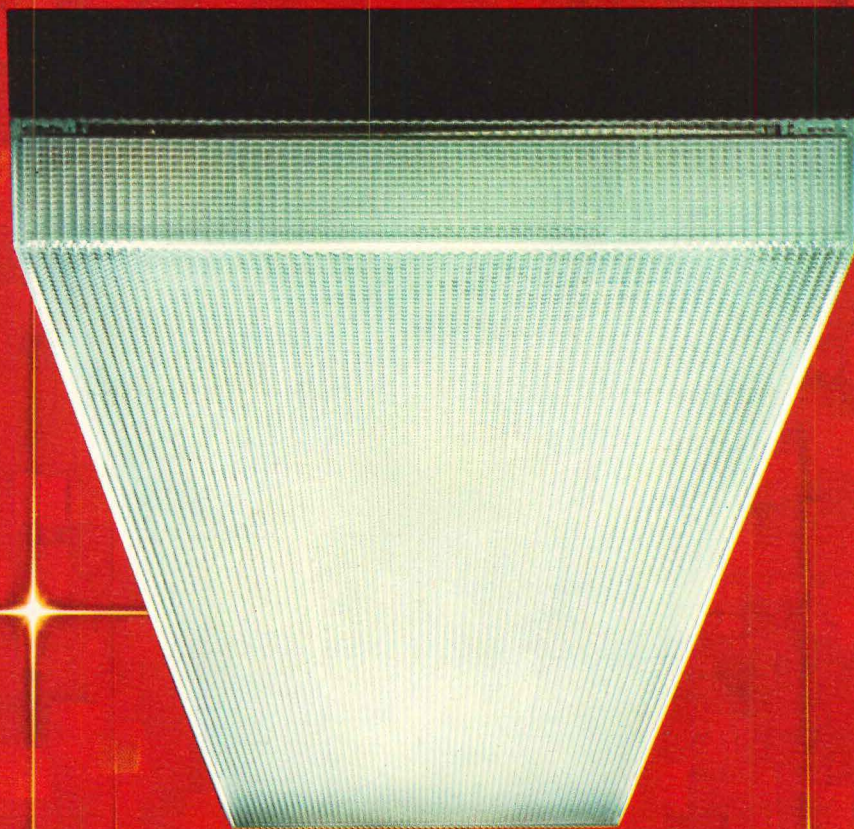
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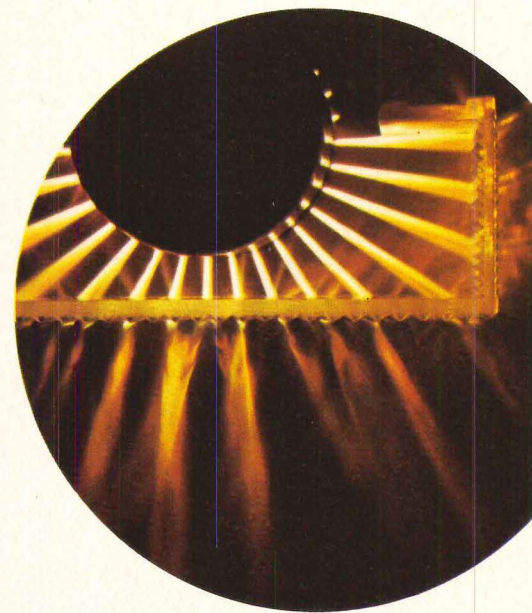
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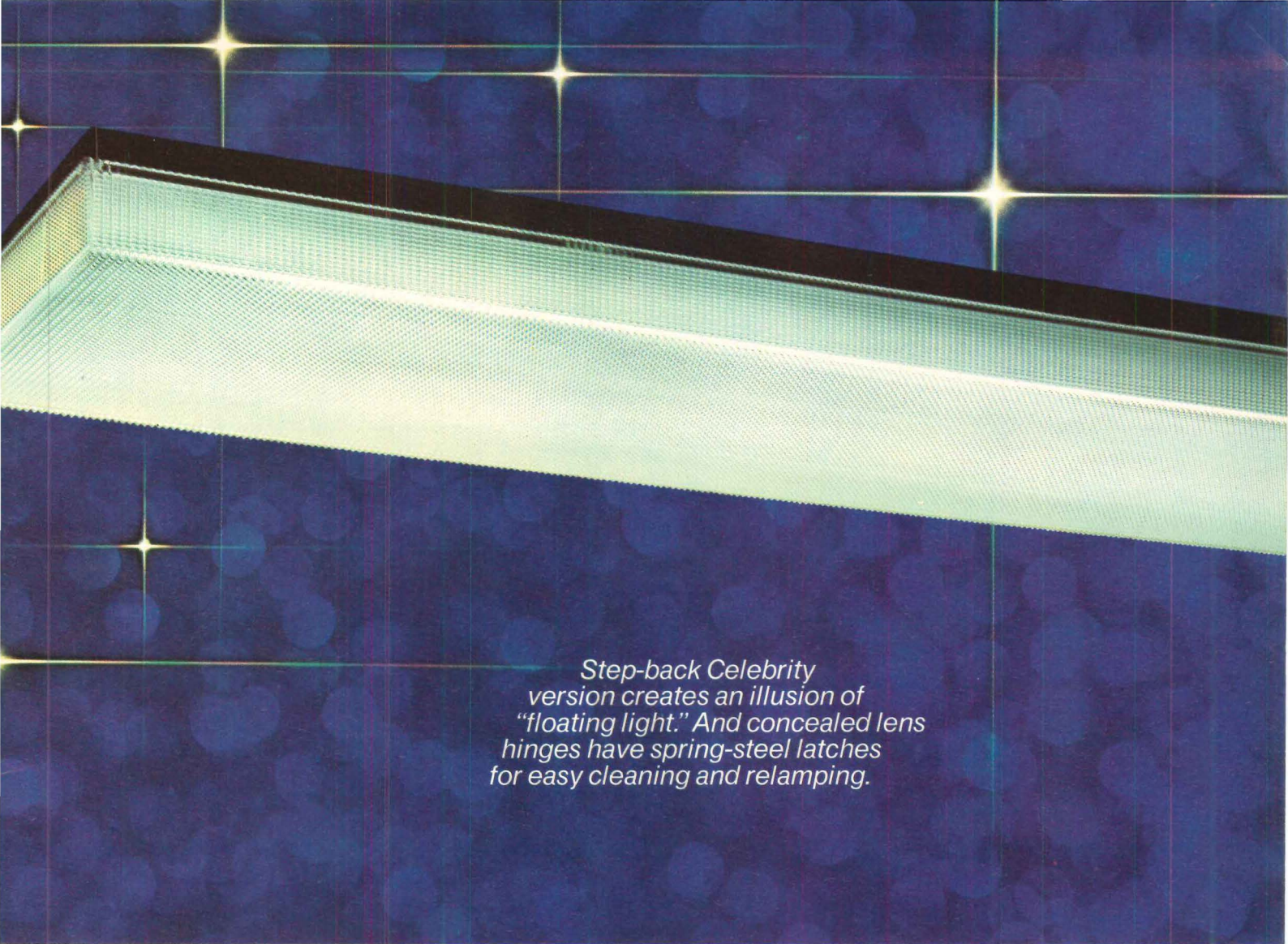
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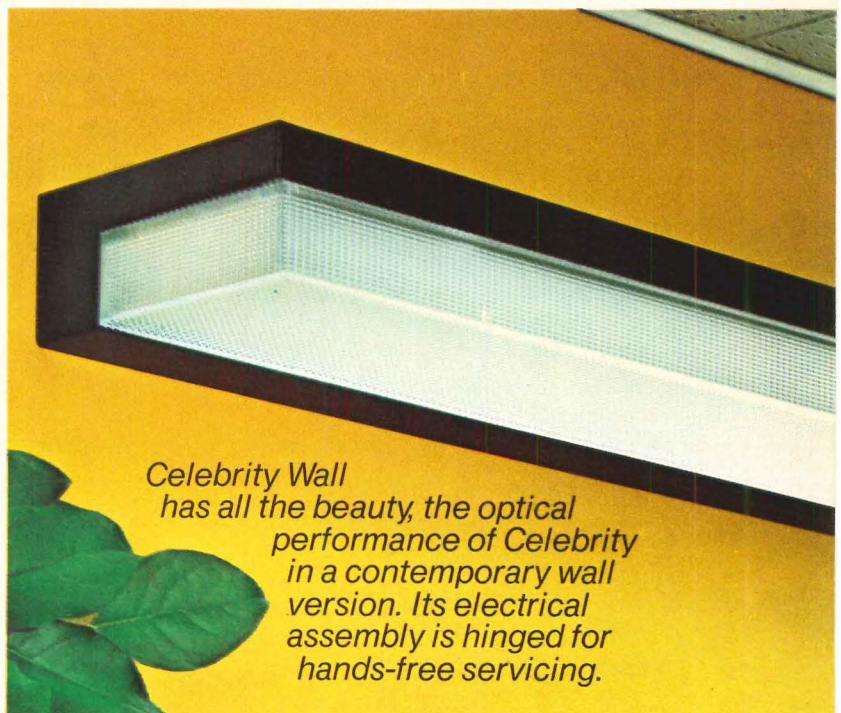
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FEATURES

**House near New York City
by Richard Meier and Associates**

Latest in a series of interesting houses by Meier, this large residence—eleven bedrooms—combines straightforward wood detailing with glass to achieve remarkable transparency and sculptural richness.

College of Education at Houston

For an imaginative client at an important university, Wilson, Morris, Crain & Anderson have designed a structure that encourages innovation in searching for new teaching ideas and techniques.

**Designing the learning environment:
four projects by
Hardy Holzman Pfeiffer Associates**

Three of the projects included in this portfolio—a school, a training center for firemen and a children's museum are obviously instructional facilities, but the fourth project—an industrial medical clinic is not usually considered as such. So profound is this firm's interest in communication and learning, however, that it rubs off on everything they do and thus even the clinic becomes a school for its patients.

**Pietro Belluschi:
The 1972 Gold Medalist**

A look at the work of this year's AIA Gold Medalist Pietro Belluschi over the 50-year span of his practice.



Art Hupy

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DESIGN CONCEPT. This plan for a National Seashores Visitors' Center calls on concrete as the basic building material to reflect the shapes and rugged forms of the rocky coast line setting. Extensive areas of glass permit visitors to enjoy the view while using the center's restaurant, tourist information and lecture facilities.

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Bicentennial Parks: a proposal for a proper birthday present

The American Revolution Bicentennial Commission has proposed—in honor of the occasion of our country's 200th birthday—come 1976—a network of 50 parks across the country. There would, in fact, be one in each state, built on land donated to the states by the Federal government, built (largely or entirely) with Federal funds, but—after the birthday celebration—turned over to the state governments for management and operation. The drawing below is one view of a prototypical park pavilion designed for the Bicentennial Commission by Davis, Brody and Partners.

The question, before getting into the details of the proposal; is: Is this a good idea? My answer, not to keep you in suspense, is: It sure is.

To be sure, in these days of tragic problems of welfare, inadequate (to say the least) production of low- and moderate-income housing, woefully underfunded health care programs, et cetera et cetera et cetera; one must think a bit before making that it is a good idea to build—probably at a probable cost of over \$1 billion—a network of parks. But, when you do some thinking about it, you begin to realize that perhaps the proposed expenditure is a pretty good priority indeed:

The parks would be located on "parcels of surplus Federal lands, or otherwise donated lands . . . which lie inside a 40-mile radius of the densest population centers in each state." Davis, Brody's prototype envisions no auto traffic within the parks, parking nodes at a ring road, and demonstration mass transit (what a chance for the DOT to shine!) connecting the parks to the nearby population center. Thus,

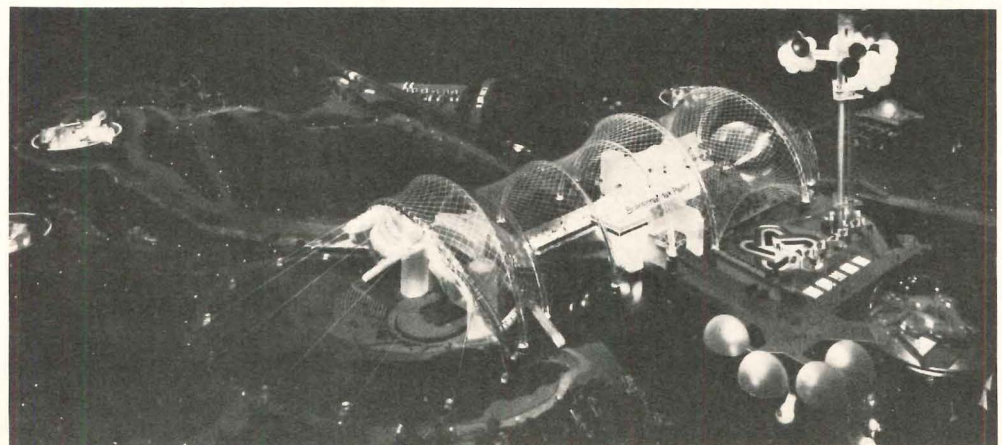
some of the parks would be accessible to a very large number of the people (i.e., the urban poor) who are in most need of such facilities. (The capacity of each park would be, at a minimum, 25,000 persons per day.)

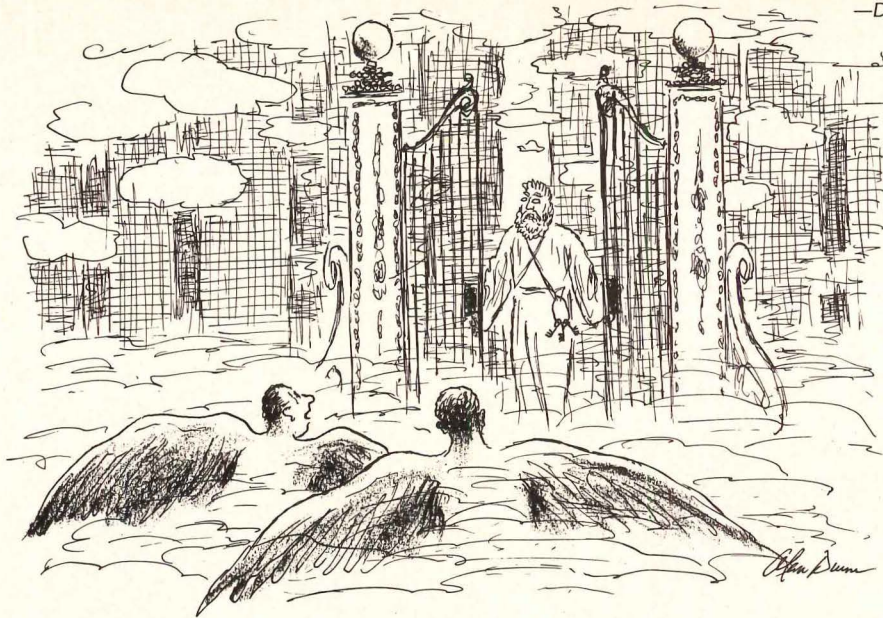
■ These new parks would serve what is clearly a growing need for recreational space. As presently envisioned, the parks would be a minimum of 100 acres in size, and many would be much larger—mostly open and recreation space. And few cities have accessible parks of anything like this size. San Francisco's Golden Gate Park (1,017 acres) and New York City's Central Park (840 acres) are fully and joyfully used by the citizens of those cities—but there is very little inbetween, and there should be people's parks everywhere.

■ What's in the whole program for those states where urban crowding is not quite the problem? There's another appeal. The Bicentennial Commission proposes that each park would have as its focal point a permanent pavilion building (perhaps like the cable-supported prototype designed by

Lew Davis), and that each pavilion might include a state historic exhibit, a bazaar where "arts and crafts indigenous to the state could be displayed and sold," a multi-screen theater, and—most importantly—an amphitheater where "live performances by national and international entertainment and cultural groups could take place." Performances of groups from around the world—say the Metropolitan Opera (or Aretha Franklin), the Bolshoi (or Arthur Mitchell's Dance Company), Joe Papp's Shakespeare Theater (or "Hair"), a great New Orleans jazz band (or Crosby, Sills, Nash and Young)—would be eased by an ingenious "utility" scheme devised by Davis, Brody. They propose a series of movable pods or modules that would "plug into" identical utility outlets at each park. Thus, a stage set for a play, for example, could be built in one such pod, and it could be transported, by truck, rail, or water, from park to park. At each park—even for the proverbial one-night stand—the module could be plugged in and ready for performance in minutes.

■ Finally, in debating the expenditure (as it will undoubtedly be debated by conservative and militant alike) we need to think in the broadest possible terms. RECORD senior editor Mildred Schertz said it well in the book "Open Space for People" which she edited and which has just been pub-





"High rise! Wouldn't you know?"

lished by the AIA: ". . . open space is essential for man's most important needs. We are wearing out what we have, including the great parks which have been preserved as a legacy from the past. We are squandering the rest through inadequate advance acquisition. We must conserve what is left for the future. We must find ways of creating and acquiring new kinds of open space within the imperatives of technology."

And so, it seems to me, that the proposed networks of Bicentennial Parks is a fine way to at once increase our desperately short supply of recreation and open space; a suitable gift (suitable both environmentally and politically) from the Federal government to the states and their people; and a spirit-lifting way to celebrate the 200th anniversary of the United States. Other celebrations—notably the much-talked-about Philadelphia exposition—seem to be fading away—the most optimistic view available on Philadelphia is that their program "is still bleeding."

**Some questions about quality:
Who designs the parks?**

Mr. Mahoney and the Commission's Design Director Jack Masey both are clearly intent on maintaining high standards of planning and pavilion design. As noted, Davis, Brody's pavilion design is only a prototype (though it sets a very high standard indeed of design and appropriate innovation). According to the Commission: "No two parks would be alike. Each would be a unique architectural conception, reflecting the unique characteristics of its site, region, and program. . . . A National Design Review Board will be established to ensure that standards of design excellence and function are adhered to throughout the parks. Over-all guidelines . . . will be contained in a Design Standards Manual and the States will be obliged to conform to the criteria. . . ."

Under the initial proposal, "architects, planners and designers . . . would be selected through state and regional commissions established by a National Design Review Board whose role it would be to monitor and coordinate the design of all the parks." That's a bit indefinite and bureaucratic—and since indefinite and bureaucratic things seem to tend to not turn out too well—a bit scary. If we're going to do these parks, let's do them right.

One suggestion: The Bicentennial Commission is about to embark on a major feasibility study. Part of that study will be discussions with architects—and with the national staff of AIA. So . . .

Why not seriously consider the idea of a major programming, planning, and design competition, under the joint auspices of the Bicentennial Commission and the AIA. Within broad parameters already established by the Commission, architects could in a first phase make an over-all programming and design proposal, then in a second stage develop the design more carefully.

There might be a competition in each state; or perhaps there should be a national competition with a great many winners, from which state commissions could choose.

At any rate, a competition format would, one hopes, establish for the parks a high level of design quality. It would seem a unique suitable competition for young and inexperienced architects—for there is little body of experience bearing on such a design problem, and the parks should be—in their developed focal points—fresh and festive. And with a developing surge of interest in the Centennial as 1976 approaches, the network of parks would make a fine, visible, people-oriented body of work with which America's architects could perhaps develop more awareness of architecture. And that's worth doing!

—Walter F. Wagner, Jr.

**The West Front again.
Again? Again.**


What do you do now that the Architect of the Capitol is an architect, and a good one, and he comes out for extension of the West Front? (It was easy when the Architect of the Capitol wasn't an architect.)

Well, you do the same thing. You say it's still a bad idea, and a costly one, and that maybe some of the tourists would rather enjoy the sense of history that surrounds the only remaining portion of the original walls than have a little more wing-around space inside. And if the cost is still that our legislators need more open space, the answer is still build it somewhere else. Hooray for the AIA for helping in—it has volunteered, again, to play a leadership role in marshalling the support of all those concerned in this fight against demolition of the West Front.

**Quote of the month:
From Russian guests**

A six-man delegation of Soviet architects headed by E. I. Sidorov, chief executive for housing and civil construction, City of Moscow, just completed an 18-day sight tour of seven U.S. cities. At a just-before takeoff press conference, Mr. Sidorov wisely avoided naming his favorite American building, though he did admit "personally—not from a professional point of view, you understand, but personally—I like San Francisco best." Professionally speaking, he said that in studying the structure and spans of many U.S. buildings, he found "many of the architects' and engineers' solutions were very brave . . . very bold indeed."

And I guess we were all struck by the statistic that the Russians supplied: they have just completed a 2.3-million-unit housing year.



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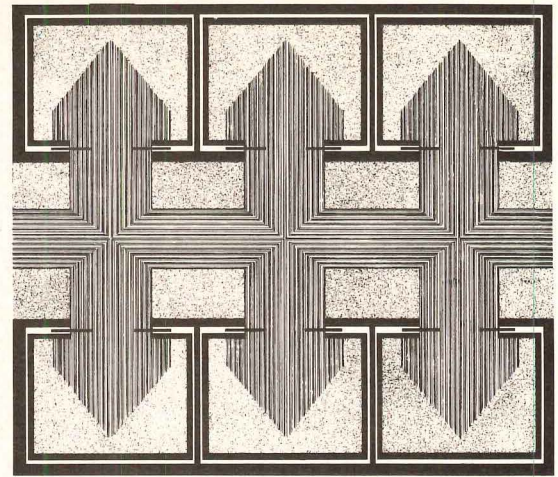
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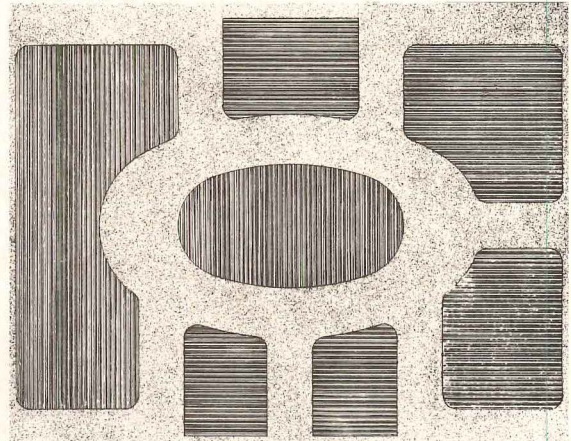
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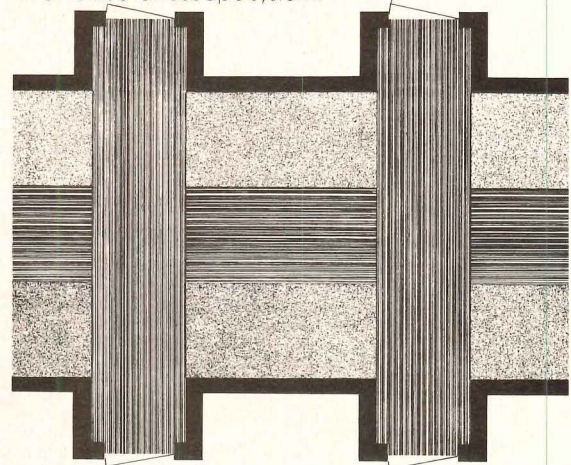
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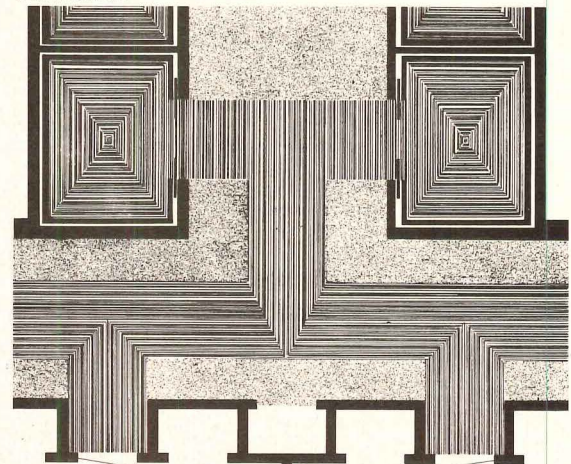
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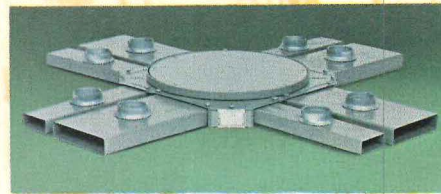
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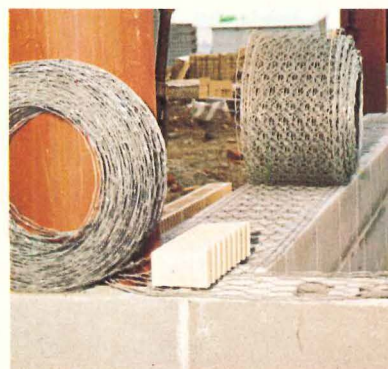
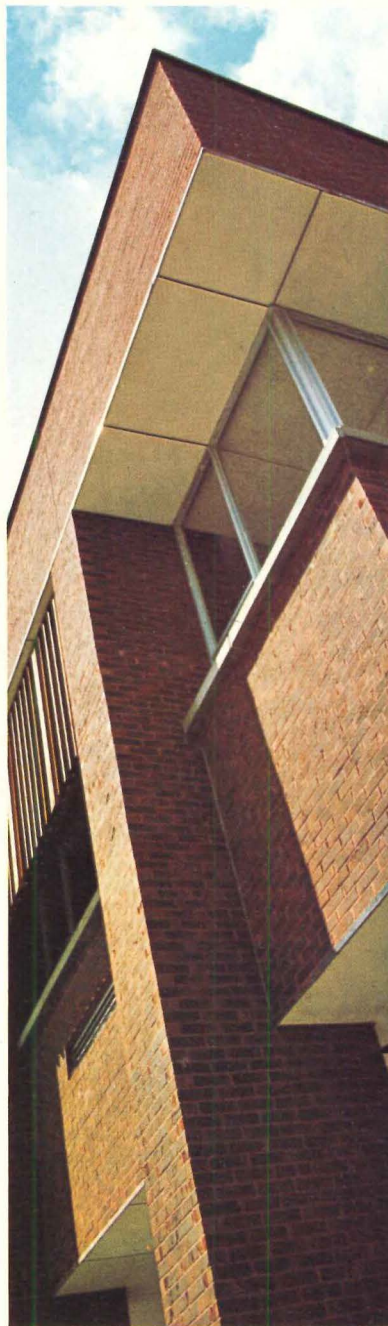
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OOOWALLS

are built to withstand hourly changing weather on the outside, heating and air conditioning on the inside . . . constantly changing humidity on the outside, a different and usually controlled amount of moisture on the inside. Consequently, wall materials, mortar, blocks, bricks, tile and the structural supports are constantly expanding and contracting, and forever absorbing or expelling moisture. Furthermore, each material has a different coefficient of expansion causing it to react differently from the adjacent material. These normal wall conditions require the use of a reinforcing to control expansion and contraction and to efficiently distribute the stress resulting from temperature changes.

How much reinforcing is needed? What type of masonry reinforcing is most desirable?

Are small twisted reinforcing wires superior to larger single wires?

KEYWALL[®]

multi-bond masonry reinforcement provides more bonding surface with the mortar, more inches of anchorage to the block and more complete distribution of stress resulting from temperature changes.

One measure of the effectiveness of reinforcement is the amount of metal in surface contact with the mortar. For example, a pair of 9 gauge wires provides 11.2 square inches of bonding area per block foot. A pair of 3/16" wires, 14.2 square inches. KEYWALL gives 22 square inches. That's approximately 96% more bonding surface than the 9 gauge, about 55% more than the 3/16".

Another KEYWALL design advantage results from the two cords of two twisted wires compared with single rods. This double row of twisted wires more than doubles the amount of anchorage to the blocks. Interconnecting wires spaced 1" and 1 1/2" further bond and lock mortar and block.

The multidirectional pattern of wires in KEYWALL distributes the normal stress throughout the wall and more completely utilizes the great compressive strength of the concrete block and mortar. KEYWALL does provide more bonding surface and more anchorage to the block. KEYWALL has proven itself on so many important jobs — we really recommend it for your next job.

Contractors prefer KEYWALL. It rolls out, 200' per roll, lays flat in the mortar, is easier to handle on scaffold and on the wall. It is available from most building material supply dealers.

For more information about any reinforcing problem, contact Keystone Steel & Wire, Peoria, Illinois 61607.

KEYSTONE STEEL AND WIRE FOR CONSTRUCTION

KEYSTONE STEEL AND WIRE, PEORIA, ILLINOIS 61607, DIVISION OF KEYSTONE CONSOLIDATED INDUSTRIES, INC.

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It makes no difference whether you have a 4-story, 12-story or 26-story apartment house, it's a walkup every time the elevators are out of order. And the tenants will let you know pretty fast that they want the service they're paying for.

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Whether you specify any of our pre-engineered, hydraulic models or a geared traction elevator, you get the same, incomparable Otis quality, competitively priced and ready to deliver, off-the-shelf.

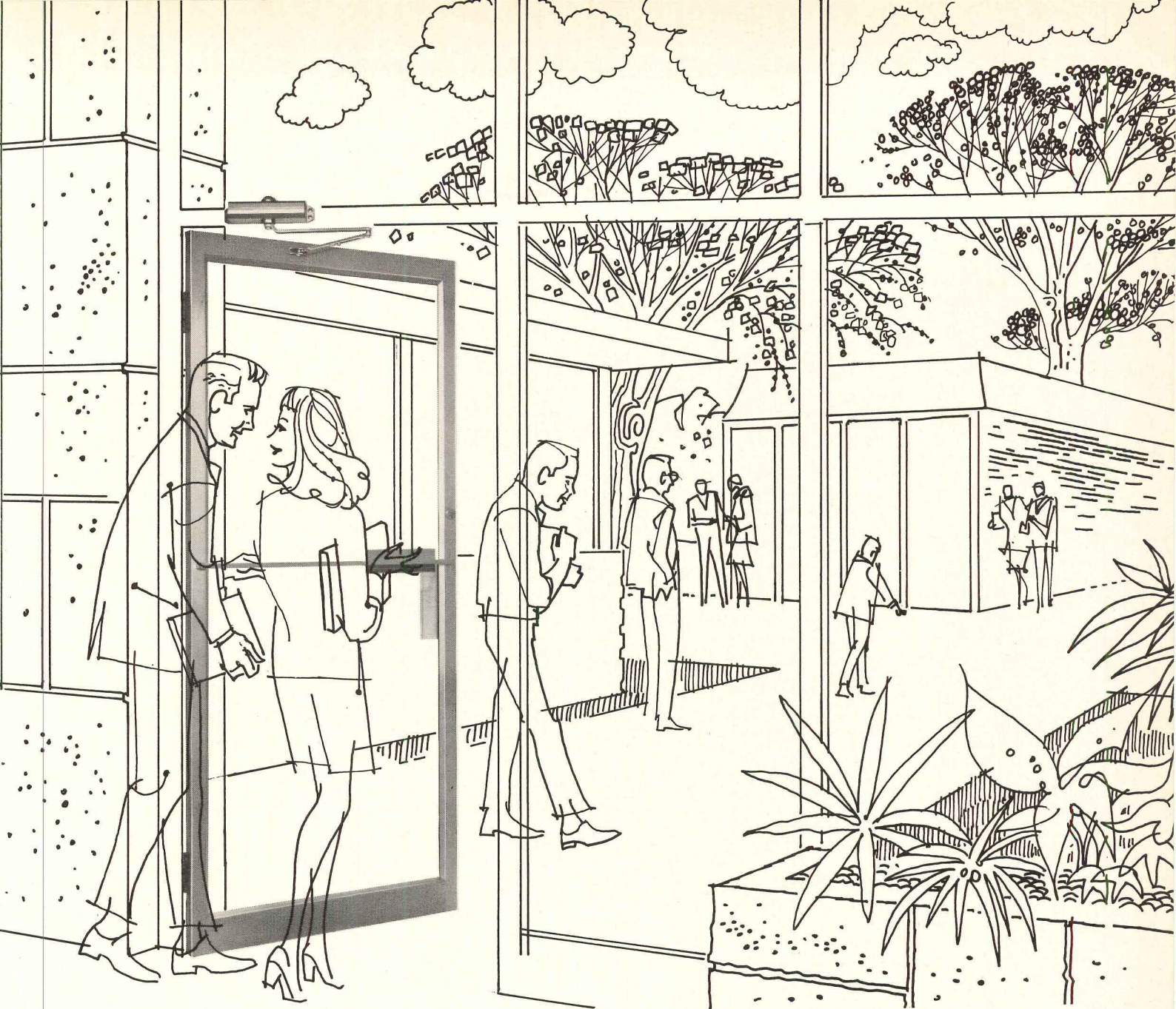
Because we want you to have satisfied tenants, not tired, foot-sore, complaining stair-climbers.

Otis[®]
HAS A SYSTEM

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**Your apartment
is just another walkup
if the elevators don't work.**





It has clean, classic lines.

It can be installed non-handed either top-jamb,
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How's that for
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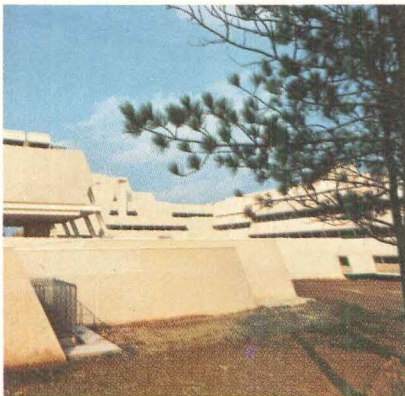
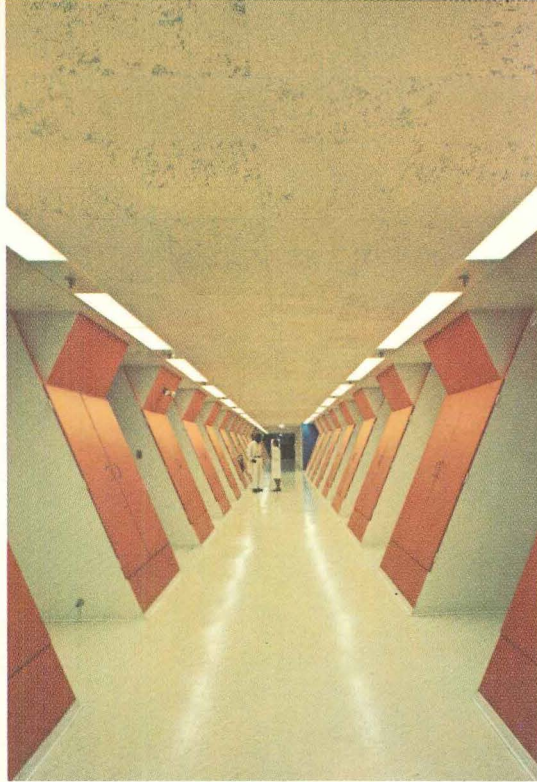
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Architect uses
sloping steel columns to
give building rugged
dramatic effect





make the new headquarters and research building Burroughs Wellcome Co. seem like a natural extension of the ridge on which it is located, Architect Paul Rudolph used sloping steel columns in a geometric, modular design.

The structure, located in Research Triangle Park near Raleigh, North Carolina, combines the functions of corporate headquarters and research facilities.

The sloping steel columns, set at a 22.5-degree angle, help to make the building seem to be an upward extension of the ridge. The steel-framed irregular ends of the structure were designed to facilitate incremental expansion in all directions in future years.

Geometrical modular units are also a unique part of the design. The large skylights and inward-slanting windows made possible by this design allow light to flood deep into the interior.

The completed building will house about 450 employees, and will contain 300,000 sq ft of space. Besides research facilities and offices, there will be a cafeteria, auditorium, library, and a lobby three stories high.

Steel columns sloping 22.5 degrees are a major feature of the design. The columns rest on a system of footings and tie-beams in which the vertical load is transferred directly to the soil through the footing.

The Burroughs Wellcome Co. building was designed by Paul Rudolph, New York. Structural engineer: Lockwood Greene Engineers, Inc., New York. Steel fabricator and erector: Peden Steel Company, Raleigh, N.C. General contractor: Daniel Construction Company, a division of Daniel International Corporation, Greenville, S.C. Bethlehem Steel supplied 3,100 tons of ASTM A-36 structural steel.

BETHLEHEM STEEL





Silver Slate, 760

The Silvery Spectacular

Silver Slate is a striking new dimensional laminate that can turn any surface into a shimmering swirl of color and motion. Its chrome-like brilliance and bold, deeply embossed texture bring it alive with highlights and shadows.

And the real beauty is that when you specify Silver Slate, you're selecting an exclusive FORMICA® brand laminate that stays bright and new looking for years. Designed for any vertical or light horizontal application, the durable surface resists scuffs, dents and scratches.

Silver Slate is one of eleven exciting new colors and patterns that make this a vintage year. Deeply textured dimensionals, fabulous Quatramatic woodgrains and subtle patterns. They're all part of the biggest laminate line available. See them all in Sweet's Architectural File 6.14/Fo. Contact your Formica representative or write Dept. AR-4

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laminated plastic

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a complete concept of efficient, beautifully designed furniture with exceptional versatility for open space planning.



MFC work areas can be created to individual and departmental requirements and can be grouped and regrouped to changing office needs. For more information write: All-Steel Equipment Inc., Aurora, Illinois 60507. Showrooms in New York, Chicago, Los Angeles, Aurora. In Canada, B.K.Johl Inc., Montreal, Toronto, Vancouver.

*Multiple function concept

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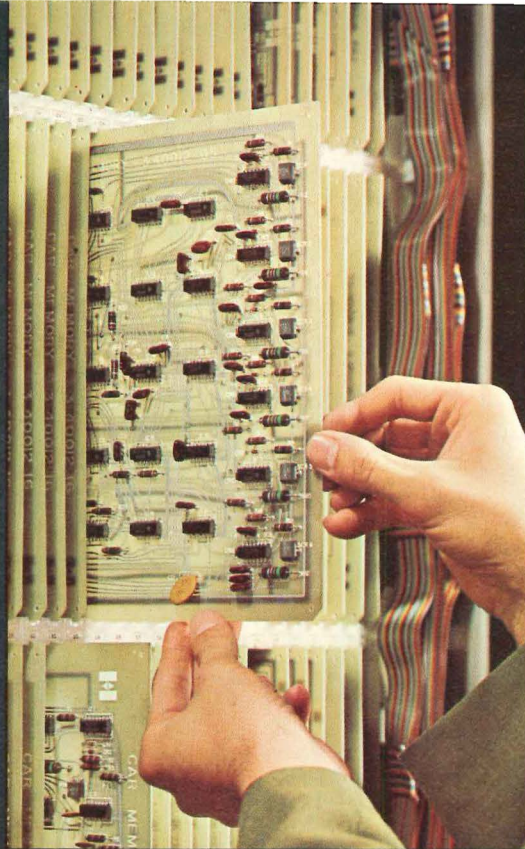
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AND ESCALATORS**

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DIVISION OF **RELIANCE** ELECTRIC COMPANY 

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This is the most efficient and comprehensive system ever perfected for group elevator service. It's the only one that "thinks on its feet" — constantly recognizes and responds to everything affecting any car's ability to pick up and deliver passengers quickly. It's the only system able to provide the shortest Passenger Destination Time.

Faster than description — in milliseconds — 1092-IC locates every call as it's registered, computes distance between cars and calls, measures each car's load, counts every call, instantly and continuously allots and reallocates calls to cars best able to handle them.

And 1092-IC is not merely last year's relay system warmed over. It's exclusive — an entirely new concept of elevator control. Micro-miniature integrated circuits are employed to their full capability for the first time in elevator application.

A compact cabinet of integrated circuits replaces a roomful of old-type hardware. Yet 1092-IC speed and scope exceed any other elevator system — deliver the shortest Passenger Destination Time ever achieved.

Personal investigation will convince you that Houghton 1092-IC introduces a new generation of passenger elevator service. We're ready. Just tell us when you are.



Wash your hands of expensive water bills.



A seven-month test recently concluded in New York showed that water consumption, both hot and cold, was cut by 90% when Unatap spray mixing faucets were used instead of conventional faucets on ordinary wash basins.

While maintaining a hygienic spray of water, the flow-gov-

erning mechanism that's the heart of every Unatap faucet cuts wasteful water consumption.

That also means a saving on water heating, a major factor

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in operational costs. And even installation costs because the entire water distribution system is scaled down to meet the drastically reduced hot and cold water demand.

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Long-lasting PPG coating on prefinished aluminum roof system assures minimum maintenance

Designing a gigantic, column-free service hangar capable of accommodating four 747 jumbo jets required careful consideration of building maintainability as well as structural engineering. Aluminum roofing panels prefinished with DURACRON® Super 800 coating were selected. This silicone-copolymer acrylic finish offers color stability with outstanding resistance to extreme weather conditions, yet its cost per square foot is only in the medium range. Whatever type metal building you plan, there's a PPG coil coating

designed to deliver the performance, beauty and protection you require. See Sweet's Architectural or Industrial Construction Files 9.10/PPG for more information. The panel manufacturer of your choice can help, too. Or contact PPG INDUSTRIES, Inc., Dept. 16W, One Gateway Center, Pittsburgh, Pa. 15222.

PPG: a Concern for the Future

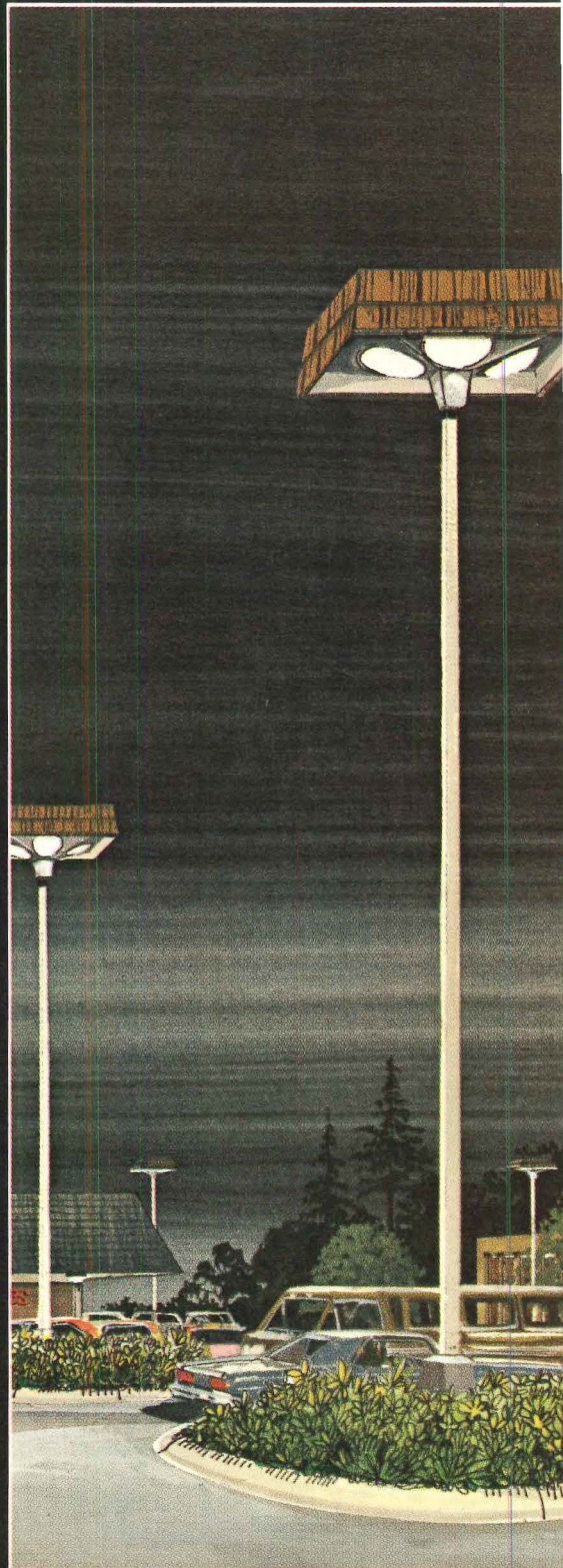
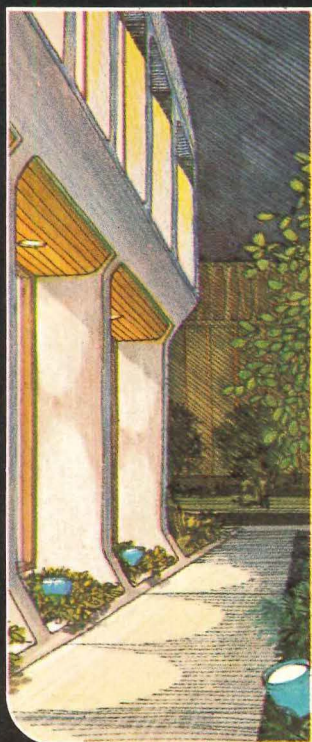
Coil
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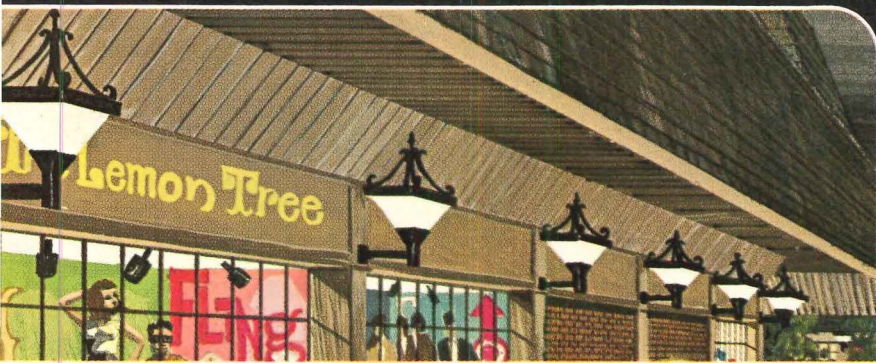
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Light takes on form. By day, as well as night



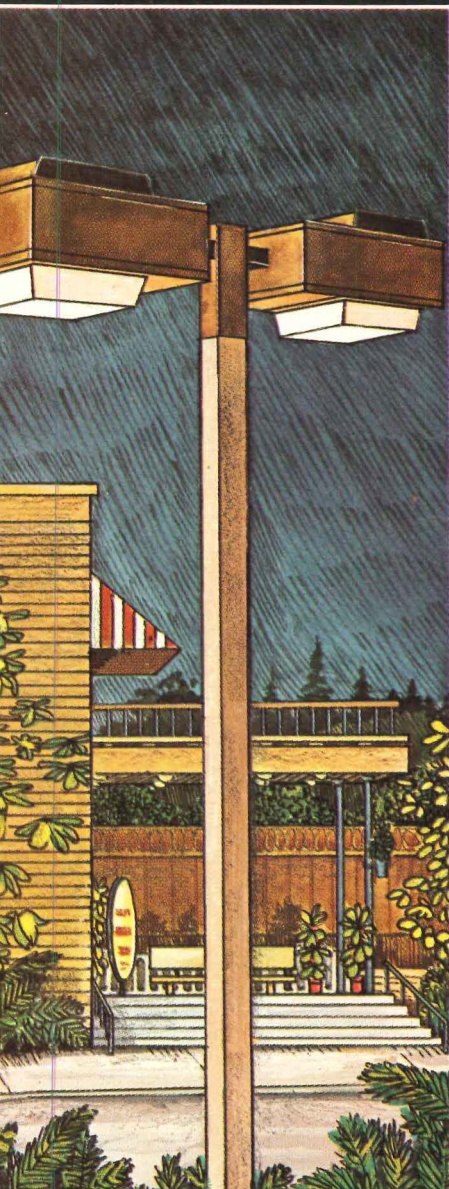
ish a brick facade. Splash safety on a footpath. Make bold a bas relief. Shine security on parking areas.



Until now that sort of lighting all too often came in ugly packages. The photometrics were nice. The esthetics weren't.

That's no longer true, as you can see on these pages. Good looks by day complement good light by night. Now, fixture designs complement architectural creativity, complement landscape features, complement other lighting.

We've packaged lighting function inside lighting form in many new ways. Let us show you. And let's talk about creative custom designs, too. The coupon opens the conversation. Send it now.



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CROUSE-HINDS

Introducing: The next generation in seating design

The all-new ES/III AudiLec Chair...from American Seating

The system approach to seating: As your needs change, so does the ES/III AudiLec Chair. Begin with the basic chair—right as it is—and add to it as budget and needs change. With the system approach, you're no longer forced into making prophetic "decisions" when you buy. This is the chair that refuses to become obsolete!

The basic chair

Sculptured cast-iron standards, either floor or riser-mounted, complete with polished armrest. Seat and back of high-impact,



blow-molded Dexlon® plastic. Wide color choice: easy to coordinate. Long-life, gravity-lift seat—unique in this price range—almost indestructible. Good-looking and extremely durable, the AudiLec Chair is the one right chair for auditoriums, lecture or training rooms, summer theatres, indoor or outdoor arenas . . . you name it!

A wealth of options

Long-wearing nylon upholstery for the seat and/or back . . . upholstered or plastic armrests . . . big-surface Amerex® plastic tablet arm . . . each can be installed during manufacture or easily added in the future. In short, you can "customize" this chair at any time.

A view to sightlines

Four chair widths—from 19" to 22"—can be had from *one* seat size, *one* back size! How? The secret's a patented internal spacer engineered into the seat and back support tubes, an integral part of the chair itself! All of which means (1) lower installation cost; (2) every seat and

back easily relocated, *without* concern for size; (3) upholstery sent out for cleaning can be quickly refitted without the tedious matching of chair widths.

For details, write: American Seating Co., Dept. AR-750, Grand Rapids, Michigan 49504.

AMERICAN SEATING®



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Be sure you specify architectural finishes based on Dow Corning® brand silicones. More than nine years of actual in-place field performance demonstrate that finishes made with Dow Corning silicones can be specified for a 20-year life in any climate. You can select from a full spectrum of colors.

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

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

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

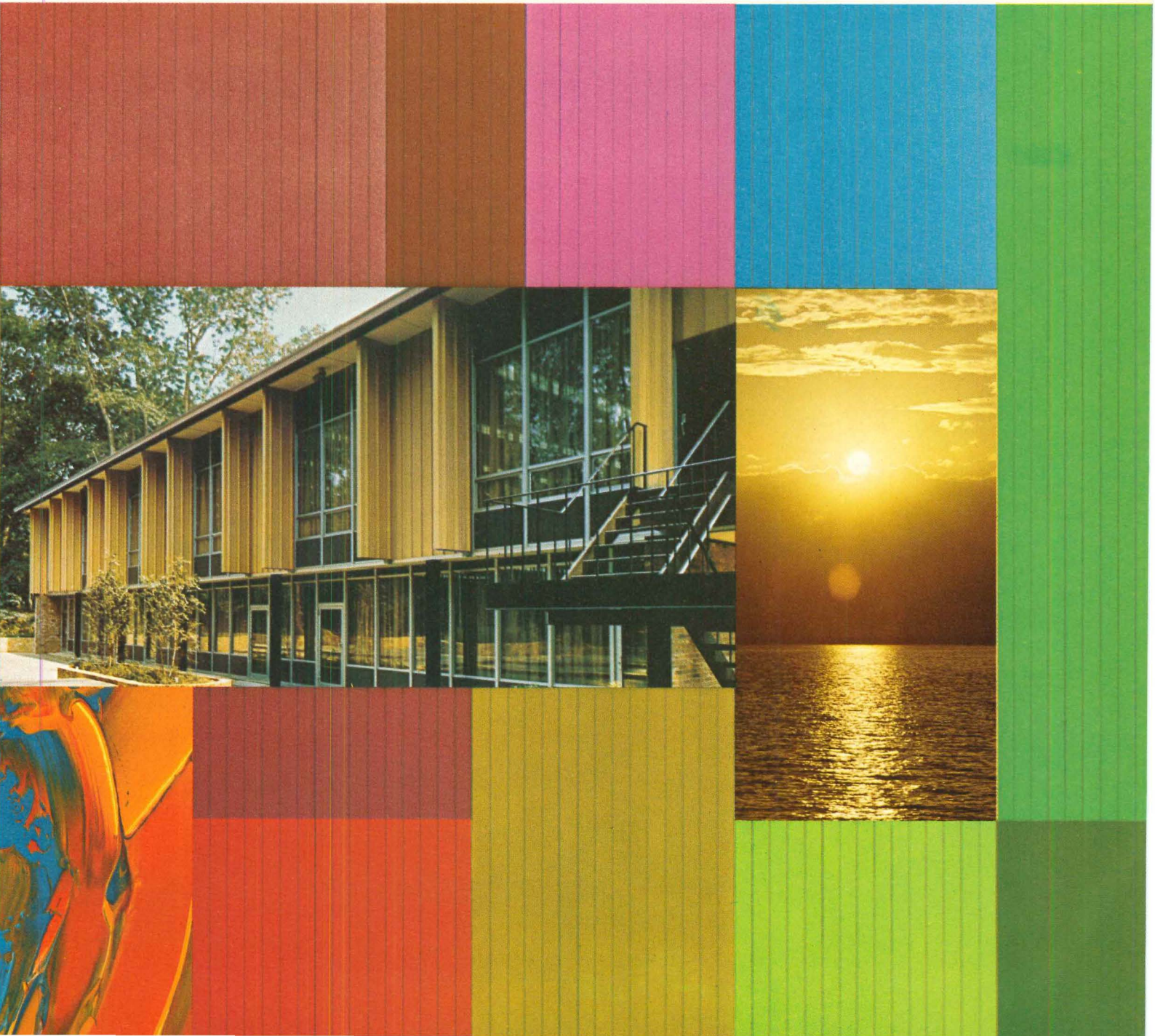
Silicones for coatings from

DOW CORNING

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



An airport needs pretty-tough carpet

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

But in many contract installations you need both. So we conceived carpets that are pretty and tough.

You can choose handsome original designs from our Masterworks Design Program. Or we'll create an exclusive design

to meet your specific requirements.

But these carpets are a lot more than pretty. They're made from 100% ANSO nylon so they hide dirt better. And they're tough enough to stand up to your heaviest traffic areas.

In fact, Allied Chemical guarantees carpets of ANSO nylon against excessive wear for 5 years (We've got more guaranteed carpet fiber installed than anybody — over

40 million square yards.)

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

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Guaranteed nylon carpet.

BYRD AIRPORT CARPET BY SEAMLOC LOMA-LOOM CARPET CO.



confidence countdown

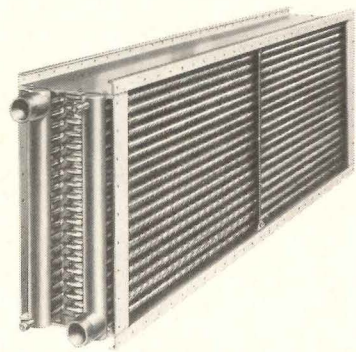


About half the buildings erected in downtown Chicago in the last few years are AEROFIN COIL equipped

From "Big John" to "Ma Bell" Aerofin Heat Transfer Coils have run up quite a track record in Chicago—with its hot, sticky summers and deep-freeze winters.

Check out those landmark structures with Aerofin coils. Building profitability relates to the reliable performance of Aerofin coils with remarkably high exchange co-efficients, yet compact enough not to steal useable/rental space.

From heat recovery to controlled variable volume systems, get more efficient cooling/heating with dependable Aerofin coils. Chicago's confidence in Aerofin could color your coil thinking. Call our specialists in: Atlanta, Boston, Chicago, Cleveland, Dallas, New York, Philadelphia, San Francisco, Toronto, Montreal.



AEROFIN HEAT TRANSFER COILS come in many sizes, configurations, circuitry—copper or aluminum helical fins. Designs range from preheat or reheat applications, sprayed coil humidification control, freeze-up hazard reduction, to customized climate systems.

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| 5. Gateway Center #1 | 14. U. S. Court House and Federal Office Building |
| 6. Gateway Center #2 | 15. Sears Building (under construction) |
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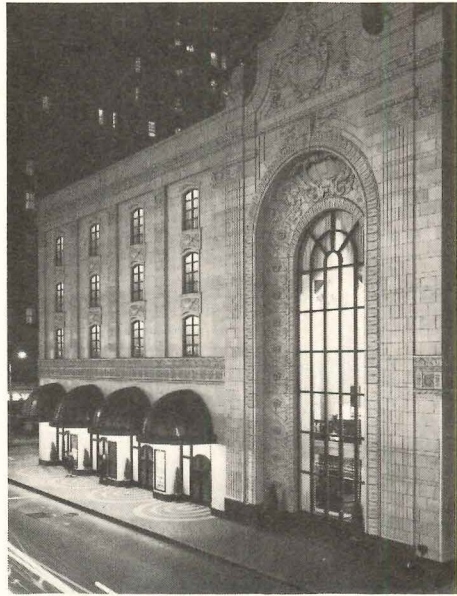
Aerofin is sold only by manufacturers of fan system apparatus. List on request.

Dover Stage Lift helps recycle an old movie palace

In a Cinderella-like transformation, the old Penn vaudeville and movie theater in Pittsburgh has become a showcase for the arts.

Now known as Heinz Hall for the Performing Arts, this unique building is not only the new home of the Pittsburgh Symphony, Pittsburgh Opera, Civic Light Opera, Pittsburgh Ballet and the Pittsburgh Youth Symphony, but also offers complete theatrical and film facilities for international attractions.

Much of the neo-Baroque



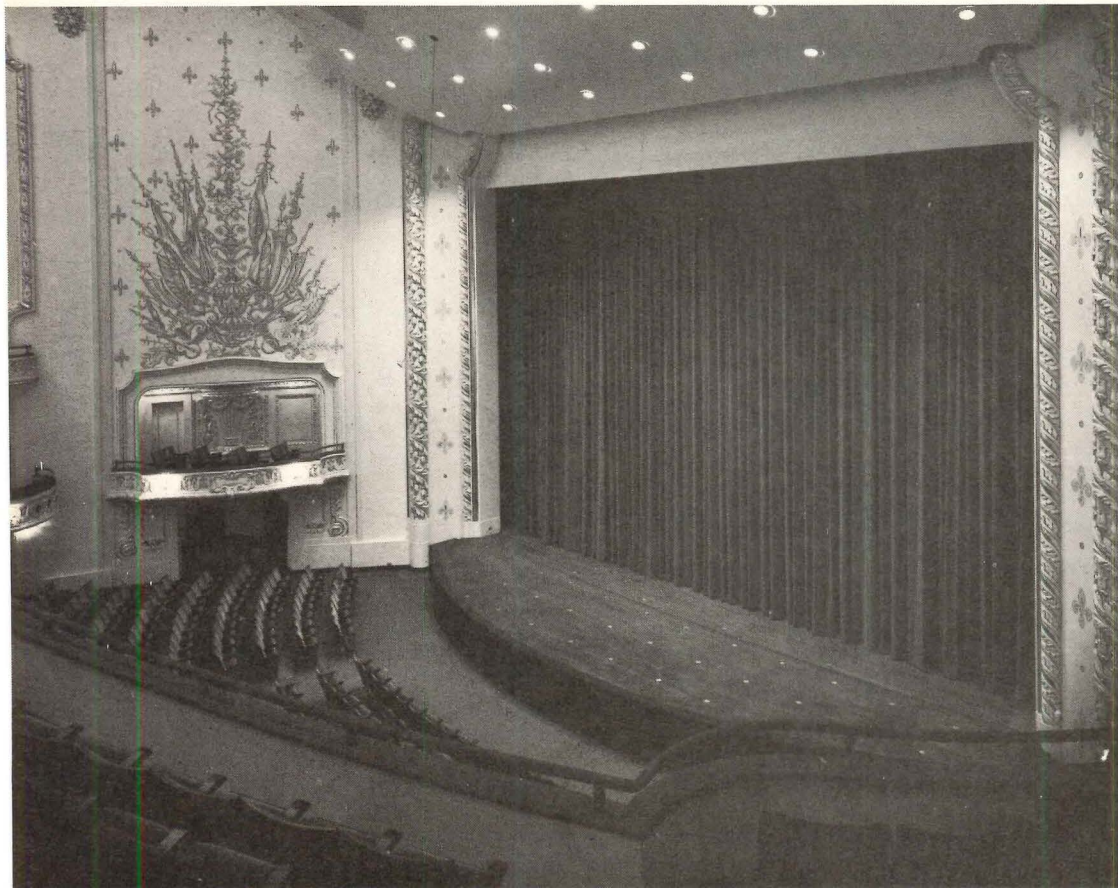
opulence was retained in the multi-million dollar renovation project. But extensive revamping was necessary for conversion of the old movie palace into a building that functions efficiently and beautifully for its diverse new tenants.

A major addition was a Dover Stage Lift, 14' x 54' in overall dimensions. Raised, it provides a needed extension of the stage area; lowered, it serves as an orchestra pit.

Dover Stage Lifts are used in theaters, concert halls, opera houses and drama centers throughout the country to provide more flexibility and imagination in staging musical and dramatic presentations. Call us in for design and engineering assistance, or check our catalog in Sweet's Files. Dover Corporation, Elevator Division, Dept. A-4, P. O. Box 2177, Memphis, Tenn. 38102. In Canada: Dover/Turnbull.

DOVER
Stage Lifts

For more data, circle 25 on inquiry card



HEINZ HALL FOR THE PERFORMING ARTS, Pittsburgh, Pa. Architects: Stotz, Hess, MacLachlan and Fosner, Pittsburgh. General contractor: Mellon-Stuart Co., Pittsburgh. Acoustical and stage lift consultant: Dr. Heinrich Keilholz. Engineers: George Levinson, Inc. (structural); Meucci Engineering Inc. (mechanical); Hornfeck Engineering, Inc. (electrical). Interior designer: Verner S. Purnell. Dover Stage Lift installed by Marshall Elevator Company, Pittsburgh.

News in brief

Architectural construction started the new year with a seasonally-adjusted decline, but . . . The F. W. Dodge index of architect/engineer designed construction entering the contract stage slipped seven per cent to 154 (seasonally adjusted, 1967=100) from December's record 165. January data showed a sharp, seasonally-adjusted drop in apartments following December's record volume. Declines in the non-residential sector were centered primarily in commercial building where contracting for both offices and stores turned down significantly during the month. Manufacturing, still recovering from the recent recession, remained unchanged. Both educational building and hospitals recorded advances. January's slow start in architectural construction should not be construed as a sign of a weakening market during the coming year. The month's weak performance, according to the F. W. Dodge study, is primarily a result of random or irregular factors. But unlike 1971's steady upward trend, architectural construction is expected to exhibit more of a saw-toothed pattern this year, with one month's gain being partially offset by another month's decline. Setbacks are expected during the year in apartment building but they should be outweighed by gains made in non-residential construction as the business recovery accelerates. By the end of the year, the average value of the architectural construction index is expected to advance from three to four per cent over 1971's average.

Ten architects, from nine foreign countries, have been named Honorary Fellows of The American Institute of Architects. The ten, elected by the board of directors of the 24,000-member national professional society, are: Luis Arizmendi, Spain; Jai Rattan Bhalla, India; Henri Delaage, France; Sir Roy Grounds, Australia; Thomas Howarth and Jean Louis Lalonde, Canada; Vayden R. McMorris, Jamaica; Gueorgui Orlov, U.S.S.R.; Luis Ortiz Macedo, Mexico, and Michael Scott, Ireland.

Wolf Von Eckardt, architecture critic of the Washington Post has been named the recipient of The American Institute of Architects' 1972 Architecture Critics' Medal. Canadian author, architect, and educator, Peter Collins, has been named the winner of the AIA's 1972 Architecture Critics' Citation. Both men will receive their awards at the AIA convention in Houston, May 7-10.

President Nixon was warned by NAHB President Stanley Waranch that unstable lumber pricing could seriously threaten the economy. Prices have been scraping authorized ceilings for the past four weeks, in some cases exceeding them. Waranch stated that stud and plywood prices have been 18 to 20 per cent higher than a year ago.

Four architects have been named to the National Public Advisory Panel on Architectural Services by Rod Kreger, of GSA. The four are: Grant Curry Jr., Pittsburgh; William C. Muchow, Denver; B. Rea Nesmith, El Paso, and Kenneth C. Black, Lansing. The panel advises GSA on selection of firms to design government buildings and in developing designs reflecting regional architecture.

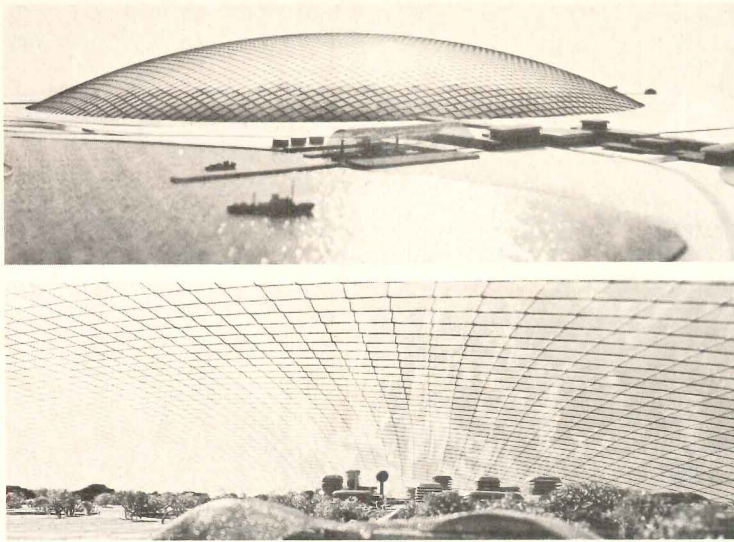
Skidmore, Owings & Merrill are the winning architects for the New York City Convention and Exhibition Center. The \$100 million Center, nearly a decade in planning, will be completed just before the opening of Expo '76.

An omnibus housing bill, calling for the establishment of a National Institute of Building Sciences within the National Academy of Science, is now set for quick Congressional consideration. The new body would make its technological research available to the construction industry. The bill authorizes an \$18 million budget over the first five years, after which, the Institute would become self-supporting. Spokesmen for the Senate Banking Committee say that such a national resource would help remove code obstacles and speed new technology into the building stream.

James Stewart Polshek has been named Dean of the Columbia University School of Architecture. Polshek succeeds Kenneth A. Smith who served as Dean for nine years. David E. Glasser will serve in the newly created post of Associate Dean.

The 16th annual convention and exhibit of the Construction Specifications Institute will be held in Minneapolis, June 19-21. The convention will focus on the specifier's expanding role as well as the greater demands made on his time for research and evaluation in the specification process.

The Urban Land Institute's spring meeting will take place in Toronto, Canada, May 23-25. Delegates will examine Toronto's metropolitan transit systems and will study the completed new town of Don Mills as well as two new towns now under construction.



1

ARCTIC CITY

An international design team under the leadership of Frei Otto, director of the Institute of Lightweight Structures at Stuttgart, has developed plans for a climate-controlled, domed city capable of supporting 20,000 persons in frigid regions. Recent oil and mineral discoveries in polar areas stimulated the research which was financed by the West German chemical firm of Farbwerke Hoechst in Frankfurt. The domed city would support the work of recovering these resources. The study predicts that the first of these cities will be completed in "12 years at the latest." Customers for the domed project would most likely be large oil companies.

The dome is fashioned of a double-layered polyester fabric a mile and a quarter in diameter. It would be pneumatically tensioned and supported by a cable netting of specially prepared, PVC-impregnated, high strength polyester fiber with a maximum height at its center of 790 feet. Once erected, dome pressures would be maintained by a system of computer operated fans.

Electric power for the city would come from a nuclear reactor, situated just outside the dome. Thermal discharge from the reactor would warm the surrounding water, creating an ice-free harbor for supply of the city and also partially warm the air which would be taken into the city through a 985-foot air exchange tower adjacent to the dome. Temperatures inside the dome would be maintained at levels common in temperate climates.

Inside the dome, an artificial sun (a battery of electric lights) would run on a track across the dome during the long arctic winter in order to give residents a sense of diurnal rhythms. In summer, rotating shutters would shield out the sun during portions of the six-months arctic day.

Construction of buildings in

the city itself would be open to a variety of technique and materials. The city would contain separate residential, business and city center districts plus a large park. Intracity transportation would be by fast or slow moving sidewalks.

The study argues that domes up to about 14 miles in diameter are practical—beyond that point, the costs become prohibitive.

The Tokyo planning firm of Kenzo Tange & Utec performed the over-all city planning, while the London consulting engineering firm of Ove Arup & Partners provided structural engineering details for the protective dome roof.

WILL THE GLOVES COME OFF?

President Nixon's 19-page environmental message calls on Congress to get on with the work of passing new laws submitted last year plus new amendments now proposed. Nixon wants this to be a year of action. He's seeking a toxic-wastes disposal control law, state programs to control sediment discharge from construction projects, charges on sulphur emissions starting in '76, another \$88 million for clean energy production, clarification of tax exemptions for plants recycling their wastes, \$23 million more for noise reduction research and another \$12 million for studying health effects of air pollution.

All these are hopeful signs—but critics point out that Washington is a city of rhetoric and every initiative by the administration is introduced as "the boldest," "the more urgent" and "the longest overdue." In a city of verbal overkill, where every program is "highest priority," a rhetorical stance is not enough. The President must be prepared to fight "tooth and nail" for the programs he really wants. Capitol Hill observers are watching and waiting.



2

ONE THAT DID; ONE THAT DIDN'T:

A) Bowling Green Park, a disheveled half-acre oval in lower Manhattan, has a history of proud associations. Peter Minuit is said to have stood on the spot when he purchased Manhattan Island from the Indians in 1626. Early Dutch settlers developed the site as a bowling lawn and a place to stroll away many a languorous summer afternoon. In 1732, the park was leased to a group of private citizens at the exceedingly nominal rental of one peppercorn a year. Nearly a half century later, in 1776, the park's statue of King George III was torn down and melted into bullets for Washington's army then at bay in Brooklyn.

Now swallowed up in high rise development, the site is little more than a subway stop to most New Yorkers. Plans are underway, however, to renovate the park and restore it to its late eighteenth century condition. Landscape architect M. Paul Friedberg has been retained to develop plans for the restoration with funds provided from the capital budget of Transit Authority who will expand and upgrade their subway facility. Also involved in the renovation project are the City's Department of Parks, Recreation and Cultural Affairs and the Landmarks Preservation Committee.

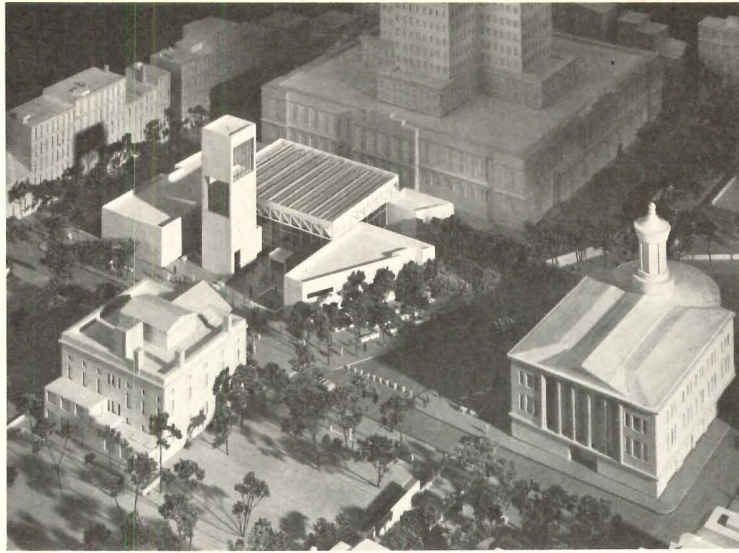
B) Although it was the oldest Methodist church west of the Alleghenies and the scene of William Henry Harrison's funeral, Cincinnati's Wesley Chapel (photo above) did not fare so well. Its claims to historic significance were not really overwhelming but Wesley Chapel typified the starkness of early Methodism sufficiently to warrant a place in the Federal Registry of Historic Buildings. It nonetheless became the property of a large corporation who wanted to demolish the chapel to make way for office expansion. The corporation was apparently willing to "discuss" the building's

preservation but the owners' conservationists could not reach any satisfactory agreement. As a result, on the night of February 1, 1972, over the protest of many city professional groups (including AIA), demolition began.

Whether this chapel should have been saved caused wide debate. What is disturbingly true, however, is that in the absence of any rational mechanism for preservation, buildings of excellent quality continue to be replaced too quickly by buildings of mediocrity. In a tug-of-war between past and present, vital parts of our cultural heritage are being destroyed. How many passenger pigeons—out plan or sufficient forethought? A park was saved, but add Wesley Chapel to the roll call of buildings doomed. When will a national preservation policy be more than just talk?

ST. LOUIS EXPERIMENTS WITH WASTE DISPOSAL

The city of St. Louis and the St. Louis Electric Co. have joined the Environmental Protection Agency in sponsoring a demonstration aimed at combining ground water and other municipal wastes with pulverized coal to fire boilers and generate electricity at a power plant. Says EPA Administrator William D. Ruckelshaus: "The St. Louis project, if successful, would provide a way to use energy that would otherwise be wasted, a procedure which would become available that would be used in a number of large cities across the country to help solve the problem of waste disposal." EPA estimates the value of such waste to be about half that of coal.



4



5

KEY ADDRESSES ARCHITECTS AND ENGINEERS

Architects and engineers from all parts of the nation swarmed Capitol Hill on Tuesday, March 14, for their annual visits to members of Congress to argue for passage of legislation advantageous to their practices. This invasion of professional offices followed a busy day of sessions in which delegates met for the annual Public Affairs Conference, co-sponsored by the American Institute of Architects and the Consulting Engineers Council, and briefed on current bills and attended seminars in which issues were discussed in detail.

Subjects of the concurrent seminars were housing, transportation, labor relations, research, technological conversion as subjects affect the design professions. Nearly a score of Congressmen and Senators also participated.

Fortuitously, a day of hearings on the A-E procurement measure sponsored by Rep. Jack Brooks (D-Cal.) gave delegates a chance to appear on a House panel in action on March 14. The bill would legalize the currently prevailing methods of A-E selection on Federal projects, staffed by a General Accounting Office to force a bidding procedure. Chances for passage this year are bright with full committee chairmanship by Chet Holifield (D-Cal.) opposed to the bill as written.

The luncheon speaker March 13 was Sen. Edward M. Kennedy (D-Mass.), who urged architects and engineers to show their skills by planning a new city that by 1980 would be serving the needs of its citizens. Such a city should be "a primary goal for skilled men and women, technology which he said has been marking time since the Civil War was won.

Sen. Kennedy also detailed provisions of his proposed National Energy Policy and Priorities Act which would authorize \$2 billion

in three years to establish a framework of policy and priority for civilian science and technology. He also took the opportunity to criticize the recent decision to extend, rather than restore in place, the West Front of the U. S. Capitol Building.

4 NEW HOME FOR LIBERTY BELL

Because security is inadequate and its present home too small to accommodate the crowds that Expo '76 will almost certainly generate, the Liberty Bell will be moved to a bell tower soon to be constructed nearby as part of a \$5 million Visitors Center. Designed by Cambridge Seven Associates, the Center will provide information and assistance to visitors in locating Philadelphia's historic buildings. In its new setting, the 220-year-old symbol of national independence will hang four feet off the floor so that visitors can touch it and examine its famous crack. The bell has not been rung since 1846 for fear of enlarging that crack.

Construction of the new center is expected to begin in July or early August.

HUD TO REVISE INSULATION STANDARDS

The White House has directed HUD to issue revised insulation standards for apartments and other multi-family structures coming under FHA-insured mortgages. The new rules will cut maximum permissible heat loss by 40 per cent with costs to be recovered through lower fuel costs. HUD already has new single-family standards reducing maximum permissible heat loss by about one-third.

HOUSTON CONVENTION

New efforts by the AIA to influence national growth policies will be the theme and prime focus of the 1972 convention in Houston. Delegates to the convention will debate, amend, and vote on a major policy document—the Report of the Task Force on National Policy (RECORD, February 1972). A year in the making, the Report recommends a number of strategies aimed at assuring intelligent use of our dwindling land reserves and proposes methods for creative, humane rebuilding of our crumbling and chaotic urban areas.

■ A Marketplace of New Ideas, to be located in the Albert Thomas Convention Center, is a new activity this year. Through seminars, slide presentations, and training laboratories, the Marketplace will provide an interchange of the latest developments in architectural practice and the construction process. More than 50 presentations of topics of vital interest to architects will be in the Marketplace. Among them: computer systems, legislative issues, employer-employee relations, Federal agency programs, financial management and cost accounting, planning special environments, and ecological concerns.

■ Dr. René Dubos, microbiologist and experimental pathologist, renowned for his writing and lectures on man's relationship to his environment, will deliver the keynote convention address, "In Praise of Diversity," on Sunday, May 7. On Wednesday, Texas Senator John Tower will address the convention.

■ The convention's round of social activities—the McGraw-Hill/Dodge Party, a Night at the Alley Theatre, and the Houston Chapter's Texas Fiesta, will be capped by the Gold Medalist's Ball honoring Pietro Beluschchi (see page 119) on the evening of Wednesday May 10.

■ The Building Team Conference this year will follow the convention on May 10-12.

5 IS THE AIA EMBLEM OUT OF DATE?

Some architects think so and are petitioning the AIA's board of directors to commission a new design that is "more representative of the emerging new image of the architect." If the board disagrees, the matter may be brought to the attention of the membership at the forthcoming Houston convention.

HOME APPLIANCES TO BE RATED FOR EFFICIENCY

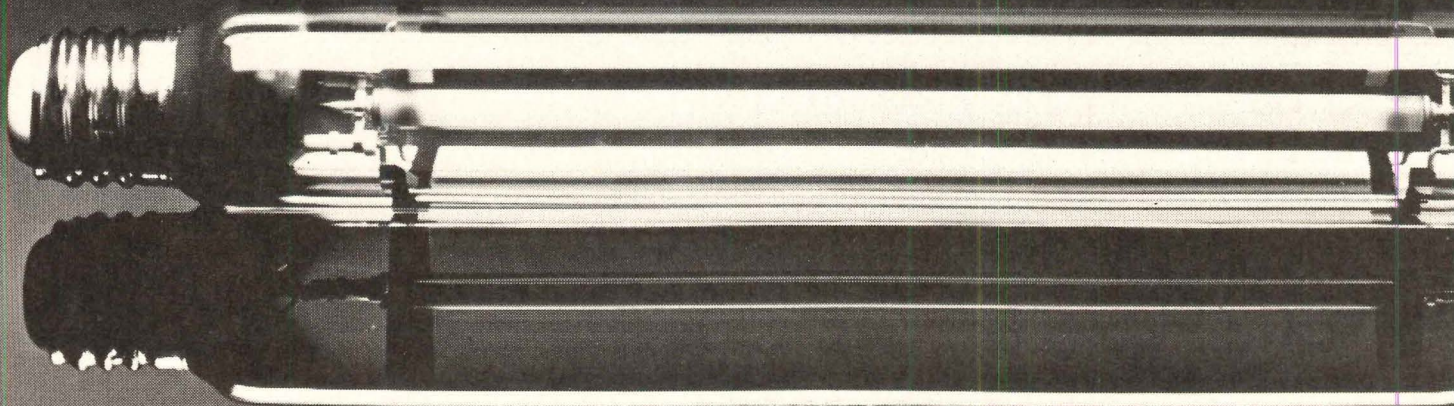
A great deal of electrical energy could be saved if room air conditioners were more efficient. That making them more efficient is not a technical problem was brought out at RECORD's Round Table on Energy Conservation (January). Rather, efficiencies have been going down because the public has not demanded any better.

The fact that room air conditioners represent a large electrical load apparently has moved the Municipal Service Administration of the City of New York, under administrator Milton Musicus, to work out a joint government-industry campaign to conserve energy by rating the efficiency of the units.

As a result of a meeting with the Association of Home Appliance Manufacturers, the AHAM organization has agreed to publish and disseminate: 1) a consumer purchase and use book; 2) forms for estimating the size of air conditioners best suited for the customer's needs; 3) data that will permit consumers to compare the efficiencies of various models 4) suggestions for saving electricity through shading, better insulation, reduction of heat from lights and appliances, and proper maintenance.

Further, and most importantly, AHAM will require that every air conditioner sold in New York City be rated according to energy efficiency (Btu/watt-hour).

Lucalox® lamp



Since you can't beat it, join us.

Once you join General Electric's Savings in Light Association, you discover there are a number of important advantages.

And none of them is more unbeatable than the Lucalox® lamp.

The Lucalox lamp is, quite simply, the most efficient general lighting source available.

Specifically, a single 1000-watt Lucalox lamp puts out an average of 130,000 initial lumens of light. That's 130 lumens per watt—approximately $\frac{1}{3}$ more light per watt initially than any other comparable general light source available.

The lighting efficiency of the Lucalox lamp becomes even more impressive when you consider that it's double the efficiency of the average mercury lamp (which is around 60 lumens per watt). That's a pretty good reason to think about updating your present mercury or other type of lighting system.

And when you begin to investigate that possibility, you make another interesting discovery.

Often, to increase your lighting levels, no change in existing wiring or electrical distribution systems is required when Lucalox lamps and fixtures replace your existing lighting units.

Lucalox lighting has many applications: street lighting, parking lots, industrial lighting, highways and others. Anywhere you want to increase your lighting levels and conserve electricity.

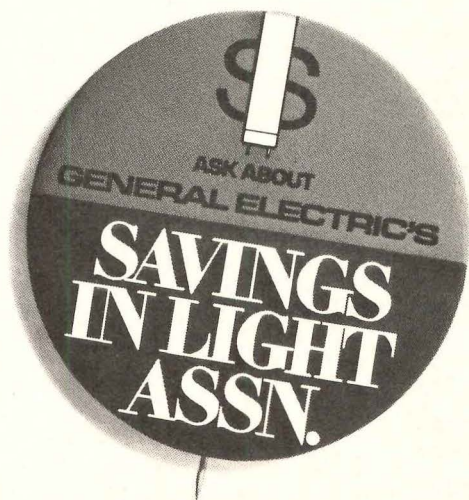
(And nobody knows for sure how much improved lighting may save by reducing accidents and crime, or by increasing productivity in factories, etc.)

Lucalox lamps are available in three sizes: 250 watts for smaller areas, the popular 400-watt size and a 1000-watt lamp for high mounting areas.

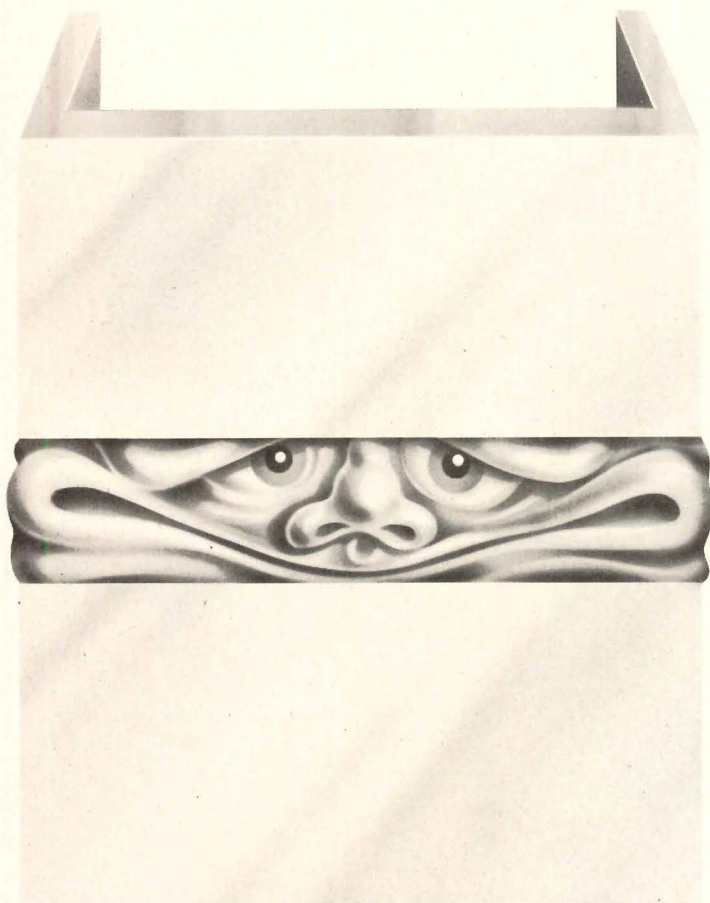
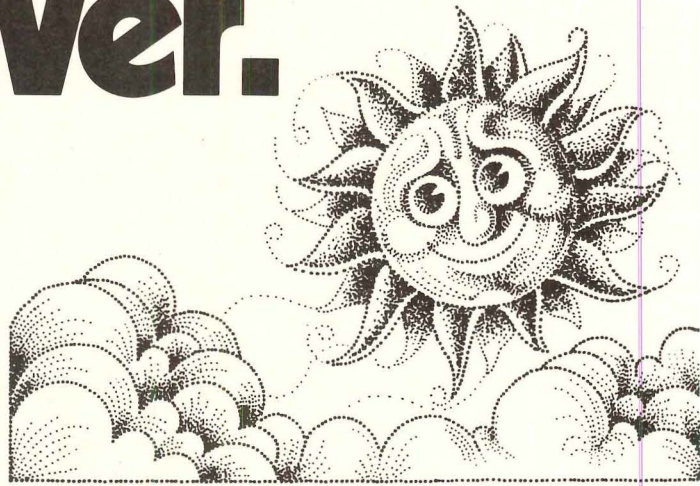
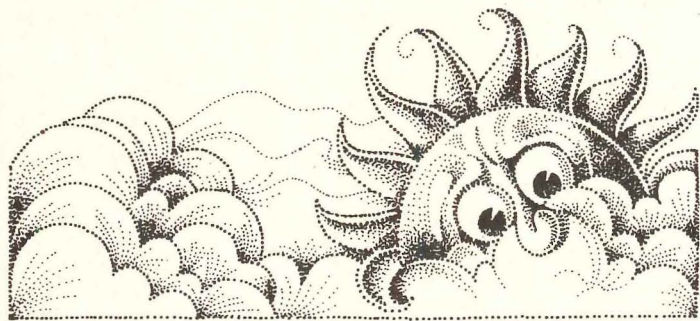
You can't beat Lucalox lamps for efficiency and savings in your total cost of light. And since most of the cost of light is in maintenance, power, etc., the way Lucalox lamps perform can mean major savings in your total lighting costs. And, as is usual in lighting, the cost of the lamps is relatively unimportant.

So take advantage of Lucalox lamps. Call your General Electric lamp representative. Or write: General Electric, Dept. C-110, Nela Park, Cleveland, Ohio 44112.

GENERAL  ELECTRIC



Mating habits of the all-aluminum column cover.

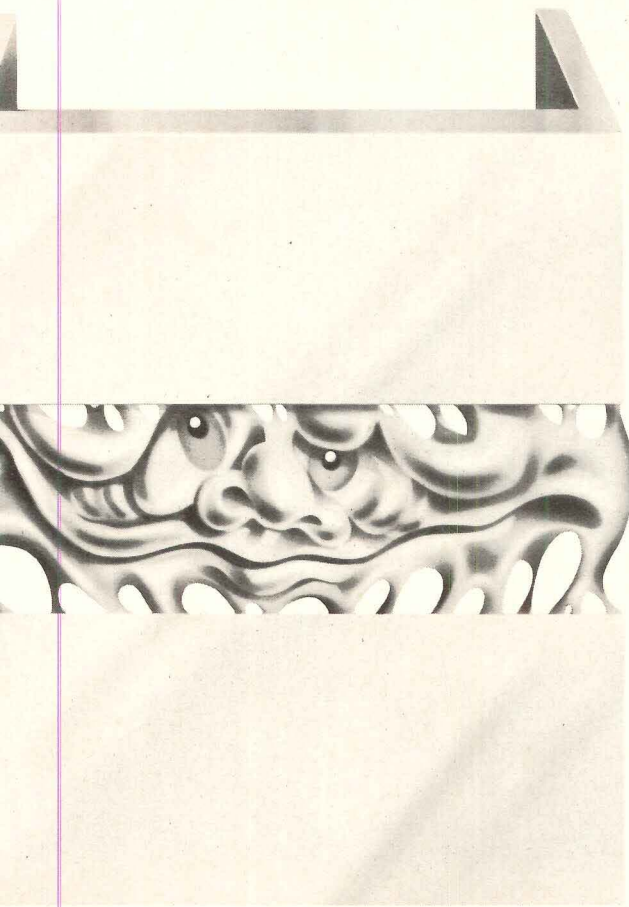


By itself an aluminum column cover is a thing of joy and beauty forever. The trouble starts when you try to make a waterproof joint between a pair of them.

Let's say the job calls for a $\frac{3}{8}$ " joint between 12-foot panels. The panels are set in place at 8:30 a.m. The temperature is 50°F when the sealant is applied. (Above, left).

But now the temperature starts to rise. By 4:00 p.m. it's 85°. And those dark-colored, dull-finished, insulated panels are up to 175°. The joint has compressed to $\frac{1}{4}$ ". This is normal building movement. But look what's happened to the sealant. (Above, center).

Heat speeded the cure. And by 4:00 p.m. the sealant has cured to a firm bead $\frac{1}{4}$ " wide.



Now the temperature drops. By 9:00 p.m. 20°; the joint opens up to $\frac{7}{16}$ ". And while the job called for a $\frac{3}{8}$ " cured bead that could move 25% either way, it actually winds up with a $\frac{1}{4}$ " cured bead that must elongate more than 50% to $\frac{7}{16}$ ". It probably won't stick it (Above, right).

Here's how you can avoid this problem.

Design the joints at least $\frac{1}{2}$ " wide. This way, you will wind up with a $\frac{3}{8}$ " cured bead that has to move just 25% of its cured width.

If it is aesthetically feasible, use 6-foot instead of 12-foot panels. You'll cut panel expansion in half and stay well within the sealant's movement capability.

Better still, you might talk to us while you are still in the design stage. We're Tremco. And we cope with aluminum column cover sealant problems every day of the year. We also have some 15 basic sealant formulations to work with — including such familiar names as MONO (our job-proven acrylic terpolymer), DYmeric (our Tremco-developed polymer), and Lasto-Meric (our polysulfide).

With all this going for you, you can stop worrying about the mating habits of the all-aluminum column cover. Because Tremco will come up with a sealant system that will stick with you for years on end. The Tremco Manufacturing Company, Cleveland, Ohio 44104, or Toronto 17, Ontario.

TREMCO
The water stoppers



Our light heavyweight

Permalite Pk • the new, compact roofing board that provides as much insulation as materials twice as thick.

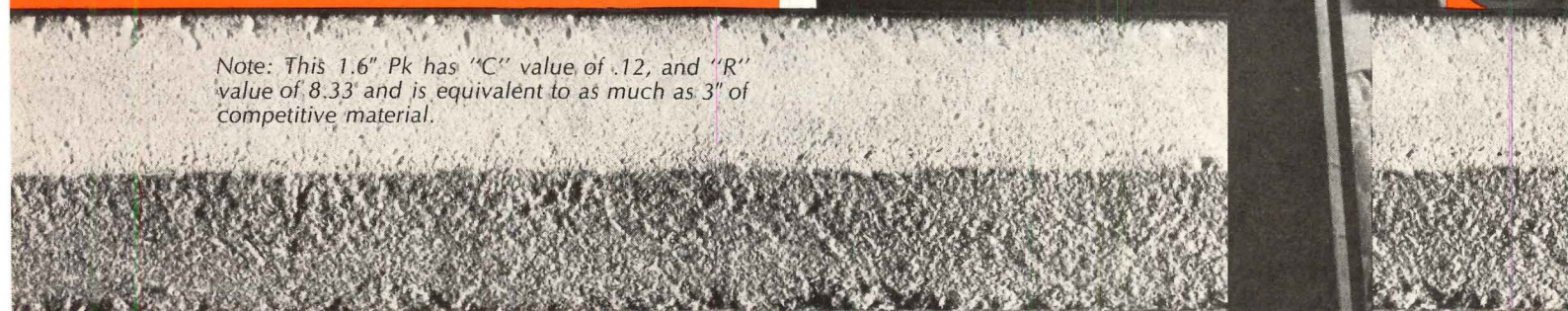
Permalite Pk • increases design flexibility, sharply decreases operating costs, and reduces shipping and installation costs significantly.

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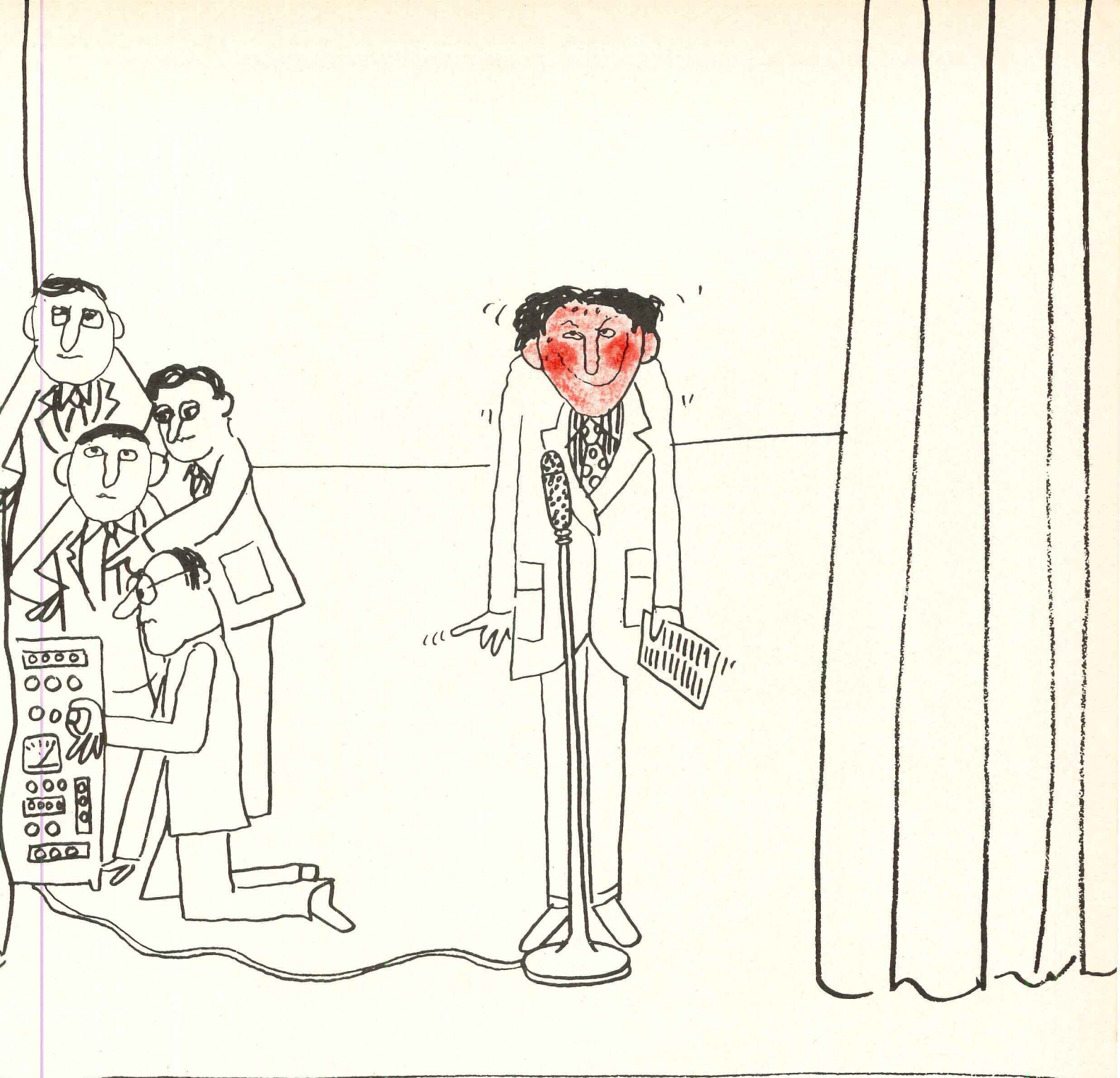
Note: This 1.6" Pk has "C" value of .12, and "R" value of 8.33 and is equivalent to as much as 3" of competitive material.

*Permalite Pk: Listed by FM for Class 1 Steel Deck Construction (fire and wind uplift); UL Metal Deck Assemblies Construction Nos. 1, 2 and others.



Building Products Division

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Even the finest sound systems ring, whistle, howl, echo—or distort the sound in other disturbing ways.

Sound engineers will tell you that feedback from itself usually causes the distortion. Working from this premise, sound engineers have come up with a solution: Executone Room-Tuned Sound Systems. These professional sound systems employ the most sophisticated techniques yet developed to electronically match amplification to the room it serves. Before installing a system,

Executone sound engineers determine the room's "acoustic personality." This is the room's environment, the sum of its size, shape and volume—plus the influence of materials used in the walls, ceiling, floor and furnishings.

They then select the proper combination of Executone professional sound components to match the room's personality and function. And where a room has acoustic deficiencies, the engineers "tune out" unwanted variations and "tune in" needed sound reinforcement.

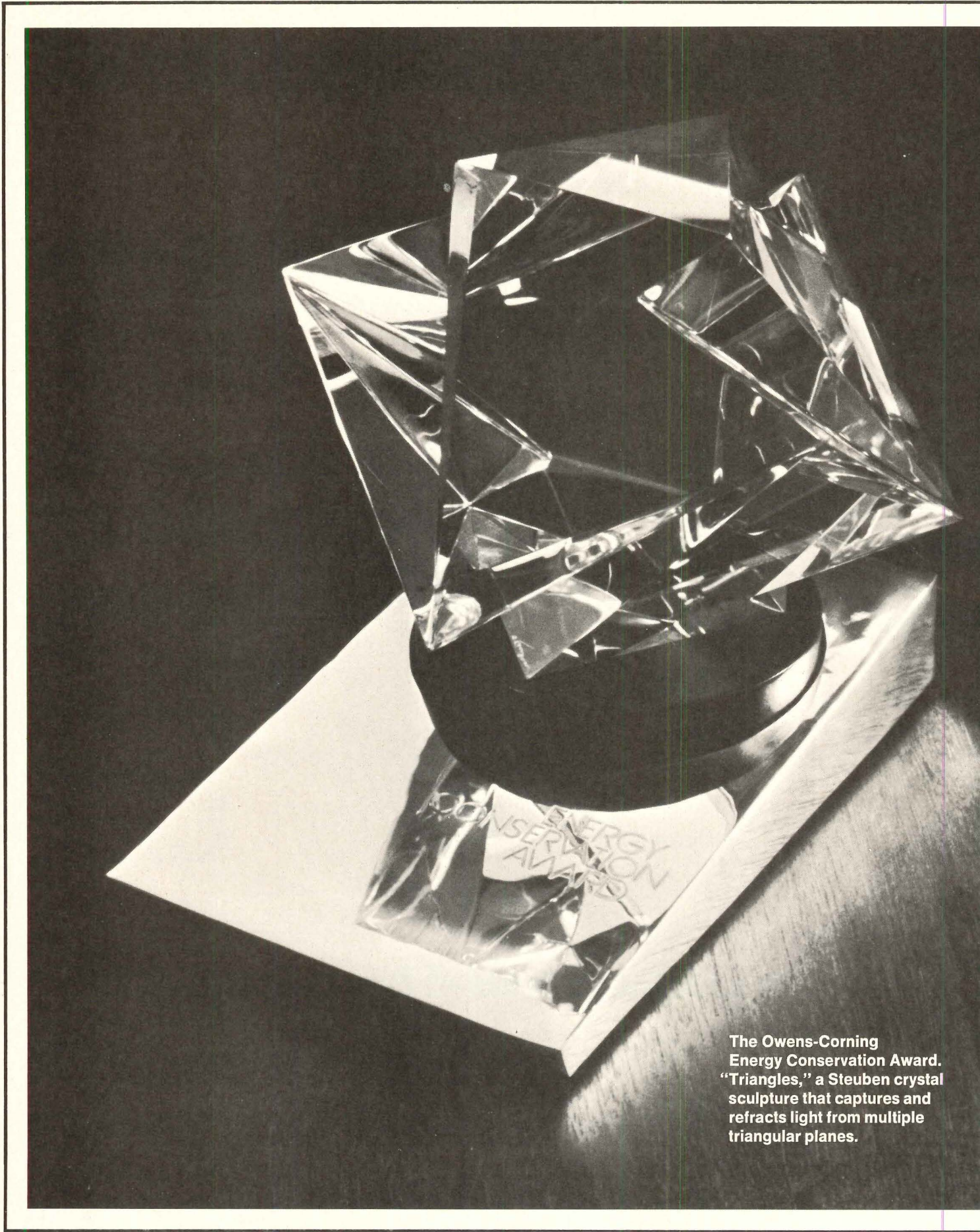
The result is an Executone Room-Tuned Sound System. Consistently clear and balanced sound, free of feedback and distortion. People using the system become more confident and audiences more attentive.

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Executone



The Owens-Corning Energy Conservation Award. "Triangles," a Steuben crystal sculpture that captures and refracts light from multiple triangular planes.

Announcing the first Owens-Corning Energy Conservation Award for architects and engineers.

Show our Awards Jury a building design that doesn't waste energy—and you could win one of the three Energy Conservation Awards Owens-Corning will present this year.

The Awards Jury will be looking for three things: Creativity. Originality. And designs that save energy.

We're running this program because of the urgent need to conserve energy. Too many buildings waste energy and contribute to environmental pollution.

By offering Energy Conservation Awards, we hope to stimulate new designs and ideas for conserving energy. We also want to honor the architects and engineers who do the best job of designing buildings and mechanical systems that save energy.

The winning combination of energy-saving ideas could be in the building you're working on now.

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

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

The Awards. The Awards Jury—outstanding

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

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

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

Industrial—including manufacturing plants, research centers, warehouses.

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

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

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

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

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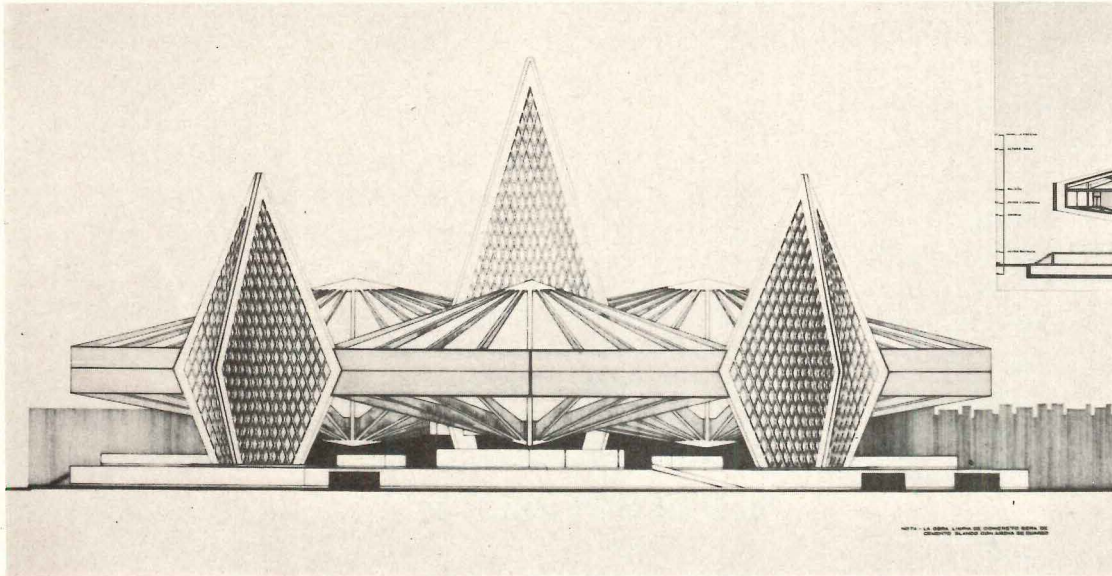


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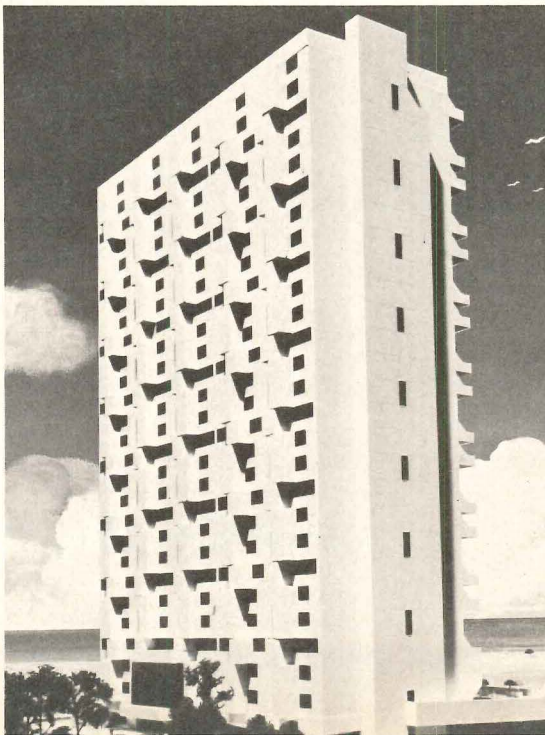


Anthony Hathaway

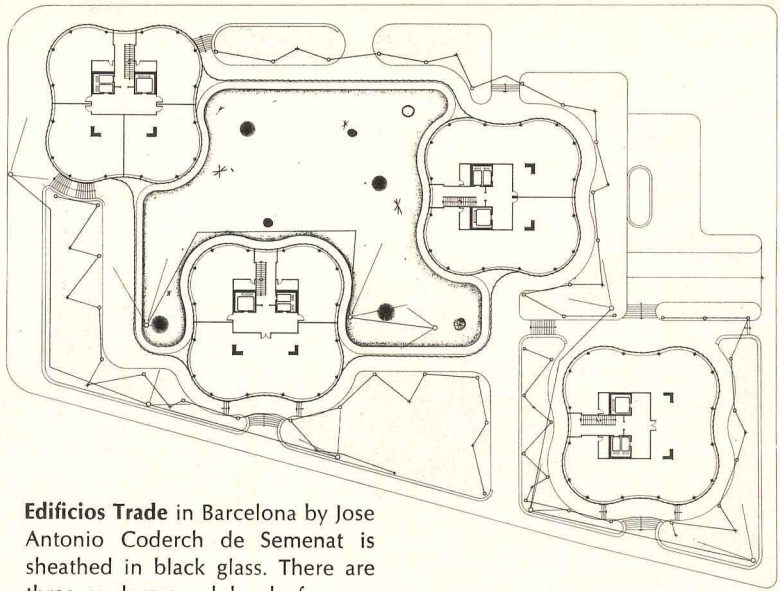
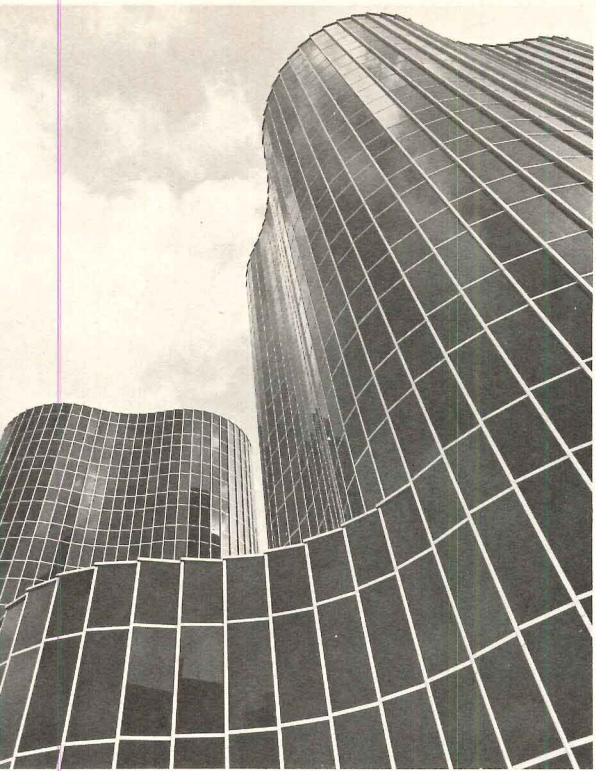
Dunbar High School in Washington, D.C. by Bryant and Bryant, a black-owned architectural firm, consists of a learning tower and adjacent facilities to serve both the community and school. The tower is composed of split levels connected by up-escalators and down-escalators. There are three four-level "houses" for different age groups, each having—besides learning areas—its own kitchenette, a combined lunch and multi-purpose space and a terrace. Robert Jongh, chief designer; Hector Arillo, project architect.



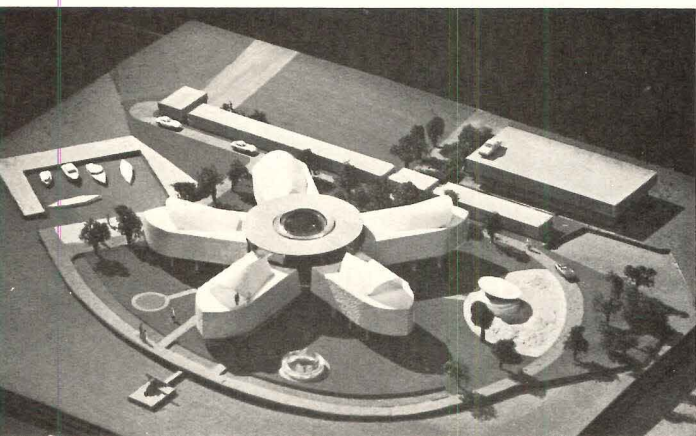
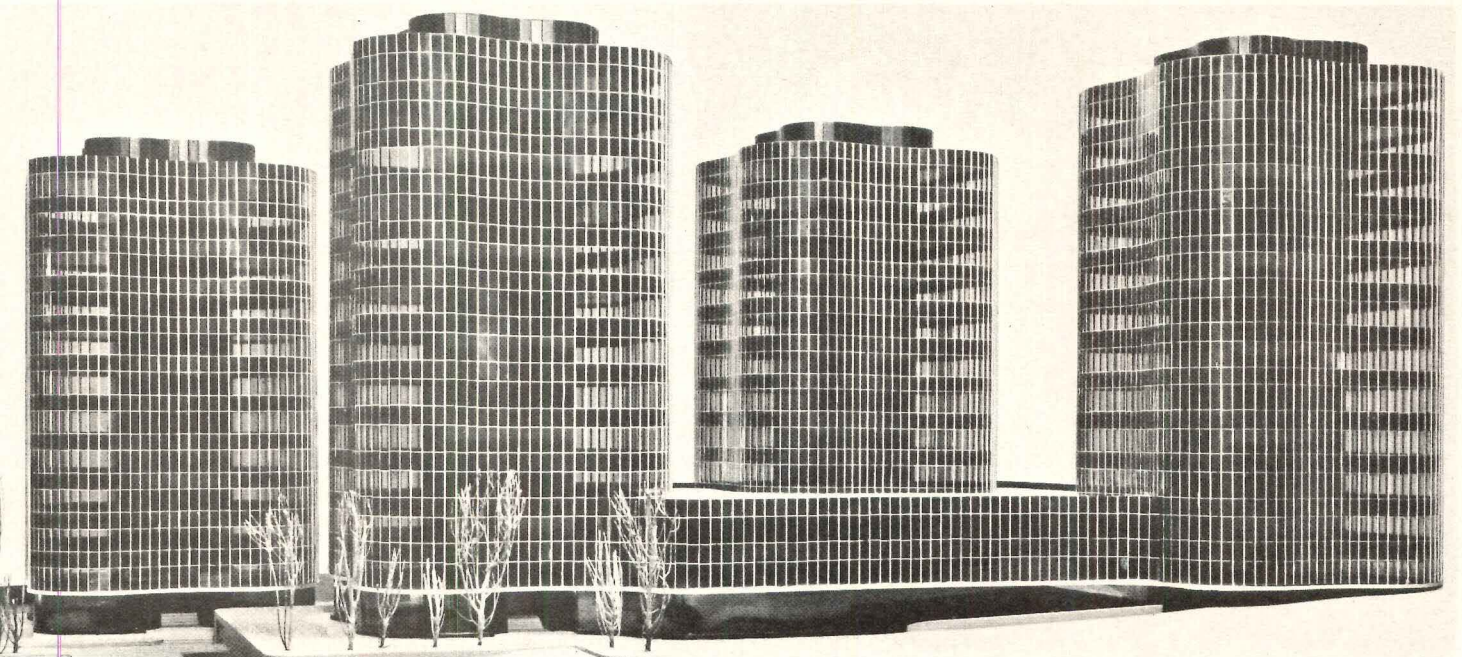
The Caracas Concert Hall by Carlo Vannini, architect, and Emma Gavillet, civil engineer, is shown in its preliminary design stage. The main hall for 2,500 people is designed to accommodate chamber music, symphonies, opera and ballet. The diamond shape dominates the elevations and the plan which also includes a 500-seat hall.



The Century I Condominium in Ocean City, Maryland by William Robert Wakeham of Valand, Boring and Associates will have a ground-level, rainy-day play area under the raised structure; a lounge, game room, sauna, steam and massage areas on the second floor; and a swimming pool, deck and dune walk on the ground front. There will be 167 one- and two-bedroom units, all with living areas facing the Atlantic and bedrooms facing a bay. The building will be 26 stories high and use a skip-corridor plan, of cast-in-place reinforced concrete.



Edificios Trade in Barcelona by Jose Antonio Coderch de Seneat is sheathed in black glass. There are three underground levels for mechanicals and parking. In the area connecting three of the towers are restaurants, gym, sauna and shops on the ground floor; conference rooms and auditorium on the mezzanine.



Aquaseum designed by Knafo Serra for a Greenport, Long Island City waterfront site is to be a unique aquarium-museum-teaching facility where graduate and high school students could conduct studies. A multi-storied tank will form the

core with exhibits, services, laboratories, instruction and lecture rooms in the starfish shaped wings. On stilts, the structure will leave the grounds free and protected for outdoor exhibits. There will be a rooftop restaurant around the tank.

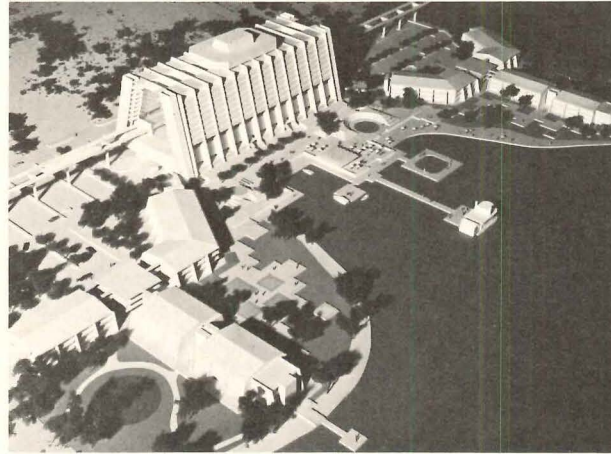
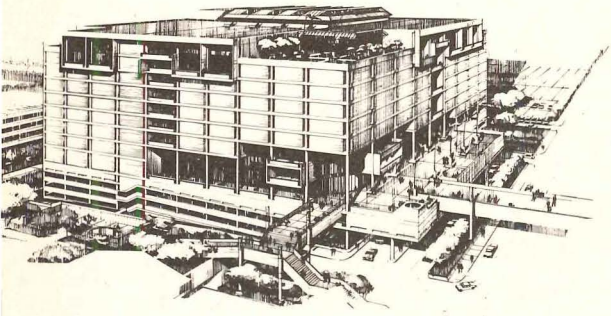


The Steamboat Village Inn (right in photo) and Plaza (left, rear) in Steamboat Springs, Colorado, designed by Ken R. White Co. offers 80 hotel rooms, 22 condominiums, a dining room, lounge, saunas, game room, meeting rooms and shops.

The Society of American Registered Architects 1971 Awards Program

The 1971 Awards Program of the ARA indicated a far higher standard of design than has been true of its past programs. The premiated designs shown below (and the Third Honor Award winning **Red Wing, Minnesota marina, shopping center and housing development**, not shown, by the ARA president's firm, Lie-

benberg, Kaplan, Gotter & Associates) were judged by F. Schmitt, Paul F. Colebrook, Jr., Herbert H. Johnson, Andrew Ferendino, Wahl J. Snyder, Samuel H. Kruse, John Hellman, J. Boulanger and Sidney Epstein with Blake Hughes, RECORD publisher, as jury chairman.



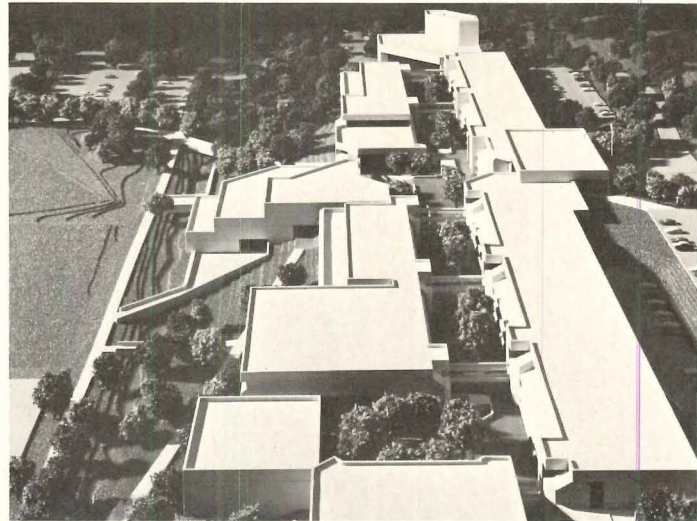
Richard Karl Koch

The Los Angeles Resource Center (far left) and the **Disneyland Hotel** (left) in Orlando, Florida by Weisman, Becket & Associates both won First Honor Awards.

Holyoke Community College in Holyoke, Massachusetts by Daniel, Mann, Johnson & Mendenhall, with F. Schmitt and Masiello as consulting architects, won a Second Honor Award.



The Villa Apartments in Raleigh, North Carolina by Harry W. Moser, Jr. won a First Honor Award.



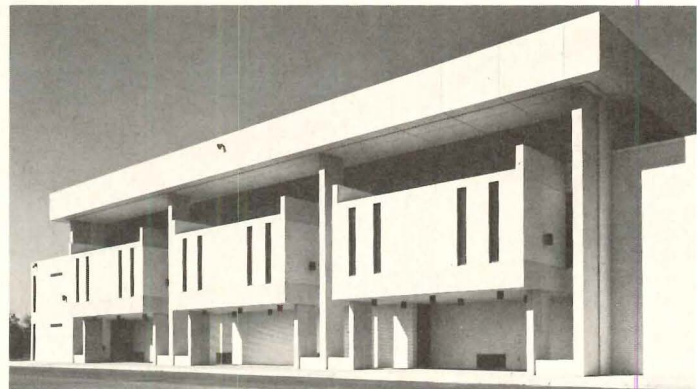
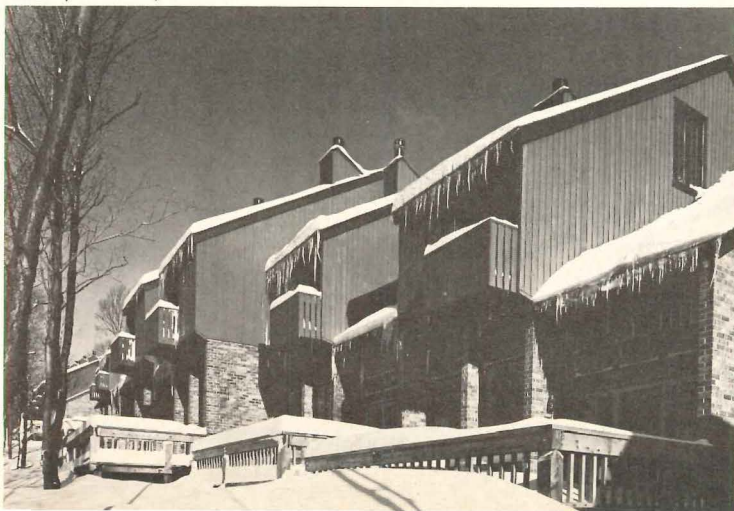
Richard Karl Koch



Woods Cross High School in Farmington, Utah by Harold K. Beecher & Associates won a Third Honor Award.

A Ski Resort in Seven Springs, Pennsylvania by Collins, Kronstadt, Leahy, Hogan & Collins won Honorable Mention.

Anthony Hathaway



The Parkland Junior High School (top, above) and **The William Allen Physical Education Building** (above), both in Allentown, Pennsylvania and

St. Steven's Lutheran Church (shown) in Bethlehem, Pennsylvania by Everett & Associates all Honorable Mentions.



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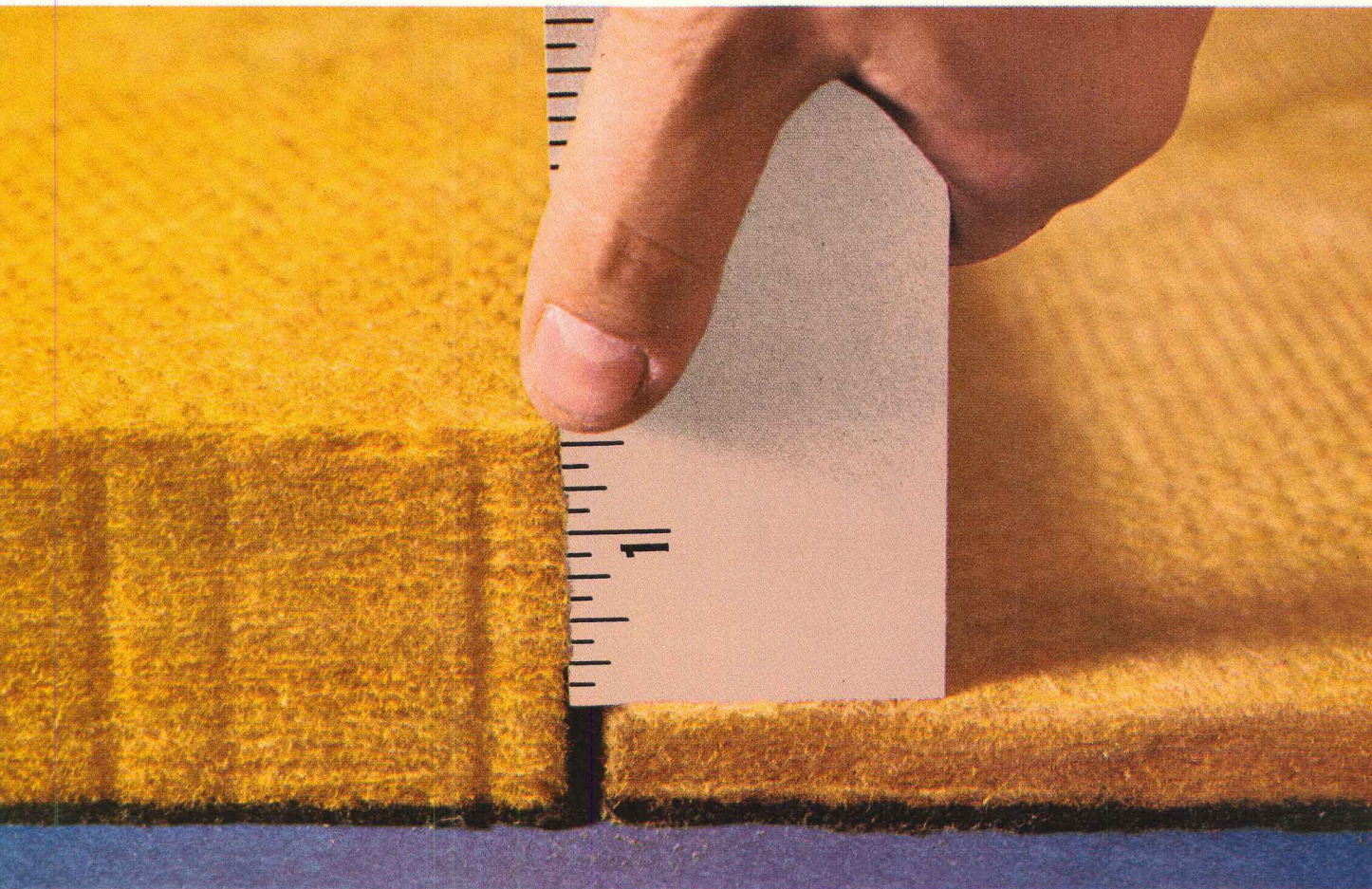
A black and white photograph of a man in a striped shirt and tie, looking intently at a large architectural drawing spread out on a drafting table. The drawing shows a complex floor plan or schematic. In the foreground, there are several rolled-up blueprints. The background shows a wall with a grid pattern and a window with blinds.

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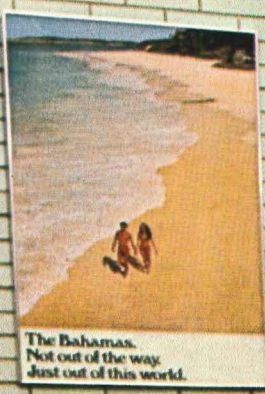
Corning Fiberglas Corp., Fiberglas Tower, Toledo, Ohio 43659.

Energy Conservation Award

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

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Enkalure II soil-hiding nylon.
When things are at their worst, we're at our best.



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That's because Enkalure II's unique construction makes it harder for dirt to accumulate.

And harder for dirt to be seen. The reasons for this are simple.

Unlike conventional nylon fibers, Enkalure II fibers have smooth, sloping surfaces. Which means there are no deep grooves to trap dirt.

In addition, Enkalure II's special multilobal construction acts like millions of tiny reflectors, to bounce light in every direction. This intensifies the color and makes it appear brighter than any other soil-hiding nylon available. Even when dirty.

Of course, you'll be able to see that with your own eyes, so you won't have to take our word for it. And because carpets made of Enkalure II must pass Nationwide Consumer Testing Institute's critical tests for performance, you won't have to take our word for that either.

Now that you know how Enkalure II hides the dirt, it's easy to understand why carpets made of it need less cleaning. And therefore, why installations in airport terminals, schools, office buildings, theaters, shopping centers, or any other place where there's heavy traffic and soil, mean lower maintenance costs.

So if you're looking for a commercial carpet fiber that's at its best when things are at their worst, why not look at Enkalure II soil-hiding nylon. For more information contact American Enka, 530 Fifth Avenue, New York, N.Y. 10036 (212) 661-6600.

Carpets made of Enkalure II must meet the following minimum specifications:

1. Pile yarn: One hundred per cent Enkalure II Nylon.

2. Pile weight: Minimum of 20 ounces per square yard.

3. Pile density: Minimum 5,000. Formula: $D = \frac{36W}{T}$

W = average pile weight (oz. per square yard)

T = average pile yarn thickness in inches

4. Tuftbind: Nine pounds, minimum.

5. Wear: Minimum — 10,000 revolutions (NBS. modified using #320 Aloxite cloth with a torque of 60 inch pounds.)

6. Flammability: Must pass Flammable Fabric Act Standard DOC FF 1-70 Methenamine Tablet Test. Must not propagate a flame.

7. Pilling: Must resist pilling after 10 hours in abrasive tumble-drum tester with a rating of 2.5 or less.

8. Resiliency: Must recover at least 80 per cent of its pile height after 48 hours of pressure at 50 psi.

9. Crocking: AATCC 8-1964 rating 4 or better.

10. Colorfastness: AATCC 16 A-1964 minimum of 20 SFH with no color change.

Enkalure II soil-hiding nylon by ENKA
The color stays clean when the carpet gets dirty.

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GET THE PICTURE?

ASG Industries, Inc., has purchased the glass coatings division of Kinney Vacuum Company. This involves the vacuum deposition of metals on glass, a technique used in the manufacture of light and heat resistant architectural glass and transparent mirrors. The production facilities have been moved to Tennessee where ASG laminated glass and insulating units are manufactured.

Chrome, gold and silver reflective glass is being produced under the tradename REFLECTOVUE[®]. Transparent (one-way) mirrors will be marketed under the tradename DUOVUE[®].

New literature and technical data are being prepared. Return the coupon, and you will receive the new material when available. In the meantime, please refer to your current Kinney literature and direct your inquiries to the nearest ASG sales office.

- Atlanta, Ga., (404) 636-3001
- Boston, Mass., (617) 482-0663
- Chicago, Ill., (312) 693-2031
- Dallas, Texas, (214) 748-6391
- Detroit, Mich., (313) 547-6880
- Los Angeles, Calif., (213) 723-7171
- San Francisco, Calif., (415) 697-7244
- Stamford, Conn. (203) 325-4411

Please Send New Literature And Technical Data When It Is Available.

Reflectovue[®] (ASG Reflective Glass)
 Duovue[®] (ASG Transparent Mirrors)

(Please Print)

Name: _____

Firm: _____

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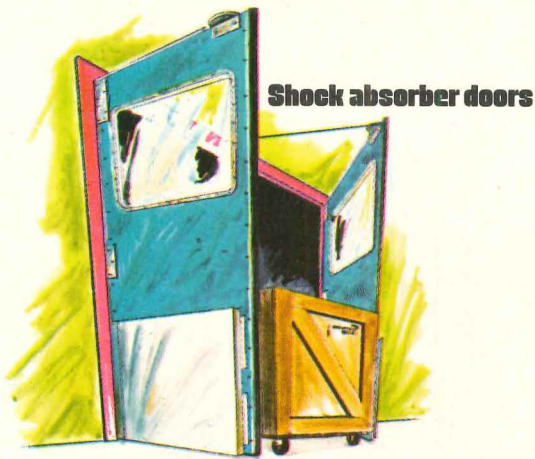
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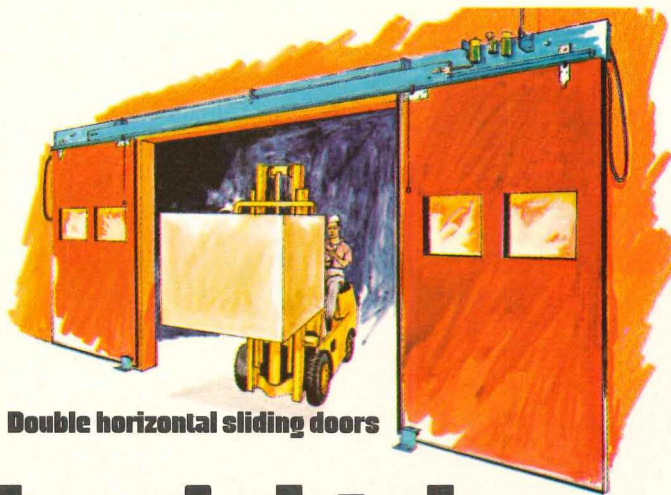


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POST OFFICE BOX 929
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Shock absorber doors



Double horizontal sliding doors

Choosing the right door is tougher than you think...



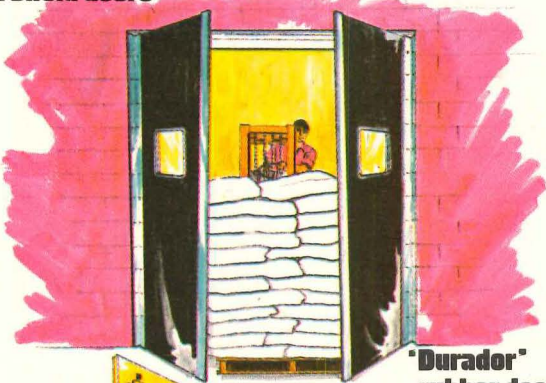
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But Clark can put you on the right track.

Each door installation encounters a number of different materials handling, temperature and building requirements. That's why we make the widest range of manual and automatic Industrial and Cold Storage Doors in the industry. Not to make your task more difficult, but to make sure that you can select the *one* door type that best suits your needs. Our specialists can help you make that selection. Send for your catalog. Specify whether Cold Storage or Industrial. Today.



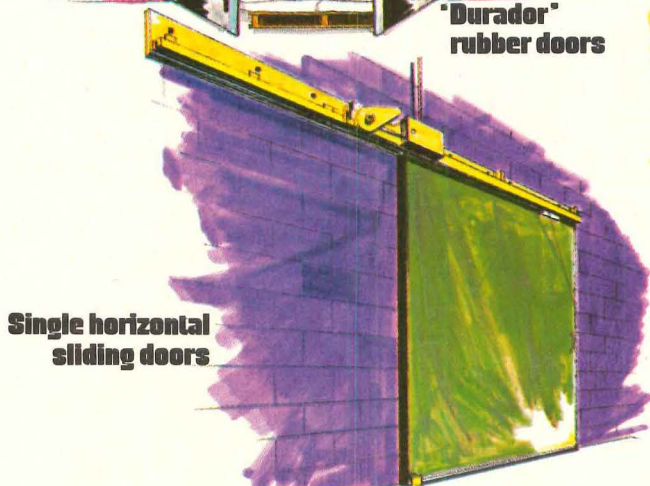
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"Durador" rubber doors

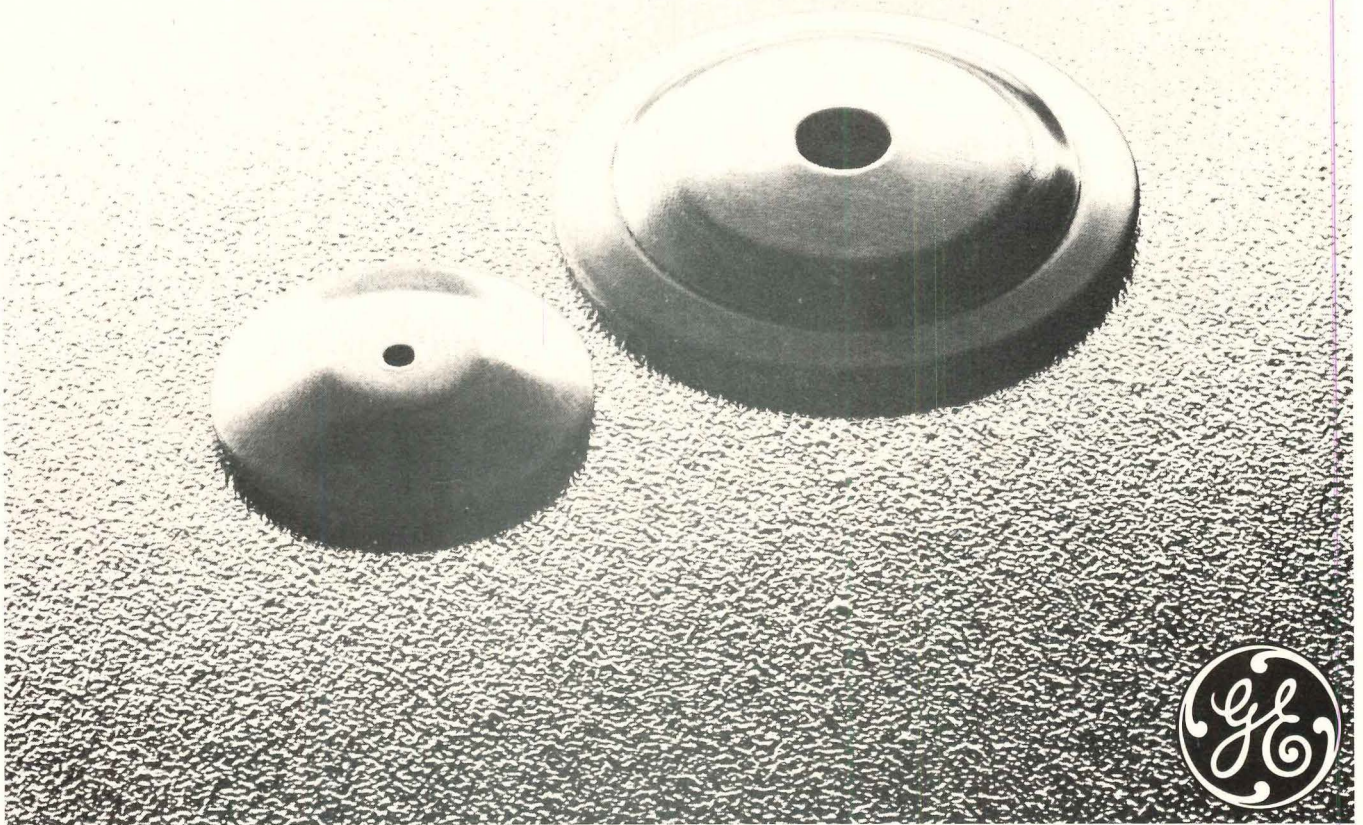


Vertical lift doors



Single horizontal sliding doors

All you need to convert GE's gas/electric to LPG is five minutes and two pieces of metal.



In some areas, the natural gas shortage is a heartbreak. But not to users of GE's gas/electric heating and cooling equipment.

Because, with a simple kit, GE's gas/electric units can be converted to LPG.

The kit consists of two aluminum washer-type orifices, a name plate and instructions.

The orifices go into the pipe union and meter the flow of gas to the burner.

The nameplate signifies that the unit has been converted to LPG at 2500 BTU/FT³ with parts supplied by the General

Electric Company, And that the unit does not lose its A.G.A. certification upon conversion.

It's a small plate, so there are some things we couldn't put on it.

For one thing, the unit runs at 3.5" manifold pressure, the same as natural gas, so it isn't necessary to adjust the gas input valve.

The burner is a forced combustion type, which eliminates the need for increased pressure drop, and aspiration of primary air into the gas.

The valves themselves are A.G.A. certified for natural

and LP gas regulation and control.

The combustion chamber is made with the same metal we developed for jet engines.

And finally, all our gas/electrics have the General Electric National Service Contract available at the time of installation. Service is available from the installing dealer or other authorized servicer.

For more information, call your General Electric Central Air Conditioning Dealer. He's listed in the Yellow Pages under Air Conditioning Equipment and Systems.

GENERAL  ELECTRIC

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**We've improved one of the trade's basic tools.
Trinity White's Waterproofed Masonry Cement.**



You get the traditional color uniformity you expected from Trinity White Masonry Cement with the added advantage of a water repellent mortar joint with Trinity White *Waterproofed* Masonry Cement.

Trinity White Waterproofed Masonry Cement, when mixed with white sand, can produce a pure white mortar that contrasts beautifully with dark masonry units. With pigments or colored sand, the mortar blends nicely. Of course, for brilliantly white walls, there's no better

choice. Exacting quality controls during manufacture make Trinity White Waterproofed Masonry Cement consistent bag-to-bag for uniform results, wall-to-wall.

High water retention gives Trinity White Waterproofed Masonry Cement better bond strength. Its excellent workability is further assurance of good results.

Make new Trinity White Waterproofed Masonry Cement a basic design tool. Specify it for your next masonry job.

Trinity White
Creativity in Concrete

THE OWNER
OF THIS BUILDING
SAVED \$7,600*—

...all because someone specified ZONOLITE Masonry Fill Insulation.

No wonder he's sold on the people who advised him to insulate.

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

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

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

Some examples:

A Boston office building with 10,000 sq. ft. of wall area. Insulation installed: \$1,700. Estimated ten-year savings: \$6,350 for heating, \$1,250 in electricity for cooling.

A 45% average annual return on insulation cost.

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

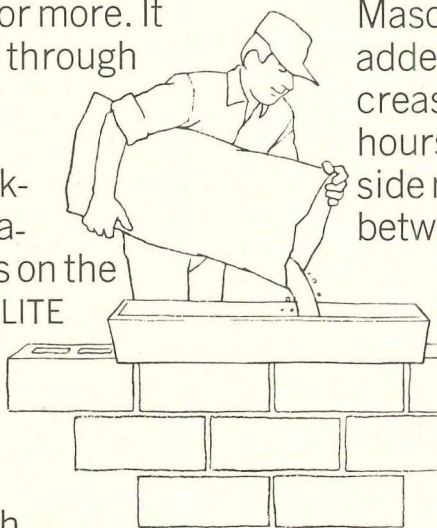
Reductions like these in fuel consumption can ease the nation's energy crisis, and reduce pollution caused by excessive fuel use.

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

It makes sense to recommend and specify ZONOLITE Masonry Fill. For more information, send the reader service card. Or, write today for brochure MF-164. It contains specific

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

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



GRACE ZONOLITE

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Bally belongs.

In mass feeding
for student bodies
Bally Prefabs set the standard
for Walk-In Refrigeration



Bally Walk-In Coolers and Freezers belong everywhere mass feeding takes place. They can be assembled in any size for indoor or outdoor use from standard panels insulated with four inches of foamed-in-place urethane, UL 25 low flame spread rated. Choice of stainless steel, aluminum or galvanized. Easy to enlarge... easy to relocate. Refrigeration system from 35°F. cooling to minus 40°F. freezing. Subject to fast depreciation and investment tax credit. (Ask your accountant.) Write for 28-page book and urethane sample. **Bally Case and Cooler, Inc., Bally, Pennsylvania 19503.**



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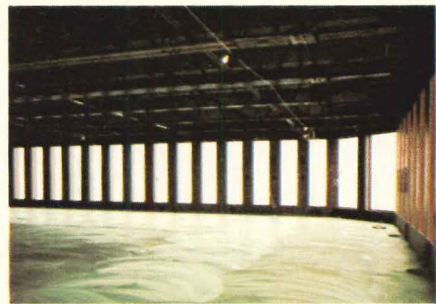
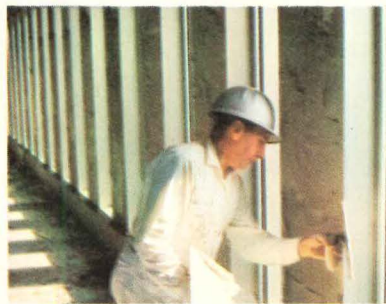
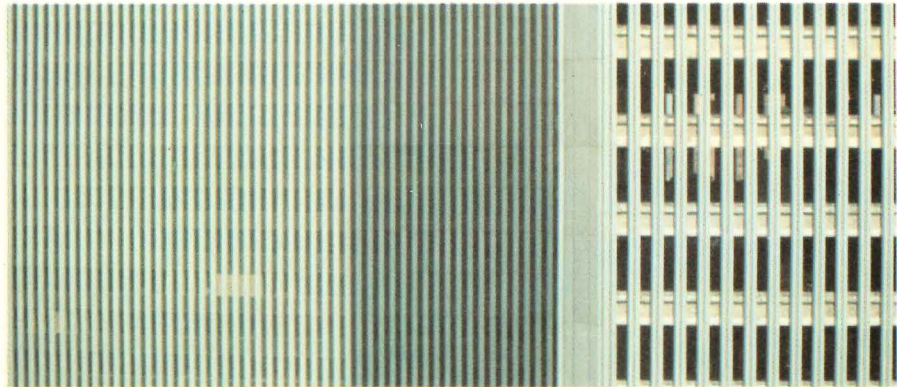
ADDRESS ALL CORRESPONDENCE TO DEPT. AR-4





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

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



would give us a structurally sound wall system.

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

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

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

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

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

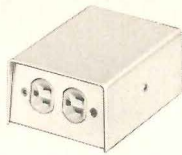
"In effect, then, the refinements of the curtain wall provided by Cupples Products Division of H. H. Robertson Company contributed to the efficiency of the trades responsible for interior finishing, another example of the interrelated planning of the building team. On a project like the Trade Center,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

The World Trade Center is a project of the Port of New York Authority. Engineering and development were carried out under the Authority's World Trade Center Planning and Construction Division.

Change for the better with Alcoa® Aluminum



This Single Fitting Delivers Phone, Power and Signal Service



THE GRANCO CEL-WAY®/COFAR® SYSTEM

Only visible evidence of the system is the handsome floor fittings, each furnishing telephone, power and signal services wherever needed throughout the floor.

Concealed within the 5 $\frac{1}{4}$ " floor slab is a network of electrical cells, factory-installed pre-set inserts and Granco's new Feed-Way high capacity header. Granco's Cofar floor deck (combined form and reinforcement) completes the system.

Pre-set inserts permit future installations of additional floor fittings without core drilling. Desks and partitions can be changed whenever desired.

Get the complete story on CEL-WAY/COFAR in-floor electrification. See Sweet's 5.5/Gr and 16.2/Gr, or write for new product design manuals. Granco Steel Products Company, 6506 N. Broadway, St. Louis, Mo. 63147.



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A Unit of
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The
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Door closers.
Look at them as we do.
From the inside,
where strength and power
combine to easily close
the heaviest doors.

Now look at their eye appeal.
Clean, smooth lines.
Handsome finishes.
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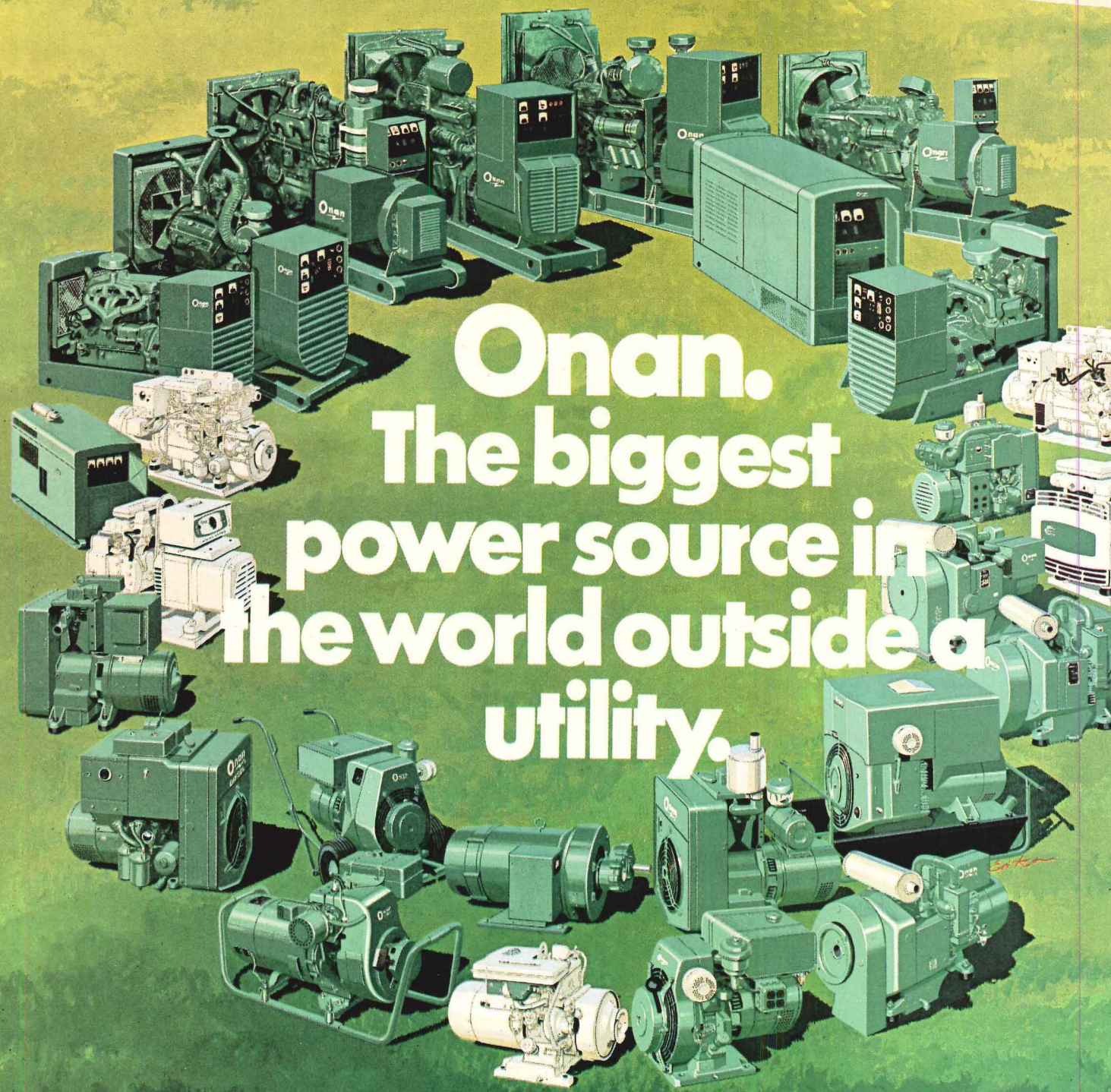
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The powerglide®
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A door closer for every door,
in every value range,
with every feature.

Sargent door closers . . .
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Onan. The biggest power source in the world outside a utility.

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institutions. For auxiliary or portable power in boats, recreational vehicles, service
trucks and construction equipment.



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Marketing architectural services

Bradford Perkins

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

architect who wants to achieve a steady growing volume of interesting projects have already pointed out there is an organizational difference between "steady" ("growing") has to seek new clients and convince them that they should commission this firm. Even those clients who come from "over the transom" must have had a presentation other than the yellow pages of the telephone directory. A presales job, perhaps? In some way made sense?

We have already emphasized (RECORD, March) the need for developing and following a plan for all aspects of a firm's practice, including business development. What follows is a more detailed introduction to the development and implementation of a marketing plan.

The importance of a successful business development effort was memorably summarized by H. H. Richardson. A wealthy mother implored him, one day, to advise her son who aspired to be an architect. "What," she asked, "is the most important thing in architectural practice?" "Getting the first job!" Richardson replied. "Of course that is important," she agreed, "but after that what is most important?" "Getting the next job!" was Richardson's response.

The "how" of business development is something that can be taught as a series of tricks and pitches. Professionals are selling a service, not an encyclopedia or vacuum cleaner. Each firm has to be extremely creative in developing that approach which is exactly right for it, because a successful professional business development program is one that is molded to the unique personality of the firm.

The first steps in this molding process, as pointed out in the March article, are an internally consistent statement of the firm's goals and an objective analysis of the firm's strengths and weaknesses. Certain offices may want only prestige projects, the lion's share of which are obtained by what Morris Lapidus has labeled the "sky tower" firms. But if that is the firm's objective then the architect must chart a realistic business course that will eventually bring his office to a point where he is the natural choice for these commissions. A firm cannot expect to be chosen until it

knows how much and what type of work it wants, as well as how to build the strengths and minimize the weaknesses that will affect its selection.

The most important guide in this process should be what is known in other businesses as the "marketing concept." This concept, if it is well developed, can be used effectively not only to help sell professional services but also to improve the quality of the service sold. In simplest terms, this concept has been defined as "finding a need and filling it." Every client has needs which he expects the architect and engineer to understand and to fill.

How to identify the client's needs

Each client's needs are somewhat different, of course, but there are certain general if not universal expectations. The typical client wants an architectural firm that considers all aspects of the job—function, cost, schedule, esthetics, etc.—and designs effectively to meet the project's schedule. While meeting these practical requirements, the firm is still expected to produce attractive facilities.

Increasingly in today's complex milieu, professional firms are expected to deal effectively with the many management problem areas that affect so many projects. In addition to the normal and familiar procedural areas of management, clients are beginning to expect more and more of the professional's participation in such areas as community relations, prequalification of contractors, project financing, etc.

It is less simplistic than it sounds to say that clients want a professional who is easy to work with. The day of the prima donna is past, and the corporate client especially is accustomed to dealing at well defined levels of authority with the various aspects of their projects. So the professional firm must not only sell its overall capacity and specialized capabilities to carry out the project, it must also set up those capabilities in a way that will assure the complex client that the project will get the attention of the most senior and most qualified personnel available at key points in the procedure.

While the exact needs of particular

projects differ from client to client, groups of potential clients do share roughly similar categories of emphasis in their needs. For example, hospital clients typically consider an understanding of the facilities' operational requirements as paramount. Others, including many industrial clients and developers, rank project cost and schedule as their primary concerns.

As part of its initial planning effort, the firm should select and concentrate on several potential client and building types. Some concentration is necessary, for as even the largest, most diversified firms know, the broadside approach rarely works. The selection of target building types will naturally be guided by the principals' and staff's interest, the firm's long- and short-term objectives, the competition, the projected volume, whether or not the firm is or could be qualified to handle the project type, profitability, and many related issues.

Part of the process of narrowing the field down to two or more target groups (no firm should concentrate on just one because of the risk) will be research into the major problems facing each group: i.e., financing, operating methods, the need for flexibility, growth potential, siting problems, etc. Also, the firm should find out as much as possible about the strengths and weaknesses of other firms in the field, their presentation methods, the design selection process, and, of course, the target group's basic level of sophistication in construction programming and management—since all of these factors will affect the architect's own costs and methods of doing business.

While all of this research will have the effect of narrowing the field of target groups, it should not be regarded as simply a search for the easiest windfalls. The most fertile ground may indeed lie among clients with the most difficult or the most neglected problems. The search, in fact, is for a market for services within the professional's most outstanding potential.

Identify the target—then shoot straight

As we move from the general to the specific, the question becomes: "How does one identify and contact prospective clients within the target group?" Many professionals do not seem to realize that there are

usually at least three routes to each client: The architect contacts the client; an intermediary contacts the client; or the client contacts the architect. Virtually every successful firm uses all three, and there are neither ethical nor business reasons to favor one over another.

To illustrate typical approaches, let us look at one client group—hospitals. Many people know about a hospital's building plans long before the architect is selected. To name a few: hospital consultants, regional health planning agencies, government (Federal, state and local) health agencies, local newspapers, and, of course, hospital administrators.

Aggressive firms interested in hospital work might contact all of these sources directly to ask if they know of any proposed building plans and to express an interest in being of service if and when there is a need for the firm's capabilities. This, of course, implies those capabilities exist and are in some way documented. The direct approach requires backup by direct response to any client's expression of interest. There is another kind of backup implicit in and supported by more indirect approaches, such as attending the conventions every target group has, joining the group's associations and participating in its committees, etc.

One way to expand the potential use of intermediaries is through association with other firms. Several large firms, for example, have made a successful career of lending their national names and impressive experience to local architects who may have certain contact advantages but limited staff credentials for major projects.

The best and most frequently used intermediaries are friends and past clients. All firms should maintain close contact with as many people as possible—especially past clients. To quote one principal of a 600-man firm: "Everything leads somewhere."

How to get the client to come to you

The third category, that of client-initiated contacts, is the most desirable but, of course, the hardest to achieve. Most firms who enjoy a large number of unsolicited contacts received them as a result of satisfied clients and one or two well known projects. In fact, virtually every successful "design-oriented" practice can trace its reputation back to one or two early successful projects.

The impact of many of these projects can be assisted by an effective public relations program. Articles in the trade journals of the target client groups, newspaper features, places on client convention panels, etc. are the most effective. Too often a firm's public relations program is aimed at the design profession's trade journals, which are useful in building a firm's general reputation, but other architects are not clients. So if your building is published in

an architectural journal, see that the prestige of that event is made known to the client group as well as to your peers.

One further note on public relations: Robert Townsend in *Up the Organization* noted "We eliminated the P. R. staff. And we called in the top ten or so people in the company and the telephone operators and told them they were the P. R. department." The same advice applies to architectural firms. Outside consultants are worth their fees if—and only if—they write well, understand design and construction, and know a target client group well. Used carefully, however, to achieve specific tasks—such as writing and placing key articles, advising on the firm's marketing plan, or securing key introductions for speaking engagements—a firm of qualified consultants can be used to supplement the efforts of the firm's own staff.

Let your presentation show your wares in clients' terms

Whatever the route to a client, the next step is to convince the potential client to select your firm for a project. Although, unhappily, a few projects are awarded on the basis of contacts and pressures rather than qualifications, most are not. In fact, most clients try to choose on the basis of some rational criteria.

The major purpose of a firm's marketing and sales planning is to prepare itself to satisfy these criteria better than any other firm. The successful architectural business development effort must achieve this in order to provide the firm with a consistent means of differentiating itself from the many other offices competing for the same project. In other words, if you believe the firm should be selected for a project, find some way to demonstrate it *in the client's terms*.

Specifically, go back to the list of typical client needs at the beginning of this article. Each client presentation and support material should be structured to leave easily understood answers to each of the client's primary needs. Leading school boards, for example, want to be reassured on the chosen architect's understanding of educational concepts, ability to control costs and to have the new facility open for class at the beginning of the school year, the experience of the proposed project architect and principal in charge, etc. If the firm's demonstrable capabilities and experience do not provide these ready answers, then it must work to build its marketing strengths. Some firms do this by such techniques as hiring senior experienced staff; using strong consultants; and preparing special presentation materials. Several can trace large numbers of projects to their decision to take these steps. This is the "marketing concept" applied to architectural practice.

The various client contacts must also take into account who in the client's organization is listening. The late D'Orsey

Hurst, founder of our management consulting firm, noted that since fewer commissions are being awarded by a single individual, it is important to distinguish

- 1) "initiators" who establish the contact,
- 2) "influencers" whose goodwill is important but who don't make final decisions,
- 3) "permitters" who can narrow the list of firms under consideration
- 4) "deciders" who make the decision.

All of those are important, and contacts with each must be fitted to the client's particular needs. If, for example, one or all of the above are a committee, remember that many committees look for the "safe" decision. As one architect noted, selection committees—both corporate and public—"are as concerned with protecting themselves from criticism as they are in selecting the best firm. If the project is a doghouse, many committees will prefer to award it to a firm that has done eighty previous doghouses, for one can criticize them for awarding eighty-first." A firm that best meets the client's needs as well as makes the "safe" decision will consistently get a large share of projects.

Exactly how the effective message is transmitted—by oral presentation, slides, brochures or sky writing—depends on the client as well as the architect's own presentation capabilities. As long as it is relevant, expressed in the client's language, demonstrates an understanding and interest in the project, it is likely to be generally correct. In spite of how obvious these points are, however, it is a constant source of wonder to us that most firms use the same brochure, slide show, consultants and other "point-of-sale" material and approach for every client contact.

Marketing (the overall planning) and sales (the implementation of the plan) must be a dynamic process. Each project, presentation, new staff member, should contribute to the firm's next project. As a result the firm must continually learn from the answers to such questions as why it was chosen for or lost a project, what does new staff add to the firm's knowledge of a client type, or what changes are taking place in the firm's potential clients.

How much effort and cash investment should be devoted to all of the above steps will, like all other aspects, vary in accordance with the firm's objectives. A firm with national aspirations will typically spend more than one wishing to stay local and small. Typically the amount spent, including salaries will range from five to eighteen per cent of the firm's income. Whatever it is, it should be carefully budgeted and then controlled in accordance with the guidelines outlined for financial planning and control which will be continued in the next article in this series.

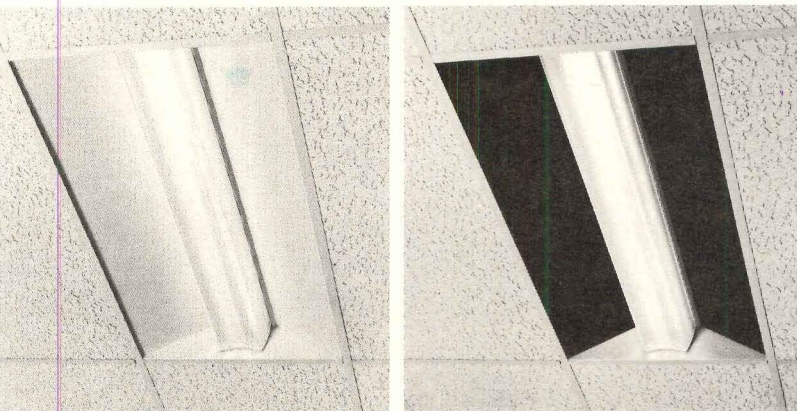
Percepta™ Convertible Coffer.

Designed for visual comfort.

And styled for visual appeal.



For design flexibility, the PERCEPTA Convertible Coffer can be installed with ceiling tile side panels (above), or matte white or black panels (below).



The introduction of PERCEPTA by Holophane brought an important new advance to lighting. A luminaire that eliminates veiling reflections (reflected glare). And thereby improves task seeability in places where eyes work the hardest. Schools. Offices. Libraries. Computer centers.

And with PERCEPTA, fewer lamps are needed to produce the required "effective" footcandles (E.S.I.). So your electric power and air conditioning requirements are substantially reduced, decreasing your operating costs and conserving energy resources.

Until now, PERCEPTA has been available only for surface-mounted applications.

But now you can have all the PERCEPTA benefits in a recessed unit as beautiful as it is effective.

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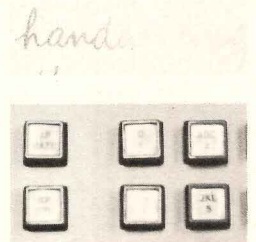
Install it in suspended ceilings with optional matte white or black metal side panels. Or paint the panels any color you wish. Or use ceiling tile instead. No matter which you choose, the glare-free light distribution is unaffected.

You can also choose between 430 and 800 ma luminaires to meet your specific lighting needs. Both are available in recessed or surface-mounted PERCEPTA units.

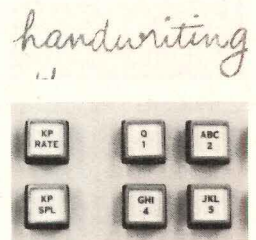
Highest visual comfort. Unusual flexibility. Lower power consumption. PERCEPTA Convertible Coffer offers all three.

See your Holophane sales engineer for details. Or write Dept. AR-4, Holophane Company, Inc., 1120 Avenue of the Americas, New York, New York 10036.

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Holophane®

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Chrysler Airtemp introduces-

FACTS

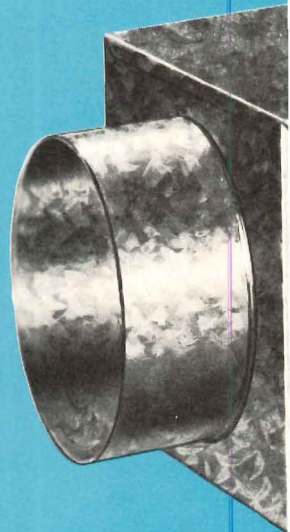
a whole new dimension in
engineered climate control system

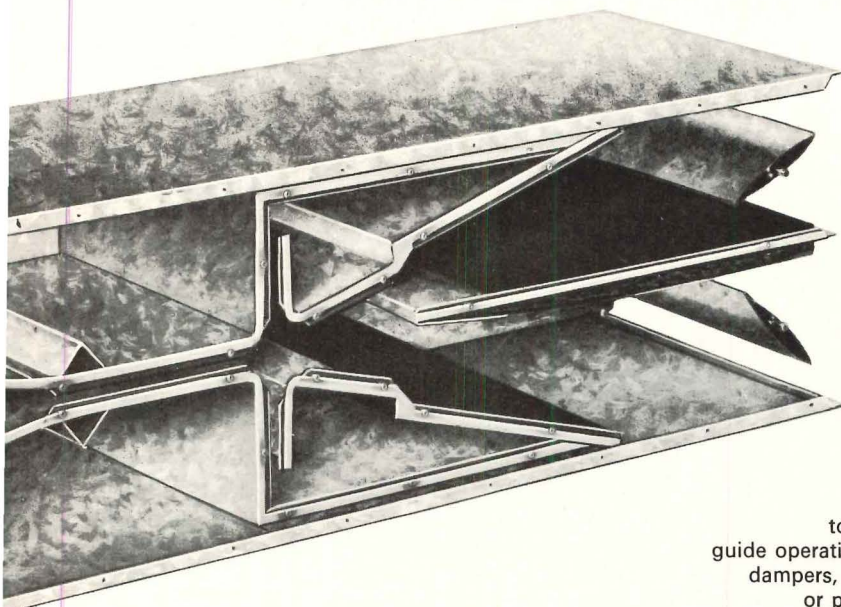
AIRTEMP DIVISION



CHRYSLER
CORPORATION

*Fluidic Air Control Terminal System





**The only moving part
in fluidic terminal unit
is on the wall**

Simple bi-metal thermostat reacts to temperature changes immediately to guide operation of system. There are no automatic dampers, bellows operators, linkages, electrical or pneumatic connections to make noise, require maintenance, or wear out.

A variable air volume terminal with no moving parts • No limitations on ceiling construction or type of outlet • Close temperature control $\pm 3/4^{\circ}\text{F}$ • Quiet • Lower cost

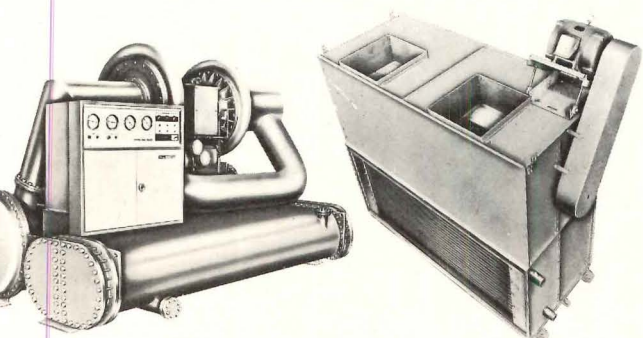
Chrysler Airtemp's F.A.C.T.S. eliminates the restrictions, the noisemakers, and the costly specials that plague other variable air volume systems. Customers get quieter, more precise comfort, yet pay less to purchase, install, operate, and maintain the system.

F.A.C.T.S. delivers air to room at full velocity and attains its design throw under all load conditions. No throttling or dumping of air. No need for delicately counterbalanced discharge grilles or spe-

cial ceiling diffusers. And the constant fan volume eliminates the problems involved with varying volumes and varying duct pressures.

Patented fluidic terminal units are manufactured in sizes from 120-2400 cfm. Several outlets can easily be ducted from a single unit. System-matched chillers and air handling units customize F.A.C.T.S. to wide variety of applications. Ideal for office buildings, schools, institutions. Mail coupon today for full details.

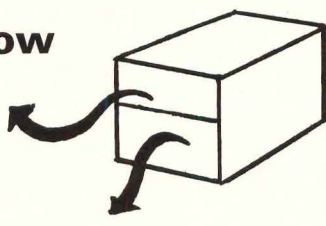
System-Matched Line of Chillers and Air Handling Units



Water Chillers—Wide selection of space-saving centrifugal or reciprocating models for use with Airtemp air handlers. Capacities from 10-850 tons.

Air Handling Units—Airtemp offers a complete line of central station air handlers for use with water chillers. Air capacities from 800 to 37,000 cfm.

**show me how
it works!**



Airtemp Division
1600 Webster St.
Dayton, Ohio 45404

Gentlemen:

- Have your representative call for F.A.C.T.S. demonstration.
- Rush new Data Booklet containing complete details on new F.A.C.T.S. System.

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TITLE _____

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CITY _____ STATE _____ ZIP _____

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

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



FOLLANSBEE

FOLLANSBEE STEEL CORPORATION
FOLLANSBEE, WEST VIRGINIA

NORMAN R. McGRATH photo

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

For more data, circle 45 on inquiry card

Can the housing census measure quality?

The nation's housing stock, or inventory, is the composite total of every dwelling unit (including raised ranch, condominium, mobile home and slum tenement) in existence at a given point in time. It stood at 68.7 million units when the 1970 Housing Census was taken, a gain of over 10 million since 1960. That's a lot of homes, but the gain in the previous decade—1950 to 1960—was more than 12 million. A slowdown in the rate of progress? That depends on how you look at it.

Additions to the housing stock are not just, "more units" added to a stable base of dwellings. They are a net figure—the gain that exists after losses due to natural disasters, demolitions or abandonments are subtracted from the total. And, since a significant portion of the losses—most of those due to demolitions and abandonments, anyway—are lower value, or substandard housing, there exist distinct quality factors that are not at all reflected in a "numbers only" analysis of changes in the housing stock.

The Government gave up rating housing units as "sound," "deteriorating," or "dilapidated" with the last census, because they felt that it was too subjective a criterion. The results supposedly varied greatly from one census enumerator to another, despite specific sets of instructions on what factors to look for in evaluating any given structure.

There do exist a number of factors in the housing census that can help us evaluate the changes in the quality of the housing stock that have taken place over time, though. One that should serve as a significant indicator of quality is the condition of the plumbing facilities in the structure.

As recently as 1950, one-fourth of the homes in the nation lacked separate bathtub or shower facilities. By 1960, this figure was halved to 12 per cent, or 6.9 million units. And by the 1970 census, it had shrunk to 3.3 million units, or five per cent. Similar progress was discernible with respect to flush toilet facilities and piped-in-water, though in 1970, there were still 2.7 million units in the nation lacking an indoor toilet, and 1.7 million units that still relied on an outside well or spring for their water supply.

Regionally, the South rated the lowest

over-all quality score in the last census. With 31 per cent of the nation's dwelling units in 1970, it accounted for 61 per cent of the units that were deficient in bathtub or shower facilities. The figures for flush toilet facilities and piped-in-water show a similar regional split. Lack of progress in the South? Quite the contrary. Of the 3.6 million units lacking bathtub or shower facilities that were removed from the housing stock, or renovated between 1960 and 1970, 1.9 million, over half, had been in the South.

It's not so much the plumbing as where the plumbing is

Terms such as "the housing problem," or the "housing crisis," so much in vogue in recent years, are not normally associated with specific regions of the country, though. These terms have a distinctly urban accent. But, the data for the nation's central cities, are not very revealing—at least as far as things like plumbing facilities are concerned. While one-third of the nation's housing stock is located in cities, only 17 per cent of the units deficient in over-all plumbing facilities are found there. When we broaden the picture to look at the central cities and their surrounding suburban areas, that is, the metropolitan areas of the country, the situation is about the same. Roughly two-thirds of the nation's housing stock is located in metropolitan areas, but only one-third of the units deficient in over-all plumbing facilities are in those areas. And, the data for the major metropolitan areas does not behave much differently either, disclaiming any contention that we are dealing with a "big city" problem. The top ten metropolitan areas of the country, where 22 per cent of the nation's dwelling units are located, account for less than ten per cent of the units deficient in plumbing facilities.

There are aspects of the central city housing stock that point to something less than ideal conditions. This is particularly true among rental units. The median number of rooms in central units. The median number of rooms in central city apartments was 3.8, for instance, while rental units in the nation as a whole had 4.0 rooms. And, for this smaller apartment, the city dweller pays a dollar more a month in rent than

the national average. Basically, the same conditions were found in the 1960 census also without relation to actual room size.

But, the statistical portrait of the nation's stock of dwelling units painted in the 1970 Housing Census does not seem to effectively communicate what housing conditions are really like in this country. Basically, it fails in three ways, but in all fairness only the following one can be directly blamed on its internal design: despite the mass of data on plumbing facilities, numbers of rooms, and the like that is presented about the nation's dwelling units, we still do not have an effective measure of the actual "condition" those units are in. Scrapping the judgmental criteria "sound," "deteriorating" and "dilapidated" because of "serious problems with response reliability," as was done in the 1970 Housing Census, did not strike me as directly facing the issue. Perhaps a change in terminology or more effective training of census takers would have been better alternatives to simply deleting that section of the survey. If anything, this part of the survey should have been expanded to include some indication of the over-all size and layout of the dwelling unit. A room count is not always an effective measure of living space.

Another failing of the housing census—and this is a failing of most statistical presentations—is that it offers no way of matching the observed data with the human condition to which it relates. That is to say, in human terms, there is a distinct difference between not having piped-in-water or a flush toilet on a small farm in Kansas and not having these amenities in downtown Philadelphia. We can appreciate the difference, but we are unable to place a numerical value on it.

Thirdly, and this is in part related to the second failing, there is no provision for judging the social context in which the nation's housing inventory is set. Housing is only one facet of a larger community network. It seems logical that a structurally sound dwelling unit in a crime-ridden slum cannot be given equal weight in any headcount of housing with a similar unit in a suburban bedroom community. But, again, all we have been able to do so far, is appreciate the difference.

McQuay® Hi-Line Fan Coil Units reduce installed costs without reducing comfort



McQuay's new upright Hi-Line Seasonmaker® Fan Coil Units can save 15% and more on installed costs but still offer greater flexibility than conventional units. They're shipped with all chilled, hot water and drain risers and all internal control systems already installed. The contractor merely places the units above each other on the floors, sweats the factory-supplied couplings together, connects the power and plugs in the external thermostat. All units produce equal water pressure drop, virtually eliminating system balancing.

Hi-Line units can have single, double, triple and top duct discharge to service one room or a number of rooms. Five sizes from ½ to 2 tons with 200 to 800 CFM. Available features include standard and low-flow coils, with or without reheat coils, for two-pipe and four pipe systems; both full and supplementary electric heat; fan cycle control; 2-way and 3-way valve cycle control; single stage thermostats with manual or automatic heating-cooling changeover, and two-stage and sequenced heating-cooling thermostats.

For complete information on these upright Hi-Line Seasonmaker Fan Coil Units, ask your McQuay representative for Catalog 770.

Or write McQuay Division, McQuay-Perfex Inc., Box 1551, 13600 Industrial Park Blvd., Minneapolis, Minnesota 55440.

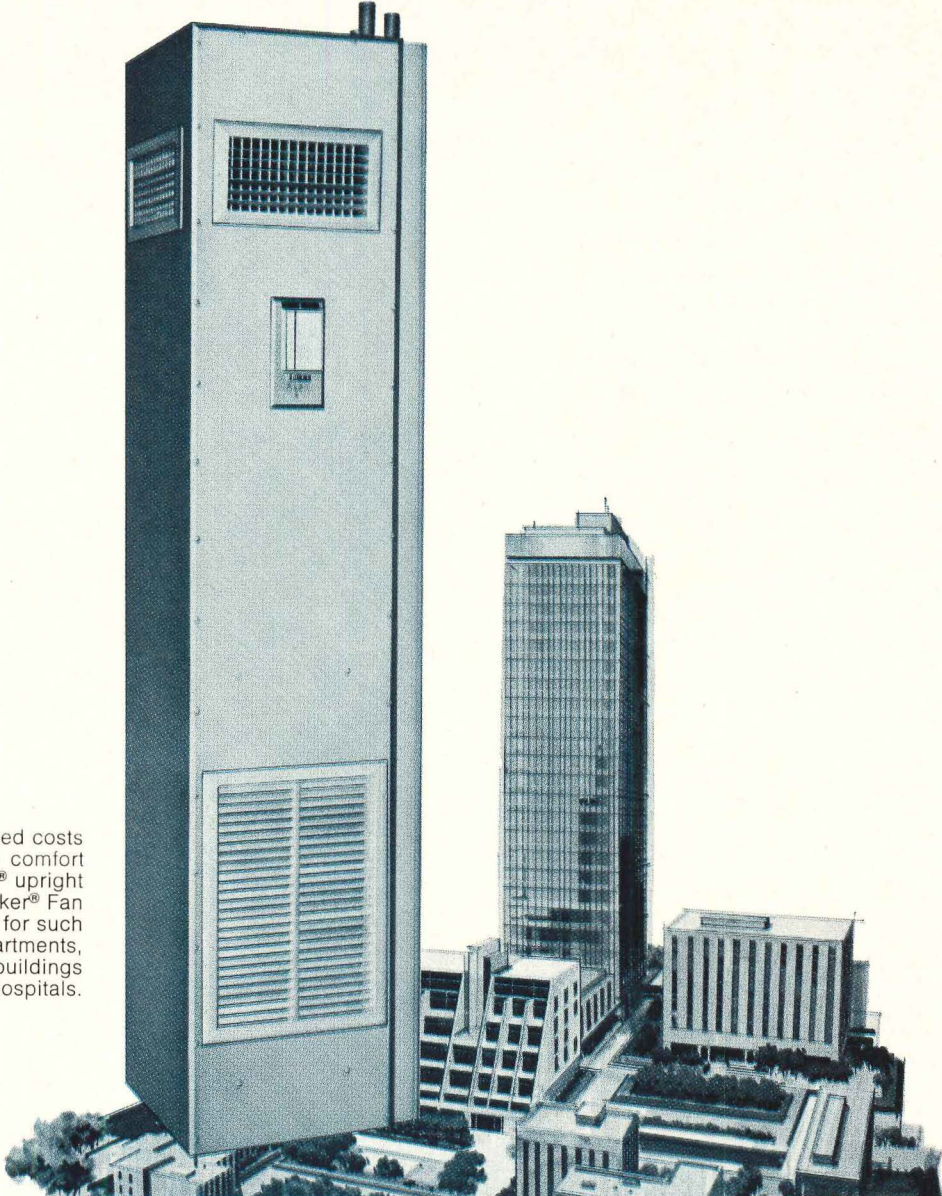
Look to the systems leader . . .



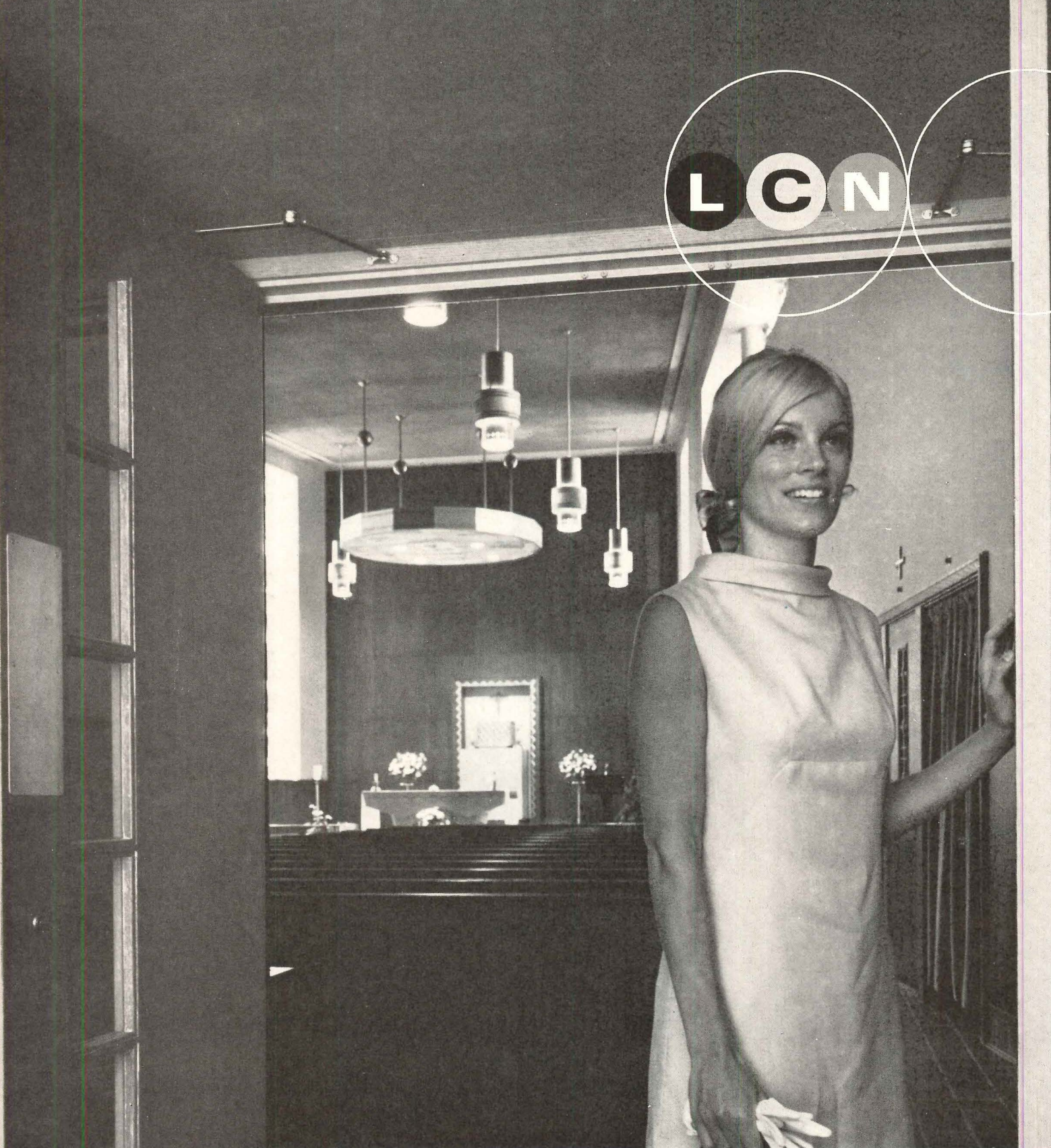
McQuay
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McQUAY-PERFEX INC.

The cost saver



Reducing installed costs without reducing comfort makes McQuay® upright Hi-Line Seasonmaker® Fan Coil Units ideal for such applications as apartments, hotels, office buildings and hospitals.



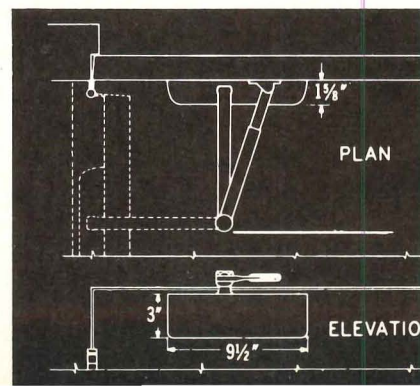
Cardinal Cushing General Hospital, Brockton, Mass. • Kennedy, Kennedy & Keefe—Architects, Boston, Mass.

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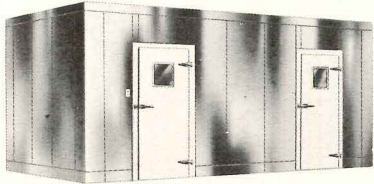
LCN Closers, Princeton, Illinois 61356

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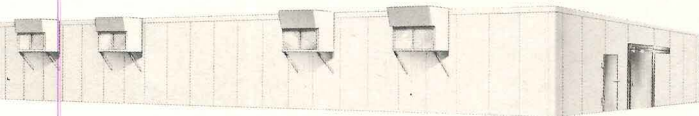


*They
love us
in...*



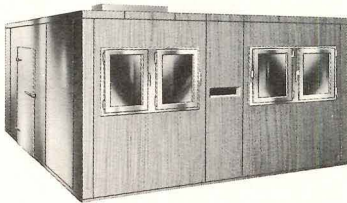
Notre Dame, Ind.

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



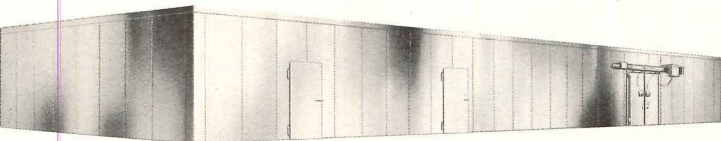
Washington, D.C.

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



Los Angeles, Calif.

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



Clearwater, Fla.

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

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nwide, Vollrath modular walk-ins have proven their
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BUILDING COST RISE SLOWS DOWN

Average building costs have gone up 2.4 per cent in the last six months instead of 4.5 per cent which might have been expected from previous increase rates. The national average now stands at 7.7 per cent over a year ago.

This apparent slow-down in the rate of building cost inflation was revealed in a Dodge survey conducted in March of 1972. The Dodge surveys regularly cover 182 metropolitan areas, and composite price figures or indexes are based upon wage rates for 10 building trades and prices of five key materials weighted for their influence on the overall building cost.

The reasons for the moderating rate have to do with market conditions as much as they do with Phase-2 constraints, according to most observers.

School equipment costs

Chalkboard: slate 3/8-in.	3.30	SF
porcelain steel on 1/4-in. hardboard	2.60	SF
plastic coated 1/4-in. hardboard	1.65	SF
ceramic enamel glass, 1/4-in.	2.80	SF
sliding, custom design	4.50	SF
Chalktrap, aluminum	2.20	LF
Headrail, 2 X 1 1/4-in. aluminum	0.90	LF
Map rail, 2-in. aluminum	0.90	LF
Edge moulding, 1 1/2-in. aluminum	0.80	LF
Tackboard, 1/4-in cork	1.30	SF
with 1/2-in plywood		
backing and frame	3.40	SF

		1941 average for each city = 100.				% change last month
		Current Indexes				
Metropolitan area	Cost differential	Current Indexes				% change last month
		non-res.	residential	masonry	steel	
APRIL 1972						
U.S. Average	8.3	376.0	353.0	368.2	358.9	+ 10.0
Atlanta	7.8	478.6	451.2	465.7	455.5	+ 11.0
Baltimore	7.9	395.1	371.4	384.1	373.9	+ 10.0
Birmingham	7.3	345.2	321.0	333.0	328.3	+ 9.0
Boston	9.0	382.6	361.4	379.0	367.9	+ 14.0
Buffalo	9.1	419.4	393.8	414.3	400.5	+ 9.0
Chicago	8.4	429.1	408.0	414.9	407.8	+ 9.0
Cincinnati	8.7	405.5	381.5	394.5	384.7	+ 14.0
Cleveland	9.3	421.4	396.5	411.7	401.9	+ 8.0
Columbus, Ohio	8.3	400.7	376.2	388.8	381.5	+ 8.0
Dallas	7.6	368.5	356.9	361.4	354.4	+ 11.0
Denver	8.1	403.1	379.2	398.4	384.6	+ 7.0
Detroit	9.5	421.9	401.9	421.4	405.6	+ 10.0
Houston	7.6	358.8	336.9	350.4	343.6	+ 9.0
Indianapolis	8.0	354.4	332.8	345.6	337.9	+ 12.0
Kansas City	8.1	353.6	334.1	343.9	336.7	+ 10.0
Los Angeles	8.2	417.2	381.3	405.5	397.3	+ 12.0
Louisville	7.7	374.2	351.4	366.6	358.1	+ 12.0
Memphis	7.7	358.4	336.5	346.5	340.6	+ 9.0
Miami	8.0	396.6	377.8	387.0	378.5	+ 10.0
Milwaukee	8.5	429.0	402.8	423.7	410.1	+ 8.0
Minneapolis	8.9	406.5	382.4	400.3	388.4	+ 10.0
Newark	8.9	374.5	351.7	369.2	360.1	+ 9.0
New Orleans	7.3	355.8	335.8	350.2	342.4	+ 9.0
New York	10.0	416.3	387.0	403.4	393.3	+ 10.0
Philadelphia	8.7	398.9	380.0	391.9	382.7	+ 13.0
Phoenix	7.9	214.2	201.1	206.7	203.3	+ 10.0
Pittsburgh	8.8	368.9	347.0	362.1	351.6	+ 10.0
St. Louis	8.7	390.9	368.9	385.9	373.9	+ 11.0
San Antonio	7.6	144.7	135.9	141.3	138.0	+ 3.0
San Diego	8.0	149.5	140.4	146.5	143.1	+ 7.0
San Francisco	9.3	547.6	500.5	543.8	525.9	+ 14.0
Seattle	8.6	372.8	333.6	369.3	355.2	+ 5.0
Washington, D.C.	7.8	354.9	333.3	344.3	336.8	+ 12.0

Cost differentials compare current local costs, not indexes.

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

1941 average for each city = 100

Metropolitan area	1971 (Quarterly)										1972 (Quarterly)							
	1962	1963	1964	1965	1966	1967	1968	1969	1970	1st	2nd	3rd	4th	1st	2nd	3rd	4th	
Atlanta	298.2	305.7	313.7	321.5	329.8	335.7	353.1	384.0	422.4	424.0	445.1	447.2	459.2	472.5				
Baltimore	271.8	275.5	280.6	285.7	280.9	295.8	308.7	322.8	348.8	350.3	360.5	362.5	381.7	388.1				
Birmingham	250.0	256.3	260.9	265.6	270.7	274.7	284.3	303.4	309.3	310.6	314.6	316.4	331.6	340.4				
Boston	239.8	244.1	252.1	257.8	262.0	265.7	277.1	295.0	328.6	330.0	338.9	341.0	362.0	377.3				
Chicago	292.0	301.0	306.6	311.7	320.4	328.4	339.5	356.1	386.1	387.7	391.0	393.2	418.8	422.8				
Cincinnati	258.8	263.9	269.5	274.0	278.3	288.2	302.6	325.8	348.5	350.0	372.3	374.3	386.1	399.9				
Cleveland	268.5	275.8	283.0	292.3	300.7	303.7	331.5	358.3	380.1	381.6	391.1	393.5	415.6	415.2				
Dallas	246.9	253.0	256.4	260.8	266.9	270.4	281.7	308.6	327.1	328.6	341.4	343.4	357.9	364.9				
Denver	274.9	282.5	287.3	294.0	297.5	305.1	312.5	339.0	368.1	369.7	377.1	379.1	392.9	398.3				
Detroit	265.9	272.2	277.7	284.7	296.9	301.2	316.4	352.9	377.4	379.0	384.6	386.8	409.7	416.9				
Kansas City	240.1	247.8	250.5	256.4	261.0	264.3	278.0	295.5	315.3	316.6	329.5	331.5	344.7	348.7				
Los Angeles	276.3	282.5	288.2	297.1	302.7	310.1	320.1	344.1	361.9	363.4	374.2	376.4	400.9	407.8				
Miami	260.3	269.3	274.4	277.5	284.0	286.1	305.3	392.3	353.2	354.7	366.8	368.9	384.7	391.5				
Minneapolis	269.0	275.3	282.4	285.0	289.4	300.2	309.4	331.2	361.1	362.7	366.0	368.0	417.1	401.7				
New Orleans	245.1	284.3	240.9	256.3	259.8	267.6	274.2	297.5	318.9	320.4	327.9	329.8	341.8	350.9				
New York	276.0	282.3	289.4	297.1	304.0	313.6	321.4	344.5	366.0	367.7	378.9	381.0	395.6	406.5				
Philadelphia	265.2	271.2	275.2	280.8	286.6	293.7	301.7	321.0	346.5	348.0	356.4	358.4	374.9	394.2				
Pittsburgh	251.8	258.2	263.8	267.0	271.1	275.0	293.8	311.0	327.2	328.7	338.1	340.1	362.1	364.5				
St. Louis	255.4	263.4	272.1	280.9	288.3	293.2	304.4	324.7	344.4	345.9	360.0	361.9	375.5	385.5				
San Francisco	343.3	352.4	365.4	368.6	386.0	390.8	402.9	441.1	465.1	466.8	480.7	482.6	512.3	535.3				
Seattle	252.5	260.6	266.6	268.9	275.0	283.5	292.2	317.8	341.8	343.3	347.1	349.0	358.4	363.0				

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

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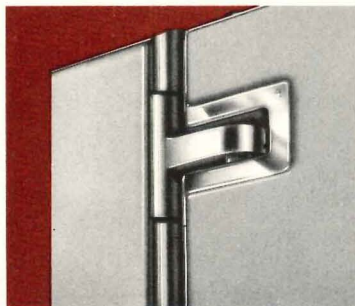


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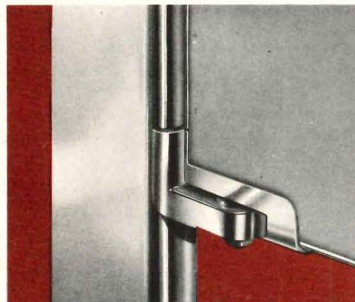
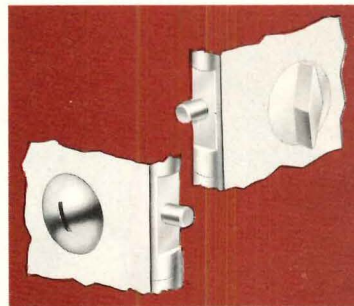
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- flush hinges
- concealed latches
- proven performance
- genuine value

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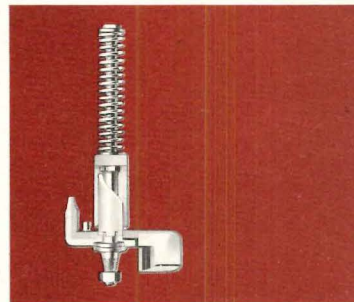
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CONCEALED LATCH... no exposed fasteners, stainless steel bolt, concealed and flush-mounted, smooth, vandal-proof operation.



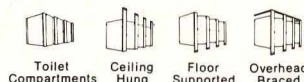
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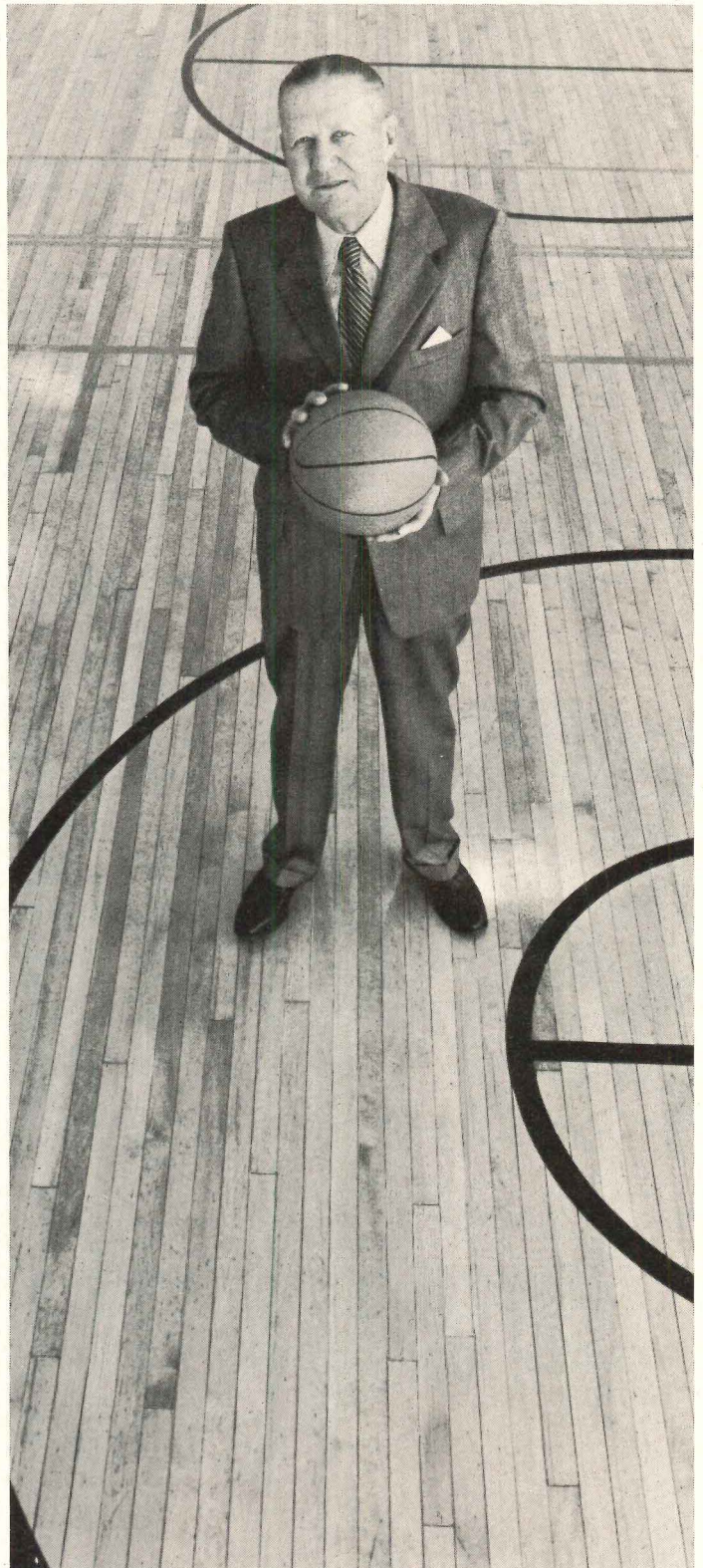
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*Coach of U. S. Olympic Basketball Team 1964, 1968, 1972. Head Coach and Director of Athletics, Oklahoma State University, 1934-1970.

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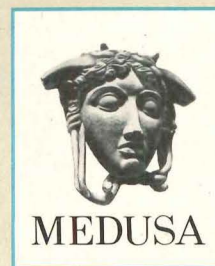
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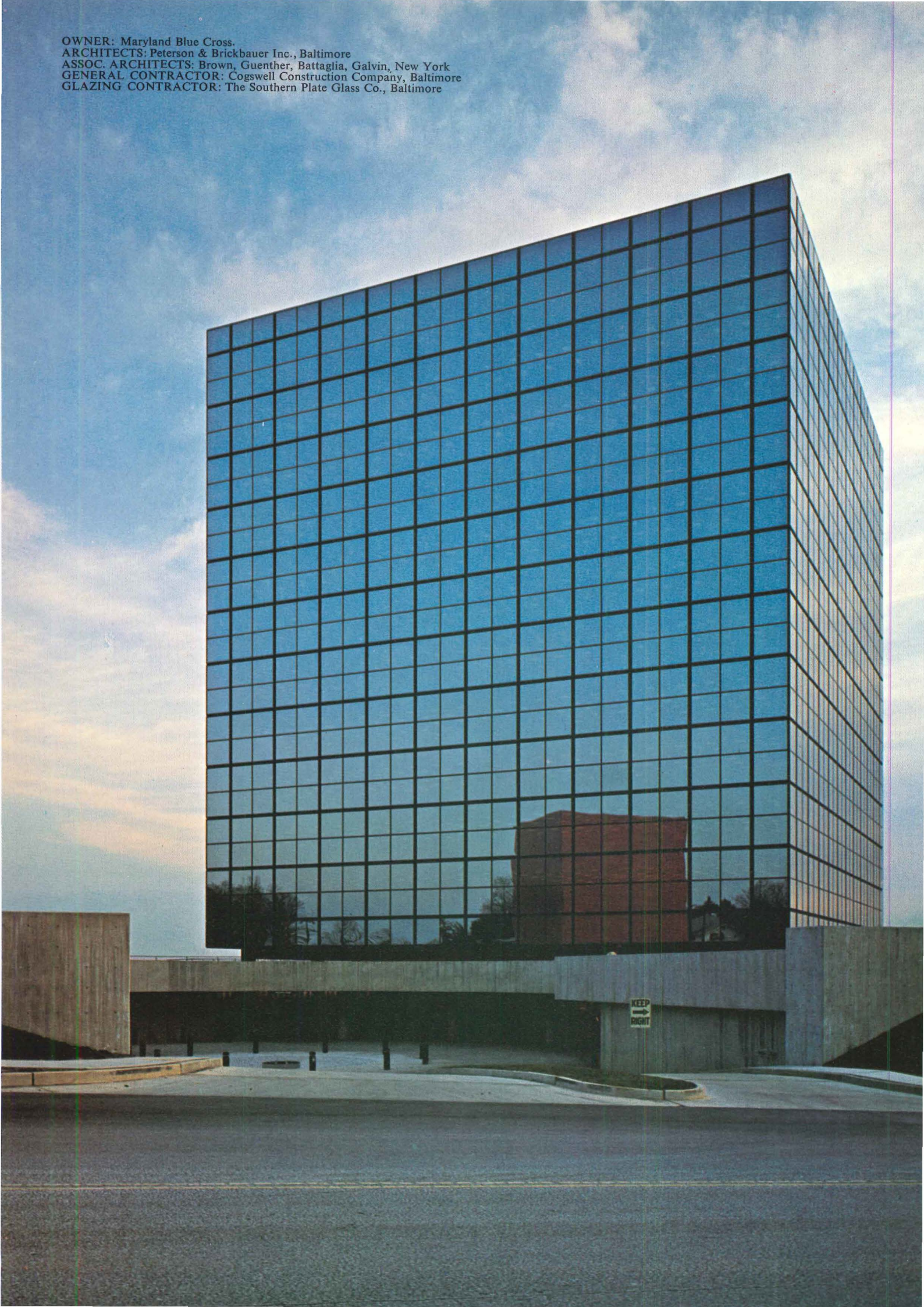
For the first time in the long history of portland cements, the architect, or precast producer has available a veritable rainbow of new Colored Portland Cements . . . from Medusa . . . the Cementmaster. All are pigmented, intermilled white cement base products manufactured under a strict scientific process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

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GLAZING CONTRACTOR: The Southern Plate Glass Co., Baltimore



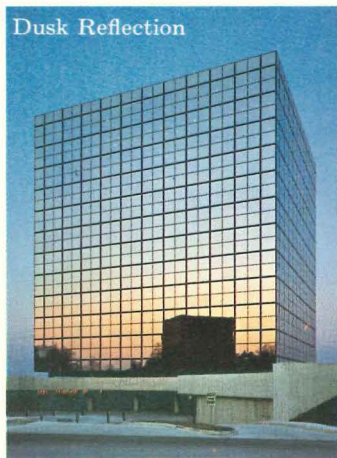
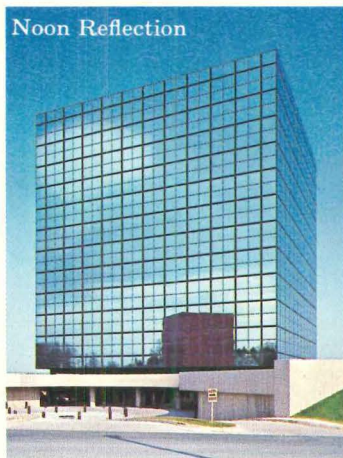
How Vari-Tran[®] helped Maryland Blue Cross establish a good neighbor policy.

Problem: Build a large, efficient office complex surrounding a new residential community. And in the process enhance the beauty of the neighborhood.

Solution: Turn the building into a piece of sky-sculpture with Vari-Tran[®] Thermopane[®] insulating glass made with Vari-Tran reflective glass.

Because Vari-Tran reflects the sun's heat and light, it greatly reduces air-conditioning needs and results in reduced construction and operating costs. In addition, Maryland Blue Cross Inc., Vari-Tran's aesthetics are what the doctor ordered.

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Vari-Tran, the result is an ever-changing reflected skyscape. On clear, cloudless days, the building takes on myriad solid hues which change throughout the day.

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provide comfort and save money, too.

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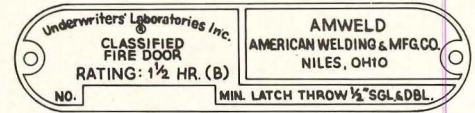


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The glass that cuts building costs

Amweld puts the heat on fire door costs

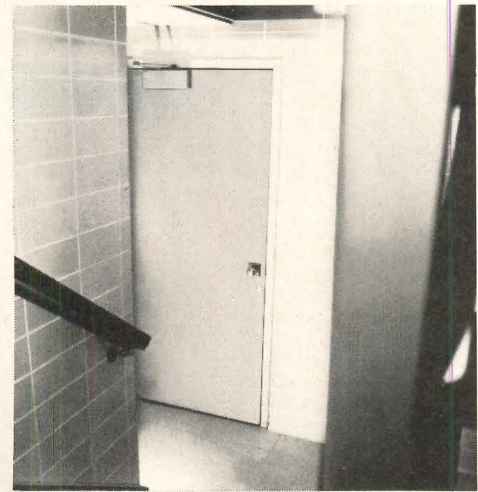
We've added Underwriters' "B" label to our polystyrene core door to give you an economical fire door. It's our Super Core, available in either 1 $\frac{3}{8}$ " or 1 $\frac{3}{4}$ " thickness.



Super Core fire door offers fire protection, plus excellent sound retardation, moisture resistance, and cold weather insulation characteristics at an economical price.

Super Core is the reason.

A rigid, pre-cured, pre-formed polystyrene core is permanently bonded to cold-rolled steel panels with structural thermosetting adhesive. This combination gives our door its inner strength, assures dimensional stability, and results in a smooth, attractive exterior. There is no sacrifice in quality or materials. You get the same kind of precisely engineered, hard-working product that you've come to expect from Amweld.



Specify Amweld Super Core. It's the perfect door for stairwells or other areas requiring fire protection. And, it's available in 18- or 20-gauge, full-flush or seamless, in a wide range of widths and heights.

Want to know more? Contact your Amweld distributor or call us. Amweld Building Products, 370 Plant St., Niles, Ohio 44446. Phone (216) 652-9971.

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A division of The American Welding & Manufacturing Company, Warren, Ohio



*Krueger Sequence Seating at Mascenic Regional High School; New Ipswich, N. H.
Designer: Frank Torrey, Silver Spring, Md.*



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Tablet-arm seating, beam-mounted for floor or riser applications, or floor-mounted pedestals . . . plain or upholstered fiberglass shells . . . fixed or folding tablet. Arrangements in rows, staggered, curved in-line or other configurations to fit your needs. Floor-mounted units adaptable to floor pitch. Posture curved, durable, fiberglass shells. Comprehensive room planning and consulting engineer services are available. *Write for details.*

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Lechmere shows its true colors

Life's a little brighter for customers at one of New England's largest hardgoods stores, Lechmere Sales, at Liberty Tree Mall.

The reason? GTE Sylvania's Metalarc HID lamps.

Thousand-watt Metalarcs flood the outside. And 360 four-hundred-watt Metalarc/C's light up the inside.

Customers feel secure as they walk through the parking lot, because

with powerful Metalarcs they can see and be seen. These lamps deliver nearly twice the light of ordinary 1000-watt mercury lamps. And their color rendition is so good, a customer can spot his car by its color.

Inside the store, phosphor-coated Metalarc/C lamps spread a warm, natural light. The merchandise stands out in its own true colors. Reds don't look purplish. Yellows don't look

greenish. Blues don't look garish. (And people don't look sickish.)

Customers don't come back complaining, "Gee, that wasn't the color we thought we saw in the store."

The entire store is lit up so brightly and the merchandise can be seen so clearly, that shopping is a pleasure.

Metalarc/C's even make life a little brighter for management.

Compared with fluorescents or



-inside and out.

incandescents, a lot fewer lamps and fixtures are needed. So you can design better-looking ceilings, yet pay less for installation and maintenance.

To top it off, Metalarc/C's last a long, long time. The newest 400-watt lamps are rated for an average life of 15,000 hours. That's about 4 years, if the store stays open 6 days a week from 10 to 10.

We'd like you to know the ins and

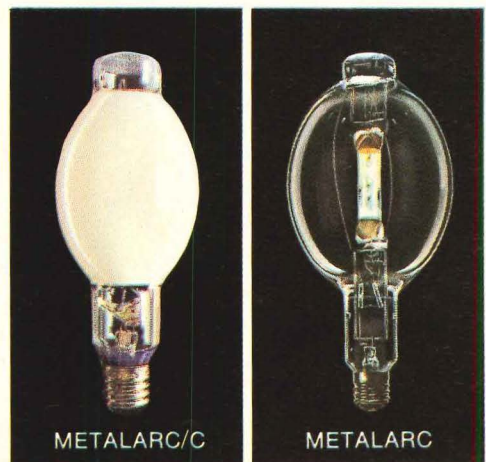
outs of Metalarc lighting.

Talk to your nearest GTE Sylvania sales representative or independent electrical distributor.

And learn the whole, colorful truth.

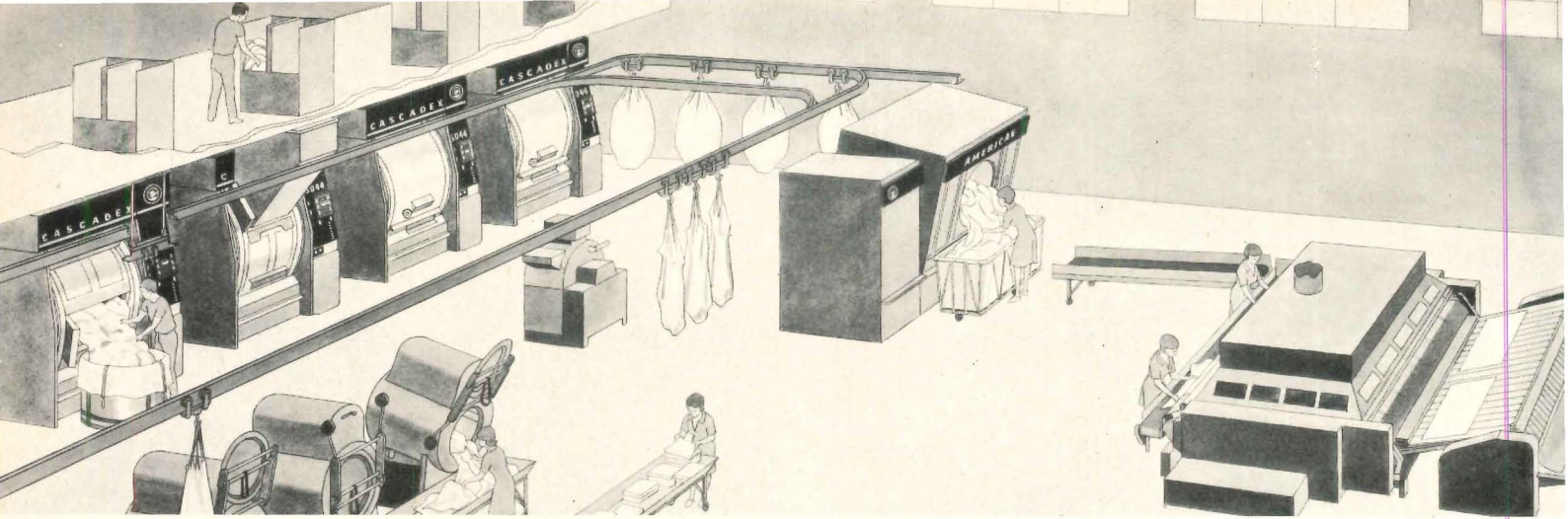
To find their names, look under "Lighting" in the Yellow Pages. Or write to: Sylvania Lighting Center, Danvers, Massachusetts 01923.

GTE SYLVANIA



METALARC/C

METALARC



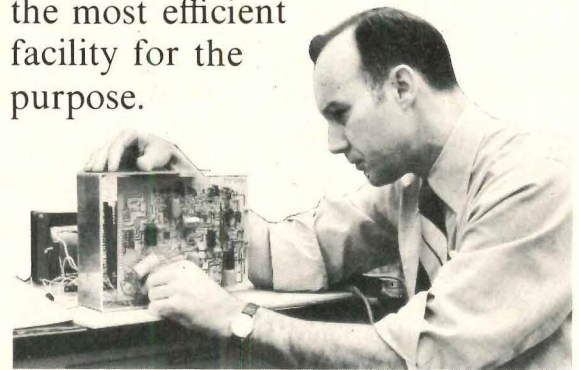
How to plan an up-to-date laundry that stays up-to-date

Laundry needs—in terms of type of equipment and provision for flexibility—have changed dramatically. New synthetic fabrics and rising labor costs have called for new kinds of equipment, greater degrees of automation—and the adaptability of both to changes in the size and sort of work loads.

In planning laundries to meet these conditions, you can count on uniquely qualified help from American.

Our credentials—over and above our long experience—include the industry's most extensive R&D program and the new and

laundry operations of today. For dependable help in planning up-to-date laundries—that stay up-to-date—call on American. We can help you with complete floor plans, equipment recommendations, flow diagrams, capacity and personnel data—anything you need to provide the most efficient facility for the purpose.



Tomorrow's equipment is ready today at American.

The American Modular Industrial Drycleaning System

The American Slant Line Washer

The 6044 Cascadex Washer/Extractor

The Super Thematic Drying and Conditioning Tumbler

The Tru-Feed Spreader Feeder

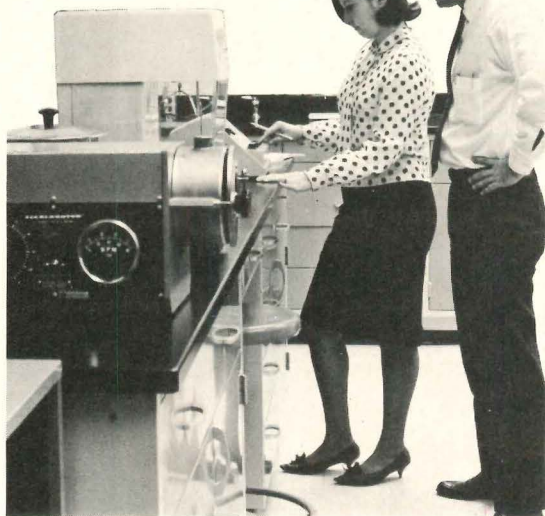
The Foltronic Primary Folder

The Trumatic II Primary Folder

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improved process machinery that it has produced—machinery that is now proving itself in the “new”

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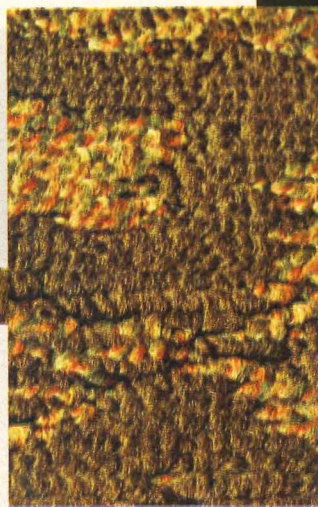
Lea & Perrins got saucy on Mohawk Carpet of Herculon®...



...but not for long.

Mohawk's Omnibus carpet of HERCULON* had a legitimate claim to fame. Very rare and juicy. And we covered its "Quadrille" pattern with spicy Lea & Perrins Worcestershire Sauce. But that great meal didn't last long. It was cleaned up quickly and easily, leaving nary a trace.

The stain resistance of HERCULON olefin fiber, coupled with its common resistance to abrasion and fading, gives you the perfect carpet for any commercial installation.



Lea & Perrins couldn't make a lasting impression on Mohawk's Omnibus carpet of HERCULON. But its "Quadrille" pattern will make a beautiful impression on your clients.

For detailed information on HERCULON olefin fiber see Sweet's **S** Light Construction, Architectural and Interior Design files. Or, write Fibers Merchandising, Dept. 209. Hercules Incorporated, Wilmington, Delaware 19899 for free 24 page booklet.

Specify carpet of Herculon® by Mohawk



HERCULES

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Shown above: Flush Mounted CP-130 Control Panel and Ceiling Mounted DI-6 Ionization Detector



Pyr-A-Larm, unchallenged leader in early warning fire and smoke detection, now offers a system with smartly styled detectors and control equipment to blend with any commercial decor . . .

But more important, the Pyr-A-Larm system offers the four major methods of fire detection making it adaptable to any application. These are: Ionization Detection which is capable of detecting a fire BEFORE there is any visible smoke, flame or appreciable heat; Visible Smoke Detection; Flame Detection and Thermal (heat) Detection. In the event of fire, the detector signals the control panel which sounds the alarm, and if desired, activates the fire extinguishing system, closes smoke doors and dampers and sends a signal to the fire department.

The low-voltage detection methods are the same as those in Pyr-A-Larm high-voltage systems installed in major industrial plants, in government buildings, museums, universities and other institutions throughout the world.

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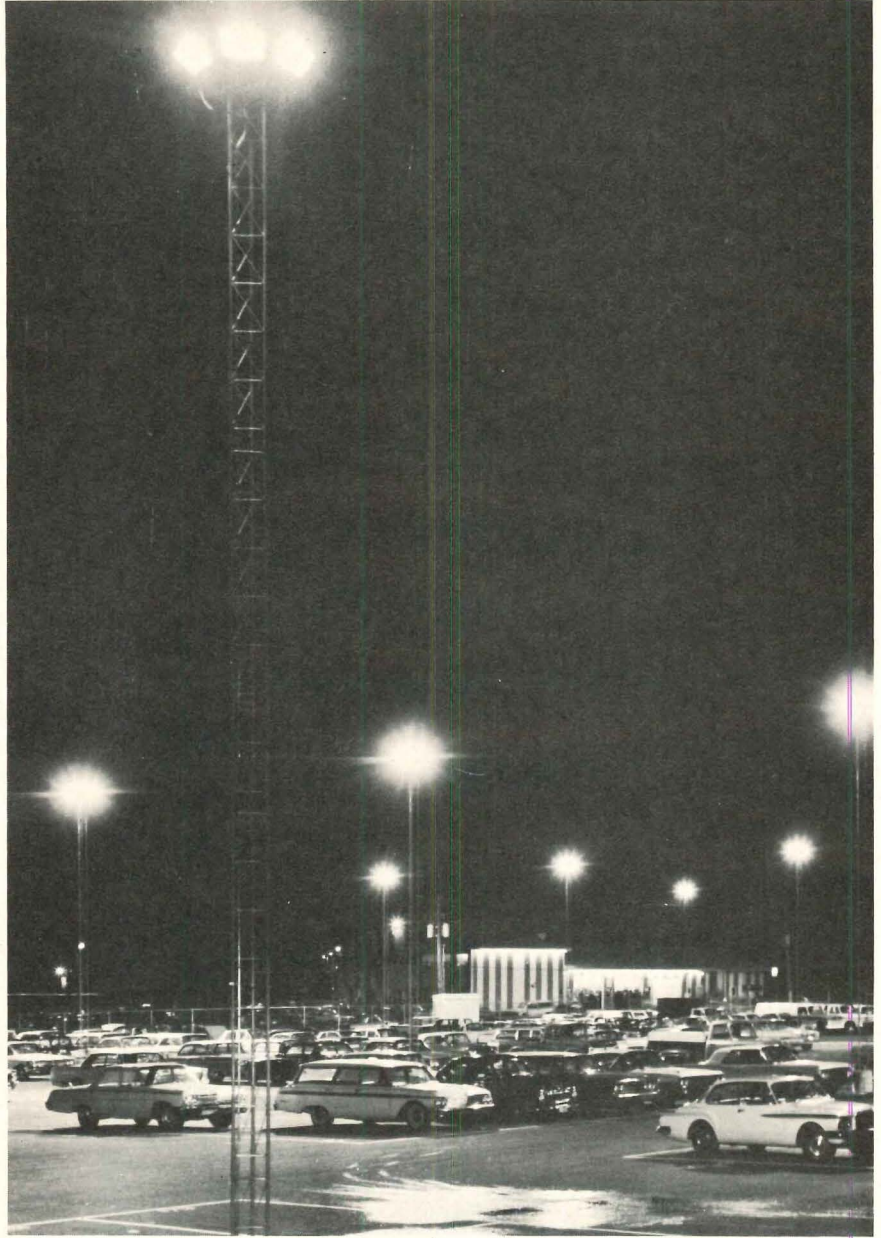
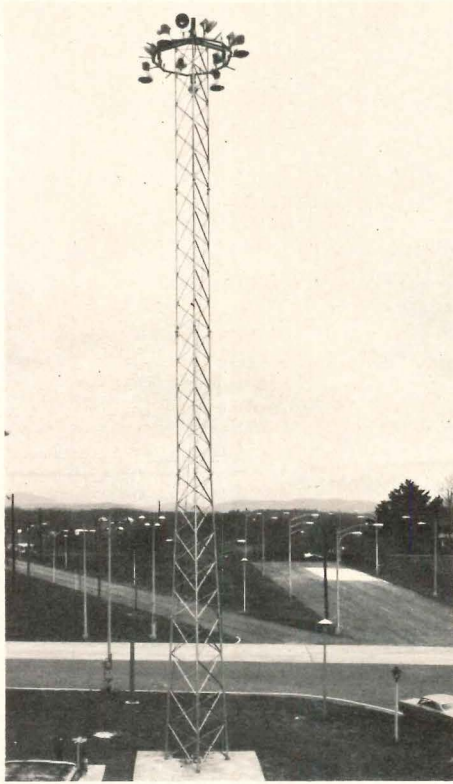
Write or Call:

Mr. William A. Columbus,
Pyrotronics, A Division of Baker
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Pyr-A-Larm®

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Gestation period 150 Days.

This spanking new 48,500 square-foot, 3-story Hood Junior High School in Derry, New Hampshire is the first completely pre-engineered environmental school in New England. Built during the last half of 1971, it accommodates approximately 500 students.

AllianceWall porcelain-on-steel panels form both the exterior and interior walls. Officials estimate the use of these panels will save the school district thousands of dollars each year in maintenance. The AllianceWall panels never require painting and are both graffiti and vandal-proof. They cannot be scratched or marred and paint wipes off without leaving smear marks.

Designers of the school* also used floor-to-ceiling chalkboards of AllianceWall porcelain-on-steel in various decorator colors to achieve an ideal teaching environment.

Shown here (left to right) is an exterior photo of the new 3-story addition which is connected to the original school by a double-deck enclosed passageway. Also shown is the school science laboratory and two art studios.

Write today for complete information and free floor plan.

*Titan Environmental Construction Systems, Inc.
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AllianceWall Corporation

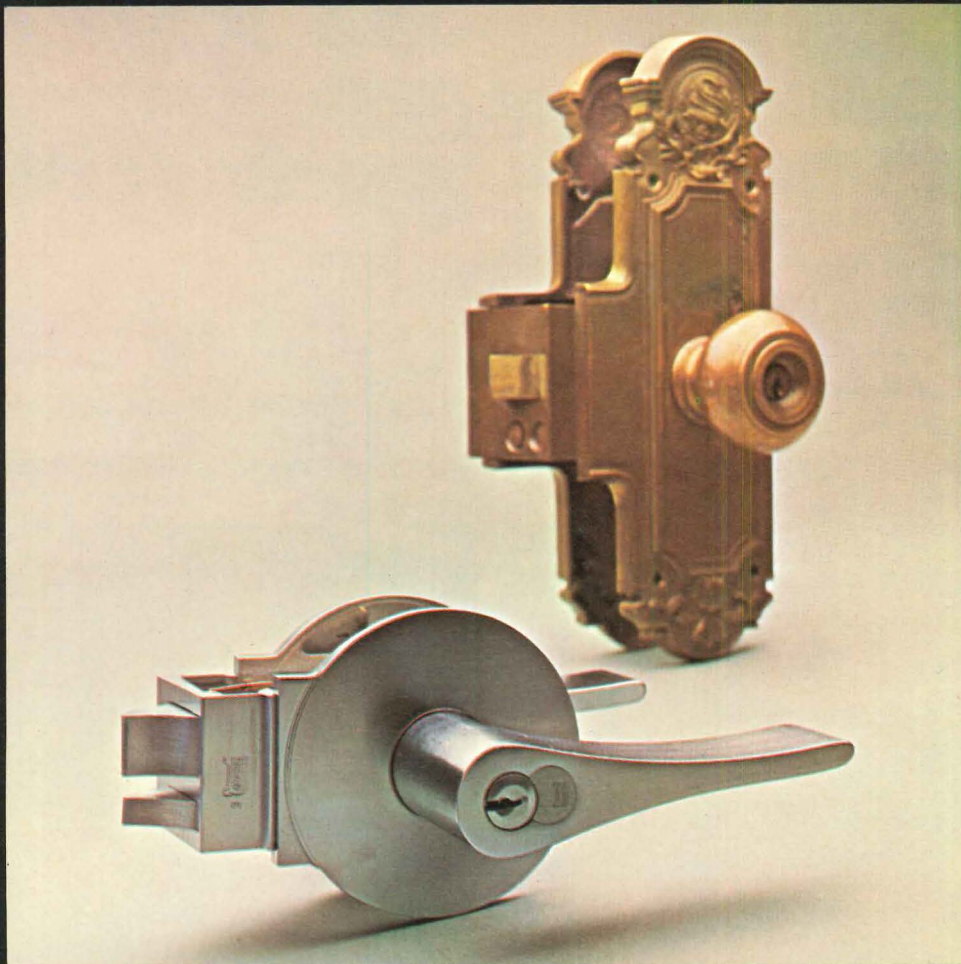
Box 247, Alliance, Ohio 44601

European Plant:

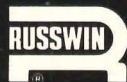
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*Lever-action UNILOC™ lockset.
A classic evolution of line and
form and fingertouch response.
Enduring design in the Russwin tradition.
Russwin, Division of Emhart Corporation,
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The Collector's Series by Russwin

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Not many architects produce houses that illuminate philosophic concepts at the same time that they solve esthetic and programmatic problems. Richard Meier does. There is a clarity in Meier's work that compels every architect, no matter what his bias, to study the buildings and absorb the lessons each offers. This house near New York for a family with six children is worth study on four levels: First, as it responds to the work and thought of Le Corbusier. Second, as it conveys the special delight of architectural sculpture. Third, as a thoughtful solution of the clients' program on a specific site. Fourth, as a series of details which solve house-building problems economically and well. In short, it is a very comprehensive approach to residential design.

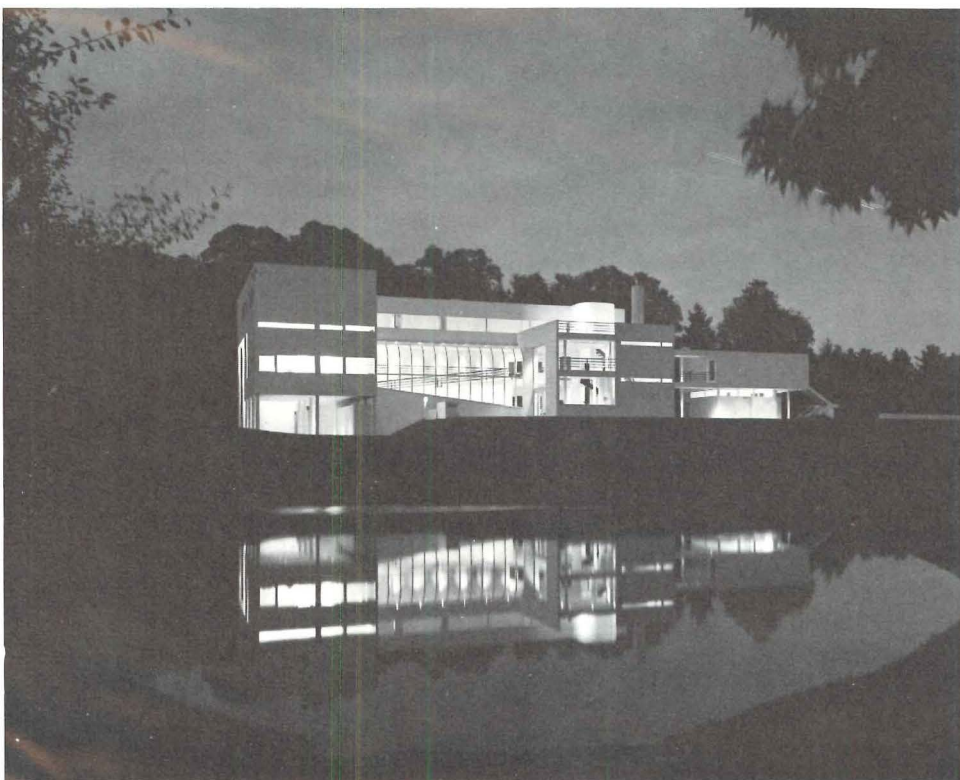
Richard Meier believes that every architect working today has been affected by Le Corbusier. In his own work, and particularly this house, he cites Corbusier's interest in structural clarity, of the relationship of the horizontal plane to its columnar support and the ensuing visual framework. He cites the bold expression of vertical circulation patterns, such as the ramp, and their incorporation as major design elements. Finally, he cites the play of light and shadow upon form. That is, after all, one of the principal ways in which Le Corbusier defined architecture.

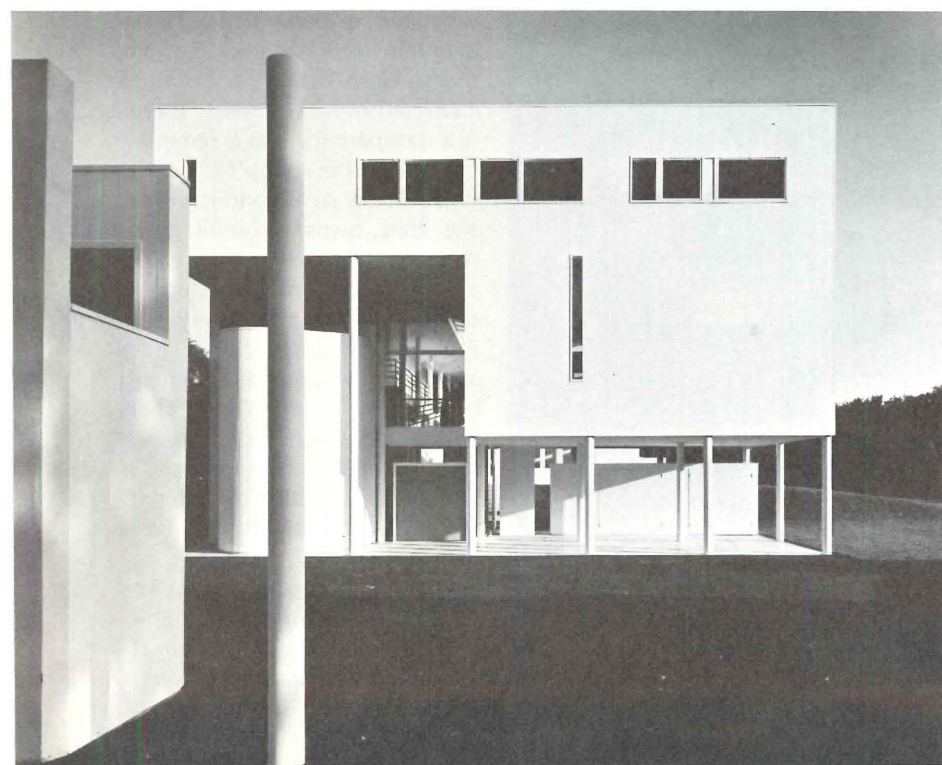
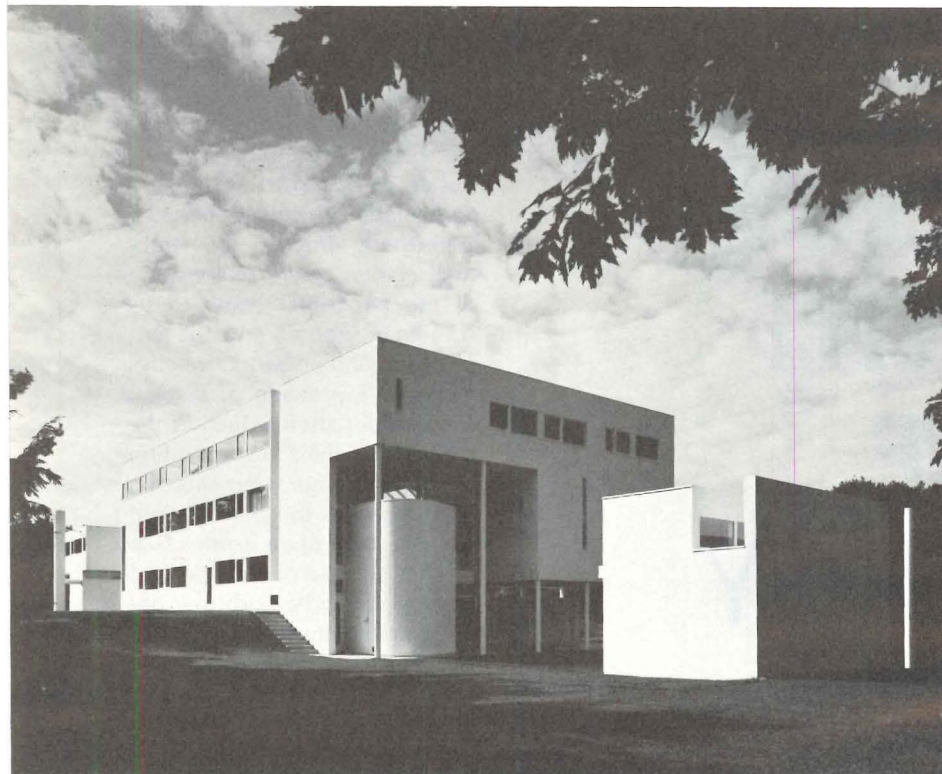
And it is in this way that Meier has particularly succeeded here. As in his earlier houses, Meier has carefully balanced interior daylight level with the exterior light. Thus, even in the daytime (when many glass buildings become solid mirrored volumes), there is a transparency that is reminiscent of Corbu's tropical buildings—those at Chandigarh or the mill owners' building at Ahmedabad. In other words, in a climate that requires tightly composed and completely enclosed buildings, Meier has achieved the apparent openness of an unenclosed building. That has been the main esthetic quest of a generation of architects.

The illuminated building at twilight (left) conveys the quality well, but transparency in daylight is the true test. With admirable bravura, the architect has used ramps to connect four levels and has underlined

A HOUSE THAT GLOWS WITH CRYSTALLINE TRANSPARENCY

Ezra Stoller photos © ESTO





their presence with quasi-industrial detailing such as the welded pipe railings and the arched metal glazing structure. The juxtaposition of the arched glass wall and the two glass walls of the living room (right) produces a visual depth that has eluded most designers.

It is this transparency, of course, that makes the house truly sculptural in contemporary terms. It is not enough, today, for external massing to be powerful or pleasing. In both sculpture and architecture there ought to be an interplay of internal and external spaces: a topological continuity is the ideal. Set as an object in a meadow, the scale of the house is deceiving. The linear quality, so obvious in the second level plan, is largely achieved by the connected pool house/playroom. The total length on that level is almost 160 feet but the house itself is only 85 feet long. Thus, using a swimming pool and ancillary structures, Meier has maximized the thrust of the form into the site.

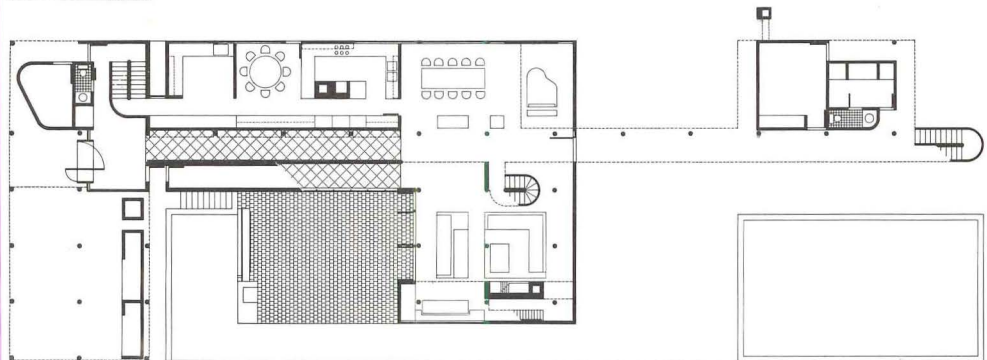
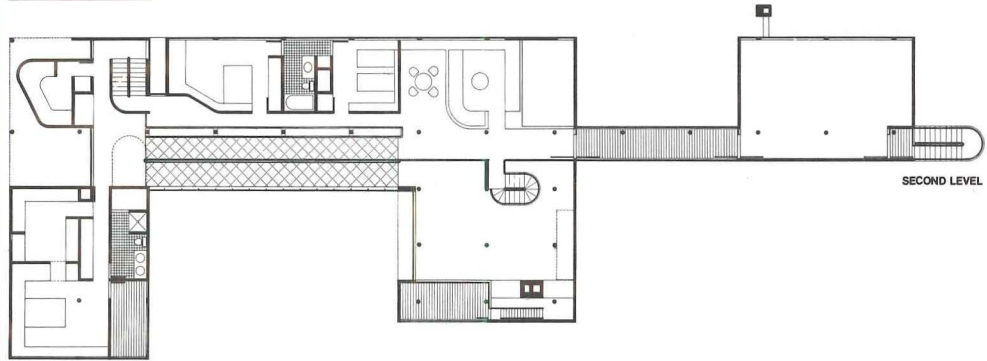
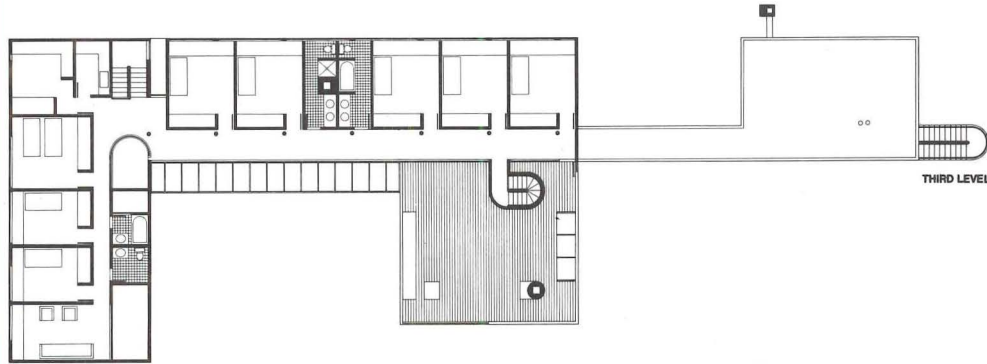
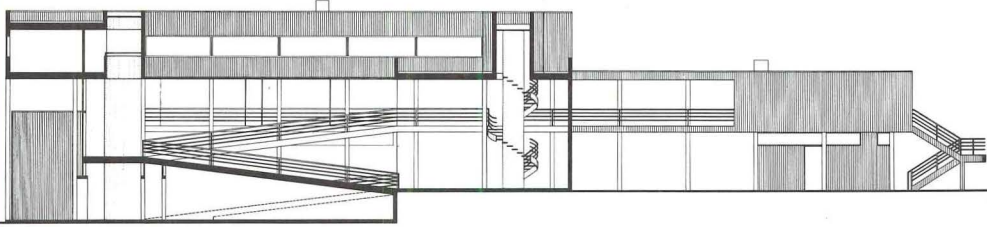
It is a large house—eleven bedrooms—but it definitely has a residential scale. When the six children are at home with their friends, and young visitors are very frequent, the ramps are alive with running, shouting youngsters. It is an indoor playground. A device which architects have always identified with monumentality, or at least with access for the handicapped, is used here to express an open and informal style of living. Although the plan organization of the house indicates a compartmentalization usually identified with much larger buildings, the intensity of use (a dozen people live here after all) requires such zoning.

Finally, in spite of its steel frame, this is a wood house which owes as much to American house-building techniques as it does to European formal traditions. The 4 ft.-6 in. wide ramp is wood framed, and, like most of the floors, is of dark-stained oak boards. This material, played against glass and white walls inside and out, adds a warmth that is entirely appropriate.—*James D. Morgan*

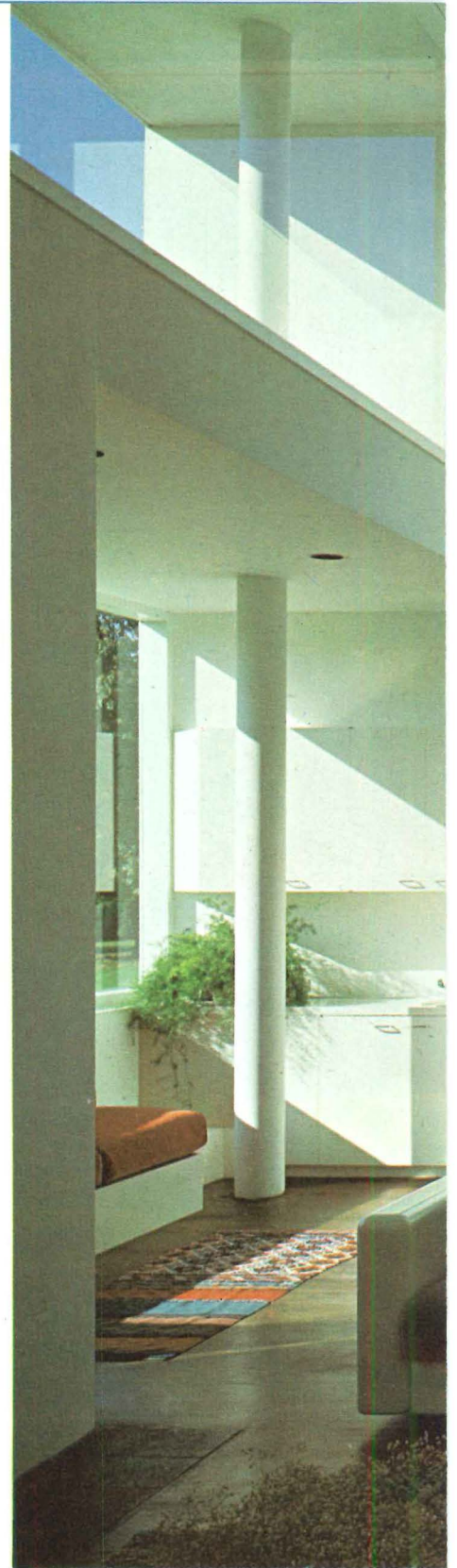
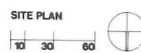
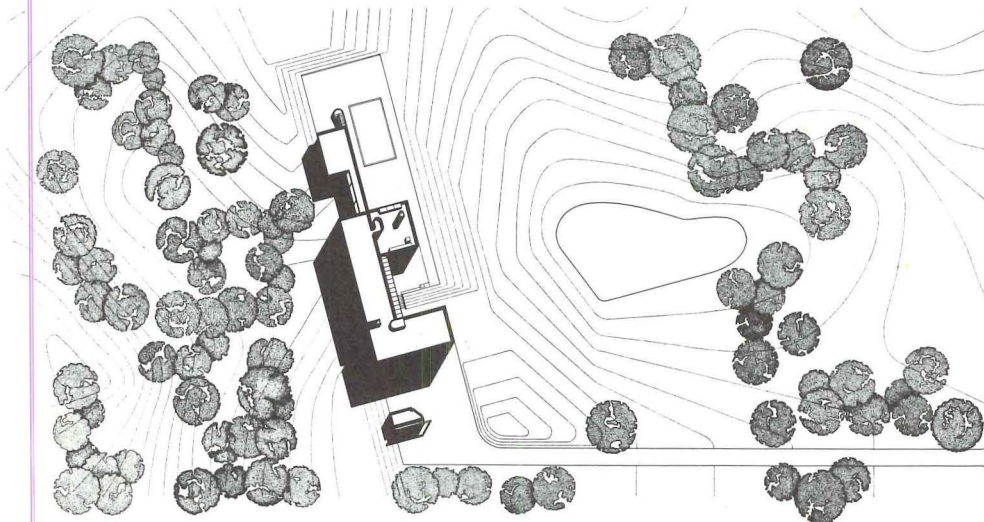
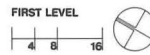
The rear and side elevations (left) are designed as a tight skin to complement the rich forms of the main facade. A symbolic freestanding steel column (bottom left) has been placed on the structural grid.



MEIER HOUSE

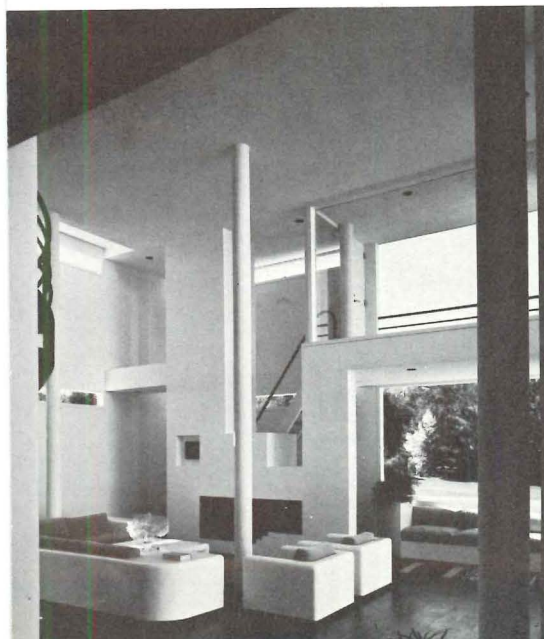


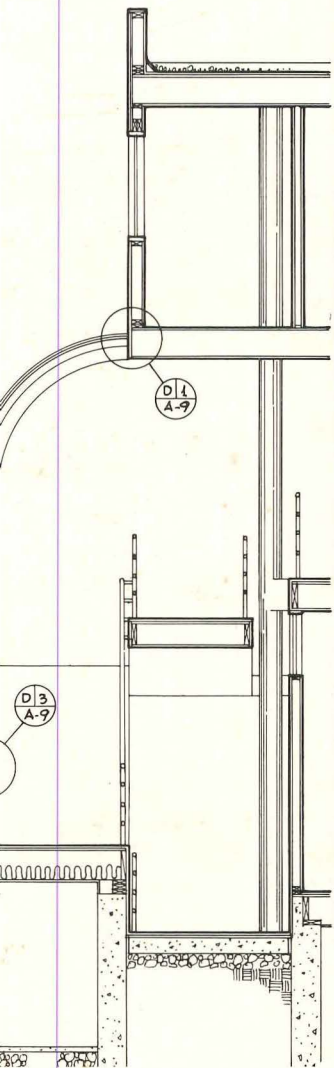
The linear organization of the house, emphasized by the ramps and the second-level connection to the play-room/poolhouse, relates well to the site. Formerly a pasture in which horses grazed, the land was gently shaped including a mound which screens the entry from the drive. The existing lake was also modified.



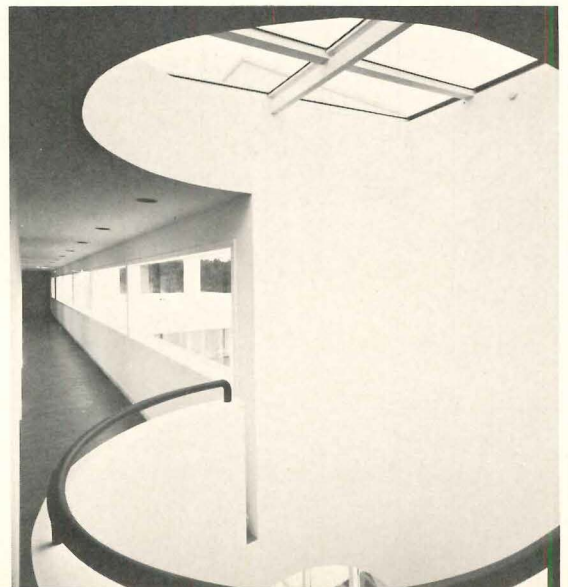
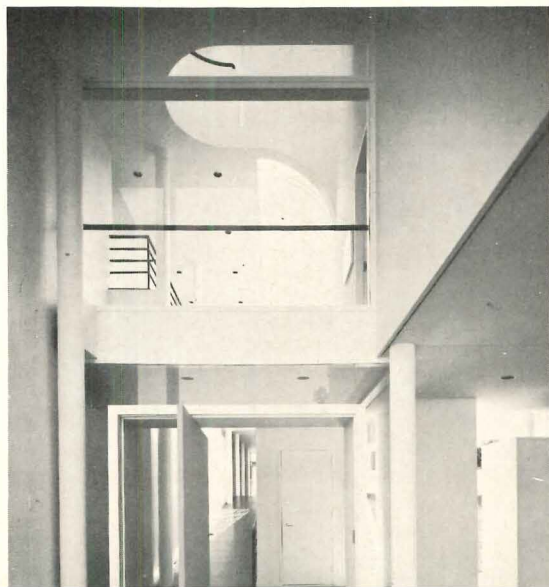


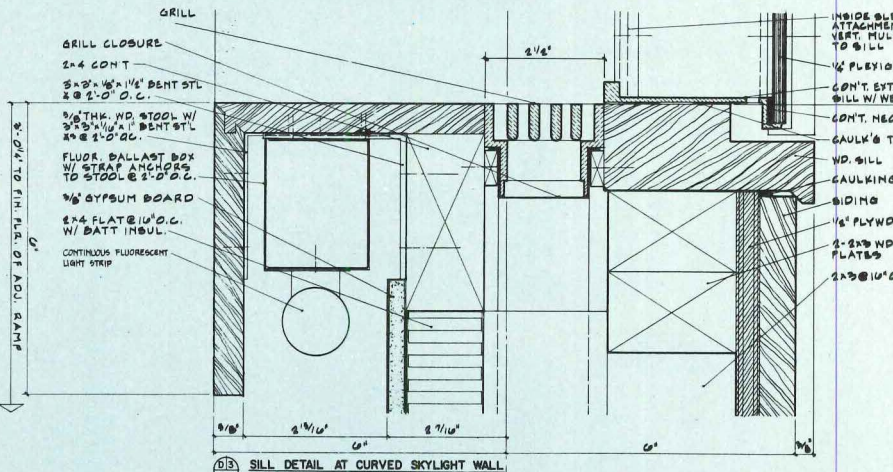
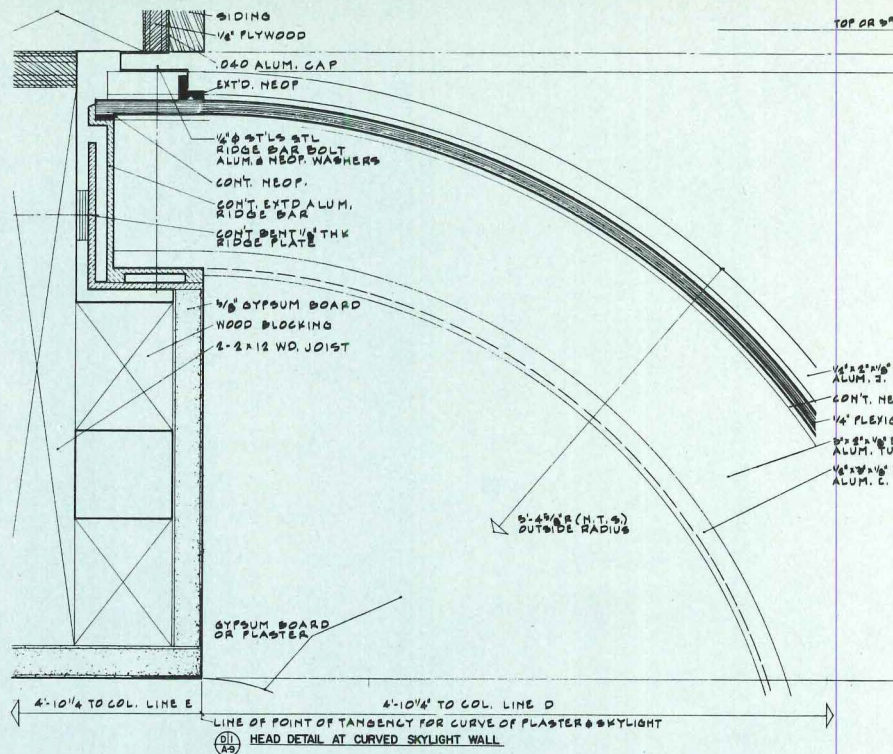
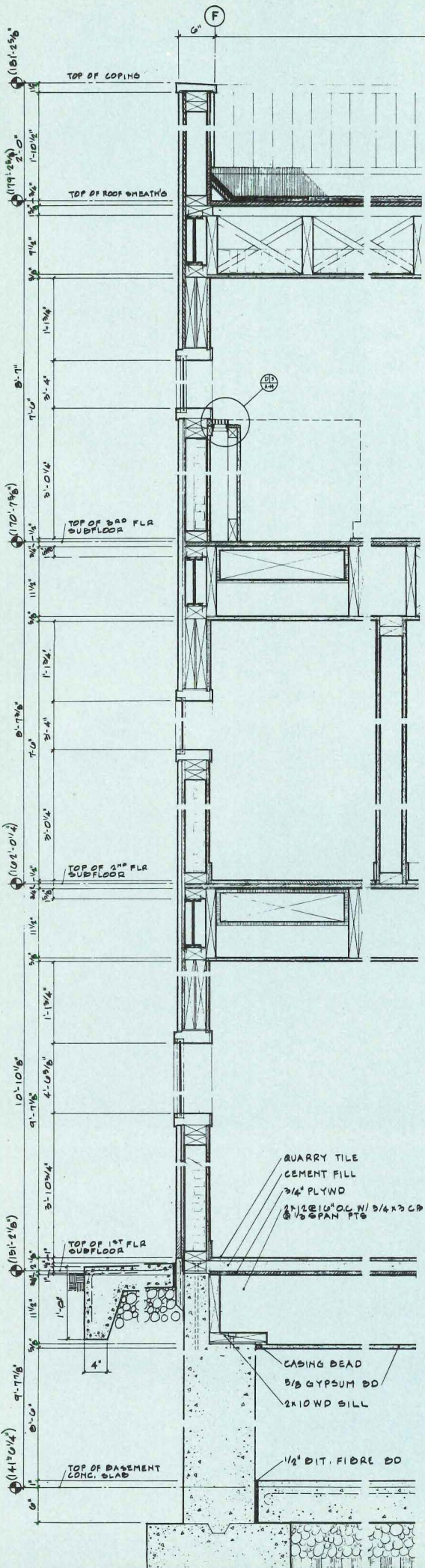
The living room is a two-story glazed pavilion, partly defined by the winding metal stair (right) that continues up to the bedrooms on the third level. Yet the space is contiguous with the circulation spine on both levels and with the areas beyond: dining and music below and children's recreation above. Specially-designed white lacquered wood furniture grouped around the fireplace provides a remarkably intimate area for entertaining. The steep stairway behind the fireplace (left) leads to a small deck. From the interior, the deck provides a smaller-scale sitting area to one side of the fireplace. From the exterior, it creates a well-proportioned opening, with the upper glass thoroughly shaded, thus assuring transparency.





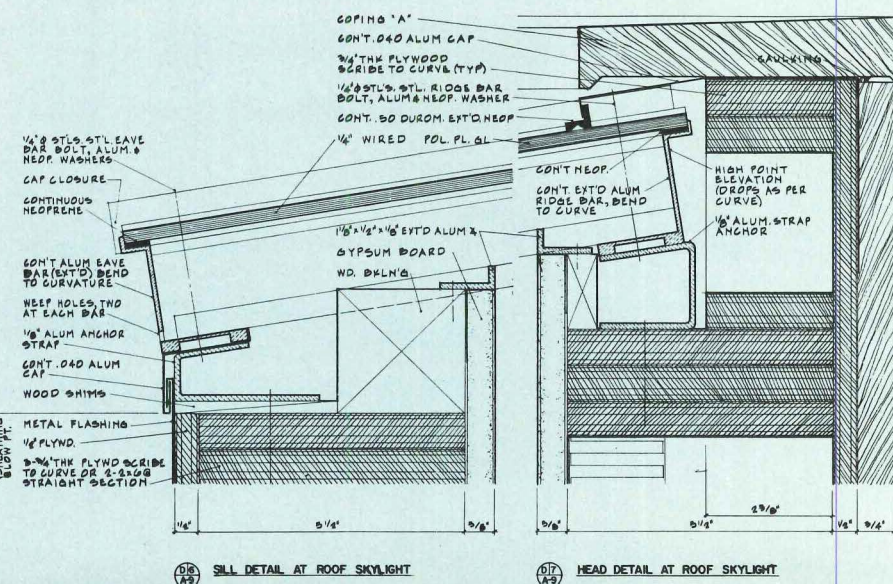
ramps in the acrylic-glazed gal-
 are the most compelling archi-
 tural feature of the house. Framed
 2 by 12's and surfaced with
 stained oak flooring, their spring-
 helps to give a domestic scale
 what might seem an inappropri-
 monumental design element.
 entry (right) with its red, asym-
 ically-pivoted door, leads imme-
 to the ramp which ascends
 the living room (above right). The
 end leg of the ramp lands above
 entry, adjacent to the master bed-
 n. There, a cylindrical two-story
 e (right and far right) is topped
 a flat skylight, details for which
 shown on the next page. The de-
 indicated on the section through
 ramps (above) also appear on the
 page.

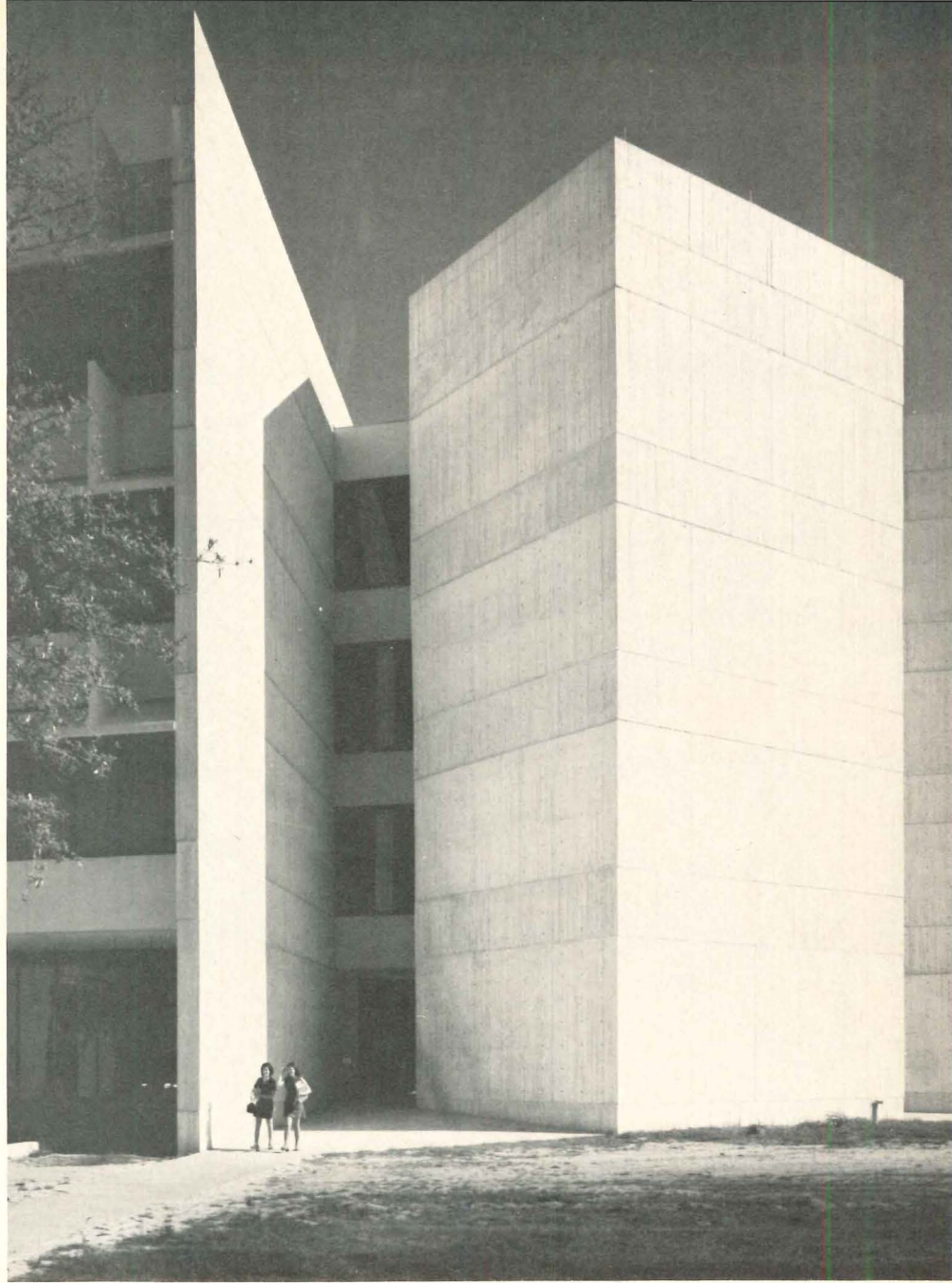
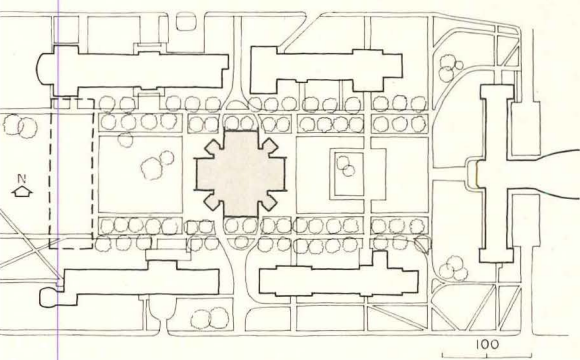




These drawings are taken from Richard Meier's construction documents. The wall section (left) is cut through the rear elevation. Note the extensive use of dimension lumber and the straightforward design of the fixed glazing detail. Steel operating sash are installed in similar fashion. The curved gallery window above and the flat roof skylight below are also examples of effective minimal

detailing. The wall section is reduced at 1/2" = 1'-0" and the sills at 3" = 1'-0". Architects: Richard Meier and associates; Dorothy Alexander Sherman Kung, project manager; Littenberg and K. Childs, assistant; Engineers: Severud-Perrone-Stubel (structural); Dalton and Burton M. Saks Construction Co.



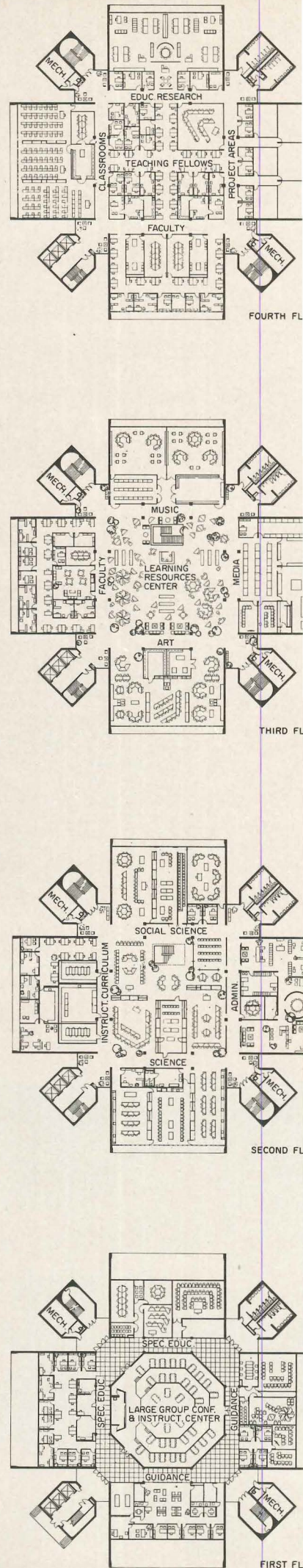


BOLD, SYMMETRICAL DESIGN ANTICIPATES A VARIETY OF NEW TEACHING OPTIONS



Wilson, Morris, Crain & Anderson have recently completed a handsome, surprisingly flexible College of Education on the campus of the University of Houston. In plan, the building is a Greek cross, symmetrical about every centerline, with core elements split-up and placed in four, free-standing towers outside the building where the arms of the cross intersect. Sited at the center of a long quadrangle, the building's symmetry and omni-directional orientation are, in part at least, a response to its focal location.

The four-story, 120,000-square foot structure is reinforced concrete with core and shear walls poured-in-place and post-tensioned. Window walls are bronze-tinted solar glass framed in anodized aluminum sash and protected by conspicuous, carefully articulated sun screens. Entrances, at grade, are located behind each of the four towers.



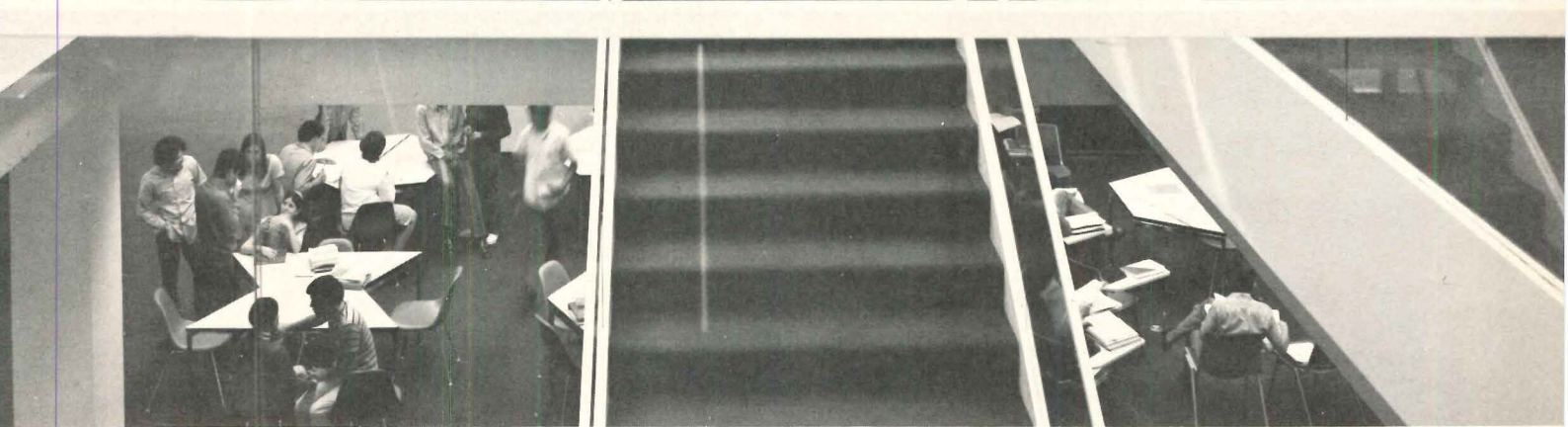
Inside, the rigid geometry of the forms begins to disappear. By transferring the core elements to the building's periphery, the architects were able to provide a superimposed sequence of large central spaces, defined by point supports but otherwise unencumbered. On the first floor, a Large Group Instruction Area can accommodate 300 people. It also doubles as a conference center for the College, the University or the surrounding community. The second and third floor spaces, partly opened to each other (photos above), form the Learning Resource Center—a space or series of sub-spaces in which a wide variety of learning situations can be generated.

Surrounding these central spaces on each floor are assorted faculty and administrative offices, audio-visual labs, seminar rooms, lounges, practice teaching classrooms—all with non-bearing partitions that can be rearranged as new needs arise. A system of paired columns separates the large and small spaces, delineating interior circulation and picking up intermediate structural loads (see plans).

The educational program is subject to continuing revision, so the architectural program emphasized flexibility. The as-

sumption was that the best facility would be one that got out of the way of the educational program. To both client and architect, this meant innovative, open planning. It meant planning for a future full of practical uncertainties—a future in which tools, techniques and perhaps even purpose will improve. As knowledge in nearly every discipline continues to explode, the concept of teacher as “dispenser of knowledge” gives way to more viable alternatives. The burdens of education are being transferred at an earlier age to the learner.

The function of the College, therefore, is to train and retrain teachers, to encourage experimental attitudes, in short, to influence both the direction and the quality of present and future education. In spite of these uncertainties, the building has a surprising sense of self assurance. The forms have a clarity and confident logic. The detailing, inside and out, is precise and sure-handed. Metaphorically, the building seems to answer more questions than it asks. Such ambiguities as exist center on the shifting, multiple use of the building's varied interior spaces, and it is in these spaces, of course, that the building's long-range effectiveness will be gradually determined.



arly all spaces in the College are
designed for comfort and acoustical
control. Furniture has been carefully
selected with a view toward flexi-
bility and, in some cases, multiple
function. Ceilings are lay-in acous-
tic tile with custom-designed, rec-
tangular lighting fixtures. Air diffusers
are supplied by a double duct sys-
tem from mechanical spaces on
the floor.



The Large Group Instruction Area, which seats nearly 300, can be comfortably used by one or more smaller groups simultaneously. Smaller spaces whether administrative or teaching, are designed with the same eye toward flexibility and uncertain future needs.

COLLEGE OF EDUCATION, University of Houston. Architects: *Wilson, Morris, Crain & Anderson*. Engineers: *Walter P. Moore* (structural), *Cook & Holle* (mechanical); acoustical consultant: *C. P. Boner*; contractor: *Manhattan Construction Company*.



Richard Payne Photos

DESIGN FOR LEARNING: WORK OF HARDY HOLZMAN PFEIFFER ASSOCIATES

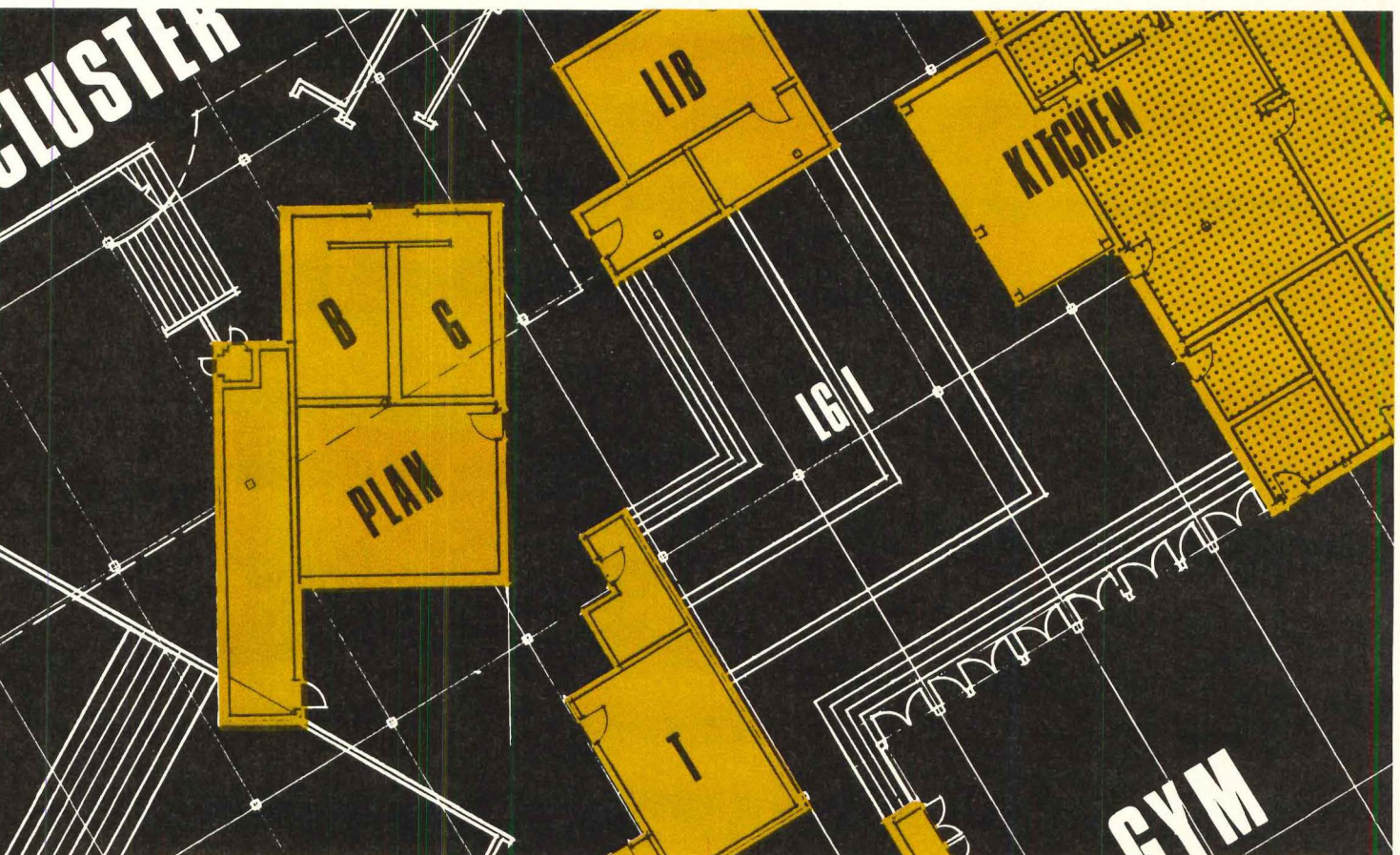
The projects on the following pages are all educational complexes—although only three can be conventionally considered as such. The elementary school, museum and firemen training center each have a formal and traditional teaching mission, but the industrial medical center does not, at least for its patients. All four projects, however, will when complete, prod, stir, arouse, excite, stimulate, exasperate and ultimately educate their users.

The buildings of Hardy Holzman Pfeiffer Associates teach as organizations of space for human interchange, for developing self-awareness, for community and for privacy. Their inventions fascinate in their essence as constructions. By using conventional materials unconventionally, and unfamiliar materials in a familiar way, the architects force their users to really see what they are looking at. They keep finding fresh contexts for old things, and time-honored contexts for new things.

The architectural game they so exuberantly play is paralleled in their methods of architectural presentation. Bored with miniaturization—they don't wish to show the client a tidy little model of his perfect little building to be—they make their mock-ups out of combinations of anything which suits them. Told that perhaps their presentation techniques overwhelm content, accused of not being serious, of trivialization, of creating curious toys, they argue that their models are for the purpose of stimulating the conversation, and for suggesting a broader range of visual values. Malcolm Holzman adds "—anyway all models are toys."

The architecture that emerges has a strong structural discipline. The bids on each building are within or under its limited budget and comparable to the national average where it applies.

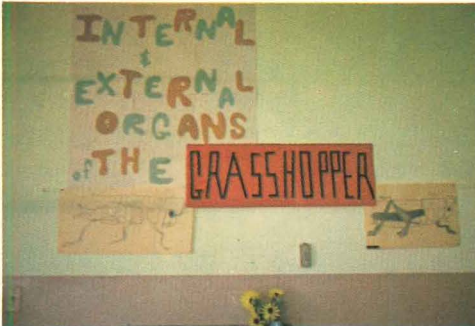
Hardy Holzman Pfeiffer Associates are a small office and all the work is done by themselves and a six-man team which consists of Thomas W. Casey, Neil Dixon, Michael Franklin Ross, M. Herbert Staruch, Marvin Wiehe and Peter S. Wilson. —Mildred F. Schmertz



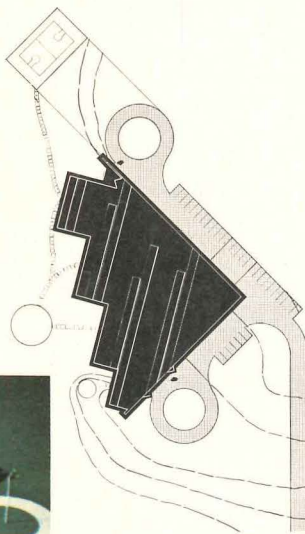
1 A NON-GRADED SCHOOL DESIGNED FOR TEAM TEACHING



An open plan for rural children based upon three multi-level clusters each of which function like a one-room schoolhouse.



This school which occupies a sixteen-acre site is to become a part of the rural setting which appears in the top photo. The architects have tried to make it a modest addition to this scene—low lying, minimally landscaped and with its great diagonal skylights, explicitly functional like the farm buildings which are its neighbors. The educational cluster areas have metal walls which are stepped by half levels into and over the sloping site.

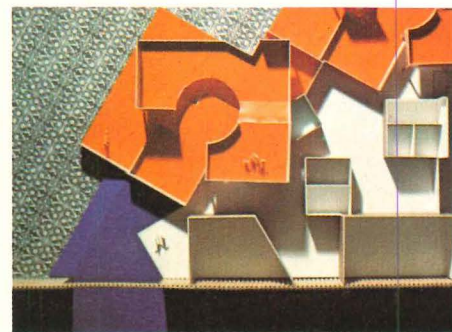
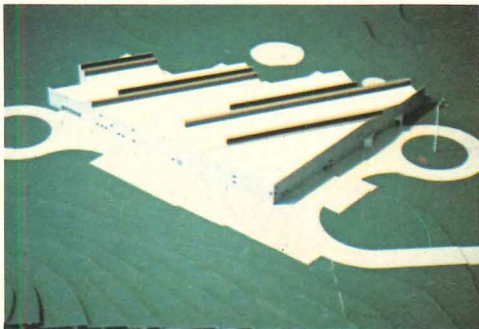


The lively model (opposite page, top) shows the typical team teaching cluster which forms the basis of Hardy Holzman Pfeiffer Associates design for the Southwest (Mt. Healthy) Elementary School. It is now under construction for the Bartholomew Consolidated School Corporation near Columbus, Indiana. The cluster model at first glance looks like one of the firm's preliminary models for a theater-in-the-round and suggests the influence of spatial ideas which have emerged from their widely known theater work. Hugh Hardy insists, however, that "our buildings don't really look alike because they are all different solutions to different programs" and it is true—if one studies it carefully—that the cluster model gradually stops appearing to be a setting for drama and begins to look like a setting for life.

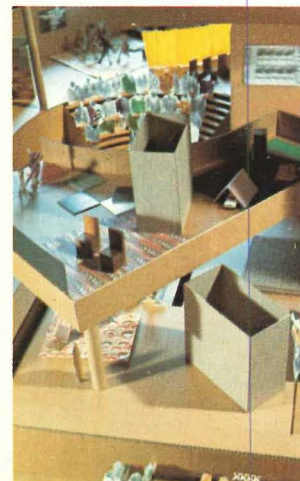
team teaching on a non-graded basis. The non-graded cluster works at his own pace in each subject and is assigned groups of varying sizes at a similar level of achievement. The implications of this teaching approach for school design are major since the concept abolishes the graded classroom as we know it and with it, the various corridor configurations.

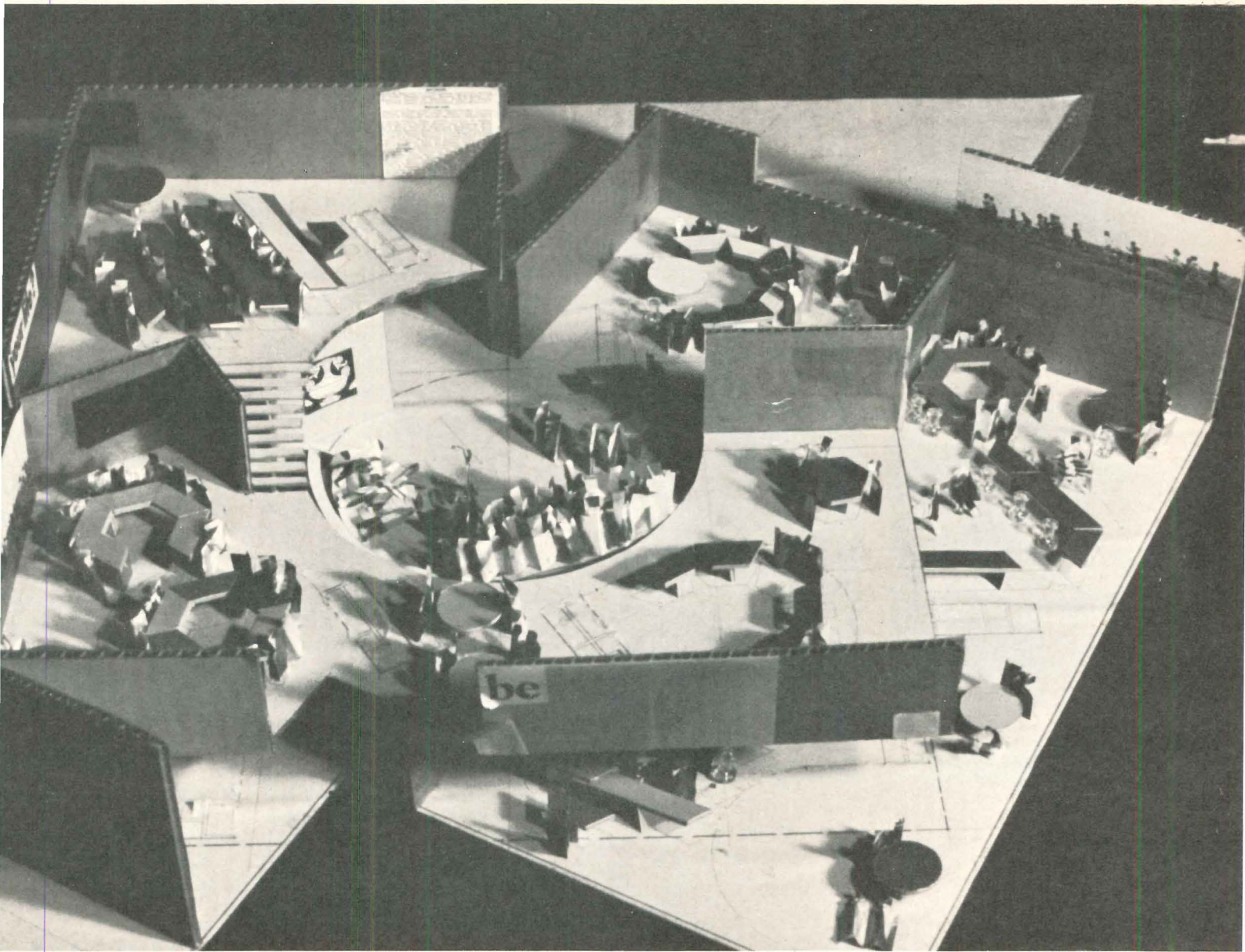
Although the Southwest School is only the latest in a series of excellent schools designed by distinguished architects for Columbus and its environs, it is the first in that area to feature an open plan for

What would once have been the classroom area is divided into three multi-level clusters which can handle a maximum of 90 students each. The cluster areas correspond to standard academic divisions: lower primary (kindergarten through second grade), intermediate (third and fourth grade), upper primary (fifth and sixth grade), and special education classes. Within each cluster, large group, small group and individual instruction proceed simultaneously. The physical divisions between each group consist of changes in floor level, cleverly juxtaposed materials and finishes and contrasts in type and intensity of natural and artificial light.

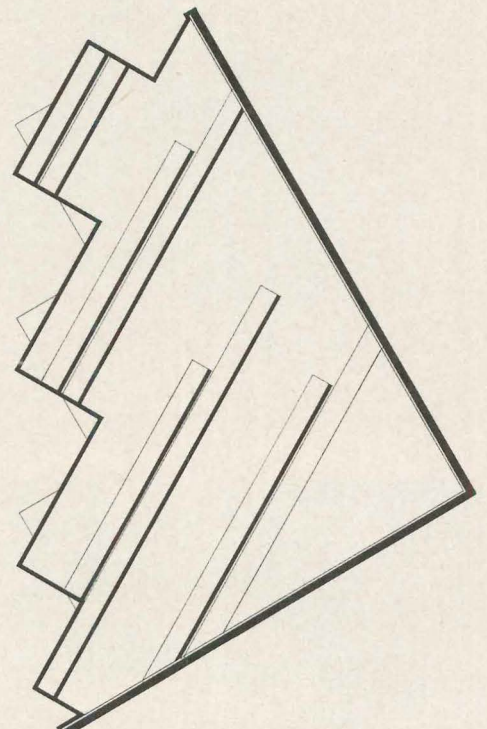
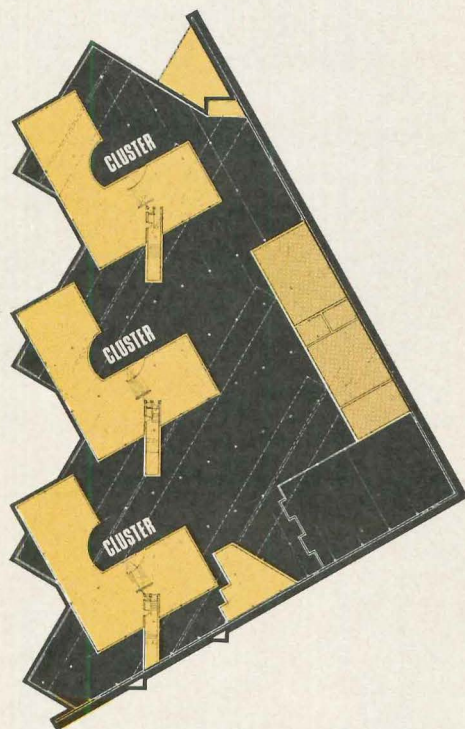
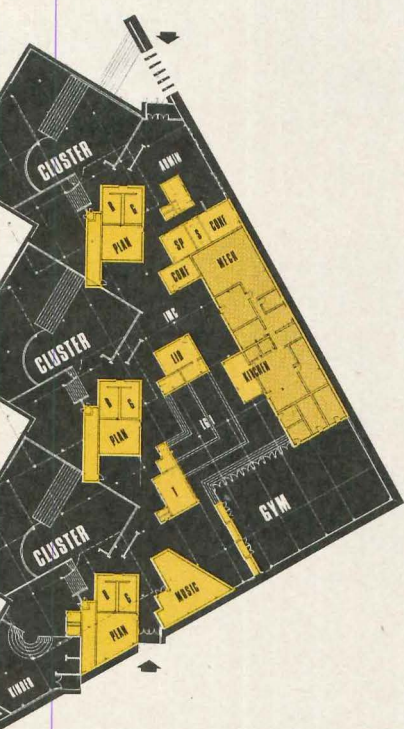


Schools are messy but the mess is fun says the second photo from the top. The model photos above and to the right show the ways in which the happy chaos will be gently ordered. At the heart of each cluster there will be a small instructional materials center containing a library reference area, TV and computer outlets and audio-visual devices. Each cluster contains a semi-enclosed planning area and home base for the teachers assigned to the cluster. An open access spine connects the three clusters and leads to the gymnasium, the large group instruction area, the principal instructional materials center and art, music, administration, service and other facilities.



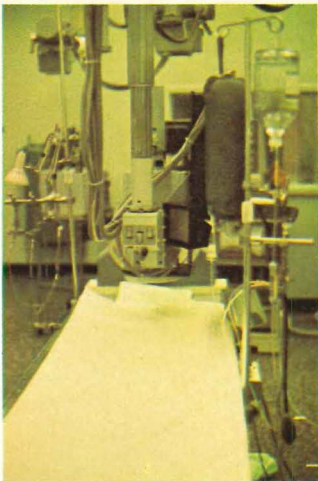


Photos by Hardy Holzman Pfeiffer Associates except as noted

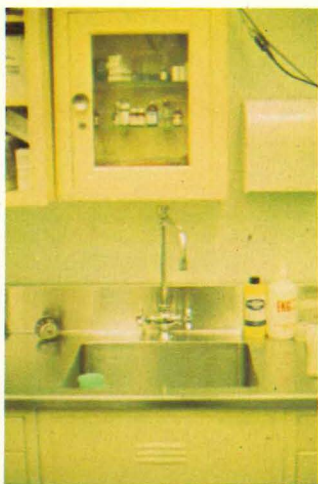
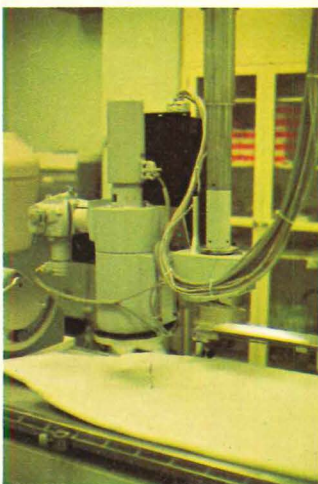


2

AN INDUSTRIAL MEDICAL CENTER DESIGNED FOR HUMAN BEING



Unlike most new medical buildings which function primarily as antiseptic containers for their frightening equipment (left and below) this new clinic has been designed to educate and relax the patient as well as treat him.

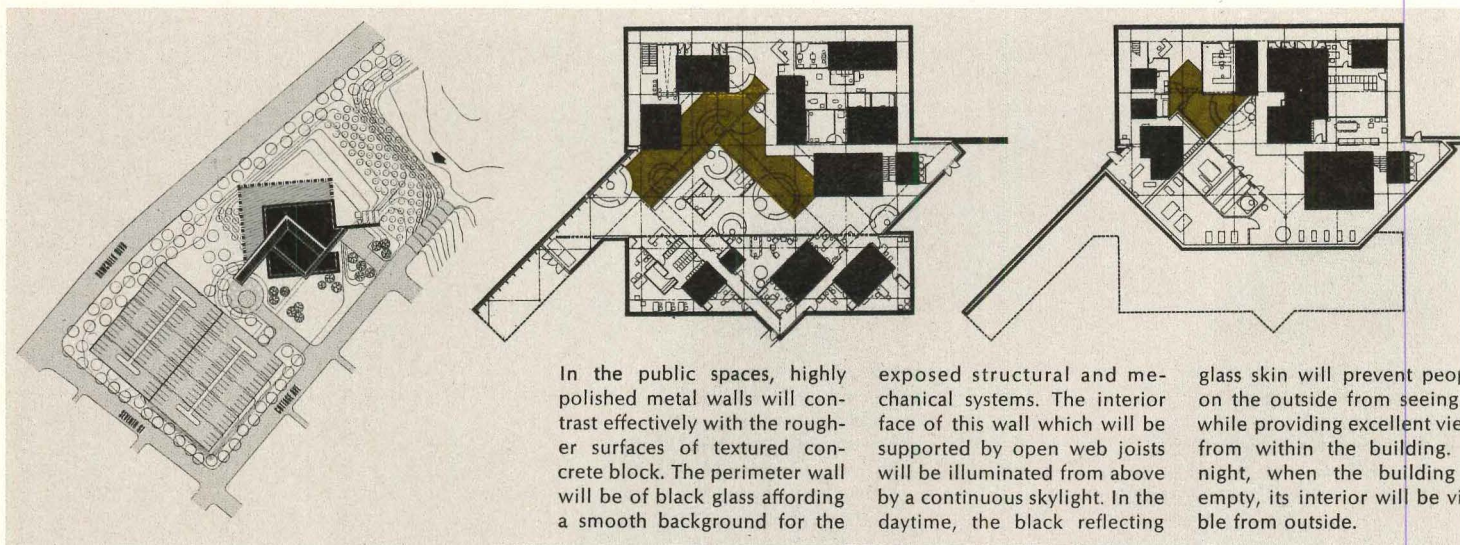


Were it not for the figures in white coats it would be hard to tell what the elegant model (opposite page) is meant to be. The remaining photographs and drawings give no additional clues and for once words are really needed to buttress the visual language of an architectural project. This is because the Columbus Occupational Health Center to be constructed in Columbus, Indiana will be like no other, and has no precedents as an image of medical treatment.

The interior planning concept of the center challenges the commonly held theory that a clinic is merely a series of individual self-contained boxes connected by corridors. During careful examination of the services the clinic would perform and the kinds of activity it would engender, the architects discovered that not all functions require the same degree of privacy. It was found that only examination rooms need the degree of aural and visual privacy provided by walls extending to the ceiling and conventional doors. Activities such

as physiotherapy, eye examination, cardio-pulmonary testing and dressing can be performed in alcoves enclosed by double height partitions and folding screens. Sight testing, weight and height recording, exercise areas and nurses stations are to be open.

The architects believe that many of the activities of a medical center are essentially interesting to the waiting patient who will take advantage of the opportunity to educate himself. The laboratory area has been encased in glass but is visually open to the waiting area. The latter consists of two gently sloping ramps and a large open space which connects all the levels of the building. Circular seating pods, which can be seen in the models and plans, will be equipped with audio-visual devices to disseminate educational medical information and to record individual medical histories. The sequence of events which occur along the waiting ramps has been planned to occupy the entire duration of the waiting cycle in order to reduce boredom and anxiety.



In the public spaces, highly polished metal walls will contrast effectively with the rougher surfaces of textured concrete block. The perimeter wall will be of black glass affording a smooth background for the

exposed structural and mechanical systems. The interior face of this wall which will be supported by open web joists will be illuminated from above by a continuous skylight. In the daytime, the black reflecting

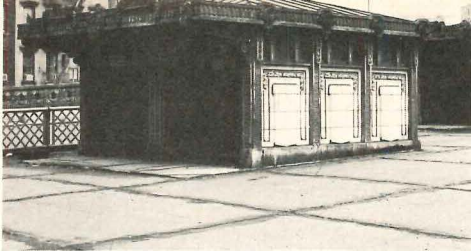
glass skin will prevent people on the outside from seeing in while providing excellent views from within the building. At night, when the building is empty, its interior will be visible from outside.

Gil Amiaga

Gil A







3 A MUSEUM DESIGNED FOR THE CHILDREN OF BROOKLYN

Planned to serve children from all ethnic backgrounds to foster their curiosity about the world and themselves.

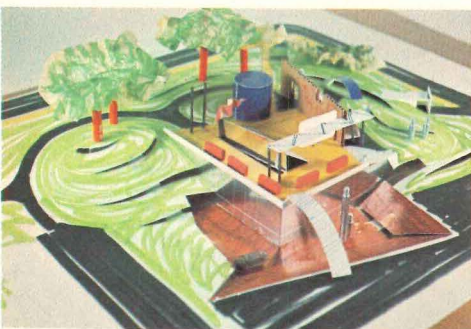
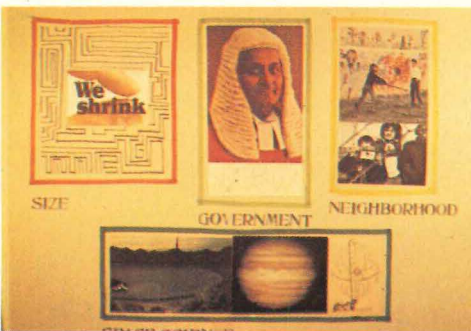
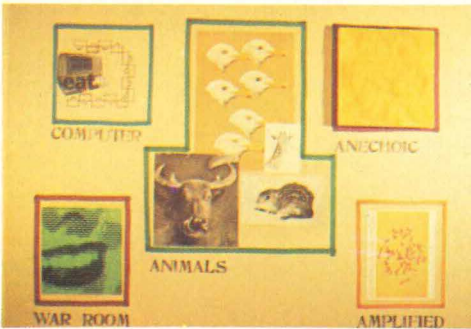
Whether they are designing a school, a clinic, a firehouse or a museum, Hardy Holzman Pfeiffer Associates are hard at work in behalf of the already intellectually curious and are just as eagerly attempting to prod the bored and somnolent into awareness and energy. Architects who study even a medical clinic in its aspects as a teaching mechanism for its patients and arrange things so that the latter may learn a little medical science while they wait (previous pages), can be expected to surpass themselves as architect-teachers when they get a museum to do.

From the beginning the Brooklyn Children's Museum, designed for the New York City Parks Department, has been conceived of as a total learning experience and is being designed as such. In the architects' words the museum is not to be "a remote fortress for the preservation of the priceless and unique. Unlike the traditional museum, it must encourage active exploration and an interplay between seeing and doing. It will not be designed

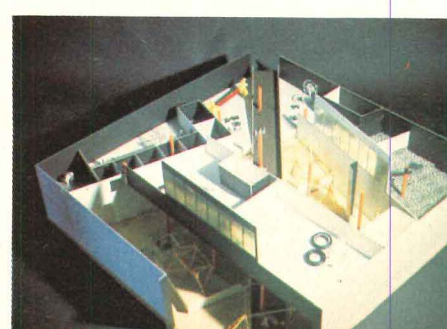
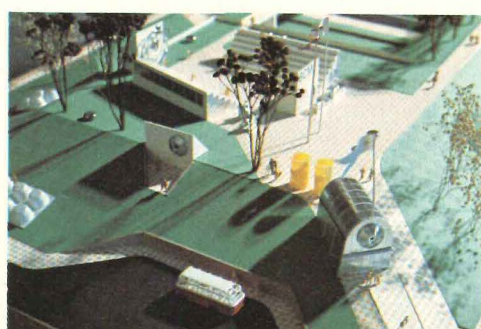
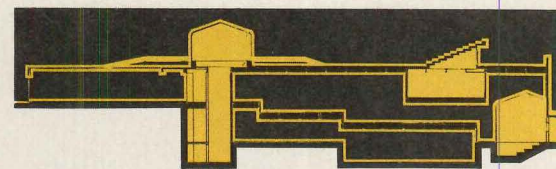
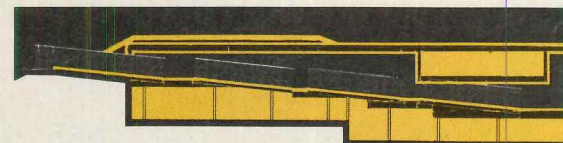
as an additive series of contained and separate rooms. Rather, it will offer an open series of interlocking spaces adapted to many activities."

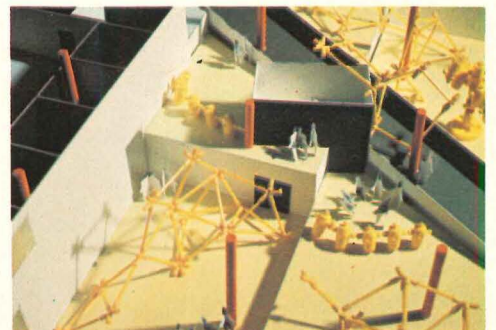
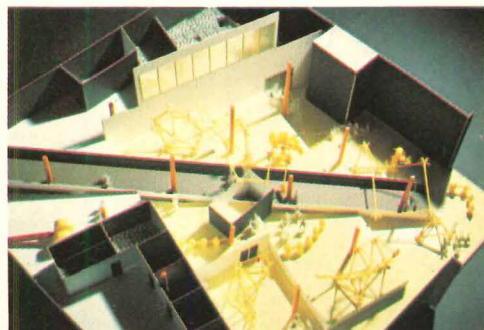
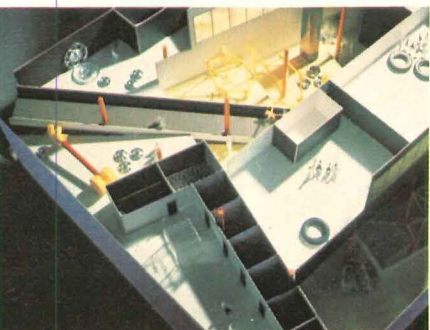
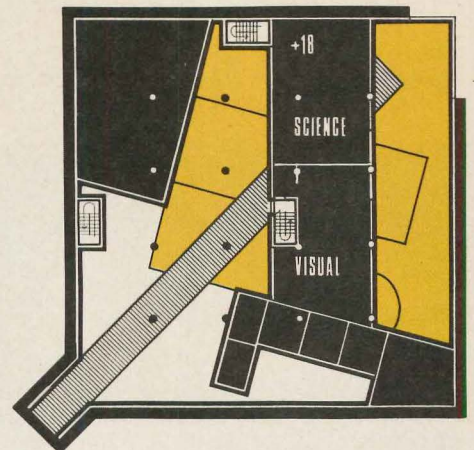
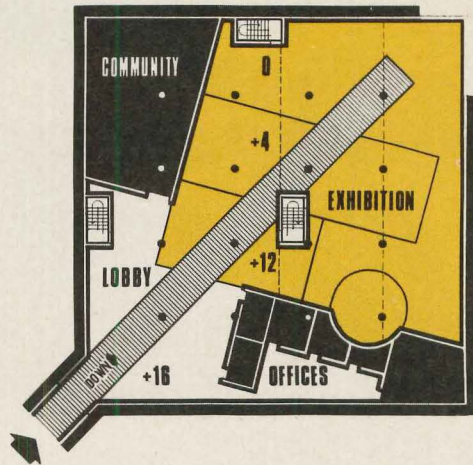
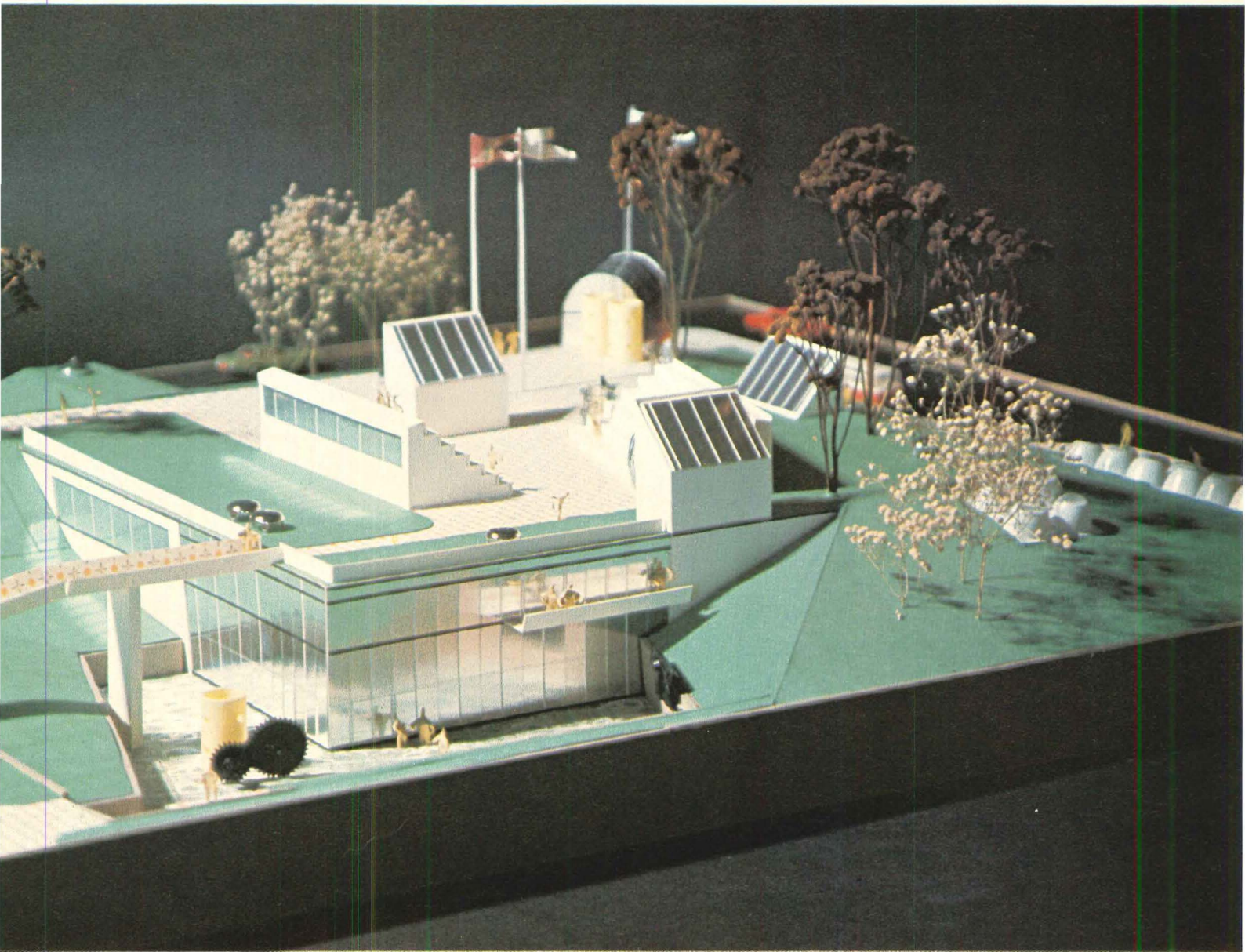
The architects are designing the first exhibit which will be based upon a broad range of concepts including those indicated in the posters (upper left). Entitled "Who Am I?" it will enable the child to discover more about himself, his family, and the community.

The building is essentially a concrete box to be partially buried in Brooklyn's Brooklyn Park in the Bedford Stuyvesant area. It supports a plateau on top which functions as a continuation of park land. The model photograph (opposite page) is an early one. The plateau since been redesigned as an even more active area and will contain a number of objects "as found" such as a 19th century New York City street kiosk and a lamppost, borrowed from the Queensborough bridge (left), a porcelain steel silo, a fiberglass onion dome, a grandstand and an interstate highway bridge and sign.

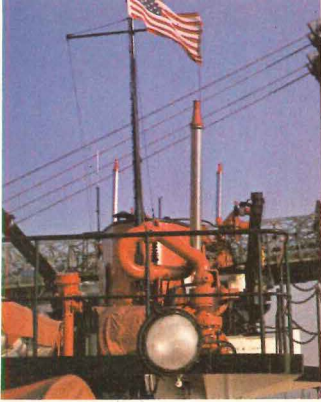


The building contains five levels framed with a light steel structure. Mechanical equipment will be exposed throughout. Access will be by half levels to a flexible unit scaffolding which contains and defines each exhibition. The workshop and administrative activities are interwoven over and around the exhibition levels. Fixed interior walls will be of glass allowing various patterns of use to be always visible. A 180-foot-long ramp descends diagonally through the exhibition space from the entrance way to the outdoor exhibition area at the lowest level.





4 A TRAINING CENTER DESIGNED FOR THE FIREMEN OF NEW YORK C



A master plan which provides streets and turnarounds for learning to drive fire trucks, simulated buildings for all kinds of fire fighting, and a school for academic disciplines.



Firehouses are fun to visit, fire fighting equipment is fascinating, and firemen have a discipline which is wonderful to watch (left). Fire fighting is also a dead earnest para-military enterprise and a training center for firemen has much in common with an army training camp.

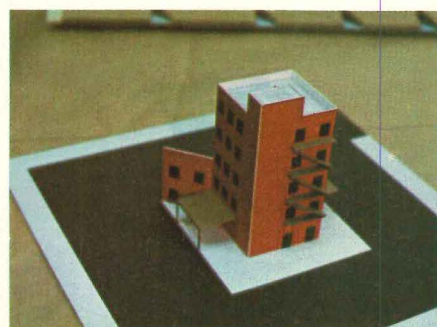
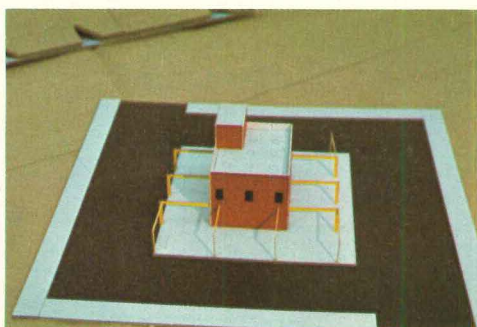
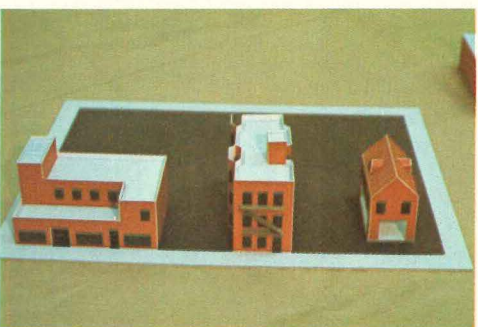
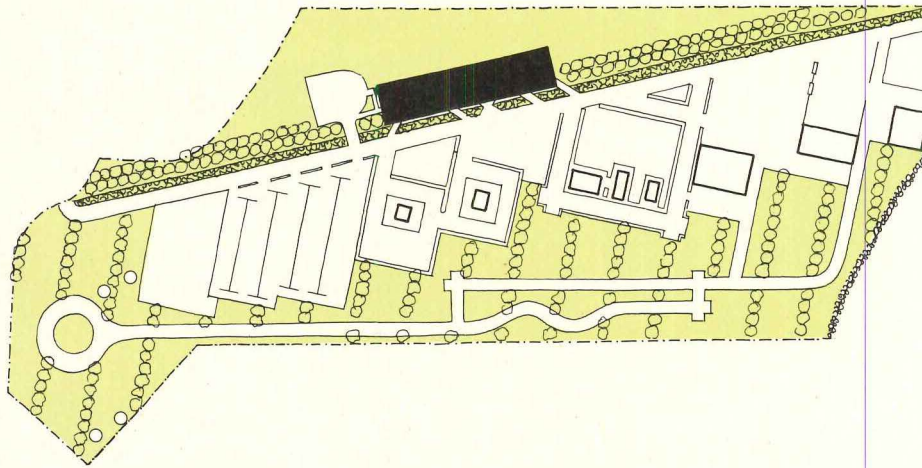
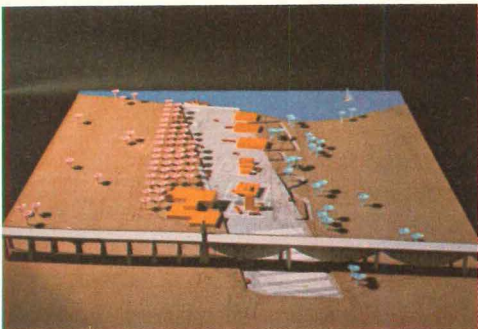
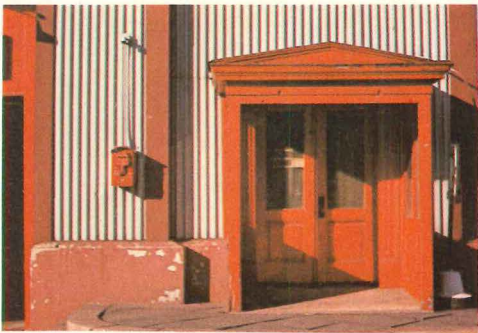
In the past, New York City's firemen went through their basic training on Welfare Island. Since the Urban Development Corporation has taken over this site for housing, it will build the New York City Fire Department a new school on Wards Island. The Firemen Training Center serves as the academic and physical training facility for all New York City firemen. Three specific activity areas have been developed to accommodate the school's varied programs: physical training, service and education and administration. The physical training facilities include the fire tower, the basic training building and the advanced training group, consisting of the replicas of a loft building, a tenement and a frame dwelling. These five

buildings can be seen in the plan and photos (below).

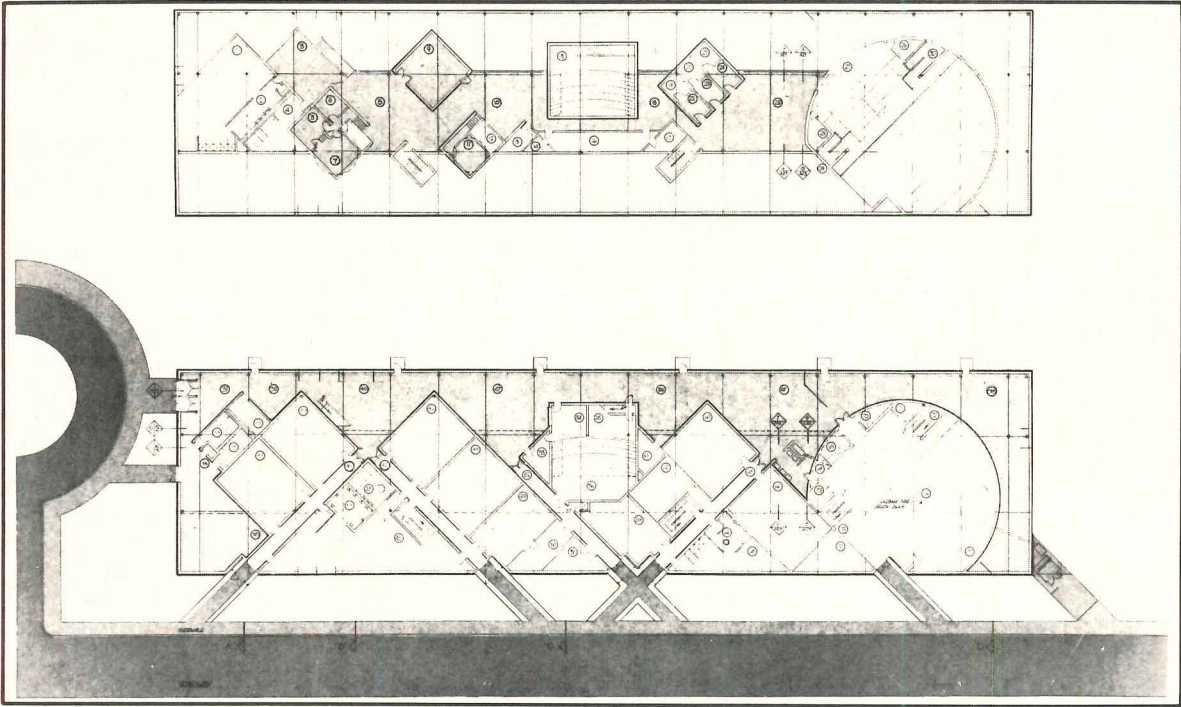
The service facilities include the mask service unit, a combined firehouse-marina facility and a garage. The education and administration building has been separated from the training and service area (as the plan indicates) and will be developed in a park-like setting as part of the over-all landscape plan. The model photo (right) of a portion of the center within this building.

The over-all architectural character of the center is derived from the linear organization of the training and service buildings set within the open, hard surfaced training strip along a common spine. Landscaping and planting parallel to the strip further develop this area and create a different ambience for the education and administration building, separated from the training service center by a major road and a sloping earth berm.

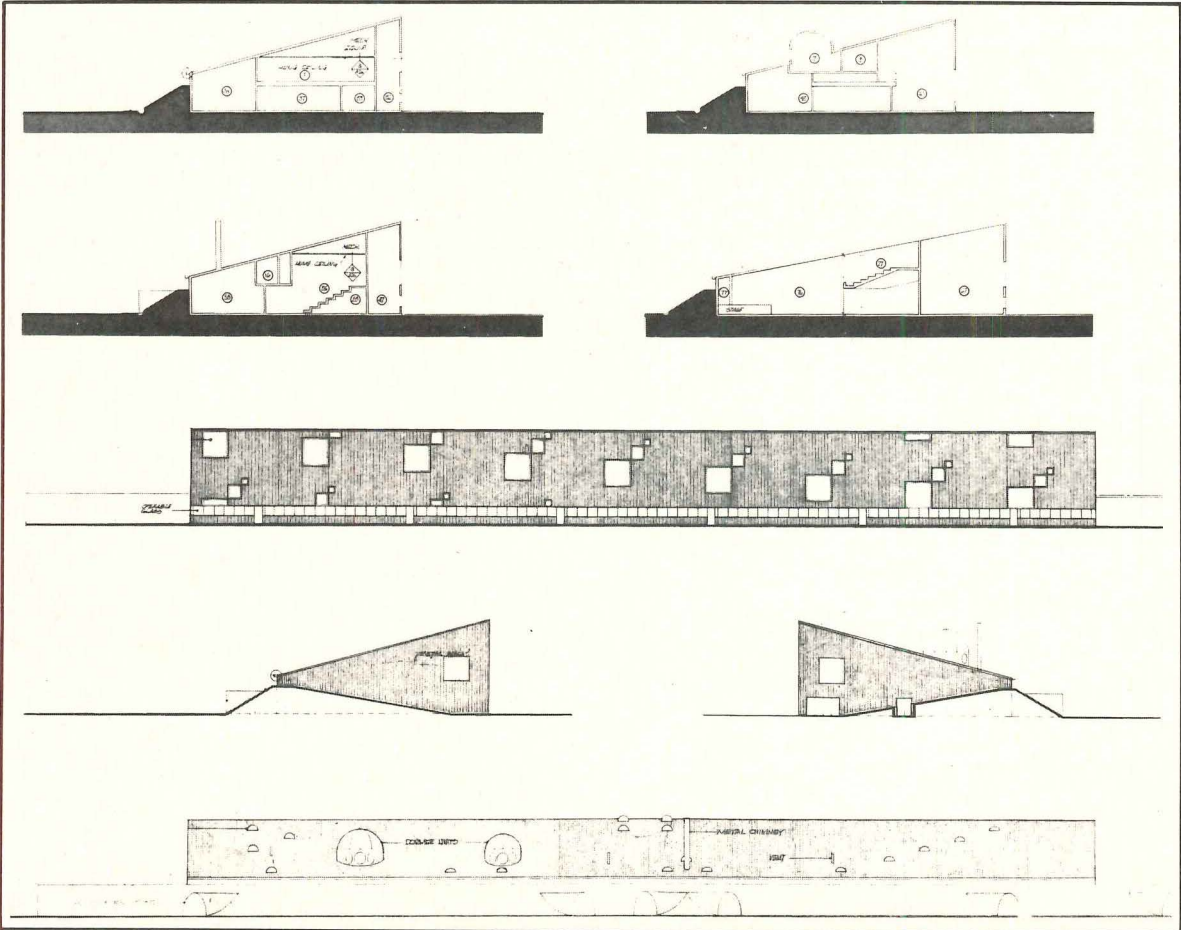
At the interface of the two distinctively different areas, pedestrian paths and sea areas will be provided.







The sloping roof of the education and administration building of the Firemen Training Center will be of corrugated steel. Offices, classrooms, lecture halls, public circulation and exhibits spaces occupy the ground floor and mezzanine.



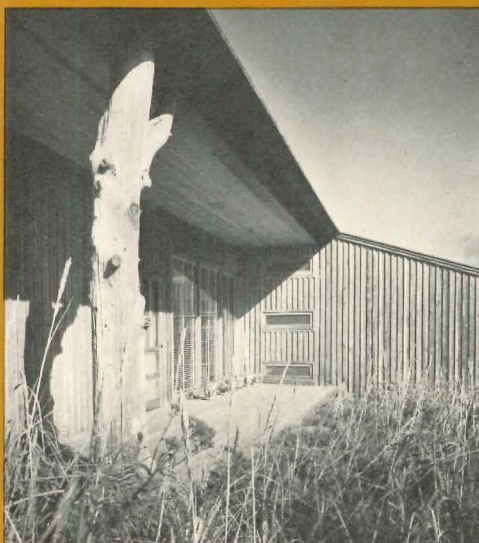
PIETRO BELLUSCHI: THE 1972 GOLD MEDALIST

For fifty years Pietro Belluschi has been expressing his philosophy of "eloquent simplicity" in one way or another but always in deep humility and with gentle persuasiveness, through his buildings, his spoken and written words, and through his various ways of teaching. The message is so fundamental, and its delivery has been so modest and unassuming, that the importance of this approach to architecture has been understood and adopted by fewer than it warrants. Its significance now, at a time when architecture is overwhelmed with the fruits of technology and the products of free expression, takes on a new dimension of urgency.

This year Pietro Belluschi is the AIA

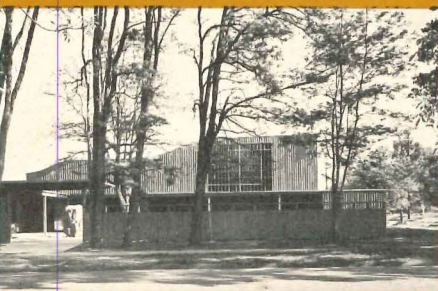
Gold Medalist, chosen for the honor for his most distinguished service to architecture, the extent of which has never been fully recorded. Since publication in 1953 of the "Northwest Architecture of Pietro Belluschi," presenting an overview of his work through 1951, there has been no survey of his work. Only through such a survey will the meaning of his philosophy—and the inseparability of his beliefs, his words and his work—become clear and his work be understood.

Belluschi reviewed his fifty years in architecture last year at an extraordinary event in the Pacific Northwest—The First Abbey Conference, at Mount Angel Abbey,



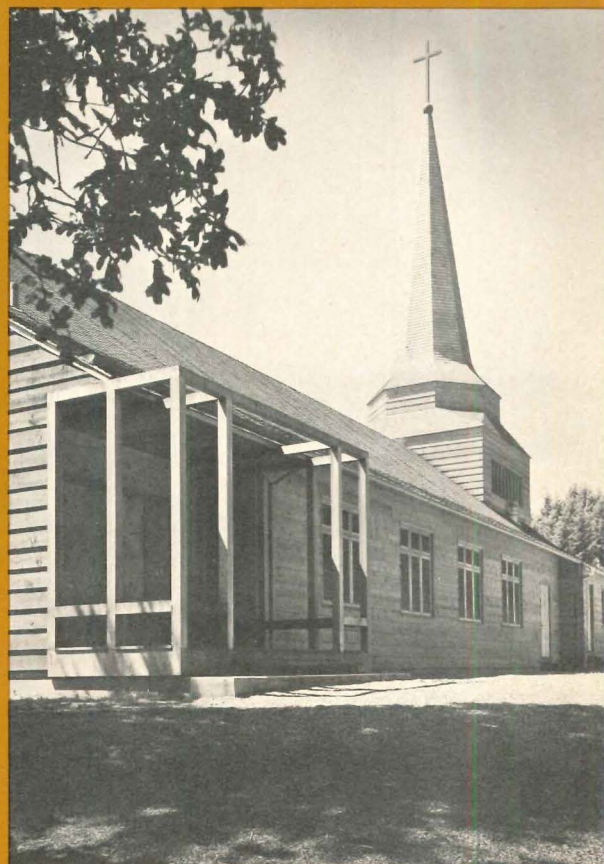
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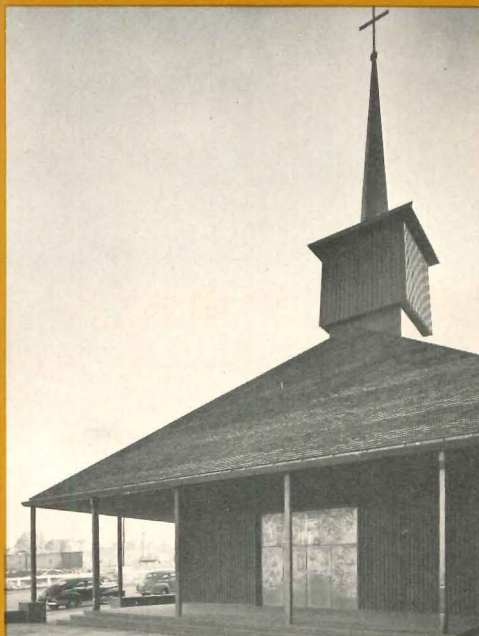
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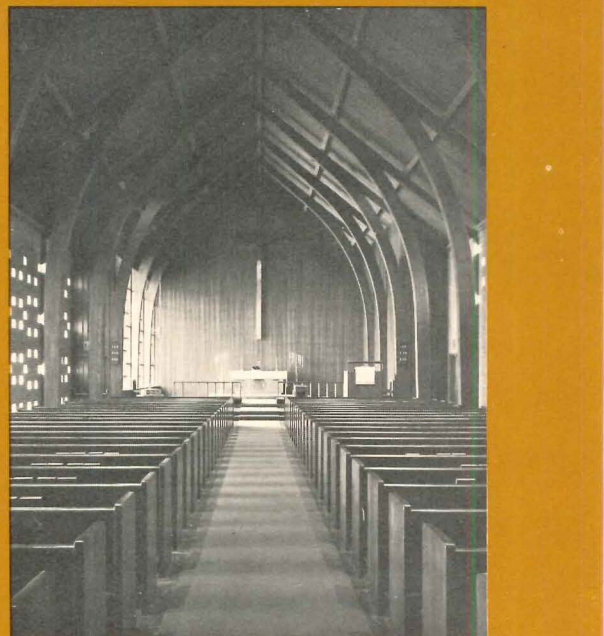
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Roger Sturtevant



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K. E. Richardson

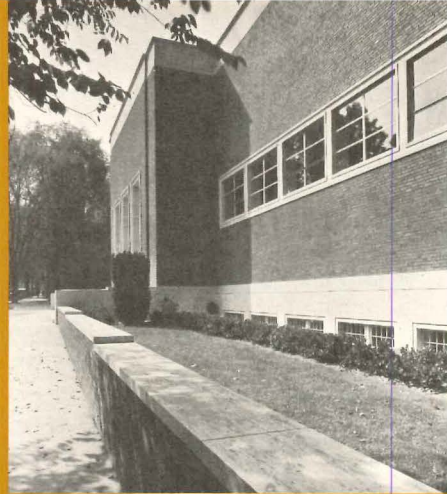
Among Belluschi's best known Northwest buildings are: 1. Kerr beach house, Gearhart, Oregon; 2. Cottage Grove, Oregon, Presbyterian Church; 3. Sutor House, Portland; 4. St. Thomas More Church, Portland; 5. Central Lutheran Church, Portland; 6, 7. Zion Lutheran Church, Portland. His varied practice in Portland included most other building types.

in his former home state of Oregon. It was a rare occasion—especially so because Belluschi at 72 saves his energy these days for design, not speeches—in its revelation of both the man and his work, of the enduring quality of his ideas, the timelessness of his beliefs, the passion and compassion that undergird his philosophy, and the “eloquent simplicity” that so expressively sums up his approach to architecture.

His early work in Oregon and Washington (pages 119 and pages 120-123, top) remains as fresh, as real, as clear in purpose today as when he produced it 30 and 40 years ago, not because he designed a “style” but precisely because he did not. He

searched for form in structure, and found it a wellspring of ideas. He probed the “facts and circumstances” of each job that came to him and from them derived his design. “The solution,” he said last year in talking of this early period and particularly of one of his favorite buildings, the Portland Art Museum (right; below), “is in the functional demand.” What the clients wanted, what the locality suggested, what the building was to be, were the “functional demands.” But his way of translating these demands into buildings was individual, a combination of sensitive awareness and clear, logical, practical good sense.

“... I believe that architectural forms



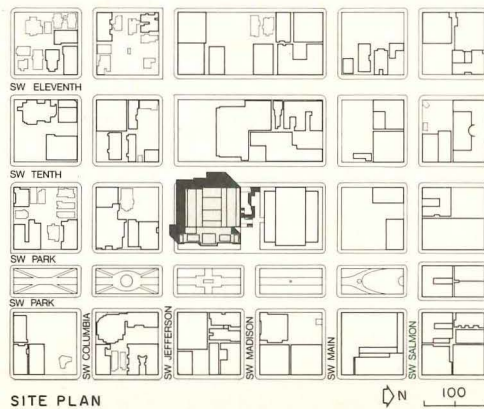
Erven Jo

Museum buildings span forty years of Belluschi's practice

The Museum Art School and the pedestrian Mall and Sculpture Court through which it is entered, represent the final phase of the Portland Art Museum's development plan, carried out over a 40-year span by its architect, Pietro Belluschi. Architecturally harmonious with the earlier buildings, the new building (pages 120, 121, and 122) consists of three floors of studios, an auditorium located to serve both Museum and School, an exhibit gallery, and administrative offices. The landscaped Mall and sunken Sculpture Court (left, below) replace a street vacated by the city at the request of the Museum and connect with Portland's “Park Blocks,” making a fortunate and delightful addition to the city and a handsome entrance for the School. The first wing of the Museum (at top) completed in 1932 but commissioned earlier, was the first important public building for whose design Belluschi was responsible. The second wing (opposite page, top), added in 1938, more than merely meshed the two wings. It enhanced the original facilities and heightened their effectiveness architecturally as well as for display of art objects, with a large dramatically skylighted sculpture court and with innovative monitor lighting in the six new galleries it provided. Both natural and artificial lighting are important elements in design of new Art School building (opposite).



Art Hupy



SITE PLAN



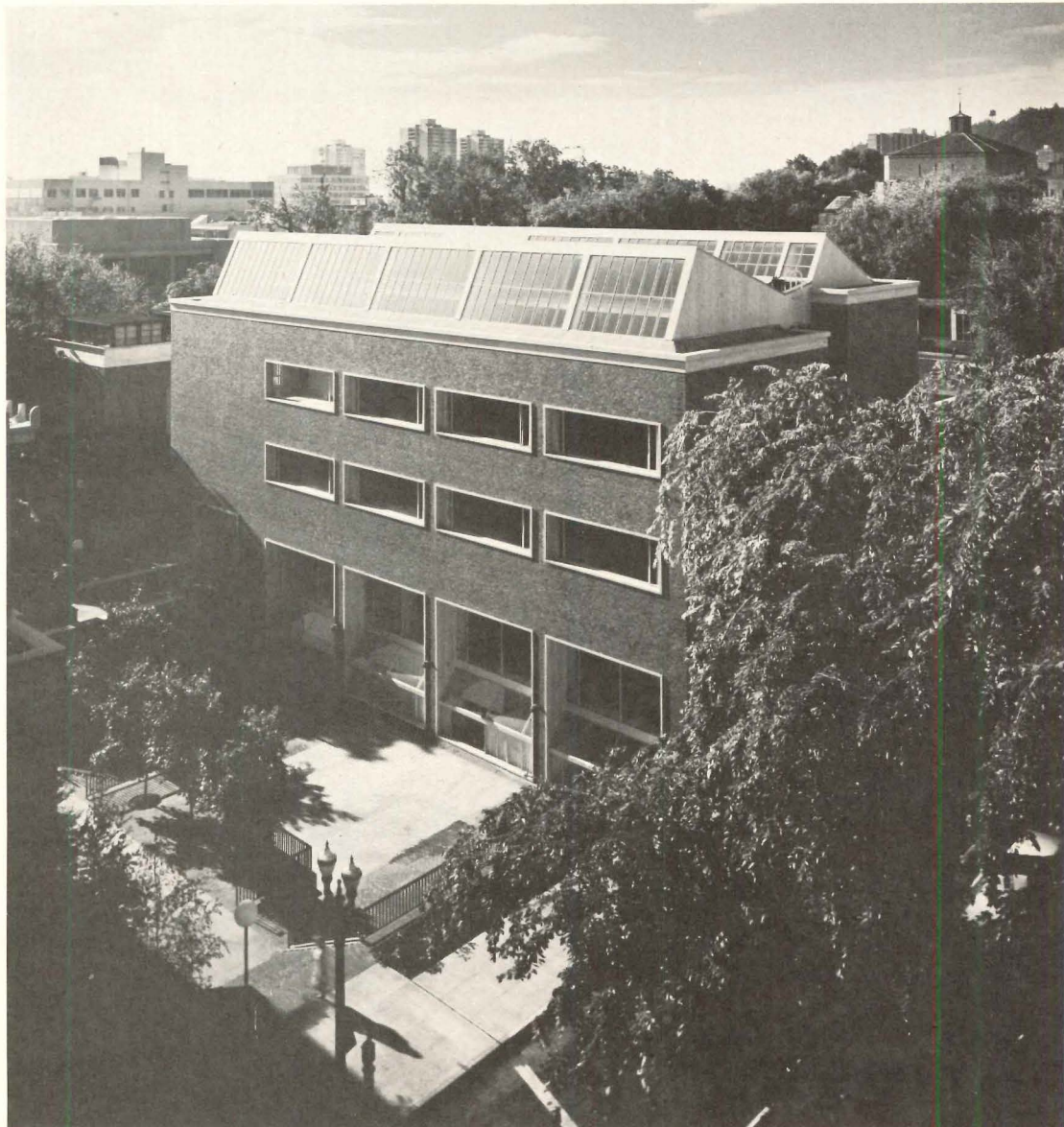
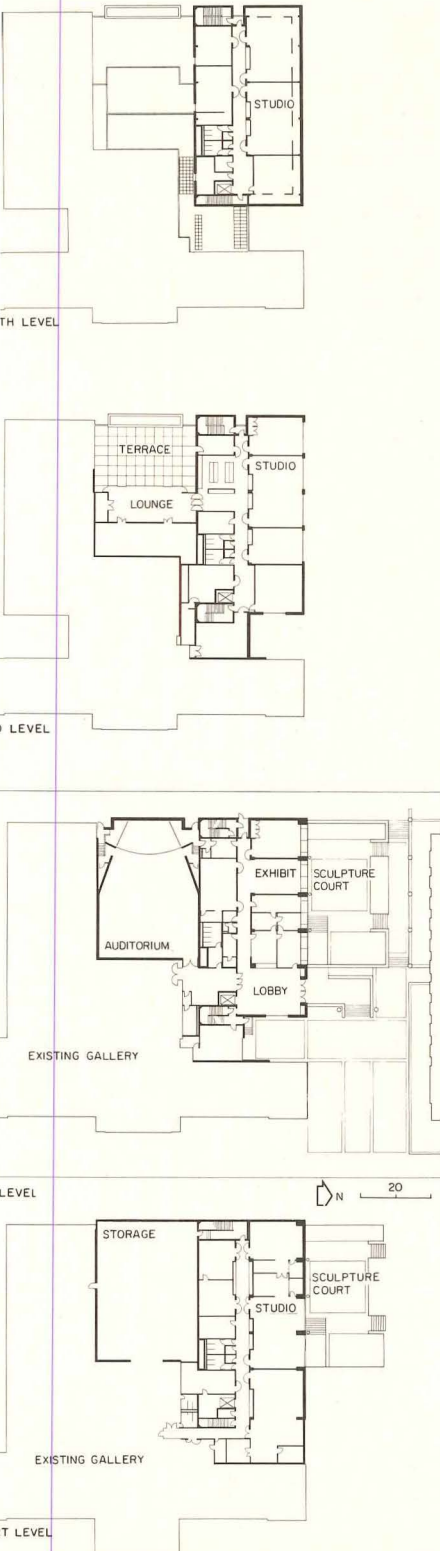
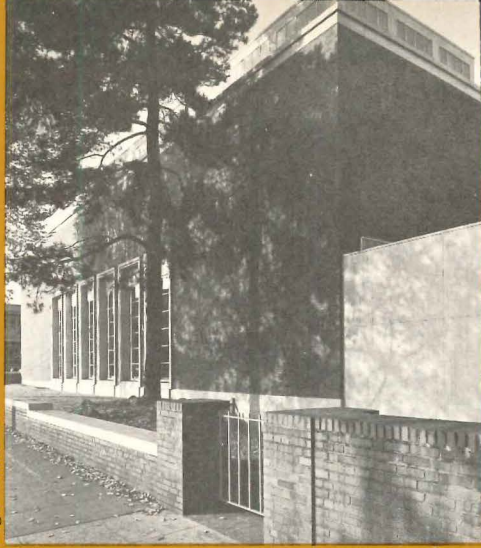
Hersh

which are not born of the peculiar demands of the job to be performed, but which come out of preconceived esthetic theories alone, will be in constant danger of becoming artificial, tricky, and fashionable . . . their transitory quality will be even more evident after they have gone out of fashion . . . not only the emotions but also mind and logic must be satisfied before lasting values may emerge.” (Regionalism in Architecture—Pietro Belluschi; RECORD, December 1955.)

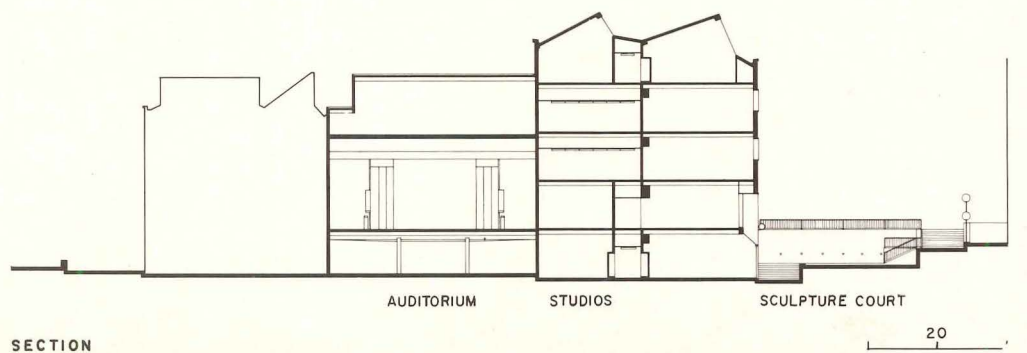
When he first arrived in Oregon—after a year at Cornell where he received a degree in civil engineering (he already had a doctorate in architectural engineering



Roger Sturtevant



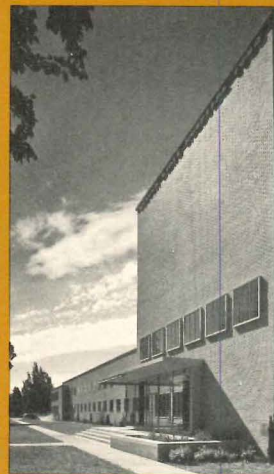
Hershberger



from the University of Rome) and a year as an engineer in a mine in Idaho—he thought it “wild, unfriendly country, lacking in softness and femininity, not like the hills of Tuscany and the Roman countryside I remembered.” He especially did not like tall stands of Douglas firs, and the dark weather, so unlike his native Italy. But as he drove (in an old Ford) the plank roads of the wild coast and ferried the rivers (there were no bridges then) that emptied into the Pacific Ocean, he came to see the beauty of the place and, perhaps from this intimate experience of its natural geography, to understand in a rare way how to express this particular part of the world in his

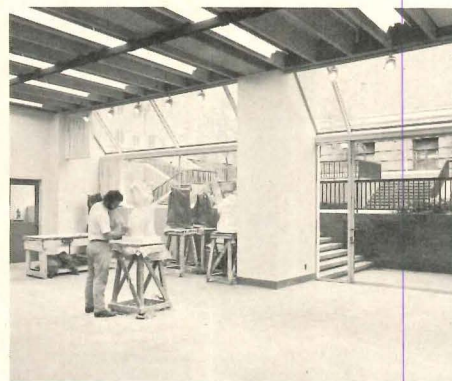


Roger Sturtevant

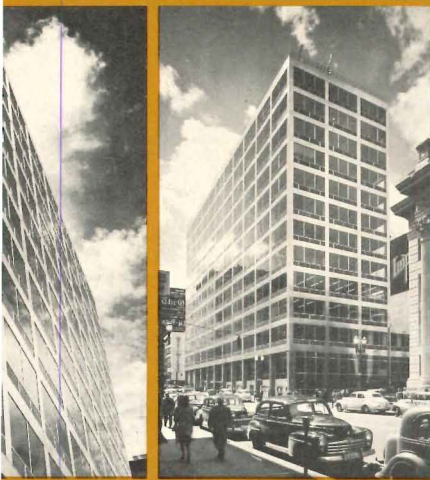


In the 40 years since the first building was completed, the original design decisions have proved themselves, rooted as they were in the museum's requirements and not in the style of the moment. The solution was then, and it has continued to be in all of Belluschi's work, in the "functional demand," to use his terse and descriptive phrase, of the building itself.

PORTLAND MUSEUM ART SCHOOL, Portland, Oregon. Architects: Pietro Belluschi and Wolff Zimmer Gunsul Frasca Ritter—Robert Mickelson, project architect. Engineers: Stanley Z. Carlson & Associates, structural; J. Donald Kroeker & Associates, mechanical; Grant Kelley & Associates, electrical; Dames & Moore, foundation; Bolt, Beranek & Newman, acoustics. Landscape architect: Robert Peron. Graphics: McCann-Erickson Collaborative Group. Cost consultants: Hoffman Construction Company. General contractor: Contractors, Inc.



Art Hupy Photos



K. E. Richardson

Roger Sturtevant

medium, architecture.
"Regionalism at its best cannot be measured or imposed, is not a school of thought but simply a recognition within its own sphere of what architecture is to human beings, a deep regard for their emotional demands, and this need not be forfeited even in the most practical demands of a project. . . ."
"It would be impossible for us to retreat or escape from a world in evolution but . . . we must believe that a society of men may gain wisdom by seeking again the things man can understand and love, and conversely by learning to love all that lives near him. . . ."

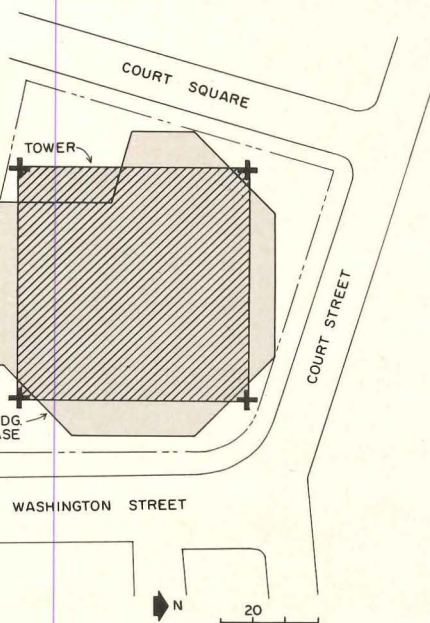
"The plea we can make is not that we go back to what once was, not that we become romantic, but that we face creatively as free spirits and in deep honesty the complexities of our modern world, never forgetting that man is the measure of all values." (Ibid.)

The Museum brought Belluschi his first national acclaim, though regionally he was already known for the elegant simplicity of his houses. In 1948 the Oregon State Hospital at Salem (page 122), set a new standard for humanitarian design of institutional buildings, especially for the mentally ill. But it was the Equitable (now Commonwealth) building (page 123), also

Concept and system cooperate innovative economies

The 41-story Boston Company building, reflecting the clarity, directness and simplicity of Belluschi's early smaller-scale buildings is again successfully translated, as it was in the Equitable building in 1948, to a larger scale of a high rise structure. The structural system—four corner columns and a central core, reinforced by inverted-V braces (or "wind bracing") to transmit wind loads to the columns—precisely reflects the architectural concept. Architects and engineers worked closely together from the earliest design stage, achieving through their collaboration exceptional economy in the weight of the steel (21 psf vs. 25 in conventional building), and providing Boston's first column-free office space as well as a satisfying esthetic statement. Slender intermediate columns veil V-braces on exterior

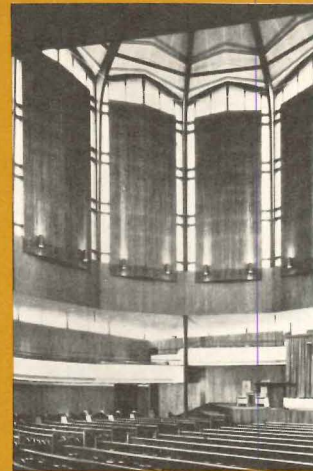
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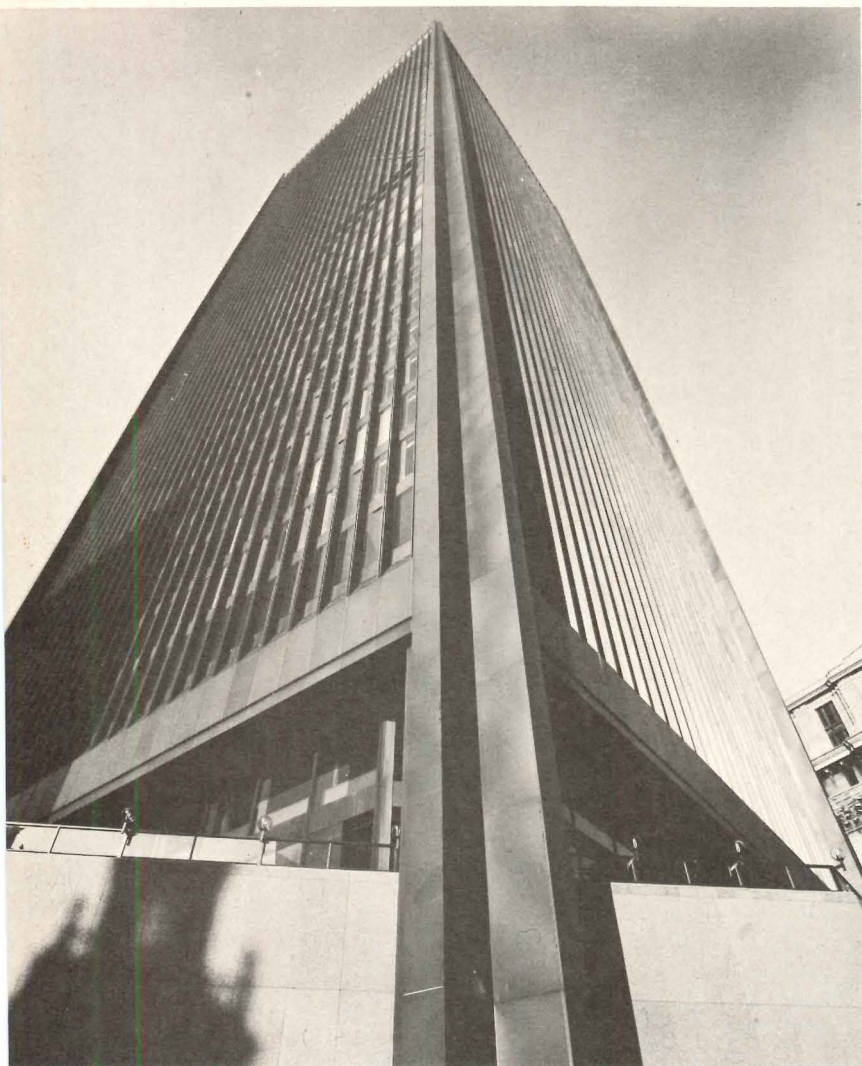
completed in 1948, in which his pioneering concepts really caught the profession's attention. It was not the first multi-story curtain wall building, but it was the first of a new generation of buildings to make use of the idea and to do so in a unique way which was at once regional and trans-regional. The gleaming aluminum sheathing which covered the reinforced concrete frame was a product in excessive supply in the Northwest after World War II, and the Equitable proposed a market for its use on structures. Its list of "firsts" is imposing. Belluschi recalled one of them, the traveling crane window washer, last year: "I got the idea from the way train windows were



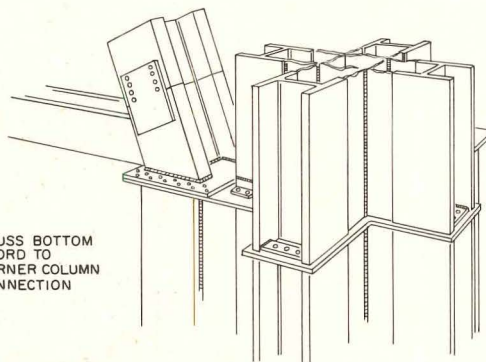
Roger Sturtevant



Joseph W.



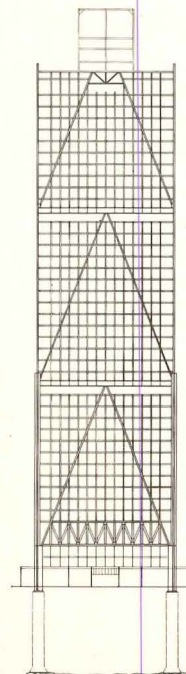
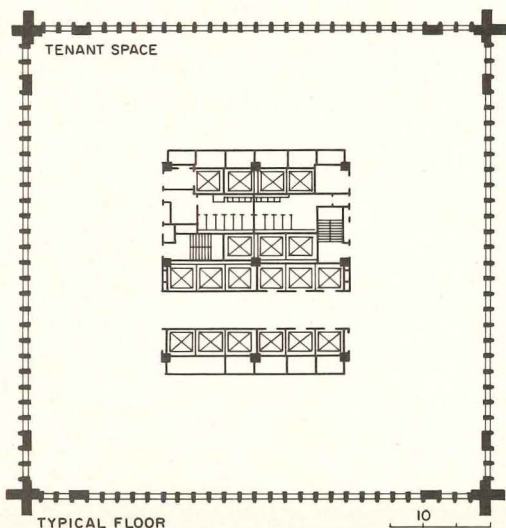
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TRUSS BOTTOM CHORD TO CORNER COLUMN CONNECTION

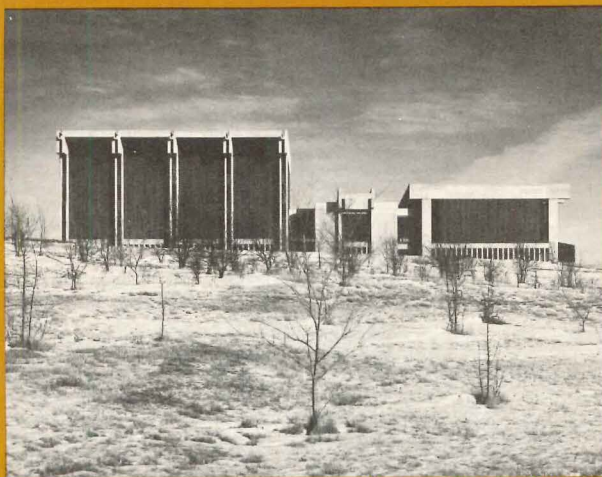
Bronzed aluminum sheathes tapered cruciform corner columns, narrow intermediate columns, and V-braces. Tower base is faced with granite. Detail shows fourth floor truss connection to column.

THE BOSTON BUILDING, Boston, Massachusetts. Associated architects: Pietro Belluschi-Emery Roth & Sons. Engineers: The Office of James Ruderman, structural; William A. DiGiaco Associates, mechanical/electrical; Haley & Aldrich, Inc., foundation & soils. General contractor: Aberthaw Construction Company.

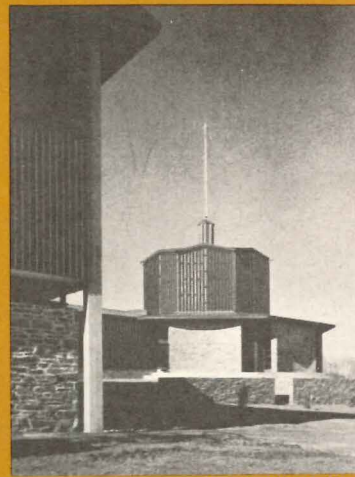


ed," he said. "This device is really made the flush exterior walls of the table possible." The boldness of the apt, its direct expression, pared to essentials, is a perfect statement of Belluschi's of that "an architect must train himself iminate, refine and integrate."

When he left Oregon a few years later come dean of the School of Architecture and Planning at MIT, his office was hired by Skidmore, Owings and Merrill. era ended for him, but ahead of him, gh he did not know it, were opportun- for a new and different kind of practice, scope few architects ever envision, the challenge he had sensed when he



Bill Engdahl, Hedrich-Blessing

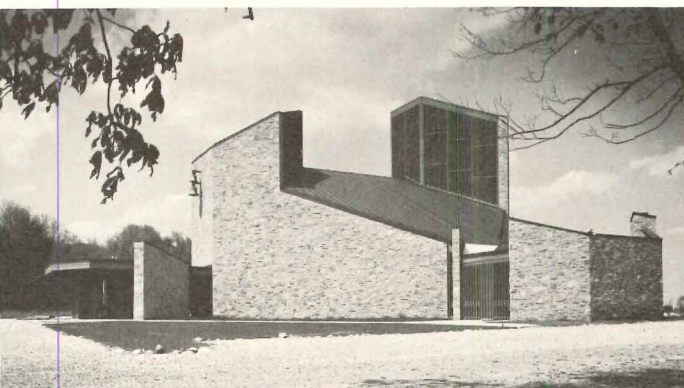


Joseph W. Molitor

ent work: a miscellany
building types in many places

ublished recent work by Bel- li: 1, 4. St. Margaret of Cor- Columbus, Ohio, Brubaker & dt, associated architects; 2. Ad- stration Building for Ports- h Priory, Portsmouth, Rhode- d, Sasaki, Dawson & DeMay, iated architects; 3. John M.

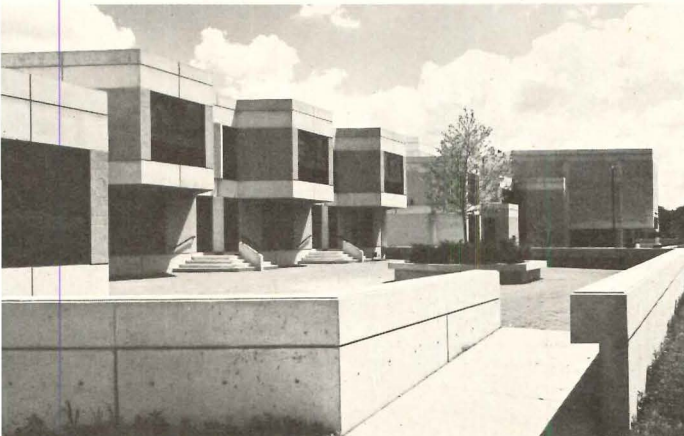
Tobin School, Cambridge, Massa- chusetts, also in association with Sasaki, Dawson & DeMay; 5. The Chapel, Oklahoma City University, Oklahoma, John Reid associated architect; 6. McGregor Dormito- ries, M.I.T., Cambridge, with The Architects Collaborative.



Charles Moor

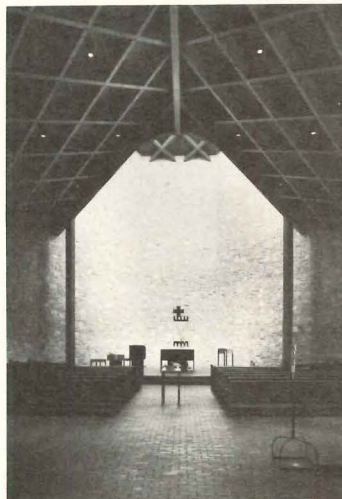


Louis Reems



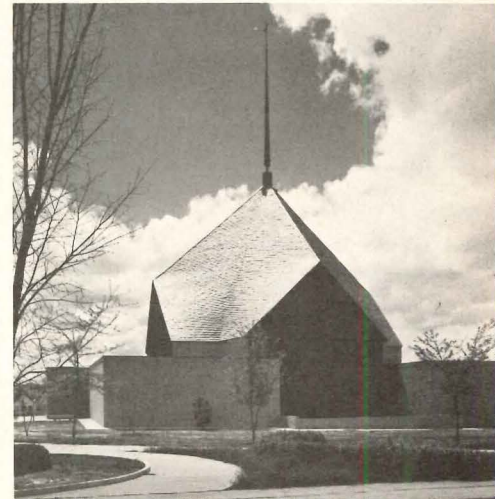
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Charles Moor

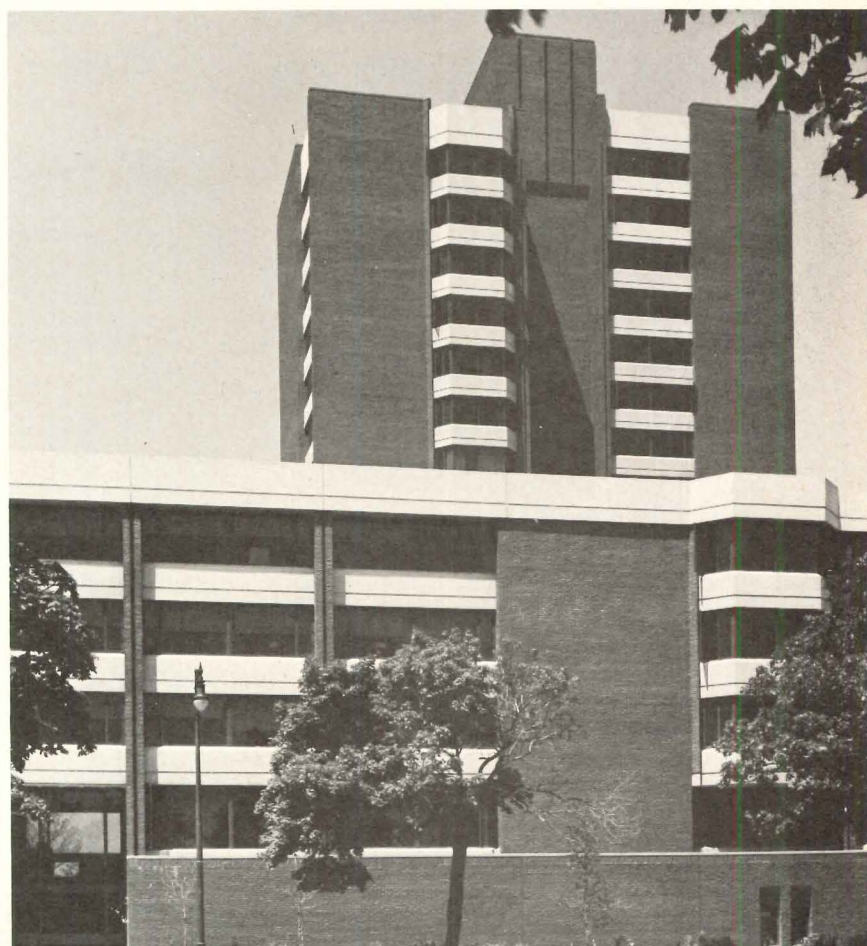


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Michael J. Wurth



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spoke at Reed College on the eve of his departure:

"The ideals of the modern architect may be very briefly summarized thus: He must come to terms with his environment; only then can he hope to become again creative, not in the anemic method of the academy or as a hireling of the wealthy, but as a lively interpreter of the new social order and as a prophet of his age."

During his first years as dean, he served on numerous architectural juries and advisory commissions, a new dimension to the educational career he had undertaken. Soon he was asked to consult on projects of all kinds and of great scope, in all parts of the

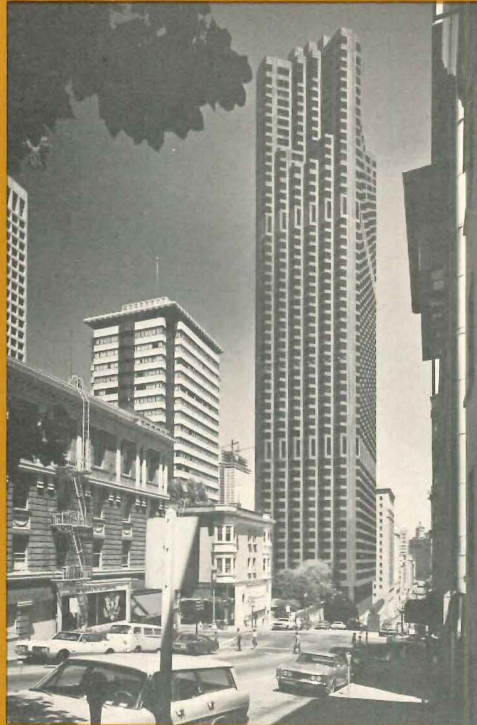
country, and abroad. But for Belluschi consulting is no tangential association; it is complete involvement with the problem. His practice became a new kind of professional service for which he was uniquely qualified. Retirement from the MIT deanship gave him the time this kind of practice required, and that new demands asked. Old clients (the Museum, the Equitable, The U.S. National Bank) wanted new buildings. New clients were numerous. In every instance, he associated with a local firm, often a young firm. His name was on churches, temples, office buildings (though on the Pan Am, it was Gropius, not Belluschi, who was primarily responsible), schools and col-

lege buildings—the list is varied and long. It is likely, however, that great as has been his contribution in the design of individual buildings, it is his work—serious, honest and practical as well as intensely creative—on projects that have affected the quality of cities by changing the concept of their pattern that will eventually be recognized for its pioneering concepts. For through "eloquent simplicity" he has brought to decision makers of all kinds—politicians, financiers, developers—his message of good design, and because his work is as good, or even better, than his word, they have listened. And all have benefited. —*Elisabeth K. Thomas*



Gorchev and Gorchev

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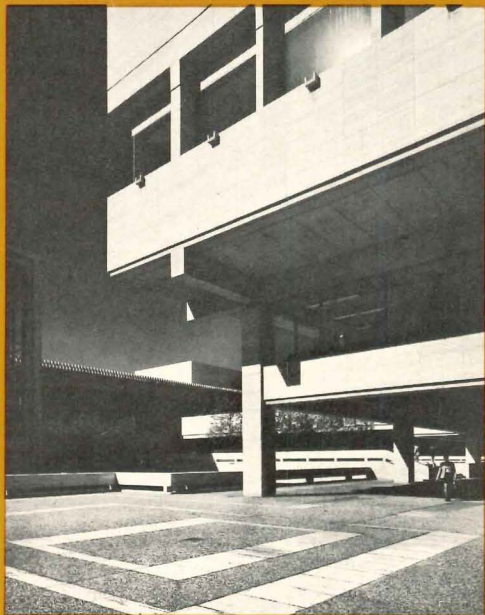


Roger Sturtevant

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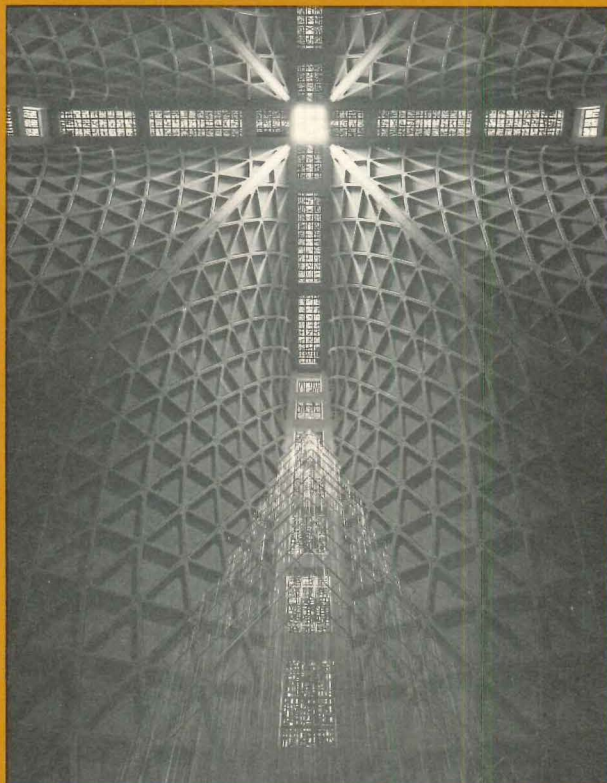


3



Ezra Stroller © (ESTO)

4



Morley Baer

5

Recent work, published and unpublished, includes: 1. The stone Building, Boston, Massachusetts, in association with Emery & Sons; 2. Bank of America, Headquarters, San Francisco, which Wurster, Bernardi & Emery and Skidmore Owings & Merrill were architects, with Pietro Belluschi as design consultant; 3. & Haas office building, Philadelphia, George M. Ewing Company, architects, Pietro Belluschi, consultant; 4. Juillard School, New York, Eduardo Catalano and Helge Gerberman, associated architects; Mary's Cathedral, San Francisco, with McSweeney, Ryan & Le

Articles by Pietro Belluschi:

Architecture and Society, Address at Reed College, Portland, Oregon, December 1950. RECORD, February 1951. The Meaning of the New Architecture, Address at the National convention of the American Institute of Architects, 1953. RECORD, October 1953. On Religious Architecture, RECORD, December 1954. The Meaning of Formalism in Architecture, RECORD, December 1955. Eloquent Simplicity in Architecture, Address to the 1963 National Conference on Church Architecture, RECORD, July 1963.

CHILD CARE CENTERS

This is ARCHITECTURAL RECORD's first Building Types Study devoted entirely to child care centers. Child care centers serve many social and community purposes, but their most important job is to be places where young children grow and learn.

Child care centers are hard to design. They must be flexible, simulating, scaled for children but comfortable for adults, inviting to the community—and dirt cheap. Despite that last requirement, the buildings we have chosen have been successful in many ways. Child care centers are, by definition, resources available to working mothers; but we have included two private nursery schools which are closely involved with their communities and for which most of the architectural problems are the same—*Jonathan Hale*

Jonathan Hale



CHILD CARE CENTERS: THE PROBLEMS AND THE MEANINGS

WHO WANTS CHILD CARE CENTERS?

Child care centers have been going up by the hundred in the last few years. There are two main reasons: the entry, *en masse*, of mothers into the work force, and the still-dawning understanding that a child's earliest experiences are crucial for later ability to learn.

One reason that is missing is any real government support. There is very little Federal money for child care programs, and very little Federal guidance for designing and setting up a child care center. Few states have large-scale care programs and most have no standards for early childhood care away from home. New York City has perhaps the most extensive child care program in the country, but even there, cutbacks in state funds have brought new construction to an end and some existing services are threatened.

Nationwide, one out of three mothers of children under six works. During the time the mothers are away from home, their children are cared for by friends or relatives, by licensed child care centers (about 25 per cent), by unlicensed child care centers where children are often given minimal attention, or the children are left alone. By some estimates, 600,000 small children are left alone each day.

According to education experts, 50 per cent of a person's ability to learn is achieved by the age of four; and a stimulating environment where a child receives considerable attention can affect this ability enormously. Educators have been intuitively aware of this for decades; but during the last ten years, there has been a great increase in the amount of reliable information about how children learn. At the same time, people have been discovering the failure of schools to reach many underprivileged children. The Federal Head Start Program was started under President Johnson to help deprived preschool chil-

dren attain the patterns of thought necessary for later learning. Head Start was a relatively small program, but it continues to provide the only Federal support for school education.

WHO OPPOSES CHILD CARE CENTERS?

Last fall, Congress passed a large-scale program of Federal support for child care centers. President Nixon vetoed the program, arguing that such a program might weaken the family structure, and arguing that the billion program was too expensive. Objections to child care centers have come from some communities because the centers would bring in the children of poor neighbors. Also, many educators believe that long hours spent away from home are hard on small children. Finally, child care can be extremely expensive. The ratio of teachers to children in the New York City program is about four times that of the city's public schools. What's more, child care centers are open from 8 a.m. to 6 p.m. and cost is \$2,500 per child per year.

An alternative to the child care center is the placement of small groups of children in private homes. At least one urban community claims success with an inexpensive plan; however, in the hands of untrained adults, a great deal is left to chance.

Private child care centers are springing up in large numbers, especially in areas such as Texas, where there is little or no government support for child care. Chains of franchised centers are run for profit at low cost to parents. Many charge as little as \$20 per week. The quality of the care varies widely, although some of the franchised centers have achieved a good reputation. Some educators insist that decent child care is impossible for less than three times \$20 and not a few balk at the whole idea of marketed child care.

ROLE OF THE ARCHITECT WITH THE COMMUNITY

Good child care center is a real community resource. It frees mothers to work (in any way, freeing many fathers who must hold more than one job) and it gives children a solid foundation which will make it possible for them to survive in school later, in providing a much happier and more stimulating environment than they could otherwise.

The first group of child care centers in the following pages, by architect Frank Williams, in association with architect Peter Herget, were designed to make the most of their high-density inner city sites, reaching out to their neighborhoods. Under the New York City system, the community controls the completed center but does not control its design. That is determined by the Department of Social Services and by the private builder, from whom the buildings are then rented by the city and given to a community group. Within the set program, there is still room to respond to the community. On one narrow through-block site, Williams terraces his building back to provide two entrance plazas and a rough-the-block connection (page 130). On other sites, he provides inviting "front porches" (page 132).

To many in poor communities, monumental or institutional buildings are a insult and an affront by the wealthier society from which they are excluded. It is up to the architect to keep his building from having that image—no mean trick if the building is, in fact, the creation of an independent government agency.

Many architects and administrators of child care centers believe they should provide services for adults as well as children. The center on page 134 contains many community facilities, notably medical and psychiatric counselling. The center at the bottom of page 135 also contains counselling facilities. The center on page 132 includes a drug rehabilitation service. Many centers contain after-school facilities for children.

While there have been some efforts to make the small children's spaces available to adults at other times of the day, the general feeling appears to favor leaving the small-scale spaces and the children's projects-in-progress for the children alone. The furniture is, of course, far too small for adult use, but more important, daily rearrangement makes it very difficult to maintain any sort of continuity.

When a child care center must appear inviting to the surrounding community, this aspect is even more important to the young children who will use it, many of whom have never been away from home. For example, it is important to avoid large blank walls along the street, and overscaled—or not clearly visible—entrances. A domestic scale

WITH THE CHILDREN

on the outside will make children feel more relaxed.

Easy access to the outdoors is a tremendous asset, and it can be provided in the city by the use of terraces opening directly from the playrooms. Special heaters near the doors can help eliminate drafts. A child care center with little or no play space at ground level can use virtually all of its roof for play (pages 130-135). There are many opportunities for the architect in traditional playground design. However, the non-architectural "adventure playground" is becoming popular among some American educators who have seen its success in Europe. Children are given raw materials and an adviser to help them and they make their own constantly-changing playground. Adventure playgrounds are usually very messy and need to be screened in, but, after all, elegance is not the point in a playground.

Young children are pretty small, but a Lilliputian scale throughout the building has been found not to be a good idea. Most educators favor a combination of small- and large-scale spaces and furniture. Photographs on pages 140-142 show some of the possible alternatives to conventional furniture, which provide, among other things, small spaces to crawl into or climb up to within a larger space. Places which are completely inaccessible to adults give small children a sense of insecurity, but they enjoy having unseen corners to go into. Several preschools use the floor as furniture. As long as the floor is carpeted and warm, children like to sit on it. Floors can include stepped sitting areas (page 140). Windows only at child height (this has been tried in at least one private nursery school) give adults a feeling of insecurity. The most successful buildings we have seen provide standard-sized doors, steps and windows (although it is desirable to keep the window sill at child level).

There is great disagreement among educators about the degree to which environment enters into education. At one end of the scale are the Montessorians, followers of the early-twentieth-century Italian educator, Maria Montessori. In a Montessori school, the facilities are everything. The child moves about freely, but everything in sight has an educational purpose. The architect can have great influence on the way the learning materials are presented, and he can make his building a learning material itself, revealing its construction (page 138) and encouraging awareness of "large" and "small," direction, color, and texture. Other educators prefer a building which provides for everyone's needs but otherwise stays out of the way. One school director told us that given the money, he would not build a more elaborate building, but would put his school on a farm with plenty of animals and plenty of land.

There is also division of opinion on how to arrange the interior spaces. Some

educators believe that children between the ages of about 2½ to 5 can get along happily in one space. A large interior space can be divided by temporary or permanent partitions. Such an arrangement has the advantage that no facilities need be duplicated, but it requires sensitive handling to avoid seeming too large. If the children are divided into smaller groups, many facilities, even interior sandboxes, can be made portable enough to be shared. It's a good idea to provide separate areas for wet and messy activities, such as water play, sandbox, and painting.

Most educators agree that the day of the pink and blue nursery with duckies and piggies on the wall is over. Playfulness is fine, sentimentality isn't.

... IN CONSTRUCTION

Building a child care center is an exercise in doing more with less—much less. The A-B-R Partnership, architects, used prefabricated units made by local modular builders to put up three low-cost child care centers in Denver (page 139, top). The Early Learning Center, Stamford, Connecticut (page 138), Egon Ali-Oglu, architect, was built six years ago for \$13 per square foot, using a system of precast concrete elements. In New York City, architect Frank Williams used load-bearing brick to help reduce the cost of his centers to \$20-22 per square foot in a city where school construction can run as high as \$60 per square foot. The Charlestown Playhouse, north of Philadelphia, Oskar Stonorov, architect (page 136) incorporates the stone bearing walls of an old church. The Henry Street Child Care Center, Welton Becket and Associates, architects (page 135, bottom), uses the roof of an adjoining building for a playing area. Direct remodeling is sometimes more desirable than new construction, although some schools have found it nearly as expensive. The Shady Lane School in Pittsburgh, remodeled by Paul Curtis and Roger Smith (page 140, top) was a Victorian house. The Hilltop Center, Dorchester, Mass., PARD-Team, architects (pages 141, middle, 142, top) is a remodeled supermarket with big plate glass windows that provide a link to the community.

More information

An excellent, highly-detailed book, "Patterns for Designing Children's Centers," by architect Fred Linn Osmon, was recently prepared for the Educational Facilities Laboratories, Inc., a non-profit organization funded by The Ford Foundation. The book is available from EFL, 477 Madison Avenue, New York City, 10022, for \$2.00.

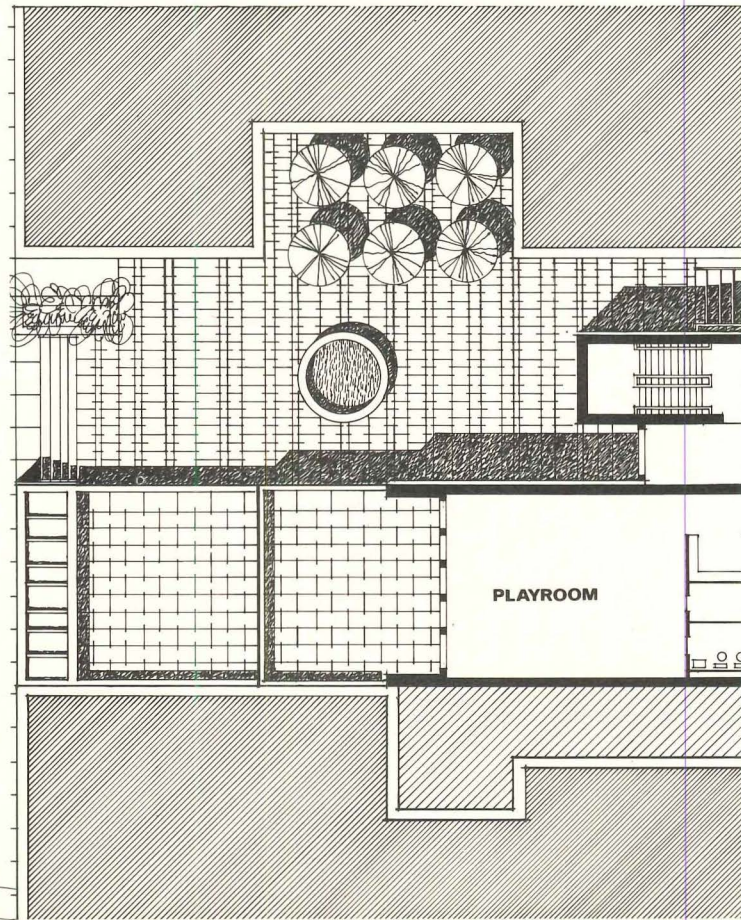
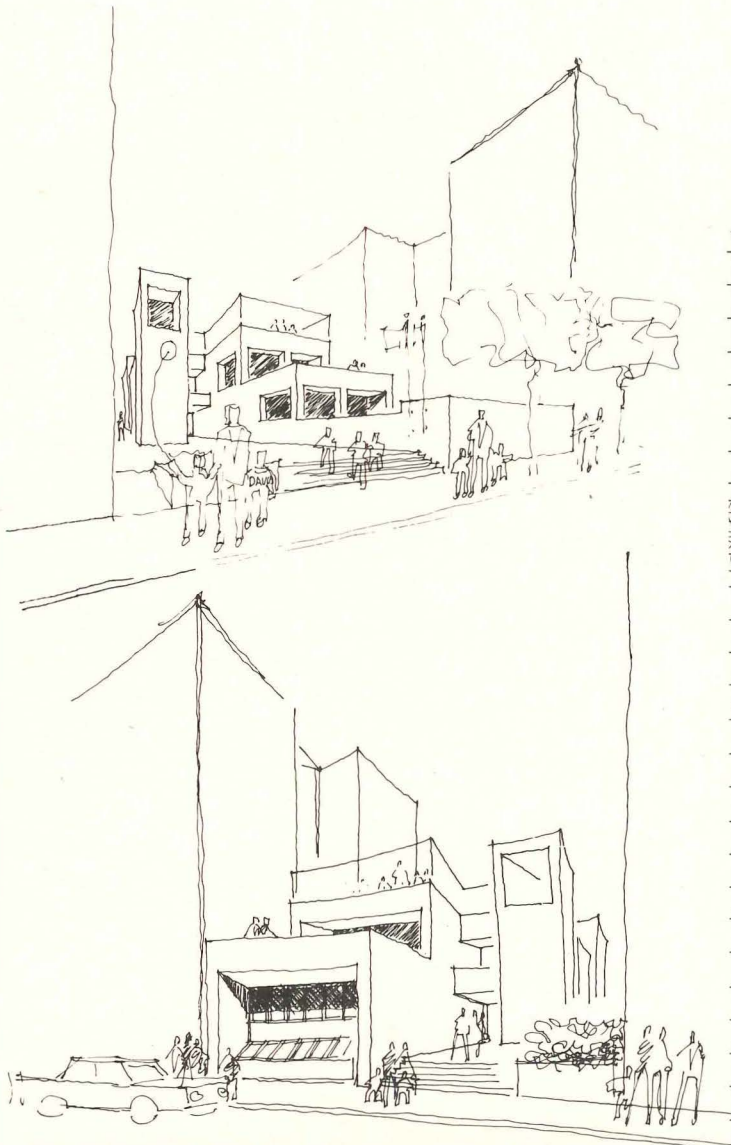
The Day Care and Child Development Council of America, Inc., in Washington, D.C., is also a good source of information for the child care architect.

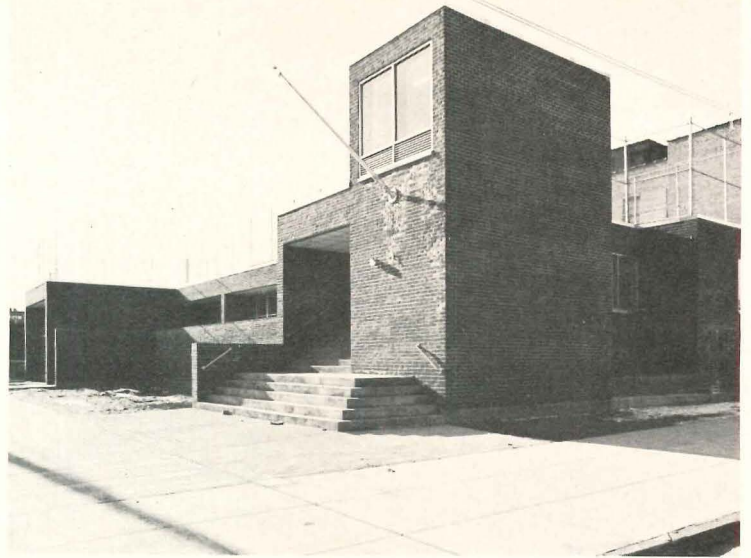
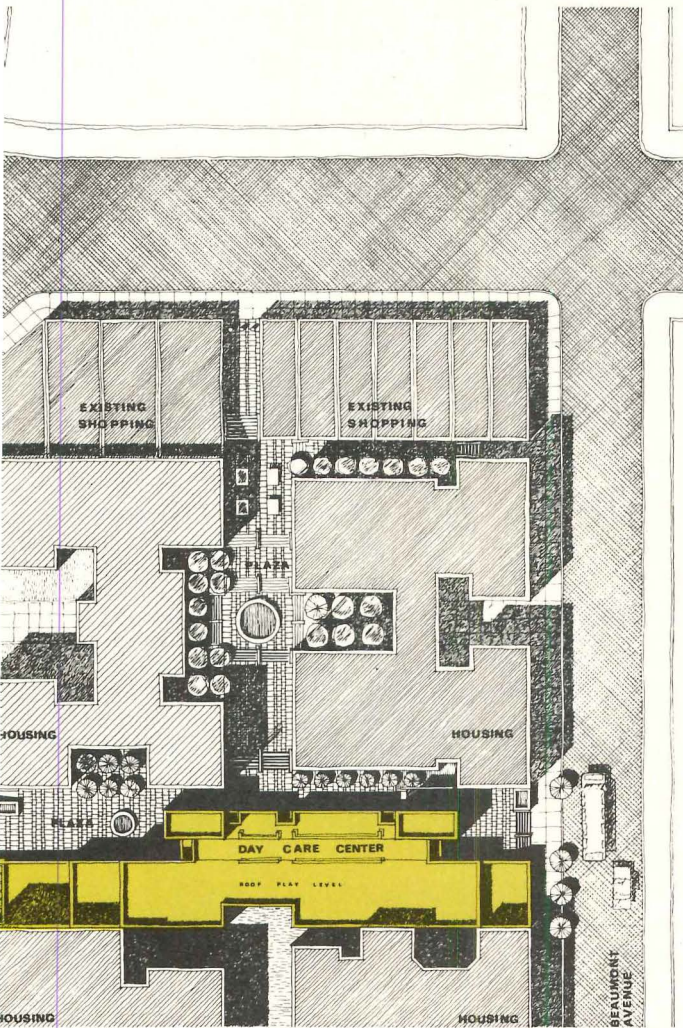
BELMONT DAY CARE CENTER, BRONX, NEW YORK

Given a standard New York City Department of Social Services program and a rock-bottom budget, architect Frank E. Williams opened a narrow site to the neighborhood, providing a through-block connection and two plazas. The site plan (opposite page) shows a proposed mid-block mini-park linked to a shopping street (top). Playrooms for 15 to 20 children each open directly onto terraces for quiet outdoor play. The roof provides a space for active play. The structure is load-bearing brick. The choice of facing materials was up to the builder, not the architect. The configuration of the building, terracing towards the street, with entrances clearly denoted by stair towers, is designed to be inviting to the community. Although the completed building falls below the architect's conception, its basic strengths are not lost.



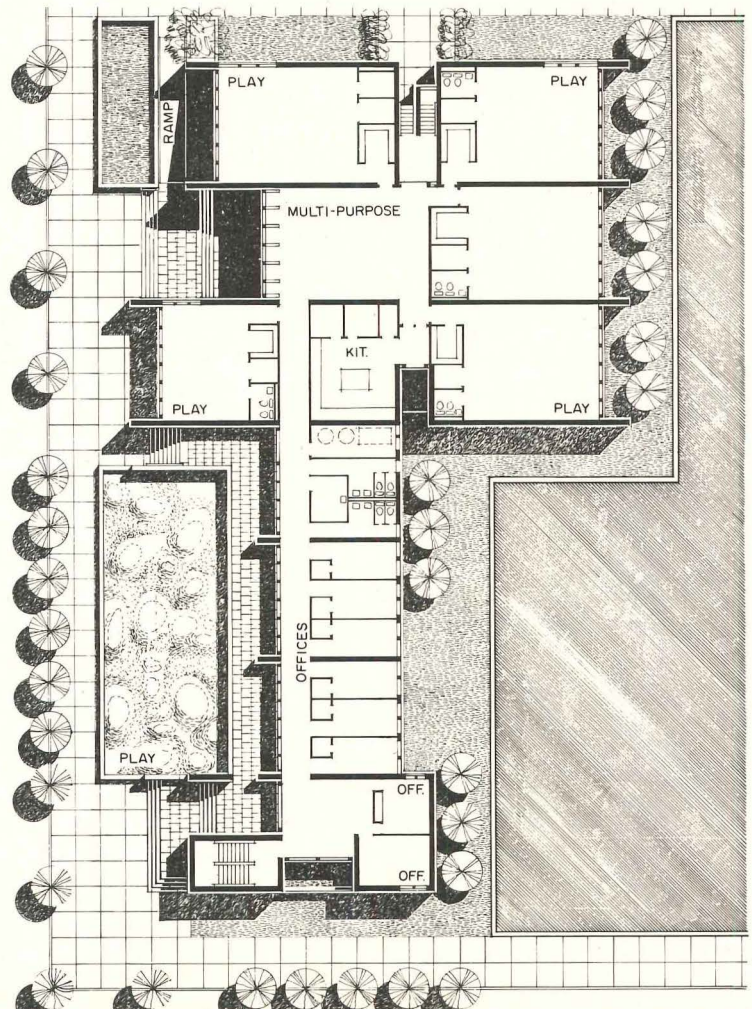
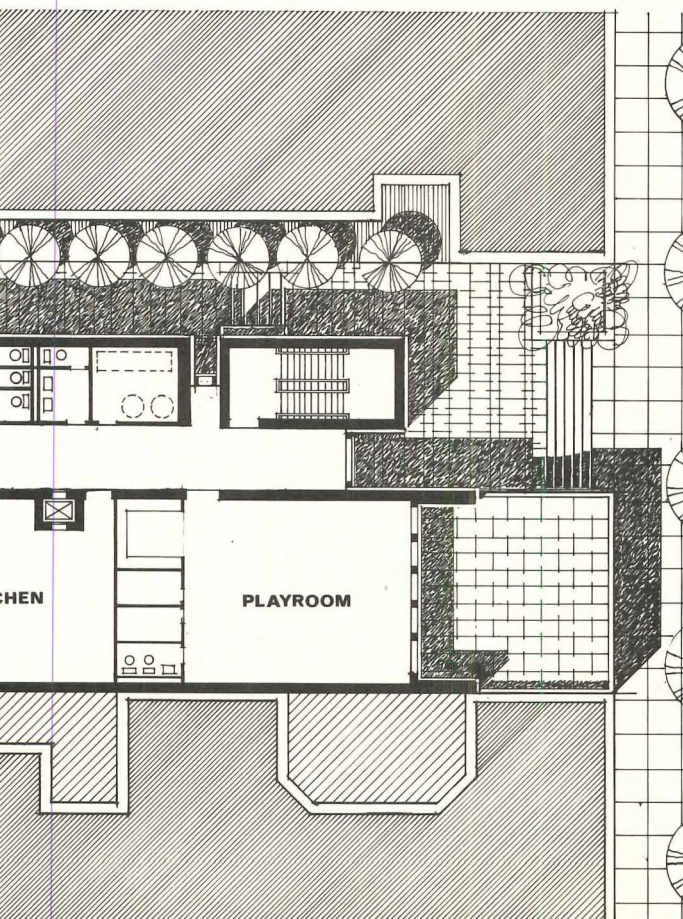
Jonathan Hale p





DAUGHTERS OF AFRICAN DESCENT DAY CARE CENTER, BROOKLYN, NEW YORK

On a more congenial site, and with a very sympathetic builder, this is one of the most successful of architect Frank Williams' centers. The child care section above is an after-school center which has a separate entrance (top left in plan). Classroom arrangement is a direct expression of the New York City program, grouping community and administrative facilities for the child care section around the main entrance (bottom in plan), linked to the playrooms by a sunny gallery. An open "front porch" is an invitation to the neighborhood. This center was started by a women's organization which felt child care was the most immediately effective way they could help their community. Builders were Rentar Development Corporation.

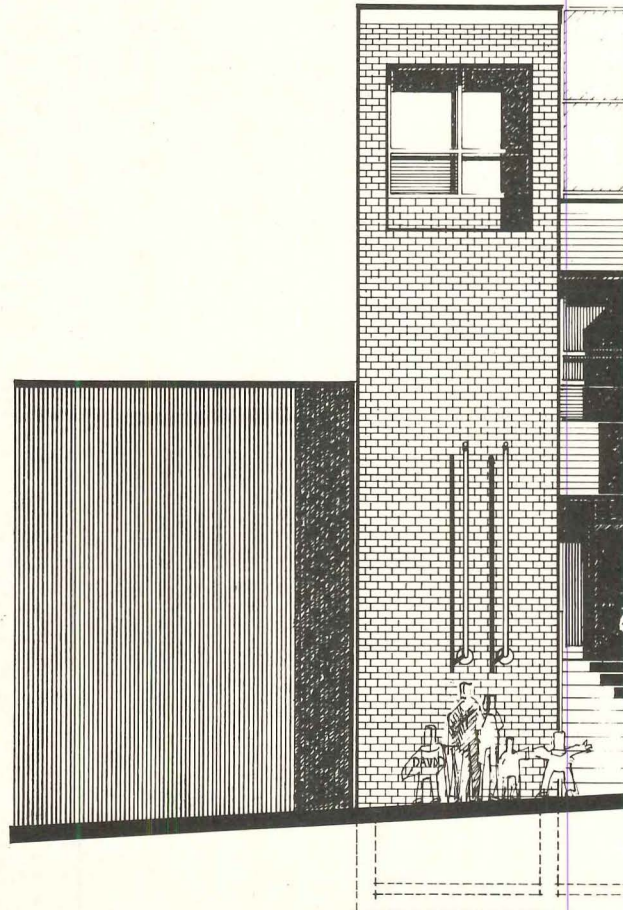
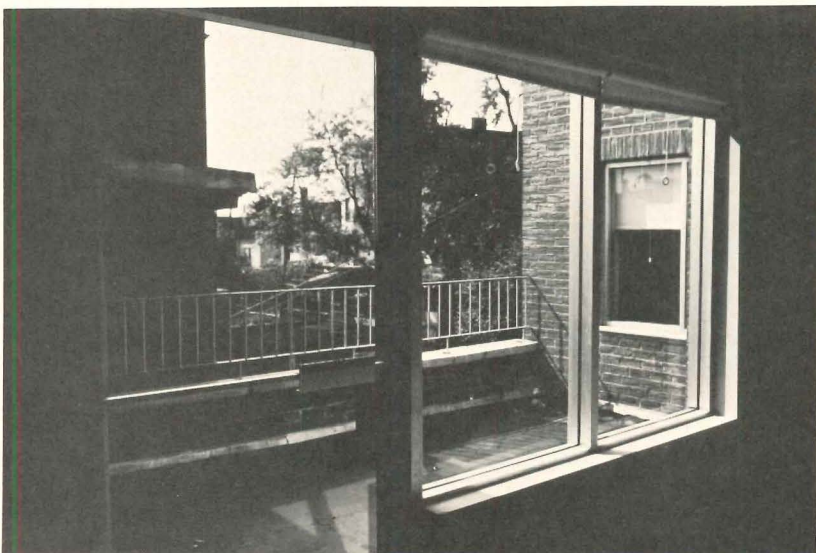


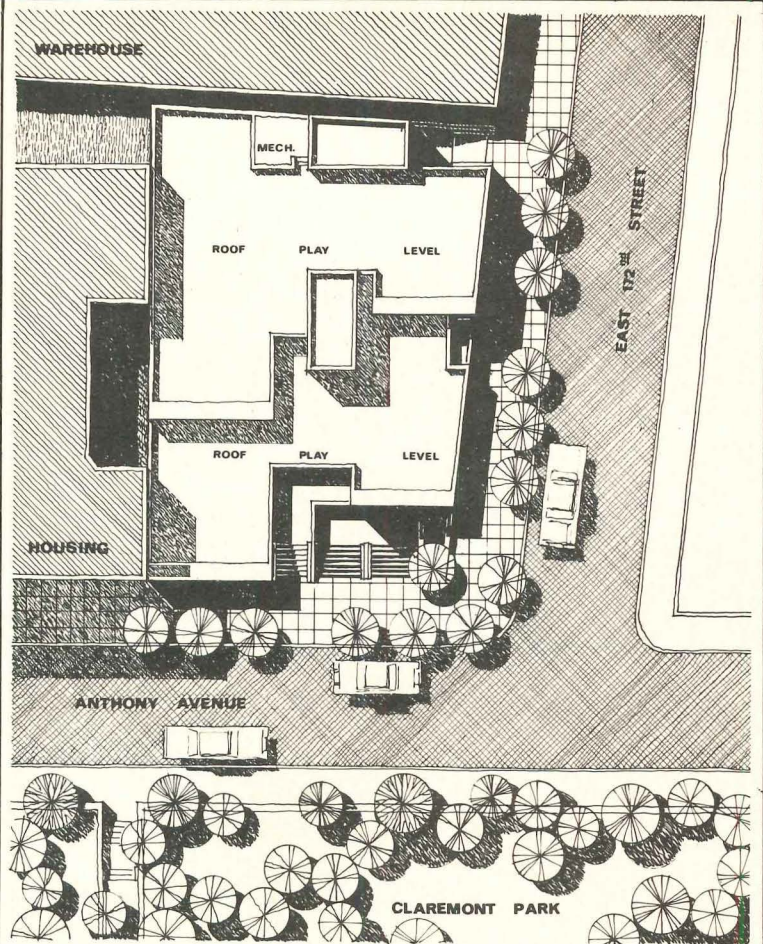
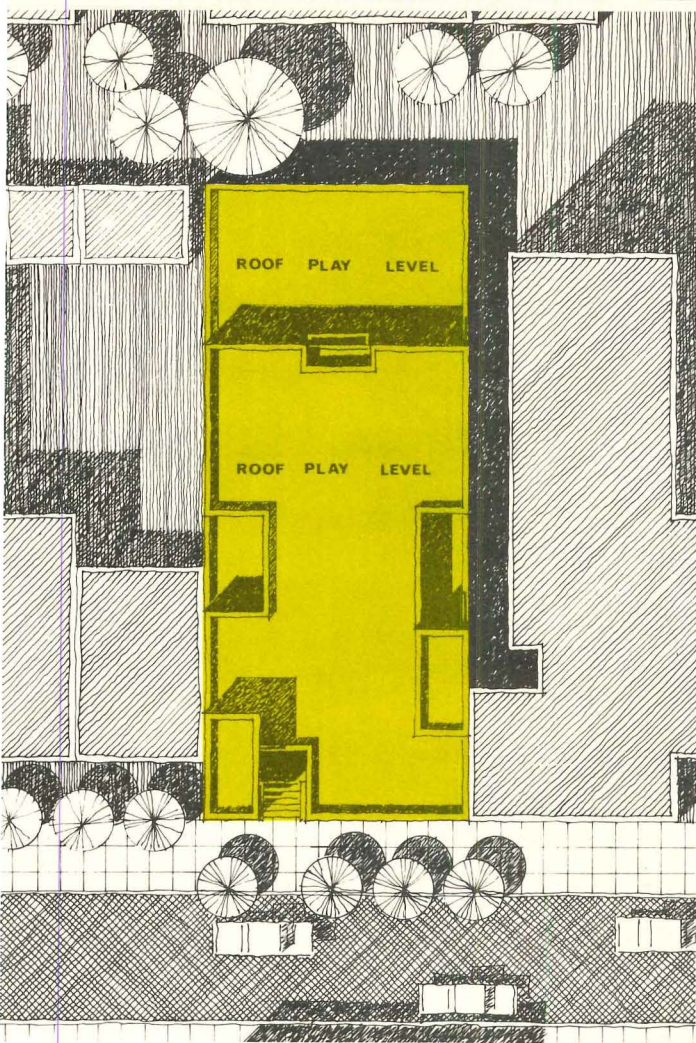
MARCUS GARVEY DAY CARE CENTER, BRONX, NEW YORK

On a tight mid-block site, this center by Frank Williams makes the utmost use of the resources at hand. Keeping to the scale of the surrounding buildings, it provides a "front porch" on which neighborhood kids love to play. Even before it was opened, this building was a part of its community. Two playrooms open onto their own terrace. The rear was designed to make the most of neighboring gardens. Small interior terraces (below) bring light to a central multi-purpose space and also to the adjacent buildings. Typically of New York City child care centers, this is located in a healthy neighborhood which, however, has many underprivileged residents. It combines child care with other community resources, notably in this case, a drug prevention and rehabilitation facility on the lower level.



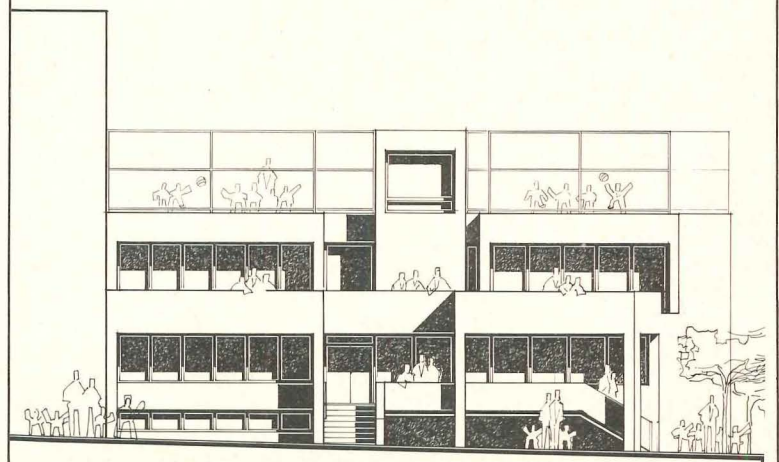
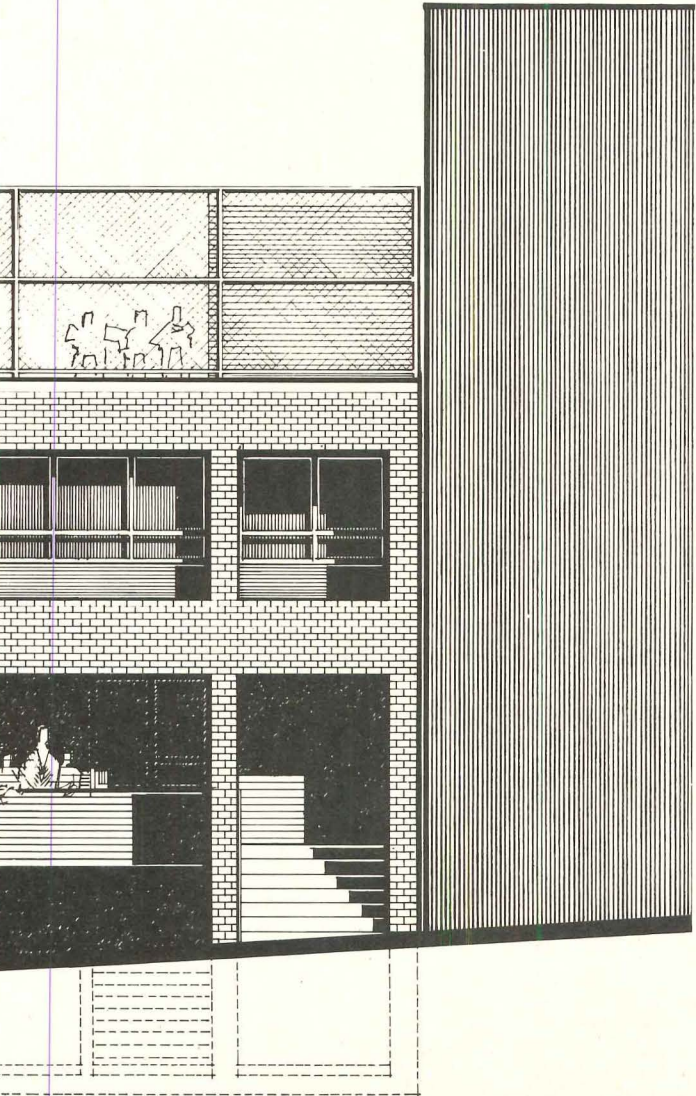
Jonathan Hale ph

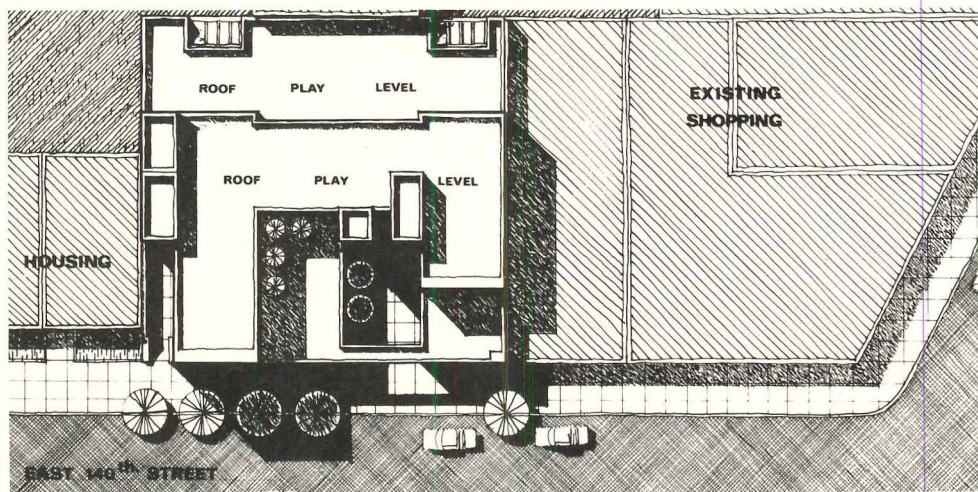
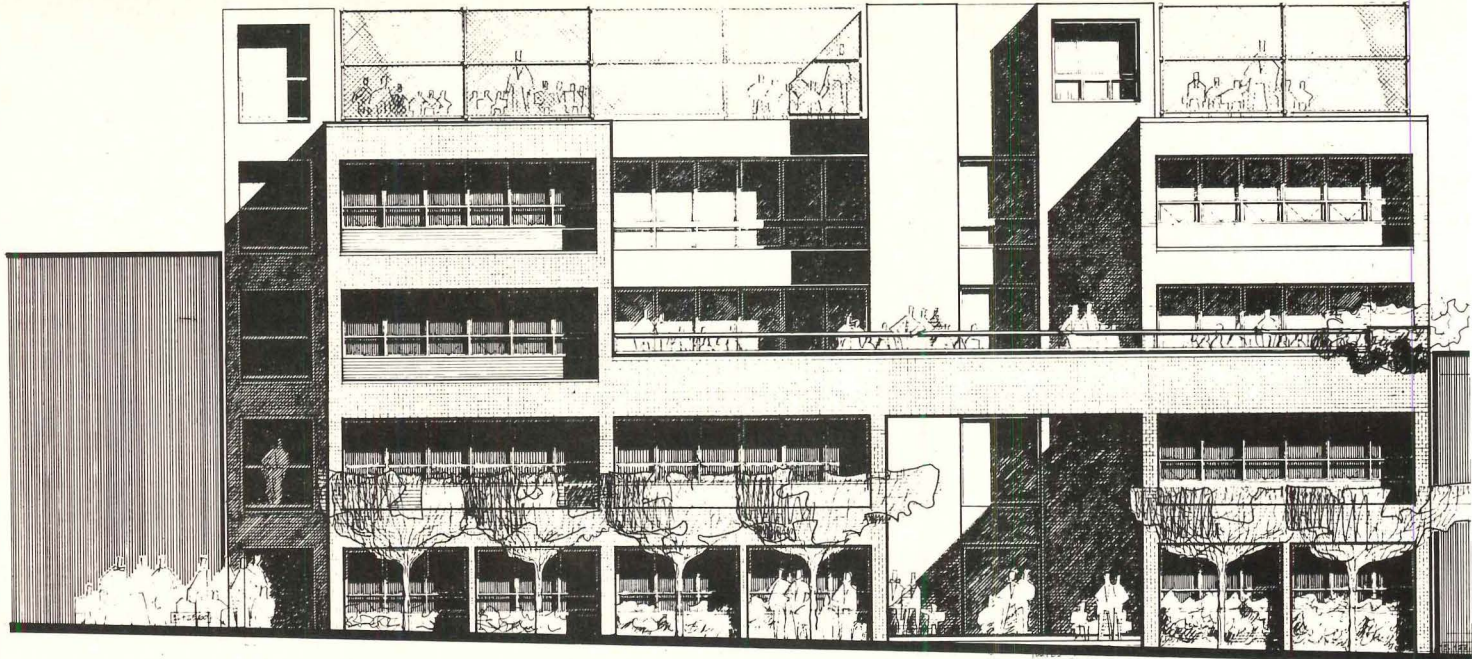




ANTHONY AVENUE DAY CARE CENTER

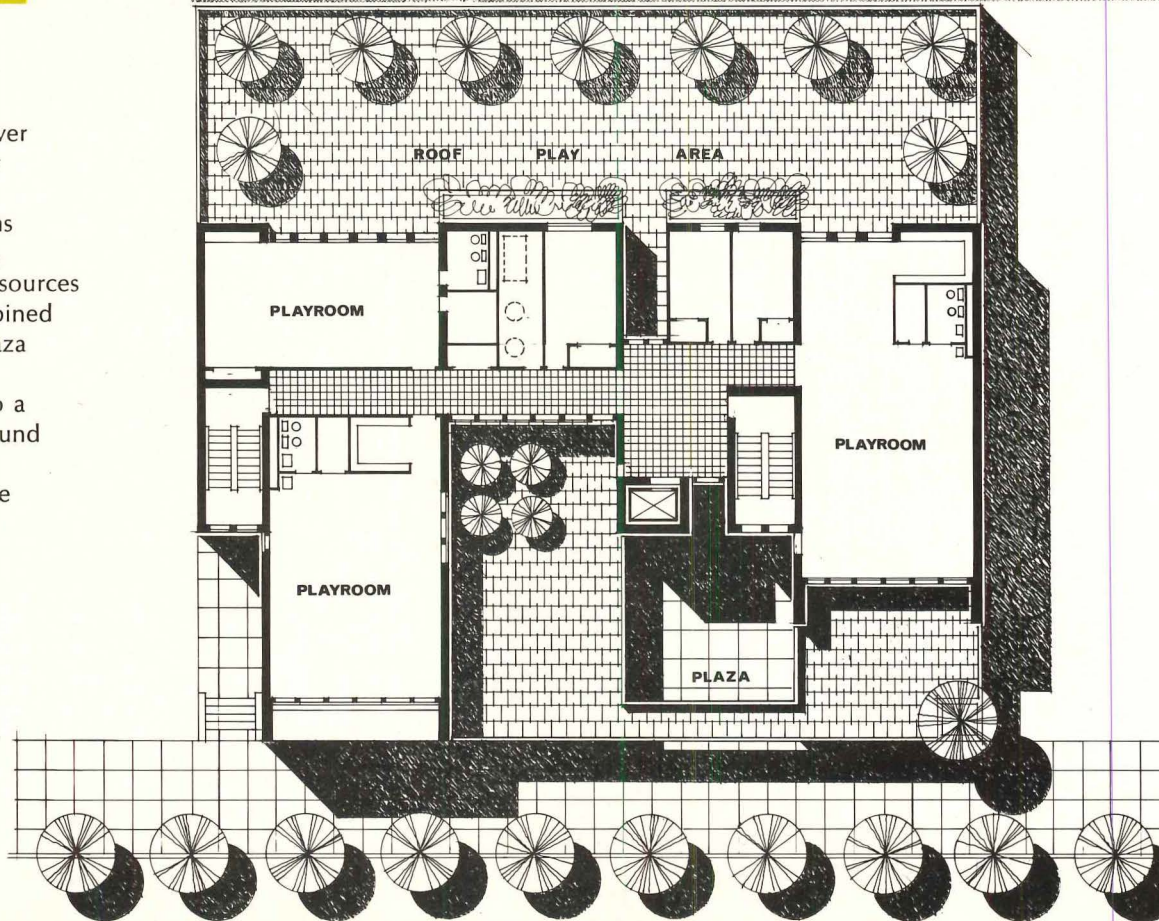
This Bronx, New York center by Frank Williams steps down toward a park across the street which, in turn slopes sharply up. Community facilities on a lower level are reached by a separate entrance. The whole corner is given over to entrances and a "front porch," making this one of the most welcoming of Williams' buildings. Williams believes that an open, accessible building will discourage vandalism, which is largely a result of alienation. But the success of such openness depends also on the center's administration. It takes courage in some neighborhoods.

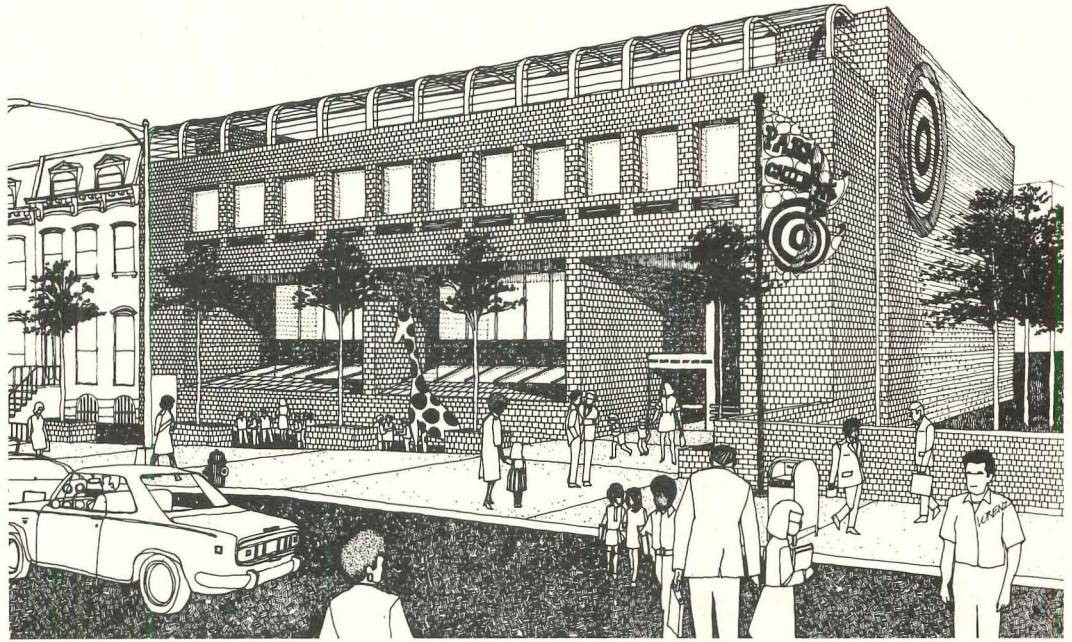




140TH STREET CENTER

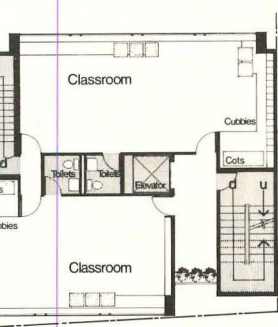
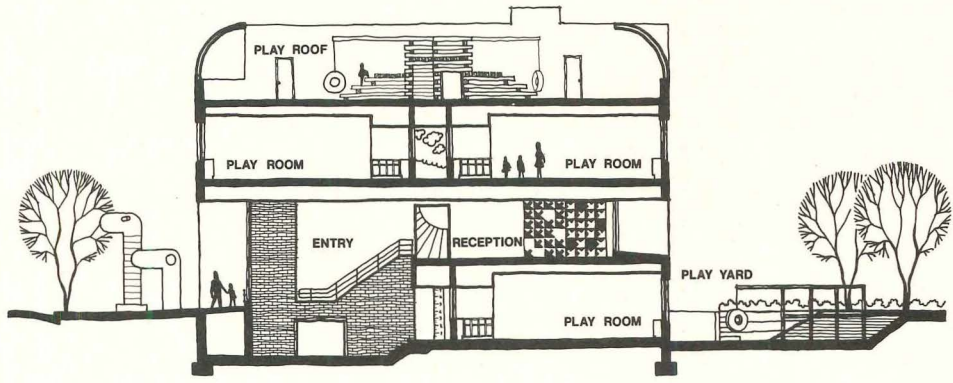
The top two levels of this Bronx, New York center by architect Frank E. Williams are a child care center. Lower floors contain a community counseling service and an after-school center. Williams believes, with many others, that as many community resources as possible should be combined with child care. A small plaza welcomes passers-by. Many playrooms open onto a roof terrace, a second "ground level" for the child-care part of the center. A terrace bridge creates an entrance portal to the plaza below. (Under construction.)





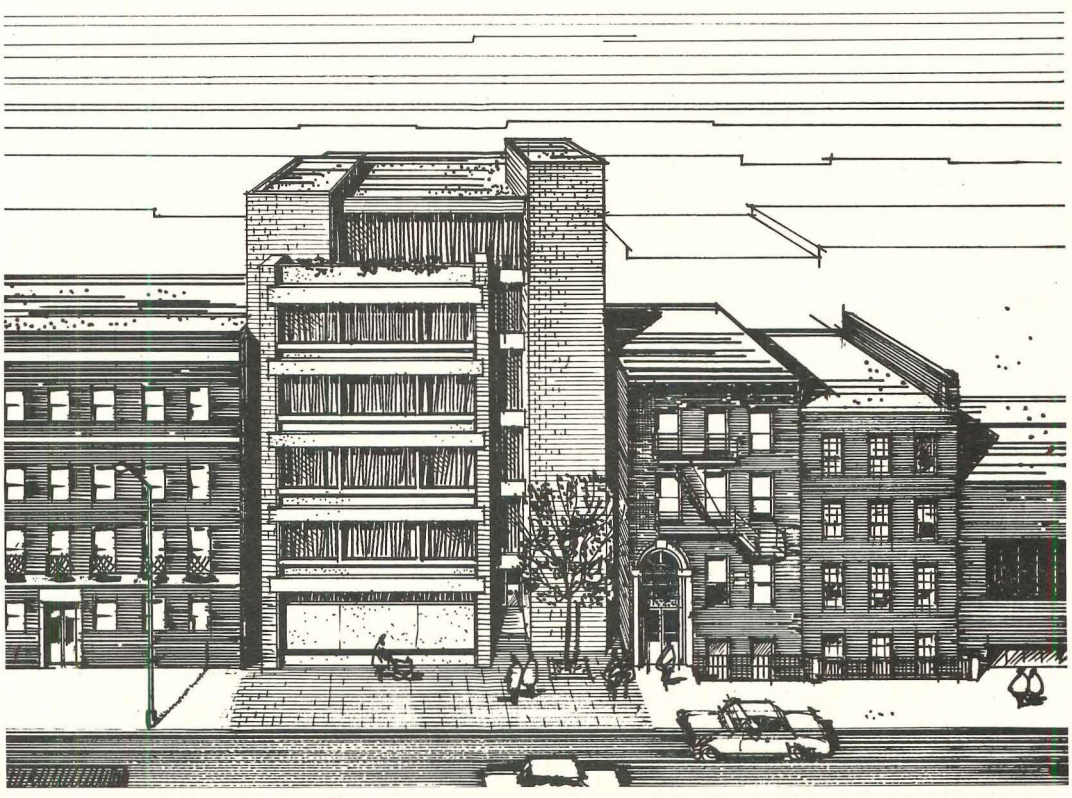
BROOKLYN NORTH

Child Development Center
 This Brooklyn, New York center, designed by Beyer Blinder Belle Architects, has a program similar to those of the preceding centers. Its financing is through the state. The center is scaled to surrounding row houses. Back yard play space complements a roof play area.
 Designer in charge: John H. Beyer, Principal architect: Yogesh Sethi, Project design: Joseph Tybporowski. (Under construction.)



HENRY STREET CHILD CARE CENTER

Stanton Becket and Associates designed this Manhattan child care center for the famous Henry Street Settlement. The roof of the adjoining building serves as play area and supplements a large ground level play yard behind the center. Space for community counseling is also included. The structure is steel with brick facing to fit in with older existing buildings on either side.





Jonathan

CHARLESTOWN PLAYHOUSE, CHARLESTOWN, PENNSYLVANIA

The late Oskar Stonorov designed the Charlestown Playhouse in 1937, using the bearing walls of an old church. Mrs. Stonorov still runs the Playhouse, a private nursery school which has always had close ties to its community. The location is a large wooded hillside north of Philadelphia. Over the years, Mr. Stonorov designed additions—always clear and simple and full of light. But in 1964, Mr. Stonorov, writing about the Playhouse, said, "I am sure that the architectural form of a nursery school has not yet been developed. . . . Such a building must have the ability for improvisation to a degree non-existent today. . . . Various age groups from two to five might be housed in spaces which have different scales." The Playhouse does contain a wide variety of spaces, from a two-story glass-walled central room to small rooms which cantilever out from the second level (right, above). It is at ease with its surroundings and informal inside without being dull.



Jonathan

Roberta Reich

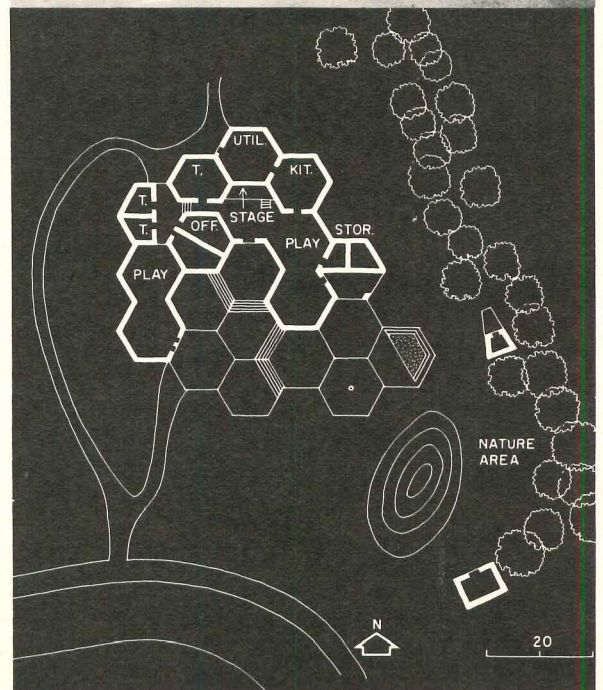
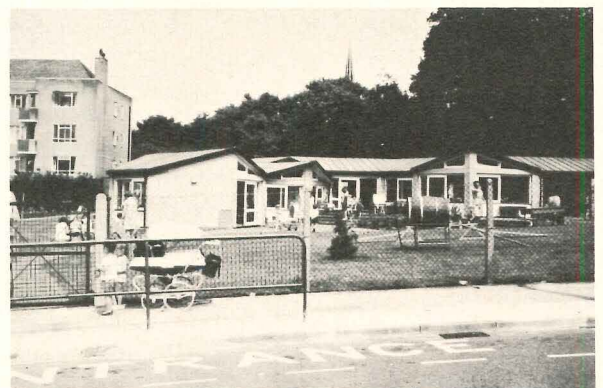




Robert Utzinger photos

FULWICHWOOD NURSERY SCHOOL, LONDON, ENGLAND

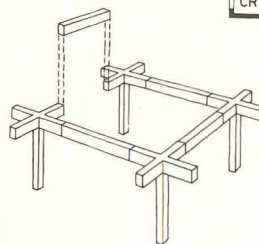
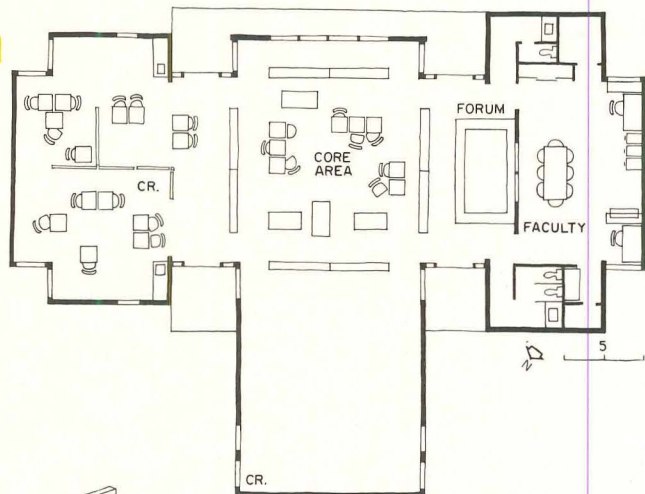
careful scaling, planning and use of materials reveal a deep concern for the children in this assured and straightforward design by architects Stillman and Eastwich-Field, FRIBA. England and Scandinavia are far ahead of the United States in child care awareness; however, this facility, which cost about \$1,000,000 to build in 1966, is more expensive than most English preschools. The 60 children aged 3 to 5 in each of the daily sessions are not divided into groups, but move freely through the building, whose hexagonal spaces provide variety and reduce the scale. Structure is brick and concrete; ceilings are wood plank and electrically-heated floors are covered in resilient tile. Window sills are low, and the sliding doors provide easy access to the outside play area, where a popular feature is a hill of earth excavated during construction.





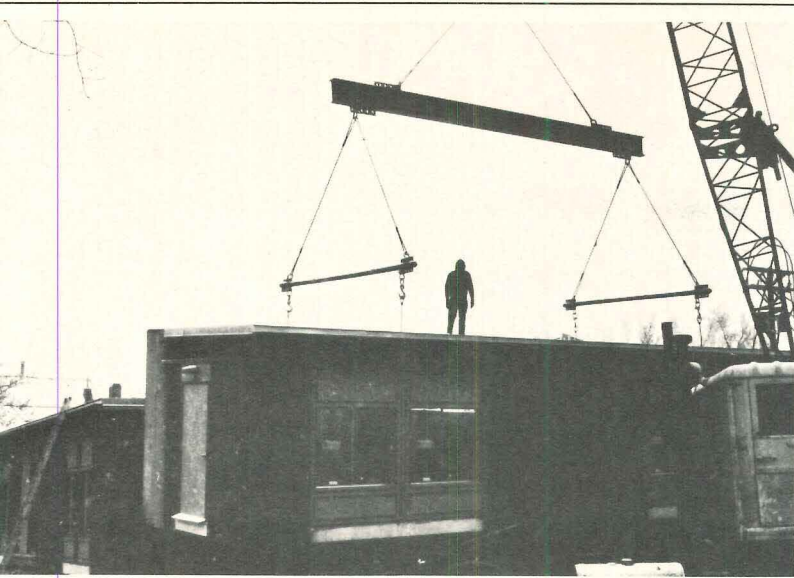
EARLY LEARNING CENTER, STAMFORD, CONNECTICUT

Architect Egon Ali-Oglu designed the Early Learning Center of precast concrete elements, cutting costs to \$13 per square foot in 1966. It is a private community-oriented nursery school with a modified Montessori program. Children 2½ to 5 use an undivided space containing a skylighted central area filled with learning materials, which the school's director, Mrs. Margaret Skutch, compares to a Mexican market place. The carpeted floor is the furniture in this area—dark gray to hide dirt and set off the bright-colored materials. There is also a stepped seating area. Shelves are painted boards on concrete blocks. Children walk directly out to the play area whenever they want. A non-carpeted area (left in plan) is for wet activities. Interesting colors, objects and textures abound. Windows are tinted brown, fixtures are incandescent for warm light. Slightly older children have their own wing (bottom of plan), recently designed by Paul Curtis and Roger Smith into a series of varied multi-level spaces.



Jonathan Hale photos





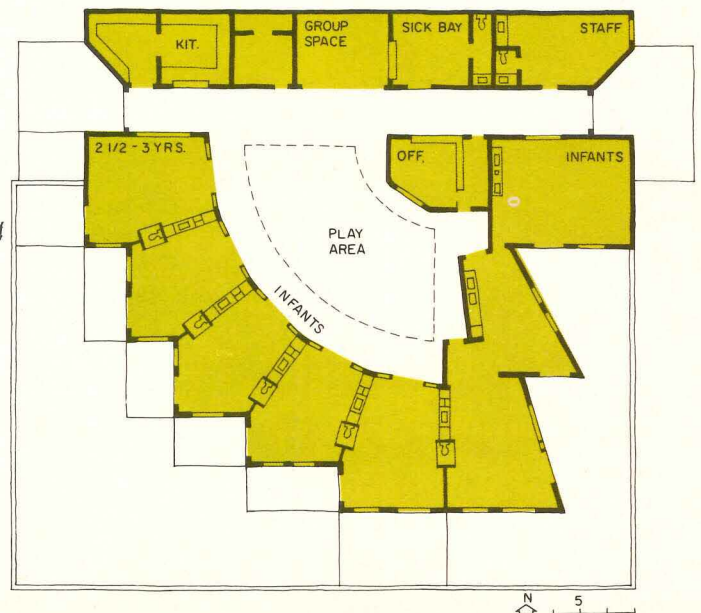
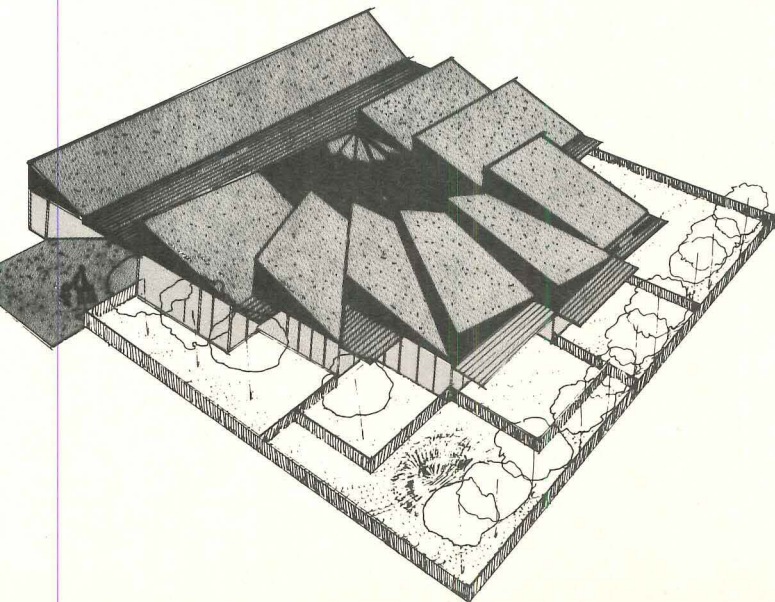
THREE DENVER CHILD CARE CENTERS MADE OF MODULAR UNITS

The program called for a temporary facility that could be moved in two to five years, so the A-B-R Partnership, architects, designed a demountable modular building. Denver has at least two modular builders, one in the community to be served, and one nearby, both employing people who would benefit directly from the center. Eventually, the center, funded by Model Cities, expanded into three centers, two in Denver's black ghetto, one in a Chicano neighborhood. As the architects put it, "the design and site development concepts are basic at best"; but this form of construction opens many possibilities.

PROTOTYPE INFANT CENTER FOR CALIFORNIA MIGRANT WORKERS

California migrant workers have a life expectancy of 38 years. A large reason for this average is the very high death rate among children under five. In migrant communities, child care centers can have tremendous importance. The design below, by Sanford Hirshen and Partners, architects, is the result of a highly-detailed study made under a grant from the Rosenberg Foundation. Care is provided

for new-born babies to three-year-olds—32 children in all. Storage units and glass partitions separate groups acoustically but not visually. All playrooms open outside. The center uses prefabricated trusses for the roof spans and a foam core wall panel system made by the Production Technology Corporation, a non-profit organization set up to train migrant workers in factory skills.

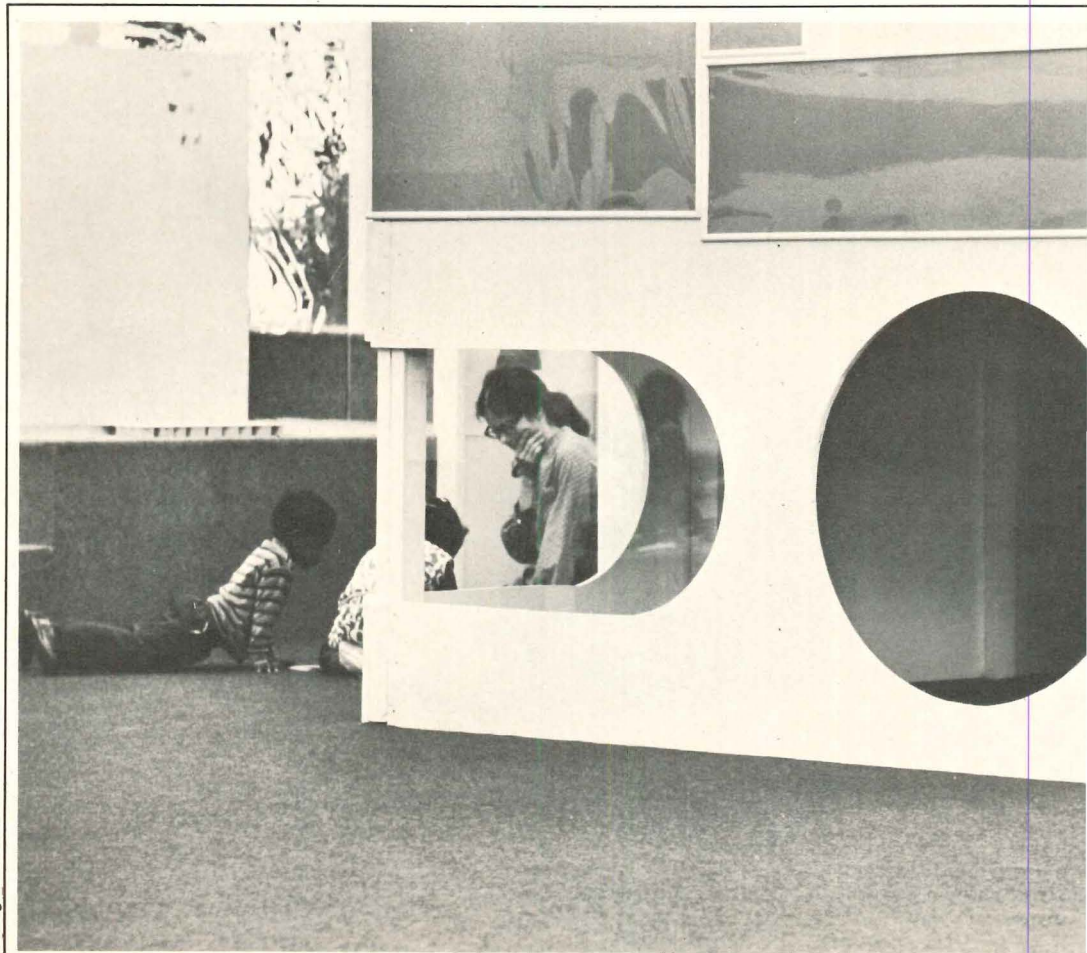




George Zi

GOOD IDEAS

The following three pages show details from several child care centers—suggestions which aren't likely to show up in any program, but which can add a great deal to the way a place feels and the way it is used.



George Zimbel

OR AS FURNITURE

Children and teachers find many ways to use carpeted, raised areas. In a new building, the steps can be sunken; in a remodeled building the steps can be built on platforms, as in the Shady Lane school in Pittsburgh, designed by Paul Curtis and Roger Smith, which was originally a Victorian house.



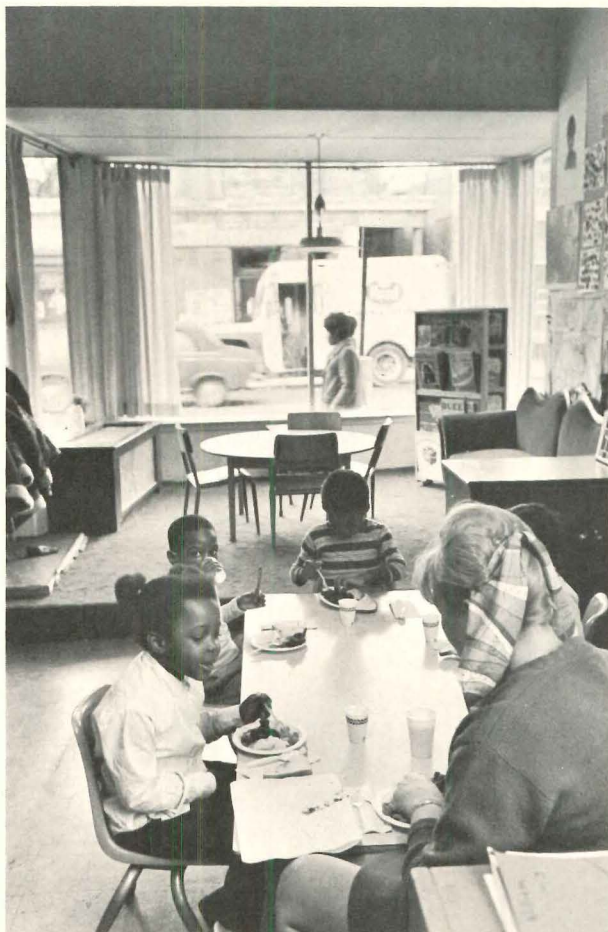
George Zimbel

INDOOR TREE HOUSE

By the designers of the indoor cave (photo, left) but for the Shady Lane school in Pittsburgh. Such areas should not be inaccessible, nor completely invisible, to adults.

INDOOR CAVE

Children enjoy special places to crawl into (left) but the spaces need to be open enough so the children can still be in contact with the room outside—and they should have more than one entrance. This is the CLC Good Hope Road Center for Children, Washington, D.C., remodeled from a store by Paul Curtis and Roger Smith with Margaret Schuch, whose Early Learning Center appears on page 138.



George Zimbel

CONTACT WITH THE STREET

The big plate glass windows in the Hilltop Center, Dorchester, Massachusetts, give the children a lot to look at and make the community aware of the center. The center was a supermarket, remodeled for child care by PARD-Team, architects, Sam Mintz, architect-in-charge. The atmosphere is relaxed but stimulating. A big red plush Victorian couch sits next to the window (rear, right).



Robert Utzinger

AWNINGS

A way of taking off the institutional hard edge. All the playrooms in this English child-care center (above) open onto the terrace. Highgate Nursery School, London, England.



Jonathan Hale

PLAY SCULPTURE

This one is at the Charlestown Playhouse, Charlestown, Pennsylvania, a nursery school originally designed by the late Oskar Stonorov in 1937 and expanded by him over the years (see page 136).



George Zimbel

"You can't have too much stimulation in a child care center," say some educators. Others would disagree, but it's important to note that most of the materials in this room come from objects used by the children. A lot of bright colors or sophisticated supergraphics, by contrast, might or might not be stimulating. The children are playing in an indoor sandbox. Photo by George Zimbel at the CLC Good Hope Road Center, Dorchester, Massachusetts. PARD-Team, Architects, Boston, Massachusetts.



George Zimbel

FLOORS FOR INFANTS

The floors in the infant area of this Swedish child care center are sheet vinyl with a cushioned backing. Low covered mattresses are used as furniture. Hendriksdalsberget Barnstuga ("child cottage") Stockholm, Sweden.

Robert Utter



MAKE YOUR OWN FURNITURE

The seats in this picture are computer reel cans stacked to different heights for users of various sizes—a brainstorm of Margaret Skutch (page 138). The CLC Good Hope Road Center for Children, Washington, D.C. (see also page 140).

A system's disciplines become clear as an architect works with it for two high-rise dormitories

A factory-precast system replaced a conventional steel-framed building when the system was offered at the same cost, and the architect determined there could be added functional advantages and reduced time from design through construction.



Dallas photos

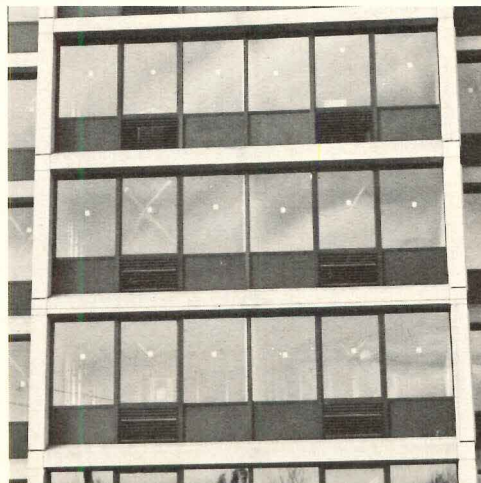
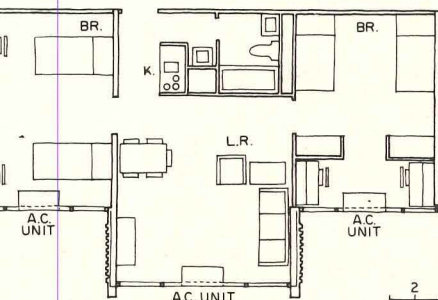
Nearing completion on the University of Delaware's Newark campus are two high-rise dormitory buildings constructed with the Bison factory precast concrete system that has been highly successful in England. The system used for the dormitories, designed by Charles Luckman Associates, has precast, load-bearing exterior and interior walls, 27-ft prestressed concrete planks, and an aluminum and glass infill between precast spandrels.

Several European industrialized housing systems, of which the Bison system is one, are being franchised in the U.S. and Canada. While only a few projects, using several of the systems, have been completed so far, a modicum of experience has accumulated, and, importantly, the disciplines of the industrialized housing process, based upon the concept of factory-produced structural components, are beginning to be understood. Further, the professionals who have worked with these systems are getting an idea of what these systems can and cannot do.

Proposed originally in steel, the structure was switched to the precast system

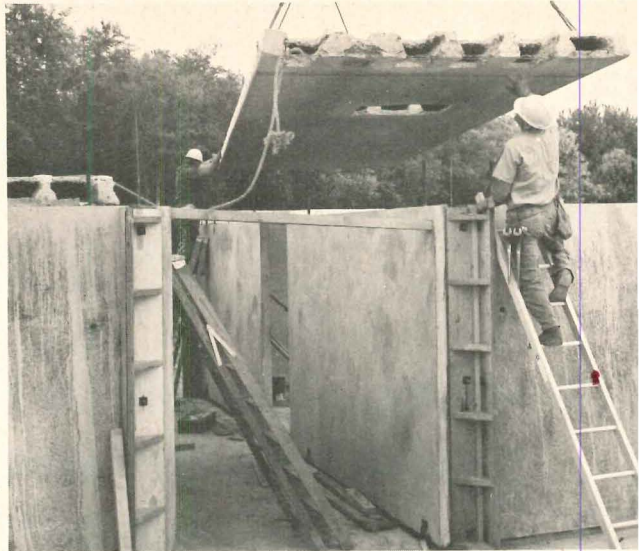
University of Delaware housing officials decided to take the private developer route in getting their dormitories built, and sponsored a competition whose entries were judged on the basis of quality of architectural concept and cost. The winning entry was that of Ogden Development Corporation, headed by Charles Luckman, in a joint venture with Frederic G. Krapf and Son, Inc., Wilmington general contractor. A \$10.5-million contract was let for the two dormitory towers and a 27,000 sq ft student commons, the project being designed to accommodate 1,300 students. The towers have 375,000 sq ft and incorporate 255 one-bedroom apartment units and 197 two-bedroom units.

The Ogden Development Corporation-Krapf joint-venture's original proposal was for a conventional steel-frame design. Shortly after winning the contract they learned that they could obtain the industrialized concrete system without an increase in cost, while at the same time





The building shell uses bearing walls and prestressed slabs. The 8-ft-wide slabs are cast and pre-tensioned in a continuous bed and cut apart after the concrete sets. Exterior wall panels are faced with white architectural concrete in a fluted pattern, outlined by smooth spandrels and corners. They are of sandwich construction with a core of foamed polystyrene insulation, and an inner layer of ordinary concrete. Through joints between wall panels are protected from the weather by the rain-screen technique—a baffle set in grooves of adjacent panels keeps out rain while equalizing pressure. Panels and planks were erected using a tower crane with maximum weight of panels being 10 tons.



gaining some square footage in the apartments. The proposal for supplying the system's concrete units was made by Strescon Industries, Inc. of Baltimore. Further, the system promised improved acoustical privacy, interior finishing and maintenance.

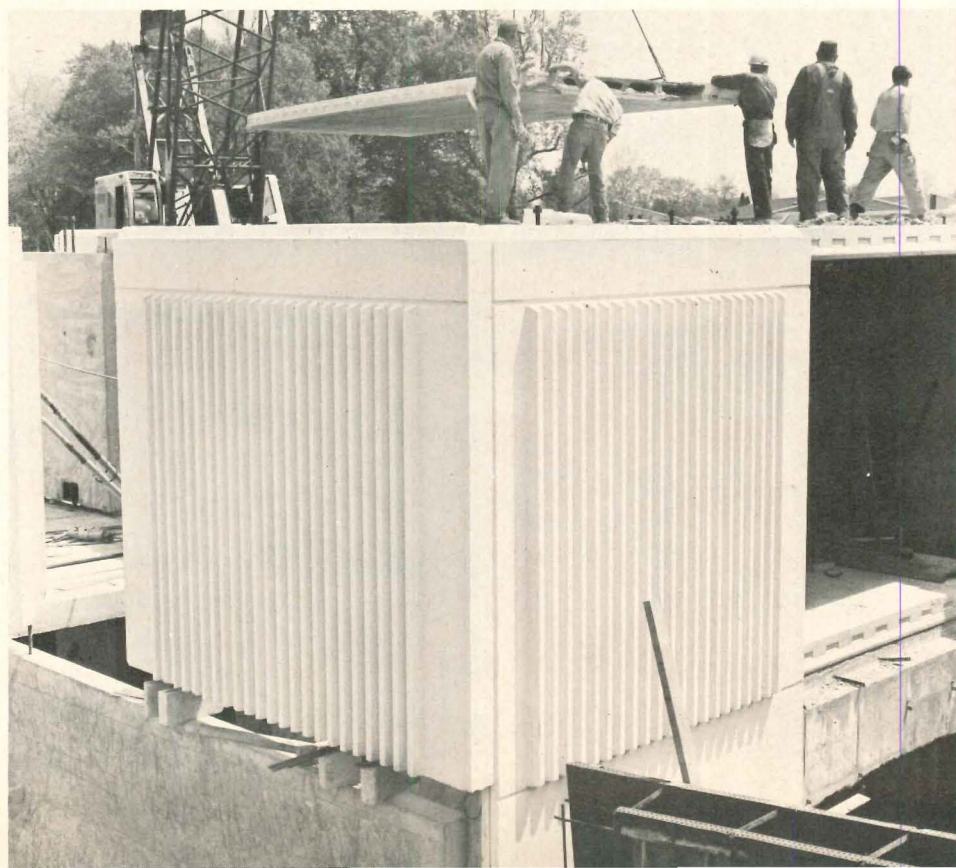
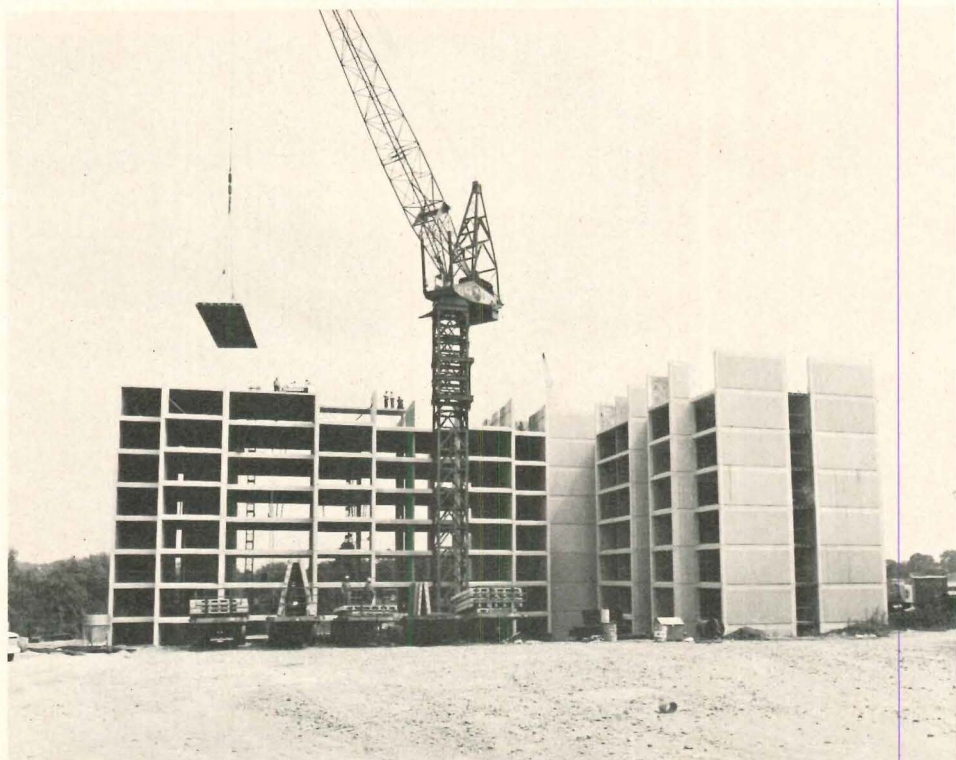
The same basic floor plans as originally worked out were retained, with the exception that one-bedroom and two-bedroom apartments were grouped so that bearing walls would align across the short dimension of the plan, a condition preferred by the structural engineers for shear-wall design. Also, the depth of the floor plan was adjusted to match the 8-ft-width module of the floor planks.

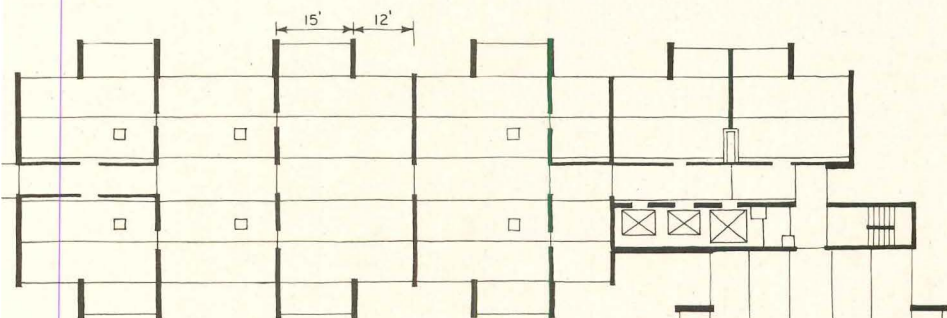
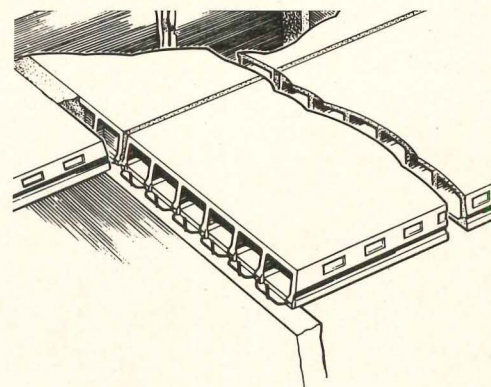
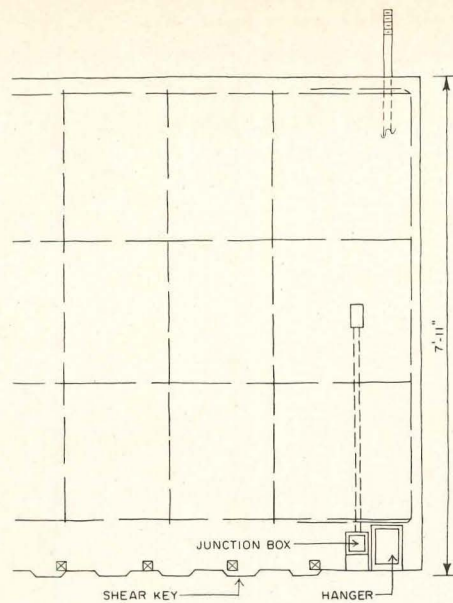
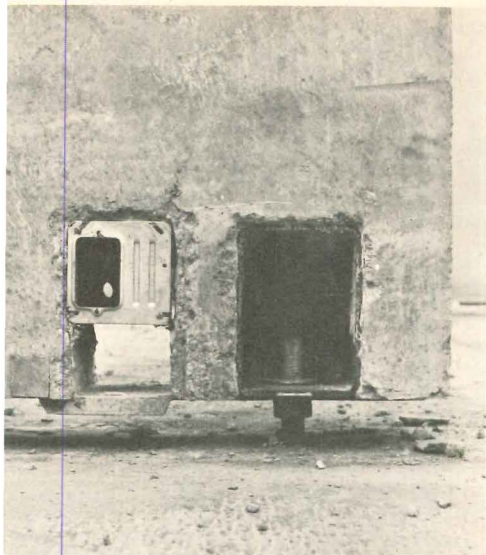
Because the floor plans were changed only to this extent, the architect found that a much larger variety of wall panels was required than would have been the case if the concrete system had been selected at the start, and the floor plans laid out considering the nature of the system. The variations consisted mainly of different types of panel connection details, different reinforcing patterns, slight differences in dimensions, etc. Over half of the panels on a typical floor had some variation, even though minor. But the original plans were retained because redesign would have cost both time and money.

The collaborative efforts of those participating in the project have paid off in terms of high-quality appearance as well as in construction time—the structure was erected at a rate of one floor per week per building. This meant that the plumbing and electrical trades were inside for their work—which was done conventionally on site—much sooner.

For the architect, the Luckman firm sees a reduction in the number of working drawings required. Of course he still must prepare the floor plans; perhaps detail an infill curtain wall, and do normal interior detailing for bathrooms, kitchens, door bucks, etc.

But, the architect and structural engineer found—as others have—that the checking of shop drawings on a building that has not been done before takes considerable time. Of course, if the same sys-





aded rods in wall panels
e two main purposes: 1)
are used for leveling of
panels; 2) they take tensile
s created by wind forces in
panels. The hanger box
ides continuity from a rod
e panel to those in panels
e and below. The hanger
s also serve as means for
ling. Bottoms of panels
shear keys to transmit
s to the floor diaphragm.
ical boxes are cast in the
ls as seen above. After
ls are leveled, drypack
rete is put underneath.

Wall panels are supported by spider braces until planks are set, and corner joints poured.

Bearing walls support floor planks which are 27-ft long except for projected areas, where they are 15 ft. Planks at corridors use "stretched-out" point supports at the corners. These panels have a solid ring of concrete around the perimeter to minimize deflection and to transmit loads in shear.

Openings in the floor slabs for plumbing and ducts sometimes required special support and/or reinforcement.

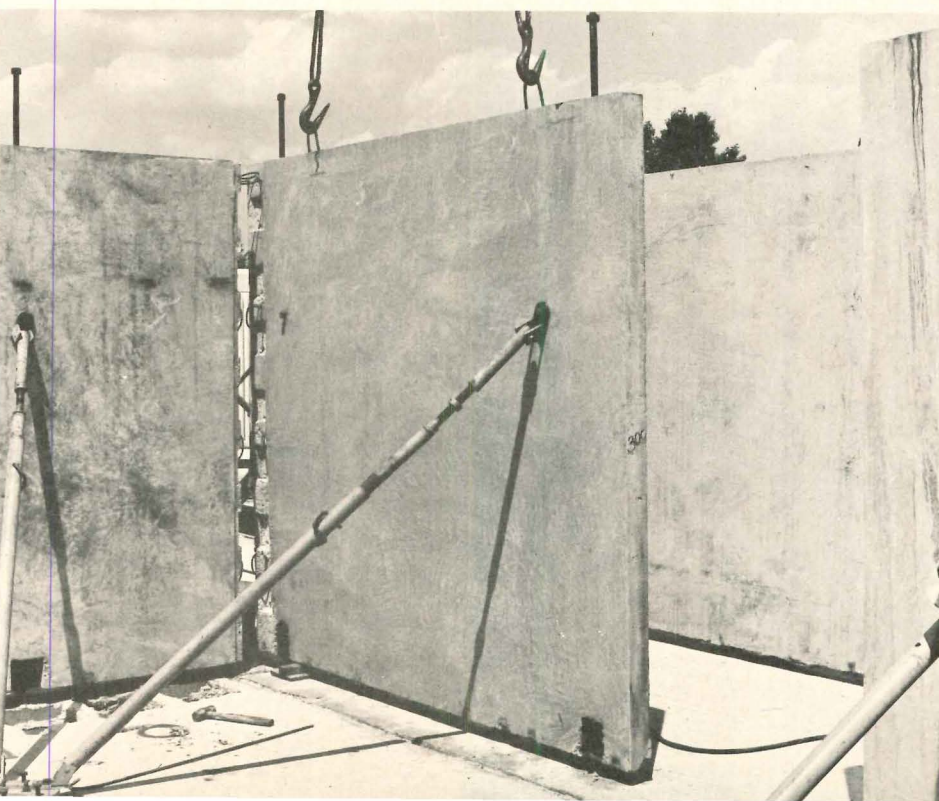
tem is used again by the same architect and engineer, they will have familiarity with various details. This familiarity, however, will not be of much help if different industrialized systems, with different details, are used on succeeding jobs.

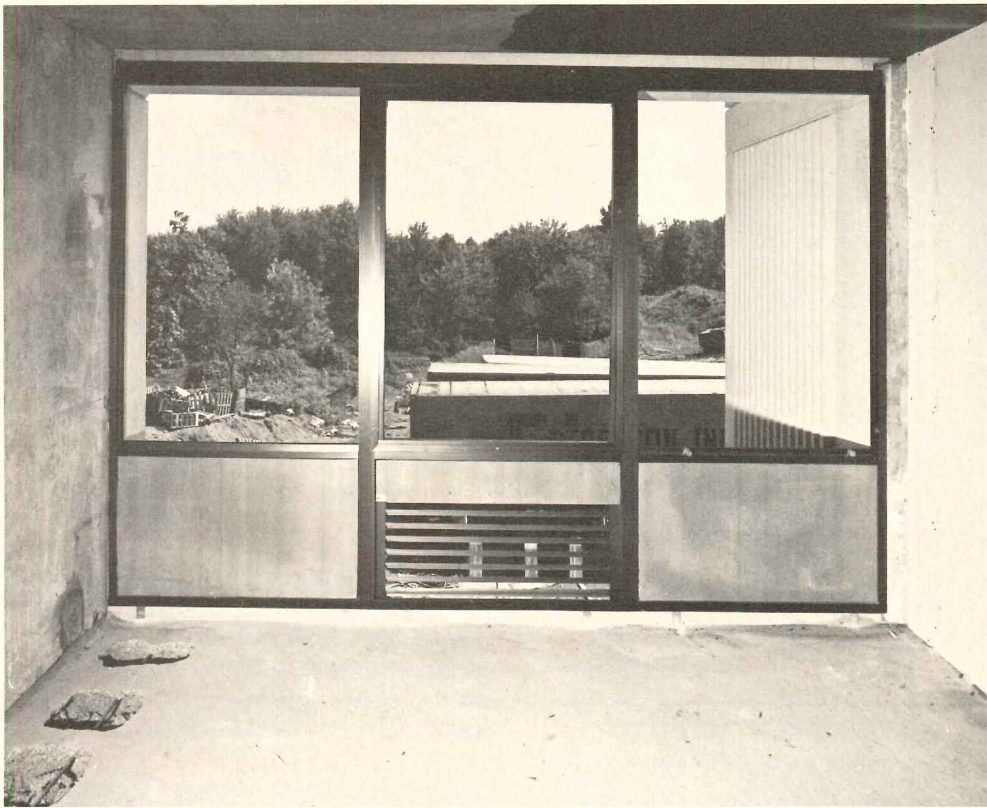
Details were worked out to accommodate piping, ductwork and wiring

Heating and cooling of the apartments is by room air conditioners that have electric resistance heaters, so the only ductwork required for apartments is for kitchen and bathroom exhaust. Penetrations were provided in the floor planks for passage of pipes and ducts. The prestressed slabs, 8-in. thick, 8-ft wide and 27-ft (or 15-ft) long, are hollow-core, ribbed units. Some openings were provided by putting block-outs in the continuous forms. In other cases, they were cut out after the concrete had set and the slabs cut to length.

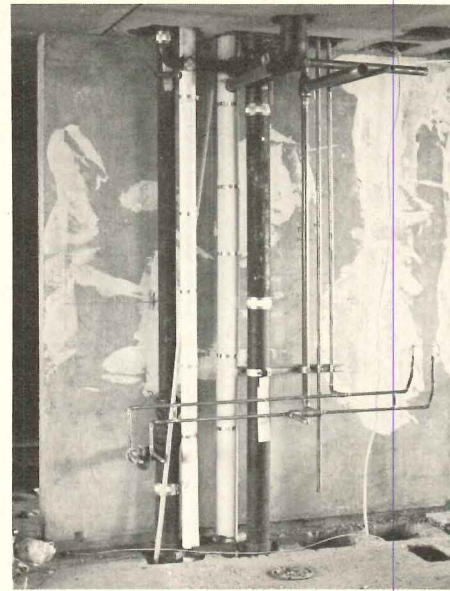
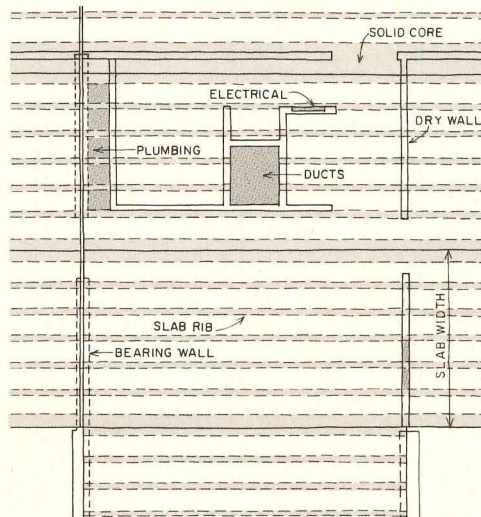
For small penetrations needed for the plumbing wall, the structural engineer permitted a series of openings across the width of the slab made by cutting out top and bottom surfaces, but preserving the ribs intact. In some cases openings were made by stopping a slab short of a bearing wall, the slab being supported by a steel collar. In such cases the slab was stiffened at the end by chopping out the top part of the slab and filling the void with concrete. Where large openings were required, the engineer allowed a maximum of two ribs to be cut (see drawing, page 146). Additional shear reinforcement was provided in the area where the opening was to be cut so that load would be transferred to the other ribs.

No wiring is run within the wall panels or the floor slabs. Because of the long span of the slabs, and the need for only occasional shear walls along the corridors, many of the partitions could be dry wall, with wiring being run within these. Where outlets were needed in bearing walls, the wire was run in a recess at the bottom of the walls made as the drypack under the walls was tamped. The recess was covered by a metal plate held by clips fastened to wooden plugs cast in the panels.





The drawing shows the types of openings provided in the floor planks for penetration of ducts, plumbing, and electrical risers. Planks with the large opening had to have additional reinforcement in that area. Room air conditioners with electric heating elements are used to maintain thermal comfort—thus, the louvered area for the air-cooled condenser. Because of the long spans and design of corridor planks, considerable lengths of dry-wall partitions were possible, making it easy to run flexible electrical cable.



Wind resistance had to be thought carefully to minimize stresses and moments. Shear wall action had to be dependent upon to resist wind loads because it was not possible to create a moment-resisting frame by tying bearing walls together across corridors with dropped beams—a connection the architect wanted to avoid. (The connection could not be worked out within the shallow 8-in. depth of the slabs. In any event, it would have been difficult and expensive to develop moment-resisting walls. Wind stress analysis was made by the engineers—Severud, Perrone, Sturm, Banderet—using a computer program.

Because of the L-shaped plan, the shear walls had to be carefully located to avoid an eccentric condition with respect to the center of "stiffness" of the building. Eccentricity would have greatly increased the wind moment which would have overstressed the shear walls. The structural engineer avoided this condition by judiciously placing shear walls along the corridor and by utilizing a long shear wall at the elevator core.

The wall panels are connected to each other in the vertical direction by means of 1-in. diameter rods. Depending upon the dead load, and the particular location of the panel in the building, the panels may be put in tension by wind load, or they may be always in compression. When tension forces may occur, the rods are continuous from top to bottom, being anchored to the foundation, and tied from one panel to another by means of steel hanger bolts set in the panels, with nuts being turned down on the threaded rods to secure them. When a compressive condition exists, steel angles—which cost less than the hanger bolts—come attached to the wall panels and the rods are needed only for erection, leveling and stability.

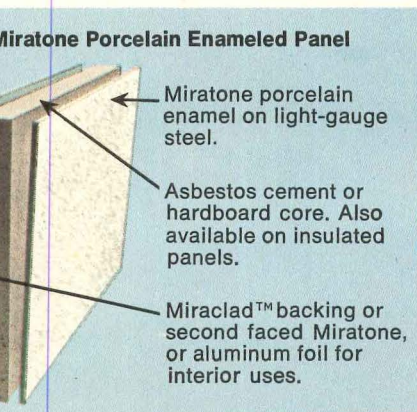


RESIDENCE HALL HOUSING, University of Delaware. Architects: Charles Luckman Associates; structural engineers: Severud Associates; mechanical engineers: Cosentini Associates; electrical engineers: Eitington & Schlossberg Associates; joint venture developer: Ogden Development Corporation and Frederic G. Krapf and Son, Inc.



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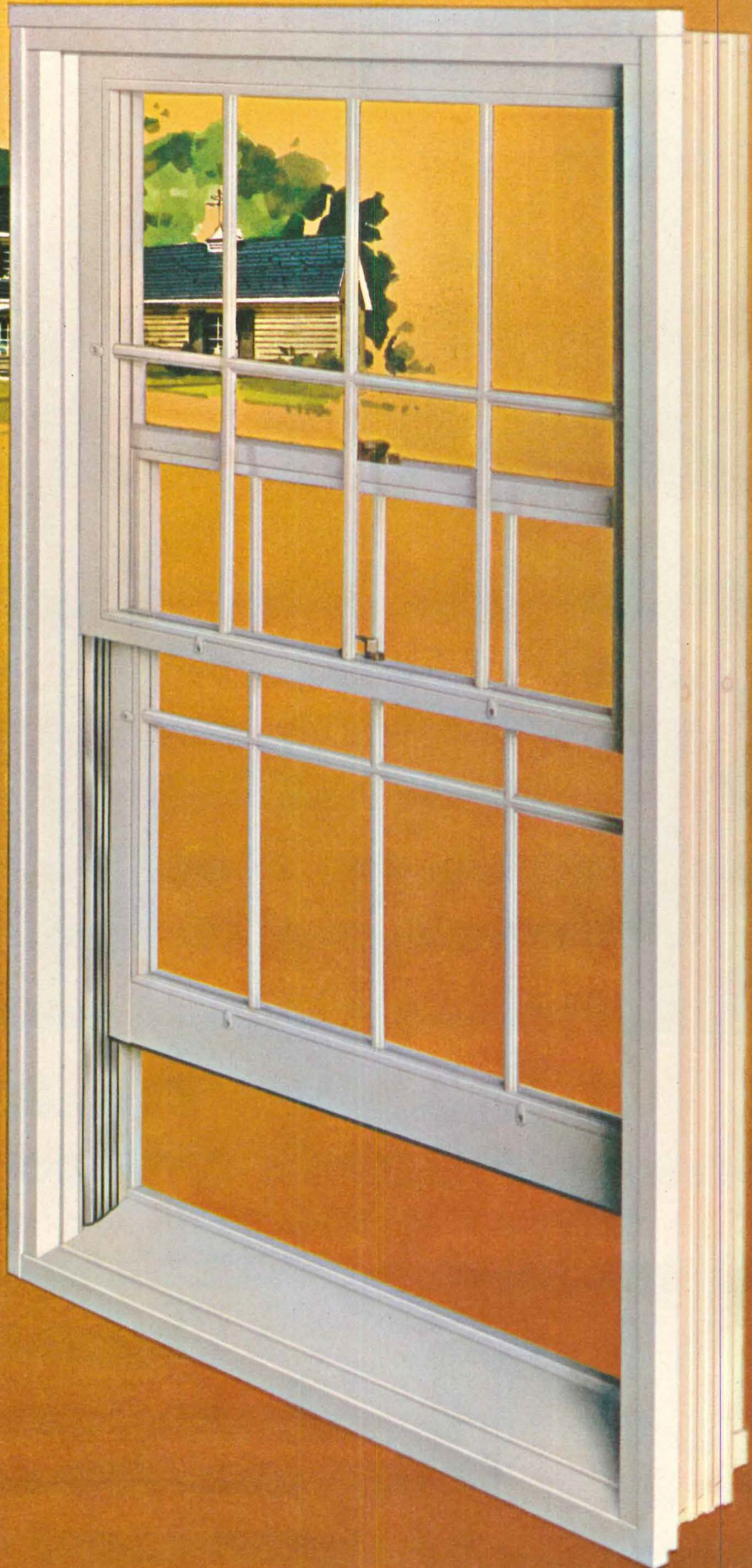
OUR C-100: THE ECONOMY WINDOW PACKAGE



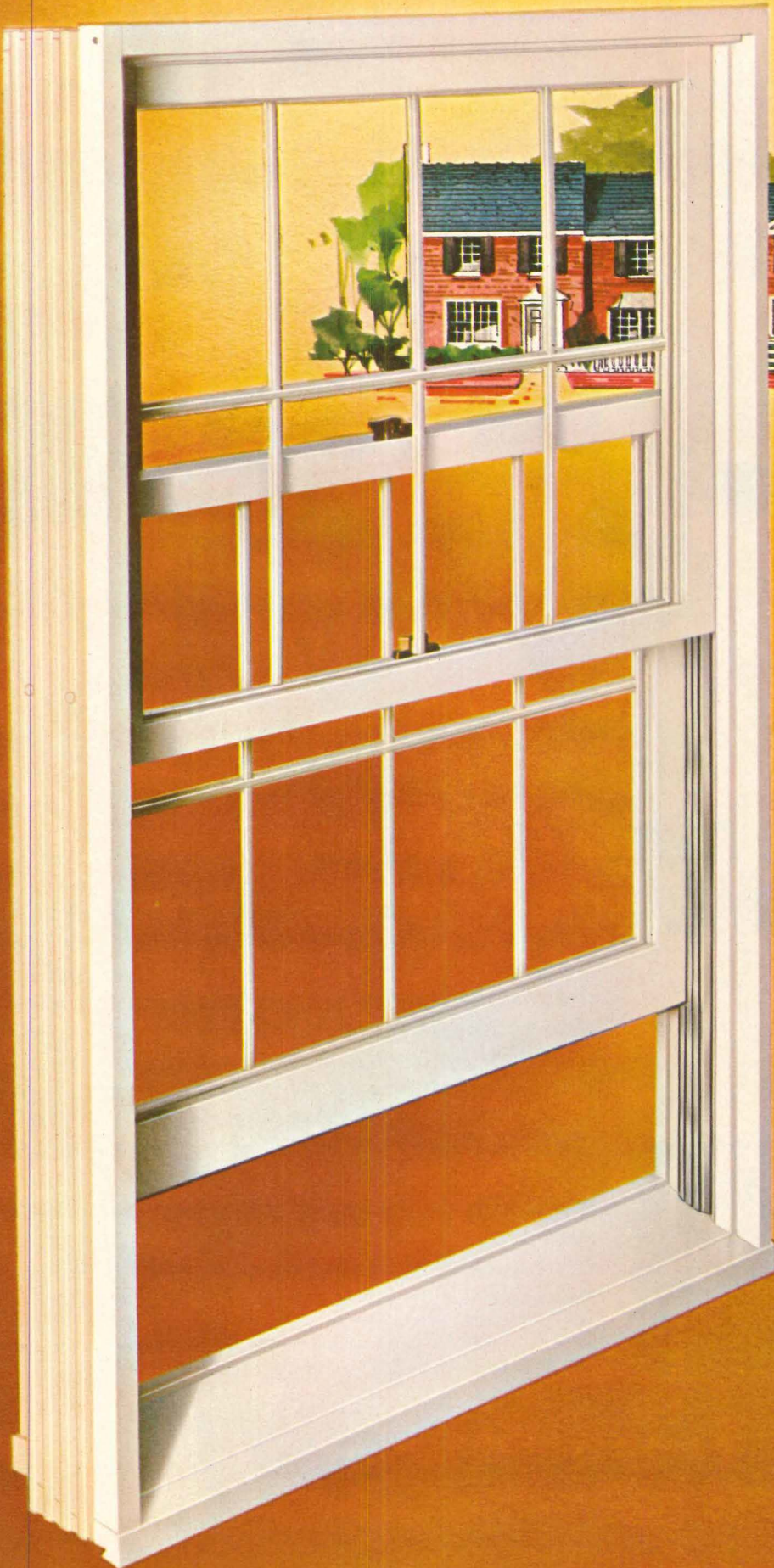
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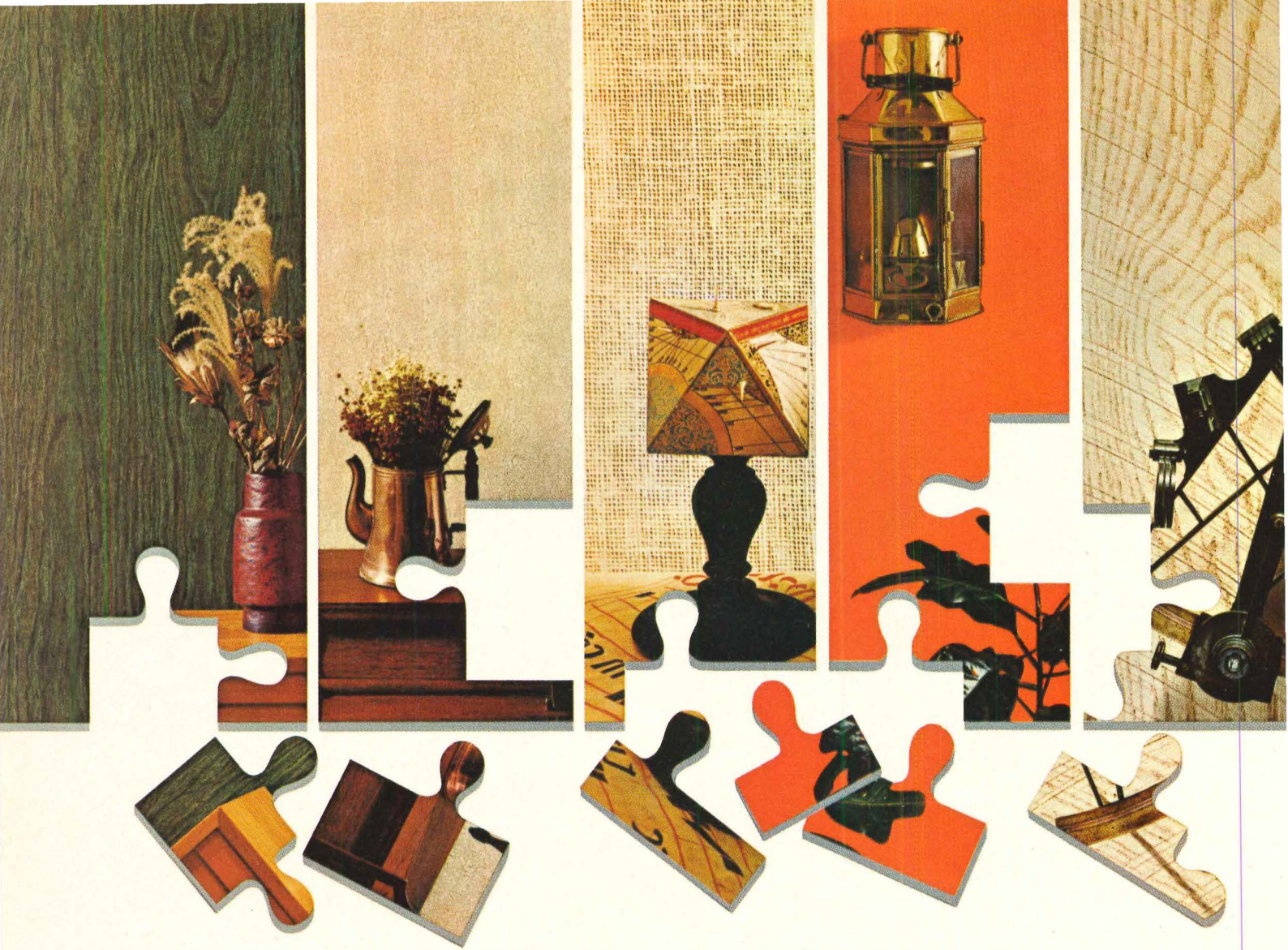


THE WINDOW AND
DOOR PEOPLE

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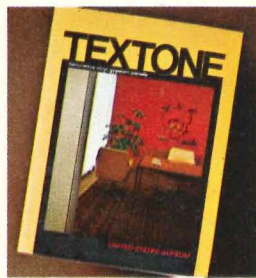
Eastern Assembly Plant,
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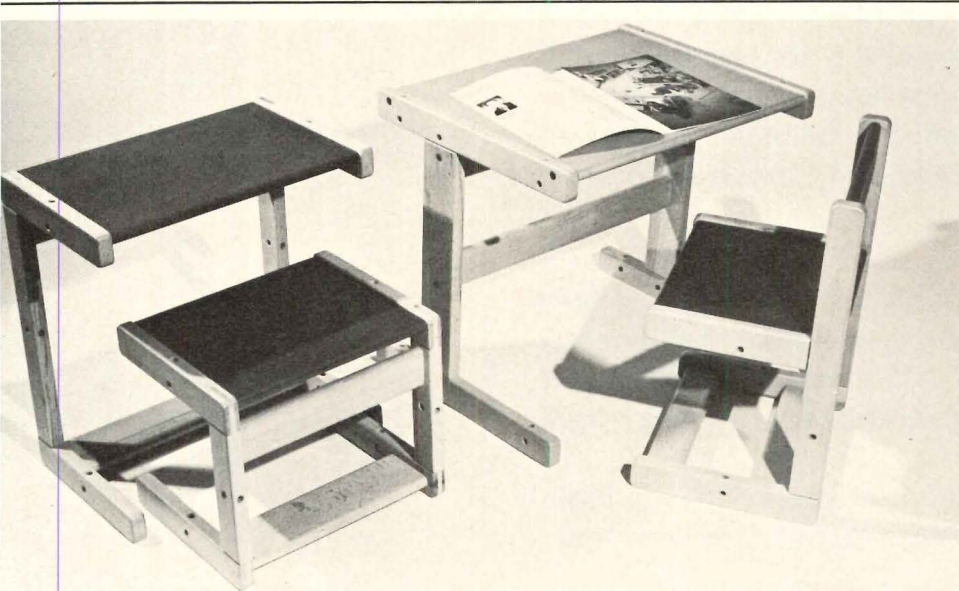


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For more data, circle 70 on inquiry card

For more information circle item numbers on Readers Service Inquiry Card, pages 215-216



CHILDREN'S FURNITURE / This line designed for day care centers includes chairs, stools, desk/chair sets, and tables and benches for use by groups of children. All basic units are constructed of beechwood. The desk/chair sets, color-coded by age group, offer a range of five sitting heights.

The line, developed in Scandinavia by Lars Gunnar Johanson, is a combination of quality

furniture and educational toy. Separate pieces can be joined with plastic screws and bolts to make play structures. The furniture is designed for pre-school youngsters from ages one to seven.

Skandi-Form, Inc. is introducing the furniture to the U.S. market under the name Skandi-Land. ■ Skandi-Form, Inc., Washington, D.C.

Circle 300 on inquiry card



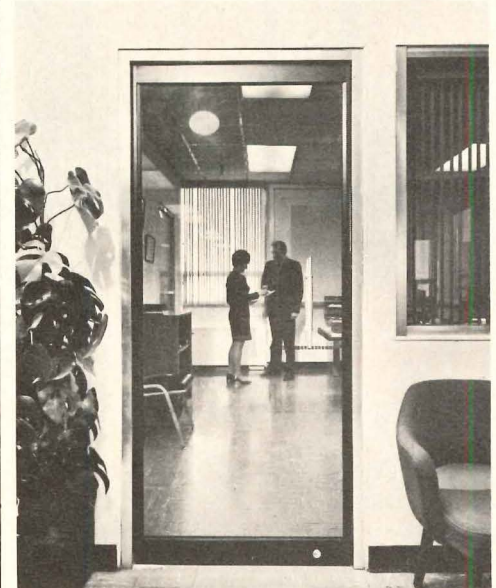
DECORATIVE CERAMIC PANELS / Single piece, paint-free modular sizes up to 6 ft by 4 ft are available for facade or interior wall cladding, as well as flooring applications. Only 5/16 in. thick, the panels weigh less than 3½ lbs per square foot and are available in factory cut modular sizes of 2 ft by 2 ft, 2 ft by 1 ft, 1 ft by 1 ft, and in 6-in., 12-in., and 18-in. strips. ■ Amsterdam Corp., New York City.

Circle 301 on inquiry card



HOTEL SECURITY SYSTEM / The problem of lost or stolen keys is eliminated by remote electronic changing of any or all room lock combinations, thereby invalidating a room's door lock combination upon guest checkout and creating a new combination and key for arriving guests. Should a guest report a lost key, a new combination and key can be issued immediately. Pass keys are issued a unique code. Their use can be individually monitored, recorded and traced to the employees they have been issued to. The entire mastering system can be remotely changed without removing door locks or changing guests keys. ■ Instrument Systems Corp., Jericho, New York.

Circle 302 on inquiry card



ALUMINUM DOOR / This entrance is designed for applications where more glass and less metal is required. Door has very thin stiles with screw-spline mechanical joinery through the stile into the rail. Features include rugged corner construction. Doors are available with clear anodized finish or hardcoat colors. ■ Amar-lite/Anaconda, Atlanta.

Circle 303 on inquiry card
more products on page 156

If you haven't seen the Flexalum Venette[®] yet, here's your chance to see 16,400 of them.

The IDS Center's soaring expanse of glass represented a unique opportunity for Venette . . . not just because of the impressive number of blinds needed, but because Venette's ultra-slim one-inch louvers are so beautifully unobtrusive when viewed from across the street.

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Like the IDS Center — a case where one look was worth 16,400.



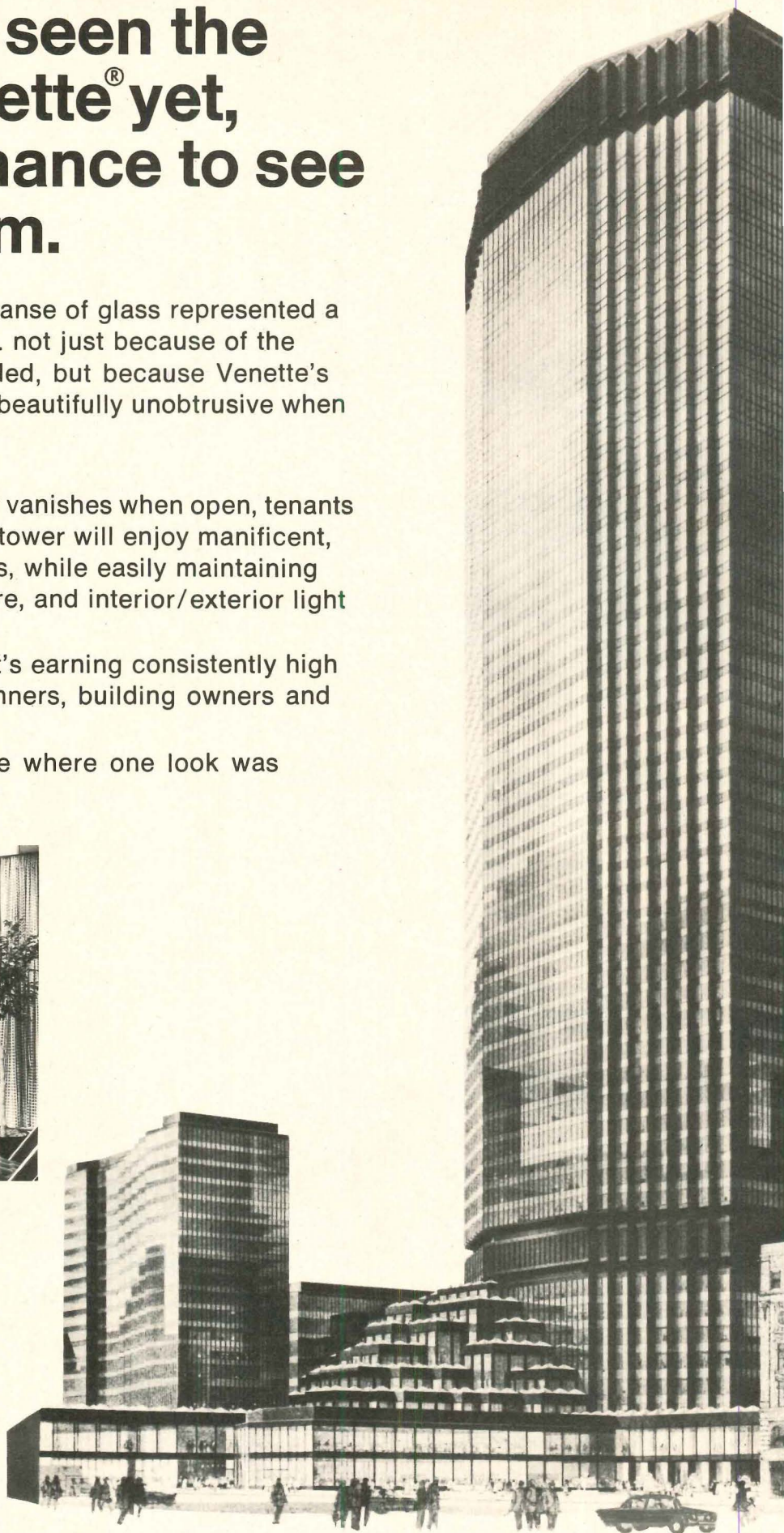
Model IDS suite shows Venettes installed at pre-set angle.

Architect: Philip Johnson & John Burgee, New York City.

Owner: IDS Properties, Inc., a subsidiary of Investors Diversified Services, Minneapolis, Minn.

Gen. Contr.: Turner Construction, Chicago, Ill.

Venetian Blind Contr.: Julian Shade, Inc., Milwaukee, Wisc.



ALCAN ALUMINUM



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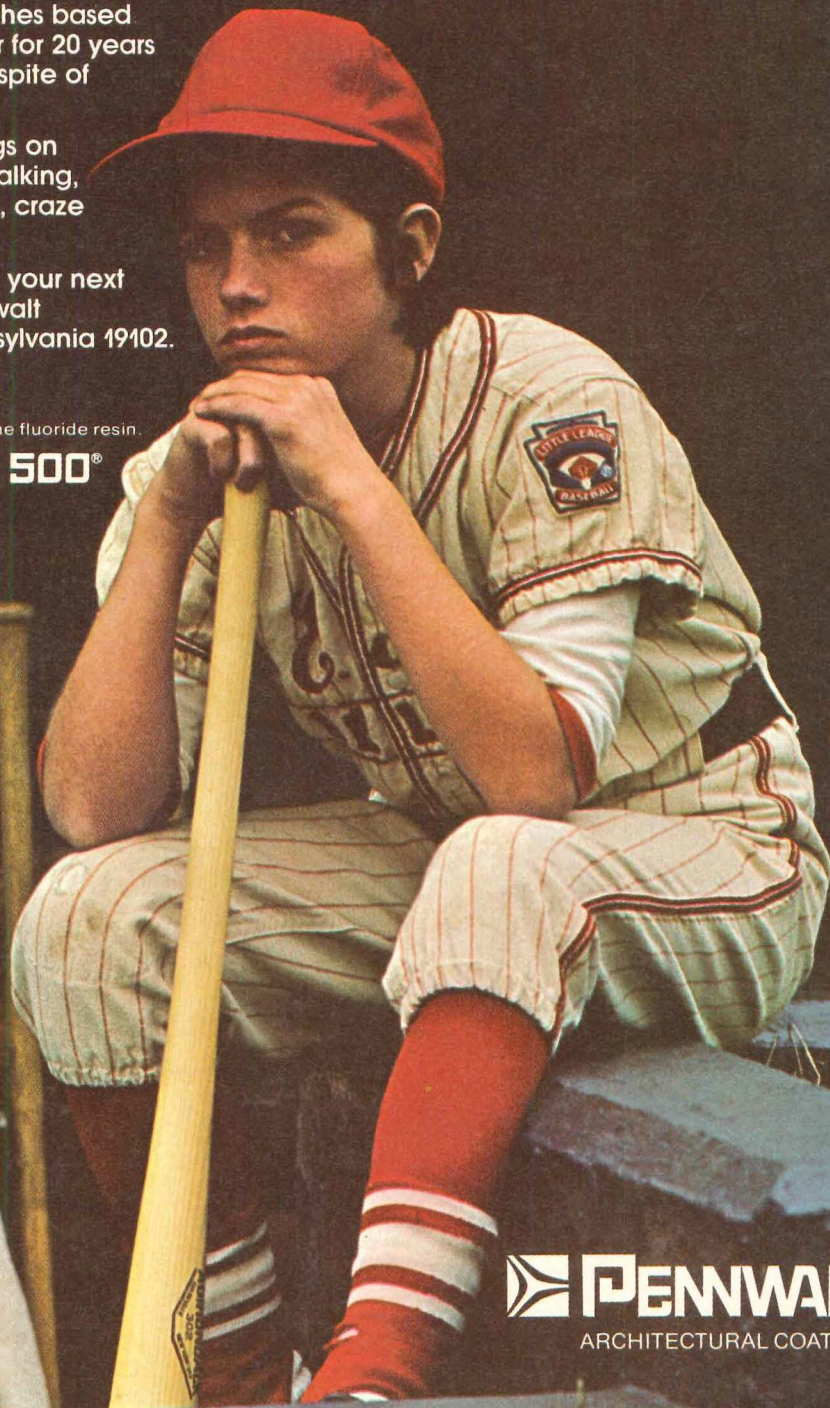
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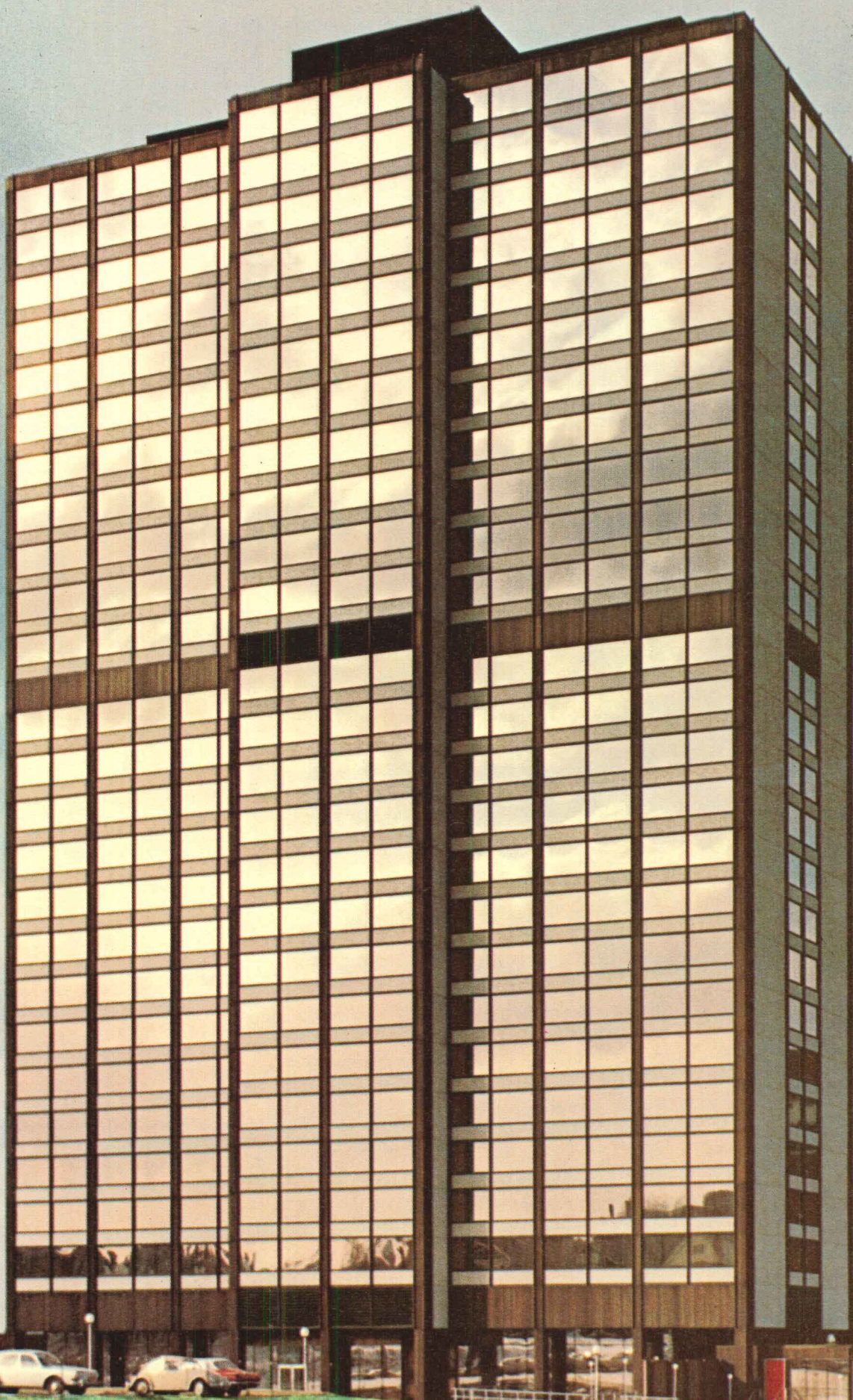
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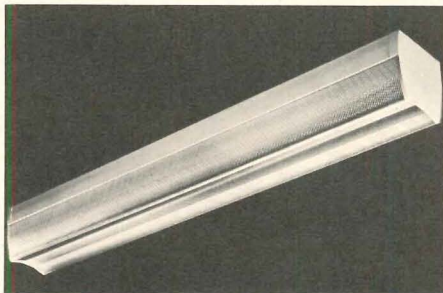
For more data, circle 124 on inquiry card

*Glass Conditioning is a service mark of PPG Industries, Inc.

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incinnati, Ohio
tect: Woodie Garber, Hughes and
ociates, Cincinnati, Ohio



continued from page 151



FLUORESCENT LUMINAIRE / Injection-molded lens with a prismatic pattern inside and out produces a precisely controlled twin-beam distribution pattern designed to eliminate veiling reflections and glare. ■ Lighting Products Inc., Highland Park, Ill.

Circle 304 on inquiry card

EMERGENCY EYE/FACE WASH / Designed for first-aid treatment in the event of industrial accidents, unit features newly designed shields to assure greater precision of flow from the aerated water projectors. ■ Speakman Co., Wilmington, Del.

Circle 305 on inquiry card



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Circle 306 on inquiry card

ROLL-IN REFRIGERATORS / Cabinets feature vinyl plastic exterior and interior surfaces. Cabinet walls are insulated with at least three-inch-thick fiberglass. Other features include automatic interior lighting and oversized refrigeration coils to provide proper cabinet temperature and ensure 80 per cent relative humidity. ■ McCall Refrigerator Corp., Chicago.

Circle 307 on inquiry card

INSTITUTIONAL SEATING / Fiberglass sculptured shell is available in a range of colors. Nylon fabric or vinyl upholstery is optional. Shells can be mounted on free-standing legs or pedestal bases. ■ Clarin Corp., Chicago.

Circle 308 on inquiry card

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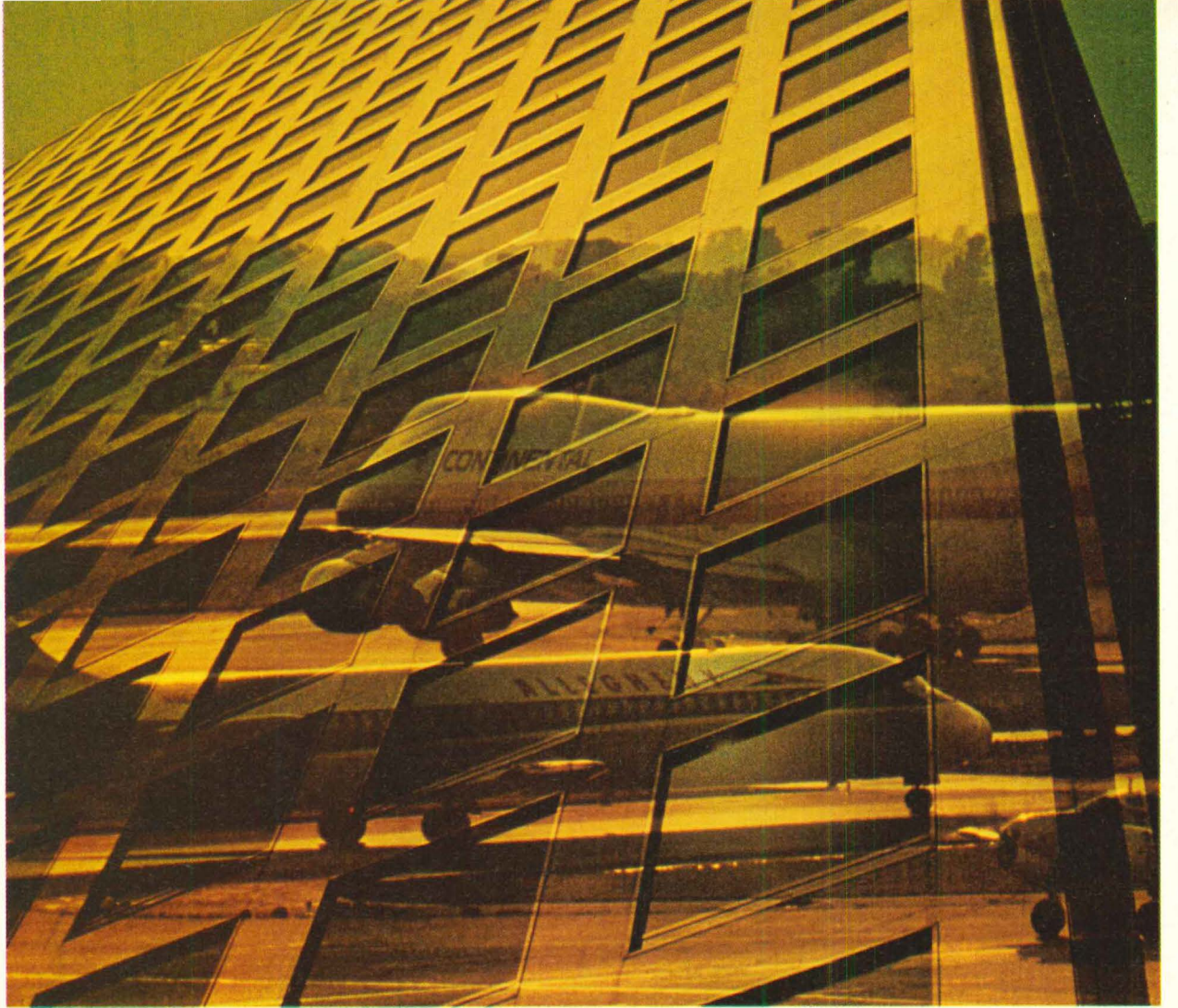
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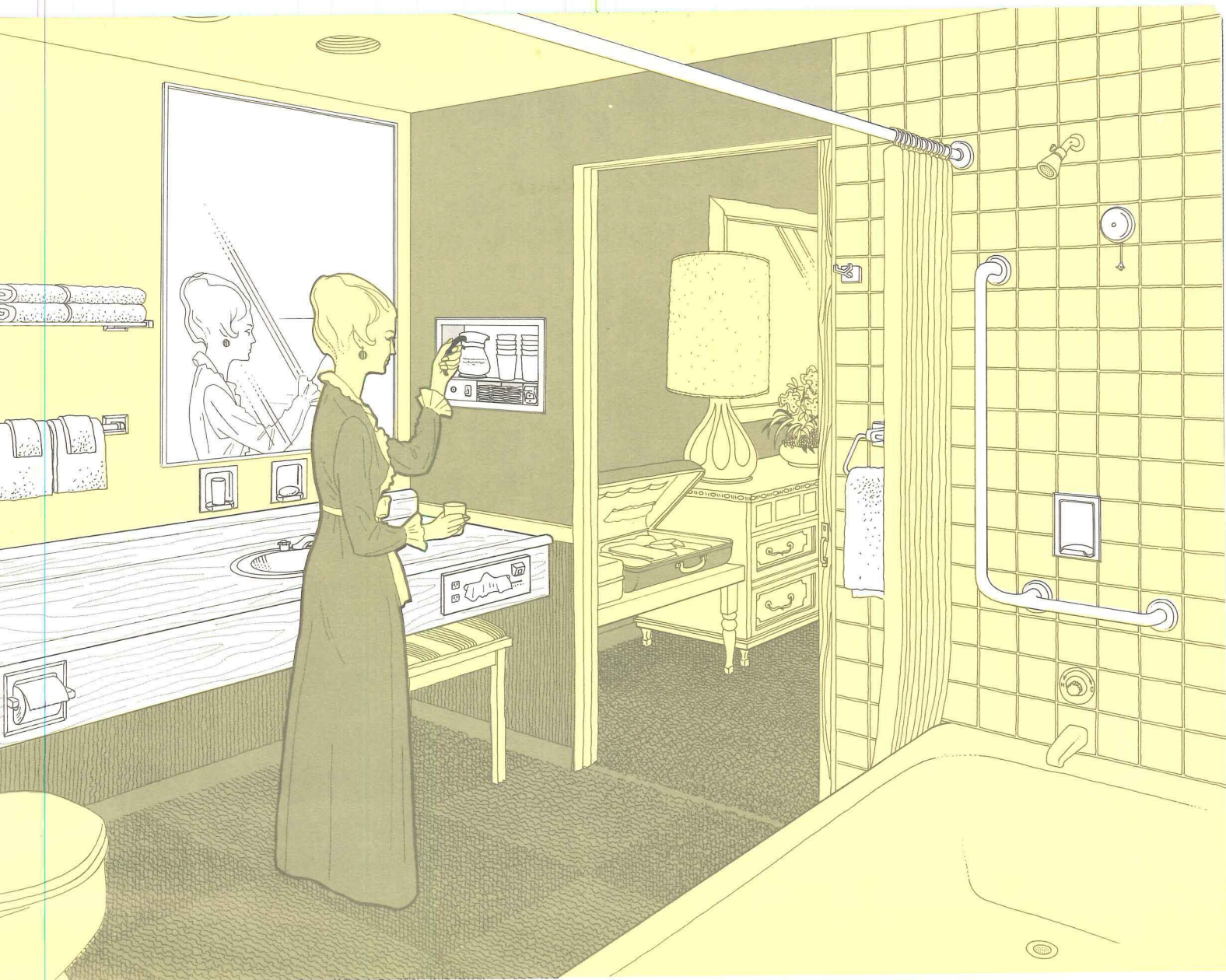
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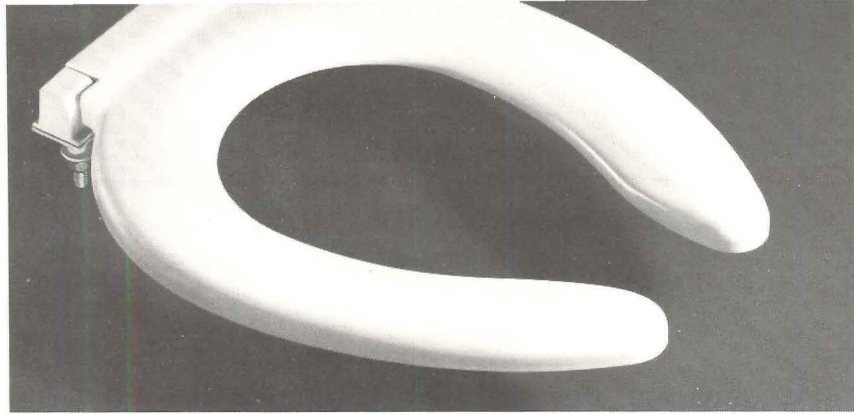
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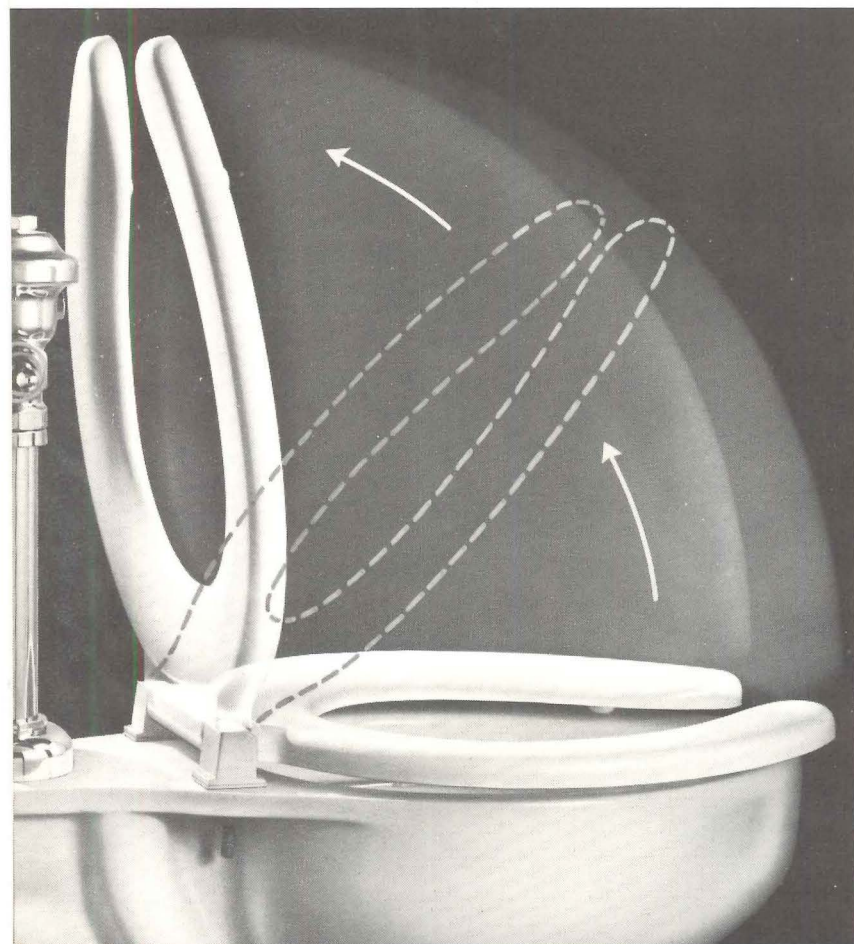
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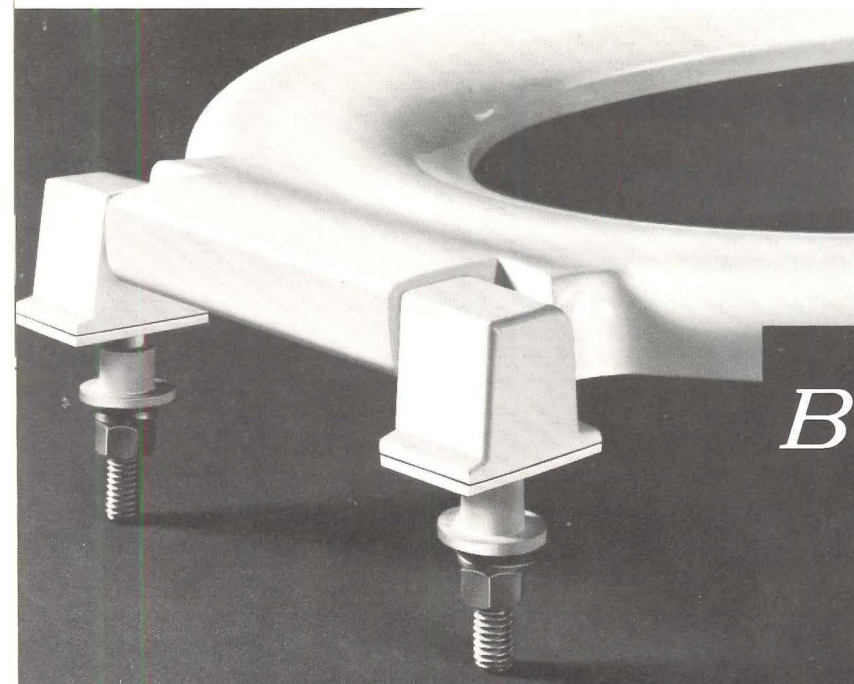
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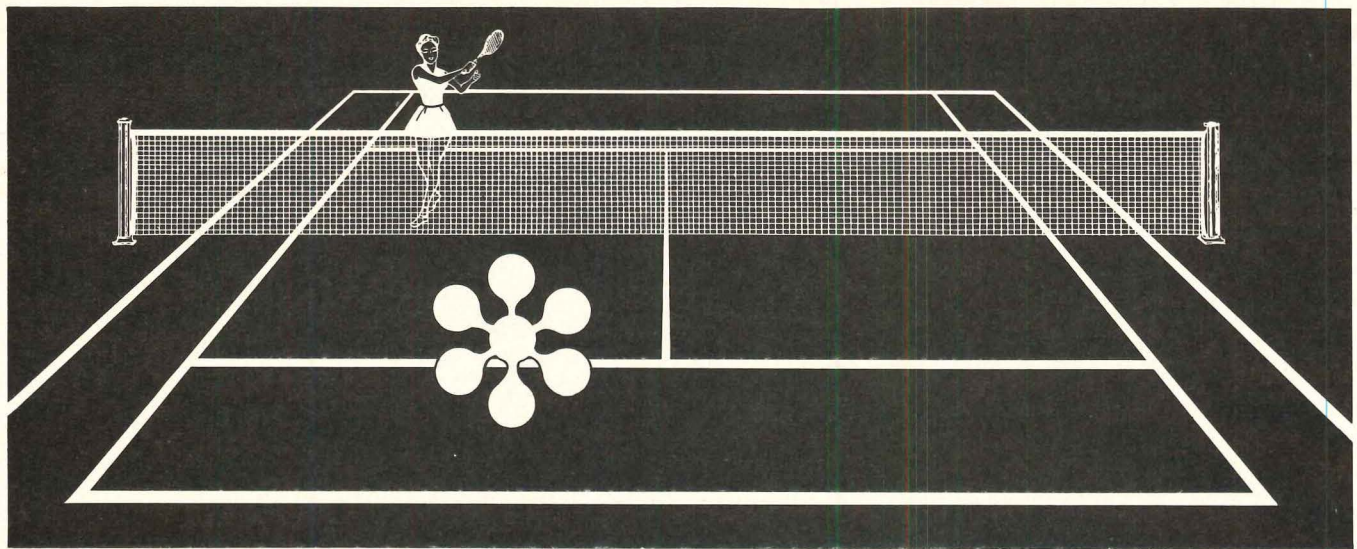
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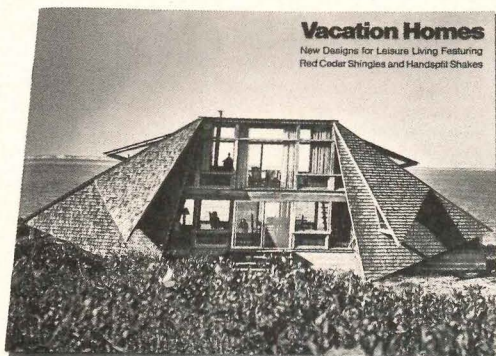
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All the way. Take the Polaris chair. It backs you up with a one-piece, moulded plastic back. Strong. Safe. And good looking. And it stays that way. For a long time. Massey backs you up with comfort. Two inches of foam with every back. And a thick foam cushion over the springs of the seat. Then they back you up with a nice little extra. Complete architectural, engineering and design assistance.



S FOR REFERENCE SEE SWEET'S ARCHITECTURAL CATALOG FILE 12.5 MA.

You're always
 Sitting Pretty with . . .

Massey
 seating CO.

NASHVILLE, TENNESSEE 37208

For more data, circle 89 on inquiry card

KINNEAR ROLLING DOORS



THIS LARGE CRANE OPENING IS COMPLETELY CLOSED WITH KINNEAR MOTOR OPERATED DOORS.



MOTOR OPERATORS OPEN THE DOORS BY ACTUATING SEQUENCE TYPE ELECTRIC CONTROLS.



POWER OPERATED INTERMEDIATE POSTS AUTOMATICALLY RAISE AFTER DOORS OPEN.



WITH POSTS OUT-OF-THE-WAY, THE OPENING IS COMPLETELY CLEARED — UNOBSTRUCTED.



OPERATING THE "CLOSE" BUTTON REVERSES THE OPER-

handling the unusual with the usual **KINNEAR** Efficiency

Whether large or small — vertical, horizontal or sloped — no matter what the size or configuration of the opening, Kinnear Rolling Doors are custom-built to handle the *Unusual* with the *Usual* Kinnear efficiency everytime! The 100 ft. wide crane opening shown* is typical. Five separate doors in conjunction with four movable mullions — all motor equipped — are interlocked to operate in proper sequence at the touch of a single control.

When fully opened the crane-way is "all clear" since the door curtain is coiled overhead — completely out-of-the-way. In operation, its rugged construction will withstand rough day-to-day wear and tear. And when closed, it's literally a galvanized steel wall that repels all elements. Weatherproof, fireproof and literally vandal-proof! Besides these benefits, Kinnear continues to meet the test of time with the design leadership that has won universal door preference for the past 75 years. This is further backed up with Kinnear's "Registered" Life Extension Policy and a nationwide service organization.

When you need imaginative engineering "know-how" for protective closures of any size, consult your nearest Kinnear Representative or write us today!

Kinnear also manufactures Rolling Fire Doors, Rolling Grilles, Rolling Counter Shutters, RoL-TOP Overhead Doors of Steel, Aluminum, Fiberglass and Wood and Power Operators.

*OWNER ILLINOIS CENTRAL RAILROAD
WOODCREST SHOP — HOMEROD, ILL.
135 EAST ELEVENTH PLACE
CHICAGO, ILLINOIS 60605

DESIGNERS AND ENGINEERS
ALFRED BENESCH AND COMPANY
10 WABASH AVENUE
CHICAGO, ILLINOIS 60603

GENERAL CONTRACTOR
W. E. O'NEIL CONSTRUCTION CO.
2751 NORTH CLYBOURN AVENUE
CHICAGO, ILLINOIS 60614



KINNEAR CORPORATION and Subsidiaries

1860 FIELDS AVENUE, COLUMBUS, OHIO 43216

FACTORIES:

COLUMBUS, OHIO 43216 • SAN FRANCISCO, CALIF. 94124

CENTRALIA, WASH. 98531 • TORONTO, ONT., CANADA

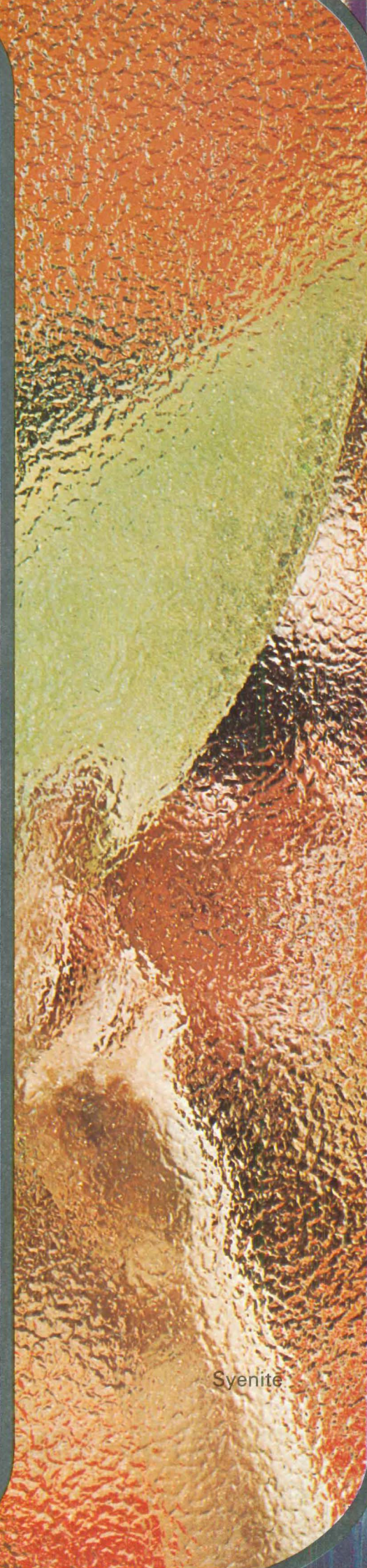
OFFICES AND REPRESENTATIVES IN ALL PRINCIPAL CITIES



Since 1905



Hylite



Syenite



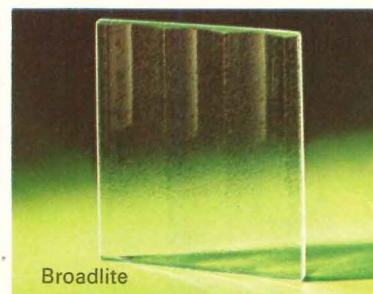
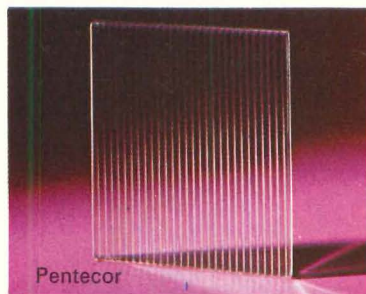
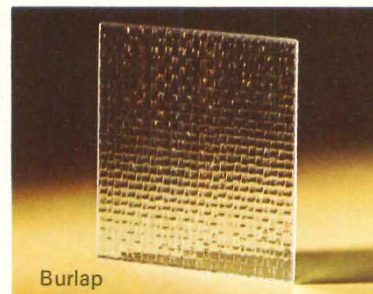
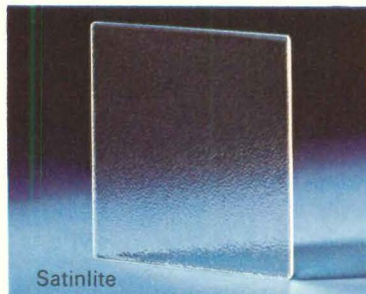
Pluralit

Selections
that give
imagination
full sway


MISSISSIPPI

PATTERNED GLASS

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



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

See our catalog in Sweet's 

CE GLASS

For more data, circle 91 on inquiry card

Smooth Rough

Bank Uses Matching Mount Airy Granite Over Span of 56 Years!

Here's proof-positive of the long lasting and matching beauty of Mount Airy Granite. It was a wise choice for the exterior of the Citizens and Southern National Bank, Augusta, Georgia in 1913. It was a perfect match for remodeling in 1952, and again in 1969 Mount Airy Granite was used in an addition.

More and more architects recognize the limitless design possibilities, durability, and timeless beauty of Mount Airy Granite. For complete details, write today.

**North Carolina
Granite Corporation**
Mount Airy, North Carolina 27030

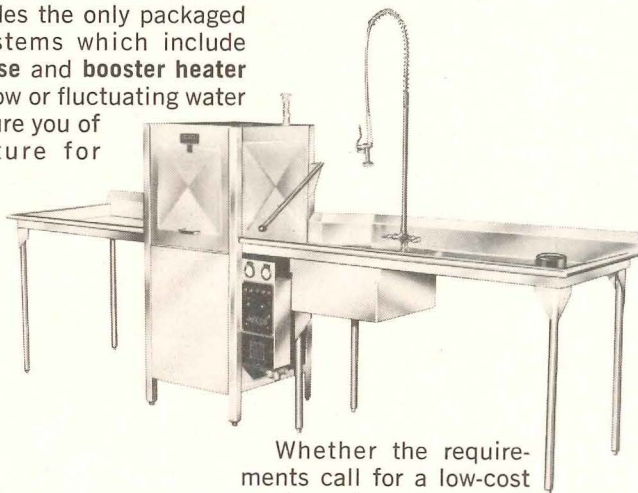


The Citizens and Southern National Bank, Augusta, Ga. Architects and Engineers: Jones and Fellers. Contractor: Clarence Mobley Contracting Co., Inc. Stone Setting Contractor: Georgia Marble Setting Co.

For more data, circle 94 on inquiry card

Specify the complete commercial dishwashing system.

Jackson provides the only packaged dishwashing systems which include built-in power rinse and booster heater which eliminate low or fluctuating water pressure and assure you of 180° temperature for final rinse.



Whether the requirements call for a low-cost packaged system with capacity of 950 dishes per hour to conveyor dishwashers with capacity of thousands of dishes per hour — Jackson has the proper system.

Our Engineering Staff is available to supply you with complete information and technical data.

For complete details, contact:

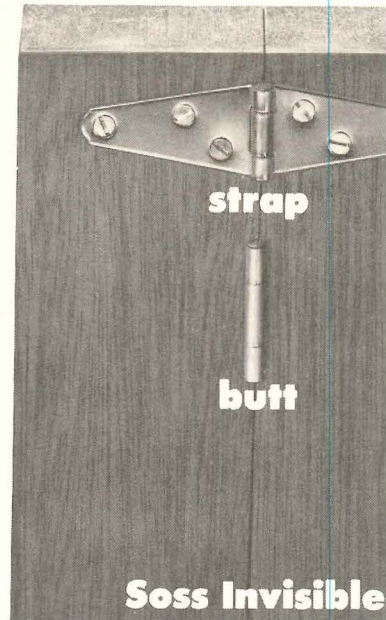
JACKSON PRODUCTS COMPANY
Dept. AR-4 Box 9275, Industrial Park
Tampa, Florida 33604

An Alco Standard Company • The Corporate Partnership[®]
813-971-6262 Telex: 52-615

For more data, circle 95 on inquiry card



Pick the hinge that hides



Compare the Soss look of invisibility with any strap or and you'll choose The Soss Invisibles. These amazing hinges when closed to blend with any decor. With The Soss Invisibles you can create room, closet, or cabinet openings which are free of hinges or gaps . . . the perfect look for doors, doorways, bars, stereos, or T.V.'s. The Invisibles are extra strong, reversible for right or left hand operation, and are reversible for 180 degrees, and are reversible for right or left hand operation. Listing in Sweet's or write for catalog: Soss Manufacturing Company, Division of SOS Consolidated, Inc., P.O. Box 8200, Detroit, Michigan 48213.



For more data, circle 96 on inquiry card



Make a beautiful entrance with Republic stylable standard doors.

Get a custom look . . . but for a fraction of the cost of custom-made doors.

Get it by specifying Republic stylable standard doors for your next apartment, institutional, or commercial building.

You'll get the exact light and louver treatment you wish. That's because your nearby Republic distributor can modify our basic door design right in his own warehouse. To you, that means no long delays or extra costs for "specials."

And you can choose from 36 door sizes and 8 standard styles, all prime-coated or prepainted in one of 19 popular colors.

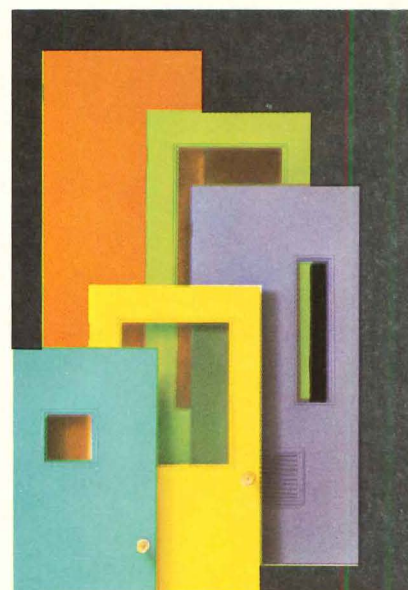
Plus, when the doors are delivered, they're ready to hang or erect. No planing, notching, or mortising is needed on any

Republic door-frame-and Frame-A-Lite stick system. That's because they're made to exacting tolerances.

They're made strong and quiet, too, thanks to a honeycomb inner structure. Fact is, we think our doors are so great that we use them in THE ENVIRONMENTAL HOME, Republic's new residential building system that uses prefabricated steel panels and components that lend themselves to mass production and easy on-site assembly.

Like more information? Contact your Republic distributor. He's listed in the Yellow Pages under "Doors-Metal."

Or, send for a free copy of our Architectural Products Manual. Write Republic Steel Corporation, Manufacturing Division, Youngstown OH 44505.



Republicsteel
Manufacturing Division



For more data, circle 97 on inquiry card

Design out water hammer. Specify Wade Shokstops.

Water hammer is the shock caused by the sudden build-up of energy when a quick closing valve suddenly stops the flow of water in a piping system.

Specify Wade Shokstops to solve the problem.

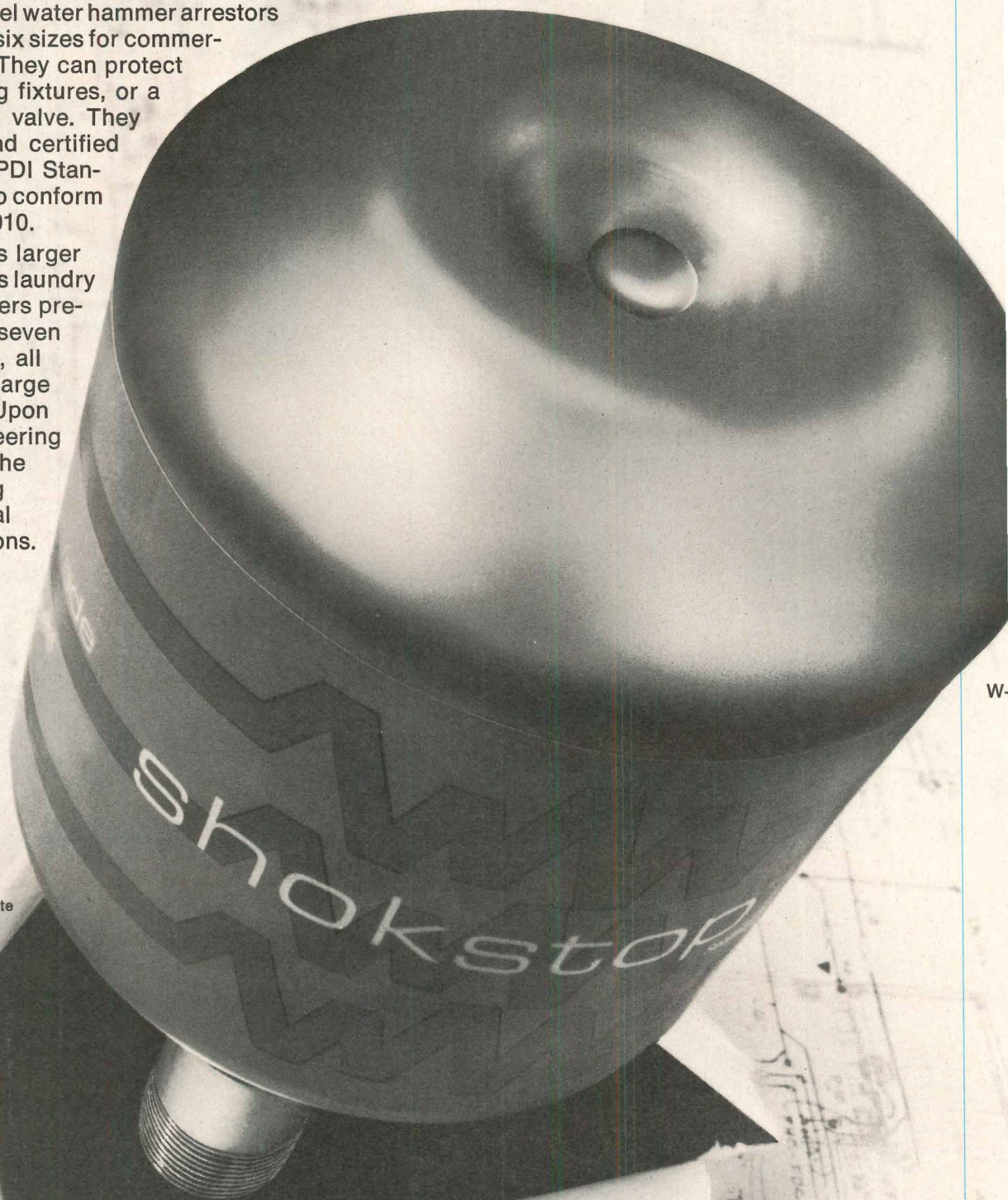
These stainless steel water hammer arrestors are manufactured in six sizes for commercial piping systems. They can protect batteries of plumbing fixtures, or a single quick closing valve. They have been tested and certified in accordance with PDI Standard WH-201 and also conform to ASSE Standard 1010.

For piping systems larger than 2 inches (such as laundry machines), Wade offers pre-pressurized units in seven sizes and capacities, all designed to absorb large amounts of energy. Upon request, Wade Engineering will size and locate the units for large piping systems or for special equipment applications.

So design out the problem. Put Wade Shokstops in the specs.

For your new Wade Shokstop Specification Manual, write Box 2027, Tyler, Texas 75701.

Member,
Plumbing and Drainage Institute
© 1972 Tyler Pipe

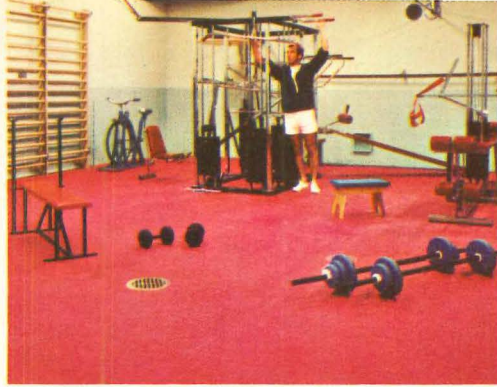


"Wade stainless steel Shokstops shall be installed as shown on the mechanical engineering plans or shall be sized and located in accordance with Plumbing and Drainage Institute Standard WH-201."

For more data, circle 98 on inquiry card

Tyler
Pipe
Subsidiary
Tyler Corporation





Robbins SPORT-TRED[®] is the any-color synthetic surface ... indoors and out

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

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



Robbins
SPORT-TRED[®]

SEND COUPON FOR FULL INFORMATION AND FREE SAMPLE.

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

Name _____
 Position _____
 Company _____
 Address _____
 City _____ State _____ Zip _____

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

Honeywell clears the air about computers in centralized building control systems.



Delta's computer is a peripheral option. An add-on . . . same as any other standardized Delta module.

Our Delta 2000 automates building operation with or without our computer. We'll recommend the computer only if you really need it...then program it to slash building operating costs!

Some buildings need a computerized control system, some don't. Honeywell can help you either way.

You see, we build both!...the automation system and the computer. We can help you decide...by evaluating your building, its special problems, management needs...not just hardware.

Sometimes we won't recommend it.

For large building or small, we don't have to recommend a computer to justify our investment. The basic Delta does so much

more than conventional automation systems, sometimes our computer isn't needed.

And we'll tell you so.



For instance, what does your client really require in an automation system? One-man environmental control? Fail-safe equipment status reporting? Automatic start-stop scheduling? Fire and security monitoring?

Those basic functions don't really use a computer's high-speed calculating talents. Nor justify a computer's extra cost. Delta 2000 handles all that (and a lot more!) without a computer. It was designed that way right from the start.

Management by objective.

But what are your client's other objectives? Maximized energy savings? Predictive electrical demands? Maintenance scheduling? Daily efficiency reports, and other decision-making information?

Here our minicomputer can really help... now, or later on. It can join forces with our basic Delta system to move up from automated building control to automated building management. When needed, as needed.

Cost-shared software programs ready to go.

Just select what you need from Honeywell's growing library of fully-documented software routines. Modular programmed solutions that eliminate costly start-from-scratch, trial-and-error programming... proven, risk-free.

Think of our minicomputer as part of the total Delta system...an electronic assistant for your client's building management team.

By giving you the choice, Honeywell takes the risk out of choosing your next building automation system...with, or without a computer.

Management by objective.

It's one more way Honeywell helps. We have a new booklet that gives you the full story. Call us for it. Or write: Honeywell, Commercial Div., G2118, Minneapolis, Minnesota 55408.

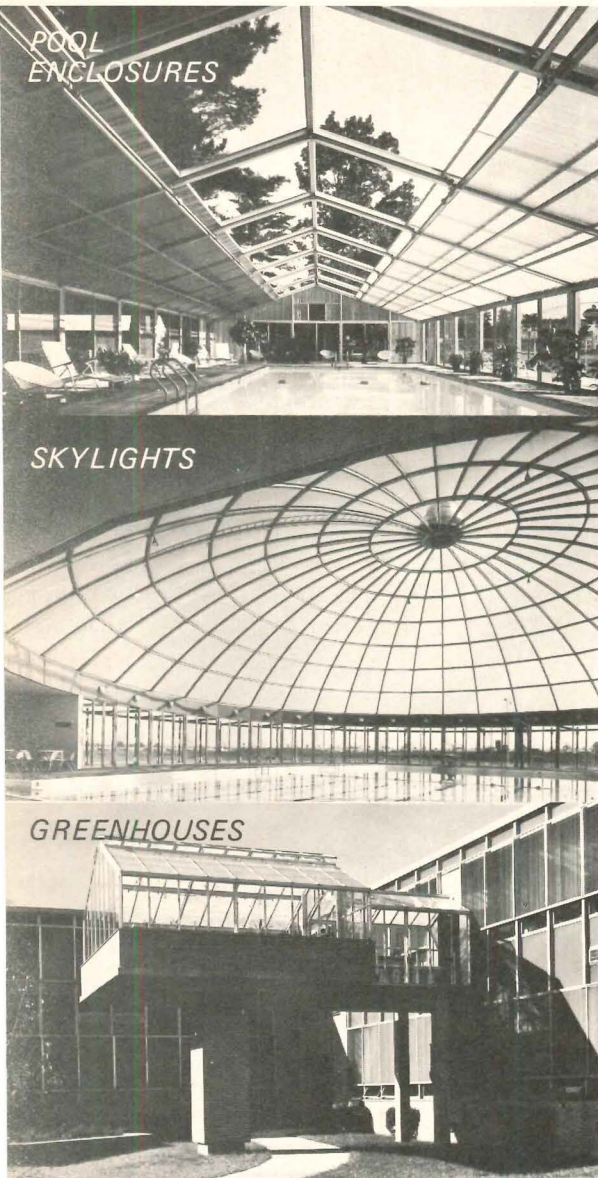
Honeywell

The Automation Company

For more data, circle 100 on inquiry card

We Didn't Discover Natural Light

*We just know a lot of ways
to make good use of it!*



Like indoor/outdoor pool enclosures for year-round swimming.

Like custom skylights for malls, recreation areas, foyers.

Like horticulturally correct environments for teaching and research.

*May we help you
with design projects
involving the use of
natural light?*

See us in Sweet's



ICKES-BRAUN GLASSHOUSES, INC.:

P. O. Box 147, Deerfield, Ill. 60015

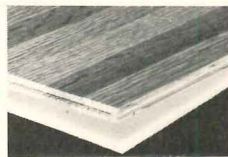
Representatives in principal cities.

For more data, circle 101 on inquiry card

PRODUCT REPORTS

continued from page 174

WOOD FLOORING /

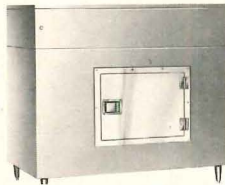


Tile's backing is made of closed cell foam that deadens sound, and meets New York City's apartment building code standards for impact sound control. Seven finishes are available. ■ Tibbals Flooring Co., Oneida, Tenn.

Circle 318 on inquiry card

VERTICAL ICE STORAGE BINS /

Two new models feature stainless steel lining, foamed-in-place polyethylene insulation, drip-proof, heavy-duty door design, and large doors for easy ice removal in small or large quantities. ■ Crystal Tips Ice Equipment, McQuay Perflex Inc., Minneapolis.



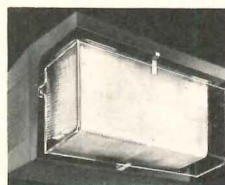
Circle 319 on inquiry card

NON-WOVEN FABRICS /

A thermoplastic bonding system results in a series of materials with controlled ranges of liquid and air permeability selected chemical resistance properties, and a high level of mechanical behavior. They can be sewn, dyed, printed and embossed, and are compatible with water-repellent and fire-retardant finishes. Applications include air and liquid filtration, backing for carpet underlays and coating substrates. ■ J. P. Stevens & Co., Inc., New York City.

Circle 320 on inquiry card

LIGHTING FIXTURE SHIELDS /



Polycarbonate product is available with the company's line of prismatic mercury vapor fixtures, and is available in three sizes. Shields are said to be vandal-proof, and will not yellow. ■ Stonco Lighting, Union, N.J.

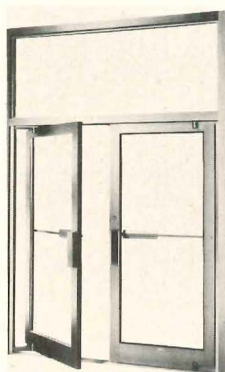
Circle 321 on inquiry card

ONE-STEP WALL SYSTEM /

Concrete is poured into strong, lightweight aluminum forms fitted with patterned fiberboard, steel reinforcing rods and 4-ft boards of the manufacturer's 1½-in. thick plastic foam, laminated to ⅝-in. gypsum wallboard. End product is a complete, insulated, finished wall in one step. ■ Amspec Inc., Columbus, Ohio.

Circle 322 on inquiry card

MANUAL BALANCED DOORS /



Features include a 1¾-in.-wide entrance framing. The balanced pivoting mechanism features self-aligning pivots at all points of rotation and a spring-cushion backstop. Closers are concealed and have adjustable closing and latching speeds. The doors have adjustable pile weathering on all four sides for maximum resistance to air and water infiltration. ■ Kawneer Co., Niles, Mich.

Circle 323 on inquiry card

more products on page 195

2 Great Ways to Achieve Seating Flexibility

With MOD-LOK. Elegantly simple. Comfortable. Beautifully finished in natural Danish beech wood. Choice of upholstery coverings. Interlocking and stacking.



Century II
MOD-LOK
MODULAR SEATING



Or with Archbold Seating. Strong. Lightweight. Laminated Danish beech wood finish or select from vinyls and fabrics for cushions. Easy to stack. Optional interlocking hardware available.

ARCHBOLD Seating

WRITE FOR FULL DETAILS

**SAUDER
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INTERNATIONAL**

200 HORTON STREET STRYKER, OHIO

For more data, circle 102 on inquiry card

For more data, circle 103 on

This new circuit breaker offers greater protection for people

Square D introduces an entirely new concept in circuit breakers. It is the first practical and economical device that significantly reduces the hazards of line-to-ground faults to both people and equipment.

The new Qwik-Gard™ circuit breaker combines branch circuit overload and short circuit protection with ground fault protection in one compact unit that occupies the same space as a standard QO® circuit breaker. In addition to the QO protection for overloads and short circuits, ground faults are detected and interrupted by sensing an imbalance between line and neutral current in the individual

branch circuit. A current imbalance as low as .005 amperes (5 milliamperes) will cause the Qwik-Gard to trip.

This amazing new unit is available in 15, 20, 25 and 30 ampere ratings for 2 wire, 120V ac circuits with or without an equipment ground. Qwik-Gard circuit breakers fit into existing or new QO load centers, or NQO panelboards. Bolt-on units are available for NQOB panelboards. Since branch circuits are protected individually, a problem on one circuit will not interrupt the power to other circuits.

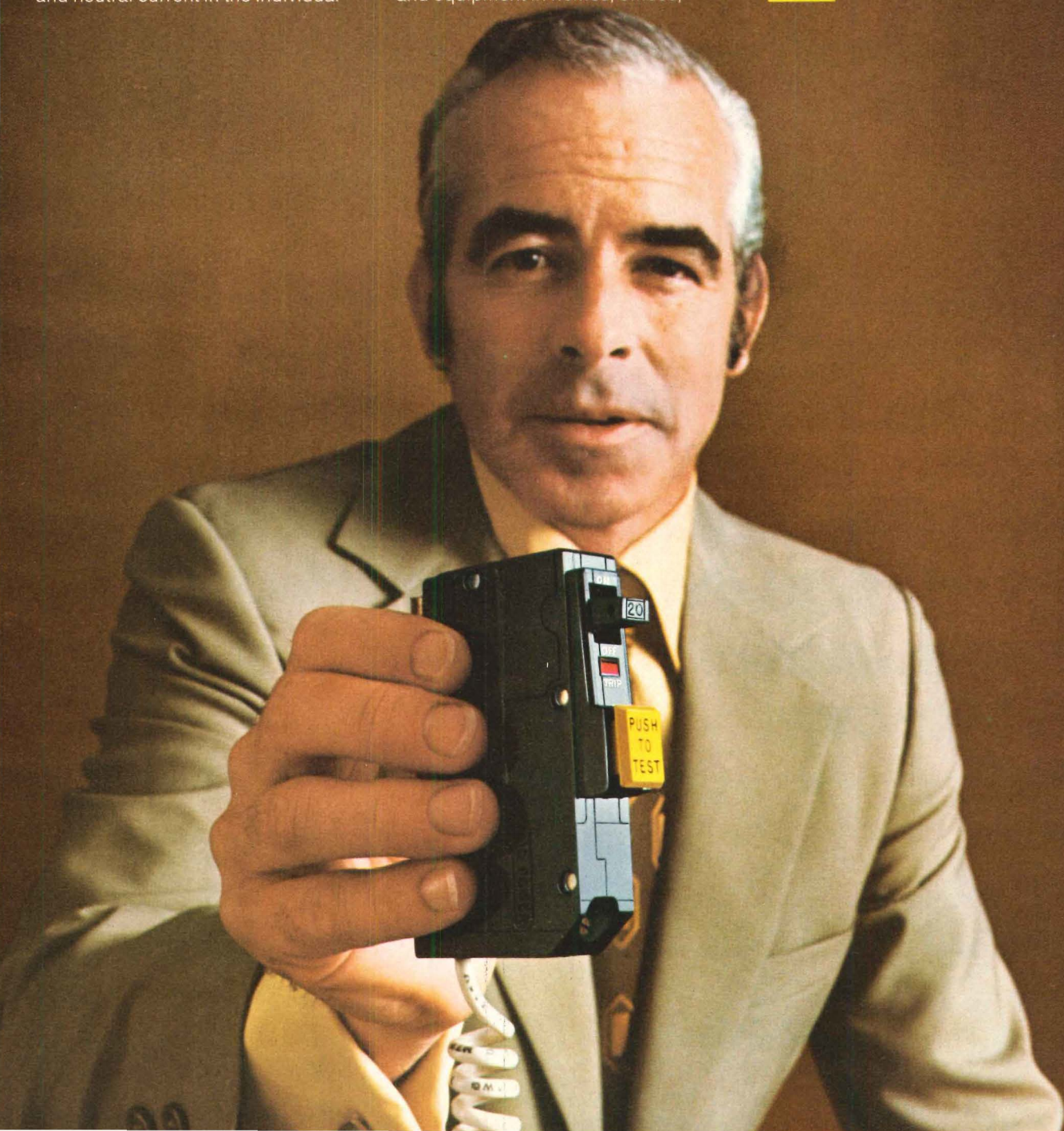
Qwik-Gard circuit breakers are designed to protect circuits, people and equipment in homes, offices,

factories and swimming pool areas and on construction sites. They are UL listed and meet the requirements of the 1971 National Electrical Code. Qwik-Gard breakers also have the exclusive Visi-Trip® indicator you find on Qwik-Open® breakers. It's a highly reflective red flag that springs into view through a window when the breaker trips. For further information, contact your nearby Square D field office or write Square D Company, Dept. SA, Lexington, Kentucky 40505.

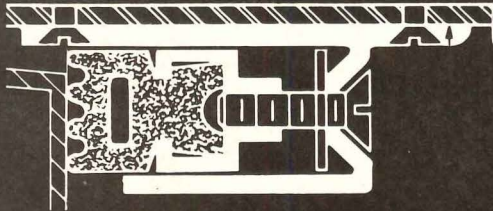


SQUARE D COMPANY

Wherever Electricity is Distributed and Controlled

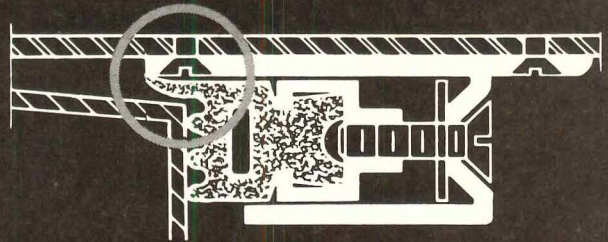


Our Old Design

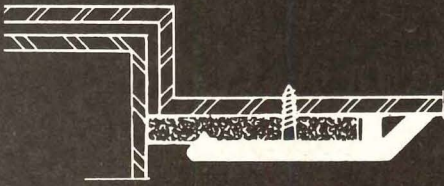


Head and Jamb Sound Seal No. 170. Basically excellent weatherstrip seal but sound penetrates where insert moves.

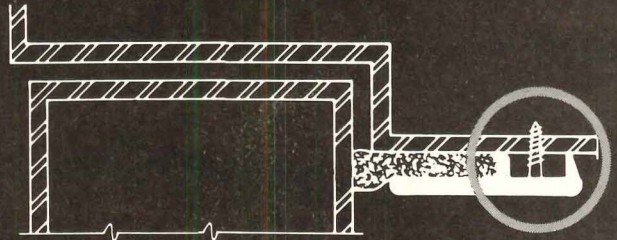
Our New Design



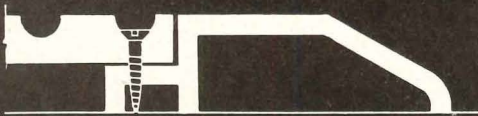
Head and Jamb Sound Seal No. 170. Neoprene projection, compresses against housing, eliminates sound penetration when insert is adjusted. Excellent weatherstrip seal modified to compensate for sound in 45 decibel range.



Head and Jamb Weather Stripping No. 139. Screw penetrates Neoprene, makes adjustment difficult. Retainer will tilt if screwed too tightly. 1¼" dimension will not fit on 1" stop.



Head and Jamb Weather Stripping No. 314. Support leg keeps housing straight. Screw does not contact Neoprene; adjustment is easy. 7/8" dimension allows fit on 1" stop. Housing is 34% heavier.



Saddle Assembly. Assembly must be fastened by drilling and tapping through plate into support section. Difficult to set level. Expensive to install.



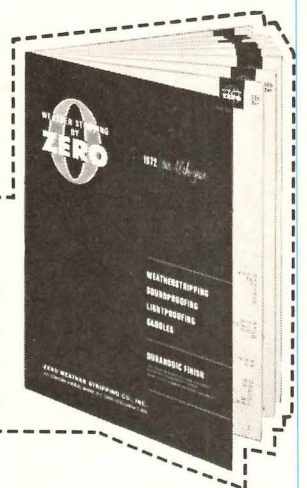
Saddle Assembly. Interlock between plate and support section eliminates drilling and tapping. Secure fit guaranteed. Easy installation.

Zero's weatherstripping isn't just an improvement over everyone else's. It's even an improvement over our own.

If you want the benefit of these and other improvements in weatherstripping, soundproofing and lightproofing materials, don't specify "Zero or equivalent." There is no equivalent! The only way you can be sure you get exactly what you — and your job — call for is to specify "Zero." By the style number in our new, 1972 catalog. Send for your copy today.

Zero Weatherstripping Co., Inc.
415 Concord Ave., Bronx, N.Y. 10455
GENTLEMEN: Please send me your 1972 catalog

Name _____ Position _____
Company _____
Address _____
City _____ State _____ Zip _____



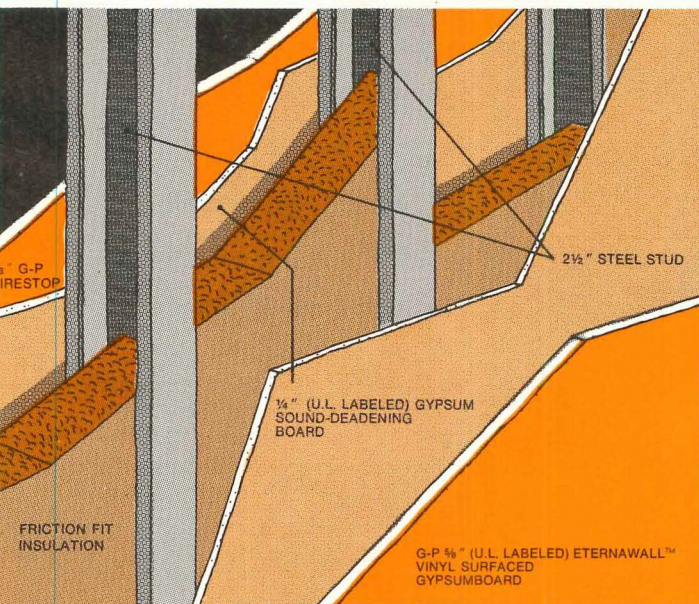
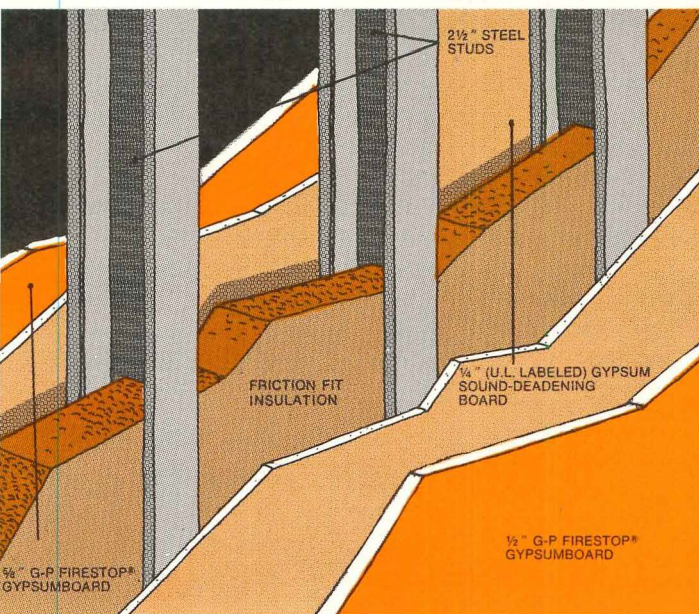
Zero Weather Stripping Co., Inc.

415 Concord Avenue, Bronx, N.Y. 10455 / (212) LUdlow 5-3230

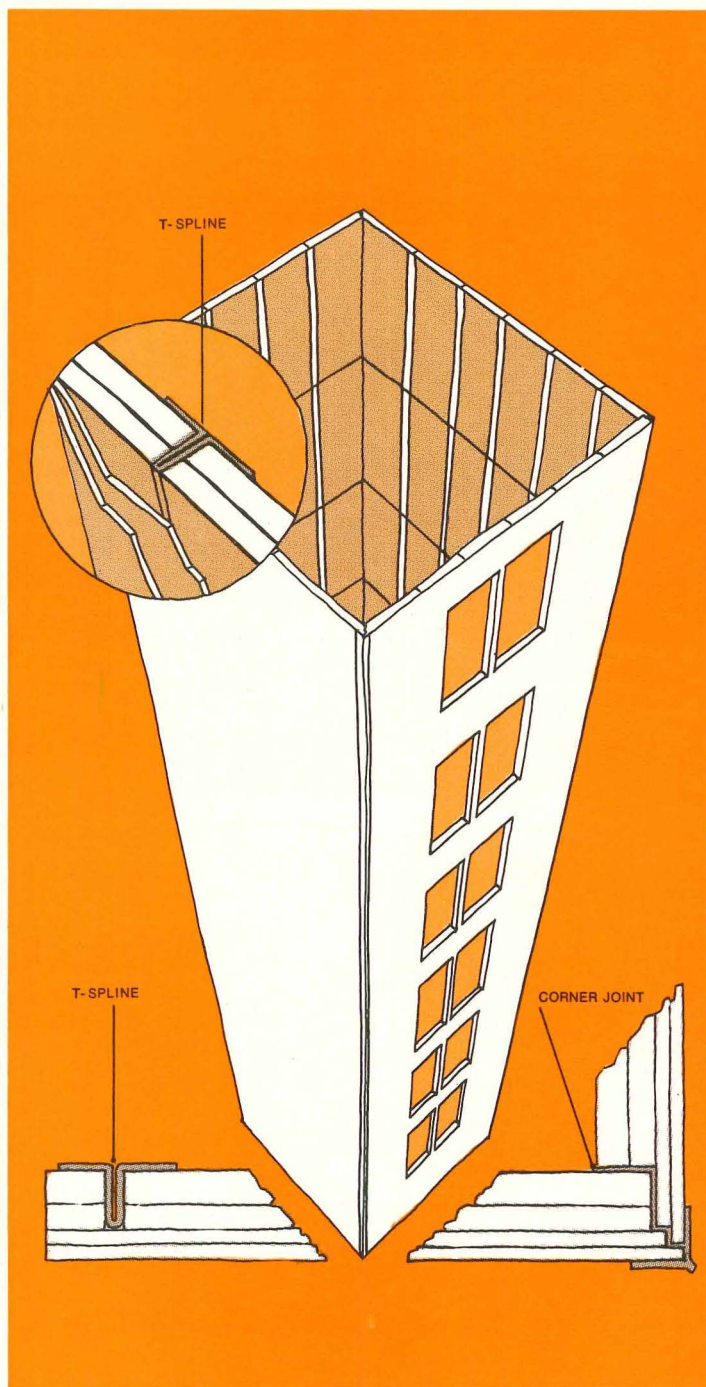
For more data, circle 104 on inquiry card

G-P has the answer to economical fire and sound control in high-rise construction.

Party Wall. With G-P's party wall system, you get an STC of 50 and a one-hour incombustible fire rating. First erect 2½" steel studs and then install 2½" fiber glass insulation. Then, on both sides of the studs, G-P's ¼" (U.L. labeled) Gypsum Sound-Deadening Board is attached. Applied to the Sound-Deadening Board is G-P's ½" FIRESTOP® gypsumboard. Easy! Fast! Inexpensive!



Corridor Wall System. This economical wall system gives you an STC of 54 and a one-hour fire rating. On the interior side of 2½" steel studs with fiber glass friction-fit insulation, G-P's ¼" (U.L. labeled) Gypsum Sound-Deadening Board is attached. Then, G-P's 5/8" FIRESTOP® gypsumboard is applied to the Sound-Deadening Board. On the corridor side, G-P's 5/8" (U.L. labeled) Eternawall™ is attached to the Sound-Deadening Board. And you've got a corridor that's tough. Colorfast. Stain and abrasion resistant. And beautiful.



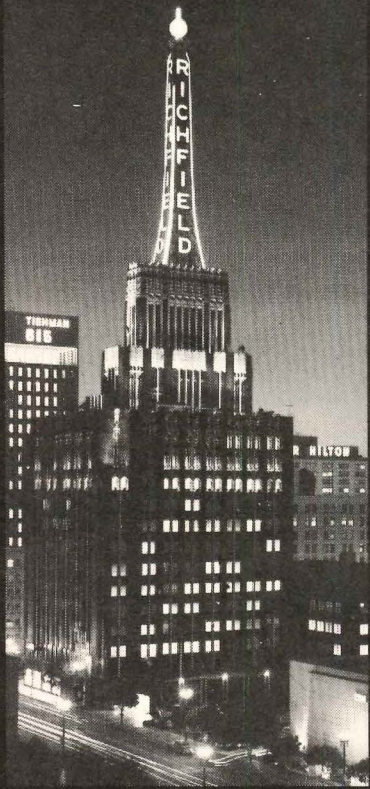
Shaft Liner. G-P's new Shaft Liner system weighs only 10.5 lbs. p.s.f. compared to 34 lbs. p.s.f. or more for masonry shaft walls. Prelaminated panels are easily installed in top and bottom runners with a T spline placed between panels. This system installs from the shaft exterior so construction is speeded up. In addition, temporary shaft enclosures are eliminated. G-P's shaft wall gives you a 2-hour fire rating. And saves you money and space in building core construction.

Georgia-Pacific

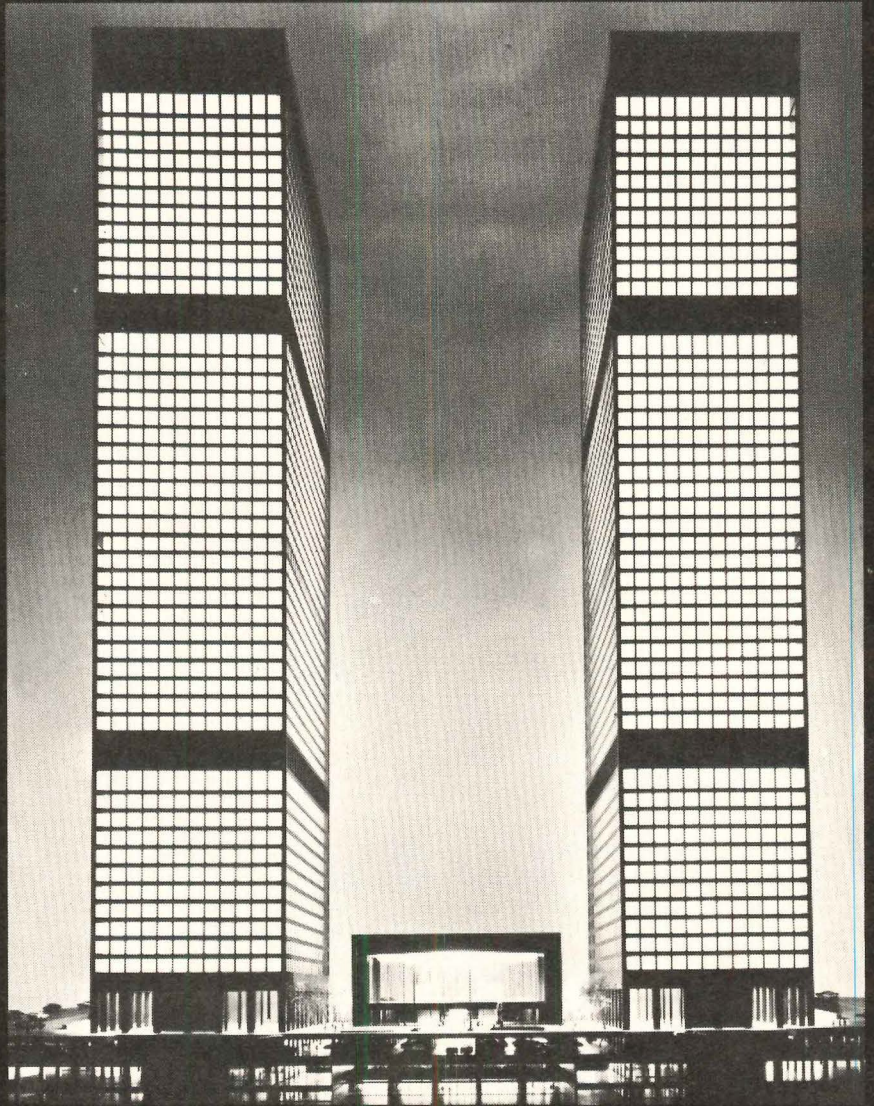
Gypsum Division
Portland, Oregon 97204



In 1958 they sealed the old Atlantic Richfield headquarters with LP[®] polysulfide polymer.



In 1971 they demanded that the new Atlantic Richfield headquarters be sealed with LP[®] polysulfide polymer.



It always makes sense to ride a winner.

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

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

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

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



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

So ride with a winner. Specify a sealant based on Thiokol's polysulfide polymer. It won't let you down over the long haul.

For more information, including detailed comparisons between sealants based on Thiokol's LP[®] polysulfide and eight other kinds of sealants, write: Dan Petrino, Thiokol Chemical Corporation, P.O. Box 1296, Trenton, N.J. 08607.

Thiokol

For more data, circle 114 on inquiry card

continued from page 182

AGGREGATE SIDING PANELS / Exterior grade plywood, fireproof asbestos board, or Homasote structural insulation board are used as substrates. Panels can be ordered pre-cut in shapes made to specific dimensions. Aggregate is available in various sizes and colors. **Dular Materials, Inc.**, South Plainfield, N.J.
Circle 324 on inquiry card

COUPLING / Steel outer collar holds a rubber sleeve pressurized to 100 lbs/sq in., and a ring of stainless steel teeth at the end of the coupling. Hydraulic press combined with the force of the steel teeth forces the two pipe-ends together. **Canron Ltd.**, Montreal 113, Quebec, Canada.
Circle 325 on inquiry card

AUTOMATIC COLLECTION UNIT / Designed for waste removal, unit converts a waste and garbage depository to an automatic system that removes waste and garbage from the bottom of existing chutes to a central collection terminal. The system provides for linking each chute to a common automatic tube line leading directly to a discharge terminal. It is particularly designed for existing high-rise apartment houses and office buildings. **ECI Air-Flyte Corp.**, Fairfield, N.J.
Circle 326 on inquiry card

METER SOCKET EQUIPMENT ASSEMBLY / Unit is particularly well-suited for apartment complexes where minimum floor space is available. Each assembly is 20 in. wide by 40 in. long and will accept four 8-gang meter stacks mounted two front and two back for a total of 16 meters. Additional free-standing assemblies can be added. **Federal Pacific Electric Co.**, Newark, N.J.
Circle 327 on inquiry card

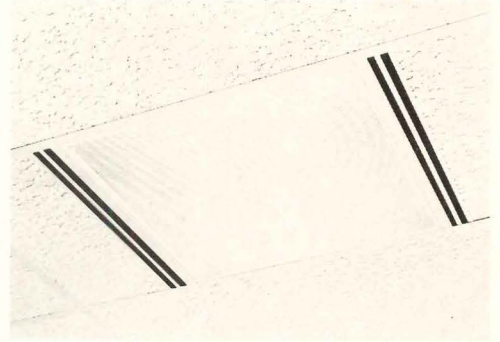
TRANSIT DOOR / Designed to provide access through finished floor, door is provided with a 3/16-in. molding to receive carpeting. Installation is accomplished through concealed hinges which allow close tolerances on joints between door leaf and frame. **The Door Co.**, New Haven, Conn.
Circle 328 on inquiry card

INTERCOMMUNICATION SYSTEM / In addition to two-way voice communication, unit is capable of distributing background music and special programs from a record player, radio tuner, or tape deck. Utilizing add-on modules, central station's capacity can be increased to remote stations. An all-call for emergency has automatic priority over all program material being distributed. **Bogen Div.**, Lear Corporation, Inc., Paramus, N.J.
Circle 329 on inquiry card

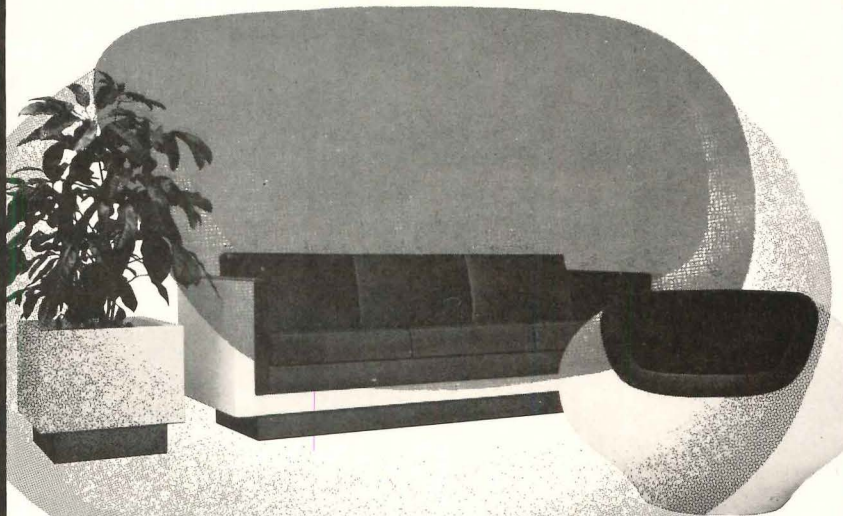
WASTE COMPACTOR / This electromechanical unit is said to cost significantly less than other comparable commercial compactors on the market. No installation is required; unit plugs into any 115 volt outlet ready for use. Unit features 25-second operating cycle, eye-level controls, safety interlocks, a mobile bag holder with a full 6-cu.-ft.-capacity, one-year warranty on parts and labor, and compaction ratio ranging from 5:1 to 8:1 depending on type of refuse. **ARS**, St. Clair Shores, Mich.
Circle 330 on inquiry card



HIGH-INTENSITY DISCHARGE LUMINAIRE / Air handling capacity is a new feature, permitting ceiling design flexibility in commercial areas. **Holophane Co., Inc.**, New York City.
Circle 331 on inquiry card



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Your choice of 10 designer colors in sofas, club chairs, round chairs, benches, end tables, cocktail tables, planters.

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For more data, circle 115 on inquiry card



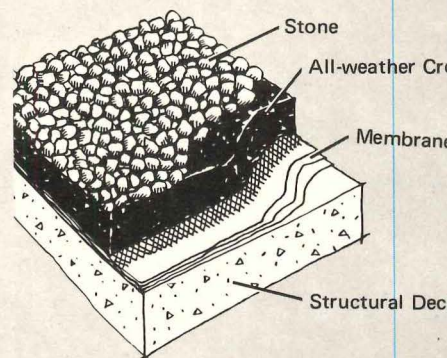
can you do this to your roof deck and still not puncture the membrane?

You can if it's protected with the All-weather Crete Insul-top system! This insulation applied over the waterproof membrane will protect it from normal accidental puncture (also from freezing and from extreme temperature cycling). It reduces expansion and shrinkage to a minimum. All-weather Crete can be sloped to drains and contoured around and over projections to provide positive water drainage.

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Consider this concept in your next project. Write for the 16 page technical booklet "Designing a Leak Proof Roof". Silbrico Corporation, 6300 River Road, Hodgkins, Illinois 60525, (312) 735-3322.

You may change your entire thinking about roof decks!




All-weather Crete® Insul-top System


SILBRICO

For more data, circle 116 on inquiry card

OFFICE LITERATURE

For more information circle selected item number on Reader Service Inquiry Card, pages 215-216.

OFFICE FURNITURE / A complete line including console desks, elevated consoles, work stations and tub files is presented in a catalog. Elevated console features a working wall providing flexible storage and privacy. ■ Kwik-File, Minneapolis.
Circle 400 on inquiry card

GLASS / Extensive lines for 1972 are presented in a brochure. Product categories include clear heat-absorbing drawn sheet glass, figured and glass, float glass, and non-reflection and glass. ■ Glaverbel, Inc., Manhasset, N.Y.*
Circle 401 on inquiry card

LABORATORY FURNITURE / Steel modules are discussed in an 18-page bulletin. A variety of units, worktop materials, and fixtures is included. ■ Fisher Scientific Co., Pittsburgh.*
Circle 402 on inquiry card

ELEVATOR EMERGENCY SERVICE / Designed primarily for buildings with unattended elevators, alarm is initiated by a key switch or heat- or smoke-sensing device. Operation automatically returns elevators back to a previously designated floor where passengers may leave safely. ■ Otis Elevator Co., New York City.*
Circle 403 on inquiry card

SLAB CONSTRUCTION / An 8-page brochure explains how slabs are cast and lifted. Details of the system is possible with a structural steel building or a bearing wall structure. ■ Star Construction Corp., San Antonio, Tex.
Circle 404 on inquiry card

ACRILIC WALLBOARD / Designed for the factory-built housing industry, panels are available in four textured colors. Features include a Class 1 flame spread rating of 20, crack-resistance and low maintenance. ■ Georgia-Pacific Corp., Portland, Ore.*
Circle 405 on inquiry card

POLLUTION CONTROL / Compilation of the most current terms and guidelines for air pollution control are given in a 17-page manual. Several pages are devoted to definitions of air pollution control standards, technical terms and equipment. ■ Vari-Systems, Inc., Cleveland.
Circle 406 on inquiry card

ANTIBACTERIAL SURFACING COMPOSITIONS / Floor compositions provide protection against corrosive chemicals, solvents, food-processing waste and meat fats. Wall compositions are designed for hospital operating suites, bathrooms, and shower rooms. ■ Crossfield Products Co., Compton, Calif.*
Circle 407 on inquiry card

STANDING LAMINAR FLOW CLEAN AIR SYSTEM / Hardware consists of a main unit and separate mask aspirator. Especially designed for operating room use, system removes virtually all airborne particles 0.3 microns or larger, including dust and pathogenic organisms. System was designed and manufactured by Agnew-Geigins, Inc. ■ DePUY, Warsaw, Ind.
Circle 408 on inquiry card

FASCIA AND SPANDREL PANELS / An abestos PVC alloy sheet product described in a 4-page brochure features non-combustibility, high strength, and a wide range of colors and surface effects. ■ Continental Oil Co., Kaykor Div., Fairless Hills, Pa.
Circle 409 on inquiry card

SWIMMING POOL DESIGN / The use of ceramic mosaics and glazed ceramic tile in swimming pools is discussed in a 12-page booklet. Text includes pool planning, design, and maintenance considerations. Newest NCAA, YMCA, and AUU standards covering dimensions, markings, ladders and overflow systems are given. ■ American Olean Tile Co., Lansdale, Pa.*
Circle 410 on inquiry card

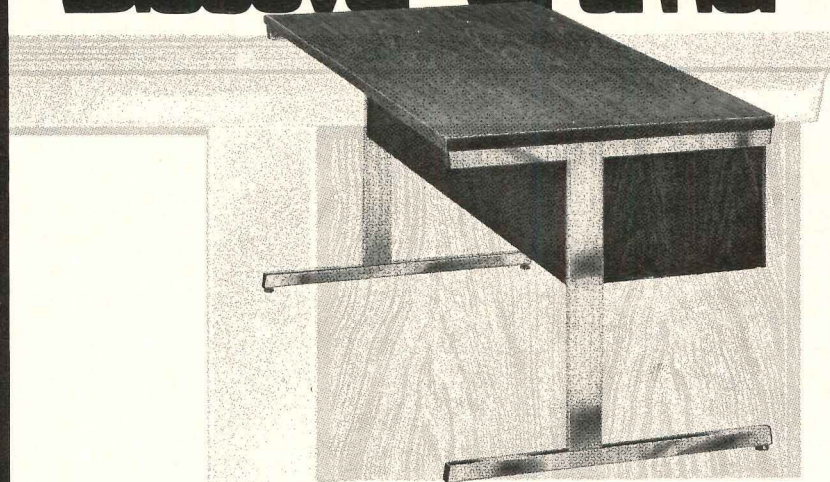
ANIMAL DETERRENT BARRIERS / A complete line of stainless steel bird, climbing animal and intruder deterrent barriers is described in a 4-page brochure. Barriers can be used on buildings, fences, transformers, walls, utility poles and all projections. ■ Nixalite Company of America, Rock Island, Ill.
Circle 411 on inquiry card

WALL FABRIC / Features include unobstructed passage of sound or sound dampening when used with standard sound-absorption materials, flame-resistance, and easy maintenance. ■ Mel-tex, Div. of Wendell Fabrics, New York City.
Circle 412 on inquiry card

* Additional product information in Sweet's Architectural File

more literature on page 200

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and you discover Motiva — with unequalled variety in work stations.

For reception area all the way to senior executive offices, Motiva offers a collection of sixty-three different desks and twenty-three different credenzas — each designed to save floor space. And each with coordinated filing systems. Motiva is ideal for office landscaping or open office. For literature call (913) 621-6700 or write



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By now you're familiar with all the various man-made carpet pile fibers and the advantages they offer. When you specify carpet for man-made fiber performance, do you get it all the way from the carpet surface to the backing?

As an important producer of man-made carpet fiber, Phillips Fibers knows the value of total carpet performance. To help you get total man-made fiber performance, Phillips Fibers has engineered Loktuft® carpet backing with many of the same important features you look for in the face fiber.

Like stain resistance. So when stains are cleaned out of the carpet, they do not wick back later from the backing to the face of the carpet.

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This new zinc-titanium alloy can be used in direct contact with mortar or concrete without special protection. It is easily formed and soldered using standard sheet metal practices.

And to top it off, Microzinc 70 is less expensive than most of the other long-life quality, roofing metals.

Write for the new Microzinc 70 booklet which includes comparative properties plus design details for batten and standing seam roofs, valley flashing, gutters, fascias and gravel stops. We will also send you a sample of the pre-weathered metal so that you can examine the color and finish of Microzinc 70 for yourself.



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For more data, circle 120 on inquiry card

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Thinking about a pneumatic waste collection system?

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OFFICE LITERATURE

continued from page 197

WINDOW COVERINGS / Louver drapes constructed of sound-absorbing extruded rigid polyvinyl chloride are described in a 4-page brochure. Specifications are included. ■ Louver-Drape, Inc., Santa Monica, Calif.

Circle 413 on inquiry card

ROOF PROTECTION SYSTEMS / Designed to restore asphalt built-up roofs and prevent costly replacements, systems employ high-performing, static, cold-applied emulsions with or without membranes to provide optimum results at minimum costs. Products to reinforce flashings, edgings and all components above the roof line are included. ■ The Tremco Co., Cleveland*

Circle 414 on inquiry card

WATER-BASE COATINGS / According to the company, coatings can be applied to rusty steel and combine the latest developments in latex chemistry with the protective properties of lead pigmentation to form a heavy-duty rust-inhibitive system. ■ Subox Coatings, BASF Wyandotte Corp., Carlstadt, N.J.

Circle 415 on inquiry card

WATER COOLERS/FOUNTAINS / A recent catalog features a complete line of water coolers, drinking fountains and emergency safety equipment models. Included are polyester and stone drinking fountains available in five colors; a stainless steel fountain available with extended base for wheelchair patients; and an eye-face wash model designed for research and development labs. ■ Sunroc Corp., Glen Riddle, Pa.*

Circle 416 on inquiry card

HEATING/VENTILATING EQUIPMENT / A recent 40-page publication describes a line of heating, air tempering and energy recovery systems. Indexed topics include door and space heating, fresh air systems, and the latest advances in rotary air-to-air energy exchange equipment. ■ The Wing Co., Linden, N.J.

Circle 417 on inquiry card

MOVABLE CABINETRY SYSTEMS / A line of cabinets, dividers and accessories designed for open plan schools is described in a catalog. Features include flexibility, interchangeability and multi-functional use. ■ Grade-Aid, Nashua, N.H.*

Circle 418 on inquiry card

CERAMIC TILE / Features of a new wall tile with a wispy, billowing design on a white matte glazed background are described in literature. Six colors are available. ■ United States Ceramic Tile Co., Canton, Ohio.*

Circle 419 on inquiry card

FABRIC WALL COVERING / Five designs imported from Sweden are illustrated in a 4-page brochure. All designs are washable, and yarn-dyed before weaving to produce woven effects. ■ Van Arden Products Corp., Hicksville, N.Y.

Circle 420 on inquiry card

* Additional product information in Sweet's Architectural File

more literature on page 209

advertisement

FOR THE RECC

CHARLES A. LINDBERGH

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The biggest problem facing the specifier of institutional casework is the lack of knowledge of what products are available. He knows a specification will not be upheld unless he can properly answer any and all questions to the complete satisfaction of the owner and contractor. Where can he turn for the most reliable information?

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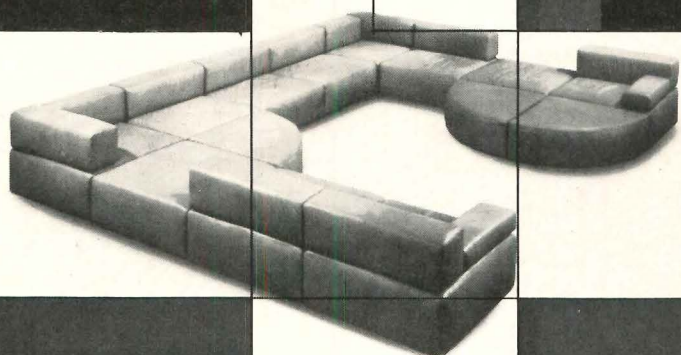
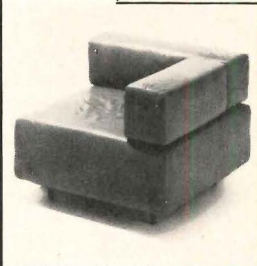
In addition to thorough specifications on materials and construction, the document also contains provisos in this document to virtually protect the specifier from accepting an unqualified manufacturer or inferior workmanship. For example: specifications concerning experience; proof of financial ability to fulfill the contract; written certification regarding materials and workmanship; and the submission of color-matched samples.

Approved by the AIA, these specifications may be obtained by sending your request to James Lindbergh, Products Division of AVM Construction, 178 Blackstone Avenue, New York, N.Y. 14701.

For more data, circle 122 on inquiry card

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

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

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So we think that architects, builders and users will all be more than pleased with this, our latest window.

But does it have everything? Before you answer, glance down the summary of features below; send for more detailed information—ask for a demonstration, if you like. We think we've come close. See if you agree.

① Perma-Shield! No painting inside or out. Both frame and sash are stable wood completely covered with a rigid vinyl sheath. No corner joints in frame. Sash corners are welded to form leak-proof joints.

② Sill tank. For added weathertightness under severe conditions of exposure, an integral vinyl dual sill has been built in to drain any moisture to the exterior.

③ Welded insulating glass eliminates need for storm windows. Snap-in rigid vinyl glazing bead eliminates glazing compound on exterior.

④ Weatherstripping is rigid vinyl for maximum weathertightness... factory applied.

⑤ Weathertight, vinyl-sheathed sash. Wood core factory treated with preservative for stability and insulation. Adjustable, chrome-plated steel glides in bottom rail for smooth, easy operation.

● Neat, trim frame is compatible with traditional, colonial or contemporary design. And it matches other Andersen Perma-Shield Windows and Gliding Doors.

● Screen is easy to install and remove from inside. White Perma-Clean® aluminum frame needs no painting. Screen strikes are part of exterior frame—no hardware to apply or lose.

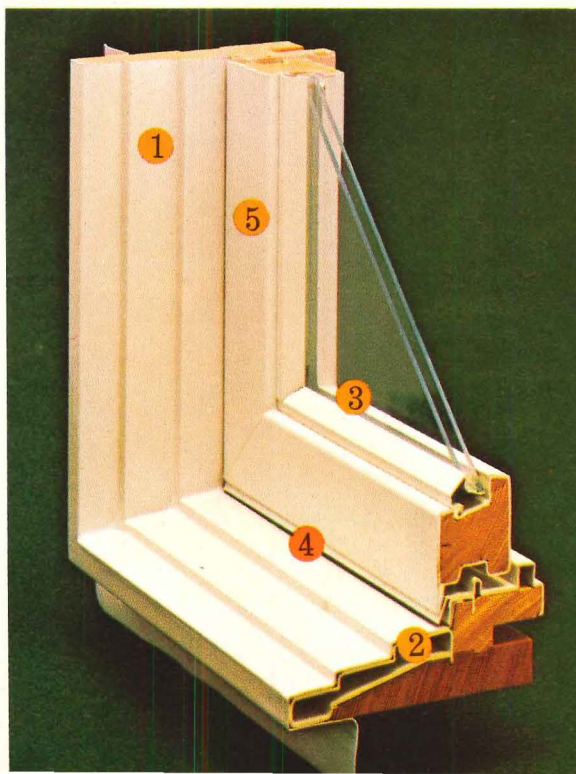
● Weatherstripping of wedge-shaped rigid vinyl and neoprene on meeting stile reduces dust, air, noise, heat and cold leakage to minimum.

● Removable sash. Both stationary and operating sash can be removed for cleaning from inside by releasing securing screws. This safety feature prevents accidental release of either sash.

● Attractive handle operates spring-loaded rods for positive locking of windows at top and bottom. All factory installed.

Perma-Shield Gliding Windows are available in eleven basic sizes suitable for commercial and residential applications.

Like more information on Andersen's new Perma-Shield Gliding Windows? There are five ways to get it: from your Sweet's File (Section 8.16 An), from your Andersen dealer or distributor, by using the Reader Service Card in this publication, or by mailing the coupon.



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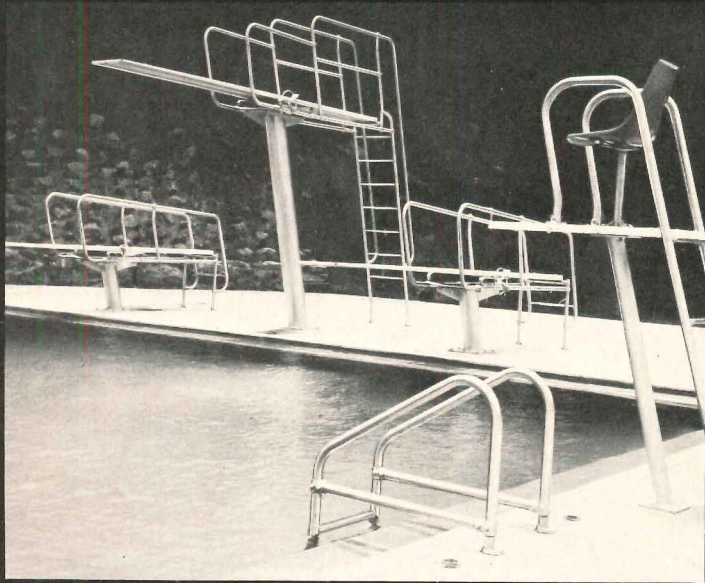
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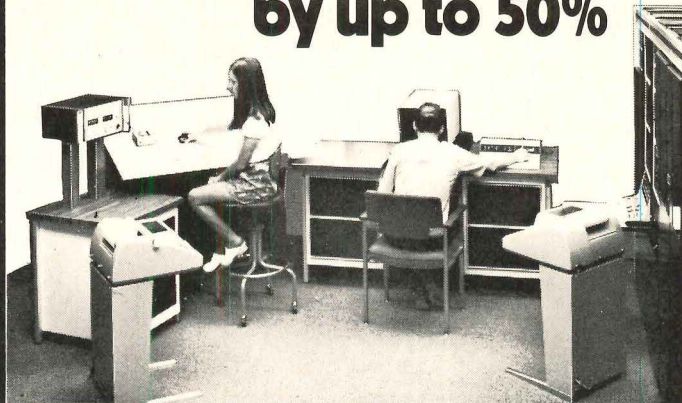
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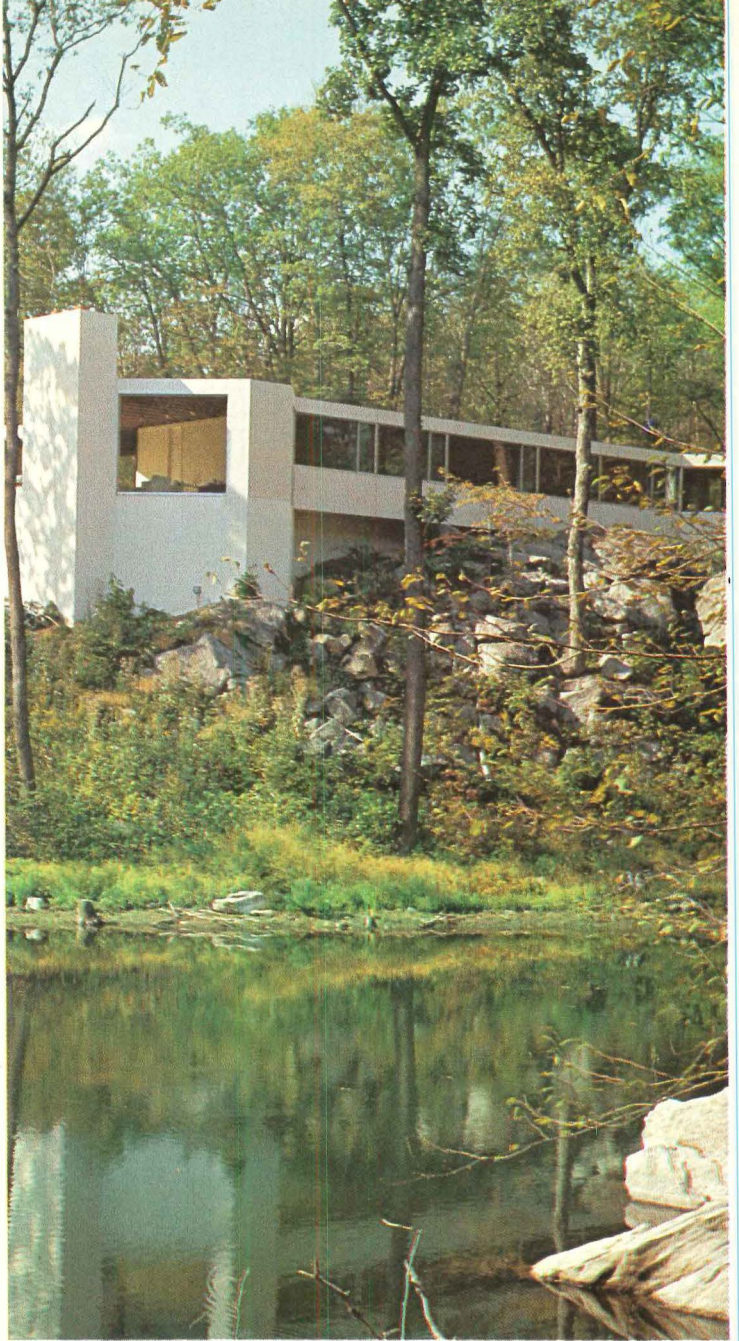
- over 41,000 architects and engineers who are verifiably responsible for 87 per cent of the dollar volume of all architect-planned residential building.
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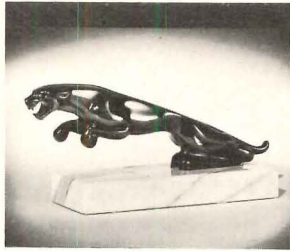
Don't miss it! April 15th is the deadline.



NEWS / UPDATE

A classified advertising section devoted to helping architects and engineers keep up to date on building product manufacturers.

HARSHAW CHROMONYX BLACK CHROMIUM opens a new world of decorative design in plated finishes. Already being used on appliances, furniture, builder's hardware, lighting, plumbing fixtures, and architectural trim, ChromOnyx offers exciting possibilities for products requiring decorative and corrosion resistant finish. A chromium deposit on a molecular structure altered to give a rich, warm black with a deep, soft reflectivity. Electroplated by traditional methods. Durable, permanent and corrosion resistant. Six-page folder on request. The Harshaw Chemical Co., 1945 97th St., Cleveland, Ohio 44106
For more data, circle 129 on inquiry card



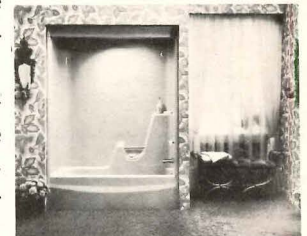
NEW HOUSING SYSTEM AVAILABLE NATIONALLY—"Planned for people," Vista-Space is the result of the coast-to-coast experience of 40 American and Canadian firms which produce and erect buildings using precast, prestressed concrete components. In addition to architectural versatility and widespread availability, Vista-Space features economical construction, speedy occupancy, acoustical privacy, plus desirable security from fire with reduced insurance costs. Write for the new VISTA-SPACE brochure, Precast Systems, Inc., Chicago (Rosemont), Ill. 60018.



VINYL PLASTICS, INC. new catalog presents a complete line of solid vinyl floor products in new-trend colors for total design coordination. Specially Featured Micro-Squared tile ensures a practically seamless floor and is ideal for both contract and residential installations. Wall tile of beautiful appearance and superior workability that is guaranteed not to shrink when installed with VPI #300 adhesive. See Sweet's Architectural File 9.23 or mail card.
For more data, circle 130 on inquiry card



"Fiberglass bathroom fixtures will be standard in ten years . . .," according to a national trade magazine. Universal-Rundle—the pioneer in introducing fiberglass fixtures to home builders—is now the leading manufacturer of fiberglass tub/shower units. Consult SWEET's Architectural and Light Construction Files for U/R's complete catalog of bathroom fixtures. For a full-color brochure on U/R fiberglass fixtures, write Universal-Rundle Corporation, 217 North Mill Street, New Castle, Pa. 16103.
For more data, circle 133 on inquiry card



PORTABLE SOLID WASTE AND RECYCLING COMPACTORS and systems from The Tony Team, Inc. includes four models and great versatility. Pollution Free™ compactors bale, bag and compact all types of wastes and refuse, wet or dry. Machine capacities range from .8 C. Y. to 4½ C. Y. of loose waste at 10 to 1 compaction ratio . . . operate on low amperage, 110-V 60 cycle service. For hospitals, hotels, schools, colleges, restaurants, office and apartment bldgs. Simple adaptation to chute-type disposal systems. Spec sheets and literature available from: The Tony Team, Inc., 7399 Bush Lake Road, Mpls., Minn. 55435.
For more data, circle 131 on inquiry card



FREE SAMPLES CONTOUR T-LOK SOLID VINYL exterior siding. Specifications, full-color literature offered by Mastic Corp. Literature describes maintenance-free solid vinyl siding. No primer needed—solid color clear finish. Does not dent like metal. Does not support combustion. Does not rust, stain, or show mars, scars, abrasions. Carries all major building code requirements. Accepted by HUD. Meets FHA Material Release 508A. Available in variety of designs, patterns, colors. Mastic Corporation, Dept. AR-4, 130 S. Taylor St., South Bend, Ind. 46701.
For more data, circle 132 on inquiry card



You want Egg in your beer?

OK! You can with

Spectra-Glaze

New Designs Unlimited UNITS

An exclusive new process provides nearly unlimited flexibility for creating custom face designs. Textured patterns and accents on the wall are truly unlimited, using the Manufacturer's standard faces, or the designer's own new faces . . . This latest addition to our popular DESIGN SERIES widens significantly your selection of 3-dimensional interest in sculptured shapes — shadows and highlights in subtle shadings or bold contrasts — for creative opportunities with color, texture, form, scale and pattern!

Wave Vee Slant (R or L) Raggedy Ann

"Slant" (R & L) combined in wall above.

POSITION WANTED

Architect—Manager NCARB CS1 25 years experience including specification work. Licensed Florida, Georgia, California. Presently with well-known Los Angeles A. & E. firm. Desires to relocate S.E. United States, prefer North Carolina. Seeking responsible position best utilizing abilities. Married, one child. Resume on request. Reply PW-7330, Architectural Record.

Architect: NCARB, AIA, CSI, 43, married, excellent references. 17 years experience with government, educational, medical, industrial, commercial, religious, projects of values to 20 million, with firms of 20 to 200 men. Emphasis: Specifications, drawings, building technology, contracts, problem solving, public shooting, office management. I seek greater responsibilities, opportunities, and compensation, with aggressive, contemporary firm. PW-7492, Architectural Record.

Need somebody who can take responsibility? Architect, NCARB certificate, 18 years commercial, industrial, meat-packing experience, last 12 years in own office. Left holding lien on bankrupt multi-million project. Want to relocate, join small architectural office on salary or incentive basis. Write for full details. PW-7490, Architectural Record.

Architect, Ohio registration. Desires high quality residential design position. PW-7268, Architectural Record.

EMPLOYMENT SERVICE

Career Builders, Inc., Agency—Complete range Architectural and Interior Design placement under the direction of Ruth Hirsch, Apprentices to Senior Designers and Project Architects. Professional screening and personalized service. References checked, 501 Madison Ave., New York, N.Y. 10022, PL 2-7640

SPECIAL SERVICES

Lighting Design Service Fixture Layouts; written specifications. Churches, banks, offices, schools floodlighting; street lighting. Special fixture design; sketches, working drawings to satisfy art form and engineering function reflectors; precise beam control; prototypes per diem or job. Short or long term. Robert M. Edwards, Jr., Haddam Quarter Road, Durham, Conn. 06422 (203) 49-8272.

BUSINESS OPPORTUNITY

Public Relations professional with 15 years' experience handling top architectural clients recently gave up Madison Avenue hoopla to operate modest, personalized one-man service. I am seeking one or two clients, large or small, requiring expertise in publicizing projects nationally or locally, brochures, reports, speeches, all writing assignments. Retainer or project basis. Please reply to PW-5225, Architectural Record.

FILMSTRIP AVAILABLE

Architects: Now available for meetings, new DuPont filmstrip, with scenaria, describing commercial carpet fibers, carpet backing and constructions. An excellent primer for carpet specifications. Dukane projector requires rental (Dukane distributors list provided). Write: DuPont, Dept. ARC, Textile Fibers, Centre Rd. Bldg., Wilmington, Del., 19898, Attention: W.F. Morris.

SELLING OPPORTUNITY AVAILABLE

Manufacturer's Representatives—Dynamic manufacturer proprietary Radiant Acoustical Ceiling Systems has exclusive territories available in the following general trading areas: Chicago, Saint Louis, Richmond, Colorado, Kentucky, Texas, and Florida. Established product lines used to heat, cool and quiet new hospitals, educational, public and office buildings. Lucrative growth opportunity if you have successful track record in promotional sales to architects and consulting mechanical engineers. Experience in heating and cooling very desirable. Write International Environment Corporation, 2740 East County Line Road, Ardmore, Pennsylvania 19003.

Representatives wanted with high quality luxury experience to sell large and unique collection of scenic (mural) panels with broad acceptance by architects, specifiers, designers for government, hotels, banks, restorations, executive offices, restaurants and institutions. Liberal commission with protected exclusive territories: Baltimore, Boston, Buffalo, Cincinnati, Cleveland, Dallas, Detroit, Houston, Kansas City, Milwaukee, Minneapolis, Philadelphia, Pittsburgh, St. Louis, Washington, D.C. RW-7682, Architectural Record.

Manufacturers Reps wanted by long estab- lished aluminum metal pan acoustical ceiling tile manufacturer with new and proven items to merchandise. Looking for agents who call on architects for our "Spec" items; and general contractors, acoustical contractors, lumber yards, building supply houses, etc., for our "Direct Sale Items". Many territories open. Commission basis. Flexible agency policy. No stock to carry. Write to Simplex Ceiling Corp., 663 Fifth Avenue, New York, N.Y. 10022.

Classified Section Non-Display Order Form

To place a non-display advertisement, fill out this form, including your name, street address, city & state with ZIP code, attach it to a separate sheet containing your advertising copy, and mail it to:

ARCHITECTURAL RECORD / P.O. BOX
12
NEW YORK, N.Y./10036

Rates: \$3.80 per line, minimum insertion ten lines, six words to a line, box number counts as one additional line. Display rates on request.

Payment Enclosed \$ Bill me

Use Name & Address Use Box No.

Advertisement to appear time(s)

.....
Signature

LAMINATED PLASTIC / A high-pressure decorative-product which reportedly incorporates a higher degree of fire resistance than other types of laminated plastic is described in a 4-page brochure. The ability of the material to meet code regulations depends upon the facing, substrate, application method, and bonding adhesive. Panels are offered in velvet, luster and textured finishes. ■ Consoweld Corp., Wisconsin Rapids, Wis.*

Circle 421 on inquiry card

PORCELAIN-ON-STEEL PANELS / UL 1½-hour fire-rated panels with polyurethane, polystyrene, perlite and fiberglass cores are described in a 16-page brochure. Interior and exterior applications and detailed specifications are included. ■ AllianceWall Corp., Alliance, Ohio.

Circle 422 on inquiry card

SKYLIGHTS / A complete custom-designed line is presented in a recently published catalog. Technical data and specifications are included. ■ EPI Architectural Systems, Inc., Pittsburgh.

Circle 423 on inquiry card

CHURCH FURNITURE / A complete line of church seating and chancel furniture is presented in a catalog. Types of pews and styles of pew ends are discussed. ■ Endicott Church Furniture, Winona Lake, Ind.

Circle 424 on inquiry card

LAMINATED STRUCTURES / A 16-page brochure describes the company's full service capabilities in the design, engineering and construction of glued laminated wood structural systems. Beams, arches and columns are illustrated in commercial and institutional applications. ■ Koppers Co., Inc., Pittsburgh.*

Circle 425 on inquiry card

TEXTILE-FACE WALL COVERING / A contract folio for architects, specifiers and designers contains samples of 10 patterns in 323 colorways, as well as complete technical specifications and photos. ■ Combeau, New York City.

Circle 426 on inquiry card

PIPE RAILING SYSTEM / Pre-anodized, standardized parts, pipe, and accessories comprise the system. Product was designed to make available anodized aluminum pipe railings with "strength comparable to that of steel and yet at little more cost than painted, galvanized steel railings." ■ Reynolds Metals Co., Park Ridge, Ill.*

Circle 427 on inquiry card

MASONRY CONCRETE / A full line of products including structural, screen, split and profile block is described in a brochure. Data sheets contain design and technical information. The company's facilities and capabilities are discussed. ■ Smithtown Concrete Products Corp., Smithtown, N.Y.

Circle 428 on inquiry card

FLOORING ACCESSORIES / A recently published catalog presents a complete line of rubber and vinyl stair treads, cove base, carpet edging, reducer strips, stair nosing and risers. ■ Johnson Rubber Co., Middlefield, Ohio.

Circle 429 on inquiry card

A Bold Corporate Look

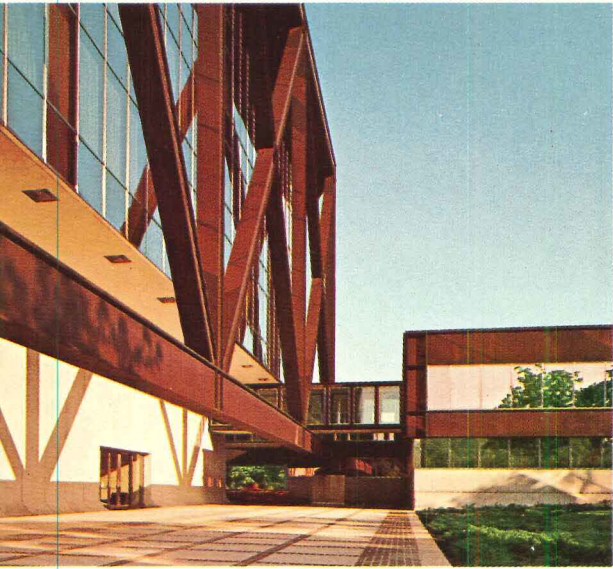
Exposed steel, mirror glass and a park-like setting are the distinctive and highly visible elements of Burlington Industries' bold new Corporate Offices at Greensboro, North Carolina.

The requirements for a structure which would project the owner's corporate identity and provide maximum flexibility were handsomely met by steel—used both structurally and aesthetically.

The complex is comprised of two distinct structural systems. The dominant six-story tower of exposed painted steel trusses and reflective glass, houses executive and staff functions. The tower is 152' square with a welded, steel-framed central core housing its services. The top four floors are suspended by hangers from the roof grid while the lower two floors are supported by columns on a caisson foundation. Surrounding the tower on



efined in Steel



three sides and connected to it by three pedestrian bridges is a bolted, steel-framed, three-story structure which houses corporate, departmental and divisional offices and auxiliary functions.

Exposed steel in the trusses and in the 5/16-inch plate facia around the low-rise structure

re painted a dark earthen hue.

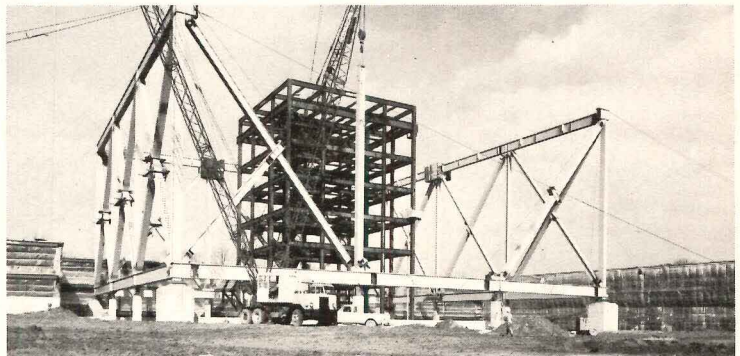
Studies to determine the materials to be used indicated that steel would be the most economical system to satisfy both functional needs and the strict timetable that was set for completion of the structure.

For more detailed information, we'll be happy to send you a copy of our new Structural Report titled Burlington Industries Corporate Offices (ADUSS 27-5084-01). Contact a U.S. Construction Marketing Representative through your nearest USS Sales Office or write: U. S. Steel, 600 Grant St. (ADUSS 7451), Pittsburgh, Pa. 15230.

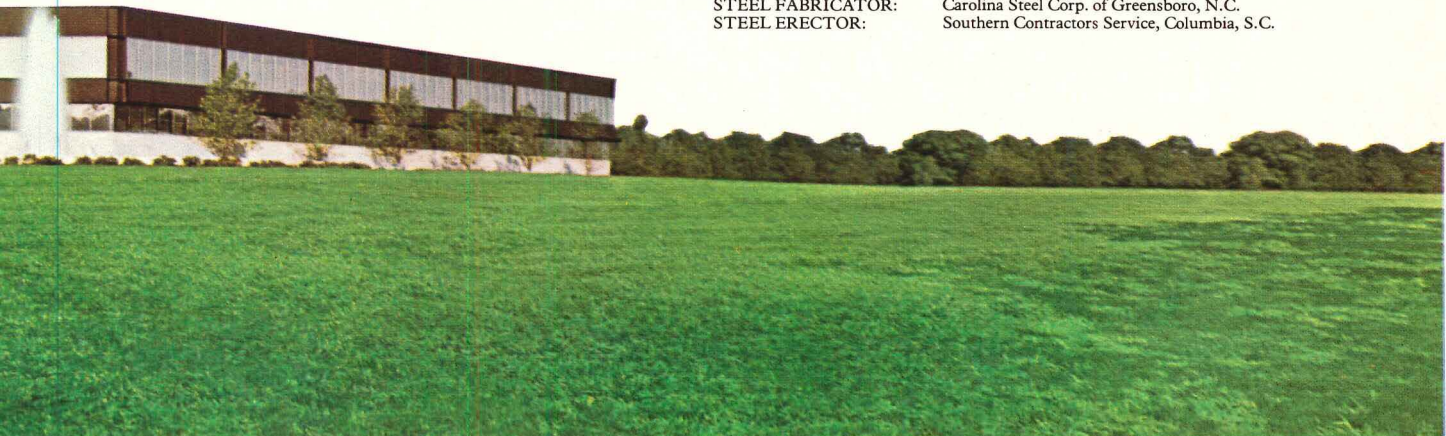


United States Steel

TRADEMARK



OWNER: Burlington Industries, Inc.
ARCHITECT/ENGINEER: Odell Associates Inc., Charlotte, N.C.
GENERAL CONTRACTOR: North Carolina Division, Daniel International Corp., Greensboro, N.C.
STEEL FABRICATOR: Carolina Steel Corp. of Greensboro, N.C.
STEEL ERECTOR: Southern Contractors Service, Columbia, S.C.



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A useful new directory in Sweet's!

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Check Section 1.1 in the first volume of your 1972 Sweet's Architectural Catalog File—you'll find an informative new Directory of specialized services required in your day-to-day operations: design services, support services, and contracting services—all indexed and informatively detailed according to scope of service, unique capabilities, notable clients/projects, and geographic area served.

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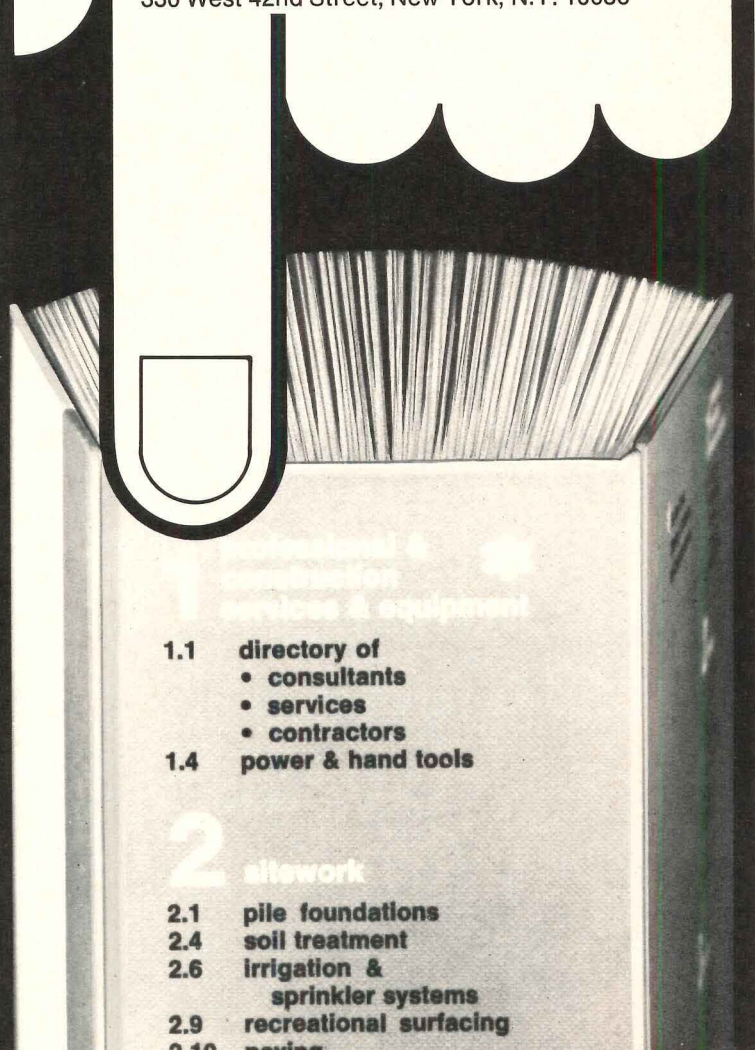
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New odorless convenience copier for fast engineering check prints.

Now your entire drafting department can breathe easier! That's what Bruning's PD-80 can do for your drafting and check print operation. No ammonia, no venting problem. That's the beauty of the remarkable Bruning PD Process.

That—plus the PD-80's compact design (64" x 13 1/2" high) — means you can put it anywhere. Make quick check prints right where you make your drawings. No long walks, no long waits. Whether you make just a few prints a day, or dozens, the PD-80 will really pay off in the valuable time it saves your busy draftsmen.

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Your local Bruning man is ready to show you the remarkable PD-80 in action in your drafting room, using your tracings. And to show you how easy it is to put this cost-cutting machine to work for you on an attractive rental plan. With no capital investment, no long-term commitment.

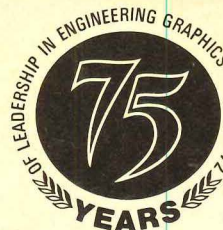
Call our office nearest you. Or contact us at 1555 Times Drive, Des Plaines, Ill. 60018.

Once you've had a whiff of this great new idea in check printing you'll want a PD-80 in your drafting room as soon as possible.



BRUNING DIVISION

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Azrock—the almost perfect floor...

for Hospitals

Azrock vinyl asbestos tile serves more hospital requirements more perfectly than any other type of flooring. Yet it costs less than half as much as it did 20 years ago. And today it's a better floor. Here's why you can specify Azrock with confidence:

- Styled to coordinate with contemporary interiors
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- Resilient underfoot comfort
- Lowest motion resistance
- Non-allergenic, mildew proof, no odor retention
- Exceeds federal specifications
- Low-cost maintenance
- Low initial cost

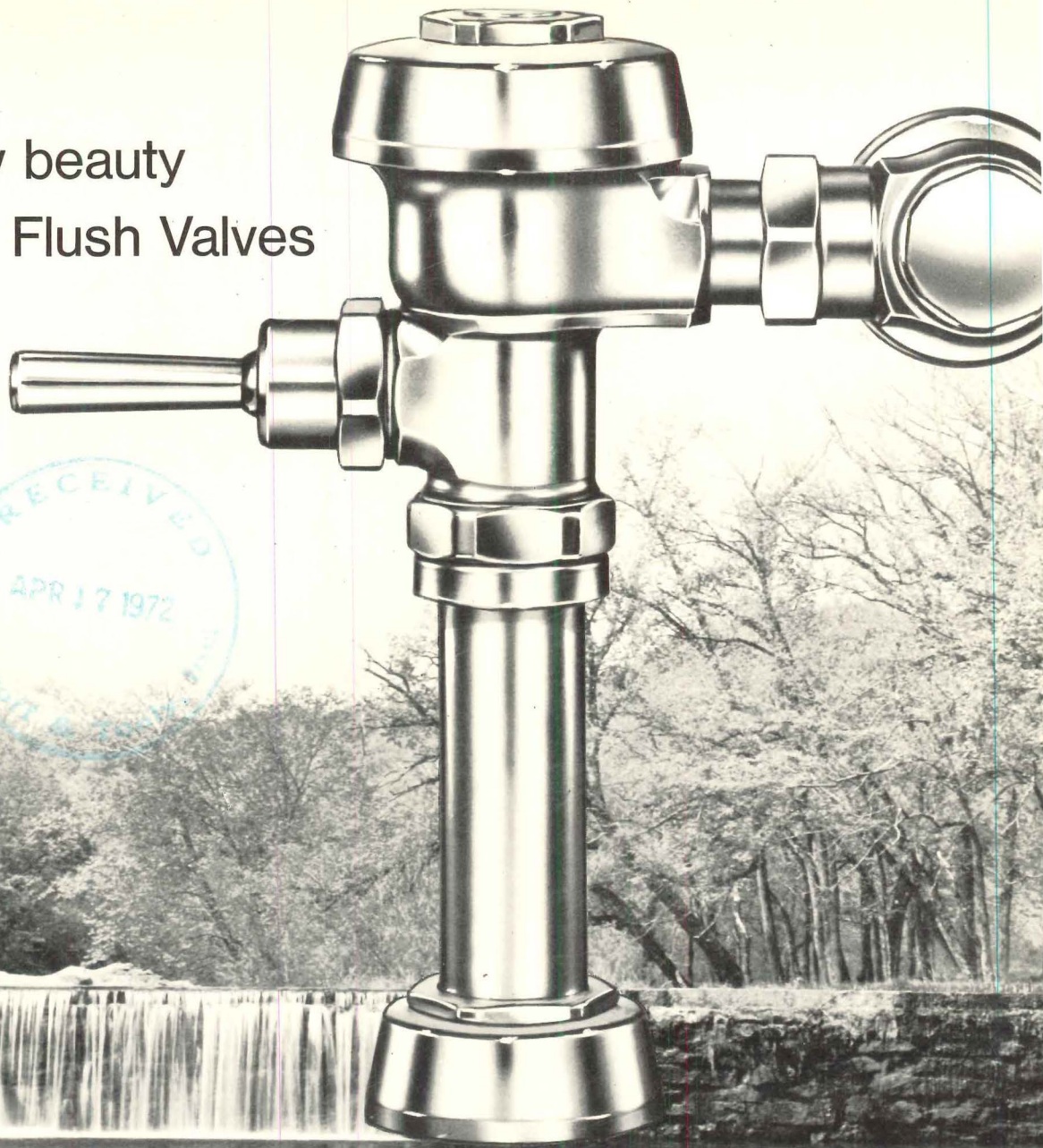
More vinyl asbestos tile is used in hospitals than any other kind of flooring. Keep patients and staff safe and comfortable with low-cost Azrock vinyl asbestos tile—the best floor for hospitals.

Floor shown: Thru-Onyx, one of over 150 colors and styles.

the vinyl asbestos
floor tile people



The new beauty of Sloan Flush Valves



Sloan Flush Valves are now dramatically restyled. Totally new contours shape their beauty in the elegant simplicity of classic design.

And this new regal appearance complements the traditional quality that has sustained Sloan Flush Valve leadership for more than sixty years.

To make sure your new building has the best in quality with beauty unsurpassed, specify Sloan Flush Valves—as most people do.



SLOAN VALVE COMPANY
10500 Seymour Avenue,
Franklin Park, Illinois 60131

For more data, circle 137 on inquiry card