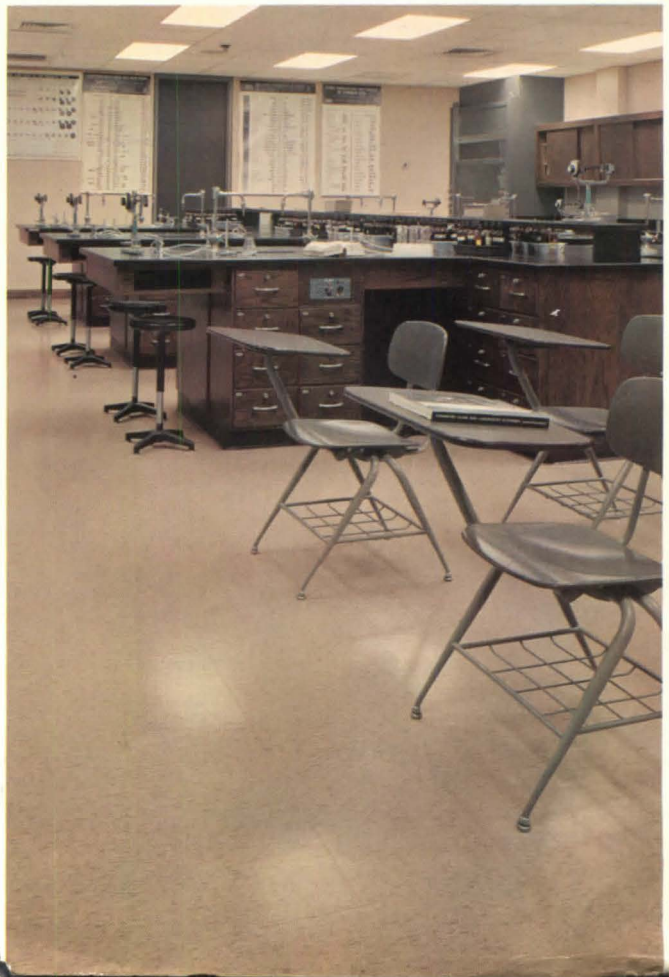


October 1968 **PROGRESSIVE ARCHITECTURE**



A Reinhold Publication



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

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



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

Evanston Township High School is a multischool.

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

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

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

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

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 *Progressive Architecture*® October 1968

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147 EDITORIAL

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THE REVOLUTION IN INTERIOR DESIGN: THE BOLD NEW POLY-EXPANDED MEGA DECORATION

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174 **FUN-HOUSE ARCHITECTURE:** Ambiguity of surface, textural surprises, and other optical games are part of a trend to alter existing spaces and forms without changing the elements themselves.

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206 **THE VERDICT:** What does the new design mean? A look at the directions it follows and the possibilities it holds for the future.

71 **P/A NEWS REPORT**

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222 **SPECIFICATIONS CLINIC**

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146 **FRONTISPIECE**

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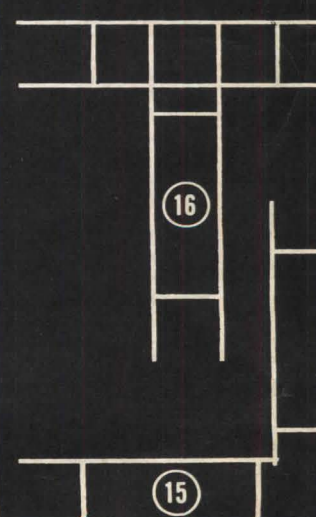
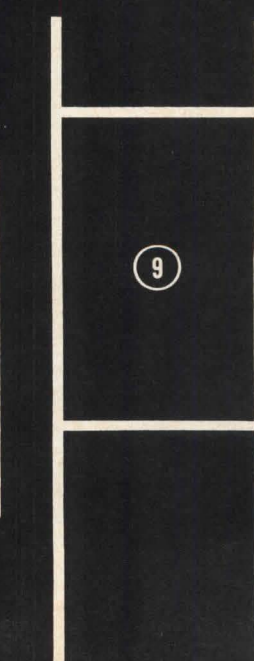
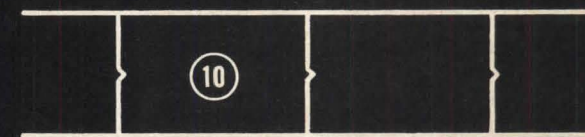
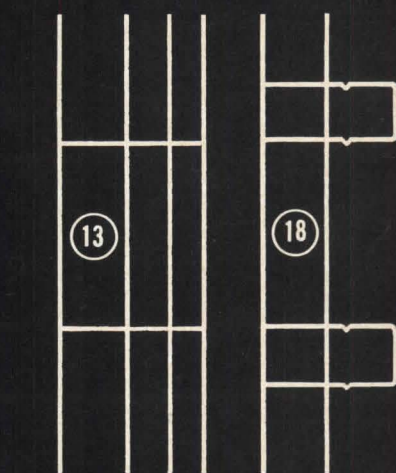
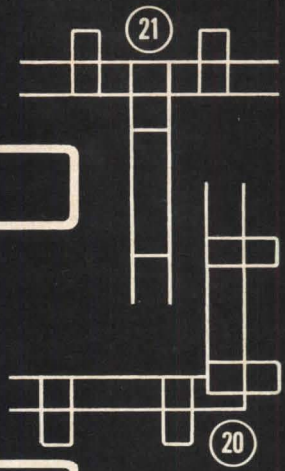
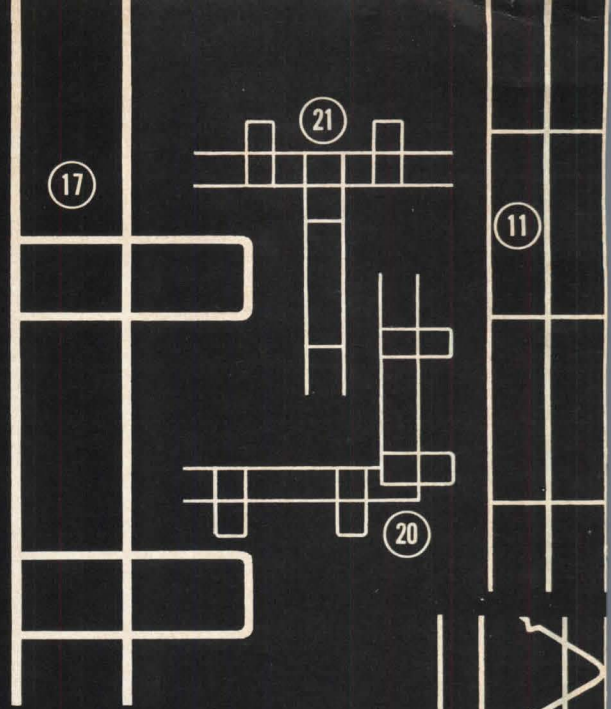
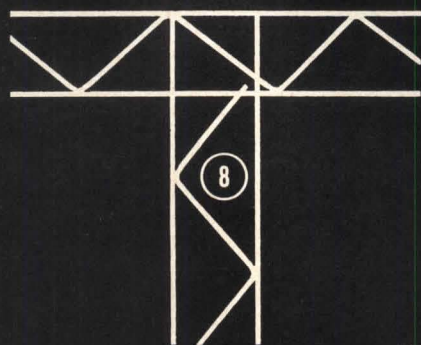
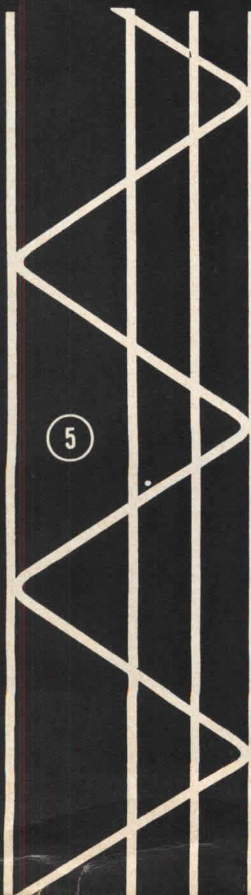
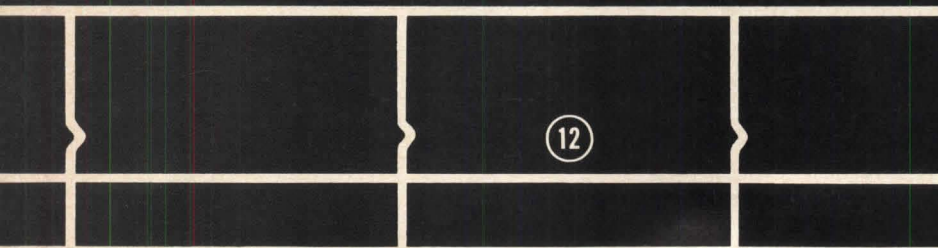
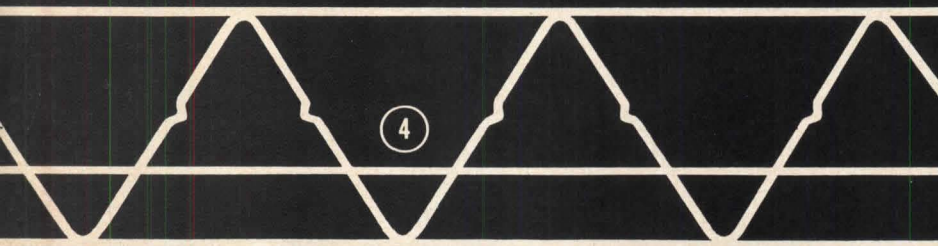
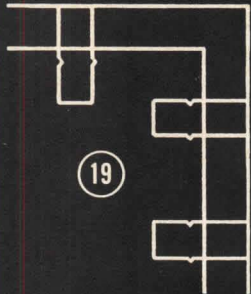
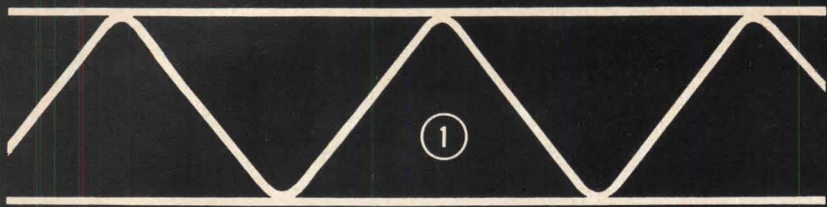
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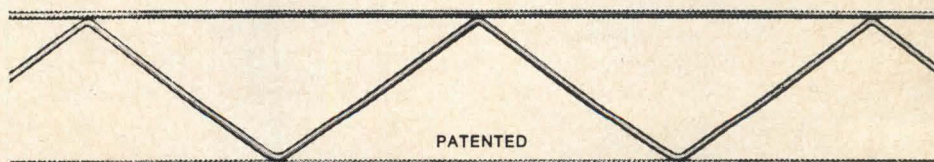
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VIEWS

Instant Satisfaction

Dear Editor: Concerning the article "Jet-sam House," AUGUST 1968 P/A: Judging from the illustrations, the appearance of the two brothers who created this haven by the sea fits their personalities to a "T." Boasting of the fact that no nails or tools were used, which is quite obvious, truly indicates that self-satisfaction can be achieved with very little effort.

I shall send a list, on request only, of treasured childhood castle locations around the country that can be featured in P/A for national enlightenment and a comparison with American architecture.

RICHARD E. BARNES
Littletown, Pa.

Use or Abuse?

Dear Editor: We are interested and somewhat amused to find that a building of ours appeared with comment relative to abuse of the corner in the AUGUST 1968 P/A.

In lieu of releasing a pack of Arkansas Razorback hogs in your reception room in retaliation, we do wish to make a mild protest or explanation relative to the philosophy of the use of the corners in the Worthen, not Worthington, Building (p. 107). The space in the corners of the building that appear to be abused in reality are used as follows: The two corners relative to the elevator shaft are lounges in toilet rooms that occur on all floors. Since this is a prestige institutional building, it was felt we should avoid the usual practice of burying toilets without light somewhere in a dark core. This resulted in the placement of the toilets in an area where they would relate to the service core but would have ample natural light. People might even like this. Each of these 8'x8' corners was carefully thought out as a small carpeted lounge area furnished with light, suitable furniture.

The corner illustrated in the magazine occurs in what is usually an executive office or conference area. The corner, approximately 8'x8', has been thought of as a small conversation area to be furnished with either a low table and several chairs or a settee, or a conference-height work area. The offset is not so deep that the area is completely hidden, yet a private

alcove effect is achieved.

Needless to say, we worry about corners too, but plan to continue using them, at least until we see whether the new president of the U.S.A. is a square.

NOLAND BLASS, JR.
Little Rock, Ark.

Extreme Pleasure

Dear Editor: For the first time in many years I am writing to a magazine concerning their articles.

I wish to express my extreme pleasure with your featured item "Corners" in the August issue.

I do hope that you plan to cover additional architectural elements in the future in a like manner. The article was very interesting, informative, and useful.

Somehow it reminds me of the old *Pencil Points*, which I made good use of in the past.

ROY B. BLASS
Chicago, Ill.

An Anonymous Critic

Dear Editor: As a subscriber, I appreciate the "critical" attitude and stance of your editorial policy. I particularly am writing about your reporting of the AIA convention (NEWS REPORT, AUGUST 1968 P/A), and the need for architects to show social concern, particularly in the solutions that will be evolved for city living and city human environment.

Opportunism by the money grabbers and pusillanimity of city officials are too much the rule and *modus operandi*.

I do think you should be more critical of egoism and prima donna-ism in individual architect's individual designs. Architects with only fair design talent are putting up far too many eyesores.

Name Withheld
Los Angeles, Calif.

Dialectic or Discipline?

Dear Editor: The JULY 1968 P/A contains a few designs of decided interest, such as the Dallas-Fort Worth Regional Airport. On the other hand, there is too much shown that is mere exhibitionism. What you call "omnibuilding" (a most unfortunate term) is largely a device to cram more and more people into less and less space. The photograph of the model shown on page 144 [Urban Design Manhattan: Central Business District] is enough to cause alarm, if not despair, to anyone who considers the movement of the millions of persons it would crowd together, regardless of any changes or

additions to transportation.

It is time people came to realize that architecture is not mere diagrams of bright ideas and that it is a discipline and not a dialectic.

EUGENE HENRY KLABER
Quakertown, Pa.

An Old Omnibuilding

Dear Editor: Just a footnote to your engrossing July issue on omnibuilding: Whoever wrote the historical preface starting on page 94 seems to have overlooked a very important and well-known "omnibuilding," which could appropriately have been described and illustrated as a precursor of those being designed today. I refer to the famous Diocletian's Palace in Split, Yugoslavia—the former Dalmatian city of Spalato.

I was fascinated by this palace just because it harbored such a variety of uses within a single megastructure. True, its original function as palace, temple, and military compound made it an omnibuilding to start with, but it has been gradually changed, over the ages, so that it has now become, in the mid-20th Century, a *mélange* of ruins, slum housing, archeological museums, sophisticated architectural offices, chic town houses, restaurants, discothèques, open-air food markets, sidewalk cafés, and a lot of other lively uses, all worked into a rebuilding of the volume of space within the four walls of the original Roman palace.

I checked the dimensions of the palace and compared it with those of Grand Central Terminal. They are almost exactly the same size (in width, length and height) *without* the latter's super structures, of course (as it was pre-Pan Am)!

ROBERT C. WEINBERG
New York, N.Y.

Industrialized Design?

Dear Editor: I read with much interest your issue devoted to prefabrication techniques (JUNE 1968 P/A). I feel close enough to the subject to express the following observations.

The introduction of large business and industry into the housing field will have a short-range detrimental effect upon this vital part of our economy. The first manufacturers of trailers and mobile homes have been working with comparatively limited capital and consequently have viewed design services as an unnecessary luxury. This short-sightedness accounts for the unattractive (with limited exception), hackneyed appearance of mobile homes and many prefabricated structures. To reflect the new technology and

Continued on page 10

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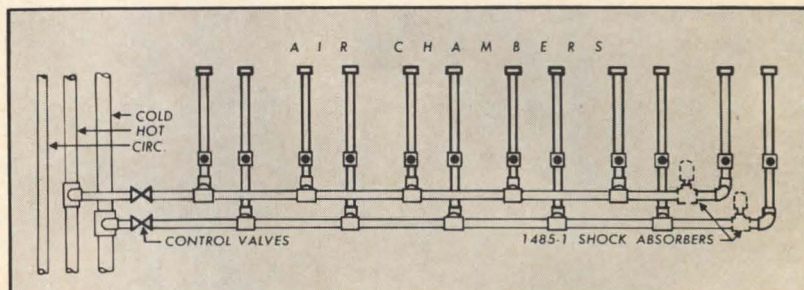
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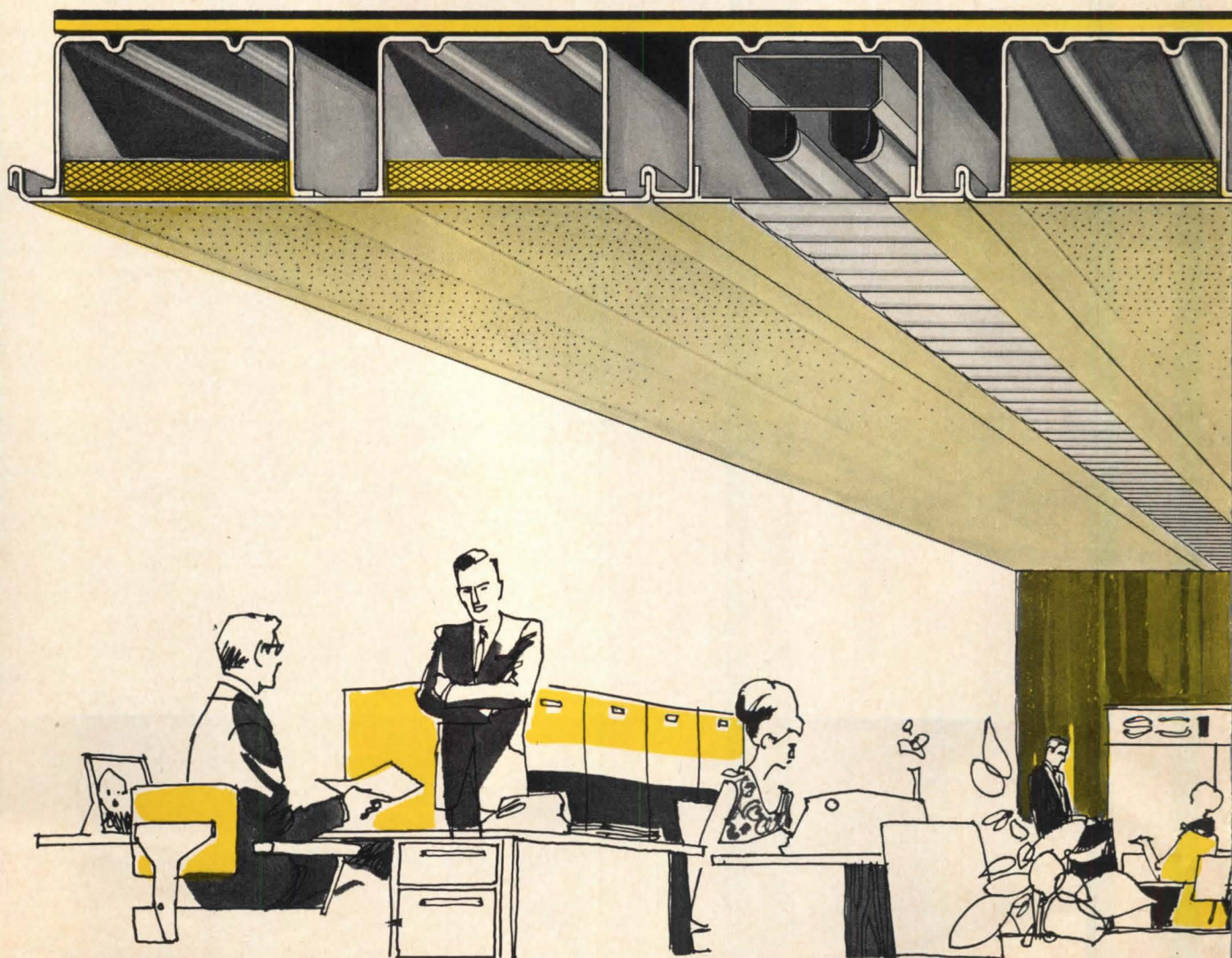
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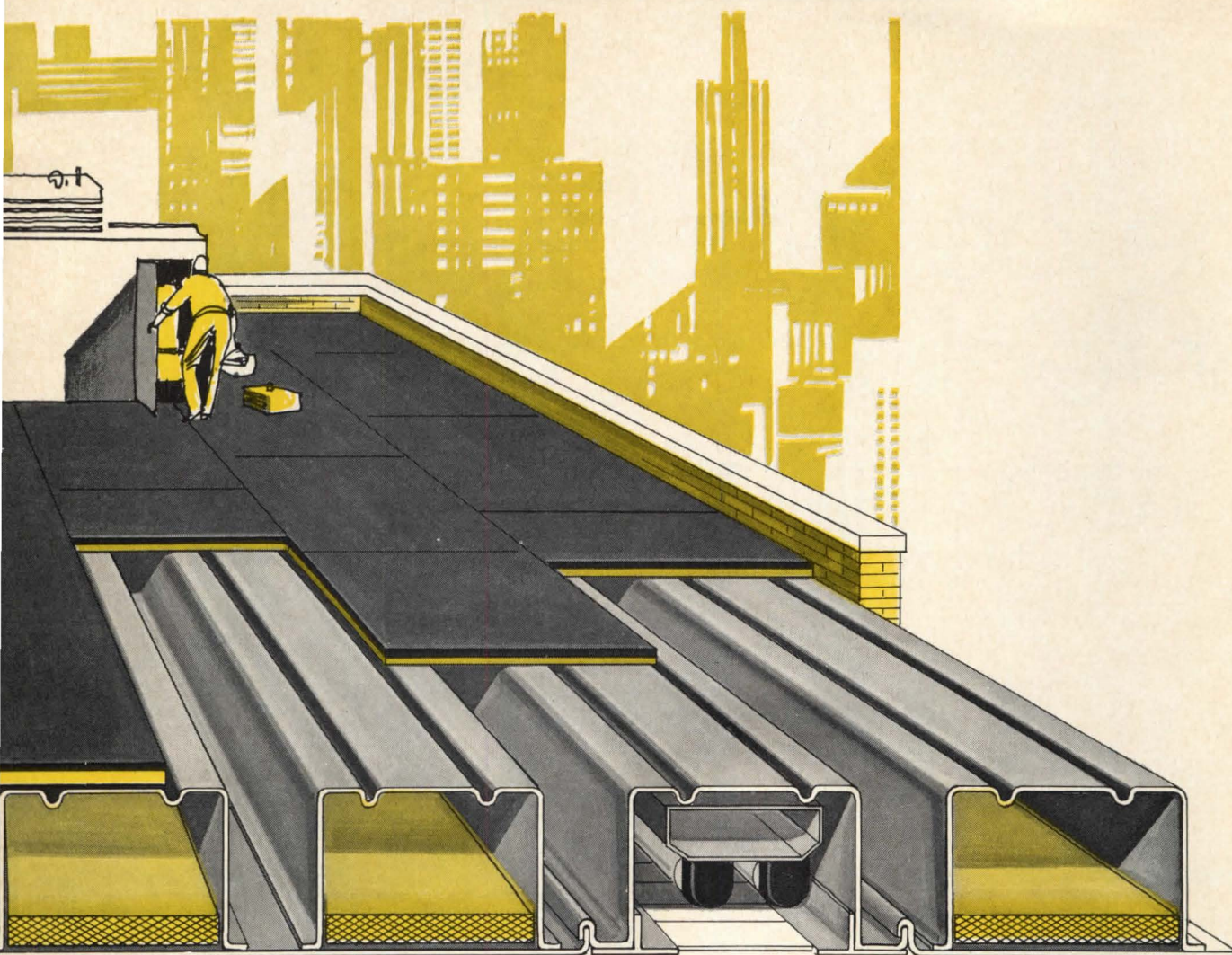
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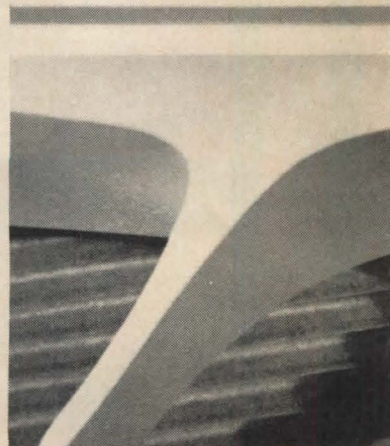
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STANDARD
8 x 16 UNIT



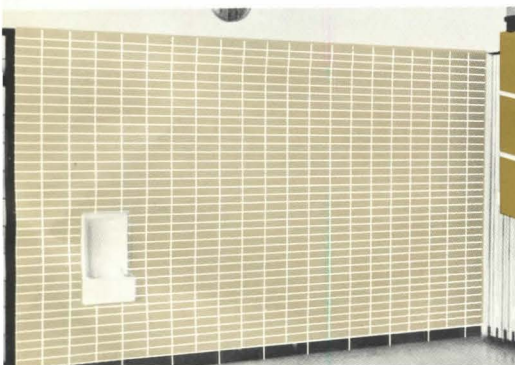
8 x 8 score
DA 1



5 x 8 score
DA 5



4" end on 3" horizontal
DA 6



brick score
DA 3



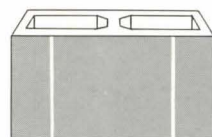
Note:
Scored joints are grouted after installation.

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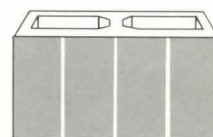


SCORED glazed masonry UNITS

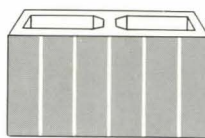
Scored SPECTRA-GLAZE® units,
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of achieving certain patterns
for special effects
in scale and design.



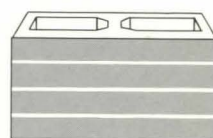
3" Offset Score



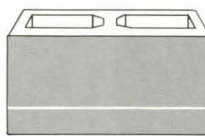
4 x 8 Vertical Score



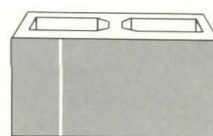
6 Brick Vertical Score



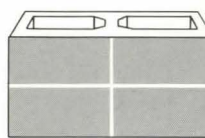
2 x 16 Horizontal Score



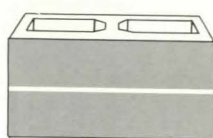
Random (your choice)



4" End Score



4 x 8 Score



4 x 16 Score

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Continued from page 10

aware of the indispensable contributions the architect has to offer. Until one publication decides that the public deserves complete architecture, the profession will continue to struggle along as a second-class group.

Quality or complete architecture to me means buildings that do not crack when they move, buildings that do not leak, buildings whose air-conditioning systems function properly at reasonable operating cost levels, buildings that do not have sound reverberation or transmission and/or vibration problems. In other words,

"design" should be a term that automatically implies that proper thought and study has been given to all facets of the project and not just the visual.

The architectural magazines seem to give too little support to those firms of architects who have a multidisciplinary organization. In fact, they appear to discredit such organizations.

For the past four years, I have been involved as a consulting architect to an organization that employs some 20 firms of architects and/or architects and engineers. I am appalled at:

Architects who begin their design pro-

cess without researching the problem and preparing an organized program of written requirements.

Architects who permit clients to retain their services for less money than the scope of the project demands.

Architects who carry no errors and omissions insurance, and, in fact, resent the clients requesting same.

Architects who continue to believe that they are incapable of mistakes and consequently are aghast when a client insists that the architect participate in correcting his errors and/or omissions.

The architect who considers only one solution to the problem and who resents his client's participation in the programming and problem solving.

The architect who develops his design from the outside in and/or develops an architectural solution that shows no concern nor regard for structural and mechanical systems.

The architect who ignores budgets, who tries to get by with quick square-foot budgeting rather than detailed and sophisticated quantitative estimating.

The architect who takes 50 to 200 per cent longer than a reasonable time period to prepare design and bidding documents.

The architect who cannot afford the time or does not concern himself with the research of building materials, thus permitting products and/or systems to be incorporated into his documents without proof that the application is practical.

The architect who neither appreciates nor worries about the problems of the contractor, the subcontractor, and/or the material and equipment supplier. This includes the architect who really does not care if the contractor or supplier makes a profit.

The architect who does not understand bidding procedures and ethical awards of contracts to contractors, subs, and equipment or material suppliers.

The architect who relies entirely upon the contractor and the subcontractor to complete the project as per the intent of the contract documents.

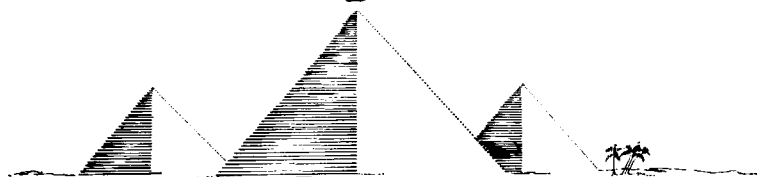
The architect who fails to go back to his client to see how well the building is solving the problems.

The architect who is unconcerned with the business operations of his practice, which results too often in severe financial problems.

I believe that P/A makes a great effort to do much for the profession of architecture and my comments may appear not to express the proper appreciation for such efforts. However, I believe that P/A should do more to improve the lot of the

Continued on page 25

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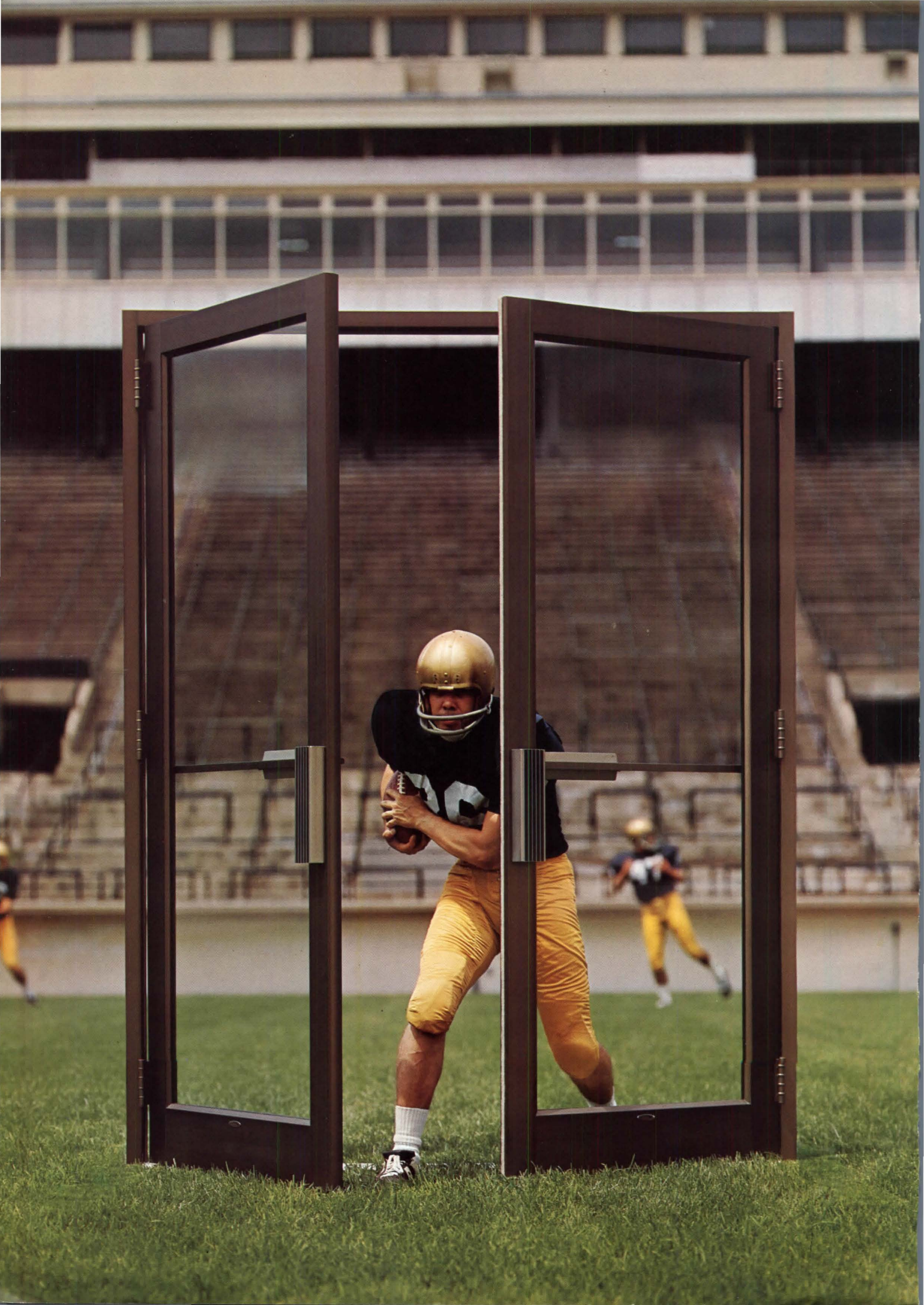
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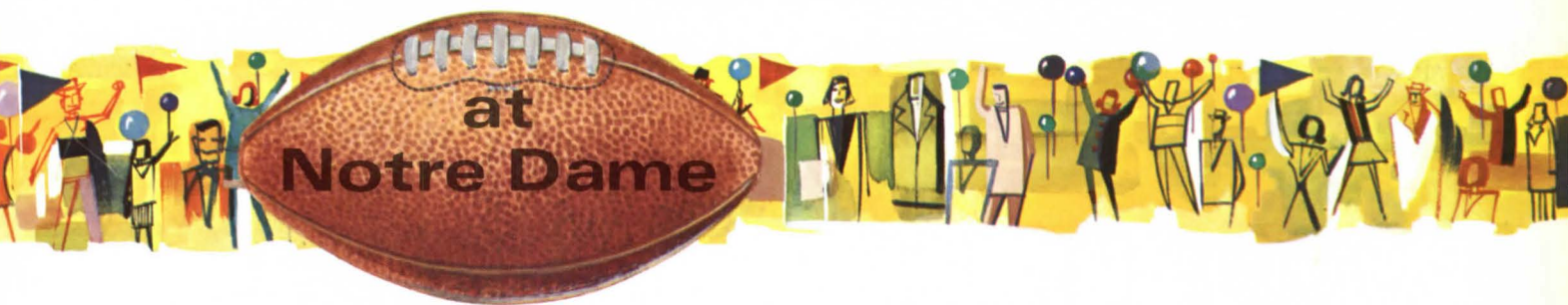
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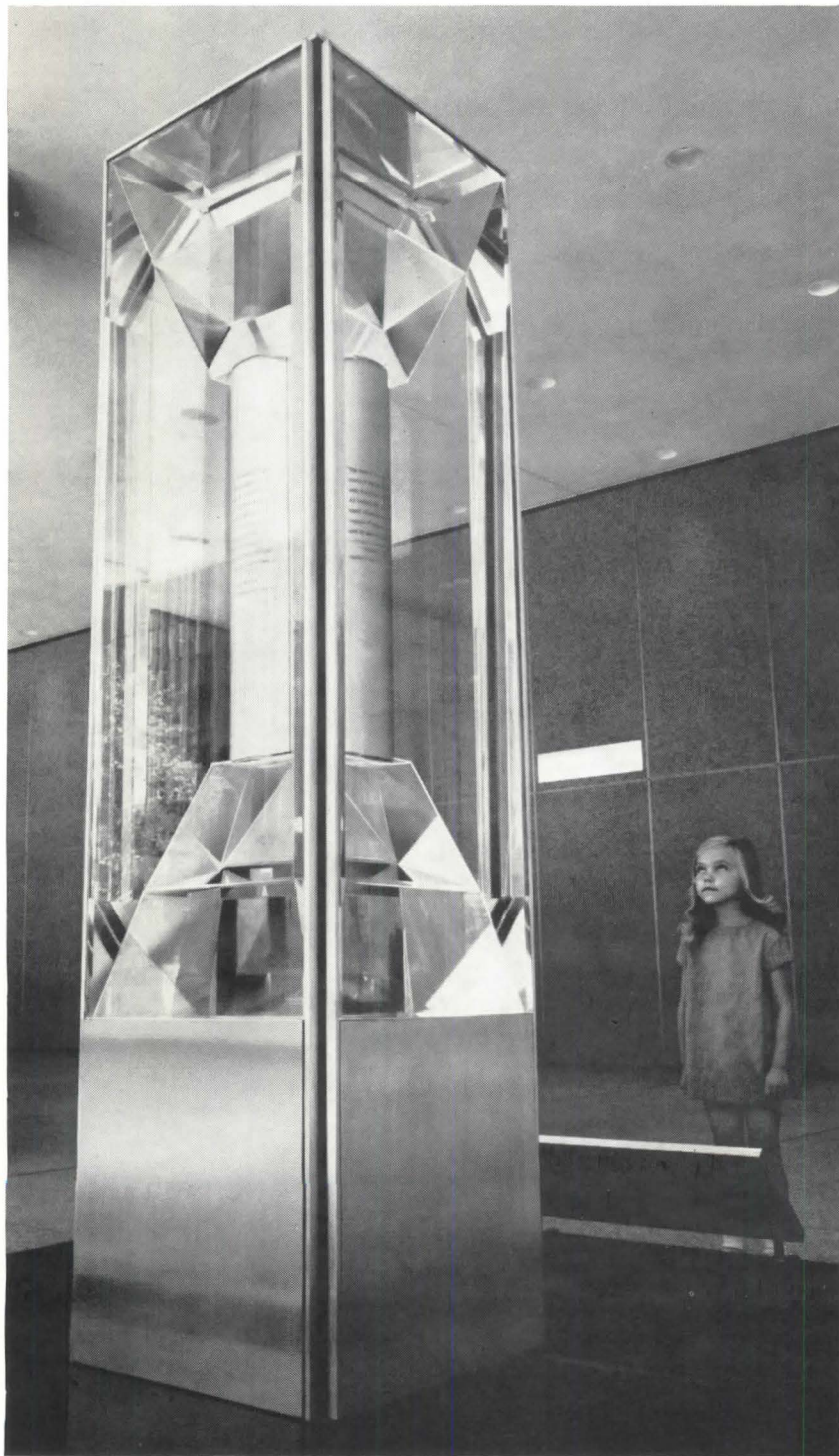
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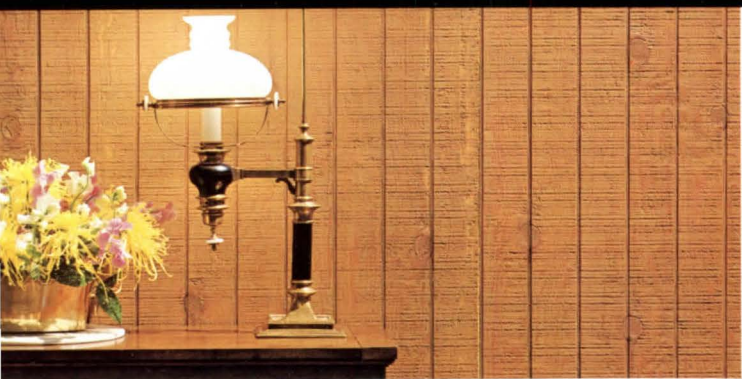
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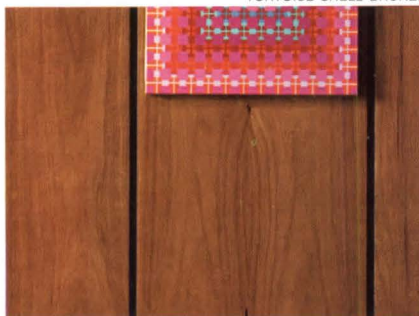


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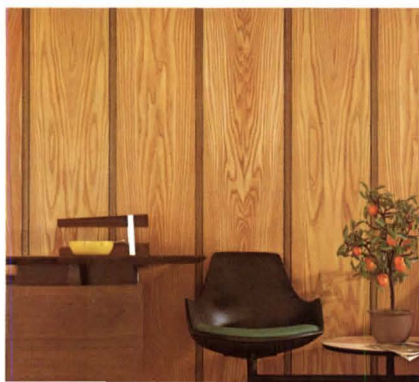
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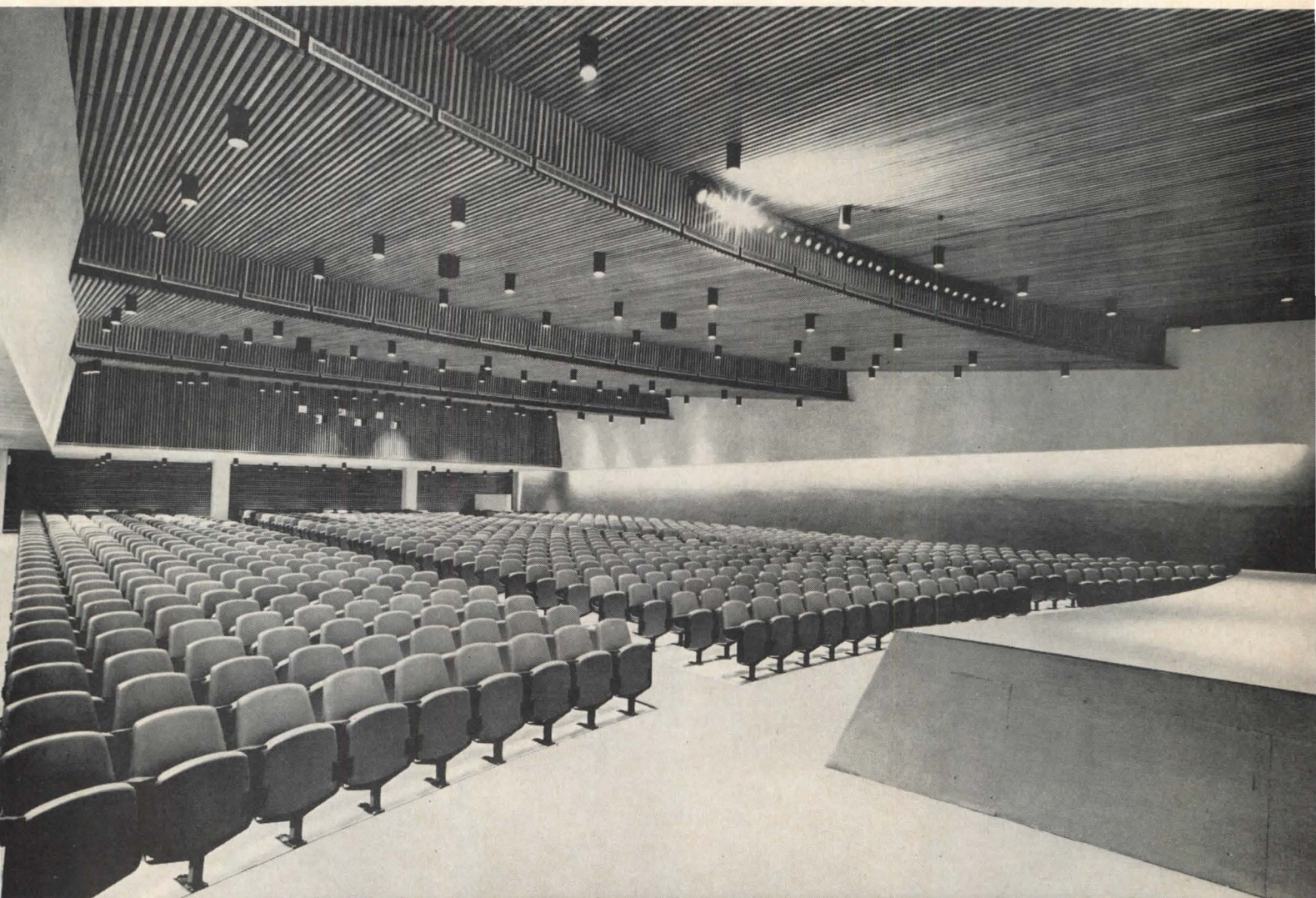
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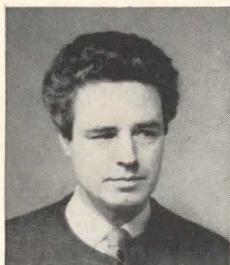
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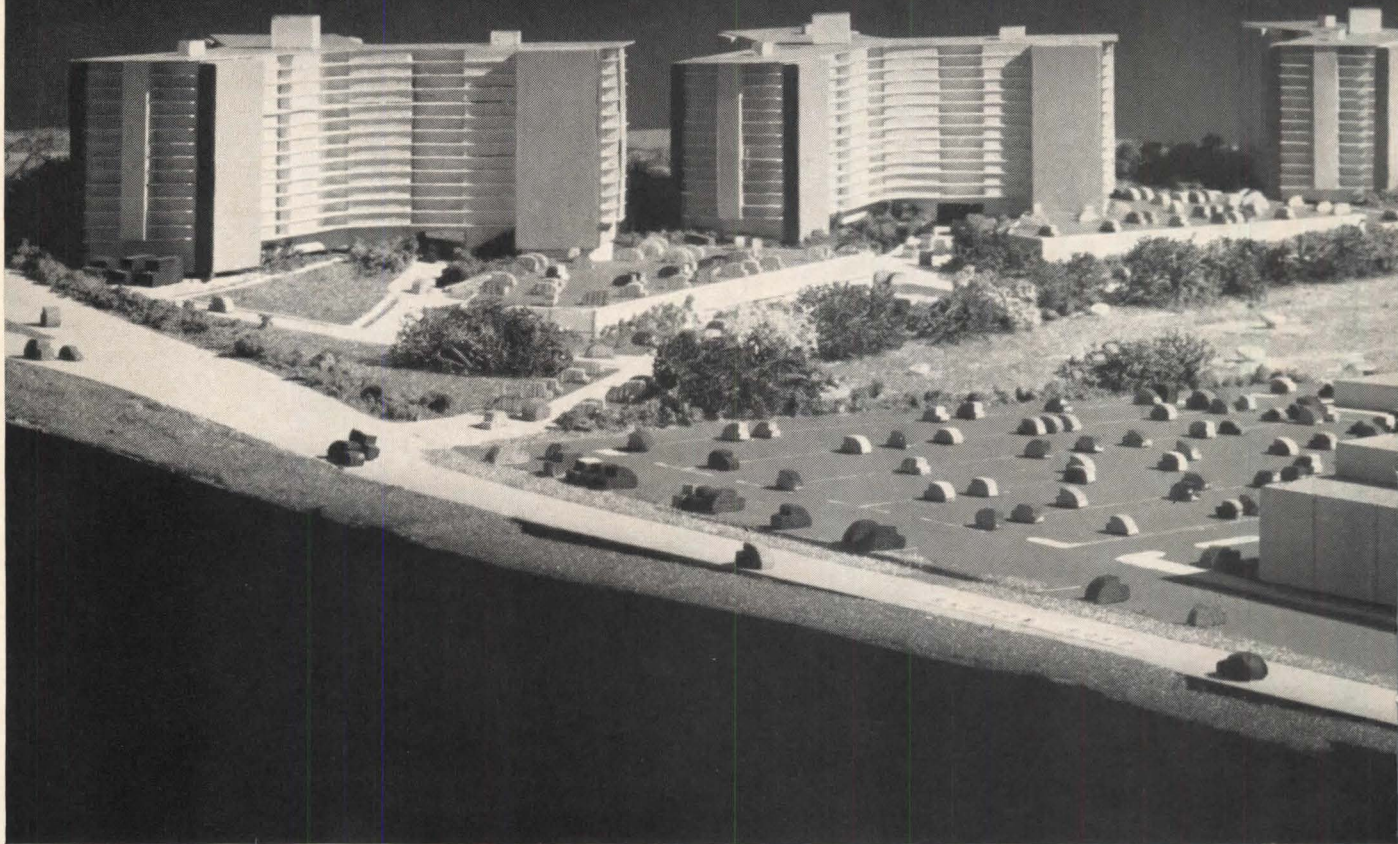
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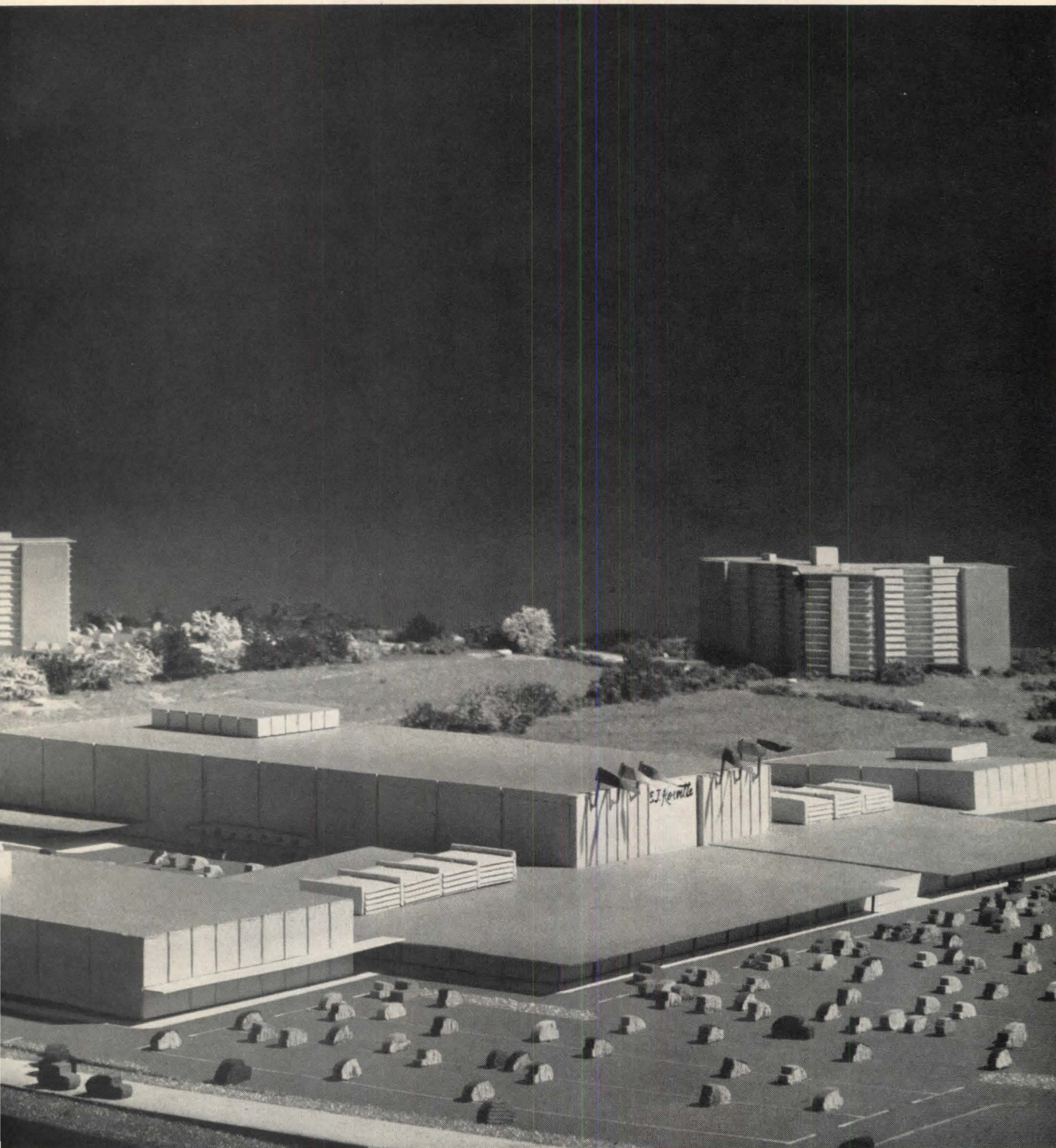
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GENERAL CONTRACTOR:

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Structural Engineers: Leap Associates, Lakeland, Florida

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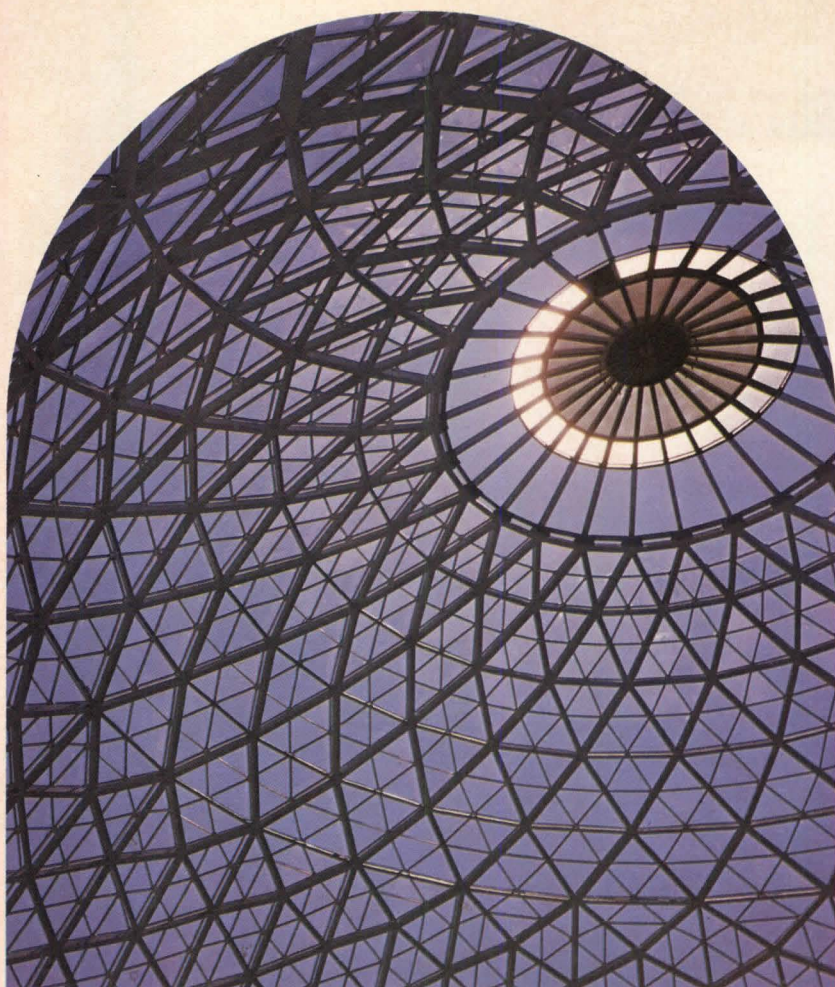
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Underwriters Laboratories, Inc.
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with fire retardant glass

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Give the "open" feel to interiors through walls that make full use of natural light. The smooth surface of Polished MISCO makes attractive wall sections that are easy to keep that way. The diamond-shaped mesh is inconspicuous . . . just visible enough to ward off floor traffic accidents from unawareness of glazed openings. Its basic fire retardant ability checks smoke and flame. The sturdy steel webbing holds glazing fast in its frame under prolonged heat exposure.



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that give clear view

Transmit natural daylight through windows that are glazed sentinels against fire, breakage, vandalism, and forced entry. Polished MISCO provides window areas with fire retardant protection, while maintaining clear vision and the sense of spaciousness that comes from greater light transmittance. Mississippi Wire Glass has been looked to by architects and engineers as the approved fire retardant glazing through more than 60 years.



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Patterned MISCO

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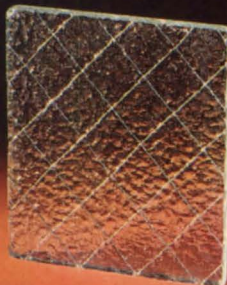
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BURLAP MISCO



SMOOTH ROUGH MISCO



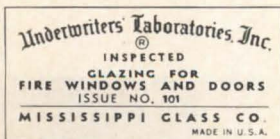
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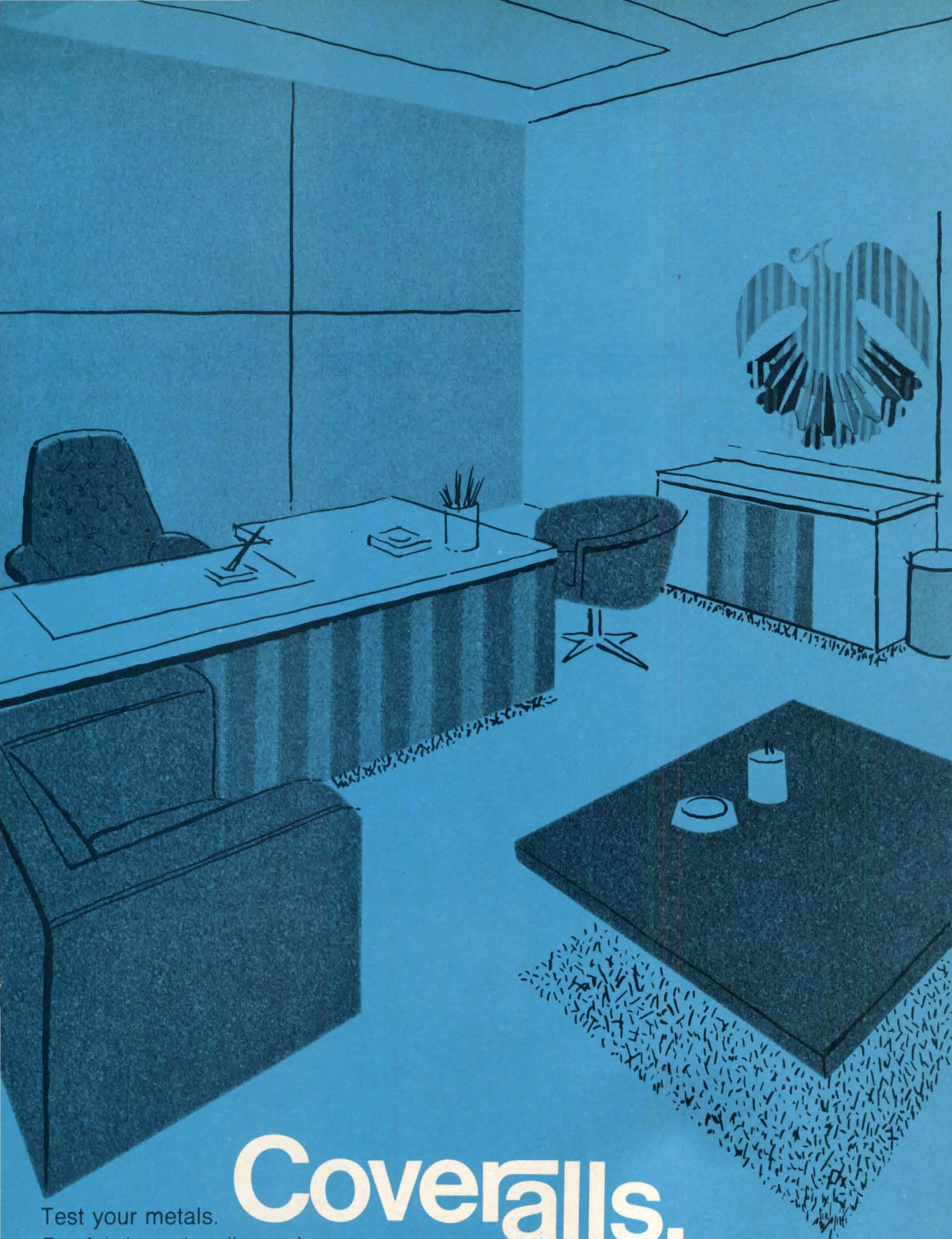
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Largest Domestic Manufacturer of Rolled, Figured and Wired Glass

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Coveralls.

Test your metals.

Pre-fabricated wall panels.

Particleboard. Plastic. Or what-have-you.

With Concept* by Terson, the new nylon-vinyl material that leaves nothing uncovered. We've laminated it to just about everything. (Sometimes with foam for extra softness.)

Concept is already dressing up dozens of national brands — from bathroom hampers to typewriters. And we're working on an infinity or two more.

How about you? We'd gladly try Concept on something of yours, without cost or obligation, as they say. Drop us a note on your company letterhead.

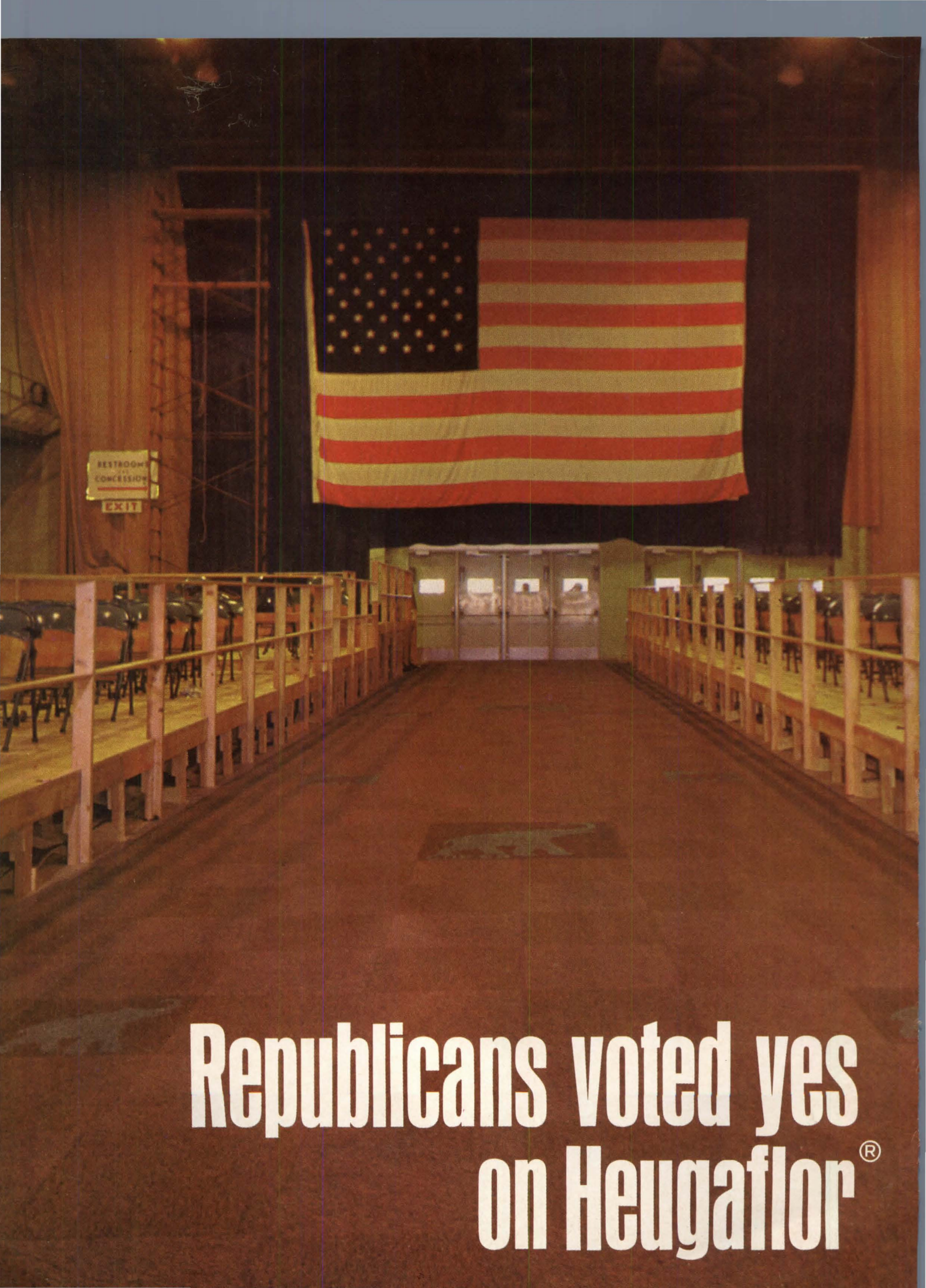
There are 23 brilliant Concepts in all — solids and stripes. And in a short time we'll have a batch of zingy prints. Concept is completely tailorable, pliable, color- and shape-fast... just about indestructible. But with the look and feel of velvet.

There's bound to be Concepts that are just right for everything you have in mind. Stick 'em up. We'll getcha covered.

*Concept is DuPont Antron⁷ (either napped or knitted weaves) stabilized by Terson expanded vinyl. For more information and a complete swatch book write Athol Manufacturing, Division of Emhart Corp., Butler, North Carolina. General Sales Office: Butler, North Carolina. Sales Office: New York, Boston, Chicago, Detroit, St. Louis. ⁷ Reg. T. M. DuPont Corp.

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**Republicans voted yes
on Heugaflo[®]**

CONTRACT SPECIFIERS:

This unconventional performance proves that loose-laid Heugaflor carpet squares can reduce installation and maintenance cost in all commercial contract installations.



These are the corridors and convention hall of the Miami Beach Auditorium covered with Heugaflor carpet squares.

A week before delegates arrived, posh Miami hotels were hiding their carpets anticipating disaster. Meanwhile Heugaflor defiantly faced up to the rough footwork, cigarettes and spilled drinks that spell doom for conventional carpeting but present little threat to Heugaflor.



Loose-laid Heugaflor carpet squares quickly go in place without adhesives or time wasting measuring or tacking.

Even over slick terrazzo, Heugaflor held fast while heavy equipment, dollies, fork lifts and television cameras moved about. During the convention, Heugaflor was vacuumed with commercial equipment yet every carpet square stayed snugly in place . . . did not shift or curl.

As the convention ended, loose-laid Heugaflor carpet squares were easily picked up by installers. This demonstrates how, in commercial installations, such as: hotels, motels, office buildings, etc., Heugaflor can be rotated to prevent traffic paths.

The Heugaflor concept is one you have to see to believe. Cigarette burns wisk away without a trace. Ordinary stains wash away with water. When wear would become a problem Heugaflor can be rotated to prevent paths. If major damage occurs, it is easy to replace the damaged carpet square.

Specifiers for commercial contract should see Heugaflor (You-ga-flor). Even the name is tough.

Heugaflor and Heugafelt are Heugatile Products.



Please write or phone.

HEUGATILE

...totally interchangeable loose-laid carpet squares

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On Readers' Service Card, Circle No. 486

Value is: using outer space to heat and cool a shopping center



Where's the Carrier heating-cooling equipment?

In outer space on the roof. No machinery anywhere inside —every inch of profitable floor and wall space can be utilized.

But, you may say, any roof-mounted system does that.

True enough, but none offers the value of Carrier units.

Value that pays off in labor-saving adapter packages that slash installation time and costs to a minimum.

And continues to pay off in low operating costs. The quality built into Carrier units delivers extra dividends in years of virtually trouble-free operation.

If air conditioning is in your plans, we will be glad to work with you. Call your nearest Carrier office.

Or write us at Syracuse, New York 13201. Represented in Canada by Carrier Air Conditioning (Canada) Ltd.

Value without equal is why more people put their confidence in Carrier air conditioning than in any other make.

Carrier Air Conditioning Company



The beginning and end
of every material handling
system is across the
loading dock.



Vital dock efficiency must be designed in—not added on

The layout and equipping of a loading dock affects the efficiency of your client's plant every day he is in business. With up to 30% of his costs in material handling, this critical area demands a fresh look — since it offers the opportunity for greatest return with least proportional cost.

Kelley Company, the originator of mechanical Permanent Adjustable Dockboard Equipment has developed a unique concept in the design of loading docks. A concept which takes into consideration all factors from proper access roads to integration with in-plant handling systems.

As manufacturer of a complete line of Permanent Dockboards in all types and sizes, including mechan-

ical and hydraulic; choice of the proper type, size and model can be made without prejudice.

The experienced Kelley coast-to-coast sales and service organization, with application knowledge gained in 60,000 dockboard installations, can help you apply these design concepts and select the dockboard equipment best suited to your client's total needs.



We invite your inquiry
KELLEY COMPANY, INC.
6740 N. Teutonia Avenue
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SEEN...

**Get a quieter sanitary system
with cast iron soil pipe and
fittings! Specify compression seals.**

The solid, sure quality of U.S.-made cast iron soil pipe bearing the famed **Q** symbol can certainly be seen during the construction phase of any project. This product's reputation for reliability is well known throughout the building and plumbing professions.

Now, after construction, when these important pipes have disappeared within walls and under flooring, they provide a quiet sanitary system that won't be heard.

Neoprene gaskets provide an effective sound barrier to eliminate transmission of sound from one pipe length to another, solving the problem of vibration transmission once and for all.

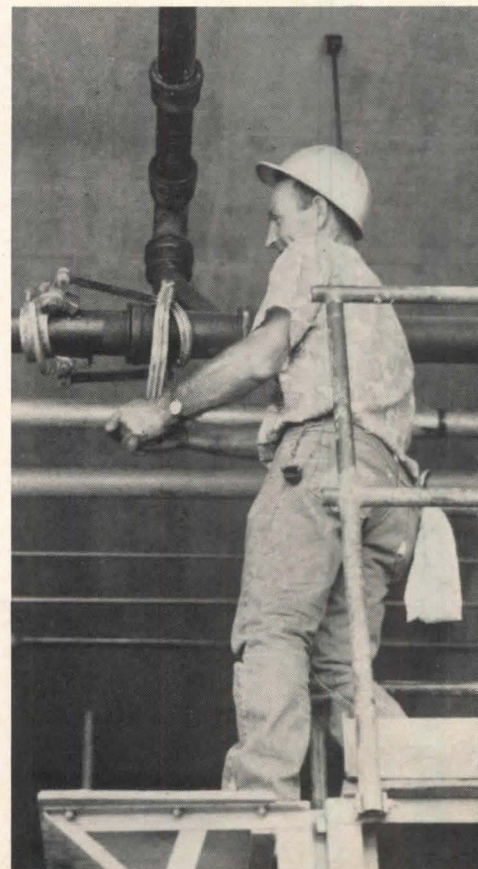
When you specify compression gasket piping, you'll know that solid **Q** cast iron and secure Neoprene will serve as silently as possible during the years to come.

Install the team with the built-in sound barrier — U.S.-made cast iron soil pipe bearing the **Q** trademark and Neoprene gaskets. Quiet quality for sanitary systems.

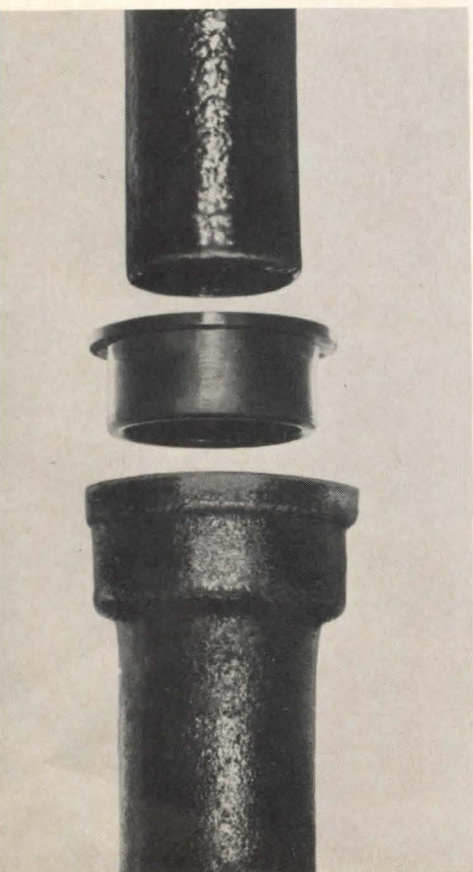


CAST IRON SOIL PIPE INSTITUTE

1824-26 JEFFERSON PL., N.W., WASHINGTON, D.C. 20036



BUT NOT HEARD



**Get the pipe joiner
with proven dependability.**

Specify seals of Du Pont Neoprene.

Neoprene gaskets are a fitting match for hub-and-spigot cast iron soil pipe.

For over 35 years, Du Pont Neoprene has proved its defenses against such destroyers as acids, alkalies, oils, greases, cold, heat, flame and abrasion.

So you can count on resilient Neoprene gaskets to withstand the corrosive elements found in drain, waste, vent and sewage systems. And to keep quiet about the whole business.

For more information on the use of Neoprene in cast iron soil pipe systems, write Du Pont Company, Room 6282B, Wilmington, Del. 19898.



REG. U. S. PAT. OFF.
NEOPRENE

Win your own beach umbrella plus a week for 2 in Acapulco!



Make the lead grading test, then mail it in— it's your free entry in the Eagle Turquoise **WEEK IN ACAPULCO** Sweepstakes!

HERE'S ALL YOU DO

- This test has been especially designed to help you test the grading and performance of the leads you are now using. You'll be able to judge for yourself whether they fill your need for perfect grading.
- Follow the simple directions for completing this test, then detach and mail to Eagle Pencil Company, Danbury, Connecticut, for entry in the prize drawing.
- All entries will receive a sample kit of Turquoise leads giving you the opportunity to prove their perfect grading. See why Eagle insists on using 17 separate formulas to make 17 perfectly graded degrees of drawing leads.

500 SECOND PRIZES Turquoise Twenty (.5MM) lead & holder packs



You may very well be the winner of a fabulous week for two in Acapulco, or one of the 500 Turquoise Twenty (.5 mm) lead and holder packs being offered as Second Prize.

 **Eagle Turquoise**

The nation's largest-selling drafting pencils and leads!

A coed from Iowa told us this:
“A good night’s sleep is an ancient
custom that’s currently in.”





"I like my pad kicky..."

Ginny wants her room modern as PolySci 404. "In" as a boutique. Personal as a whisper.

PACE® makes the scene. It's a modular dorm furnishings system that gives each room that just-for-you look. Wardrobe, bed, desk, drawer and shelf units bunch up with Scandinavian simplicity. And not the tiniest hint of cramming.

Rooms planned around Simmons contemporary dorm systems need no closets. No millwork. No separate sleeping area. They leave extra space for extra rooms. And with steel frames, melamine plastic laminate tops, tough vinyl and baked-on enamels, PACE won't leave the scene when Ginny does.



SIMMONS



There's more to Simmons than mattresses.

“Lobbies are out.



You don't have a lobby at home, do you?"

At home they call it a living room. Real living rooms take years to happen.

But in a dorm, you don't have years. You have to build it comfortable. Now. And you have to do it with commercial furniture because that's the only kind that holds up.

Simmons upholstered dorm furniture gives you so much to choose from that no two rooms ever need look alike. Deep-toned woods. Plush vinyls. Cheery fabrics. Brushed chrome. Contemporary, Modern or Traditional.

And Simmons living rooms last longer than a Charlie Brown losing streak because they're made for dorms. And dorm traffic. And dorm people.



There's more to Simmons than mattresses.

“No moss on our dean.



You ought to see his office."

After all, his business is guiding young people. And keeping in touch with young ideas.

He deserves an office that's modern. Logical. Tasteful. OFFICE SPAN II®, Simmons' component system of desks, credenzas, tables and chairs, makes faculty and administrative offices look the way they should.

But there are other reasons for planning offices around the Simmons system. One is durability. Melamine plastic laminate tops. Baked-on enamels. Welded frames and bolted assembly. And because it's a component system, hundreds of combinations can tailor each office to the work of the person using it.

How logical can you get?



There's more to Simmons than mattresses.

Like to help a coed from Iowa become a happy graduate?

Ask Simmons.

We understand what it takes to make college living cheery as a homecoming bonfire.

And with lots of experience in hotel, hospital and business furnishings, we've learned what it takes to make furniture tough as well as good looking.

High-pressure melamine plastic laminate, for example. Looks just like wood. But it won't absorb or stain, and really fights off scratches, abrasions and burns. So does Sim-Clad®, Simmons' exclusive wood grain or textured covering. Bonded onto synthetic board or steel, it's just as tough as melamine.

Our one-piece, die-formed steel drawers stay solid because there are no joints to loosen. They can't warp. They won't stick because they ride on ball bearings. And our high-impact, vacuum-formed thermoplastic makes drawer fronts tougher than football helmets. Anodized aluminum extrusions protect all exposed edges.

These are just a few of the features that keep Simmons furnishings from getting old before their time. And they need virtually no maintenance.

Modular construction with standard components offers another advantage. It lets you plan furniture space needs to the inch while the building is still on the drawing board. Windows and doors wind up where they'll do the most good. Walls are where they belong.



With the Simmons system, your entire school furnishings package can be financed to suit your budget. Extended term or leasing plans are available through our American Acceptance Program. In addition, PACE® built-in dorm units meet every requirement for HUD assistance.

If you're planning new buildings—or remodeling old ones—look into Simmons complete school furniture systems. PACE for dorm rooms. Upholstered furniture for living rooms and lounges. OFFICE SPAN II for staff and faculty offices.

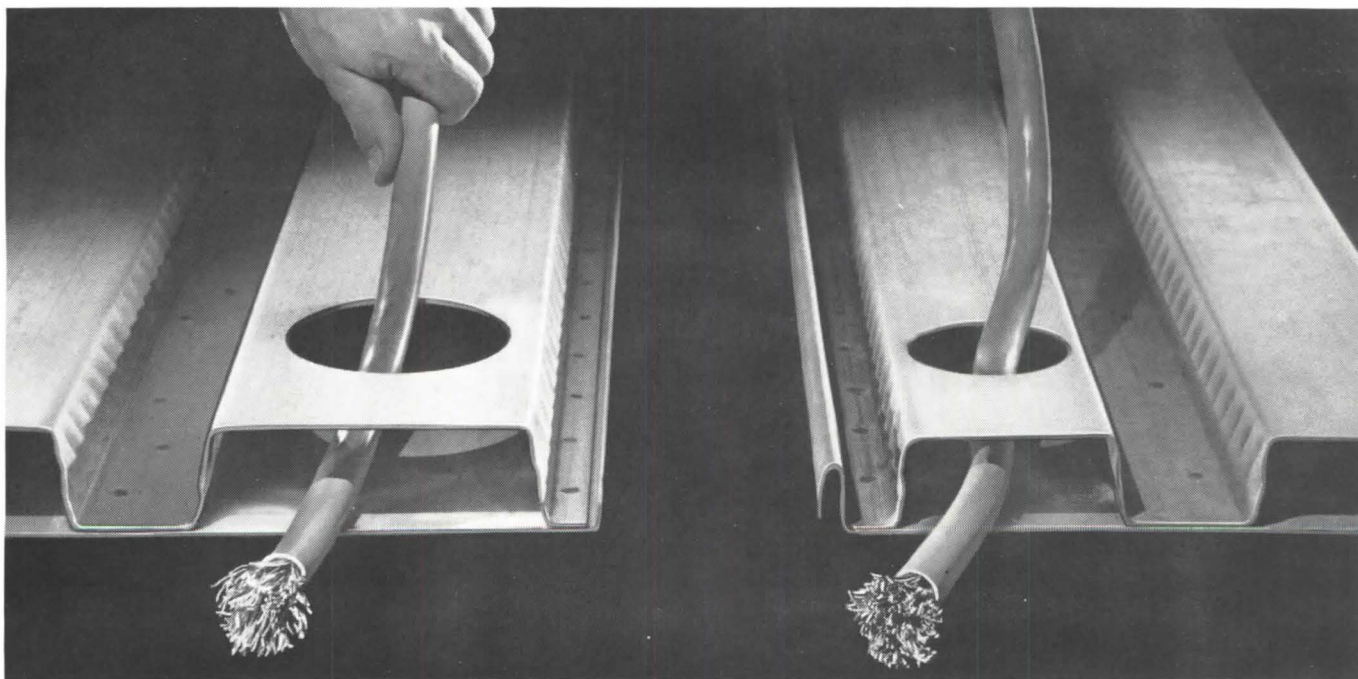
And as long as you're going first class, plan on Beautyrest® mattresses, too.

For further information, contact Bob Deuchler,
Box D, 1870 Merchandise Mart, Chicago, Ill. 60654



SIMMONS

CONTRACT DIVISION • MERCHANDISE MART • CHICAGO, ILL. 60654



The old, familiar electrified floor deck on the right is a fine product, but it's getting old fashioned. It can't keep pace with the way communications wiring needs are expanding.

Here's the new way to win the electrification space race: *Inland 1 $\frac{5}{8}$ " NF Celluflor*. It actually offers over 66% more space per cell, yet it can be blended with any standard Inland 1 $\frac{1}{2}$ " deck. And wide-cell floor deck is easier to work with; its greater width permits wider (4") hand-holes that more easily accept large diameter telephone cables.

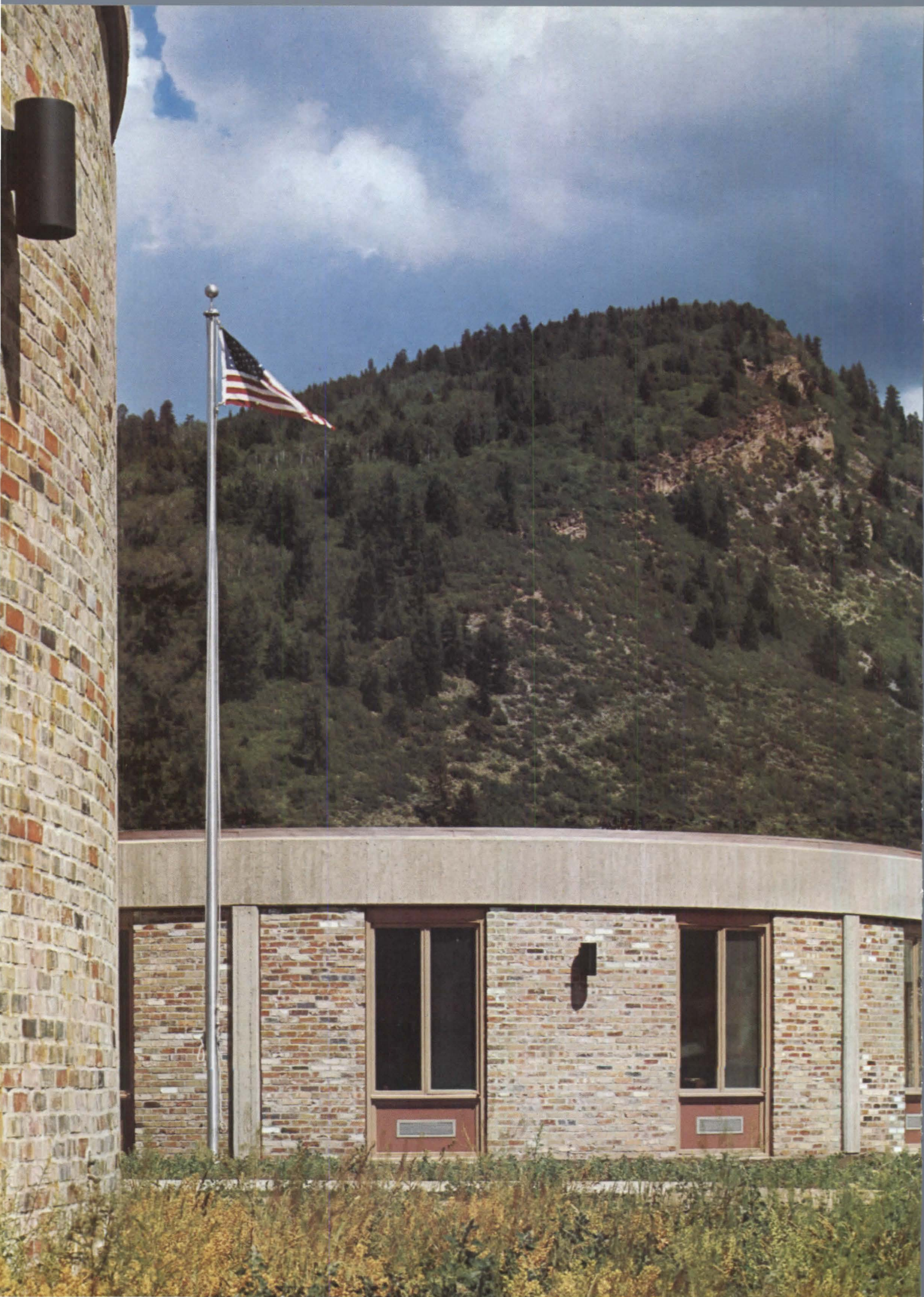
Our 1 $\frac{5}{8}$ " NF Celluflor also has Hi-Bond® lugs for greater bond with the concrete, and it is designed for use in composite construction.

Ask your Inland sales engineer to demonstrate the increased capacity of 1 $\frac{5}{8}$ " NF Celluflor. Write for our complete floor systems catalog 270. Inland-Ryerson Construction Products Co. Dept. K, 4069 West Burnham Street, Milwaukee, Wisconsin 53201.

**1 $\frac{5}{8}$ " NF Celluflor
has 66% larger
cavities.**

*Formerly Inland Steel Products
Company and the structural
fabricating, reinforcing steel and
post tensioning divisions of
Joseph T. Ryerson & Son, Inc.*

Inland-Ryerson
Construction Products Company





Aspen High School: Beautiful setting, unique design, and stock Andersen Windows.

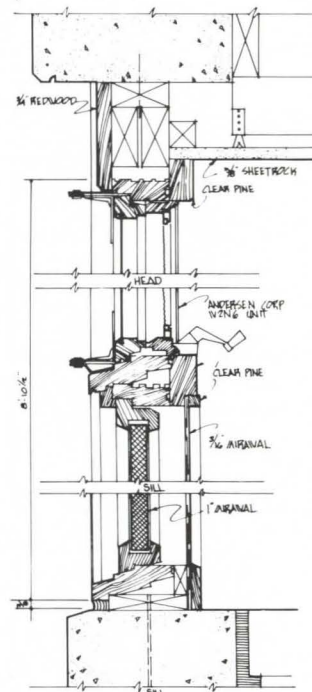
You don't *expect* it—a school right in the middle of a high, mountain meadow. Especially a school consisting of six circular rotundas.

You *might* expect custom windows, though, in a design so different. But there was no need for them. The students look at the mountains through *stock* Andersen Casements. Just one of six types and hundreds of sizes available.



One big Andersen advantage is that it doesn't take a crew of window specialists to install them. They're weathertight summer or winter. In fact, welded insulating glass and close Andersen tolerances can mean

up to 15% fuel savings in some buildings. They're designed and assembled to operate smoothly and silently for a lifetime.



Which brings us to the real question: Why design for custom millwork, when stock Andersen windows are as "custom" as the occasion demands? Check Sweets File, or call your Andersen Distributor for a Tracing Detail File.

Andersen Windowalls™



Window Beauty is Andersen

ANDERSEN CORPORATION • BAYPORT, MINNESOTA 55003

Aspen High School, Aspen, Colorado. Architect: Caudill Associates, Aspen. The school was recently selected as a School of the Month by a committee representing the National Council on Schoolhouse Construction.

Printed in U.S.A.

Why Gas absorption cooling makes sense even in TVA country.

In TVA country electric rates are among the lowest in the nation. But Gas absorption cooling proves less expensive to operate than an electric system.

The same Gas boiler that delivers heat and hot water supplies energy for the refrigeration unit as well.

There are other reasons why Gas cooling makes sense.

Gas cooling is quiet. There are no major moving parts. Low pressure steam from a Gas-fired boiler quietly energizes a liquid chiller.

And without any major moving parts, Gas systems have a long service life. They operate for years without a major repair.

How a Carrier system saves the Windsor Towers more than \$2,400 a year.

The total annual operating cost for an all Gas cooling and heating system comes to \$9,171 for these Nashville, Tennessee apartments.

In contrast, a combination electric cooling and Gas heating system would have cost \$11,587 a year to operate.

A 311-ton Carrier absorption unit cools the 12-story building.

Chilled or hot water from the absorption cooler and boiler is sent to air handling units in each apartment. This allows tenants to regulate the temperature in their own apartments.

For more details on how you can use Gas cooling and heating to reduce your operating costs, contact your local Gas Company Sales Engineer. Or write: Carrier Air Conditioning Co., Syracuse, New York 13201.

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SWENSON & KOTT, ARCHITECTS INC., NASHVILLE, TENNESSEE
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GENERAL CONTRACTOR:
NATIONAL BUILDING CORP., NASHVILLE, TENNESSEE
MECHANICAL CONTRACTOR:
REYNOLDS BROS. PLUMBING & HEATING, NASHVILLE, TENNESSEE

AMERICAN GAS ASSOCIATION, INC.
For cooling and heating... Gas makes the big difference.

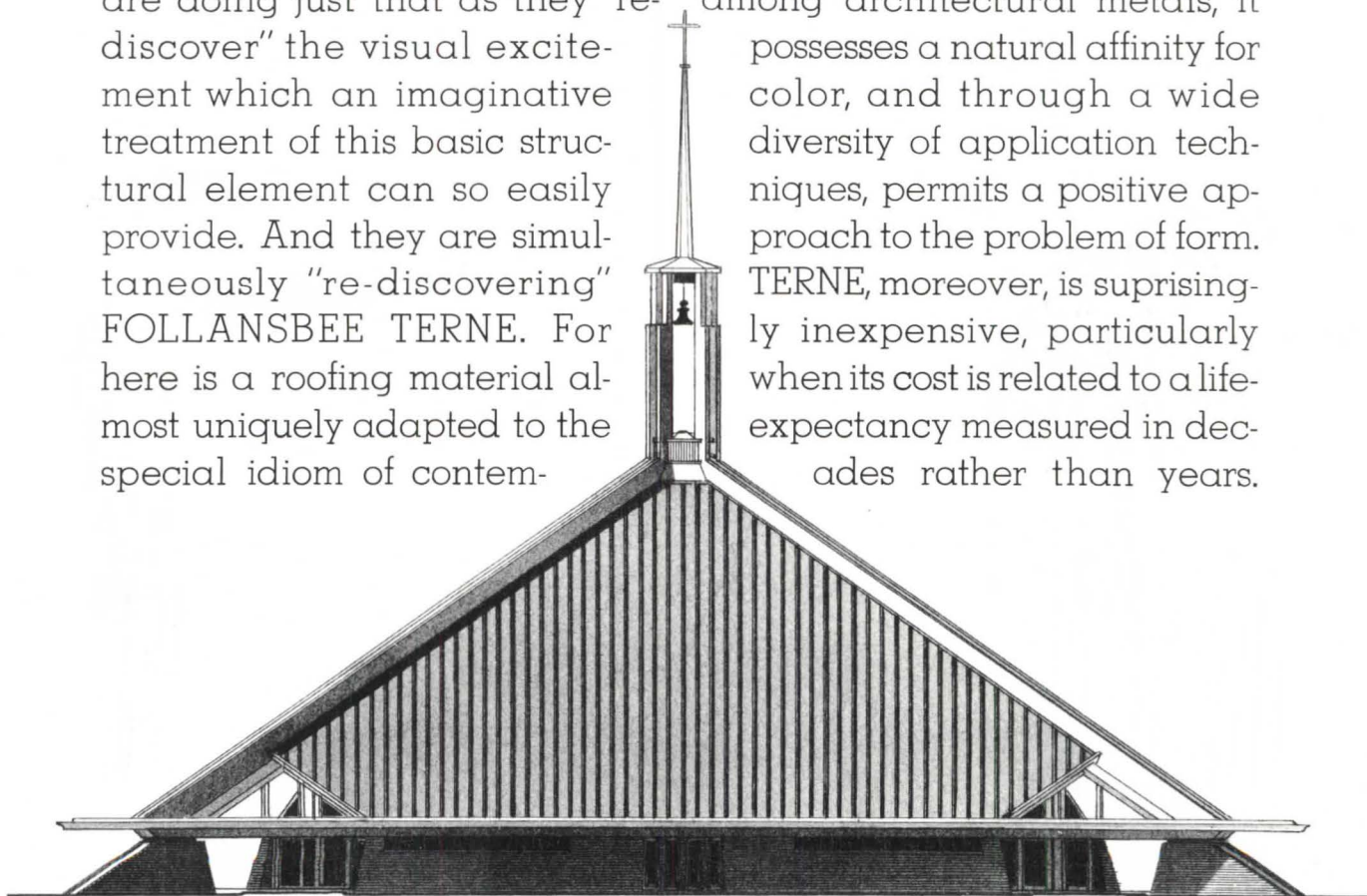
On Readers' Service Card, Circle No. 326



Speaking of roofs

... and architects everywhere are doing just that as they "re-discover" the visual excitement which an imaginative treatment of this basic structural element can so easily provide. And they are simultaneously "re-discovering" FOLLANSBEE TERNE. For here is a roofing material almost uniquely adapted to the special idiom of contem-

porary design. Almost alone among architectural metals, it possesses a natural affinity for color, and through a wide diversity of application techniques, permits a positive approach to the problem of form. TERNE, moreover, is surprisingly inexpensive, particularly when its cost is related to a life-expectancy measured in decades rather than years.



Concordia Lutheran Junior College — A College of the Lutheran Church, Missouri Synod — Ann Arbor, Michigan
Architect: Vincent G. Kling, FAIA Philadelphia, Pa. Roofing Contractor: Detroit Cornice & Slate—Detroit, Michigan

Follansbee

FOLLANSBEE STEEL CORPORATION • FOLLANSBEE, WEST VIRGINIA



Pearson Chairs by Knoll

The Pearson chairs are so sensitively designed that they appear to be a study in pure form, but actually solve the dual problem of office seating: function and comfort. To preserve the lines of these designs Knoll has developed a new compact control unit which eliminates the mechanical clutter underneath. Another contribution by Knoll to the total office. Designed by Max Pearson of the Knoll Design Development Group. **Knoll Associates**, Furniture and Textiles, 320 Park Avenue, New York, New York 10022. Knoll International operates in 29 countries.



P/A NEWS REPORT

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

October 1968

THE GORDONIAN NOTCH

WASHINGTON, D.C. The controversy over the AIA Headquarters building has dragged on long enough to try the patience of Mary Worth. Just how deep the frustration ran became evident late last month when architects Mitchell/Giurgola, who had prepared three major designs for the new building in four years, withdrew from the project.

Their decision followed a final unsuccessful plea to the Washington Fine Arts Commission to withdraw their objection to the latest design. Read by Romaldo Giurgola to the Commission, the plea stated:

"After the rejection of the last solution by the Fine Arts Commission and the subsequent unanimous approval of the same by the board of the AIA, we advised the chairman of the building committee that it was our intention to decline any further involvement in the project. The acceptance of the present design by the Commission of Fine Arts is conditioned on elimination of what has been called the 'notch,' a recess in the interior elevation of the building. We feel that such an element, almost invisible from the street and deep into private property, is an integral part of the design

and belongs to the personal interpretation of the architect, and it is out of the scope of the objective consideration of the Commission of Fine Arts.

"We have complied with the objections to the first solution with: (a) reduction of building height, based on a new program; (b) preservation of the present garden up to and including the existing wall and the enlargement of the garden beyond it; (c) an approved use of materials; (d) a new pattern of fenestration.

"We cannot make changes to the present preliminary solution without abdicating our integrity as architects and without betraying the confidence placed in us by our clients.

"We ask the Commission of Fine Arts to reconsider the previous rejection and to approve the present solution, thus enabling us to proceed to more advanced stages of the project."

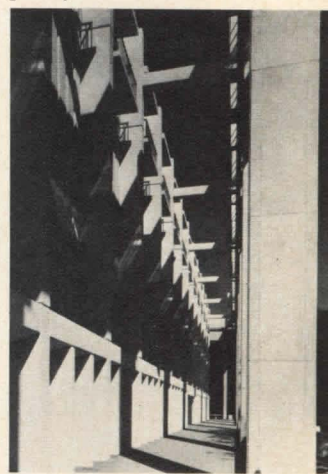
At a late September meeting in San Antonio, the AIA regretfully accepted Mitchell/Giurgola's resignation. Now the task is to find another architect. Just how that will be done is up to the headquarters committee, under the chairmanship of Max Urbahn. It's tough being a client.

five-story memorial center, which is of concrete with a marble facing, houses four buildings in one. It is, they proudly claim in Atlanta, the only building in the country to bring together all visual and performing arts under one roof.

Included in the building will be a formal art museum, whose first exhibit will put on display 59 French paintings from Poussin to Picasso, lent by Parisian museums. Affiliated with the museum is a Junior Activities Center, which will handle educational programs for young people.

The Atlanta School of Art has quarters in the center, with the school's fall term already underway in the building.

In addition, the 868-seat Alliance Theater will stage ballet, opera, and drama, and the Atlanta Symphony will perform in the 1848-seat Symphony Hall.



CLOSING THE DRAFTING GAP



NEW YORK, N.Y. In late September, ten teen-agers, five Negroes, three Puerto Ricans, and two Caucasians were at work in the architectural offices of Eggers & Higgins learning drafting. In a program as remarkable for its method of implementation as for its potential results, Eggers & Higgins have done what the national AIA and numerous local chapters have talked about for some time: provide an on-the-job training program that will interest underprivileged youths in an architectural career.

In conceiving their program, Eggers & Higgins started with a vast dissatisfaction with the quality and price of drafting talent. They found they were hiring students out of school, paying them professional wages, and then retraining them to do drafting

of architectural details the way it is done in a large office, which, of course, differs vastly from school training. Little or no concrete or steel drafting is taught in schools, and the light wood framing and residential-building drafting that is taught is of little use in a large urban firm.

Dave Eggers therefore asked himself, why not take students who have graduated from or dropped out of high school and train them in architectural drafting, while paying them a minimum wage (\$80 per week). His firm has done just that. He expects to be able to offer full-time jobs to perhaps four or five of the top graduates of the program and hopes to place the others with firms in the area.

Eggers & Higgins offers a certificate to each student who successfully completes the 16-week course. Teaching it is Joseph Rivellese, who also teaches at the State University of Brooklyn. And in the afternoons when Rivellese is not there, members of the firm come in and talk about such aspects of architectural work as specs, materials, and site work.

When they first started thinking about the alarming dearth of drafting talent, Eggers & Higgins answered an

ATLANTA ARTS IN MARBLE HALLS



ATLANTA, GA. On October 5, the French Ambassador, M. Charles Lucet, unveiled a bronze Rodin sculpture, "L'Ombre," in front of the Atlanta Memorial Arts Center. The sculpture is a gift of the French government to the Atlanta Arts Alliance, which

built the center as a memorial to the 122 Atlanta art patrons killed in a 1962 airplane crash at Orly airport near Paris, and its unveiling was part of the center's dedication ceremonies.

Designed by Toombs, Amisano & Wells of Atlanta, the

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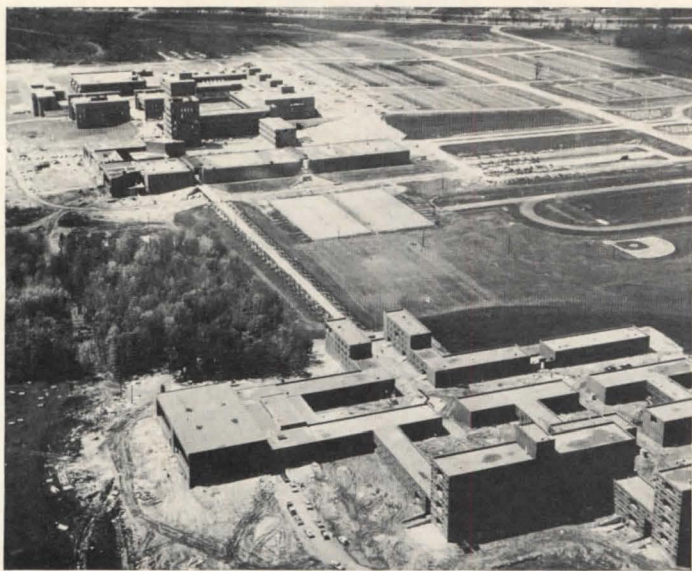
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MILLS MOVABLE WALLS CLEVELAND OHIO
MILLS MOVABLE WALLS CLEVELAND OHIO

ad of the Vocational Guidance Office of the Department of Labor offering help to employers willing to hire youths from underprivileged neighborhoods. Actual screening of candidates was done by a non-profit organization, the Vocational Foundation, Inc., working with the Labor Department. Careful screening is the key to a successful program. "We screen them for desire, aptitude and intelligence," says George Carson of the Vocational Foundation, who did most of it. As it turned out, all but one of the

original class members had some drafting training. However, it was of course necessary to start the on-the-job training with fundamentals.

Not every firm is capable of undertaking such a program, and Eggers maintains that a firm smaller than his 180-man organization would have trouble supporting the 10 to 12 students necessary to attract a professional teacher. But almost all major cities have larger firms and the program is a welcome example of action in the midst of a flood of talk.

NEW R.I.T. CAMPUS COMES TO LIFE

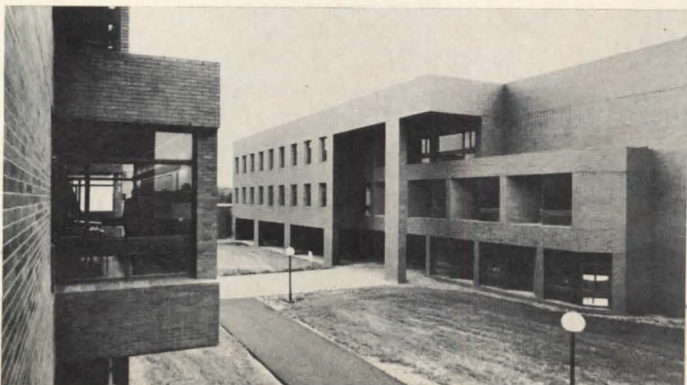


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ROCHESTER, N.Y. This month, the Rochester Institute of Technology will dedicate its new \$60-million, campus located on 1300 acres just south of this upper New York State town. In all, the campus has 13 academic buildings and a dormitory complex for 1900 students in the first phase of construction, in anticipation of a student enrollment of 20,000 by 1975.

The new campus has two distinct groupings of build-

ings (1): academic (top) and residential (bottom) with a long connecting pedestrian mall. Both groups have facades of iron spot brick, and despite the number of architectural firms that worked on the buildings—six in all—the campus achieves a remarkable harmony. Throughout, there are battlement roof lines and recessed windows.

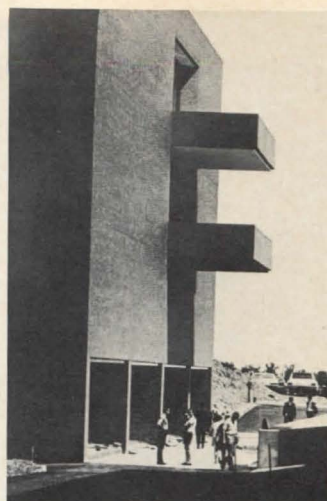
Lawrence Anderson, dean of the architectural faculty at M.I.T., was coordinating ar-



3

chitect for the seven-year project, and his firm, Anderson, Beckwith & Haible of Boston, designed the Applied Science, Science and Central Services Buildings (2).

Kevin Roche, John Dinke-
loo & Associates of Hamden, Conn., did the Administration Classroom, College Union, and Physical Education and Athletic Buildings (3); Hugh Stubbins & Associates of Cambridge designed the Arts



4

and Graphic Arts Buildings (4). Harry Weese & Associates of Chicago are responsible for the General Studies and Library Buildings (5). Residence halls and dining complex are by Edward Larabee Barnes of New York (6). And the Married Student-Faculty housing is by Corgan & Balestiere.

Dan Kiley served as space coordinator and landscape consultant.



5

6



THE PRINCESS'S PALACE

MEHR DAST, IRAN. When Her Royal Highness, Princess Shams Pahlavi of Iran (sister of the Shah), approached Teheran architect Nezam Ameri with a commission for a new palace to combine living quarters for the royal family and facilities for state

functions, the architect was not sure his office was equipped to handle the job. Being a former student of Frank Lloyd Wright at Taliesin West, it was natural for him to turn again to Taliesin, and he soon brought together the princess and Taliesin's

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chief architect, William Wesley Peters.

Discussing the program, the princess was at first rather vague, but Peters and Ameri quickly came to the conclusion that they had chanced upon a person who was as close an approximation of the ideal client as they were ever likely to meet. She began by telling the architects what she did not want: no copies of ancient Persian temples, no heavy domes. But if they could capture something of the spirit and character of traditional Persian structures in modern forms, that would please her. As her ideas evolved, she became convinced that, if the designers were to extract something of the essence of Persian architecture for her new palace, they would have to see the old cities, so she arranged for them a tour of southern Per-

sia, through the ancient cities of Shiraz and Isfahan.

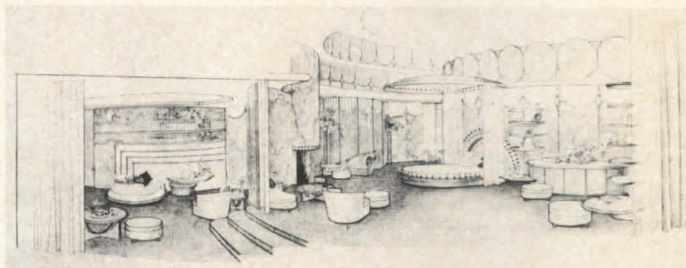
The result of the journey was, for Peters, the discovery that the most outstanding feature of traditional Persian building was the orientation of structures toward enclosed garden courts. And just as ancient temples, mosques, and public buildings present fortress-like walls to the outside world, turning in upon lavishly landscaped enclosures, so do Iranian villages of today cluster individual dwellings around communal garden courts. It is a tradition that goes back to the hanging gardens of Babylon.

Translating the idea into modern idiom, Peters arranged family and state rooms around either side of a circle that encloses a central garden dotted with pools (one for swimming), and fountains. On the upper level are living

quarters for the princess, His Excellency, her husband (who is minister of cultural affairs), and their daughter; a large reception hall, banquet hall, kitchen, and guest quarters are also located on the upper level. Below are movie theater, recreation room, exercise room, wine room, and an additional guest room. All areas of the palace are air conditioned, both to keep them cool in the sweltering Iranian heat, and to help keep the moisture accumulation on the thousands of palace plants at a bearable level.

Is the princess satisfied with the prairie architects' version of a Persian palace? During presentation of preliminary drawings, all seemed in order until, suddenly, Her Highness burst into tears and left the room. On her return, after the architects had spent a tense 20 minutes speculating on lost time, energy, and commission, it was explained to them that she had been overcome by emotion: The palace was precisely the ideal she had dreamed of as a little girl.

Construction will begin this fall. Cost is \$1 million.



WAY PAVED FOR LINEAR CITY

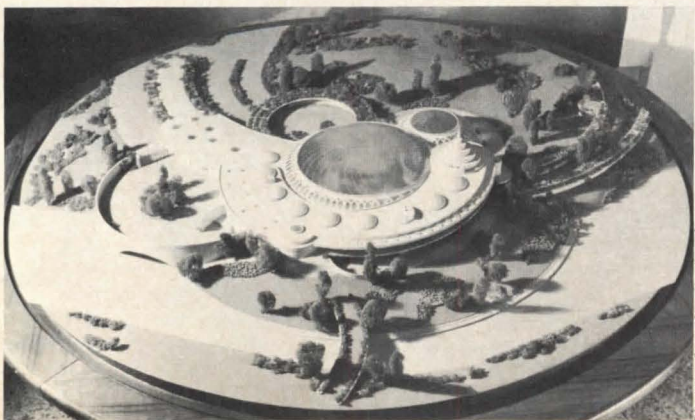
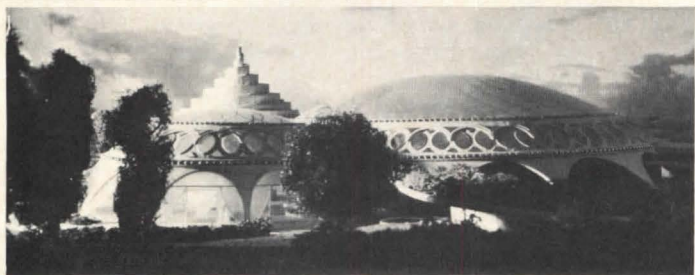
NEW YORK, N.Y. Approval by three Federal departments gives a green light to the formal planning of a linear city through Brooklyn. In late June, the Departments of Transportation, Housing and Urban Development, and Health, Education and Welfare agreed to put up funds for planning and engineering designs for the long-delayed and disputed linear city. In addition, the Ford Foundation will make \$100,000 available for special planning and design studies.

The Lindsay administration in New York wanted to provide a traffic link between the Verrazano-Narrows bridge and Long Island. Such a link could, they argued, use an existing right of way of the Bay Ridge Division of the Long Island Railway, and would eliminate need for cutting roads through more populous sections of the city. Until recently, few agreed.

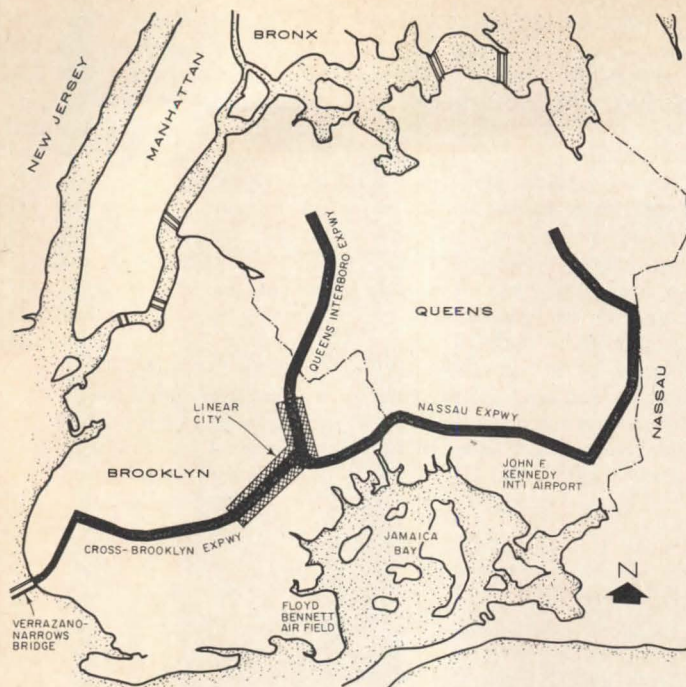
Now, by adding the Cross-Brooklyn expressway and a northern branch, the Queens Interborough Expressway, to the Interstate Highway system, all the pieces in a previously almost hopelessly confused puzzle are ready to be put in place. As part of the Interstate system, the Cross-Brooklyn Expressway and

the Queens Interborough will be financed by the Federal Government, which will put up 90% of the funds, and by the state which will give 10%. Total cost of the two new roads is expected to be about \$400 million. But the city, as its administration sees it, gets an added boost, for to give the highways interstate status, the Department of Transportation took four other proposed New York expressways off the Interstate list. These would have knifed through heavily populated areas of Manhattan and Brooklyn and would have meant sweeping dislocations of families and businesses.

As in-city freeways cut through the nation's urban areas, they tear apart neighborhoods, leaving scars that take scores of years to heal. Lindsay's Linear City concept is meant to avoid the opening of long-festering wounds. As almost everyone has heard by now, Linear City will provide complete community facilities on a 6-mile strip of air rights above the Cross-Brooklyn Expressway, starting at Brooklyn College and running east. Currently, it is thought that the "city" would provide schools for 20,000 intermediate and high-school students, 6000 housing units, space for industry, a regional



Photos: Foto-Studio Casak



shopping center, and a community college. In short, instead of ripping a community open, the expressway and the buildings above it would provide a link, a common meeting ground, for persons living on both sides of the road.

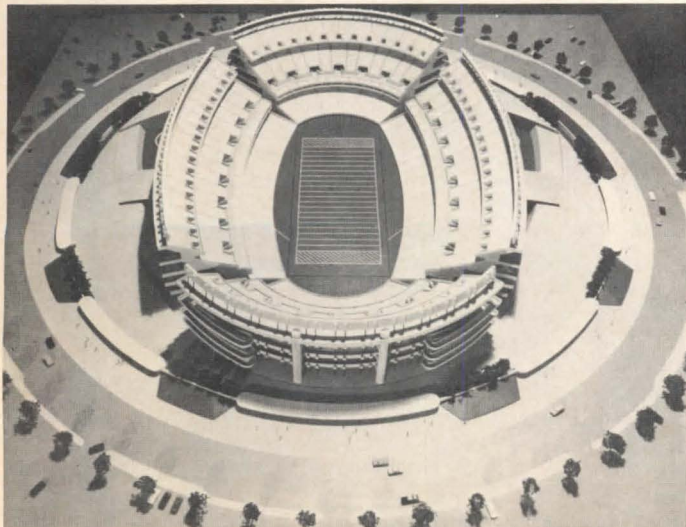
Next steps in the program are detailed studies of educational and community facili-

ties. As P/A goes to press, no announcement has been made of who will do these studies or how long they will take. Future studies will probably follow the preliminary "plan for planning" completed early this year by the Baltimore architectural firm Rogers, Taliaferro, Kostitsky, Lamb.

OMNI-STADIUM PLANNING IN CLEVELAND

CLEVELAND, OHIO Every sport has its season and its own type of playing field. These were two of the problems faced by Charles Luckman & Associates in designing a stadium for Cleveland to hold crowds for baseball, football, basketball, hockey, and even soccer. The result is a preliminary design for a stadium that will seat 65,000 spectators grouped

around a gridiron for tilts between football teams. For baseball, the two triple-decked seating tiers on either side of the oval configuration will pivot outward, pushed by a motor along ground-level tracks, to flank the baselines of a baseball field. Moreover, the stadium will have a retractable roof, which will create a more intimate 17,000-

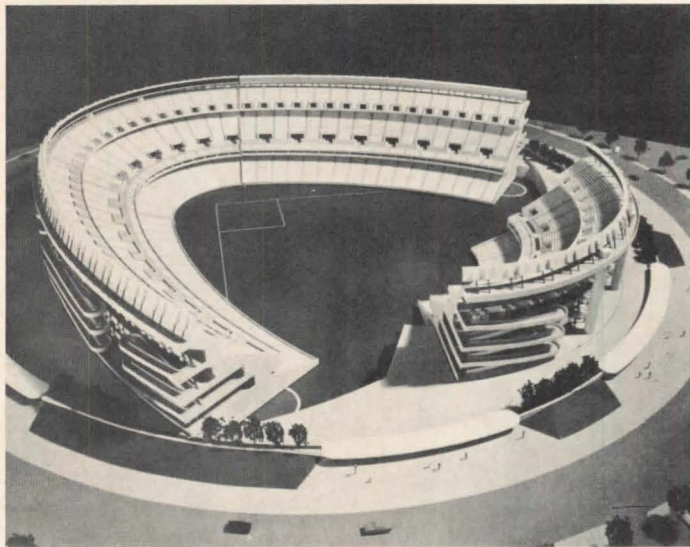


seat stadium within a stadium for big league basketball and hockey games. The Luckman office estimates the conversion from one type of stadium to another could be accomplished in 30 minutes.

Part of the problem is to decide where to put the new \$26-million stadium, and what to do with the mammoth existing 73,811-seat municip-

pal stadium located on the lakefront, if the new one is built.

The Luckman firm is in the midst of a 90-day survey on the basis of which it will decide on a site, pick a method of financing construction, and set a target date for ground-breaking. It estimates that the stadium could be built in two years.



CALENDAR

The 1968 South Atlantic Regional Conference of the AIA will be held October 9-12 at the Marriott Motor Hotel in Atlanta, Ga. Conference program centers on the computer and its uses in finance and management . . . "Contradictions"—between what we want and what we need, between what we look at and what we see, between one generation and another—will be topics for discussion at the Annual Meeting of the Industrial Designers Society of America. The meeting is planned for October 10-12 at the Playboy Club Hotel, Lake Geneva, Wis. For further details, write to: ISDA, 60 W. 55 St., New York, N.Y. 10019 . . . Experts in the fields of glass history and research will speak during the Ninth Seminar on Glass, to be held October 15-18 at the Corning Museum of Glass, Corning, N.Y. 14830 . . . One of a series of Plastics Rapid Educational Programs offered by International Plastics Industry Consultants, Inc., will be "Plastics in Buildings: Architecture and Construction." Information on the program, which will be held at New York City's Hotel Manhattan

Oct. 28-Nov. 1, is available from: International Plastics Industry Consultants, Inc., P.O. Box 1324, Long Island City, N.Y. 11101 . . . The 16th Annual International Architectural Woodwork Institute Convention is scheduled for Oct. 30-Nov. 1 in Boston, Mass. Information on the meeting may be obtained from: Architectural Woodwork Institute, Suite A, Chesterfield House, 5055 Chesterfield Rd., Arlington, Va. 22206 . . . Technical sessions will constitute a major portion of the program for the 1968 Fall Convention of the American Concrete Institute, Nov. 3-8 at the Sheraton-Peabody Hotel, Memphis, Tenn. Copies of the program are available from: ACI, P.O. Box 4754, Redford Station, Detroit, Mich. 48219 . . . The Structural Clay Products Institute's Annual Convention will assemble this year at the Puerto Rico Sheraton, San Juan, P.R. Dates for the conference are November 9-13. Write for more information to C.N. Farley, SCPI, 1750 Old Meadow Rd., McLean, Va. 22204 . . . An Interprofessional Conference on Education for Environmental



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Design will take place Nov. 11-13 at the Center for Continuing Education at the University of Notre Dame. Sponsored by the Interprofessional Commission on Environmental Design, the conference will feature discussion of the final Report on Goals of Engineering Education of the American Society for Engineering Education and the Princeton University Study of Education for Environmental Design. Additional details on program and registration may be obtained by writing: American Society of Civil Engineers, United Engineering Center, 345 E. 47th St., New York, N.Y. 10017 . . . **The Annual Meeting of the Aluminum Association** will take place Nov. 20-22 at the New York Hilton, New York City. Program information is available from: Aluminum Association, 420 Lexington Ave., New York, N.Y. 10017 . . . **A Low-Income Housing Seminar**, sponsored by the Federal Department of Housing and

Urban Development with Urban America, Inc., is scheduled for Nov. 21-22 in Atlanta, Ga. Purpose of the seminar is to "explore new forms of partnership between nonprofit organizations and private enterprise" in the construction of homes for low-income families. To obtain registration forms and program details, write to: Conference Director, Urban America, Inc., 1717 Massachusetts Ave. N.W., Washington, D.C. 20036 . . . **The Eighth Construction Contracts and Specifications Institute** will be presented by the University of Wisconsin and Region Seven of the Construction Specifications Institute, Nov. 21-22. The institute is to be held on the University of Wisconsin's Madison campus. Requests for additional information should be directed to: Dwight D. Zeck, Institute Director, 725 Extension Bldg., 432 N. Lake St., University of Wisconsin, Madison, Wis. 53706 . . .

SCHOOLS

Paul Schweikher, head of the department of architecture at **Carnegie-Mellon University** for the past 11 years, has retired from that position to devote more time to teaching and to his private architectural practice. Until a successor is named, Robert H. Burdett, in his capacity as assistant head of the department, will assume administrative responsibility . . . The Board of Regents of the **University of Washington** (Seattle) has established a new Department of Building Construction in the College of Architecture and Urban Planning. The department will offer a Bachelor of Science degree in building construction, and will be headed by acting chairman George R. Hutchinson, as assistant professor . . . Dr. Walter H. Walters has been named acting dean of the College of Arts and Architecture at the **Pennsylvania State University**. Walters, who has served as associate dean since 1966 succeeds Dr. Jules Heller. Heller has accepted an appointment as dean of the faculty of fine arts at **York University** in Toronto, Canada . . . **Auburn University** this fall will offer the State of Alabama's first master's degree in city and re-

gional planning. The new master's program will operate under a committee composed of faculty members from the fields of architecture, agricultural land use, economics, engineering, geography, political science, public administration, and sociology. Students with undergraduate degrees in any of these fields will be generally qualified to enter the new planning program . . . **Washington University** (St. Louis), through its Schools of Architecture and Continuing Education, will present the first in a series of architectural design seminars October 4. The seminar, open for architects and school administrators, will deal with the design of school buildings. Participants in the discussion will include Dolf Schnebli, visiting professor from Switzerland, Gyo Obata of Hellmuth, Obata & Kassabaum, and Robert E. Entzeroth of Smith & Entzeroth . . . Andrew Addkison, interior designer with offices in Chicago and the San Francisco Bay area, has been appointed to the faculty of the **California College of Arts and Crafts** . . . Recently appointed assistant dean and associate professor

continued on page 82

GENERAL MOTORS BUILDING OPENS ON CENTRAL PARK



Photo: Forrest Wilson

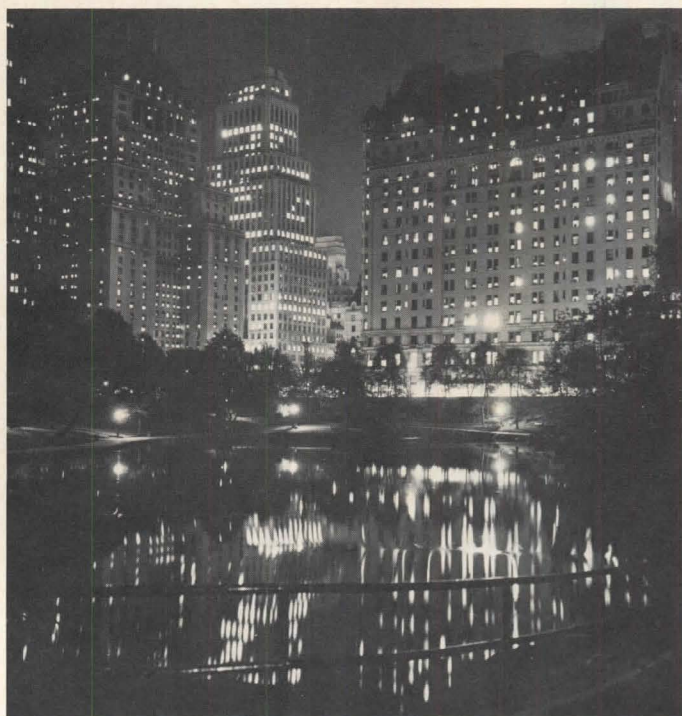


Photo: Peter Fink

Then.

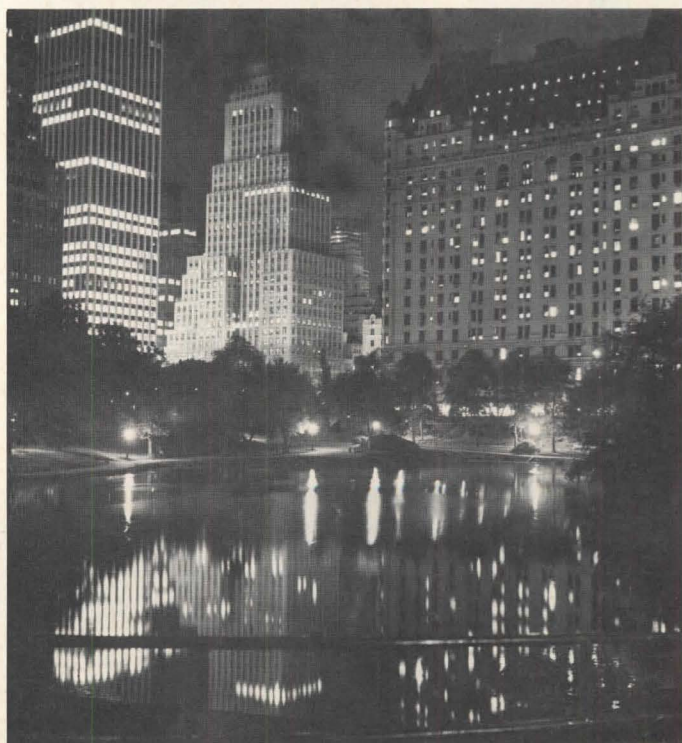
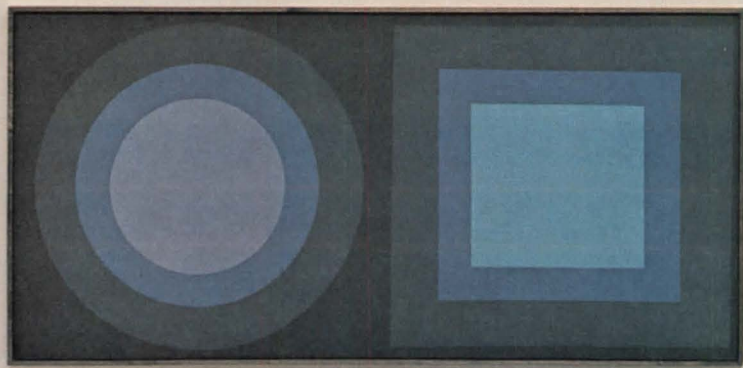


Photo: Peter Fink

Now: Wide-angle lens can only catch about 35 stories of the 48-story structure, easily identifiable at the left.



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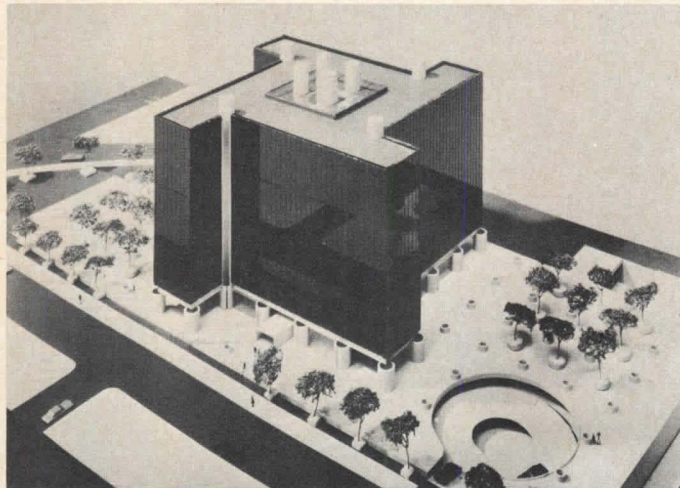
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of city planning in the **Yale School of Art and Architecture** is **Louis S. DeLuca** . . .

. . . **Columbia University** has appointed **John D. Telfer** an assistant vice-president for physical planning . . . Campus planning and architecture at **Western Washington State College**, Bellingham, Wash., will be administered by **Rob-**

ert E. Aegerter, newly appointed college architect . . . **Clifton C. Miller** has been named campus architect in charge of the **University of California, Irvine**, department of physical planning and constructions . . . **Donn Emmons** has been appointed consulting architect to the **Berkeley Campus**.

BLUE CROSS BENEATH LOOKOUT MOUNTAIN



CHATTANOOGA, TENN. The Blue Cross building in Chattanooga, designed by **Edwards & Portman** of Atlanta, will be as light and open as a cheerleader after a winning game. Arranged around a skylighted open court that penetrates 10 stories, the building will be of structural concrete and bronze, insulating mirror glass. As in the Regency Hyatt house in Atlanta, designed by the same firm, four glass-enclosed elevators will ride up

through the inner court to cross-bridge lobbies at each office floor, giving access to each side of the structure.

Four large cylindrical tubes at the structure's intersecting corners will carry the mechanical air distribution system to all floors from central mechanical located in the garage level. In all, there will be about 180,000 sq ft, and on the top floor will be a lounge and cafeteria, meeting rooms, and executive offices.

PERSONALITIES

Former AIA president **Charles M. Nes, Jr.**, has accepted reappointment to the Research and Advisory Council of the Postmaster General of the U.S. **Leland King**, whose architectural firm is in Atherton, Calif., has also been reappointed to the council . . . **Alan Taniguchi**, director of the University of Texas School of Architecture has been appointed to a four-year term as a representative of the Association of Collegiate Schools of Architecture to the National Architectural Accrediting Board, effective immediately . . . The national AIA headquarters has named **Glenn Allen White**, a second-

year law student at George Washington University, to the new position of Legislative Assistant and Editor of *The AIA Governmental Affairs Review* **John N. Richards**, senior partner in the Toledo, Ohio, firm of Richards, Bauer & Moorhead, has been elected Chancellor of the College of Fellows of the AIA . . . Among the eight citizen members appointed recently by Secretary of the Interior **Stewart L. Udall** to the Board of the National Park Foundation is **Mrs. Nathaniel A. Owings**, whose husband is a principal in the firm of Skidmore, Owings & Merrill . . . The National Association of Archi-

tectural Metal Manufacturers has elected four new members to its board of directors. They are **James M. Vann**, **William S. Birney**, **R. Donald Brown**, and **Roy W. Anderson** . . . **Carl R. Terzian**, Director of Public Affairs for Charles Luckman Associates, is slated to receive an appointment to the Order of St. John from Her Majesty, the Queen of England. Investiture ceremonies will be held in October in the Cathedral of St. John the Divine, New York City . . . For the coming year, **William R. Trautman** will serve as president of the New York State Society of Professional Engineers.

Hayden P. Mims, recently retired colonel in the Air Force, has accepted an appointment as Executive Director of the National Council of Architectural Registration Boards. He succeeds **James W. Rich**, who now becomes Director of

Professional Affairs for the council . . . **Casey H. Mann, II**, has been appointed assistant director in the Urban Design Center, operated by Urban America, Inc. Mann, a specialist in computer technology and systems analysis and a founder of the Washington, D.C., environmental design firm 2MJQ, will work with inner-city groups engaged in planning and architectural programs and will help formulate youth programs of Urban America. **William H. Dempsey** has been appointed to the position of Director of Development forums at Urban America. He will be the principal staff contact for private firms seeking involvement in urban problems . . . The Prestressed Concrete Institute has named **Robert C. Eaman** its Publications Director. **W. Burr Bennett, Jr.**, has been appointed Executive Director for the PCI.

NORSE ART CENTER OPENS

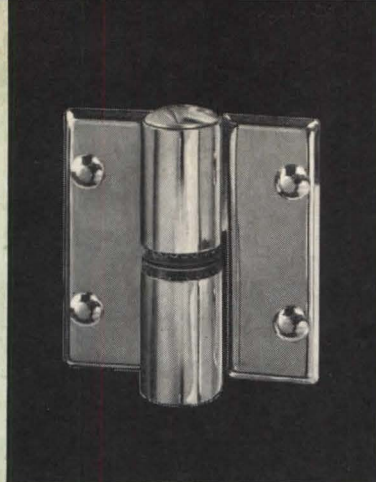
HOVIKODDEN, BAERUM, NORWAY. The Sonja Henie-Niels Onstad Art Center opened here in late August with a two-day round of parties. Norwegian royalty was there, Hollywood society was there, and, of course, so was Miss Henie, Olympic skating star turned art collector. With her husband, ship-owner **Niels Onstad**, she has given 250 paintings to Norway as well as financing the \$7 million museum to house them. Constructed on a 35-acre site on the Oslo fjord some 7 miles from Oslo, the museum is the first structure in what will become a culture and recreation center. The paintings and the museum are thought to be the largest private gift ever made

to the government.

The museum's design—separate, prism-shaped galleries fanned around a central entrance lobby—is the work of two young Norwegian architects, **Jon Eikvar** and **Erik Engebretsen** (see p. 44, DECEMBER 1965 P/A), who were among five finalists in a national competition that drew 90 entries. And if their final design is slightly reminiscent of **Aalvar Aalto's** stepped, fanned lecture halls in his Wolfsburg Cultural Center, or **Mario Ciampi's** Arts Center at Berkeley, which is still under construction, it is only a reaffirmation that the form works well. Each gallery in the museum is self-contained, lighted from



Photos: Eikvar Og Engebretsen



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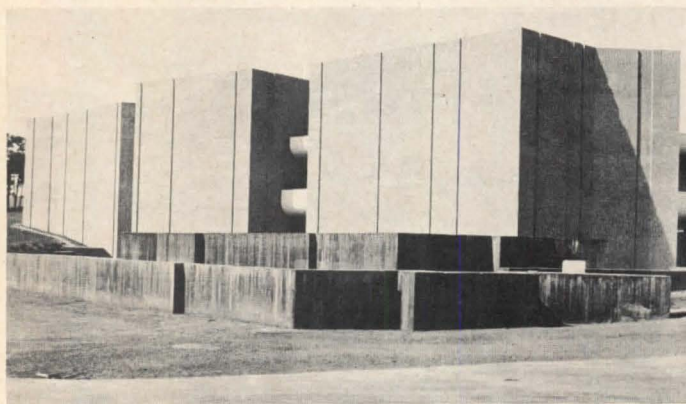
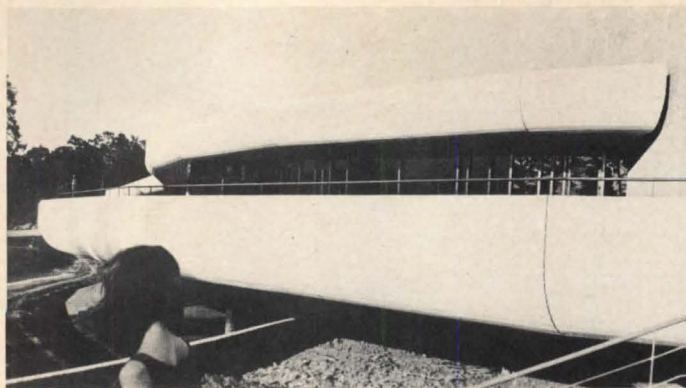


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above, both naturally and artificially through a light-diffusing grid of fiber-glass polyester. These galleries present chisled concrete facades to the steep south side of the site. Inside, paintings will hang on walls covered with white painted canvas. To the north,

the ancillary functions — restaurant, lecture hall, library, offices, staff apartments, etc. — are arranged in a long, low sweeping wing reminiscent of an ark. Just off the entrance lobby, next to the kitchen, is a room for Miss Henie's trophies.

THE BUILDING IS (FOR) ART

LONDON, ENGLAND. A complicated mass of Brutalist forms, London's Hayward Art Gallery is the third major structure in the South Banks Art Center, which has been rising piece by piece along the Thames since 1962. The Hayward is also the only building in the center to cater to patrons of the visual arts; Royal

Festival Hall and the Queen Elizabeth Hall and Purcell Room, opened in 1965 and 1967 respectively, are devoted primarily to performances of orchestral and chamber music; later additions will house the National Theater and National Opera House.

The opening of the Hayward this summer with an ex-

hibition of Matisse touched off a critical field day for reviewers of art and architecture as well as for connoisseurs of Impressionism. Critics who hold that the business of museum architecture is to remain anonymous found the architecture of the Hayward, both inside and outside, far too obtrusive to make a satisfactory gallery. Others were disturbed by the contrast between the airy, space-demanding paintings of Matisse and the bold, heavy forms of the building's display areas. But, according to some observers, the public does not seem to object to architectural intrusions such as prominent stripes of recessed ceiling lights, exposed air-conditioning ducts, massive staircases, and numerous curves and bulges that depart from the rectangular form of most recent museum design.

While critics saw what was happening inside the building as a sort of primal clash between art and architecture (one said the opening exhibit was a horse race, and that,

from where he sat, it looked as though the gallery's architect was a nose in front of Henri Matisse) the public found more to criticize about the building's exterior design. With its powerful masses and confusing number of ramps and stairs, the Hayward simply does not fit most people's idea of a building, much less a museum.

Like the Queen Elizabeth Hall and Purcell Room to the north (see pp. 132-135, DECEMBER 1967 P/A), the Hayward is of gray board-formed concrete, with bronze-anodized, rough-cast aluminum framing for window and doors. Like both its predecessors in the South Banks Center, it was designed by the architects of the Greater London Council, headed by Hubert Bennett. As P/A noted last December, the group's later designs are a far cry from the dull heaviness of their Royal Festival Hall, and one can only await the completion of the theater and opera for further developments in Brutalism on the Thames.

HUD PLANTS A SWINGING X

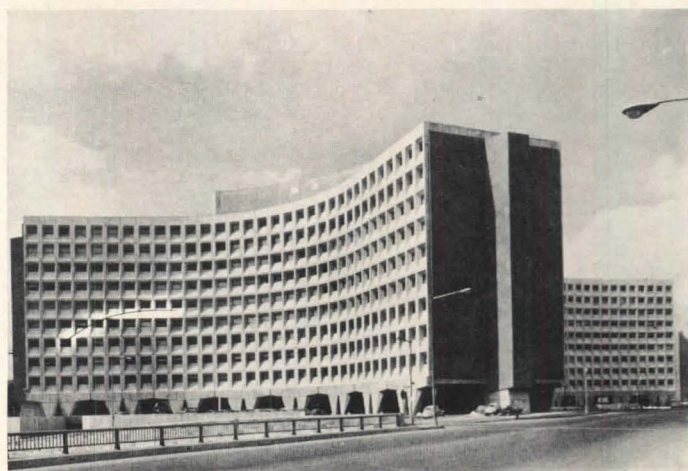


Photo: Norman McGrath

WASHINGTON, D.C. When Marcel Breuer's \$26-million building for the Department of Housing and Urban Development was dedicated last month, 5000 Federal employees were already at work in it. Associated with Breuer on the design were Nolen-Swinburne & Associates of Philadelphia.

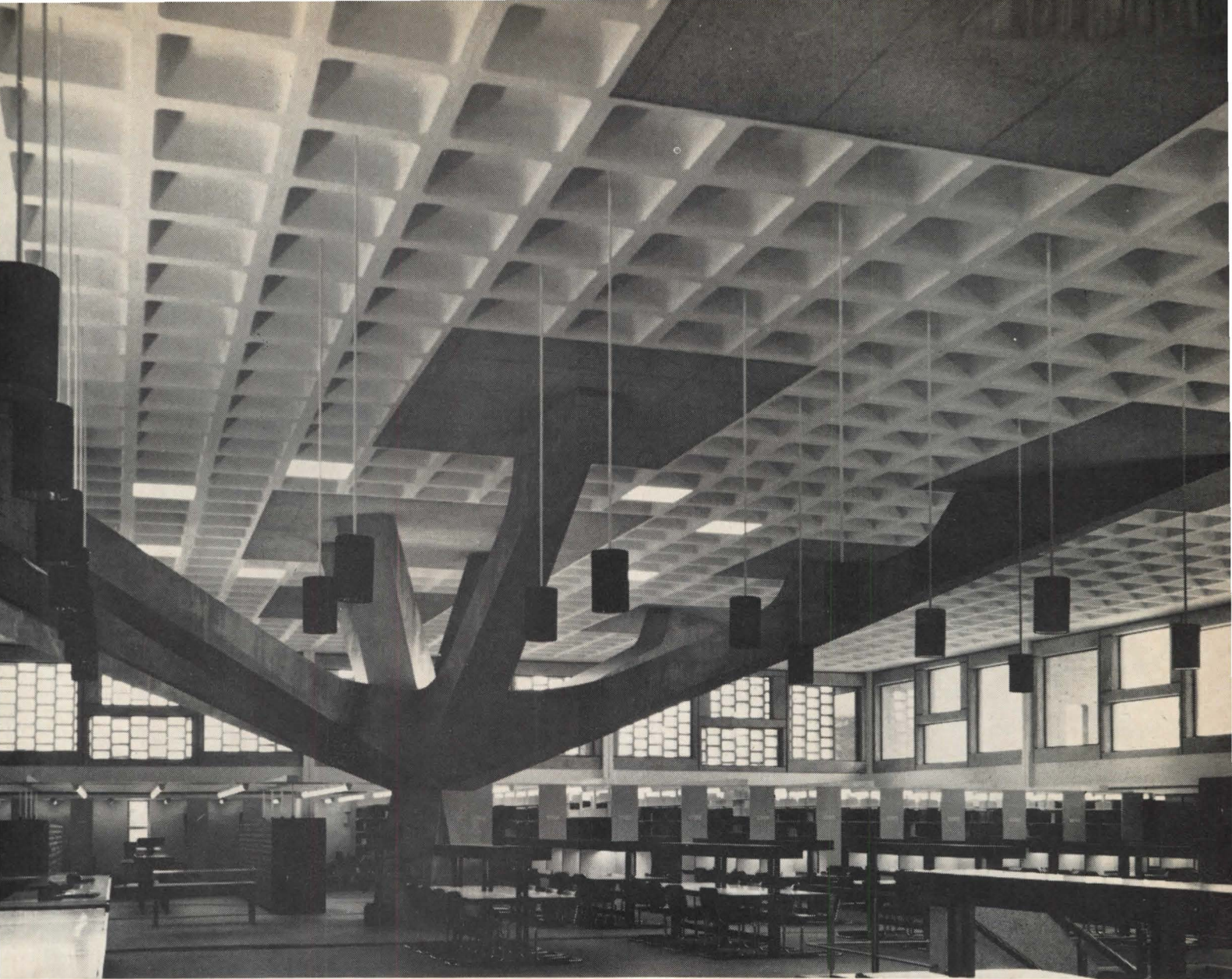
The 10-story structure is distinctive for its shape, which resembles a curved X. Rather than create a "canyon" with a building that belied up to the street, the architects decided to curve the walls on four sides, creating open plazas and parking space.

It is also distinctive for its exposed aggregate precast window panels, each approximately 12' high, 10' wide, and 3' deep, which slope sharply inward behind the mullions; each weighs 12 tons. The window walls are supported on cast-in-place concrete "trees" that raise the entire building 19' above grade, leaving open promenade space beneath it.

As it should, HUD is offering a welcome example of an office building that departs from the massive, oppressive Federal Government stereotype.



Photo: Pictorial Parade



St. John's University Library, Collegeville, Minnesota
Marcel Breuer & Associates, architects
Johnston-Sahlman Company, structural engineers
Gunnar I. Johnson & Son, Inc., contractors
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This is no less true with standard steeldome modules for monolithic concrete joist construction. You can use them aesthetically in sculptured waffle ceilings. You can create with a sure hand, relying on Ceco's 56 years of experience in forming floor systems with removable steel-forms. This means you work and shape fluidly, molding versatile monolithic structures of

strength and rigidity. Ceco's experienced crews and project supervisors are adept at carrying out your design and coordinating with other trades. Your project starts fast, speeds ahead. Forms, rebars, concrete materials are close at hand.

Another thing: monolithic concrete floor forming is economical, often \$1.00/sq. ft. less than other types. Ceco is big in experience as a nationwide specialist in floor forming, known for dependability and quality. So as you plan your next project, call on Ceco experience. The Ceco Corporation, general offices: 5601 West 26th Street, Chicago, Ill. 60650.

On Readers' Service Card, Circle No. 341

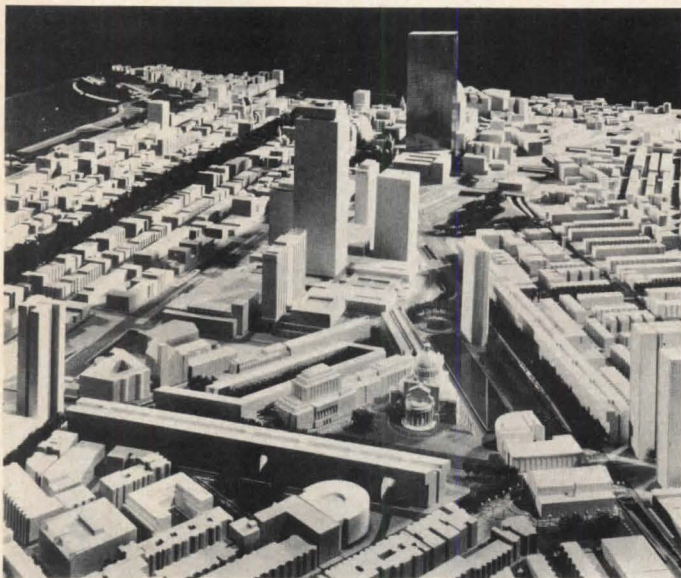


COMPETITIONS

New categories have been added this year to the **Design In Steel Awards Program**, sponsored by the American Iron and Steel Institute. Awards will be made for excellence of design in consumer products; industrial products; commercial equipment; transportation; residential construction; low-rise commercial, industrial, or institutional construction; public works construction; and art in steel. The program is open to individuals or teams working

anywhere in North America. Entries close at midnight, January 17, 1969. For details, write to: National Design Center, 415 E. 53rd St., New York, N.Y. . . . The Department of Housing and Community Development, Baltimore, Md., is offering a site for a new office building in **Charles Center**. The developer will be selected on the basis of an architectural design competition. Deadline for submission of entries is November 18. Write for details to: Inner Harbor Management, Inc., 1 Charles Center, Baltimore, Md.

SCHOOL REFLECTS ON POOL

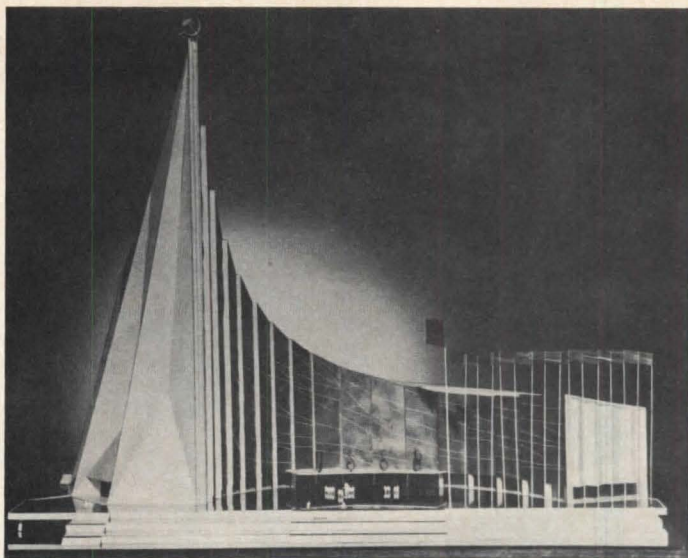


BOSTON, MASS. I. M. Pei & Associates have added a Sunday school building to their design of the Church Center for the First Church of Christ, Scientist, here. The \$26-million complex (see pp. 154-157, JUNE 1966 P/A), now under construction on 30 acres next to the mammoth Prudential Center, will add a note of serenity to the area. Anchored by the original Mother Church, which went up in 1894, the complex will include church office space, expansion space for *The Christian Science Monitor*, exhibit and education areas, and now the Sunday school,

all grouped around a 660' reflecting pool.

Preliminary designs show a two-story building of sandblasted concrete at the head of the reflecting pool, catty-corner from the Mother Church. In its 30,000 sq ft, the Sunday school will have an auditorium capable of seating 1200, including 400 permanent seats in an overhanging balcony. Far from cluttering the site, the school, which presents a curved, stepped-out facade to the pool, adds to its balance. Completion is expected in about three years. Araldo A. Cossutta is partner in charge.

RUSSIA WAVES THE FLAG AT OSAKA



OSAKA, JAPAN Russia plans to spend \$7 million here in constructing its pavilion for Expo 70. Although the cost is relatively low, the pavilion will be the largest non-Japanese structure at the fair. It curves around a 330'-high pole; the entire structure is meant to emulate an unfurling Russian

flag. To help the image, the front of the building will be painted red, the back, white. A truss dome of H-beams and steel pipes will help keep the interior space open for exhibits. Just what will go inside is not yet certain. But there will be an 800-seat theater and a 600-seat auditorium.

FROM ARMORY TO SCHOOLHOUSE



NEW YORK, N.Y. In 1895, Squadron A of the New York National Guard moved into a new Armory in Manhattan between 94th and 95th Streets and Park and Madison Avenues. It was a handsome, fortress-like structure, and, like the other Manhattan armories, it became a haven for New Yorkers in times of emergency. It was also the

scene of scrappy weekly indoor polo matches. Last year, it started coming down to make way for a school.

Originally, the site was slated for use by both a school and some low- or middle-income housing. Since it was thought, however, that zoning in the area would not permit enough housing to pay for itself, the Board of Educa-

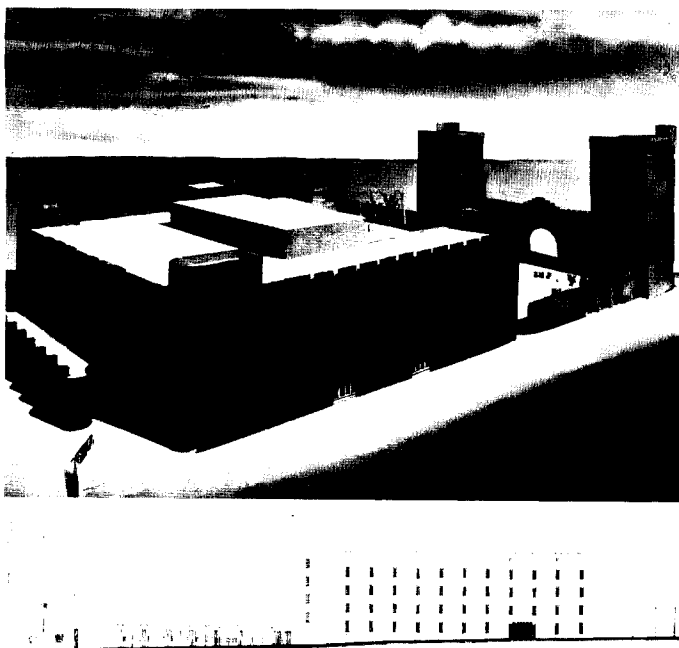


This ceiling stays up where others won't.

It's called Ceramaguard.™ It'll stay up despite conditions usually found in factories, processing plants, shops. Despite constant moisture, extreme heat or cold, corrosive atmosphere, and regular cleaning. Because it's the first acoustical lay-in ceiling of a special ceramic material. But there's more to Ceramaguard than permanence. Because it's there, heating and lighting are more efficient. And everything under it is kept cleaner. Because it's there, people have a place to work that's brighter, quieter, more pleasant. Ceramaguard and other ceiling innovations are described in our folio. Please write for a copy. Armstrong, 4210 Watson St., Lancaster, Pa. 17604.

Or on Readers' Service Card circle No. 300.

Armstrong
Ceiling Systems that work



tion was given the site for an intermediate school. Unfortunately, the Armory did not lend itself structurally to transformation into a school, and demolition was well under way before neighborhood protests were heard and the city's Landmarks Preservation Committee moved to preserve the still-standing Madison Avenue front, which includes two formidable four-story towers. At a public hearing, a representative of the New York AIA Chapter's Historic Building Committee singled out the towers, with "their machicolated parapets, their rounded turrets and corbelled galleries." "We who have studied and practiced architecture," he went on, "find of particular aesthetic merit their color, their massing, their interesting silhouettes, their detail, and their beautifully executed brickwork."

Thus, in late 1966, the commission made the Madison Avenue front an official landmark, and Morris Ketchum, Jr. & Associates took on the job of integrating it into their design for a school. Ketchum's school will occupy half of the 2-acre site. Behind the school — between it and the Madison Avenue wall — will be a playground for the school's 1800 pupils, and Ketchum has suggested to the city that the space be used for summertime and nighttime community programs — plays, perhaps, or concerts. Chairs and other equipment for these programs, Ketchum believes, could be stored in the towers. The city has agreed

in principle to this suggestion, and, if it agrees in fact, the courtyard could draw an intriguing mixture of people. Located in the midst of the opulence of Park Avenue just three blocks from the austerity of the ghetto, where the Penn Central tracks emerge from beneath Park Avenue to run in an open cut through Harlem, the community facility would provide an outdoor meeting place in an area that does not have one.

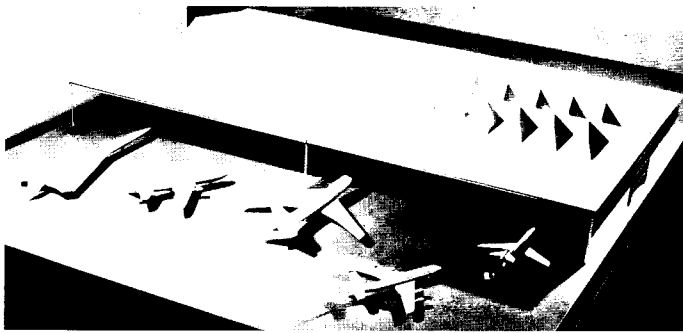
The school's façade will blend with the military feeling of the towers on Madison Avenue. Ketchum's design shows curved stair towers at the school's corners, for instance, echoing the soaring curves of the armory towers. The architect plans to use red brick, giving the façade a varied pattern, at least in places, such as beneath windows, by laying some brick vertically, some horizontally.

Inside, the four-story school building is really three schools in one, each accommodating 600 students. Using a concept practiced in more rural areas, where separate divisions of a single school are grouped around a central courtyard, Ketchum has stacked his schools above ground and basement floors of common facilities. One floor is given to each school, and under a grant from the Ford Foundation the city is experimenting with the use of open and variable classroom spaces. Plans call for each upper floor to contain a large central space surrounded by corridors. These spaces will

be divided in three sections: a large central open space, and, at either end of this, an intermediate space that can be divided by means of a folding partition. The central space can be used as a classroom by several classes at the same time, the way the schoolroom was in the old country schools. Or it can be divided

either by movable partitions or by furniture groupings. Evidently, there is some indication that both students and teachers like the open arrangement, with several classes working separately in the same space. And the city hopes it can find out more about why they like it and how it can be used most effectively.

SUPER-BAYS FOR SUPER JETS



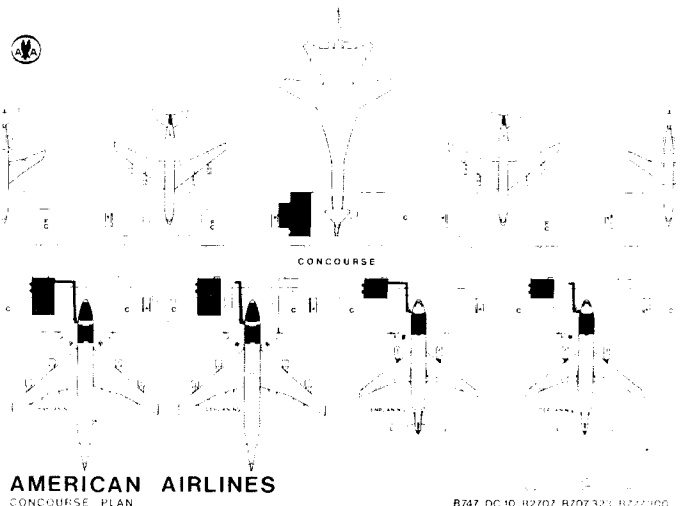
NEW YORK, N.Y. Handling airline traffic in the 1970's will not merely be a problem of too many planes trying to get onto the ground, but also one of planes too big for conventional hangars once they manage to land. American Airlines is one carrier that has given some thought to the latter difficulty, and has consumed a considerable amount of computer time in its attempt to meet the need before a crisis develops.

Recently, American announced development of a modular maintenance hangar that will serve as a prototype for future construction at airports in New York, Boston, Newark, Chicago, Los Angeles, San Francisco, and the planned supersonic airport between Dallas and Fort Worth.

The new "super-bay" han-

gar is a modular structure, each module measuring 550' x 450' with a floor area covering about the same space as seven football fields. The hangar will be the equivalent of five stories high. The roof, constructed of prefabricated elements of sheet steel and cable, eliminates the need for cantilever trusses and roof purlins. It is an integral part of the structure, not just a cover over the building.

Inside the hangar, modular substructures containing the various workshops and equipment necessary for engine maintenance and repair are suspended from the roof to provide a maximum amount of unobstructed floor space. The versatility of the modular structure will allow the hangar to serve any of the planes in the carrier's fleet, including its two subsonic jumbo jets —



AMERICAN AIRLINES
CONCOURSE PLAN

B747 DC 10 B7707 B707 323 B727 300

the 747 and DC-10 — and the supersonic transports soon to come. Workers, in one hangar, will be capable of performing heavy and light maintenance work as well as complete overhauls on any combination of at least six planes simultaneously.

Cost of the super-bay hangars, fully equipped, is expected to range from \$6 million to \$10 million, depending on location and the number of modules.

WASHINGTON/ FINANCIAL NEWS

by E. E. HALMOS JR.

As an Era Ends — With political attention shifted to the national hustings, Washington dropped into its every-four-years legislative doldrums very quickly, even though Congress reluctantly returned to work in September to clean up a few remaining matters.

On the executive level, there were still some stirrings:

- There was still no firm guide to where and how much real spending cuts would be initiated, to comply with Presidential economy pledges.

- Many long-time appointive officials were leaving their posts for steadier jobs elsewhere.

- Another round of planning was under way, though the Administration (and civil rights groups) objected vehemently, under Congressional orders to get Washington's highway program moving.

- The Department of Housing and Urban Development, virtually the only department to get a go-ahead for a really big new program, was pushing its planning to implement the newly authorized housing program (see p. 58, Sept. 1968 P/A), hoping to have planning completed before a new administration takes over.

- There was still a bill in Congress (though it seemed to have no chance for passage) to change the title of "Architect of the Capitol" to "Superintendent of the Capitol (HR 19127) Buildings and Grounds," thus ending con-

fusion that has been compounded by the present title, which is, of course, a total misnomer.

The D.C. Architectural Scene — On a local level, however, there were matters of interest:

A series of meetings were scheduled, into November, to discuss subjects of interest to architects and the construction industry.

These included three days of meetings, in late September, sponsored by the National Bureau of Standards, on "Man and His Shelter" (a discussion of the performance of buildings); a session October 14-16 of the International Council for Building Research, Studies and Documentation (CIB); a two-day seminar on winter construction, set by the Associated General Contractors for November 7-8; and a two-day meeting, October 30-31, under the aegis of the National Academy of Engineering, to consider ways in which engineering and architecture can help solve problems of medical research and improve delivery of medical services to patients.

On an even more local level, the battle over the shape of a "new town" within Washington, which was proposed months ago by President Johnson for the now-abandoned 335-acre site of the National Training School for Boys, continued merrily.

In mid-August, Benjamin J. Logue, special consultant to the National Capital Planning Commission, presented a plan for the \$175-million development that called for housing for 15,000 persons on the site, an internal rail system of transportation, schools to be separate from the city's system. Key to the plan is a proposal that would set aside only about 20% of the housing for low-income families, in the hope of attracting enough white residents to achieve racial balance (not an easy thing in Washington, which is now nearly 70% Negro).

This program brought immediate protests from a "Citizens Advisory Group for Fort Lincoln," which protested that local citizens had not been adequately consulted, that not enough low-income housing is provided,

and other things. The group said it would instruct attorneys to file suit to stop the whole project. As of the end of August, however, no such action had been taken.

Also on the local level, New York architect I.M. Pei, with funds of \$20 million provided by the Mellon family, took on the difficult task of designing a new addition to the "Mellon Gallery" (the National Gallery of Art), facing the Mall between the Capitol and the Washington Monument. Attempts to blend any addition with the Greek-style temple completed in 1941 by John Russell Pope are guaranteed to raise all sorts of criticism before it is done.

Race and Architecture — The AIA plunged into the problem of racial equality with a meeting at its Octagon headquarters of a five-member "Inter-racial Task Force" to study means of bringing more Negroes into architecture. Under the chairmanship of new AIA President George E. Kassabaum, the group discussed current status and opportunities for Negroes in architecture, education, recruitment, and other aspects of the problem. Their hope is to come up with a program that can be adopted by individual chapters.

The construction industry was also watching with interest as the Labor Department's Office of Federal Contract Compliance finally released some \$6,500,000 in Federal funds to permit resumption of work on International House, a Philadelphia project, after the contractor, McCloskey & Co., agreed that it would fill at least 108 of its 295 jobs with minority-group workers; give 17 additional minority people some of the 74 "critical trade" jobs on the work. OFCC has vehemently argued that it is not "playing a numbers game" with minority-group hirings, but it also started to release funds for more than \$80 million in projects in the Philadelphia area, on the promise that, of some 400 jobs to be filled, at least 100 will go to nonwhites.

Metric System Moves a Mile Closer — There was a final note on the news from Washington:

To nearly everyone's sur-

prise, Congress passed, and the President signed, a bill (PL 90-472) that directs the Commerce Department to look into the metric system.

Nothing much is expected of the study for a while; Congress didn't appropriate any money for the study, told Commerce to take funds from existing appropriations.

The bill is a very mild sop to ardent metric system advocates: It directs Commerce to investigate the impact on the U.S. economy of increasing world use of the metric system; look into the desirability of increasing its use in the U.S.; come up with some cost figures and plans for increasing use of the system in this country. Three years are allowed for completion of the task, which will probably be carried out by the National Bureau of Standards.

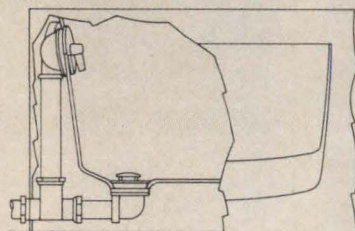
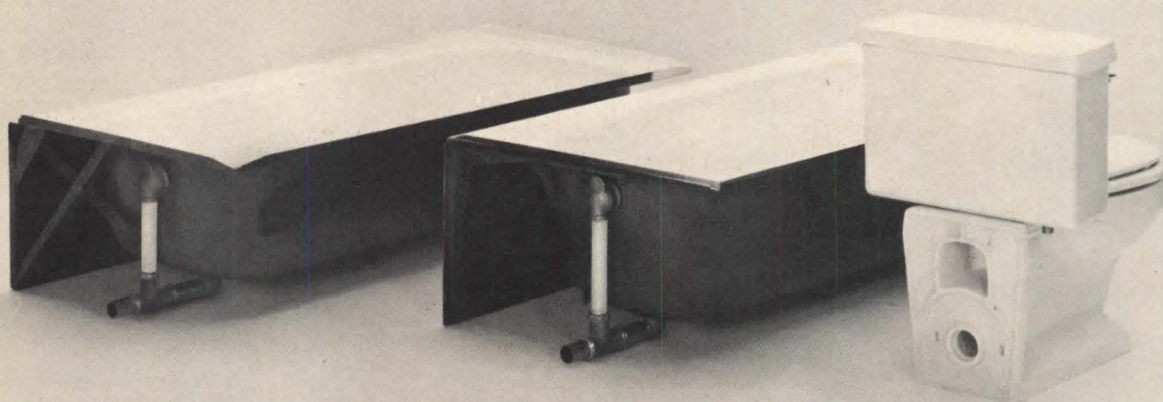
Financial — Over-all construction dollar-volume continued a slow decline through June, though it stayed above figures for a year ago, according to the Census Bureau. Volume in June was at an adjusted annual rate of \$81,300,000,000, compared to \$83,600,000,000 in May.

- Housing construction, however, took a sudden jump upward, moving to an adjusted annual rate of 1,539,000 units in July, up from 1,349,000 in June, 1,313,000 in May. Housing experts were inclined to credit the new Federal surtax bill for the improvement, pointing out that, just prior to passage of the legislation, "points" charged on FHA mortgages averaged about 7, nationwide; within about six weeks, they had dropped to about 3.

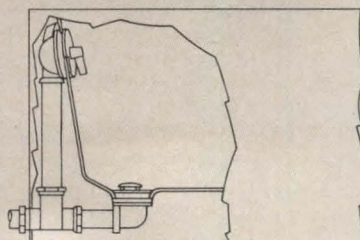
- Homeowners were spending a little less on maintenance and repair last year than in 1966 (about \$4,400,000,000 compared to \$4,800,000,000), but more on improvements to their properties (\$7,100,000,000 as against \$6,900,000,000), according to Government surveys. Biggest spenders: owners of single-family homes.

- Construction machinery manufacturers shipped slightly less equipment in the first quarter of 1968 than they did a year ago. Total value of shipments in 1968 was set at \$303,300,000, compared to \$308,800,000 in 1967.

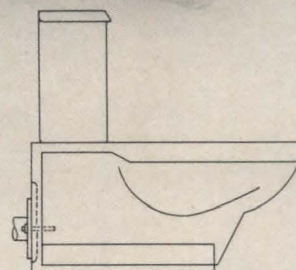
Rough-in through the wall.



The Sarasota tub, formed steel with acid-resisting enamel, features a raised outlet that permits waste line to be installed through the wall.



The new Nile tub, cast iron with acid-resisting enamel, has a raised outlet that permits installation of a horizontal waste drain from bath to wall.



The Orlando floor-mounted, back-outlet closet fits flush with floor and wall.

Eljer shows the way.

With the addition of the new Nile tub, Eljer now offers you the most complete line of fixtures that rough-in through the wall. Only Eljer has these bathtubs of both cast iron and formed steel.

And there's more. More freedom of design for you and more savings for your client when you specify these Eljer fixtures for slab or reinforced concrete construction. Since all of the plumbing goes into the wall, there's no wasted area between floors.

For more about these compatible-with-slab-construction fixtures, call your Eljer representative. Or write Eljer, Dept. PA8, P.O. Box 836, Pittsburgh, Pa. 15230.



ELJER
SINCE 1904 FINE PLUMBING FIXTURES

Eljer Plumbingware Division / Wallace-Murray Corporation

PRODUCTS

ACOUSTICS

Noiseless panels. "Spanish Stucco" acoustical ceiling panels may be supported by any standard grid system; existing ceilings need not be leveled. Primarily designed for residential or light commercial installations, the acoustically engineered 2' x 4' panels are said to absorb 60% of the noise striking their surface, because of a textured vinyl facing and Fiberglas backing. Complementary lighting fixtures available; also adaptable vinyl clad wood grain beams. Owens-Corning Fiberglas Corp., Toledo, Ohio 43601.

Circle 100, Readers' Service Card

CONSTRUCTION



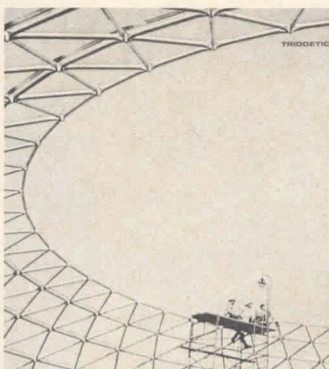
Structural glass. Krinklglas is described by its manufacturer as an "acrylic modified polyester glass fiber-reinforced structural plastic." Even at less than half the weight of ordinary glass, it is said to be six times as strong, and offers new freedom in design and construction wherever glass is required. Its texture is multifaceted, and it may be transparent, translucent, or opaque. Some uses listed are windows, partitions, skylights, and in luminous ceilings, awnings, and canopy roofs. It is said to be easily fireproofed, and may be cut, drilled or shaped with regular carpentry tools. Krinklglas is processed in over 54 colors and 21 multi-hued combinations. Dimensional Plastics Corp., 1065 E. 26th St., Hialeah, Fla. 33013.

Circle 101, Readers' Service Card

Surface variations on curtain wall components. In addition to its original stainless steel construction, the Ultimet framing system is now available in COR-TEN steel, and

color-coated galvanized steel. These framing components are said to be structurally efficient: installed simply by interlocking the members in place, thus eliminating the need for exposed fasteners. The fluorocarbon coatings are claimed to offer more surface variety and protection. U.S. Steel Corp., 525 William Penn Pl. Pa., 15230.

Circle 102, Readers' Service Card



Frame forming. Forms that can support themselves are said to be made possible by this Tridetic system, composed of a web of tubes and hubs. The system claims to allow more structural freedom in dome and vault design. Butler Manufacturing Co., 7400 E. 13th St., Kansas City, Mo. 64126.

Circle 103, Readers' Service Card

DOORS/WINDOWS

Shedding some light. Accord-A-Pleat window coverings provide flexible light control, since they are not permanently affixed to top of window; side channel guides permit adjustment from the top down and from the bottom up. Made of dacron, they come in a host of colors. International Building Products Inc., 8043 Lyndon Ave., Detroit, Mich. 48238.

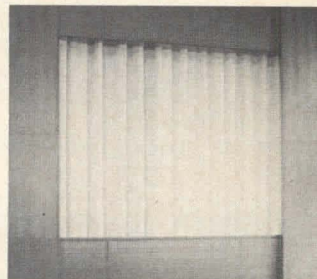
Circle 104, Readers' Service Card

Replacement window. Designed to solve the replacement problems of rehabilitation contractors, the manufacturer created an aluminum window that may be factory sized to fit any opening, within 1/4". The window is said to be easily installed; balance system allows free sash movement; a thermal setting acrylic finish eliminates

maintenance. Air Master Corp., 8501 Hagerman St., Philadelphia, Pa. 19136.

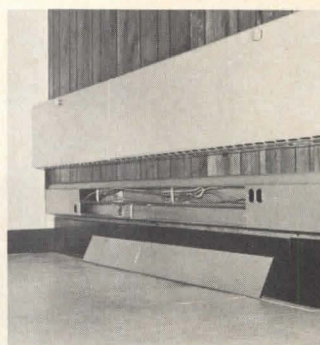
Circle 105, Readers' Service Card

ELECTRICAL EQUIPMENT



Window movements. James Fulton designed this series of kinetic window-coverings; the mechanized Visu-Walls operate electrically to create patterns from moving opaque and transparent panels. In one arrangement, called Color Shutters, the overlapping panels act in the same way as a camera lens, moving toward the center from top, bottom, and both sides. The opening at the center admits light. Attached to a photoelectric cell, the systems could automatically adjust the window coverings to changes in daylight. Owens-Corning Fiberglas, Home and Fashion Bureau, Toledo, Ohio 43601.

Circle 106, Readers' Service Card



Wiring accessibility. "Twin-duct" perimeter wiring raceways are almost flush with the wall, eliminate the cost of wall-concealed construction, and feature two internal divisions for high- and low-potential wiring. Twin-duct uses a metal snap-on cover. H.K. Porter Co., Inc., Porter Bldg., Pittsburgh, Pa. 15219.

Circle 107, Readers' Service Card

FINISHES PROTECTORS

Thermoplastic glazing. Breakage-resistance, transparency, and rigidity are only a few

of the qualities attributed to LEXAN, a polycarbonate resin. It is said to surpass all other engineering thermoplastics in impact strength, heat resistance under load, dimensional stability, low temperature strength, and versatility of fabrication. Although approximately four times as expensive as glass, LEXAN is said to pay for itself in replacement savings, especially in school, industrial, or high vandalism rate areas. It may be easily formed into complex shapes by standard thermo-forming processes. Various grades, colors, and faces are available. General Electric, Plastics Dept., One Plastics Ave., Pittsfield, Mass. 01201.

Circle 108, Readers' Service Card

Exposed steel dons a coating.

Designed specifically for steel or similar metallic surfaces — either interior or exterior — this chemical-resistant specialty coating, "Nycocon," has an extremely hard, durable, but flexible surface that is said to neither craze nor chip. "Orange peel" surface texture diffuses reflected light. Coating will not support combustion. May be applied over masonry backings. Desco International Association, P.O. Box 74, Buffalo, N.Y.

Circle 109, Readers' Service Card

FLOORING

Wood-plastic composite floor.

Gammapar parquet flooring is said to be the first wood floor product able to outwear epoxy terazzo and compete with heavy-duty plastics in the field. This durability is the result of an irradiation process producing a solid wood-plastic composite. Air is first evacuated from the wood; a liquid monomer is then introduced into the pores. The combination is subjected to intense gamma radiation, thus solidifying the monomer within the cell structure. Gammapar is said not to require surface finishing; it is easily cleaned, and as it wears, its built-in finish remains. The flooring is produced in 8 standard colors of oak and maple; also walnut. Supplementary products such as stair treads, risers, transition strips and moldings are available. Distributed by the Harris Flooring Co., 39 Powerhouse

Rd., Roslyn, N.Y. The American Novawood Corp., 2432 Lakeside Dr., Lynchburg, Va. 24501.

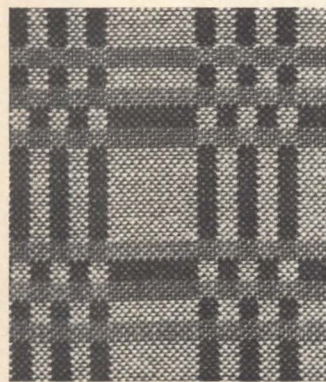
Circle 110, Readers' Service Card

FURNISHINGS



Conference in comfort. Soft and contemporary, the swivel-desk and conference chair may have open or closed arms. A host of fabric finishes are available, as are vinyl and leather coverings. Choice of chrome or bronze plated base. Directional Contract Furniture Corp., 979 Third Ave., New York, N.Y. 10022.

Circle 111, Readers' Service Card



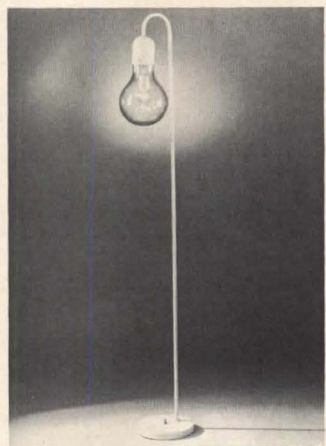
Textured geometry. Parthenon, from Boris Kroll's new Odyssey collection, is a Jacquard weave in a blend of viscose and nylon. Its strength for commercial applications is concealed by a working of 11 colors in reversed values, which update and add warmth to the traditional plaid. Also included in this collection are a host of printed fabrics that simulate, on a larger scale, ancient tie-dye methods. Boris Kroll Fabrics, 979 Third Ave., New York, N.Y. 10022.

Circle 112, Readers' Service Card

Casement fabric. Able to diffuse light and control glare, Trevira is an acrylic fabric said to have neither warp nor weft; it is braided both horizontally and vertically to re-

sist raveling and wrinkling. Weights woven into the fabric are said to eliminate hemming and width-to-width sewing. The physical properties of Trevira are claimed to be similar to those of Acrilan. 118" in width, it is specifically designed for large commercial and public installations. Anton Maix Fabrics Inc., 330 E. 59th St., New York, N.Y. 10022.

Circle 113, Readers' Service Card



Pop lamppost. A super-scaled version of an old street light has a white steel stem, and a fake light bulb serves as a globe to the real bulb inside. Height 75". Raymor Products, 225 Fifth Ave., New York, N.Y. 10010.

Circle 114, Readers' Service Card



Exposed oak series. Featured in a series of lounge seating units and tables, these white oak occasional tables may be grouped or arranged separately. Informality is emphasized by their rugged structural appearance. Harter Corp., 100 Prairie Ave., Sturgis, Mich. 49091.

Circle 115, Readers' Service Card

Blow-up. Fantastic, versatile, inflatable furniture for the experimenters and budget-minded. Available in red, yellow and crystal, the robot chair inflates in twelve minutes and holds 20,000 cu in. of air. Made of sturdy, transparent polyvinyl-chloride, each chair is equipped with a



foot pump. Uses are limited only by the imagination. Selig Mfg. Co., Leominster, Mass.

Circle 116, Readers' Service Card



Bauhaus tradition. Chair from the 'Kill' collection is of custom extruded bar steel with a matte chrome finish. The seat and back are covered with Portuguese aniline glove leather thongs. Harvey Probbler, Inc., 979 Third Ave., New York, N.Y. 10022.

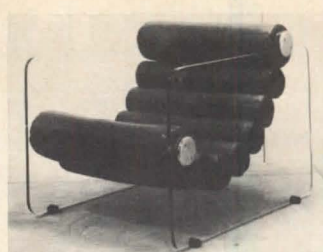
Circle 117, Readers' Service Card

Electronic desk. The "V.I.P." desk contains a console housing a UHF/VHF television receiver, AM/FM radio, clock, lamp, AC outlet, 2-station remote TV camera control, portable AC/DC tape recorder, phone index, digital calendar, memo compartment and a pen-pencil set. Desk di-



mensions: 74" wide, 36" deep. Walnut veneers and a protective plastic surface are standard. Finish for the legs may be black or chrome. Interstate Industries, Inc., 7-103 Merchandise Mart, Chicago, Ill.

Circle 118, Readers' Service Card



Slung seat chair. Conceived by Fabio Lenci, the Hyaline chair appears to float between its glass sides; the cylinder shapes of the seat are upholstered in leather, natural or black, with a polished chrome frame. A steel rod enables adjustment of the seating angle. Chair Dimensions are 28" wide 35½" deep, 27½" high, with seat 16" high. Stendig Inc., 410 E. 62nd St., New York, N.Y. 10021.

Circle 119, Readers' Service Card



Saddle chair. Executed in walnut and leather with strap supported slings for adjustment, the traditional old western elements of this chair are made contemporary by the addition of foam rubber and down filling in its seat, arms and back. Both seat and back have the additional support of a webbed rubber platform. Henry Conversano & Assoc., 577 Fifth St., Oakland, Calif. 94607.

Circle 120, Readers' Service Card



Accessory stool. A choice of heights (17" or 22") adds versatility to stools with pol-

AMWELD'S NEW SUPER CORE DOOR

**MAKES YOU FORGET EVERYTHING YOU
EVER KNEW ABOUT CORE DOORS!**

Amweld announces a major breakthrough in the design and production of a new line of seamless and full-flush core doors for commercial and institutional construction, featuring built-in qualities never before offered as a standard, stocked product.

SUPERIOR CORE - a pre-cured, expanded foam core, rated as self-extinguishing, and resistant to vermin, moisture, mildew and rot; produces a quiet, trouble-free door.

SUPERIOR BONDING - core is immovably bonded to steel face panels with a new structural thermosetting adhesive, guarantees a solid, rigid unit.

SUPERIOR FLATNESS - assured by core construction and projection-welding of flat, cold rolled steel panels; provides a door with a smooth, attractive appearance.

SUPERIOR LOW HEAT TRANSMISSION - core tested to a standard K Factor of .24 at 70 degrees mean temperature.

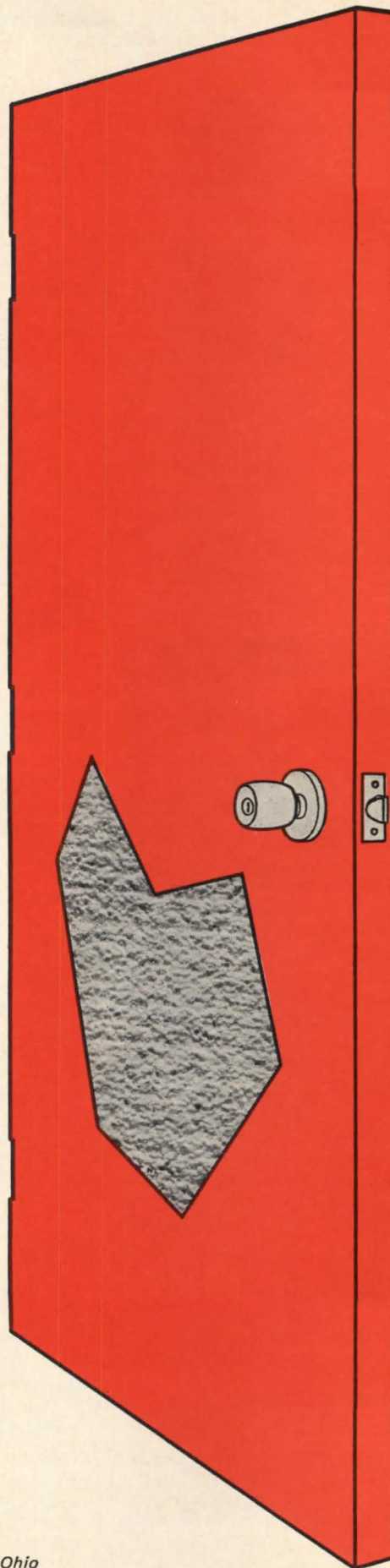
SUPERIOR SOUND RETARDATION - core has a minimum STC rating of 32 decibels.

Then, add enclosed top and bottom—outstanding hardware flexibility—a wide variety of standard sizes—and an excellent selection of standard designs (which can be easily and accurately modified to your specification by your local Amweld distributor).

Amweld's **Super-Core Door** is not just a core door. It's the industry's first **superior** core door. Call your local Amweld distributor for complete details. Or write us direct.

AMWELD® *"clean line"*
METAL DOORS AND FRAMES
387 Plant Street • Niles, Ohio 44446

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



ished chrome base and legs. Multipurpose stool is covered with a Naugahyde-upholstered foam-rubber cushion, in black or white. Habitat Inc., 341 E. 62nd St., New York, N.Y. 10021.

Circle 121, Readers' Service Card

LIGHTING

Midnight sun. Radiant BT & R mercury vapor lamps are said to last up to 24,000 hrs. A special glass envelope makes them weatherproof, while a nickel-plated base resists corrosion. Lamps have a prorated warranty to 9000 hrs. In addition to clear, color improved, and silver white lamps, a deluxe white lamp boasts improved color balance, for wherever natural color rendering is important. Radiant Lamp Corp., Bank St., Hightstown, N.J. 08520.

Circle 122, Readers' Service Card



Total incandescence. The first luminous ceiling system designed specifically for glass diffusers, the Contoura system consists of a suspended T-bar grid that supports a modular subceiling. Each 2' x 2' module has a die cast aluminum frame, which holds a glass light-diffusing panel. Frames are painted in bone-white baked enamel, but may be edge-buffed natural aluminum, electroplated bronze, or painted to match designer's sample. System is said to be compatible with linear air bar, perimeter, and plenum air distribution systems. Integrated Ceilings Inc., 2231 Colby Ave., Los Angeles, Calif. 90064.

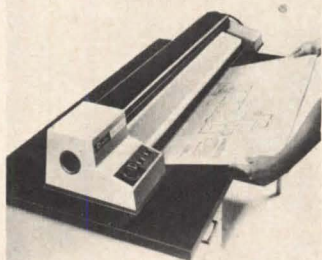
Circle 123, Readers' Service Card

Tying light in knots. There is literally no end to the lighting possibilities offered in Crofon light guides, DuPont-developed plastic fibers that carry light from one point to another, even around corners. The 'fiber optic' principle is that "light travels in a zig-zag path

through the transparent core of each fiber by internal reflections from the sheathing medium." The amount of transmitted light depends upon the intensity of the light source, and the length and number of fibers per bundle (16, 32, 48 or 64). Applications include: sensing and signalling devices, decorations, communications equipment, signs, displays, business machines, games and novelties. Edmund Scientific Co., Edscorp Bldg., Barrington, N.J. 08007.

Circle 124, Readers' Service Card

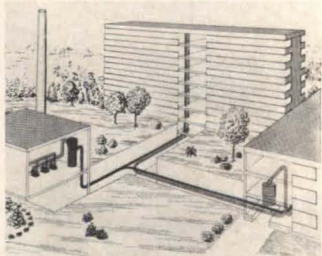
OFFICE EQUIPMENT



A whiteprint blueprint machine. The big difference in the Mark II is said to be its utilization of ammonia vapor rather than liquid ammonia; an optional pump system is further said to nearly eliminate ammonia handling, and the use of vapor instead of liquid prevents spills and damage to other parts of the machine. The manufacturer claims that the Mark II gives 100% faster printing speeds; it will make prints up to 42" wide by any length for 1½¢/sq ft. Rotolite Sales Corp., Stirling, N.J. 07980.

Circle 125, Readers' Service Card

SANITATION PLUMBING



Pneumatic refuse system. Vacuum collection system is said to eliminate hygienic problems; negative air pressure in chutes and tubes keep air from blowing out of disposal hatches, and discharged air is filtered before leaving the system. Refuse placed in

chutes is gravity-carried to a retention section, from which it is sucked horizontally to a central hopper. A dual system—one for soiled linen, the other for refuse—may be installed in hospitals or hotels. Environmental Systems Div., Aerojet General Corp., 9200 E. Flair Dr., El Monte, Calif. 91734.

Circle 126, Readers' Service Card



Flush valves. "Guildmark" colored flush valves for water closets and urinals may be specified in polished or brushed chrome or brass, and come in 5 colors. Watrous Inc., 216 S. Evergreen, Bensenville, Ill. 60106.

Circle 127, Readers' Service Card



Five-in-one bathroom fixture. Moenique incorporates a tub/shower valve, diverter, spout, soap dish, and safety grab bar into a single unit. User selects both water temperature and volume with one control. Manufacturer maintains that the unit reduces installation time and cost. It is finished in duplex nickel chrome plate. Moen, Standard Screw Co./Western Div., 377 Woodland Ave., Elyria, Ohio 44035.

Circle 128, Readers' Service Card

SURFACING

Back to wood. Genuwood is a wood veneer laminate, NEMA tested to be compar-

able to conventional paper laminate, but with a higher abrasion resistance. It is also said to be stain- and heat-resistant. Genuwood offers the warmth of real wood (teak, American walnut, Oriental wood, English oak, Zebra wood), protected by a high pressure Melamine overlay. Suited for furniture, cabinetry, millwork interiors, it is supplied in panels 48" x 96", approx. 1/25" thick. Parkwood Laminates, Inc., 134 Water St., Wakefield, Mass. 01880.

Circle 129, Readers' Service Card



Glass "blackboard." White "Nucite" glassboard is 1/4" thick, shock-resistant glass with a vitreous enamel surface that you can write on with colored chalks or water color markers. Available in seven colors, Nucite chalkboards can double as projection screens. Material is guaranteed to last, without fading, as long as the building. PPG Industries, 1 Gateway Center, Pittsburgh, Pa. 15222.

Circle 130, Readers' Service Card

Minaret patternen tile. A vinyl-asbestos floor tile, called Casablanca, is claimed by the manufacturer to offer many pattern possibilities—its self-contained design, properly installed, is said to have a seamless appearance. The Eastern design influence is also apparent in the six available colors. Tiles are 12" x 12", in standard gage thickness. The polyvinyl tile surface is said to be nonporous, unfilled, and, therefore, grease-resistant. GAF Corp., Floor Products Div., 140 W. 51st St., New York, N.Y. 10020.

Circle 133, Readers' Service Card



The Lodge of the Four Seasons, Lake Ozark, Missouri

A "far out" resort concept calls for LP-gas

Whether it's "far out" in terms of design or actual location, LP-gas is the ideal, all-around, modern fuel.

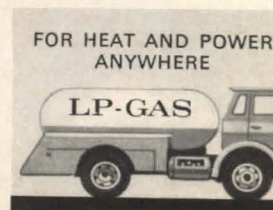
That's because LP-gas goes anywhere—does everything. From heating rooms, water and swimming pools to cooking food, drying clothes...even running generators for electrical power. Call it butane, propane, bottle gas or whatever, LP-gas is the "self-sufficient" fuel. It goes beyond the reach of the natural gas pipeline. And gas makes the big difference. Safe. Clean. Economical.

So, look into LP-gas today. The fuel designed for the "far out" concept. *Of America's great sources of energy, only LP-gas serves you in so many ways.*

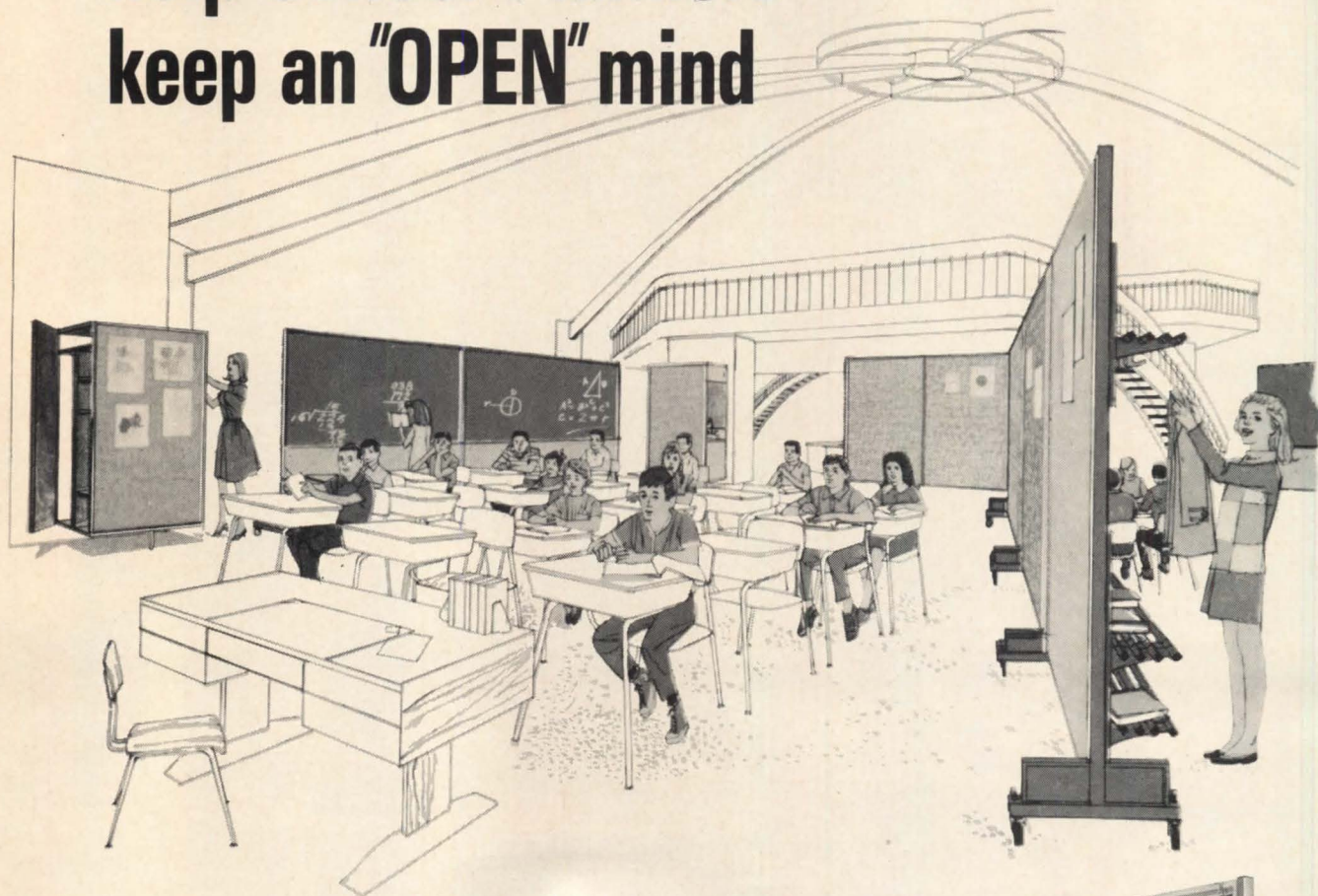
NATIONAL LP-GAS MARKET DEVELOPMENT COUNCIL, Chicago, Illinois 60603

For LP-gas data, see Sweet's Architectural File 29a/Na.

On Readers' Service Card, Circle No. 393

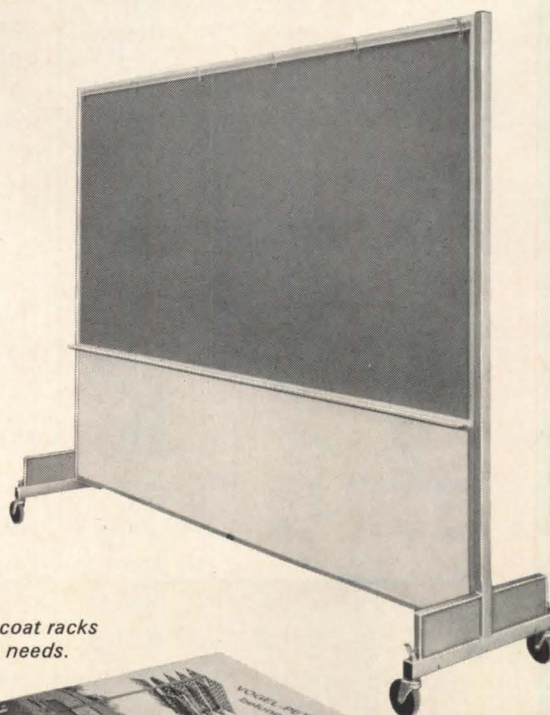


Vogel-Peterson RDF's help School Planners keep an "OPEN" mind



One moment they're handsome wardrobe racks, chalkboards or tackboards . . . a few seconds later they've converted an open plan school room into efficiently arranged classrooms to accommodate any size class or teaching requirement! Trust Vogel-Peterson to bring you the room-making magic of dual purpose RDF (Schoolline Room Divider Wardrobes) . . . 6 or 8 feet long sections that move silently and effortlessly on large rubber-tired casters . . . sturdily made, beautifully detailed and finished in colors that complement the most modern decor. Have them in any combination you wish—tackboard both sides, chalkboard both sides, or tackboard/chalkboard combination or tackboard side can be accessorized with wardrobe racks and book or boot shelves. School planners welcome their versatility . . . teachers like their efficiency and kids can't hurt them. Look into these versatile units—they're designed with you in mind.

The RDF's are just one of a most complete line of coat racks and wardrobes designed to meet today's changing needs. Write for our complete catalog SL-510.

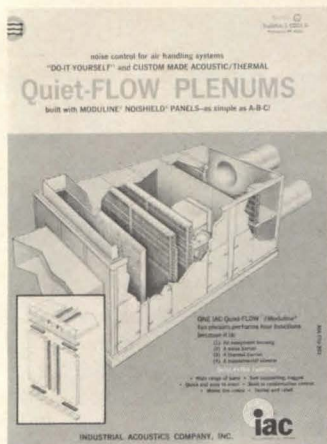


Vogel-Peterson COMPANY
"The Coat Rack People"
ELMHURST, ILLINOIS

© 1968 V. P. Co.

MFRS' DATA

ACOUSTICS



Quiet-flow plenums. Prefabricated acoustical/thermal plenum serves as a housing, noise barrier, and supplemental silencer in all installations. System descriptions contain typical assembly details, dimensions, sections, sound transmission/absorption charts, structural tables, air-flow figures, test ratings, and specs. Bulletin. 14 pages. Industrial Acoustics Co., Inc., 380 Southern Blvd., Bronx, N.Y. 10454.

Circle 200, Readers' Service Card

CONSTRUCTION

Self-supporting beam system. Spanmaster relocatable support beam system for folding partitions is said to adapt to existing spaces or to new construction. Permanent, self-supporting side columns and overhead panel are claimed to offer necessary flexibility to modular buildings. Details, dimensions, sample plan. Brochure. 8 pages. Modernfold, New Castle Products, Inc., Box 310, New Castle, Ind. 47362.

Circle 201, Readers' Service Card

Nosing stairs. Decorative functional stair nosings are produced in three models. "Allite" tread can be filled with eight colors of rubber or two colors of Carborundum; "Alfab" nosings are filled with compressed cork also available in eight colors. These two models, which have been widely used in the British market since 1937, are supplemented by "Alpet," which is filled with wool Wilton carpet available in 13 colors. All frames are of ex-

truded aluminum. Other products available include Carborundum vitreous tiles. 8 pages. AAA Stair Nosing Co., Box 328, Lowell, Mass., 01853.

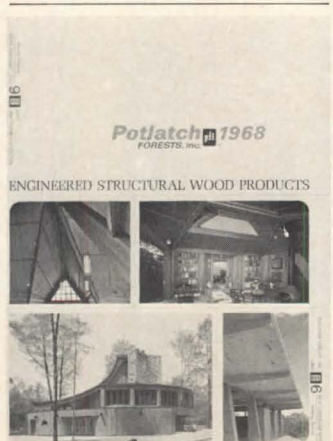
Circle 202, Readers' Service Card

Butyl rubber calking. Salient sealant information for architects' specification. Lists advantages, limitations of butyl rubber calks. Defines physical properties, test methods, and observations. Various joint details. From supplier of Enjay Butyl Rubber to calk manufacturers. File report. 10 pages. Enjay Chemical Co., 60 W. 49th St., New York, N.Y. 10020.

Circle 203, Readers' Service Card

Environmental shielding system. A total environment may be custom created by manufacturer, to shield sensitive work areas in hospitals, research and radiology labs, or any area in which it is imperative to block radio frequency, nuclear and X-ray interference from electronic instrumentation. Technical consulting service offered. Contains data for all components of the system. Catalog. 11 pages; also introductory background sheets. Ray Proof Corp., 50 Keeler Ave., Norwalk, Conn. 06856.

Circle 204, Readers' Service Card



Structural wood. Lock-Deck decking is said to be capable of clear spans up to 20', for use in roof structures, ceilings, and walls. System features fir decking and white pine soldier beams; also an Electro-Lam laminated beam,

claimed to be stronger over specific spans than steel joists of identical depths. Complete data for size, grade, texture, finish, strength; pattern and thickness details; load and conversion charts; specs. Brochure. 10 pages. Potlatch Forests, Inc., Wood Products Div., P.O. Box 3591, San Francisco, Calif. 94119.

Circle 205, Readers' Service Card

Concrete consideration. ChemComp cement expands in concrete, and the expansion is restrained by the reinforcing steel, thus putting mild tension on the steel and compression on the concrete. This action compensates for the drying shrinkage of regular cement. Data sheet includes technical data, chemical and physical requirements, design considerations and recommended uses. Data sheet. Chemically Prestressed Concrete Corp., 14656 Oxnard St., Van Nuys, Calif. 91401.

Circle 206, Readers' Service Card

Brassy shapes. Standard drawn and extruded shapes in brass and copper are shown in section and thoroughly described. Dimensional data of angles, channels, "T" sections, "Z" sections, rectangular rods, tubes, and other structural shapes are placed in quick-reference tables. Booklet. 26 pages. Anaconda American Brass Co., Waterbury, Conn. 06720.

Circle 207, Readers' Service Card

Horizontal Reinforcement. Truss designed Dur-O-wal for masonry mortar joints meets ASTM standards and Federal requirements. Contained in the report are uses and limitations for this type of reinforced joint, performance data, installation diagram. 4 pages. Dur-O-wal National, Inc., P.O. Box 368, Cedar Rapids, Iowa 52406.

Circle 208, Readers' Service Card

DOORS/WINDOWS

Through these portals. Specifications, details, and drawings in this bulletin are for center-opening elevator doors. Four entrance designs are illustrated for installation in either masonry or concrete walls. 4 pages. Otis Elevator Co., 260 Eleventh Ave., New

York, N.Y. 10001.
Circle 209, Readers' Service Card

FINISHES PROTECTORS

Long-term coverage. Five Chemstop waterproofing and waterproofing stain products are manufactured specifically for masonry and wood. A single application of the colorless (or stain) formulation is said to penetrate the surface of the treated material, thus protecting it from within. Spec guide, coverage tables, and application instructions given for each product. Brochure. 8 pages. Chemstop Mfg. Corp., 2928 Empire Ave., Burbank, Calif. 91504.

Circle 210, Readers' Service Card

Armored velvet is actually a nylon pile finish electrostatically injected into an epoxy resin adhesive. Manufacturer claims it may be applied to any surface to which paint will also adhere. Velvetex is said to have a density of up to 300,000 fibers/sq in. Applications include walls, floors, even cars; it may be applied on the job site, or to factory components, and is also available in 8" x 22", and 4' x 8' sheets. Contains application instructions; properties; results of flame spread, stain resistance, abrasion, fade, and sound absorption tests. Folder: 7 fact sheets, brochure, 29 color samples. Velvetex Industrial Corp., 24151 Telegraph Rd., P.O. Box 412, Southfield, Mich. 48075.

Circle 211, Readers' Service Card

FURNISHINGS



Stacked chairs. Complete range of commercial and institutional chairs, tables, and accessories, featuring thermoplastic or upholstered seating. Specs, details, prices, color

samples, combustion qualities, floor plan ideas. Catalog. 64 pages. Fixtures Mfg. Corp. 1642 Crystal, Kansas City, Mo. 64126.

Circle 212, Readers' Service Card



Kublai Kahn collection. Jack Lenor Larsen's new designs proudly boast a Near Eastern influence, translated into his own studio's vibrant motifs and colorings. Patterns are screened, batiked, and block printed on velvet and a host of fabric blends. Scale is generally large, and the collection is rich in color and texture. Five data sheets denote fabric, color, dimension and price information. Jack Lenor Larsen, Inc., 41 E. 11th St., New York, N.Y. 10003.

Circle 213, Readers' Service Card

Indoor/outdoor carpet fashion. Wearathon carpet is made entirely of bonded polypropylene olefin fibers, claimed by the manufacturer to be the most moisture-resistant of all man-made fibers. Its backing in the lower third, rather than at the middle, is said to give the carpet a thicker, more comfortable wearing surface. Wearathon may be positioned with or without adhesive. It is claimed to lie flat, without buckling, and won't stretch or shrink. Widths of 3', 6', 9', 12', and 15', in a dozen colors. Brochure. 2 pages, and sample card. Armstrong Cork Co., Lancaster, Pa.

Circle 214, Readers' Service Card

Back-weave carpets. Industrial and residential carpets in a wide assortment of materials (all-wool, continuous filament nylon-wool blends, acrylic) are all woven, latex sealed, and vulcanized. Entire line features a built-in, $\frac{3}{16}$ " sponge rubber cushion that is shock- and friction-absorbing; no underlayment is needed. Available in a variety of colors, tweeds, textures and patterns;

also original designs. Architectural data/sample kit. Seamloc. LomaLoom Carpet Co., 101 Park Ave., New York, N.Y. 10017.

Circle 215, Readers' Service Card

Sun control draperies. Fenestration fabrics in a diversity of weaves, textures, and hues are manufactured of glass fiber, or combinations of verel, linen, rayon, and flax. Physical characteristics; sun control data for each fabric, including visual and solar optical properties; sample cards contain width, count, content and weight information. Manual: 18 data/sample cards. Thortrel Fireproof Fabrics Inc., 51 Madison Ave., New York, N.Y. 10010.

Circle 216, Readers' Service Card



A man's chair revisited. All chairs, from traditional and transitional, to tub, bucket, and posture swivel, boast luxurious upholstery and ample proportions. Contains chair base and upholstery options, joint details, features. Catalog. 32 pages. Marble Imperial Furniture Co., Bedford, Ohio 44146.

Circle 217, Readers' Service Card

Space use ideas. Component wall system includes more than 100 cabinets and shelves in modules of 18", 30", and 36". Free-standing, pole, or wall cleat system offered. Photos, sample arrangements, styling variations. Illustration of each component, plus dimensions, description, weight and price. Interchangeable, optional components and accessories. General specs. Catalog. 11 pages. Hardwood House, Inc., 10 St. James St., Rochester, N.Y.

Circle 218, Readers' Service Card

Carpet guide. Specs for five lines of manufacturer's commercial grade carpet. Installation requirements, color sample photos, pile construction, height and weight figures. Considers numerous grades and patterns. Glossary of carpet terms. Booklet. 16 pages. Beattie Mfg. Co., Little Falls, N.J. 07424.

Circle 219, Readers' Service Card

INSULATION



Foamed-board insulation. Dylite boards are fabricated of expandable polystyrene, in a variety of widths, lengths and thicknesses, for use as thermal insulation in plaster, dry wall, perimeter, and cavity wall installations. Dylite has also been used as a core for precast concrete panels, and as a mold to cast decorative panels. Diagrams and calculation charts for optimum thickness as thermal insulation, also: engineering data; flammability graph; thermal conductivity figures; specs. Sinclair-Koppers Co., Koppers Building, Pittsburgh, Pa. 15219.

Circle 220, Readers' Service Card

LIGHTING

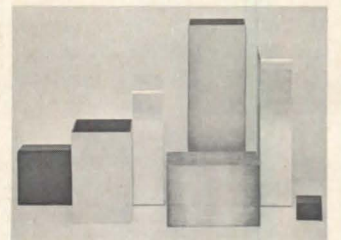


Panelescent light strip. Light is produced by exciting phosphors through a fluctuating electric field; this phosphor strip is sandwiched between flexible plates of aluminum foil and an electrically conductive transparent material.

Tape-Lite is $\frac{1}{32}$ " thick, and $1\frac{3}{4}$ " wide, manufactured in lengths up to 150'. Possibilities for architectural, decorating, aviation, and safety applications. Tech data includes electrical connections, brightness vs. voltage and brightness vs. frequency charts for various colors. File. 10 pages. Sylvania Electric Prod., Inc., 60 Boston St., Salem, Mass.

Circle 221, Readers' Service Card

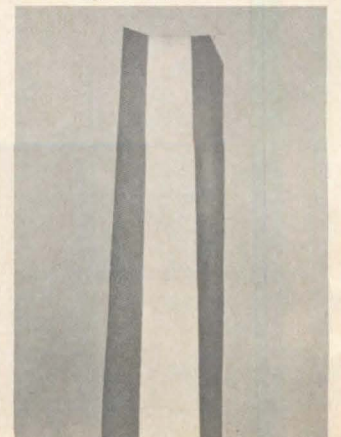
Geometric lighting modules. Architecturally compatible Site-Modules are constructed of satin polished extruded aluminum, available in Kalcolor and Duranodic finishes. Pole mount sizes from 3' to 28', also ceiling, flat wall, and extended arm mounts. Luminaires accommodate many lamps; a Controlux cone luminaire has hidden source illumination with adjustable, wide angle distribution. Coordinating illuminated site signs make planning compre-



hensive. Booklet contains dimensions, lamp source and diffusion charts, photometric data, specs. 15 pages. Mold-cast Mfg. Co., Newark, N.J. 07105.

Circle 222, Readers' Service Card

Lighting source book. George Kovacks and Joe Colombo designs for lighting fixtures are unpretentious, functional, and highly illuminating. Photos, dimensions, color options, bulb requirements, for standing, table, wall mounted,





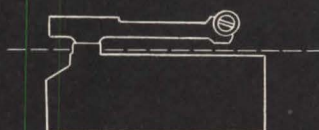
feminine touch

Massive double doors of aluminum[®] and glass—for fingertip opening, but positive control under the most strenuous conditions. Unseen, Rixson concealed floor closers*—for the unblemished architectural line.

Two of more than 160 Rixson closers in the Playboy Club Hotel, Lake Geneva, Wisconsin.

Rixson's No. 28 Series Center hung, for exterior or interior doors. Exclusive full control panel adjustments for back check, latch and closing speeds, spring tension and selector hold-open. *Details? Request

"A Short Course in Door Control"

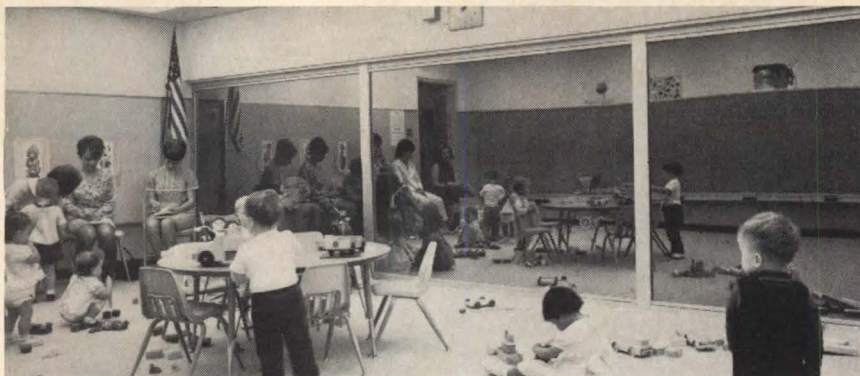


RIXSON CLOSERS

A DIVISION OF RIXSON INC.

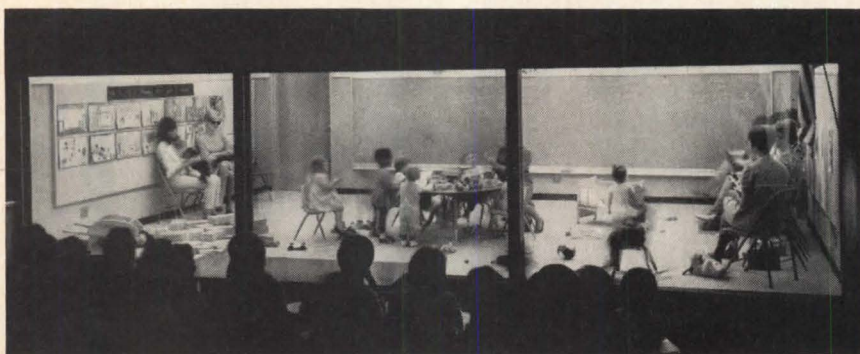
FRANKLIN PARK, ILLINOIS

In Canada: Rixson of Canada, Ltd.



*Mt. San Antonio College, Social Sciences Center, Walnut, California.
Architects and Engineers: Austin, Field & Fry, A.I.A. of Los Angeles.*

This room-length mirror is actually a soundproof, impact-resistant, "see-thru" wall.



No matter how you look at it, this installation is unusual.

Two panes of glass are glazed into acoustical aluminum frames. With $\frac{3}{8}$ " *Mirropane*® in the classroom side and $\frac{3}{8}$ " plate glass in the observation room side. A $\frac{3}{4}$ " air space between the panes greatly reduces sound transmission. A large class of child care students can freely discuss what they are observing without being overheard.

Three 7' x 5' *Mirropane* units permit maximum viewing of the entire classroom from all seats in the observation room.

Since the glass is installed at floor level, the *Mirropane* is made of *Tuf-flex*® tempered plate glass. This minimizes chance of breakage and injury should children or objects strike the glass.

Ask your L-O-F Distributor for booklet TM-2 for *Mirropane* design data. He's listed under "Glass" in the Yellow Pages. Or write Liberty Mirror Division, Brackenridge, Pa. 15014.



LIBERTY MIRROR

A DIVISION OF LIBBEY-OWENS-FORD COMPANY

On Readers' Service Card, Circle No. 382

hanging, and accent lamps. Catalog. 28 pages. Lighting Associates, 315 E. 61st St., New York, N.Y. 10021.
Circle 223, Readers' Service Card

OFFICE EQUIPMENT



The 1860 in 1968. The Xerox 1860 Printer is said to make offset masters, vellum intermediates, and reduced prints from anything up to 18" x 60". Operator need only dial percentage reduction control to 95%, 75%, 62%, or 45% of original size; re-feed prints for smaller reductions. Assembly details, operating instructions, specs. Brochure. 8 pages, plus potential application and spec sheets. Xerox Corp., Rochester, N.Y. 14603.

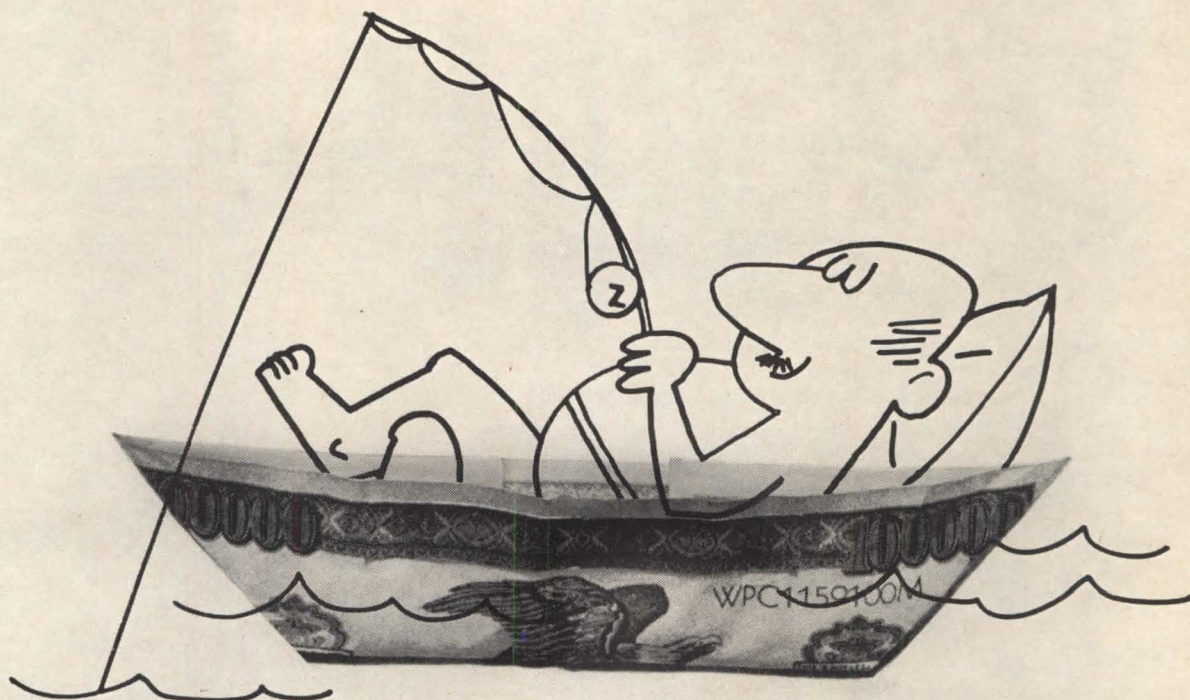
Circle 224, Readers' Service Card

Drafting lines. Two complete lines of drafting furniture offer over 100 units; all units are designed to coordinate with standard office chairs. Series' range is from budget to deluxe. Lists size, weight, and price of each unit in series. Illustrations. Brochure. 6 pages. Stacor Corp., 285 Emmet St., Newark, N.J. 07114.
Circle 225, Readers' Service Card

SANITATION PLUMBING

Water safety in the bath. In housing the elderly, shower and bath requirements differ from those in conventional installations, states the manufacturer's brochure; safety and water temperature are controlled by the fixtures, which include a non-scald mixing valve that reportedly keeps a water delivery temperature at ± 2 F even when supply temperatures vary up to 85°. A color-coded, shatter-proof dial thermometer has a hermetically sealed face to prevent condensation; the handspray unit, which is a

It's nice to have enough money to retire on.



It's also nice to be around when it's time to retire.

You want to save a nest egg to retire on? Fine. All we suggest is that you be here to enjoy it. What to do? See your doctor for a thorough health checkup once a year, including a procto. And for women, also a Pap test. In short, the works.

Because most cancers are curable if spotted in time. But your doctor won't be able to spot anything—unless you give him the chance.

If you do, you'll improve your chances of enjoying your retirement. To a ripe old age.

THIS SPACE CONTRIBUTED BY THE PUBLISHER AS A PUBLIC SERVICE



tings, mountings, etc. Suggested applications and specs; conversion charts for old parts. Engineering and design service to architects. Catalog. 173 pages. Blumcraft of Pittsburgh, 460 Melwood St., Pittsburgh, Pa. 15213.

Circle 229, Readers' Service Card

Walk into the cool. These walk-in cooler/freezers offer many standard features, including eye-level thermometer, interior safety release, and 4" urethane insulation. Bro-

chure lists all these features and shows the various standard modular panels used in the freezers. Details of floor construction and optional equipment are also included. Architectural specifications for both the unit itself and accessories. 12 pages. Vollrath, Sheboygan, Wis.

Circle 230, Readers' Service Card

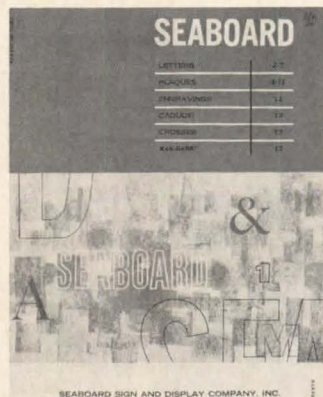


Scientific supplies. Originally compiled for the gadgeteer, this surplus supplier's catalog has grown to include optical, electrical, clock, photographic, and telescopic instruments.

Supplier offers construction information kits for do-it-yourselfers. Index to over 800 items, all guaranteed. Catalog. 147 pages. Edmund scientific Co., 101 E. Gloucester Pike, Barrington, N.J. 08007.

Circle 231, Readers' Service Card

Raised lettering. Lettering styles for signs and plaques are shown (with dimensional data) in catalog. Engravings, caducei, crosses, and vertical posts (indicating reserved parking) complete the listing.

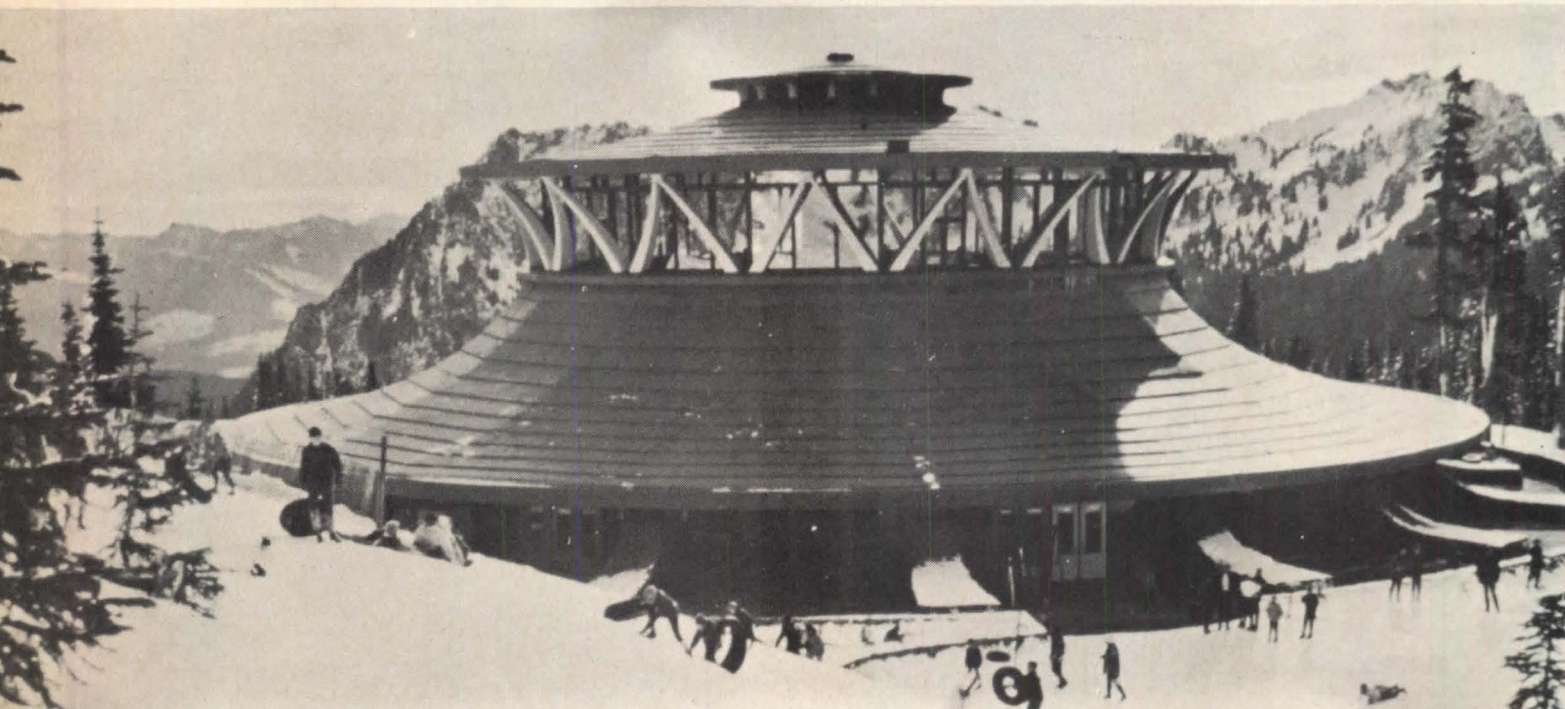


12 pages. Seaboard Sign and Display Co., Inc., Hook Creek Blvd. & 145 Ave., Valley Stream, N.Y. 11581.

Circle 232, Readers' Service Card



Planting pot. Fiberglass "planters" of various sizes and shapes are the subject of booklet. Some of the thinking in the text is slanted in the "how-to-do-it" vein that posits formulas for design, but the planters' designs are less homey. Also included: landscape pools with pumps for recirculation of water. Slat



Architects: Wimberly, Whisenand, Allison & Tong, Ltd. Honolulu, Hawaii McGuire & Muri, Tacoma, Washington

Therm-O-Proof insulating glass can take it at 100 mph.

Winds up to 100 miles per hour, driving snow, and sub-zero temperatures were the primary glazing problems governing the specifications for the Paradise Visitor Center on Mt. Rainier, Washington.

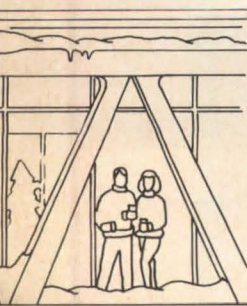
Thermoproof met these basic requirements by producing strong insulating

glass units of 1/4" clear plate with a 1/2" air space, including 32 trapezoids.

Extra care was also taken to pallet pack all units in special boxes for the one mile haul up to the isolated mountain site. This is another way Therm-O-Proof insulating glass is made to fit more

See full color 4a Sweet's insert Th

Insulating glass by Thermoproof Glass Corp subsidiary of Shatterproof Glass Corporation 4815 Cabot Avenue Detroit, Michigan 48210



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THE SHRINKAGE COMPENSATED CEMENT

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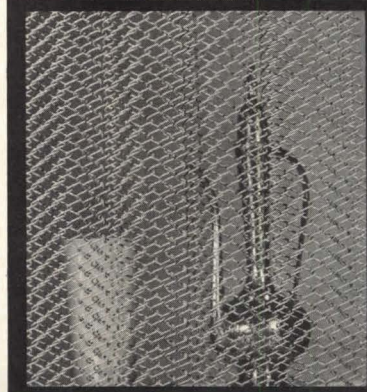
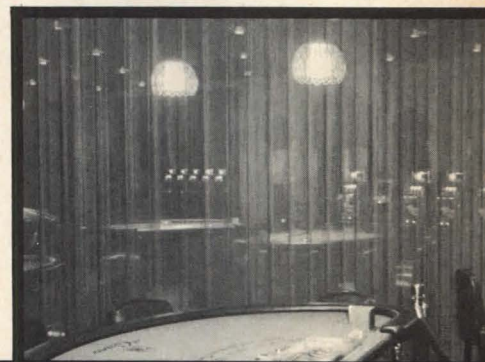
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October 1968

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P/A News Report 109

benches are available with some of the planters. 8 pages. Landscape Forms, Route 3, Kalamazoo, Mich. 49001. Circle 233, Readers' Service Card



Metal alphabet. Extensive catalog listing and illustrating 22 stock design letters in aluminum, bronze, steel, and ceramic. Also special cast letters, emblems, and symbols. Fastening methods, specs, and

prices. 33 pages. Spanjer Brothers, Inc., 1160 North Howe St., Chicago, Illinois 60610.

Circle 234, Readers' Service Card

To accompany the performing arts. Equipment for the performing arts, such as stages, acoustical shells, and risers, play an important part in the success of the total performance. Catalog includes these and other stage necessities, designed for flexibility and for use indoors and outdoors. 32 pages. Color. Wenger Corp., Owatonna, Minn. 55060.

Circle 235, Readers' Service Card

Fiberglass flagpoles. "Futura" flagpoles use fiberglass construction, which is claimed to cost less than comparable aluminum poles. The one-piece flagpoles are tapered at 1" per 12'. Sizes: 25' to 35' with three-coat white acrylic finish; other sizes and colors may be specially ordered. Annin & Co., Verona, N.J. 07044.

Circle 236, Readers' Service Card

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Delineating laminate possibilities. Handbook, for designers and contractors, of laminated plastic applications contains specs for surfacing, panels, and adhesives. Complete spec sheets for all products and systems. Standard and optional finishes; installation, pattern, and size data. Booklet. 88 pages. Formica Corp., 4614 Spring Grove Ave., Cincinnati, Ohio 45232.

Circle 237, Readers' Service Card

Hoosier diggings. Association proudly claims his handbook

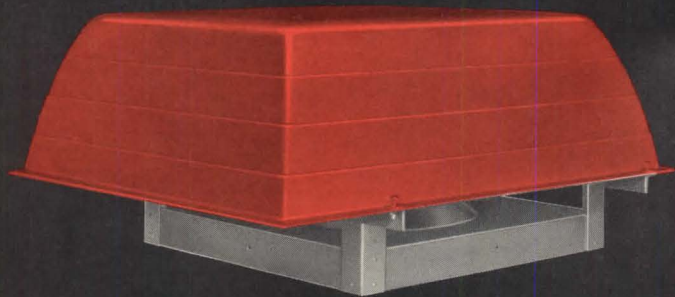
is the authoritative document on Indiana limestone. It contains 92 pages of standards and practices, details and specifications, plus maintenance and general information. In this last section are tables of physical properties merged with other design data. Anchoring systems details, panel configurations, and finishes are thoroughly described. Drawings of extant installations range from Gothic entrances and rose windows to contemporary facings and window units. Indiana Limestone Institute of America, Inc., 111 W. 4 St., Bloomington, Ind., 47401.

Circle 238, Readers' Service Card

PROGRESSIVE ARCHITECTURE NEWS REPORT

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

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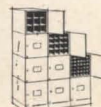
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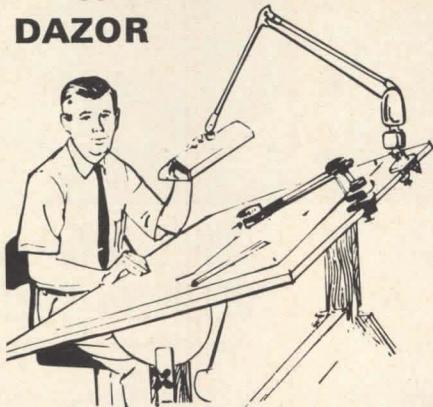
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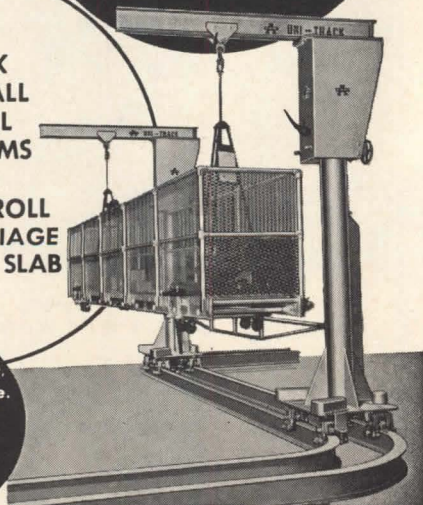
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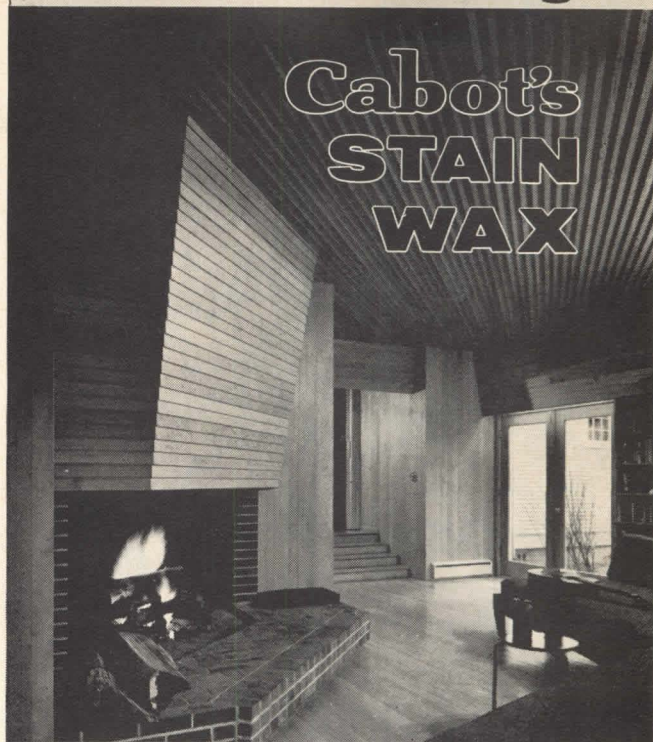
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October 1968

For Wood Paneling

Cabot's STAIN WAX



Home in Tacoma, Wash.; Architect: Liddle & Jones, Tacoma, Wash.; Cabot's Stain Wax throughout.

Stains, Waxes, Seals in One Operation

The two interiors depicted here are the accomplishments of the same architectural team... one breath-takingly modern; the other warmly rustic. In both instances, Cabot's Stain Wax was specified for the interior finish. Suitable for all types of wood, Cabot's Stain Wax protects the wood, enhances the grain, combines the pleasing color of a stain finish with the soft luster of a wax.



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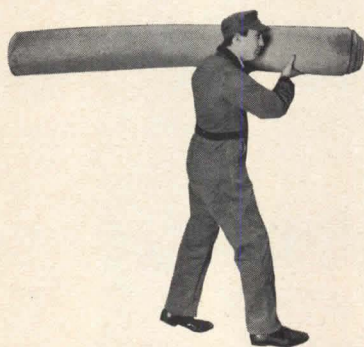
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P/A News Report 111

Architects replace wall-to-wall headaches



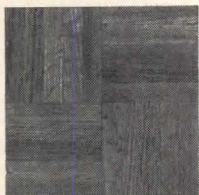
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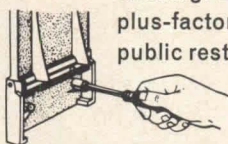
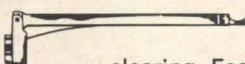
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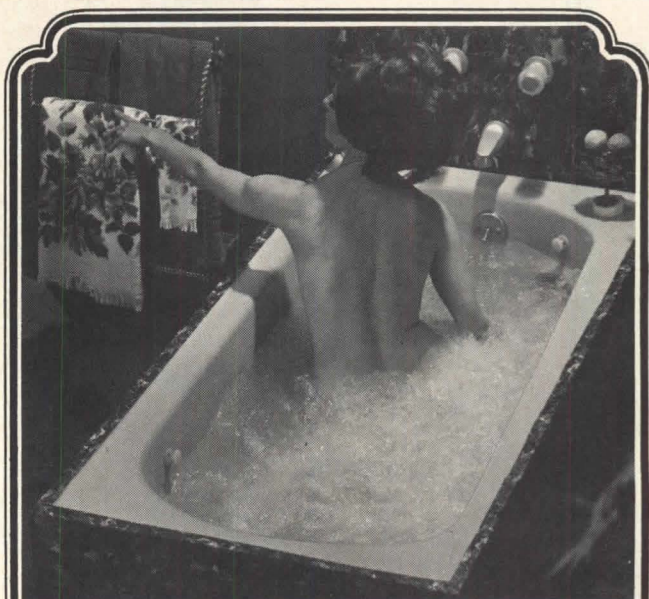
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NEXT MONTH IN P/A

P/A STAR TIME. November P/A will bring subscribers the latest works of an imposing galaxy of renowned designers: Mies' National Gallery in Berlin; Pei's L'Enfant Plaza in Washington, D.C.; Schönbrühl shopping center and apartment house in Switzerland by Aalto and Roth; and a new specialized hospital for cancer treatment and research by Vincent Kling. Plus—representing younger talents—a unique dental clinic in Marin County, California, by Neill Smith & Associates, and an ingeniously planned townhouse group in Cambridge, Massachusetts, by F.A. Stahl & Associates (a winner in the 1967 P/A Design Awards Program).

Technically-oriented presentations will deal with economical approaches to multistory housing construction; a guide to the properties, applications, and costs of seamless plastic flooring; an imaginative sealing technique for the roof of the new Olympic Sports Palace in Mexico City; and the design of a concrete footbridge in California that uses structural ingenuity to produce a sculptural result.

This rich brew of pace-making designs, forward-looking planning, and useful technological approaches will be yours if you simply fill in and send the Subscription Card at the rear of this issue. And you'll also receive 11 more equally informative and exciting P/A's in the coming year!

Bright ideas



A better way to specify and install lavatories and accessories: Bradpack! Bradpack pre-assembled wash centers have everything you want or need built in: lav, foot control, operating mechanism, temperature selector, dispensers—everything. Installation? They're all factory pre-assembled and ready for hook-up. And foot-operated Bradpacks are sanitary. Choice of three models, all in stainless steel: foot-controlled lavs with and without storage cabinet; or cabinet and lav with wrist blades. For all installations—from hospitals to college dorms—write in Bradpack. It's Bradley's idea to make things easier for you! See your Bradley representative. And write for literature. Bradley Washfountain Co., 9109 Fountain Boulevard, Menomonee Falls, Wisconsin 53051. On Readers' Service Card, Circle No. 336

from Bradley!

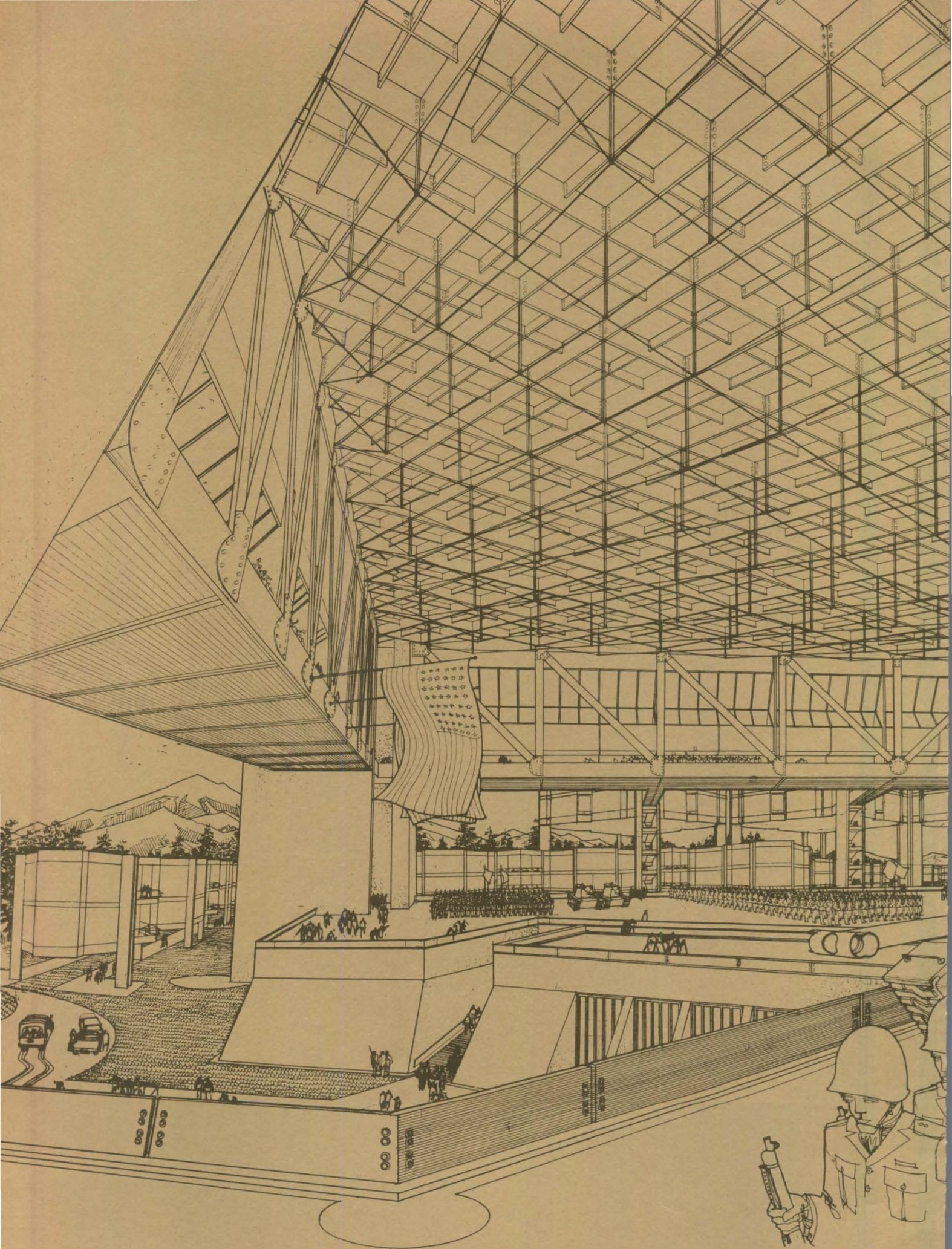


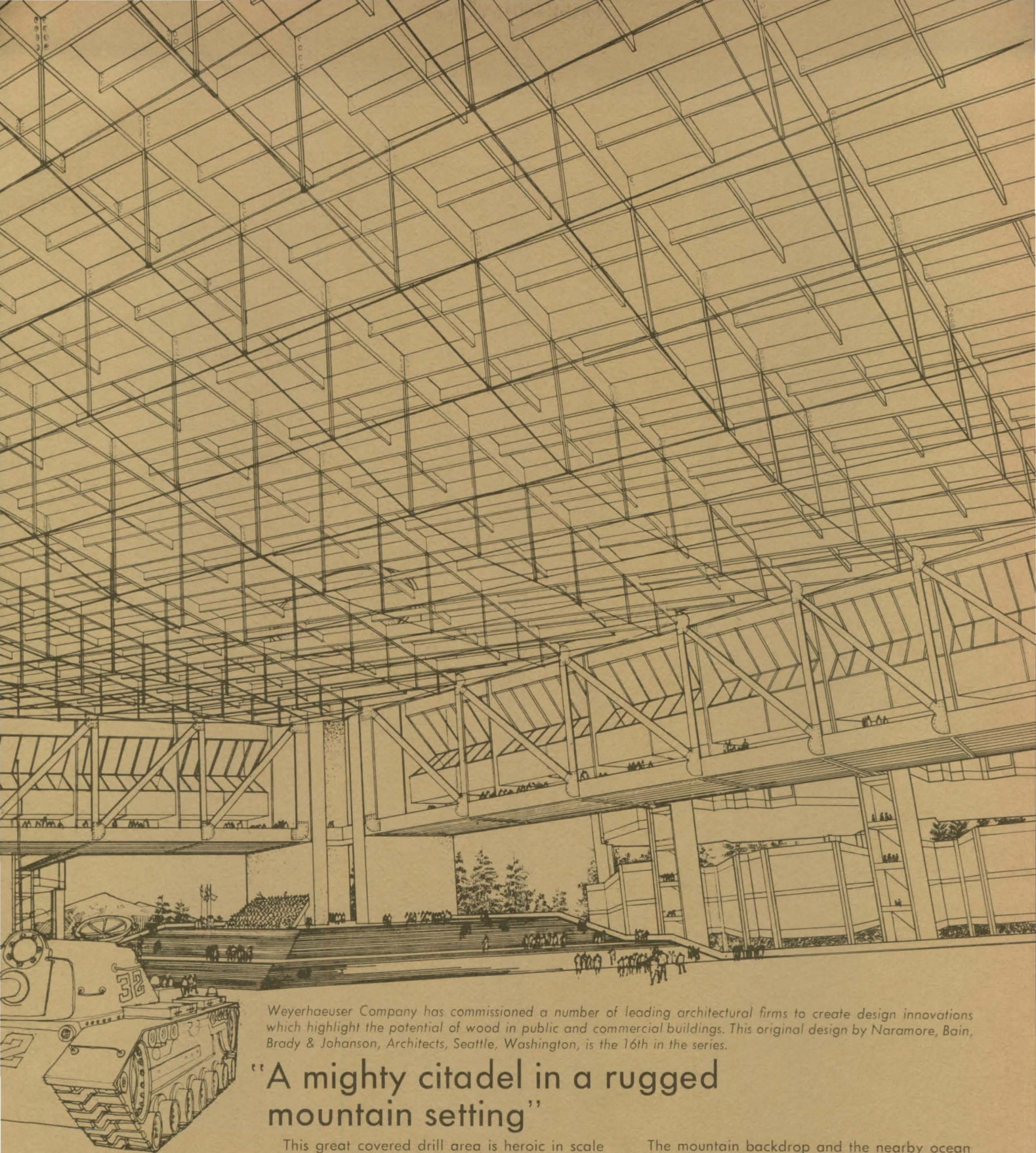
A bold new concept in wood for a military academy

Architects: Naramore, Bain, Brady & Johanson



One of a series of design innovations commissioned by Weyerhaeuser Company.





Weyerhaeuser Company has commissioned a number of leading architectural firms to create design innovations which highlight the potential of wood in public and commercial buildings. This original design by Naramore, Bain, Brady & Johanson, Architects, Seattle, Washington, is the 16th in the series.

"A mighty citadel in a rugged mountain setting"

This great covered drill area is heroic in scale for the making of academy tradition. An all-weather space, the central hall is 500 feet square, 140 feet high—large enough to accommodate formal ceremonies and daily drill.

An elevated ring of circulation corridors surrounds the drill area, supporting the roof system and providing access to academic areas and cadet quarters around the fortress perimeter.

This broad circulation way provides views through the great trusses to the covered drill floor, and becomes a meeting place for cadets.

The mountain backdrop and the nearby ocean coastline provide a rugged setting to match the training cadets would receive.

The roof grid is of wood. Laminated wood members and steel tension cables permit glazed openings so natural light can penetrate the interior space.

Wood also is used in the prefabricated, unitized cadet quarters and classrooms.

Modular wall, floor and roof panels provide construction economies and offer flexibility for expansion as enrollment grows.

William Bain

Typical intersection of long-span roof system.

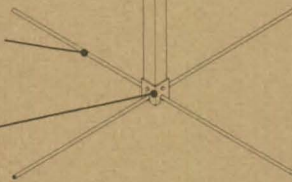
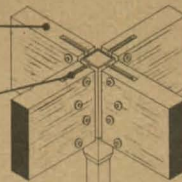
Primary members: Laminated beams $16\frac{1}{4}" \times 60"$ at 40'-0" o.c.
(Secondary members — not shown — intersect primary beams.)

Bolted steel connector.

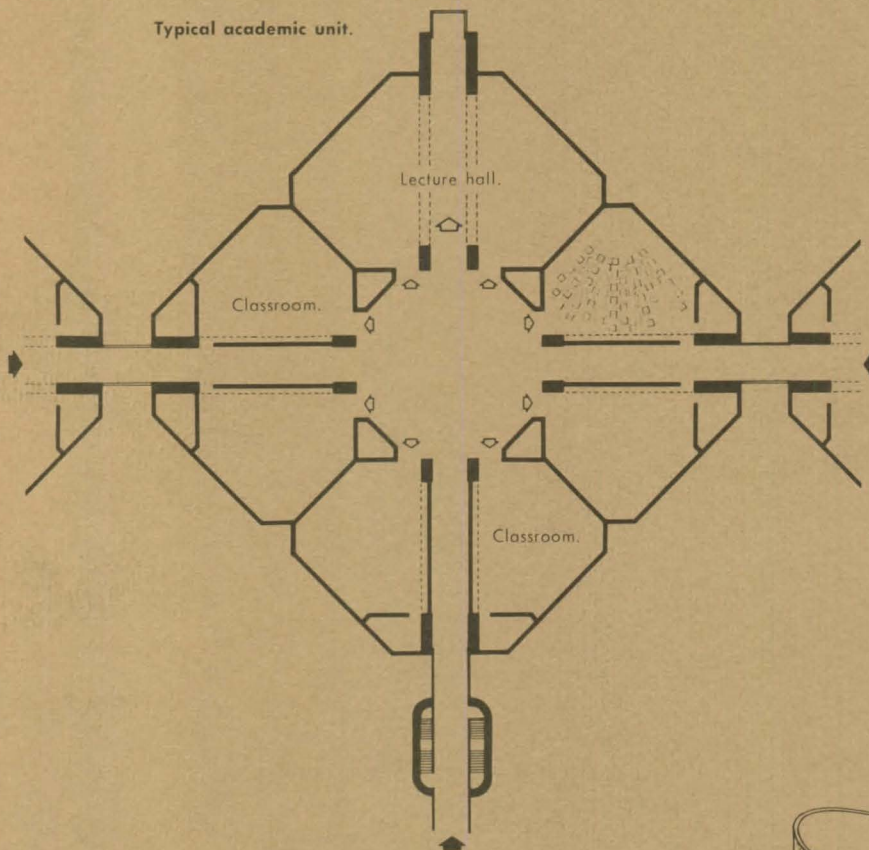
Laminated 12" x 12" king post — varies in length to 35'-0" at mid-span.

3" high strength stranded steel cable post-tensioned.

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Typical academic unit.



"A material well suited to the challenge of this design project"

In proposing this structure Naramore, Bain, Brady and Johanson have sought architecture that would encourage a tradition of excellence. The structure is self-contained, powerful in design, Spartan yet capable of supporting the brusque pride required in the men who serve in our nation's fighting forces.

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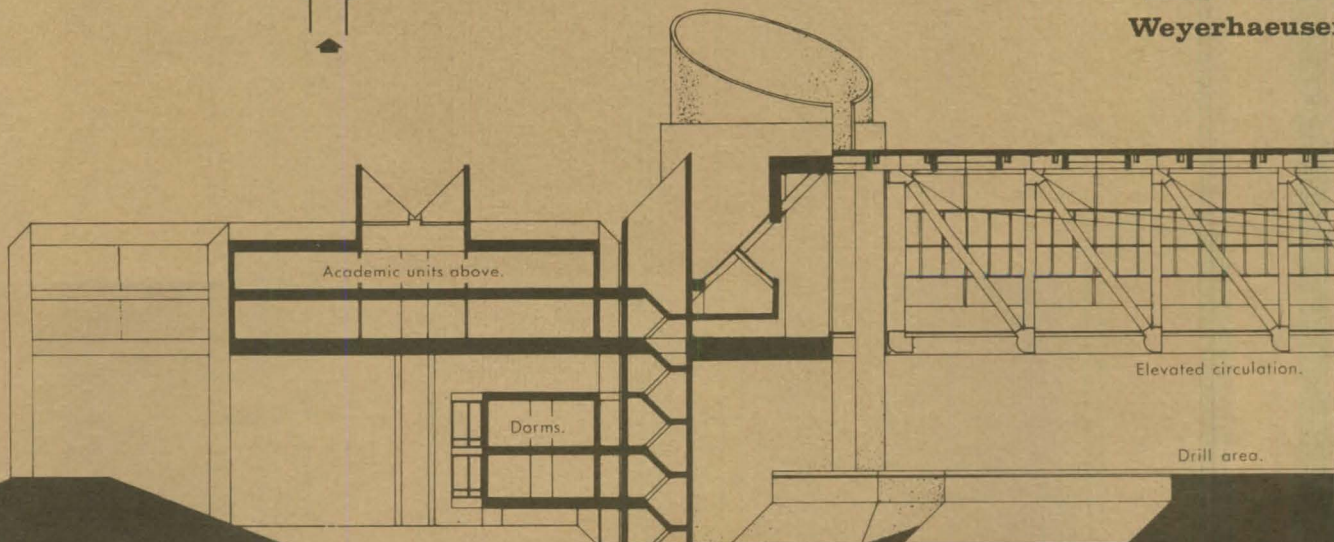
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Pitch 243

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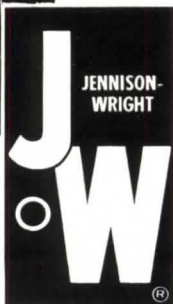
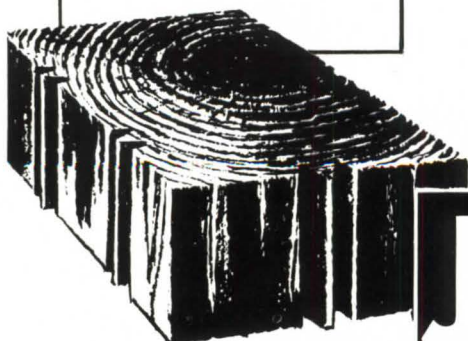
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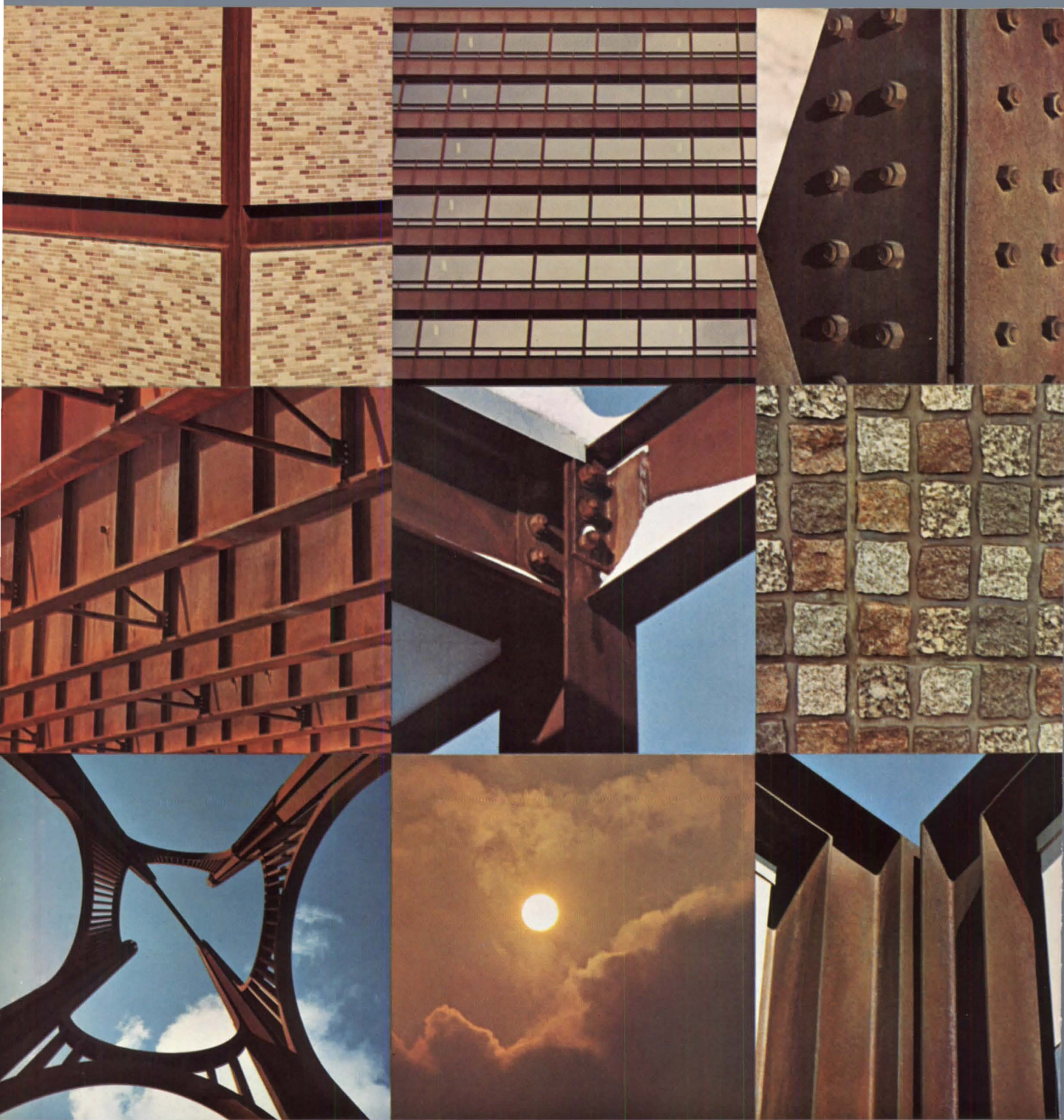
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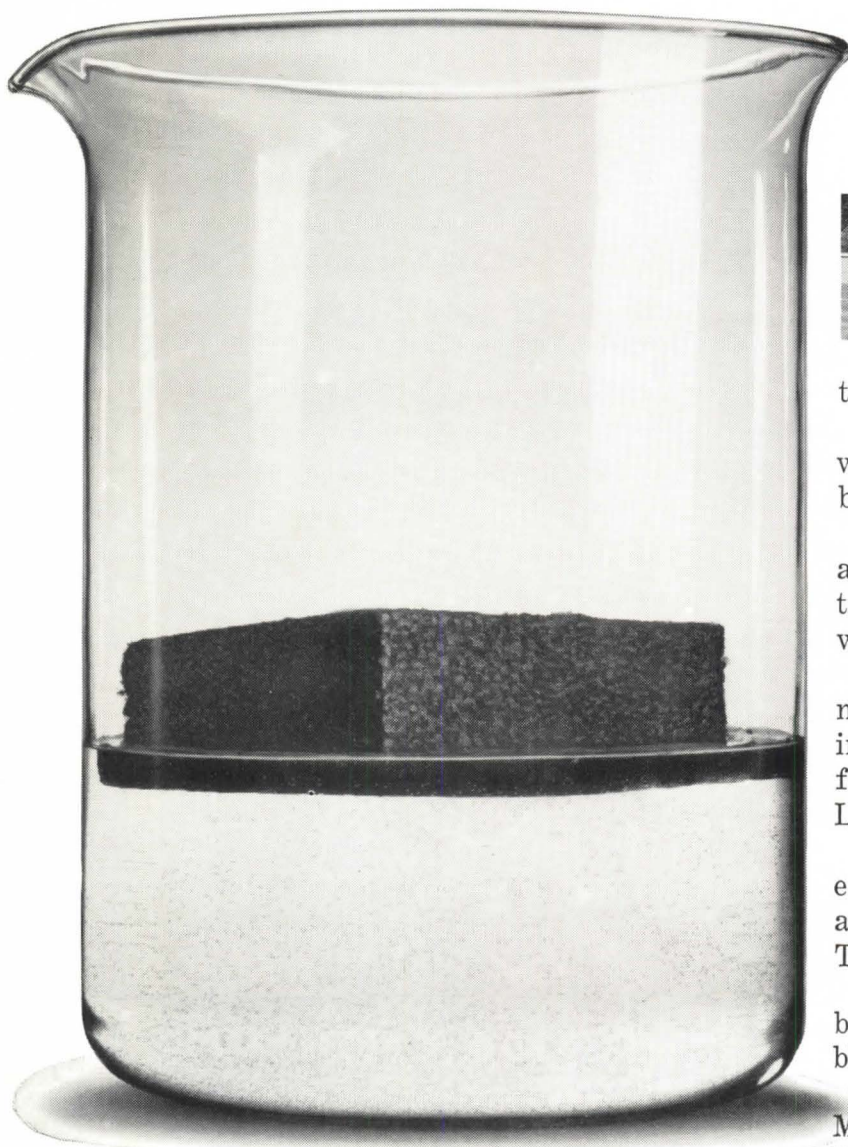
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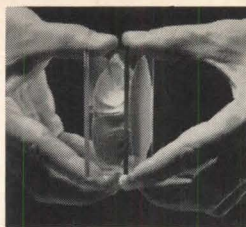
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On Readers' Service Card, Circle No. 429

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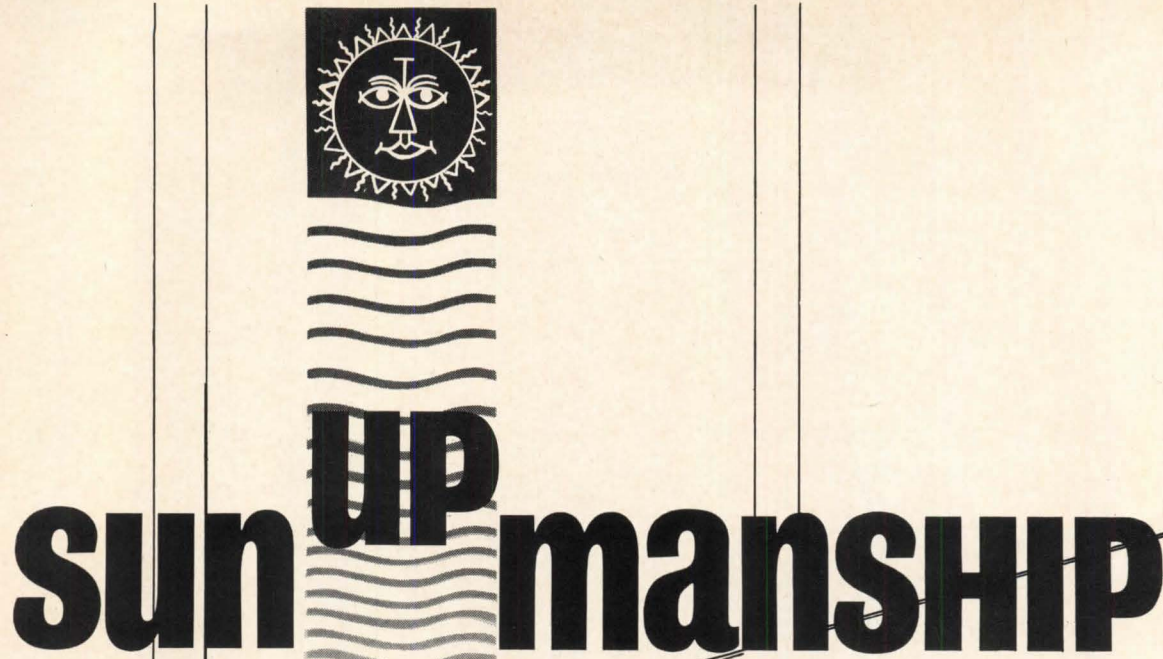
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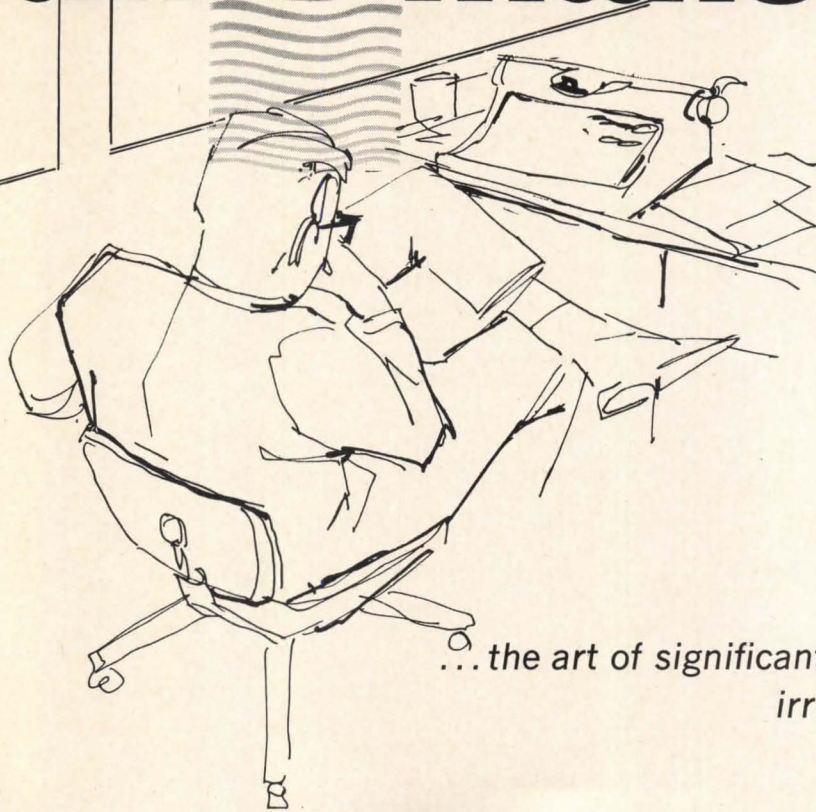
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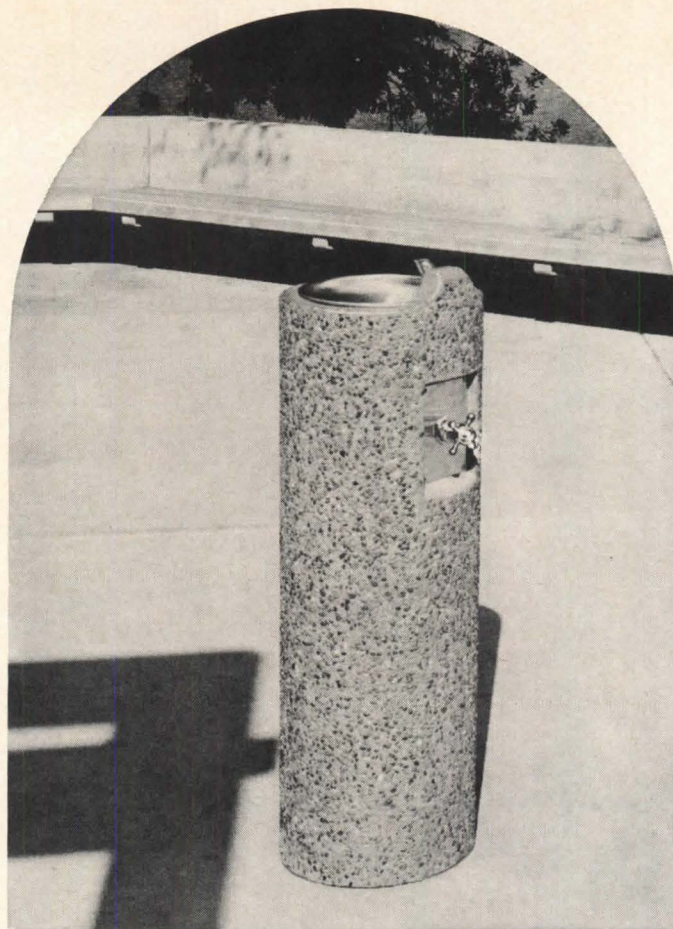
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Nor yet the last to lay the old aside."*

ALEXANDER POPE

*"Most so-called tastemakers do what
they do because they wish to separate
themselves from the rest of unrefined,
vulgar humanity. So they say that the
shiny, the golden, and the large are not
good taste. But if what they now say is
good taste were suddenly accepted by
everybody, the next minute the taste-
makers would go to gold tinsel. The
most important thing is for them to be
different."*

WILLIAM SNAITH

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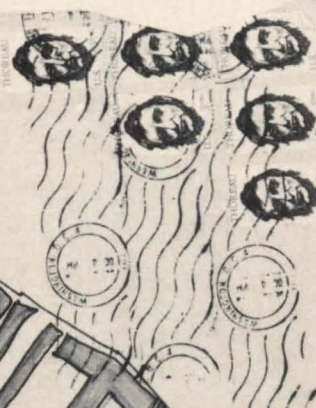
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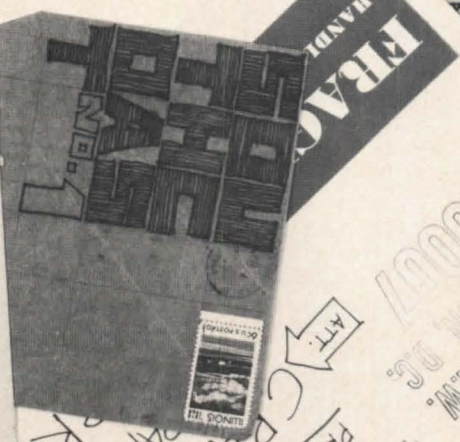
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EDITORIAL

Counterrevolution in Interior Design might have been the title of this month's issue of P/A. Not because the young designers whose work we are showing want to re-establish the old order, but because much of what they are fighting for is the undoing of several sacred cows of the revolution in architecture that took place in the first half of this century. During the aseptic puritanism of the post-Beaux Arts period — when walls were white, less was more, and simplicity the reigning word — decoration became such a dirty word that even decorators themselves changed the name of their institute. Now, a new breed of deviationists has slaughtered that major sacred cow of the contemporary movement and decoration is no longer taboo.

Actually, decorating was always with us. Except as an extreme case of professional snobbery, I never understood why, in the lingo of contemporary architecture, gluing wallpaper on a wall is called "decorating," and nailing vertical wood boards is called "interior design." Surely, by whatever name it goes, anything that embellishes a raw surface is decoration of sorts.

Because decoration deals more with sensory responses and less with physical needs, because it is the "superfluous" part of a building (in the Ruskinian sense), whimsy is its common characteristic. This capricious, often freakish, quality makes much of the work presented in this issue appear not "serious." Seriousness, however, has two sides to it: the intent of the creator is one kind of seriousness; the response of others to what he creates is another. How "serious" was Louis Sullivan in plastering buildings with delicate ornament? How "serious" was Frank Lloyd Wright in designing cavelike dwellings? How "serious" was Le Corbusier in suggesting Parisians should destroy their city and replace it with a few skyscrapers? How "serious" is Mies in designing similar glass cages for dissimilar uses?

How "serious," then, are the young architects when they assault our senses with their Supergraphics, Supermannerism, Superwhathaveyous? Is it Superstupidity, Superegomania? Is it, in fact, a Superpublicitystunt? Here is an excerpt from a letter we received from one of the Superkids:

"The decision I have reached is that publicity of any kind would do more harm than good at this time. I should have an attitude that is simple and straightforward without illusions of grandeur or illusions of worthlessness. I should get up in the morning and find all of my satisfaction in the doing and in results directly connected to that act. I should keep an accurate image of myself in my mind, neither inflated nor pessimistic. This, for some people, comes naturally. For me, it is a constant struggle. I am a natural limelighter who likes nothing better than to hog the stage. This is dangerous, because the accomplishments that really count are all done in the wings, quietly and with grave seriousness. Few people would find these accomplishments interesting, and so they seldom get mentioned publicly. They are personal, limited, and for the most part banal, yet they comprise the guts of any man's life and finally this score is what tells you how the aspirations did against the limitations, whether any success was really achieved or not. What I'm saying, as it relates to P/A, is that I'm convinced that I haven't done anything anywhere near important enough to be published."

This does not sound like a publicity-conscious designer riding on a fad. He is serious. And there are many like him who are also serious. But will the rest, less prone to experimentation, take *them* seriously? ■

Jan C Rowan

REVOLUTION IN INTERIOR DESIGN

P/A's Design Awards jurors exploded in revolt. "It's way out. It's ghastly. It's revolting. I will vote horribly and violently against it, and I want my comments stated in P/A, please." These aren't what they were. "But, then, they never have been. As responsible commentators on the ar-

chitectural scene we report on all new art and that appear to have some controversial movement for superficial or sensational effect, but to report soberly and honestly, we have attempted to determine just how much support for this movement there is across the country at this time—

not to promote the majority design has been the area in which these manifestations have taken place, primarily because many of the designers have been undergraduates and most graduates who have not yet received commissions to do entire buildings, but also because one of the fundamental design goals of the approach has been to destroy the scale of existing rectilinear interiors. What is done in the labs of tyro-architects—especially in the area of interior design, is almost certainly a prediction about the face of architecture in the future. And this generation of architects is aggressive, pioneering, and productive.

But not only the young are puncturing architectural packages and ideals. The included in this issue. In addition, correspondence in our design vocabulary of more chaos that derive from other orders, such as the German-originated system of Office Landscapes, are investigated. Also, the inclusion in our design vocabulary of more methods of forming, finishing, and joining them, are reported on.

These multiple means by which design, furnishing, and decoration are being During the last six years—certainly since

design in October 1962 (the first issue of any architectural magazine to be devoted entirely to that aspect of architecture)—there has been a dramatic break

pure, clean, off-white-and-beige, rectilinear interiors—creaky old furniture and in deep romantic use of materials and textures. Young designers are also expanding their vocabulary to include the speed and motion in traditional barriers to include whimsy and to install all these restrictions. In an age of

despite extraordinary early in their careers to architectural methods of building and rendering, and the long-termist approach to expand our vision to a permanentist, since it is partly a man-

as the hyperphenomenon "Superman-ism," since it is partly a man-

Moore, Robert Venturi, etc.), one letter

used: "there is a very unwholesome, turbulent involved there." Even one of

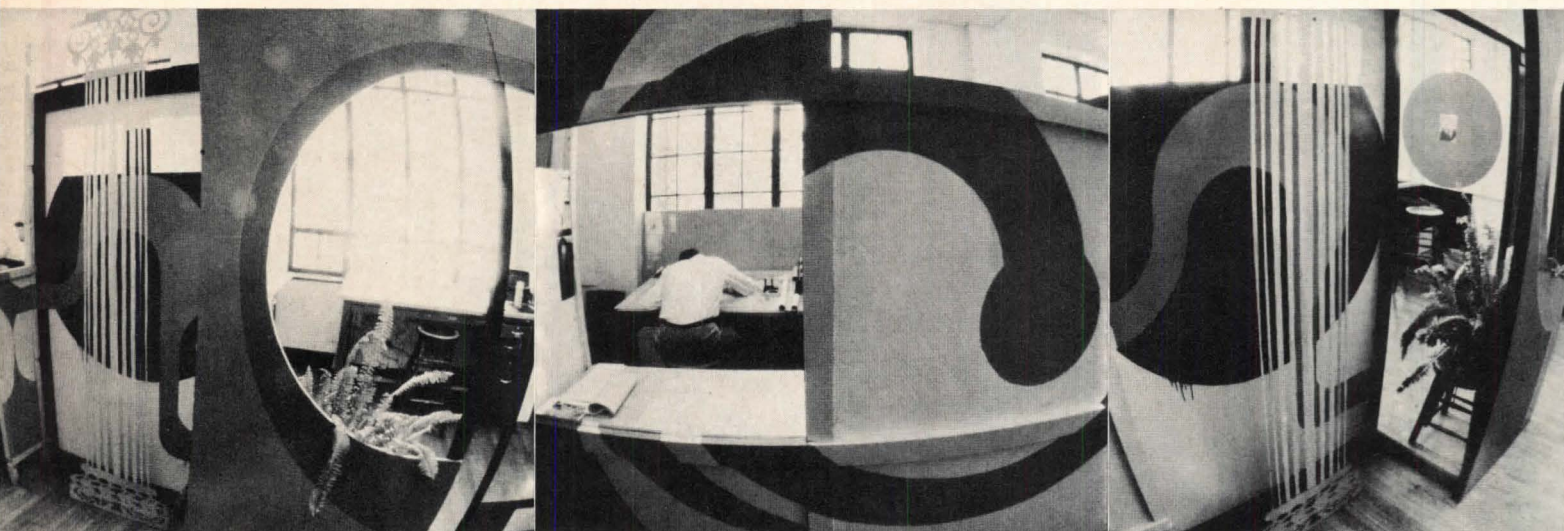
BOLD NEW POLY-EXPANDED MEGA-DECORATION

With cries of "shame," "ghastly chaos," and "trivial fad" rending the established heavens, a new breed of architect and interior designer is being born in our schools. P/A has watched what initially appeared to be mutations increase in numbers, since our noting these events as early as May 1965, to the point that we must now report the phenomenon as a new breed for the electric age.

ed in our electric age — in terms of
aesthetics, in terms of process, and, above
all, in terms of use by people — are illu-
strated and defined in greater detail as
this issue progresses. The text analyzes
the derivation, the benefits and dangers,
the predicted duration, and finally the case
for and against this "Bold New Poly-Ex-
panded Mega-Decoration." —CRS

Entry to Rudner residence, designed by David Sellers and Charles Hosford. (Photo: David Hirsch.)

THE NEW INTERIORS: FACT OR FAD?



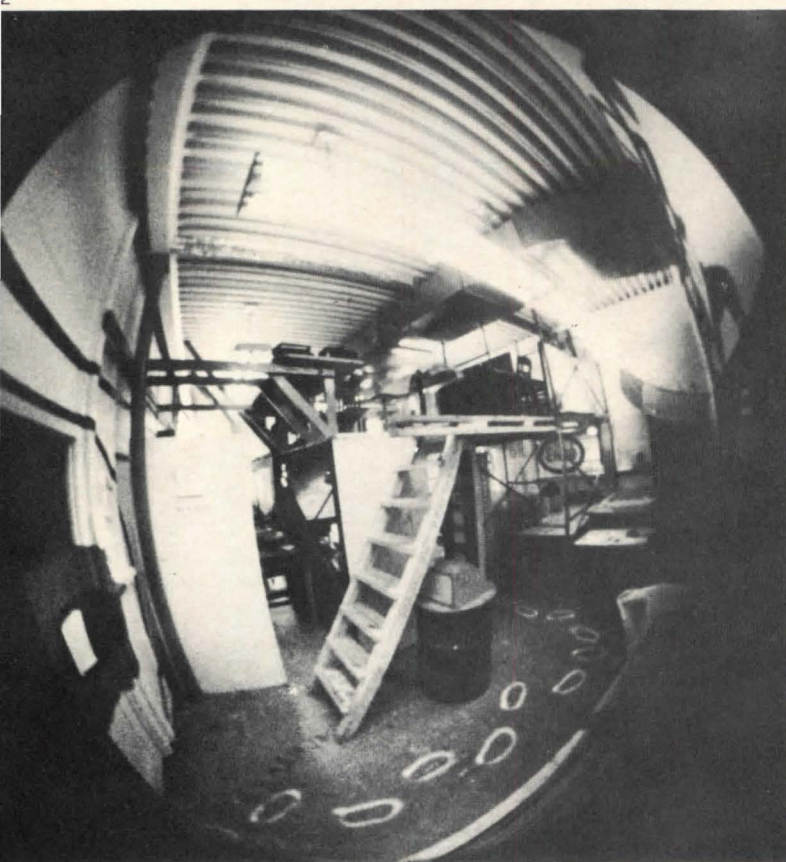
Photos this page: Jan D. Cartwright

Reactions to the question of the extent of activity in the new design direction have included such accusations as "mostly an invention of P/A" . . . "confined to a half-dozen personalities" . . . "restricted to a few Eastern schools." Admittedly, Yale architecture students, with an air of snide pride, have dubbed P/A "The Yale Alumni Magazine" because students and graduates of that university have brought so much work to P/A's attention.

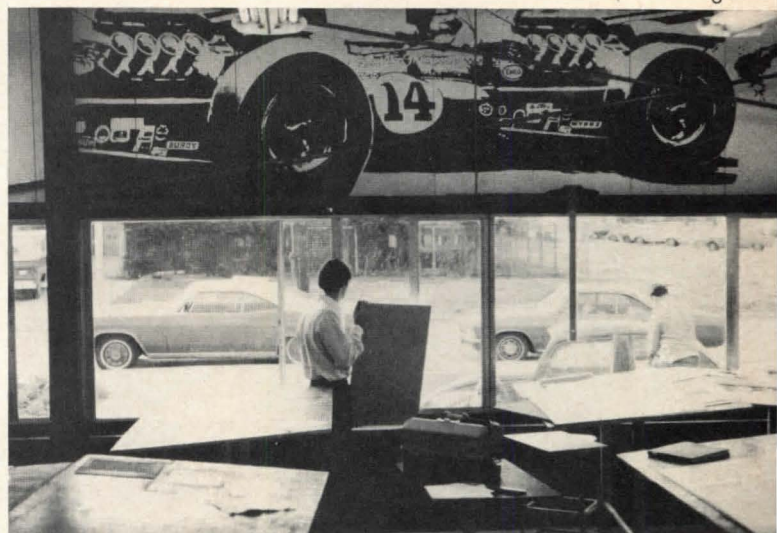
Perhaps the Eastern schools are nearer; perhaps they are more communicative about their work; perhaps they are more public-relations minded. In any case, the magazine's effort to discover the best in architectural innovation is a two-way communication, based as much on being told about the new as on ferreting it out.

To determine the actual extent of Supermannerism, P/A surveyed the deans and chairman of this country's architecture schools, who, it was felt, would be the first to detect incipient design unrest, change, and new design orders. The

Photos this page: Larry Brownback



From Austin and Houston (photos this and facing pages) comes evidence of growing interest in the new approach. At the University of Texas at Austin, fifth-year students partitioned up their design studio and then painted it, in the case of Jan Cartwright's "own thing" (facing page), with bold colors and stripes that leap openings and overlap onto adjoining spaces. Cut-outs and stripes fuse the different planes into what faculty member Richard Oliver calls "3-D figure-ground ambiguity—a technique used in camouflage painting for years." At the

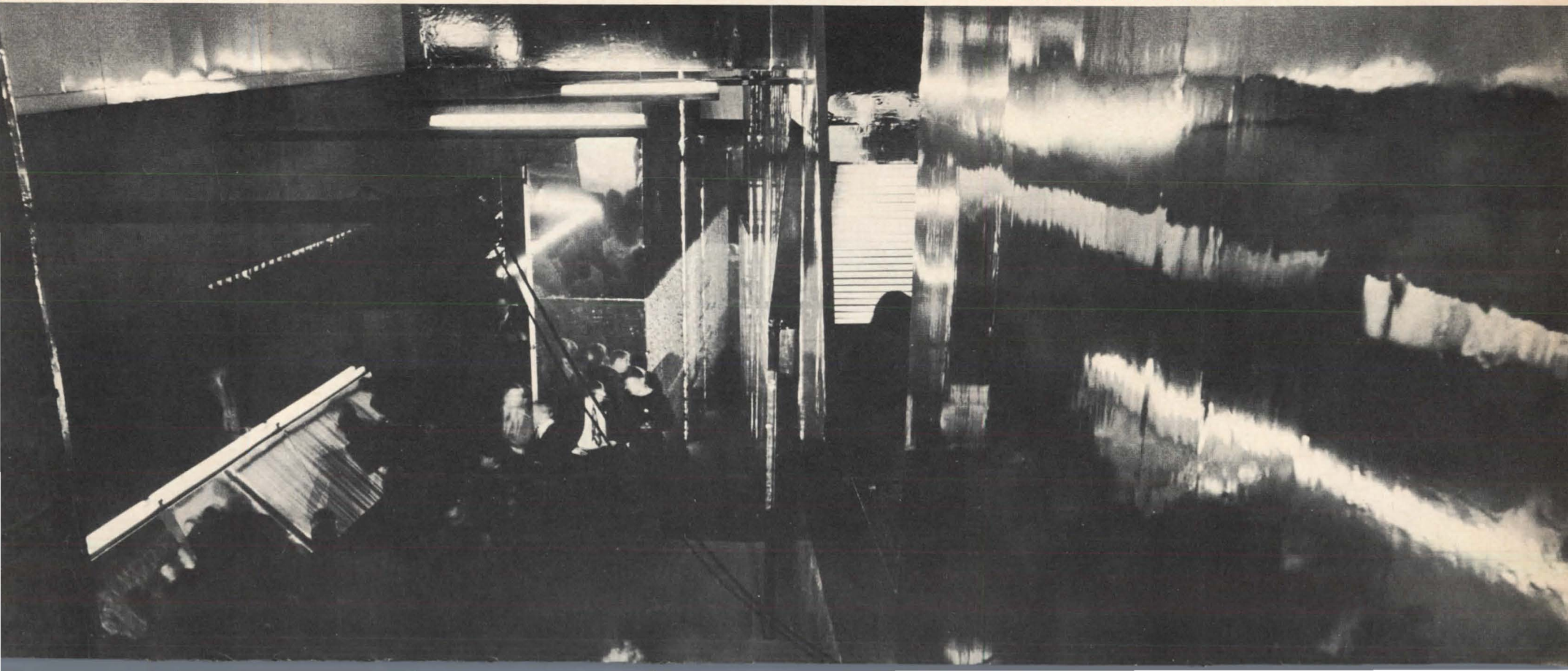
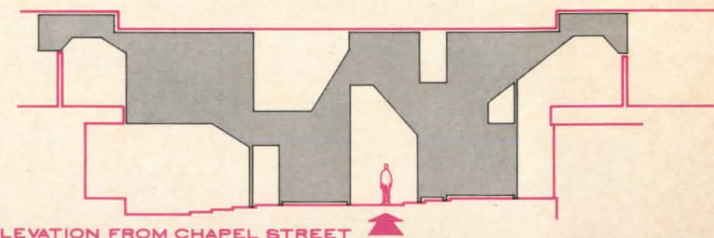
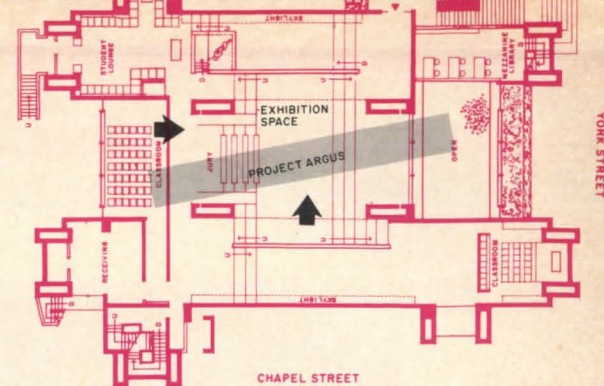
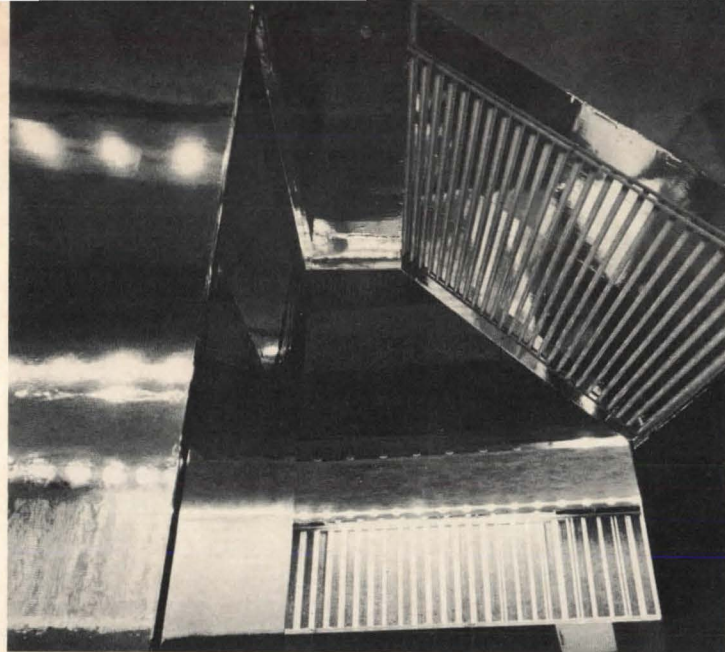


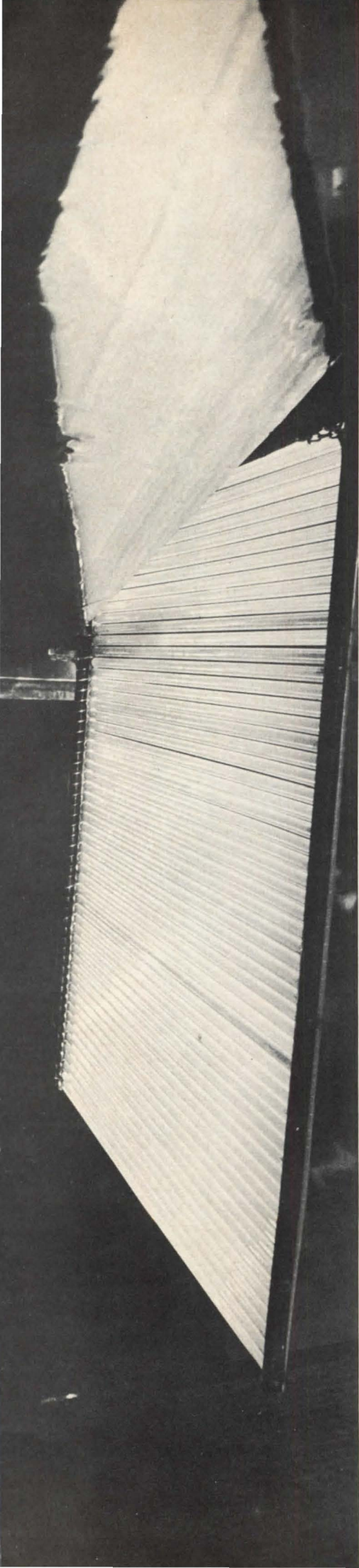
University of Houston, instant mezzanines and partitions were erected to house fifth-year thesis students more to their life-styles (1, 2), while photomontages and Pop yellow painted furniture brought the roadway inside the second-year design lab (3). These latter students ran stripes of circulation graphics up over a door to illustrate a two-entry traffic pattern (4, 5) and also painted a 55-gal drum for popular refuse (6).



Glittering confusingly in silver and in the white stripes of naked fluorescent tubes, *Project Argus* sprawls diagonally across the jury space in Yale's Art and Architecture building. Designed by Charles Moore, F.R.R. Drury, and Kent Bloomer of Yale's faculty, and built by students, the construction *Project Argus* houses and reflects the *Pulsa* all-white light show—a meticulously controlled and surely the most tidily designed (see p. 202) of any such installation—as well as showings of film clips. The confusing reflections, pulses—aural and visual—and the flashing superimpositions inflict a dazzling bombardment on even the exploded plan of Paul Rudolph's building. The purpose of the "panoptic, multifaceted sensory extravaganza," as Yale officials called it, was "to provide an open-ended experimental atmosphere."

Photos, this and facing page: Joel Katz





rometers of any increase in the following or rebellion against their own design leadership.

Has Ambiguity Crossed the Appalachians Yet?

Among the schools that responded with "no interest," "no evidence whatever," "not much activity," or "very limited effect here" to what P/A described as "the new design that is often manifested by stripes, silver, mirrors, ambiguity, permissiveness, and chaos," were Princeton, Penn State, Carnegie-Mellon, Rensselaer Polytech, Louisiana State, Illinois, Michigan, Iowa State, North Dakota State, and California State Polytech. Clearly, this is an across-the-country sweep for the minimal extent of the movement.

However, among the schools that did see evidence of the movement were Tulane, Houston, Austin, Auburn, Tennessee, North Carolina State, New Mexico, Washington State, and Washington at Seattle. Just as clearly an across-the-country sweep for signs of the new design activity.

Such evidence would seem to demolish the accusation that Supermannerism is purely an Eastern Club. At the same time, it does indicate that the endeavor is by no means universal as yet.

How Did the Word Spread?

Interests grow in sporadic areas in often unexplained ways, usually raising the question whether the genius is a product of his age or vice versa. Several comments suggest other derivations, however.

"This sudden cultural explosion," observes Kenneth Carbajal, formerly of the University of Houston's architecture faculty, "has been fostered in some cases by schools, but the schools did not produce it; the effects were only felt there first. Schools provide open lines of communication with what is happening in other places."

The new design approach reached the University of Texas at Austin, it appears, through assistant professor Richard Oliver, who had formerly been a student of Charles Moore's at Berkeley.

Howard Barnstone, professor of architecture at the University of Houston, adds, "There is no more regionalism. Communication in our time is instant—what happens in New York or London, Chicago, or Sydney is known within two hours everywhere. There was a time when regionalism in architecture, and in deportment, had validity; that is not true in our time."

By way of example, Tulane's Chip Lord explains that "Supermannerism came to Tulane mostly through the periodicals, which are read by Media Heads, who then sift the material through their creative minds, and sometimes re-create

things emerge. But better yet, creative things emerge as Supermannerism is adapted and adjusted to the individual Media Head's needs and whims."

In most cases, however, the movement is a family affair. Students can usually trace their interests back to Revised Standard Kahn through Robert Venturi, Charles Moore, and other second-generation Kahnians who are the acknowledged innovators of the new approach.

What Does It All Mean?

"What is happening today in architecture is a revolution," Kenneth Carbajal proclaims. "It is a complete readjustment of aesthetics to put it more in step with the Space Age and its materials and forms. Most of the profession is not even aware that anything is happening. Those who are aware credit it as a passing fad; they are unable to understand it. This is more than a generation gap; it is a cultural gap. And the gap is growing wider rapidly."

Other observers, whether they approve of the "revolution" or not, use similar phrases: It is a reaction against "the prevailing orderly planning," against "oversimplification of three-dimensional form," against "sterility of contemporary rationalistic attitudes" toward architecture. Still other correlate "geopolis," and "high excess of availability permitting choice without judgment." It is viewed by Raymond D. Reed, head of the architecture and engineering departments at Iowa State University, as "a concern for a new philosophy based upon other mores than the hypocrisy of the Establishment."

In this reaction against "the conservatism of the older generation," most educators stress that "logic or reason does not function as a working principle." This attitude is evident in all aspects of our contemporary life. It manifests itself in the performing arts particularly—in Rock, free jazz, light shows, Op and Pop, and happenings.

"One of the older generation's chief hang-ups," notes North Carolina State University associate professor of product design Frederick Eichenberger, "is our inability to evaluate design problems, decisions, and solutions in operational terms. To fill the void, we have invented a metaphysical aesthetic that says certain things are better than others because they are better—and never mind why, because anyone with sensibility knows why without being told. This may help to give form and substance to our days, and grant us a modicum of comfort, but it is not particularly useful to the young. They know it just ain't so. If God is not dead, he has at least gone into seclusion."

As a result, the governing principle of the new movement, according to Howard

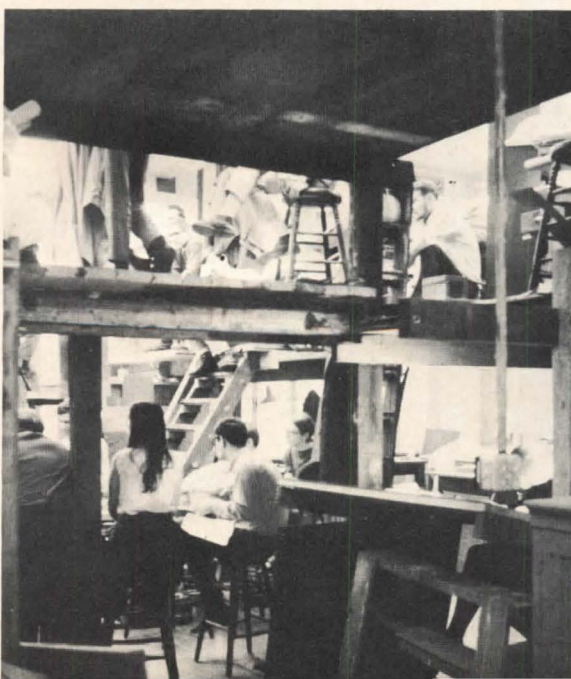


In the spring of 1967, students at M.I.T.'s Department of Architecture overnight turned one of their design studios into an instant *barriada* by subdividing it with salvage timber and concrete blocks. M.I.T. administrators were outraged by this rebellion, students say. The following fall, Donlyn Lyndon, newly appointed head of the department, gained the administration's agreement for first-, third-, and fourth-year students to involve themselves officially in subdividing, building, painting, and personalizing all their design studios as a "Space/Use Workshop." The resulting spaces resembled a demolition and construction site (photos this page). A sign at the entry to the first-year studio appropriately proclaims, "Destroy America to Save It." Some find the vision sheer chaos and aggressively messy; Lyndon himself urged P/A "not to dub it Super-Clutter." In defense, students claim the free new spaces have "Use-Form." Student William Holland explains, "The old single-room space did not really suit our needs. This was the first thing that became obvious to us even before we knew anything about architecture. Now, there is enough space to do both a model and a drawing." New mezzanines located among the ceiling fixtures provide additional work spaces above the floor-level areas, which are now like warrens with head-menacing beams; other work areas have full 14-ft ceilings; a jury room was left amid surrounding balconies. "The frustration of going through four years of drawing projects and not building them," student Jerry Wood notes, may be dissipated by this involvement in construction.

Photo: Phokion Karas



Photo (and below): Phokion Karas



Another M.I.T. involvement exercise was a thesis by three students that resulted in an actual construction of furniture and Supergraphics in the school basement; it was called "Temporary Environments" (above).



Barnstone, "is freedom and open-mindedness. The works of Yamasaki and I.M. Pei are new constrictors," he explains, "new sealed envelopes, new Establishments, and not-so-new vocabularies. These, too, are a crashing bore to the student with an open mind."

"As an attitude capable of expanding our vision of what we are doing," Richard Oliver comments, "Supermannerism is probably as important as Le Corbusier was to modern architecture."

Robert Venturi sees this as the architecture of accommodation, which "accommodates" within our design interest not only the standard vision of modern architecture but also the anonymous, "undesignated" world of "popular" life (the roadway, plastics, the chaos of conglomeration), together with the disparity between inside and outside; he also feels that it accommodates the mistake and the absurd. All the complexities and juxtaposed contradictions of our visual world, he proposes, should be fair terms for our design vocabulary.

Charles Moore distinguishes between the older architecture of "exclusion," which excluded disorder and confusion and organized all into a system," and the new architecture of "inclusion," which attempts to broaden our vocabulary and extend our sensibilities.

Neither Moore nor Venturi, it must be emphasized, see the architecture of inclusion or accommodation as barring the architecture of exclusion. The point is that the approach is viewed not as a substitute for the old, but as *an addition to*, an expansion beyond, the old. (Conversely, some question whether or not the scope of this new design is narrow, or broadly inclusive enough.)

Finally, the University of Tennessee's dean of architecture Bill Lacy summarizes what Supermannerism means, indicating "three influences presently operative in architectural design." One of these (see "Systems/Kits") is "Growth and change as a building determinant, implying dynamic rather than static forms." Another influence, and the one Lacy considers most closely allied with the aesthetic aspects of Supermannerism, is that of materials. "It concerns," he says, "the acceptance of the synthetic, artificial vs. natural environment as another step away from the vestiges of a rural heritage" (see "Synthetic Environment").

Is There a Stronger Underground Movement?

The third influence Lacy notes as operating in architectural design is "the awareness of architecture's ability and responsibility to serve a much broader segment of the population."

Yale professor Felix Drury explains, "Some people once thought that Pop architecture and Supergraphics were a

means of identifying and voicing some triumph over science and Madison Avenue." He adds, "No soap." What architects have moved on to acclaim, and what others see as a stronger movement or interest on the part of younger architects, is a concern and an involvement in social and political issues, which has nothing to do with formal or nonformal design or aesthetics. At least half the educators commenting on this subject believe that this concern with "environmental issues," "social attitudes," "behavioral patterns," "greater social consciousness," and "the human condition" is the strongest movement in architecture today.

"Energized by the chaos and urgency of the urban scene, mass needs, and low incomes," as Dean Olindo Grossi of Pratt Institute says, architects have resolved to be involved. They prefer this to showing merely what Felix Drury calls "a growing sense of helplessness in the face of it" (implying the way of the past).

"They believe the typical urban environment is inhuman and they want to do something about it," says Michigan's architecture chairman-designate Robert C. Metcalf. They want to do housing; they are living and working in black ghettos and other blighted areas—both urban and rural. They are getting actively involved in civil rights and are actually helping to design for and build in depressed areas.

Some believe that this social involvement is more significant than the new aesthetic investigations, and they use this greater moral value to denigrate the contribution of the expanded aesthetic. Others are convinced that these social concerns and the aesthetic manifestations of Supermannerism are correspondents both based on a single new attitude of involvement and participation.

Similarly, intensified interests in involving the user with the multiple functions of designed environments and objects is part and parcel of this multi-layered attitude. And the concern of tyro-architects with the architectural process, which inspires more and more recent graduates to become actively involved early in their careers with its administrative procedures and with the actual building process, is clearly a related attitude.

"Some students view the AIA-oriented architect-client relationship as a rather dreary conclusion to some turned-on ideas while in school," says Tulane's Chip Lord. "[So] there is an underground movement or feeling that is basically anti-Establishment." This movement has produced "a fringe of people who are actively pursuing their own directions," as Austin's Richard Oliver observes; they are becoming their own clients, their own entrepreneurs and developers, and are building, realizing their

Elevator Interiors

Results of a one-week design problem given to second-year architecture students at Yale during the past spring semester offer a very nearly complete exposition of the new decorative design, almost literally in capsule form. The assignment was under the direction of Barbara Stauffacher, graphic designer and visiting critic at Yale in the Department of Architecture, with the assistance of Gilbert E. B. Hoffman. Hoffman's own words provide a concise description of the experiment:

"Students were given the problem of using only paint as a medium, in a 'hard-edge' technique, to modify and enliven the constricting, drab interiors of the two elevators in the Arts and Architecture Building at Yale. Students presented their schemes in model form to a three-man jury, of whose members one was head of the graphics department and two were members of the architecture faculty. The jury chose 14 schemes that met the criteria of impact, appropriate development of a theme, effectiveness in modifying the boxlike enclosure, originality, or effective application of color and line for their own sake. Then, the authors assumed the task of executing the designs: two each week until the end of the school term.

"The problem turned out to be very successful. Students welcomed the change in scale and medium from the normal work and turned to it enthusiastically. But they soon discovered its relevance to their other work, since it involved the perception of a space and ways of altering and controlling a spatial experience. The chance to design a model and soon afterward see the design in full scale was most revealing, too, for the end product seldom provided the experience that was expected. As architects, with their traditional interest in color, they were able to feel the psychological effects caused by the intrinsic qualities of individual colors. And, finally, it was just great fun to work with Barbara and then go out and splash some paint on that elevator, which everyone abhors for its erratic slowness anyway."

Asked why elevators were chosen for the design problem, Barbara Stauffacher replies without hesitation, "Because the elevators were so awful." Why are architects and

students devoting their time and interest to the new graphics? Barbara Stauffacher says, "Supergraphics are different from the old, two-dimensional graphics, and they're more helpful to architects. I don't do them to create cute chaos. They are a reinforcement of architecture: You reinforce traffic patterns; it's an aid to circulation. I'm paid by my clients to solve their problems, not to amuse myself. The purpose of my work is to clarify, not to confuse."

"I think architects should study engineering as an aid to clarity in their own work. These graphics aren't easy; it takes a lot of experience to do this right, but architects seem to think it is easy, and they find it more fun than engineering. Of course, if it's done wrong, this stuff can look zappy and ridiculous. And I'd hate to see people scared away from it, people for whom it could, if well done, really solve a problem."

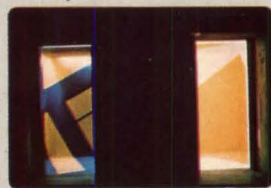
HODGES, G.



HODGES, G.



BADMAN WAGNER, M.



WAGNER, M.



CHRISTIANSEN, J.



"Hodges and Scully each developed the theme 'Ferrari' in very different ways."

BADMAN, J.



WAGNER, M.



CHRISTIANSEN, J.



SCULLY, D.



BADMAN, J.



WAGNER, M.



CHRISTIANSEN, J.



SCULLY, D.



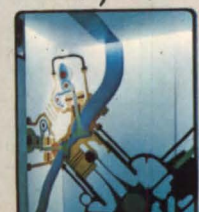
BADMAN, J.



CHRISTIANSEN, J.



SCULLY, D.



Of the individual designs, Hoffman says: "Sometimes the elevators were specifically paired (in execution, not in original design) for study and comparison. For example, the designs by Badman and M. Wagner are both diagonal line themes, in different color schemes. Christiansen's diagonals were very successful too in destroying the confines of the box. (Note the relationship to much

JACOBSON, J.



18

DRYER, T.



11

WAGNER, J.



8

PRYER, T.



16

"Jensen's elevator spells LOVE, and Jacobson's spells RED."

WAGNER, J.



2

JENSEN, L.



2

DRYER, T.



15

"On Easter weekend, I scheduled (with quite subtle cognizance) Rose's all-white elevator and Woerner and Platt's study on expressing peace—a red, white, and blue elevator with a black bomb on the door."

WOERNER, P.
PLATT, T.



12

WAGNER, J.



5

JENSEN, L.



22

"Dryer's theme was Le Corbusier's Modulor—the elevator happened to be exactly the correct height."

WOERNER, P.
PLATT, T.



18

WAGNER, J.



22

JENSEN, L.



5

RIGHTER, J.
CAUDWELL, J.



11

ROSE
↓

WOERNER
PLATT
↓



JENSEN, L.



8

"Of course, at Yale we had to have one design demonstrating the qualities of reflective Mylar. This is the design by Caldwell and Righter."

own ideas in building forms without waiting to achieve architectural registration. Such groups include the Prickly Mountain Boys (Sellers, Hosford, Luckey, Rienecke, et al) and Michels/Feild (who have been called "the Bonnie and Clyde of Archiworld"). In addition, there are the architectural happenings and summer workshops such as Tulane's "Archi-Week," New Hampshire's "New Nude Lewd Improved Family Size Franconia Electric Summer Workshop" directed by Gary Dwyer and Ed D'Andrea, Michels/Feild's "Crash City," Lawrence Halprin's recent summer workshops, and Yale's summers in Appalachia.

Other architects have rejected the traditional ways to such an extent that they look to different mediums — such as cinema, interior design, and scene design — in which to utilize their architectural training. It is surprising, in fact, to learn how many architects were undecided about whether to make their careers in painting, scene design, or architecture. Hugh Hardy and Craig Hodgetts come to mind.

These nonarchitectural activities "at least respond to the current scene, if nothing else," Chip Lord argues.

Paralleling the involvement with "social architecture," another spokesman adds, are other strong influences, such as "the technological directions and the highly disciplined aspects of design, including the systems approach and the computer, which expedite construction, lower costs, and improve the man-made environment in this age of change and growth." Design at Urbana, for example, is very "systemic," as assistant professor James Foss reports.

There is undeniable justification for this interest, since our society and our professions "have the right, the duty," as Frederick Eichenberger asserts, "to demand rigorous, objective, operationally useful solutions to real problems. No one should be allowed to exercise whims and fancy in the design of such mega-systems as regions, cities, transportation networks, health facilities, and the like. The poor are crying to be housed and fed; the natural environment is on the verge of suffocating in our excreta; the world is, in short, in dire need of massive infusions of order."

Architectural Curriculum

This involvement in social issues, and the concern for the process of architecture, are also expressed in concern for the quality of architectural education. "It is apparent that we must involve ourselves on many new levels and in a whole new range of scales," comments Virginia Polytechnic Institute's dean Charles Burchard.

Most educators and students feel, however, that architectural education has not changed sufficiently to influence either the involvement attitude of architects or

their aesthetic manifestations. Yet those who admit the absence of influential changes also protest that this is very unchanging, "weak, uncoordinated, undemanding, questionable curriculum," in the words of one spokesman, and may be the cause of the rebellion.

"Students want their teachers to talk straight to them," Howard Barnstone attests. "They want performance from their teachers; they want them to set a moral and professional example."

Administrators, however, have met changes attempted by the young with reprisals. Most telling of the recent examples is the saga of Doug Michels, whose proffering of "chaos as a design goal" prompted Catholic University administrators to reassign him from design courses to history of design courses. Even then, when Michels suggested that he would teach Mies's place in architectural theory in his own way (he proposed taking his students to a parking lot, placing them 10 ft on centers, and running zig-zag among them, as if he were skiing a slalom course, whispering "Mies van der Rohe, Mies van der Rohe"), he was asked to fill out his contract by not teaching the rest of the year.

At Austin, on the other hand, students were inventing systems that displayed "random dynamic characteristics (unpredictable rather than ordered motion)" and were taking drawing courses (called "Experimental Media") that emphasized film, slides, tapes, and animation.

Presentation techniques and graphics, which in fact sometimes seem more truly inspired than either interior or exterior design work, may have had more effect on the character of architectural education than any other factor in recent years. Charles Moore, at Yale, champions visual techniques other than the rendering or the typical plan. Isometric sections are sometimes the only drawings made for a contractor by some of the young turks; viewing models with periscopes or with fisheye and other lenses are other attempts to find new ways of seeing and presenting architecture.

As an example of involvement in curriculum, visitors to architectural schools are frequently impressed to see fifth-year students diligently bending over their drafting boards, while the first-year students are up and painting, building, subdividing their drafting studios, and personalizing, "customizing" their individual areas, regardless of the resulting aesthetic images. They are the ones, in the eyes of the new breed of designers, who are "doing architecture."

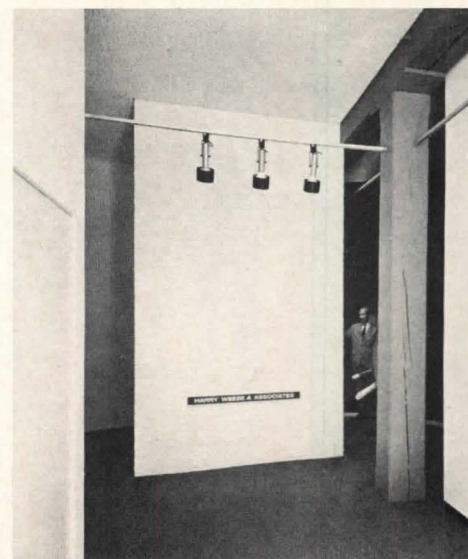
An illustrated account of the specifics of the new design movement — its elements, its devices, its materials — follows both as evidence of this extent of interest throughout the country and as explanation of its breadth and quality. A verdict, pro and con, concludes the issue. — CRS

The street-level elevator lobby of Harry Weese & Associates in Chicago is a study in ambiguity from an architect noted for logic and clarity. Like other designers in this issue, Weese has focused on the elevator, but has shunned the elaborate new palette of day-glo paint and diagonal explosions (see pp. 156-57). He has achieved a moment of confusion while remaining within the boundaries of his own tradition.

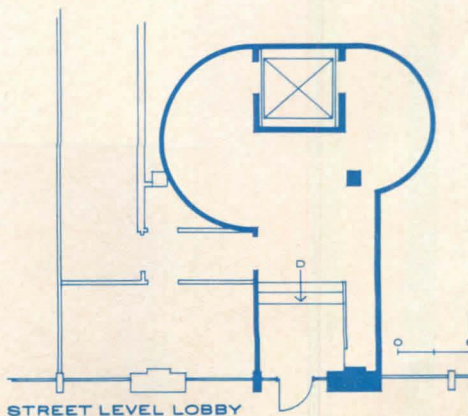
The location of the elevator behind a discreet white brick wall (1) is totally unannounced, and visitors are left to make an undirected choice of turning either right or left into the apselike space at the rear. Should they choose the left, they will find an elevator door. But what would have happened if a right turn had been the choice? When the door opens (2), the question is answered — a double entry, one on each side.

As the elevator begins to ascend (3), its occupants become aware that the designer's introductory sleight of hand was simply a prelude to the mind-expanding experience of the elevator itself. Like the lobby, it is a perfectly sober interior. But riders soon realize that the light flooding the cab is not electric, but natural: that the box is open (closed only by a clear plastic dome), that the shaft is open (skylight), and that the hydraulic system is rapidly propelling the capsule toward the top of the gantry and blast-off.

The point is not decoration, but the function of an elevator — motion.



1





3



Photos, this and facing page: Orlando R. Cabanban

2

CHAOS AS A SYSTEM

Designers appear to have moved from an attitude of permissiveness toward chaos to one of accepting it as an aesthetic goal and as a system. One extension of this design direction, Office Landscape, based on systems analysis and operations planning, is a correspondent of the new aesthetic in that it proffers visual chaos as a means toward functional order.



Hancock's New Landscape

The John Hancock Mutual Life Insurance Company has installed the second Quickborner office landscape in the United States in one of their Boston headquarters buildings. The installation accommodates a section of their Electronic Data Processing Department, and is intended as a pilot project to determine whether landscape should be used in the company's new I.M. Pei office building on Copley Square, Boston (see P/A NEWS REPORT, JANUARY and MARCH 1968 P/A), and in their other buildings.

In a couple of ways, the EDP Department was not an ideal choice. The life and soul of landscape is the easing of communication, whereas the programmers who make up the bulk of the EDP staff work largely by themselves or with others only to a limited extent. Ordinary programmers do not even have a telephone on their desks. Again, EDP is a quiet department, without the usual clatter of office machinery that would put the acoustical treatment of the installation to a severe test. There are only four typewriters and a partially shielded keypunch machine in the office. The expediciencies of the situation suggested the EDP force as the best readily available subject, however.

The first step was to establish a "planning team," whose job was to evaluate the critical factors of the situation: namely, the work patterns of the EDP people and the characteristics of the space they were to occupy. After this, they produced a series of "maxims," detailed rules for laying out and furnishing the area, determining its acoustics and interior climate, and establishing new filing methods. The team was composed of Claus D. Stang, of the Quickborner Team, working with three Hancock people: Nancy Concannon of Personnel, Nelson E. Mather of Printing and Purchasing, and Marjorie A. Neilly of EDP. The work of the team was evaluated by a "planning committee," headed by Albert E. Prouty, vice-president for Printing and Purchasing, who is also secretary of the building committee for the new Pei building, and chairman of John Hancock's Space Needs Committee. Planning was done with PERT and CPM techniques, although no computer was used. The actual layout was made by Wieland Witt, a designer from Quickborner's German office. The schedule for the whole operation, from the start of planning to the first day of use, was exactly four months, and this was very nearly adhered to.

What Was Done

The original installation, completed early this March, was for an area of slightly less than 10,000 sq ft, accommodating about 90 people. About 2000 sq ft of space has since been added to this, with considerable rearrangement of the original installation, which is that shown in the photographs. The whole area now accommodates 114 people. The average area per person is 114 sq ft, slightly higher than the company standard.

To accommodate the installation to the

individual expressions are an attempt to create chaos; they reflect rather another way of ordering and organizing. Another technique is being added to the broad range of those current." In office landscape, the key to the order is communication. The Quickborner Team, the German organization that originated office landscape abroad, and whose first U.S. installations are already at work for Du Pont (see P/A OBSERVER, MAY 1968 P/A) and John Hancock, regards itself not as a firm of designers but as management consultants with a strong orientation toward cybernetics. To them, the office is a tool for the production and handling of communications. In laying out an office they want to know, above all, who communicates with whom, how often, and by what means. The actual floor plan proceeds logically from these and the other "givens" of the situation—the space requirements of the various work stations, the dimensions of the space to be occupied, and so on—in a way amenable to computerization. Aesthetics, along with acoustics and climate control, are secondary matters, to be treated later on. The layout, then, is likely to be meaningful only to those who use it. It is some-



Photos: Phokion Karas

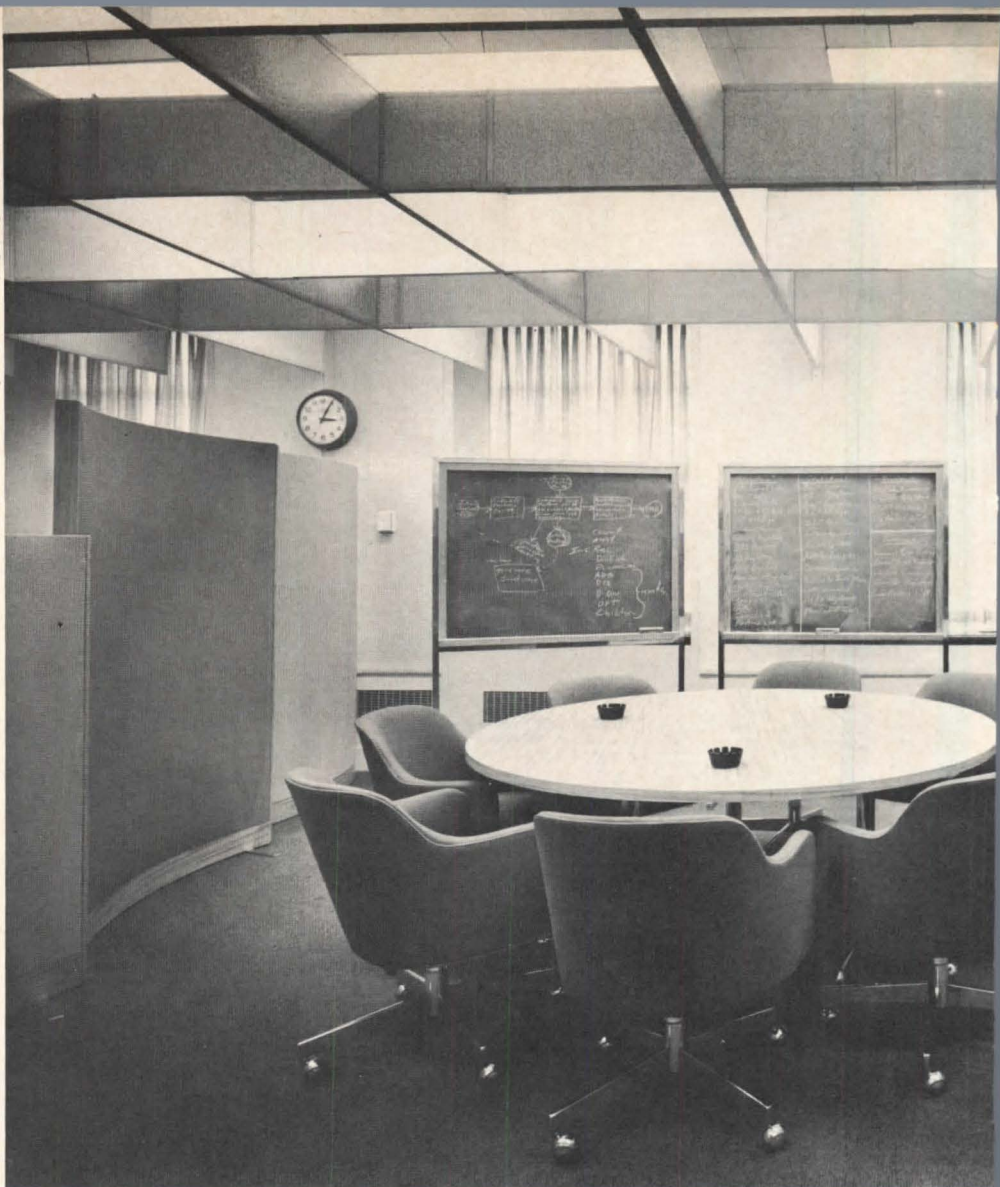
existing space, a grid of mineral wool fiber baffles, 12 in. deep, was hung from a suspended ceiling to bring the virtual ceiling height down to 8 ft. Rows of fluorescent lamps were installed flush with the suspended ceiling; in the photographs they produce a stripy effect, but the light at desk level is remarkably even. Existing metal partitions were covered to deaden sound reflectivity, and the floors, as is standard, were carpeted wall-to-wall. Curved screens 6 ft and 4 ft high were used. Furniture was almost entirely custom-made. Vice-president Prouty explains, "We decided to buy the best appointments and furnishings, in order to test fairly and show off the system to best advantage." The furniture was designed to present a minimum amount of vertical surface area, once again to suppress echoes. One interesting decision was that to use stainless steel frames, so that any alterations to the pieces that involved cutting down framing members could be done without producing sloppy results. Colors are varied. The carpet is green and orange, with a tweedy texture. White oak is used extensively for partition frames and table and desk surfaces. Upholstery on partitions and chairs may be blue, black, gold, or burnt orange. Top executives have distinctively upholstered chairs, extra large desks, cabinets, and more personal space, which is somewhat more fully enclosed than other work areas.

How It Is Working

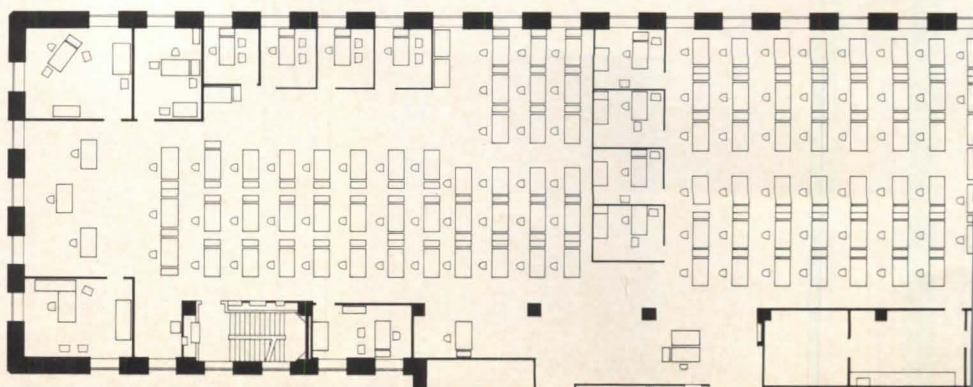
At the time of writing, it is impossible to say exactly how well John Hancock's landscape works. The peculiar nature of EDP's work and its methods of operation, the fact that existing rather than new, especially planned space was being used, and that furniture suited to landscape conditions was not, at the time of planning, to be found in stock—all make an assessment of the Hancock installation's cost-effectiveness a frustrating task. Also, the installation is a new one, only a few months old. A survey of efficiency, economy, and reactions of the staff is being made at the time of writing, however. A few facts have emerged thus far. Hancock reports that the moving-in was done for an average of \$10.38 per work station, as contrasted with \$27.98 per work station spent in moving into a conventional office under similar conditions. The custom-built furniture raised the cost of a programmer's work station 21 per cent above the customary figure, but a director's work station was 29 per cent less. Maintenance costs are thus far about the same as usual, but the landscape installation is reported to be easier to clean.

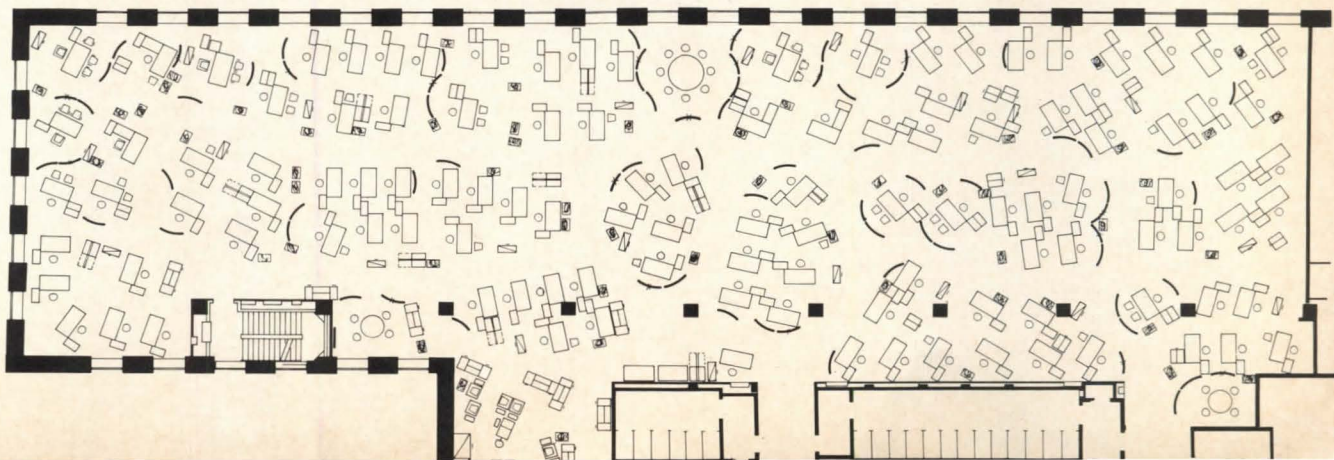
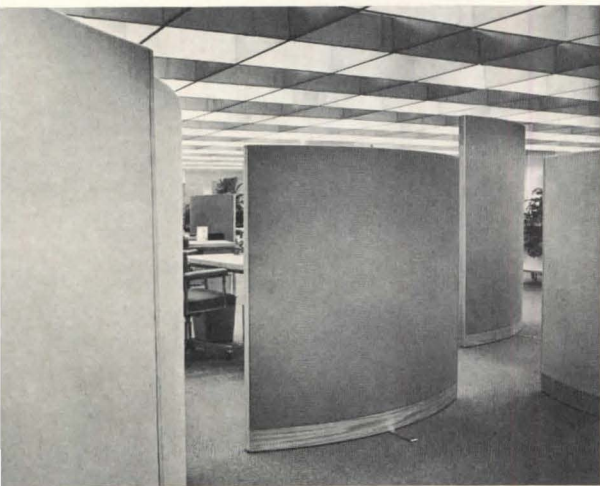
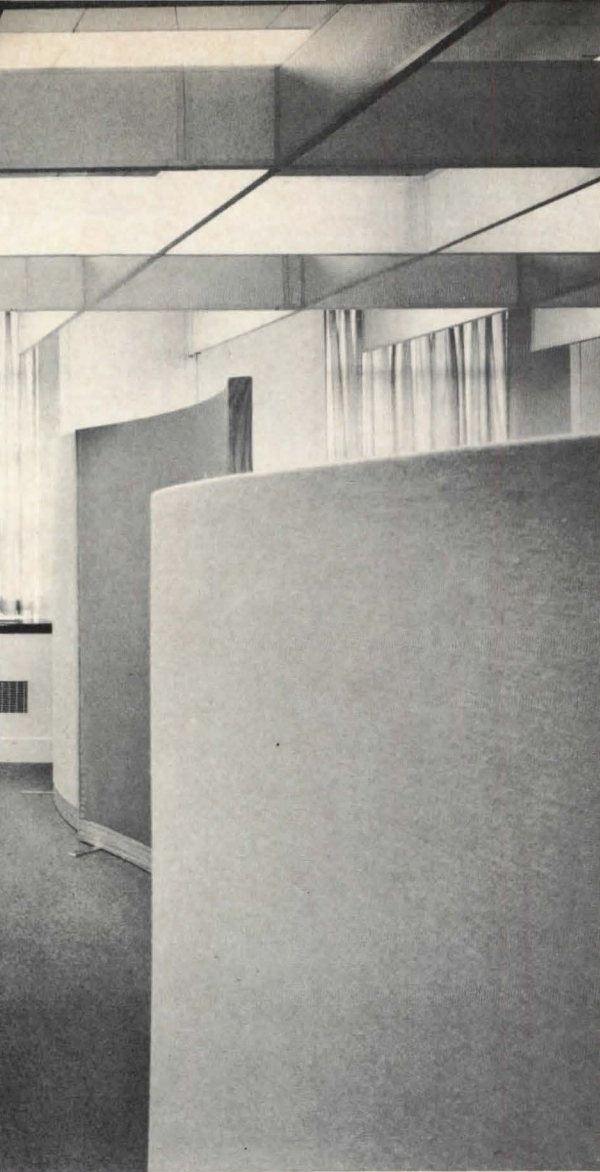
John P. Urban, Director of the Ordinary Systems section of EDP, reports favorably on the new installation. "The work efficiencies are pretty difficult to measure," he admits, "but the project leaders are looking for a minimum of 10 per cent improvement from their people." He finds that the new layout gives the staff greater privacy than the setup of "wall-to-wall programmers" they had before. Employees in other departments are interested, and many are enthusiastic about EDP's new installation: 2600 of them have toured the

Photos, this and facing page: Phokion Karas



Despite the generally open character of John Hancock's office landscape, some areas are fully defined by screens, such as the eight-person conference area, while the Pausenraum or break area (facing page, right), uses a coat closet and employee's locker unit as a space definer. Seen edge-on, partitions ranged in echelon suggest divisions of space. The plans show the major space of the present EDP office as it was before landscaping, and the "Phase II" plan of EDP, now realized, with adjoining spaces annexed.







A 360° view of Research and Design Institute's own office landscape in Providence. The former tenant, a manufacturer, took his machinery away but left his furniture and lighting fixtures, both vintage. REDE appropriated these, added two salvaged lengths of balustrade as a space definer, improvised screens and desks, and created a handsome, even distinguished-looking office.

what like a darkened apartment, through which the owner walks confidently, with all the goals and hazards committed to memory, while a guest loses his way and stubs his toes.

Planning for Theory Y

That history may be on the side of office landscape, in some form or other, is suggested by the observations made a few years ago by a psychologist, Douglas MacGregor, who suggested that the modern businessman's idea of the way to run an office may be changing from "Theory X" to "Theory Y." Theory X is the product of a "reductive" attitude, one that assumes the need for a rigid chain of command, with totally responsible and knowledgeable executives on top, and minor functionaries, responsible for and knowing about only their own limited jobs, on the bottom. Theory Y emerges from a "developmental" attitude, which assumes that everybody on a project wants to be able to contribute to the whole job, and that the executive should see himself as the leader of a team assembled to do the job.

Office landscape is well adapted to the developmental office, encouraging or even forcing the executive to emerge from his tight enclosure. One factor that would explain the transition from a reductive to a developmental condition is the increasingly larger proportion of creative people in present-day offices. If a time comes when the mental drudgery is all done by computers, the ordinary office may consist entirely of people for whom impromptu conferences are the most convenient way of making decisions. One of the prime benefits of landscape is that it makes such people readily accessible to each other, across departmental lines, without the psychological awkwardness that arises from having to ascertain, indirectly, whether the person one wants to see is busy. One can simply look over to his desk and see if he is busy.

Developmental also is the Quickborner

institution of the *Pausenraum*, or break area, to which workers go when they feel the need to let up the pace. The ordinary coffee break, a statutory idling period at the same time for everybody, is by comparison authoritarian and "reductive."

Aesthetics and Executive Happiness

This fresh, clean developmental wind blowing through the American office may blow freest through an office landscape, but landscape has a long way to go before it becomes a standard solution to a space planning problem. It has some long-established attitudes to overcome, some questions to answer, and, if it does become a standard thing, may do so only by becoming more comprehensive, more sophisticated, and more specifically American.

Take the matter of long-established attitudes first. As has just been implied, U.S. designers and U.S. businessmen have grown up with the idea that an office is a place of obvious neatness, of an order as instantly visible as the major axis at Versailles. In the last few decades, we have seen the fullest flowering of the cool business aesthetic, powerfully advocated by such designers as SOM and the Knoll Planning Unit, which has given us Connecticut General and CBS and their cut-rate counterparts. Only a couple of years ago, we saw what seemed the ultimate in this cool, rectilinear order, Total Design, that turned the office into a Platonic composition of official art, official plants, and official ashtray positions, implying a military academy gone aesthetic. To suggest to many an executive that, for reasons of efficiency, all this must be scrapped in favor of office landscape's serpentine aisles and oddly-angled desks, with the executive himself bivouacking in their midst, is to propose abomination. Such executives will listen eagerly to orthodox designers such as the partners of Saphier, Lerner, Schindler, Inc., who assure them that office landscape is not only

hideous to look at, but not particularly practical. Not only executives are prone to believe this; one manager of a landscaped office reports that job applicants have looked around them and walked out.

Again, there is the problem of status. An office manager or a vice-president may possibly not mind emerging from his prestigious den to encamp patriarchally among his subordinates; after all, everybody knows who and what he is. Some do, though, and the lesser fry, those who just qualify for private offices under the conventional system, may feel thwarted if deprived of the door and the rug that have been their symbols of success and the tangible goals of their striving. John King of ISD Incorporated, a firm of interior space designers, feels that standard office landscape thwarts a basic American need in this respect. "It works economically but not psychologically," he comments. "Organizational structure is different in Europe. There, each member of the organization respects himself for his job and in turn respects others, no matter what level they are on. Everyone is "Mister." Here, everything is oriented toward social and organizational mobility, and no one really wants to be thought of as equal. All want to show where they are, with the idea that they can go further."

Then, the questions. The openness of landscape disturbs many people, at least at first. Some people wonder how they can deal with confidential papers, have confidential conversations, when they are so approachable, and when the absence of tight cubicles allows the sound of the voice to spread. Others are simply jumpy, and wonder how they can hope to foil the eavesdroppers and spies by whom they are surrounded. (The answer to this privacy problem is masking noise, plus what Jane Jacobs calls "eyes on the street." The sneak is conspicuous in the act of sneaking.) Some people wonder how they can keep files, when the landscapers take desk drawers and file cabi-

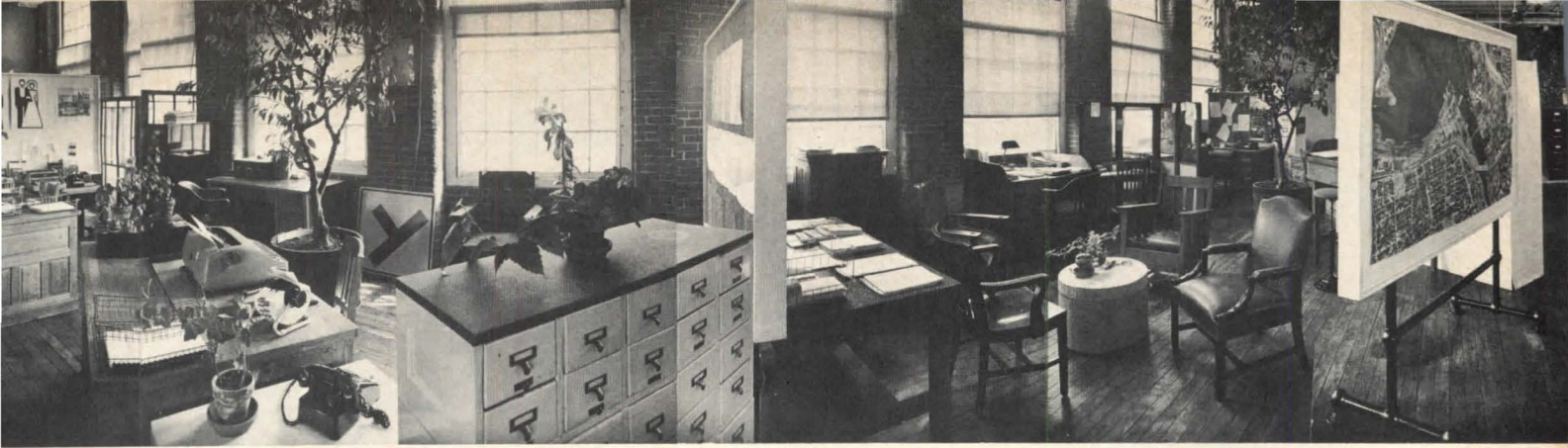
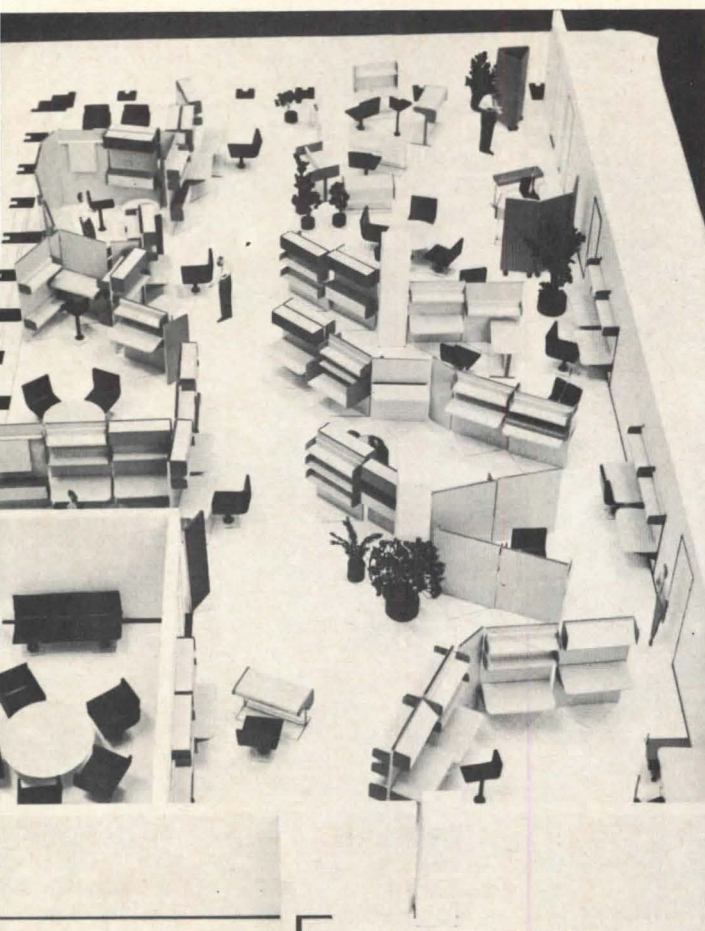


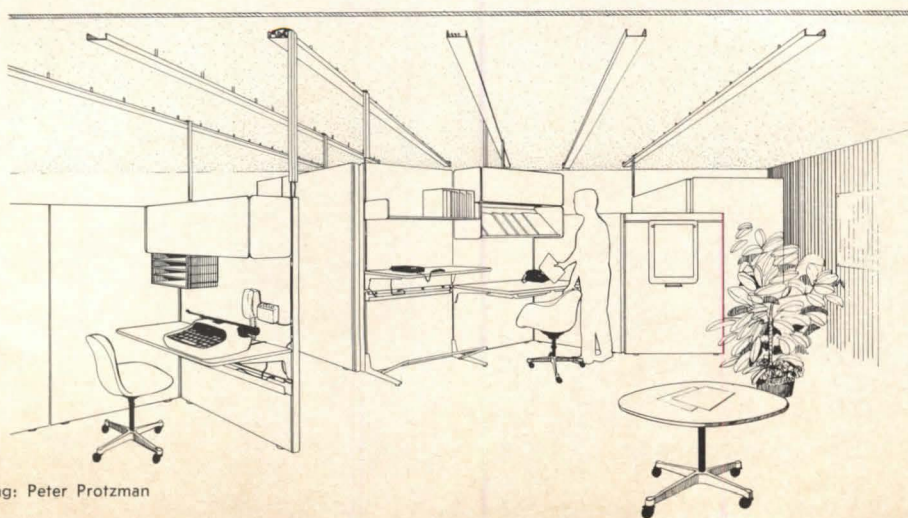
Photo: Eugene Dwiggins



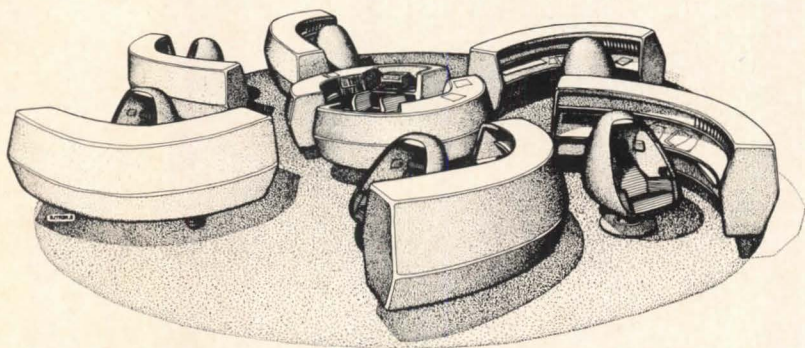
Herman Miller's Action Office II. The model shows a layout, made to answer the needs of an actual business office. The space is open, except for a corner office enclosed by permanent partitions. Most components are designed to be attached to stable, free-standing, movable partition units. Electricity is tapped from ducts in the ceiling; the wiring is concealed as much as possible in metal tubes.



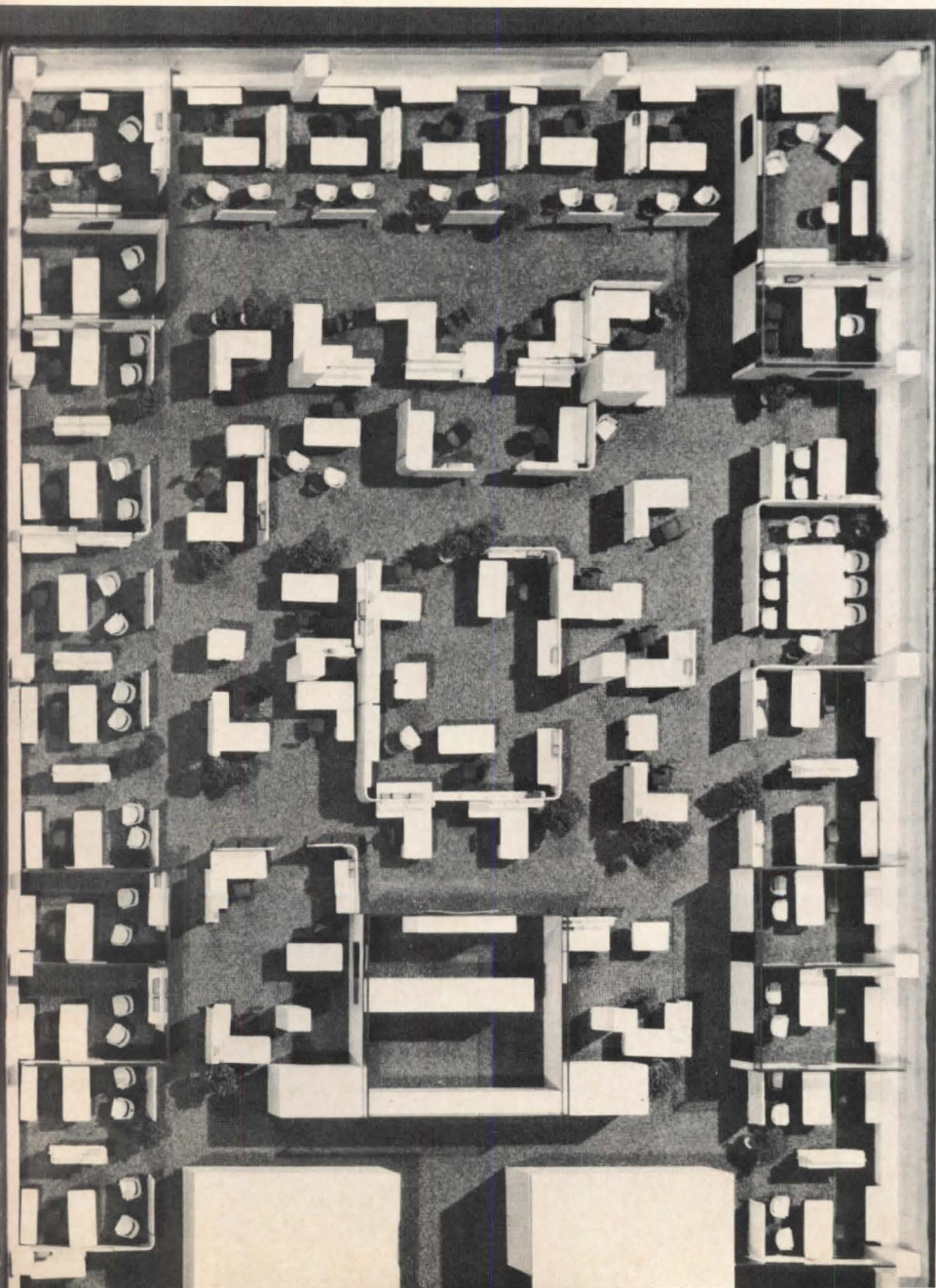
Photos: Jerry Sweers



Drawing: Peter Protzman



JFN's proposed installation for a real estate broker's office.



nets away from them for acoustical reasons. (Pro-landscape persons counter with the assertion that an absence of personal drawer space promotes tidy work habits: a file is either alive at the desk, or dead in a central archive.)

And a standing objection to all open planning is that creative people—and the creative office worker is at the center of the question of office landscape's practicality—often function best when indulging in mildly eccentric behavior, whistling, putting their feet on the windowsill, taking off their shoes, pacing up and down: things done best in private for everyone's sake. In an open plan, they are either a source of distraction, or are obliged to observe a decorum that impairs their creativity by just that much. There is probably no ideal solution to the dilemma that arises here; the shoeless executive is egregious in the open plan, the executive behind closed doors forfeits the spontaneous, reflex interaction that office landscape promotes.

The Americanization of the Landscape

The avant-garde in U.S. space planning like to consider themselves as scientists and humanists both, fully aware of all the things that make for a happy, efficient office. Unfortunately, they disagree hotly on specifics. Quickborner, naturally, feels that its approach to the office problem is adequate in all respects. U.S. designers, however, often raise two objections to landscape à la Quickborner, even when they find much that is good in it. Objection One is that Quickborner, for all its methodical survey work, neglects important psychological factors; Objection Two is that opportunities to produce neater looking and more useful work stations are being neglected.

Objection One is twofold in nature. Present-day office landscape, critics charge, fails to allow for the psychology of the individual worker; worse yet, it is laid out in ignorance of the psychology of the American office. Among those who criticize office landscape on both these counts is Ronald Beckman, formerly a

A new project that attempts to reconcile the advantages of office landscape with the American love of conspicuous, rectilinear order is this one, by Conrad Zamka of Knoll Associates, for Owens-Corning Fiberglas's new building at Toledo, Ohio. The offices are designed for creative work; the screens will give individuals a sense of enclosure when seated, while allowing them to see the whole office when standing.

ISD's Centriform unit. Each quadrant has space for a bank official and two customers, along with a wing containing a desk area, space for files and reference books, and a closet for customers' coats and hats.

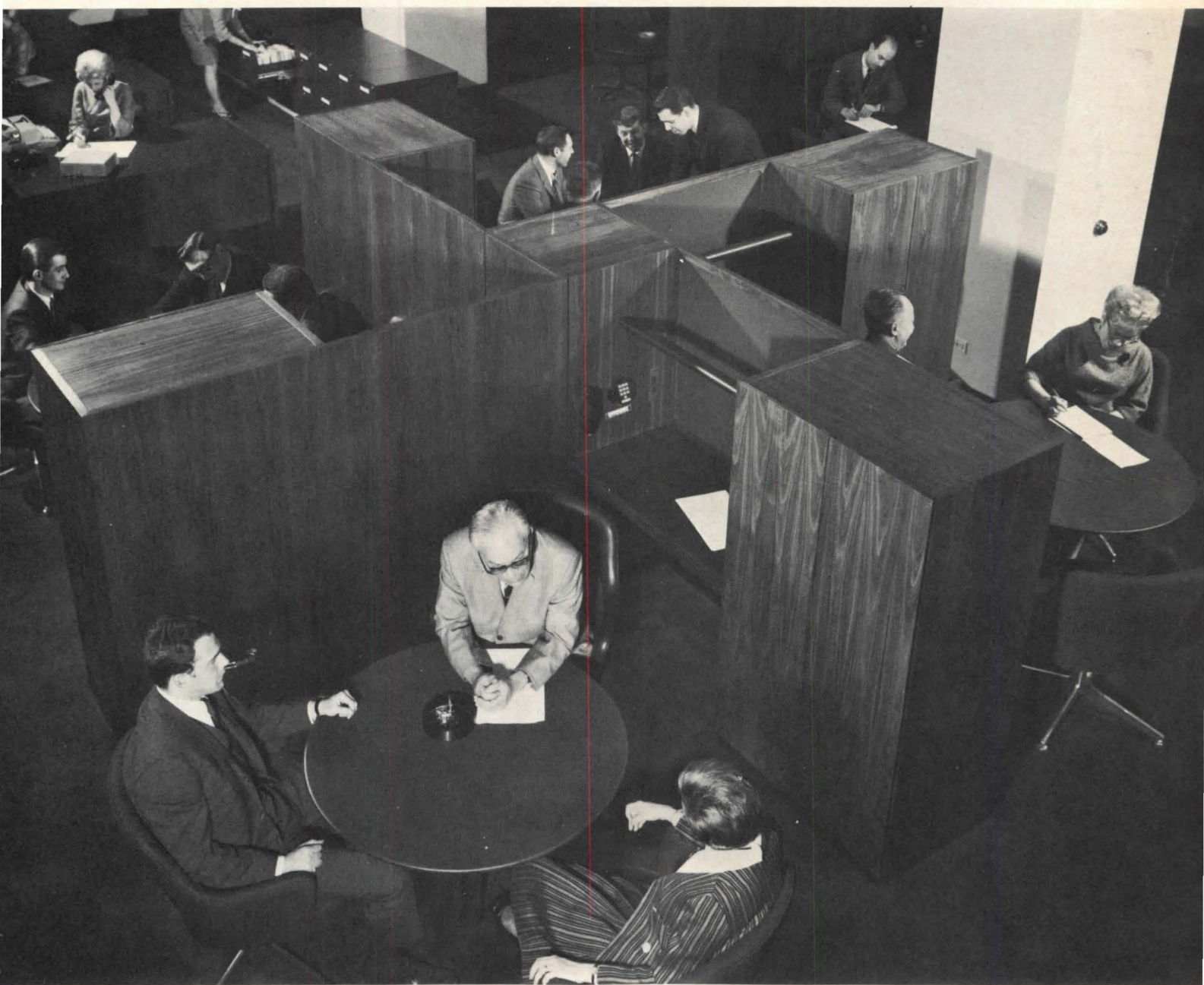


Photo: Krantzen Studio, Inc.

chief designer with George Nelson and now director of the Research and Design Institute (REDE), a nonprofit organization at Providence. One of REDE's reasons for being is a sociological one: the creation of environments, business and other, that will permit their inhabitants to be healthier, happier, and more effective than they usually are in the present-day ones. REDE's interest, in laying out an office, is thus different from Quickborner's, which is primarily in getting the work out. To Beckman, the evolution of a distinctively American office landscape

is a very important step in its development, and one that he expects REDE to help take. The built-in liberties of the Quickborner system, the *Pausenraum* and all the rest, are to him evidences of a misunderstanding of the way we work, and he suggests wryly that the Germans, having liberalized their office routine, then institutionalized the liberties, and that it is this institutionalized Germanic freedom that American office workers are now being invited to enjoy. Beckman points out that the American office looks formal and authoritarian, with its lined-up

desks, but that its people stop and chat, go out for haircuts, do little informal things that break up the routine. Moreover, they decorate their workplaces, clutter them with nonstandard but useful equipment, and make themselves generally at home. The well-run, well-designed office, Beckman feels, accepts this. In his George Nelson days, Beckman worked on office furnishings, including integrated systems, such as that for the University of Tennessee architectural school ("Hybrid Walls," AUGUST 1966 P/A) and the forerunner of Herman Miller's Action Of-

fice II, whose attempt to integrate hardware and humanism will be discussed later. Beckman feels, however, that furnishings, integrated or not, are less important to a successful office than the attitude that governs their choice and placement. His own surroundings are an illustration of this belief. REDE's office is a home-grown landscape in an old factory, using furniture abandoned by the previous tenants, and it works very well. REDE is now at work on a large New England business office, where it will have a chance to apply its principles on a really large scale.

Jaeger Protests

Dieter Jaeger, a partner in the U.S. office of the Quickborner Team, is an articulate defender of the present system. He is irked by the kind of publicity office "landscape" furniture, may end up bringing itself afraid that ignorantly critical or ignorantly imitative office planners, "ill-informed journalists," and producers of "landscape" furniture, may end up bringing landscape into disrepute in the U.S. before it has had a chance to prove itself. He is therefore anxious to dispose of what he regards as serious misconceptions concerning the subject.

One such misconception is that a kind of Germanic inflexibility has evolved a large number of detailed, specific "maxims" that are applied willy-nilly to every office. Jaeger denies this; he says that the maxims that determine the laying-out and operation of an office are created for that specific office, as a result of careful observation of existing work patterns, if any, with modifications arising from the "realities" of available space and so on, from work patterns that it would be desirable to introduce, and from general principles that the Quickborner Team has found applicable to every office situation. The principle of the *Pausenraum* is conspicuous for its character of universality; the worker takes a "real break," whenever he feels like it, in an area set aside for rest and conversation.

Another misconception, easily acquired in looking at Quickborner's elaborate survey of communications patterns, is that landscape can work only in an existing office. On the contrary, Jaeger says, a new office can be subjected to a mixture of prescription and prediction that will allow general maxims to be spelled out, within whose restrictions the office can be rearranged during the shakedown period.

Jaeger believes that objections centering on the human factor exist largely in the minds of persons eager to make out a case against landscape, which to him is not only a business tool but a thoroughly humane environment. He dismisses the Americanization problem as a red herring, "In an office, there is not an American mentality or a German mentality;



Photos: Courtesy, Eastman Kodak

there is only an office worker's mentality." Nor does he think that status, individualistic conduct, or office espionage are troublesome. As to the practical problem of filing, he is convinced that the office worker should be discouraged from storing paper. The modern office, everyone admits, has a shrew's appetite for communications, and these must be processed as rapidly as taken in. An efficient office makes this possible for every worker. A large amount of personal file space, then, creates a way of putting things off, or of hoarding information that may be useful to others, or that may have become useless to anybody.

Office Townscape?

Objection Two—that concerning the form and equipment of the work station—poses a problem for the designer that is half-practical, half-aesthetic. Assuming that an office landscape—a free-form open plan, that is—is desirable in some form, need it look the way the Quickborner landscapes do now, and need its hardware, as it is now, be regarded as technically perfect in all essentials? Is it not possible that there is a step, a neglected link, between abstract requirements and concrete fulfillment in which the designer is partly free, if he so wishes, to shape the individual work stations and thus determine the formal quality of the office space? Several American designers think so; accepting the free-form layout, they still have the itch to work on the components to create something more fully integrated, more architectonic, perhaps, more orderly in appearance. Landscape work stations at present have the look, undoubtedly, of hasty encampments, and the rectilinear desk and tabletops clash visually with the cylindrical surfaces of partitions. Too many plants begin to look silly. No one type of element is large enough to dominate the scene, not even the screens. These screens, potential shelf-carriers, support nothing but themselves. Small wonder that systems are emerging that are intended to integrate more fully the elements of a work station, hopefully with no sacrifice of the ready mobility that is an advantage of office landscape.

Of these new American systems, the most sophisticated and adaptable is perhaps that worked out by the design staff of Herman Miller to the general specifications of Robert Propst, and called Action Office II. This is a modular system with many components, adapted to a con-

ventional rectilinear layout or to the free-form, communications-oriented office landscape. Propst recently published a book, *The Office: A Facility Based on Change*, to introduce Action II. In this, Propst's thesis is that the office worker, in order to function happily—in order to function effectively, as a matter of fact—needs equipment that will answer his specific needs, so that he can get through his hectic activities without artificial obstacles. In order to do this, the worker has to be allowed many options as to the ways in which he will work alone—seated or standing, for instance, the ways in which he will confer with others, the relative amount of privacy or exposure to others he has at a given moment, and so on. Action II, like office landscape, seems best adapted to creative people, for whom the spoken word is an important tool.

The most important piece of office hardware in Action II is a self-supporting partition stable enough to hold writing surfaces, shelves, or anything else that may be useful. These can be fitted to the partitions very easily. Seats at varying heights are available, as are round conference tables and other free-standing furnishings. "Territorial sovereignty," considered so important today, can be supplied; workers usually occupy partially enclosed spaces marked off by two or three partitions, and "kiosks," three-leaved screens, can be brought over to give even more privacy. File space is kept to a minimum, with a heavy emphasis on the display of file folders, in order to insure that dead matter is recognized and gotten rid of. The layout procedure is as sophisticated as Quickborner's, perhaps even more so, since it includes questionnaires for the individual workers, intended to determine their activities and the way they allot their time.

Office landscape is not a universal solution, even in the opinion of American designers who are enthusiastic about it. John Larkin of the Interior Design Division of Vincent G. Kling & Associates, is an enthusiast, but says, "Office landscape is not a cure-all. It cannot be used in every case, but it is one more tool in our kit of office planning and design."

Landscape is probably superfluous, for instance, in the office where the movement of paper around an office and face-to-face conversations between coworkers are unimportant to the job. For people working on their own, or doing their business by telephone, the rectilinear layout is still a good solution. Even here, though, alternatives to the cubicle-plus-bullpen office are appearing in the form of free-standing, integrated, permanent elements in the middle of the office floor.

Thus, ISD, Incorporated, has developed the "Centriform" unit for the Exchange National Bank of Chicago. Centriform is used for conferences between bank

officials and customers. The idea is that the customer can come in, hang up his coat, and sit at a small, round table with the official. The customer faces inward, and gains a reassuring sense of privacy while he explains his money problems. The bank official can whirl around on his chair to reach for a book or a paper, or write at his desk, and whirl back to face the customer across the table again.

JFN, Incorporated, New York office designers, has suggested a similar cluster scheme for a firm of real estate brokers. A broker is essentially a man at the end of a wire, and his office chair is here treated as a telephone booth—and it does contain a telephone—enclosed and padded so that when he faces his curved desk he is reasonably private. By turning around, he can face the outside world, talk to a visitor, or pass a message to the typists shared by the brokers in his cluster.

Thus, Americans, inspired or provoked by *Bürolandschaft*, are reacting in characteristic ways: taking the work station to the factory in search of more flexibility, more integration, more intensive utilization of components, or else custom-building multiple work spaces that function with the geometrical order of machine assemblies. Aesthetically, these solutions, though intended for the open plan, function as an inversion of standard office landscape; rather than having a visually chaotic distribution of small objects whose position is determined by invisible work patterns, the office these designers envision would contain large, permanent (or permanent-looking) objects, counters, partitions, and so on, that would define small, meaningful spaces within an all-embracing, negative space. The encampment would become a town, and Americans who still yearn for personal space and visual order would, presumably, find a happy medium. This is not to say that the Quickborner office is stillborn, so far as the U.S. is concerned; it is too early to tell. What office landscape, and all the landscape-type systems show positively—perhaps the only thing they have shown positively thus far—is that an office is a subtle problem, functionally, psychologically, and aesthetically, if you care to treat it that way.

The free-form, open-plan office, intended to accommodate spontaneous communication and sudden change, brings us back, part-way, to the old, "undisigned" office, laid out by the office manager, according to "maxims" that were half-conscious and empirical, in the days before space planners existed. It reflects not only the current aesthetic phenomenon of visual chaos, but also the continuing importance of "do-it-yourself" and personal initiative in the forming of habitable spaces (see "Systems/Kits").—wck

The newest Quickborner office landscape at the time of writing is this remodeling of an entire floor of an existing office building for several departments of Eastman Kodak, at Rochester, New York. Here, as in Action II, electricity is tapped from the ceiling; in this case, though, the wiring is brought through a movable pole that stands on the floor.

HARD-EDGE INTERIORS

Our too-often drab environments are being revitalized increasingly through the use of paint. Sometimes, painted lines cut across interiors in liberating ways; sometimes, painting updates the venerable technique of *trompe l'oeil*. Among those who are exploring this medium, Houston's South Coast Group calls it "Hard-Edge Interiors."

Paint—applied, unnatural, cosmetic decoration, as it was considered in recent decades—has returned as a mainstay of the new approach in design. What was Out is now In. "Architecture is the progression of valid fads," says New Orleans tyro-architect Chip Lord. "In the hands of talented designers, this movement is potent and real, but also easy to copy, since all you need is a paint brush."

Space expansion is the principal aim of the investigation, with its main significance the expansion of our sense of scale, as P/A has previously indicated in the discussion of Supergraphics (p. 123-137, NOVEMBER 1967 P/A). Much of this activity derives from the influence of the paintings of Al Held and the sculptures of Tony Smith, who have expanded our vision of superscale. Venturi and Short's Grands Restaurant (pp. 132-135, DECEMBER 1963 P/A) was an early interior precursor, with its painted mirror image graphics on opposite walls.

Other designers, however, have different goals, as the following pages indicate. Some of their efforts are ordering techniques, some are leveling techniques. Pure sensory envelopment, circulation clarity, signage, and superimposed pattern without aiming at spatial extension are other goals.

Richard Oliver, for instance, who is assistant professor at the University of Texas at Austin, insists that his colleagues and students "have interpreted the cool media in their own terms." His "3-D figure-ground ambiguities" seek "through the use of color and other optical phenomena, to produce several levels of interpretation of static physical artifacts where the levels of interpretation are often ambiguous relative to one another, and simultaneously mutually revealing." His version of Supergraphics "doesn't seek to extend space or to relate it to other places." Rather, Oliver explains, "the technique seeks complexity in static objects by encouraging simultaneous and often ambiguous interpretations." His own apartment design, seemingly clear, does in fact have an ambiguous formlessness that is hard to grasp, owing to its

multiple analogies (facing page, bottom).

Whether the purpose of these painters of interiors is to hide or to reveal their environments, their form-camouflage through surface design usually distorts and confuses. The technique derives from Hard-Edge painters and the color-strip and color-field painters, such as Alexander Lieberman, Kenneth Noland, and Ralph Humphrey. For the goals, of these nonextenders of space, there is a time-honored historical precedent in the elaborate and often deceptive *trompe l'oeil* and the fake symmetry work of baroque and mannerist ages.

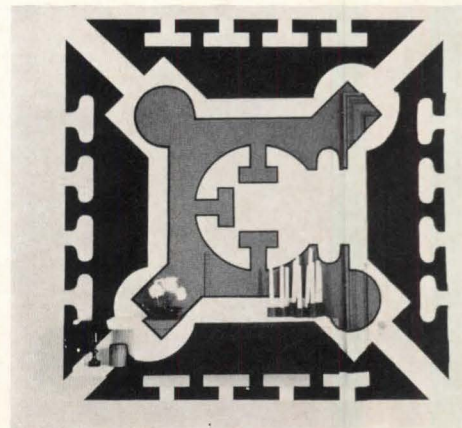
The University of New Mexico's chairman of architecture, Thomas Vreeland, Jr., points out that this painting evidences itself in student work even more in the style of presentation. "We find students using colossal size letters and numerals, juxtapositions of clashing oranges and purples, blacks and silvers, bold over-scaled patterns," he says. "They also use electronic sound reinforcement, and all kinds of new projection techniques of slides and motion pictures involving distortions, reversals, and multiple images."

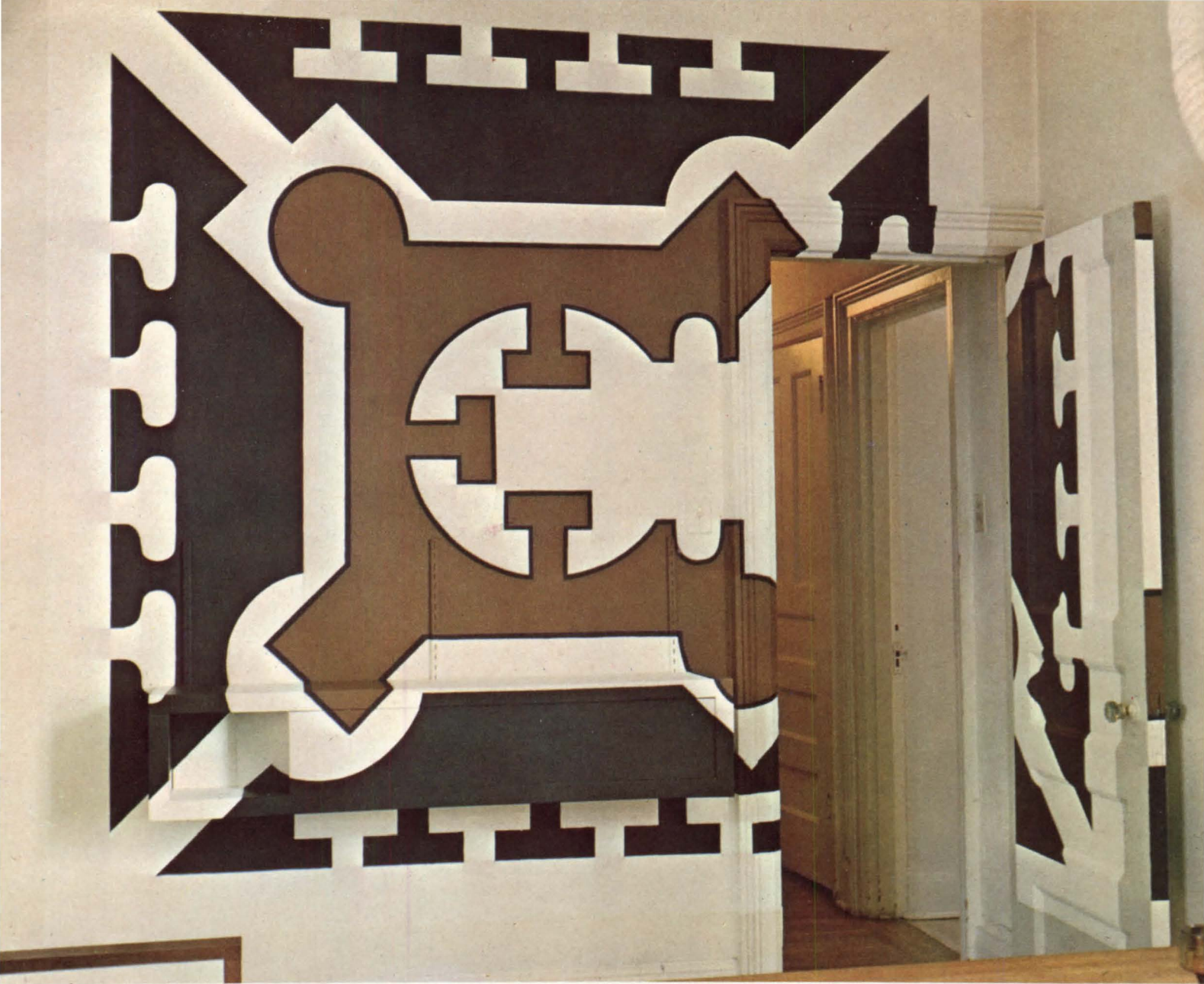
Most of these manifestations in interiors are with paint, because the designs are by undergraduates and recent graduates who have not yet received commissions to do entire buildings, and because the work is often financed by the designers themselves on really low budgets. Consequently, it employs this least expensive medium.

For this reason, much of the work looks insubstantial—and of this it is constantly accused. However, such work looks insubstantial to the established eye because it actively accepts, within the vocabulary of design, the thin, slick, and cheap appearances that were formerly rejected by "exclusive" designers.

Aside from the increase in our sense of scale, perhaps the most important contribution of the work with paint to the quality of life is the enriching of our environment by the inclusion of humor and whimsy through the spatial puns and sometimes literary analogies of the Hard-Edge interior designers.—CRS

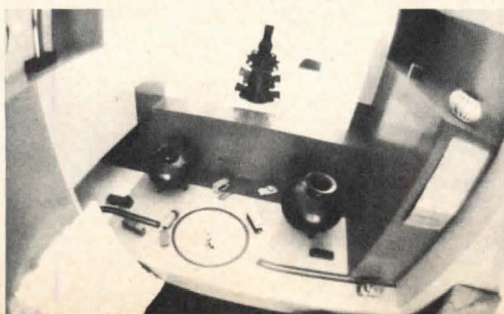
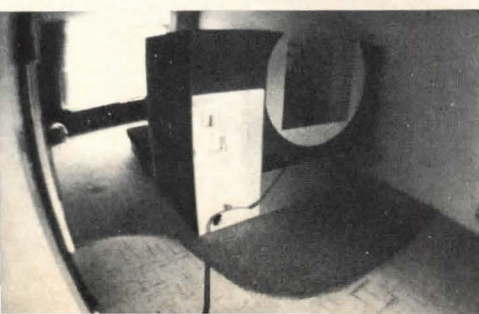
Barrie Briscoe has superimposed a mural on a white room, oblivious of door and shelves, in a manner analogous to the 18th-Century technique of paneling symmetrically and then cutting required closet doors across the design. But here the scale is entirely new. Also, paint is a more "immaterialized" kind of paneling; or, conversely, an instant-interior projection in slightly denser materials. Further, Briscoe, who was trained in the fine arts, engineering, and architecture (at Syracuse, Washington, and Penn) plays one ultimate trick: When the door is opened, the lower-right-hand corner of the mural appears on the other side—not in reverse, as if it were printed through the door fabric; rather, it is painted in mirror image on the opposite side of the door and therefore slides out against the adjacent wall as the door swings in. This is a discontinuous wrap-around mural.





Richard Oliver, assistant professor at the University of Texas at Austin, designed his own apartment with recognizable giant furniture polychromed with segments and stripes, but he is articulate about the attitude at Austin that distinguishes these from Supergraphics and adds that "[we] interpret Supermannerism in our own terms." He calls the segments and the over-all technique "3-D figure-ground ambiguities," which, essentially, "seek to produce in three dimensions the multiple organizations and interpretations (with corresponding ambiguities and tensions) of the visual phenomena that Vasarely seeks in his paintings."

The stripe here is a "roadway system." It is a play of scale between the miniature cars that are displayed on it and the room that it ties together. The roadway system "goes across the floor, diagonally across furniture, disappearing and reappearing, and finally up the wall." Although the roadway system "creates special places," as Oliver sees it, "it also levels special topographic features of the furniture and becomes topography when none exists. It is much as freeways overlay themselves on the city without respect for geography or location."



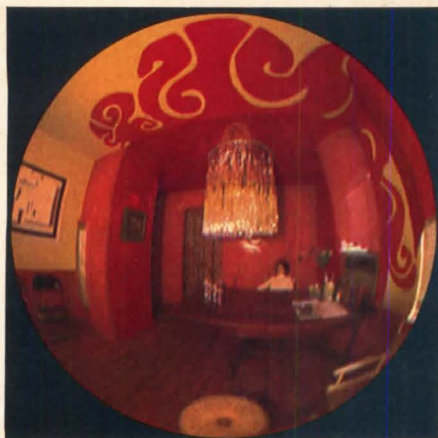
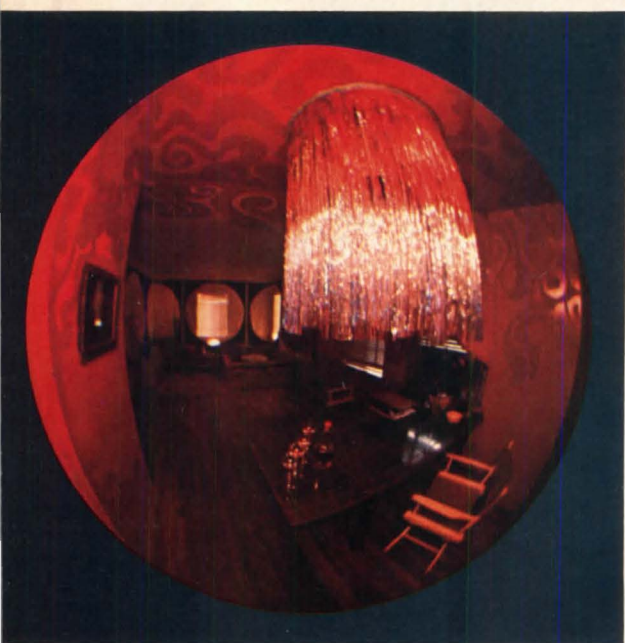
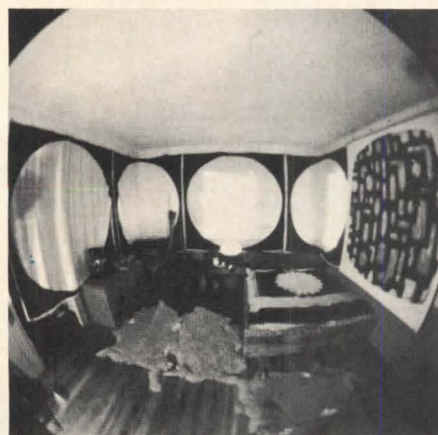


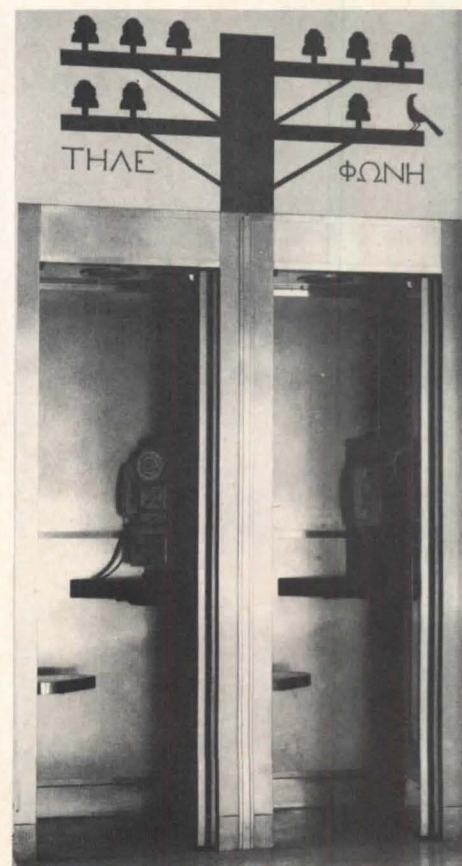
Photo: Bernard Liebman



Kenneth Carbajal of the University of Houston's South Coast Group took a beige apartment, stripped it of "uglies," and painted high-gloss blood-red (and yellow and blue and white) psychedelic "wiggles" on flat. The red-on-red eating area with its chandelier of 3-ft tinsel strips snakes out onto a yellow living space. There, 6-ft army surplus signal flags are stapled over walls and windows to provide a unifying pattern of circles. A bunk bed built into the stairwell is enclosed by red squiggles on white. Black light and a color wheel further turn on this example of what the South Coast Group calls "LSDesign."

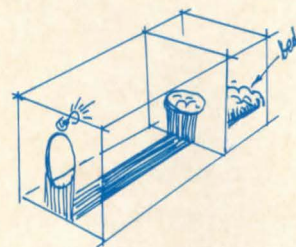


Ben Holmes of Houston's South Coast Group has painted circles in a bedroom to give an appearance of evenness and unity to several disparate elements. On the glossy yellow walls, flat orange circles of different diameters negotiate different sizes of windows and access; the ceiling has a white-on-white circle that acts as a unifying dome. A vegetable crate used as a bedside table is also painted orange—"orange crate" as Holmes points out.

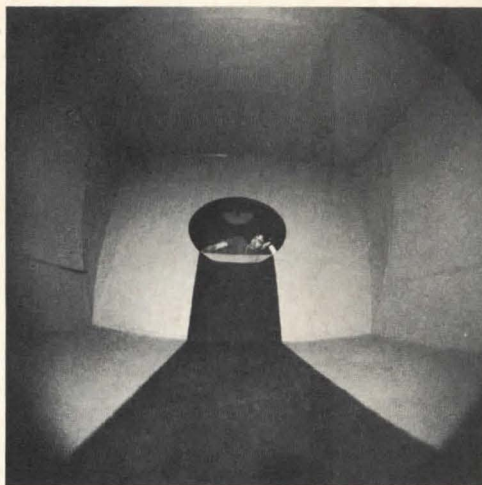


Alexander Girard was always interested in paint and pattern-on-pattern, even during the days of plain patches in pure colors. Now, he combines a personal blend of signage and Pop for the telephone booths at St. John's College in Santa Fe, crowning them with a suggestion of communication lines that stretch invisibly beyond the back wall to points across the globe.

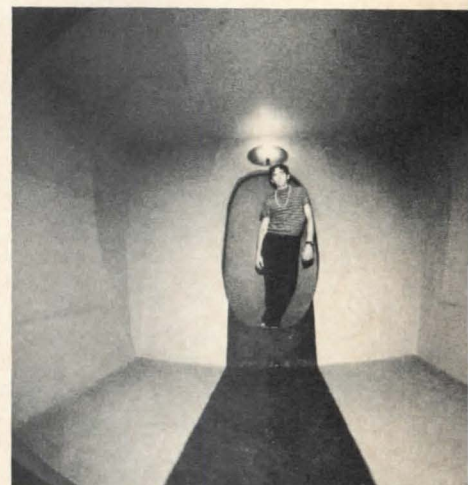
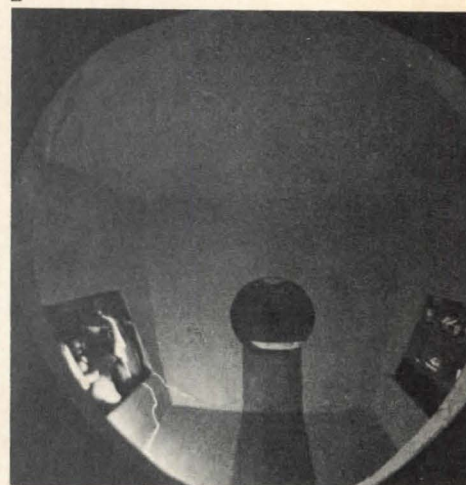
The Space Design Group's showroom for the All Steel Equipment Company has an area in which the manufacturer's older, pre-Miesian furniture designs are displayed (facing page) separately from the later furniture. SDG has entirely hidden this distinction with no-color. Throughout, the display space is done in black, white, and gray, including the envelope, the upholsteries, and the furniture. Marvin Affrime, director of SDG, explains that this scheme was used because, as furniture specifiers themselves, SDG had always found displayed colors an intrusion on their own designing. In a year when Seventh Avenue's fashion promoters have declared black-and-white an In color scheme, SDG has shown that stylish cosmetic paint used well, can make face-lifting of older forms necessary.



1



2



3

If ever there was an illustration for "LSDesign," this is it: fourth-year student Charles Coffman of Houston's South Coast Group converted what he calls a "Grade A Acme rectangular box" into a "livable bedroom" by painting it entirely in red latex gloss—floor, walls, ceiling, closets. The only exception is a blue gloss stripe that leads from entry door to pigeon-hole bed nook (1). Behind red panels on the side walls are storage compartments (2). From the sleeping area, the circulation stripe leads back to a pigeon-hole entry of stand-up proportions (3). Materials were 4-ply corrugated cardboard sandwiched on 2x2 skeleton, plus tacks, tape, and paint. Lighting in this turned-on room is also red and blue. There are new ways of seeing rooms (4).

4

FUN-HOUSE @ TULANE

Ambiguity of surface, one of the optical games that University of Houston students call "Fun-House Architecture," is an essential element in much of the new work in interiors. Its effects are ambiguity, distortion, confusion, and surprise — all derived from the irreverent intention of destroying architectural packages and packaging by destroying the actual space, and blasting us off into another scale.

"The first generation of hippie architects has come of age," proclaims New Orleans' Chip Lord.

Besides paint, these hippie architects — and some of their mentors — are also employing optical games in interior design, most of them based on ambiguity of surface. In addition, they are interested in textural surprises, such as floors with bouncy surfaces or with plastic sheeting that has bubbles in it (the kind used as packing material), which bursts as one walks on it.

Sparked by three recent art movements — Camp, Pop, and Op — the Campopop results are combinations that cannot be easily untangled.

The correspondence, however tenuous, that Chip Lord sees between these design efforts and hippie things is in the alienation, disorientation, and formlessness evident in the "New Theater" and other performing arts. It is a rebellious attempt to expand experience by breaking down the traditions of the Establishment.

Starting with an aim of destroying actual spaces and exploding scale, these spatial ambiguities rely on dislocation, confusion, and distortion for their effects. The designers camouflage forms with unexpected materials, or they attempt to achieve immaterialization of forms, to produce non-objects, through invisibility, multiple function, reflection and transparency, and superimposition of plane on plane. Ultimately, a feeling of weightlessness and the hallucination of infinity may be achieved.

These directions in perception and visual communication have been explored in a course that Thomas Vreeland has been teaching for the past two years. "Following a distinction of the psychologist Kiffka," Vreeland explains, "there are two environments in which human beings operate: the *geographic*, or actual, commensurable, physical one; and the *behavioral* or perceptual environment, the one we experience in our heads. These two environments follow separate (though frequently related) laws," Vree-

land continues. "Architects have taken for granted that they are operating in the first (the geographic) when in actuality their most important contribution may be to the second (or perceptual)."

To demonstrate these perceptual effects, architects are using materials such as mirror, polyethylene sheeting, and silver mylar. Silver is more effective by its own nature, since it produces soft reflections that duplicate the statement but confuse the image and make it discontinuous while interdependent. Mirrors, for all their clarity, however, can be placed in such a way as to achieve even more disturbing spatial confusions. Yale's Project Argus, for example, used great panels of silver mylar placed diagonally in the A & A building's jury space to disorient the viewer completely (see p. 152).

Painted mirror images and painted shadows of real objects are also used to extend space and confuse experience. Working with "like volumes and unlike surfaces," as the University of Arkansas' James Lambeth describes it, "with like areas and unlike volumes, with image upon reality," can also compel the involvement of the viewer in puzzling out his various levels. In addition, the superimposition of paint on glass and its manipulation of light and shadow has been used to play "behavioral" tricks on the "geographic" environment.

These investigations also have architectural precedents in the work of Bruce Goff and Herb Greene.

If the perspective distortion and other optical games of the art world are, as has been claimed, aimed at destroying the balance between the real and the imaginary, the activity in the applied art of interior design has as its benefit the creation of the connecting link between the known world and the unknown world of outer space. It is a connection that is being reinforced by a change from our traditional world of natural materials to a new man-made world of synthetic materials.—CRS

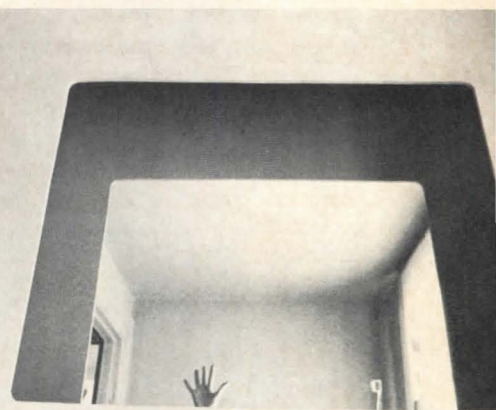


Chip Lord of Tulane painted the mirror image of real French doors that are on the opposite wall of his own apartment. He says, "The mirror image is one of three white doors on off-white walls on axis through the living room and dining room; the other two are real." The doors seem to sear a form through the empty space, as if some laser expert had turned on in the place. Maybe the Invisible Man has just walked through.

Chip Lord painted his staircase glossy orange enamel and the handrail blue, except for the depth of the handrail, which is painted orange also. Then, as if there were a one-point light source casting a shadow, he painted the shadow on the stairs in blue—"sometimes hard to climb," he notes.



Photo: Maude Dorr

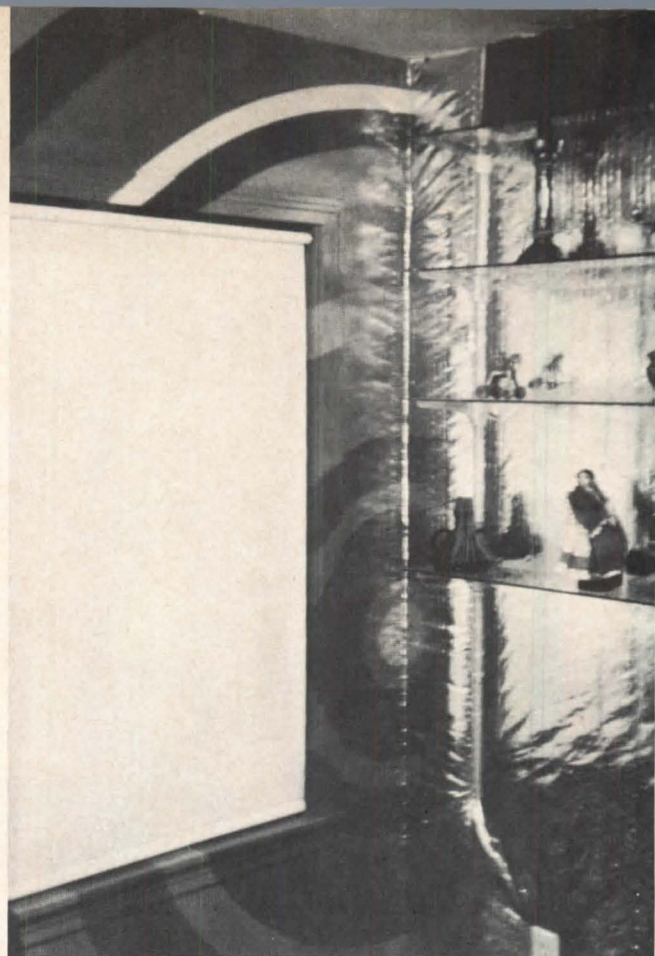


Charles Moore's New Haven house has a fun-house mirror arrangement that disturbingly disorients the viewer. One wonders which plane the mirror actually is in. The mirror is framed by a flat panel with a radius corner rectangular cut-out. In front of it is another cut-out panel that is open. Between the two panels is a shelf for toilet articles. But the reflections of the two frames confuses one's ability to locate the actual mirror.



Doug Michels has painted a supergraphic circle on the window of his apartment in Washington. It continues along wall, ceiling, and floor so that it both plays with solid and void in a confusing manner and also utilizes changing patterns of light and shadow. As cars go by at night, the headlights cause an instant flicker of patterned shadows on the ceiling. Michels evidently sees the design also as a painted banner of arms to put down the Establishment with: "I.M. Pei (whose apartment building it is) has been given a supergraphic," he proclaims.

Dick Dodge, an assistant professor at the University of Texas at Austin, upholstered one wall of his study-office in silver-faced insulation. It has seams that give it a crinkly texture. On the adjacent wall he painted a portion of a gigantic bulls-eye, which jumps the window and its bare shade and is reflected and completed in the silver wall. But the crinkly surface is more ambiguous since it does not give off reflections very well; sometimes the surface asserts itself over all the reflectiveness. In addition, Dodge has superimposed glass shelves on the silver wall and displays glass objects there. The visual overlapping and extension of these elements are exemplary of Supermannerism.



Charles Eames' view of Alexander Girard's restaurant L'Etoile shows the several mirror-and-silver tricks that Girard overlays to achieve perhaps the most complex series of reflections and ambiguities of planes, surprisingly within what the young designers might disparage as a tasteful surrounding. Glass panels etched with the great names of France are reflected in mirrors on the side wall; also reflected are a silver faced column and a white truss that forms the handrail of a stair.

Photo: Charles Eames

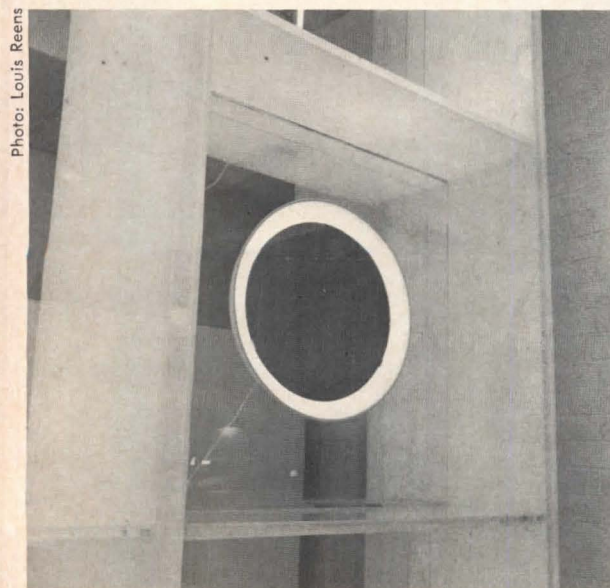
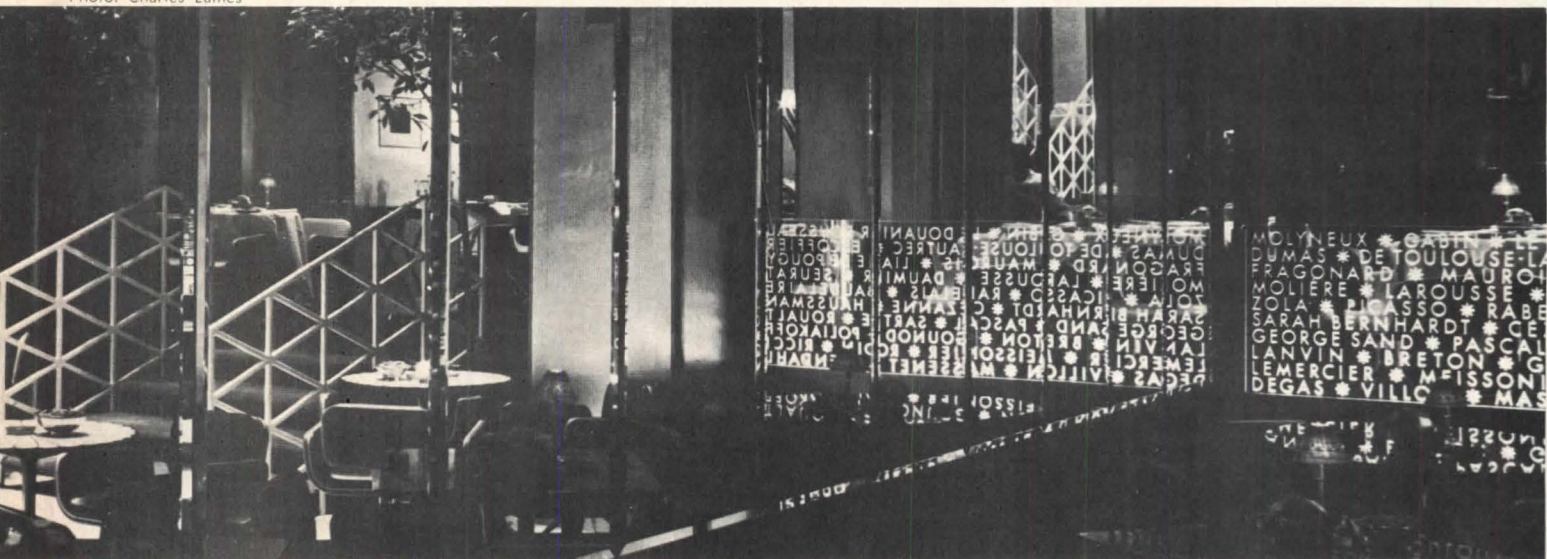
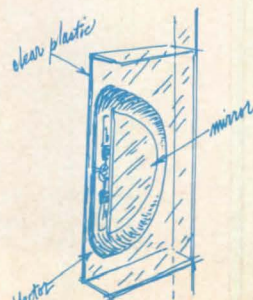


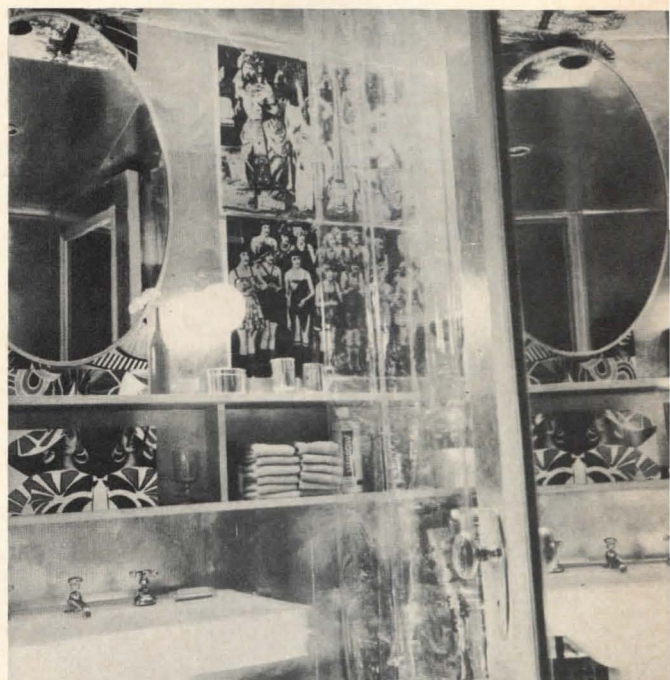
Photo: Louis Reens

In his design for Georg Jensen's Centre for Advanced Design, Warren Platner has hung a back-lighted shaving mirror within his acrylic plastic display system so that it floats in space. Because of the interaction of transparency and reflection, a complete disorientation of space occurs for the viewer. Plane on plane are there, but which is forward of the other is intriguingly ambiguous. "That is a very real and wonderful kind of thing that can happen in architecture," Platner observes, "but you cannot always capture it in photographs."

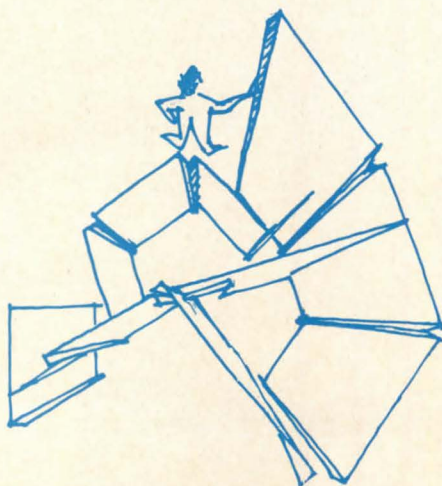




Unimark International's design for the Boston offices of the Colton Company has a display of the firm's toiletries in the reception area, which is mirrored on the opposite wall. No one can claim that a *galerie des glaces* is entirely new, but the all-glass grid of shelves holding glass bottles and superimposed on a mirrored background, produces more ambiguous reflections than interior design history has much precedent for.



Derek Romley continues to refine his presentation of ambiguity levels in the synthetic environment. In a matte silver vinyl bathroom that has a mirrored door, he has hung a clear vinyl shower curtain. The three levels are not immediately apparent. Pop objects and a brass door knob give some contrast to the immaterialization of the space.



James Lambeth, professor of architecture at the University of Arkansas, designed as a focus for a conference on megastructures the "Mass Transit Object." Eleanor Karp, lecturer in the university's department, describes the unit as follows: "The envelope, a wrap-around reality, is static, but the slipped and shifted planes of which it is composed imply movement. Real people standing near the envelope, entering or leaving it, merge with the people in the billboard photograph, requiring an observer constantly to readjust between what he is seeing and what he knows exists. Space and movement, light and dark, combine so that when you stand still, the envelope moves; when you move, the envelope stands still." These are the optical games that occupy many designers today.

SYSTEMS/KITS

Designing nonstatic forms and environments for changing, evolving life styles has resulted in component systems and kit assemblies with a strong orientation toward function. Corresponding to the social concerns of architects, these designs encourage the involvement of the user.

"Systems furniture," "space kits," and "component interiors" are phrases on the lips of the new generation of architects and interior designers. What makes the designs those phrases designate so noteworthy is not their visual effect, which, it is often claimed, is the sole concern of these designers, but rather their greater sophistication in function-orientation, in designing for use. This most "important" of all the extensions in the new approach is based on a careful, if sometimes intuitive, reanalysis of uses, and on a more refined and open awareness of the physical and psychological needs of users.

The stripes and arrows of Supergraphics, for example, are not always outrageous aesthetic fortune. Some of them, of course, are intended principally as exercises in scale to extend the vision of man to encompass greater dimensions. But often they are used practically: to extend the functional efficiency of traffic patterns, to point the way for the increased population that may be unfamiliar with the circulation pattern of an environment, to make living immediately clearer.

In systems and kits, similarly, the emphasis is on functional efficiency. Their focus is on actual do-it-yourself "owner manipulation" of one's surroundings, on instant flexibility for functional variety, on a practicable mobility of the environment, on adaptability to spatial requirements.

Toward these ends, designers are investigating portable and throw-away environments. These investigations in obsolescence are part of "the aesthetic of change," as Houston's South Coast Group defines it, "in which the parts stay the same but the interrelationships are in constant flux."

Many of the designs are also planned to be easily dismantled and transported to new locations. They are intended, then, to change as the physical needs of the user change, but also to vary with the owner's psychological requirements.



Photos: Louis Reens. Blue indoor-outdoor carpet: Courtesy, Glenoit Mills Inc.



Their designers speak of adaptability to the changing "life-styles" of people.

If the idea sounds suspiciously like our customary practice of designing for modular flexibility, it also has a new improved ingredient. For modular flexibility, like much "movable furniture," did not, in fact, always make for flexibility. Its elements were often too heavy or permanently fixed. The do-it-yourself emphasis of systems and kits insures that flexibility will work.

"Architects are interested in using technological advances to open the possibility of a new humanism based on personal response," say Doug Michels and Bob Feild. In line with this thinking, they have envisioned "The Orange Archer," a housing system, as having "response areas and back-up equipment" rather than spaces such as living rooms and bedrooms. "A soft rest area," for example, is planned with an inflatable floor that can be pumped up to produce a sleeping area or an armchair and can be deflated at will—a huge, super-cozy chair-floor.

Involvement—the architects' concern with social events and his own activity in the building process—is the impetus behind this design direction. Architects now also want to provide the clients, owners, and users of their designs with a process in which they, too, can become involved, rather than providing them with static, finished products.

"The users of architecture have little or no basis, ordinarily, for an understanding or involvement with new forms," Lee Maxwell observes. "Since these often lead to fear and resentment, users are frequently alienated. If, on the other hand, a person gets his hands involved in actually manipulating his environment, it is more likely that he will be aware of his environment and feel a sense of identity with it."

What conditions this renewed emphasis on "awareness" is the current attitude toward the psychology of change. In

Craig Hodgetts' prototypal "rapid assembly total floor" for his living room (facing page) is composed of flexible units with variable equipment in each unit and with variable locking combinations that alter the character of the "raft." Seating, fold-out tables, and storage (books, records, phono, projector) are included and fed by an umbilical that supplies electricity, audio, and telephone. Surreal in appearance, the non-object topography is "less Pop and more machine funk," in Hodgetts' view. Functional in essence, the raft changes from non-object to personal and emphasizes relationships with other human beings, Hodgetts feels. The painting is by Victor Burgin.

our Electric Age, "people want a faster change-over of responses than in the past," Maxwell points out. "They assimilate and familiarize themselves with new things more quickly and then move on to something else."

Change in our man-made environment until now, however, has been rather too slow to maintain a constant, fresh awareness. "So far," Maxwell explains, "the only means of offsetting this diminishing of aesthetic response has been to replace the thrill of the new with refinement and understanding in depth. There is a place for oak and tweed. Refinement is not outdated. But a solution that relies only on refinement and doesn't consider versatility and change is like the Spanish Armada, which relied on fire-power only and failed to consider speed and maneuverability." And, as the Oscar Wilde character Lady Bracknell said, "We know what an unfortunate movement that led to."

The rapid, simple erection and dismantling of systems and kit designs—of free-choice multiples—is an attempt to provide for this aesthetic and psychological need as well as for functional, physical needs.

Although some of the interest in this concern for awareness of "life-styles" is motivated by a desire to cut costs, it is also based on a youthful optimism that wants everything for everybody and thinks that everything is possible and right for everybody.

Some of the impetus is also due to the availability of options in Detroit's car models and the range of accessories with which the consumer can "personalize" and "customize" to suit his taste.

Although encouraging people to create their own environments poses problems for designers, the question is raised whether designers are fostering more chaos instead of providing an aesthetic environment designed to educate society by example. In reply, it can be pointed out that today, fortunately, chaos, formlessness, and the makeshift can be as swiftly altered as "tastefulness" can.

Ultimately, increases in flexibility and psychological awareness may be surpassed in importance by the reapportionment in the budgeting of interior design that systems and kits permit. No longer is it necessary, these designers say, to put money into covering up necessary things. Instead of refining them to make objects beautiful, as Charles Hosford points out, "the thought goes into making them useful for more than one person and for more than one purpose."

"The different life-styles are the main importance," Bob Feild agrees, "not what they look like."

On the part of these designers, then,

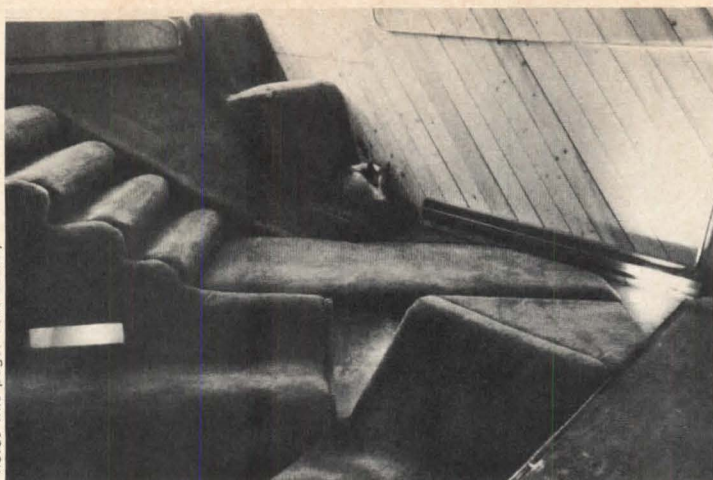
Photos: J. Allan Butts



Tank Chair, by designer Doug Michels of Washington, is a two-man rocker sold as a kit of prefabricated plywood parts to be assembled by the owner. It "encourages owner manipulation," the designers say, since it offers a range of "paint options" and other opportunities for personalization. This encourages a new scale of involvement in living as well as a super-scale of seating.

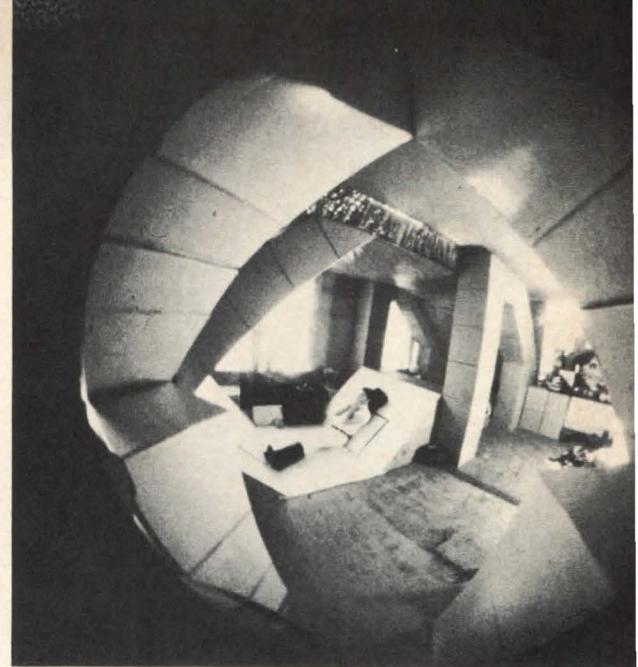
there is an attempt to take money out of the architectural envelope, the pure shelter, and put it into the furnishings. It is a new appraisal of furnishings that can provide greater personal involvement for the user, can give him larger-scale toys that may educate him about his architectural environment, and can enrich his life as well as the usefulness of the furnishings themselves.—CRS

Photos this page: Tom Luckey



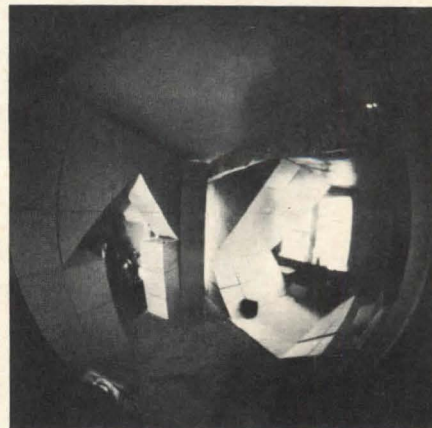
Tom Luckey, who designed the kitchen for Louis Mackall's "Adult Tree House on Potato Road" (p. 124, NOVEMBER 1967 P/A), has now designed a spooky space landscape for the living room of Yale professor Fritz Steele's house at Prickly Mountain, Vt. The floor is contoured up and down to form furniture that provides for changing activities of the occupants. Moss green carpeting, which is layed over 2 in. of urethane foam padding, uphols- ters the built-in plywood forms. The system replaces chairs, sofas, and tables, and also permits a flexibility in "accommodating the body for conversational groupings," as one observer points out. The walking texture is bouncy but does not affect one's general coordination. Recessed lighting has red gel- atin lenses.



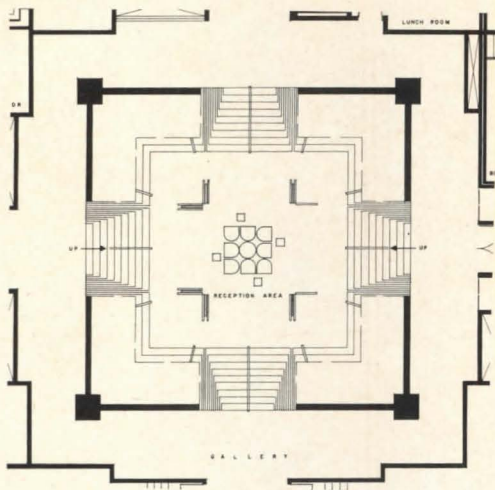


Lee Maxwell of Houston's South Coast Group designed and installed a system of blocks in his own apartment to provide for expanded or diminished needs of function and aesthetic. He calls the system his "space kit with plug-on surfaces." Like a large-scale Tinkertoy set, the space kit could be made of different materials. Maxwell chose corrugated paper-board because it is light but strong and inexpensive. Paper-board, 16-in. cubes, and cubes diagonally bisected are joined staple-like with industrial plastic straps. The original room was draped with polyethelene and tinsel and subdivided by the kit into a seating alcove, bed area, and so on. The doorway was shaped like an arrow. All could be dismantled quickly and easily, giving the user "the satisfaction and identification of do-it-yourself without all the bother, expense, mistakes and lacks of much quality production," Maxwell points out. Seats, cushions, Supergraphics, or other finishes can personalize the system, which was photographed during construction. Holes can be cut into the sides to provide storage spaces. "If a person gets his hands involved in actually manipulating his environment," Maxwell says, "it is more likely that he will be aware of his environment and feel a sense of identity with it."

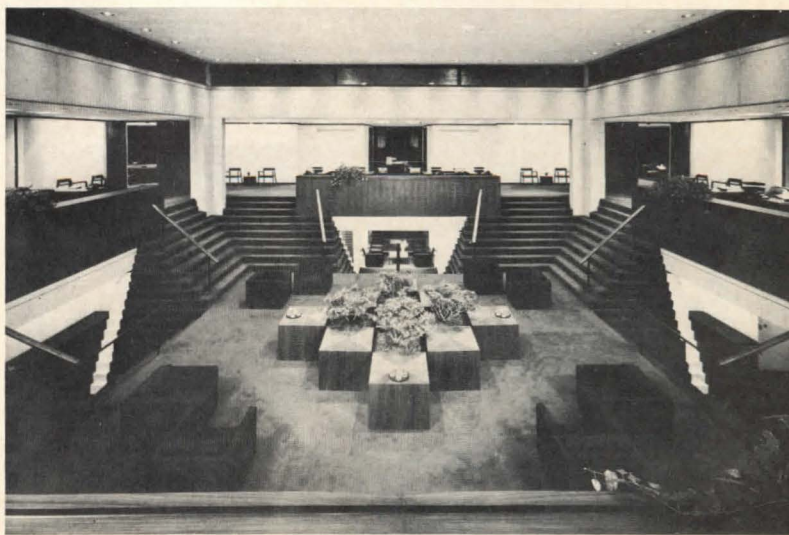
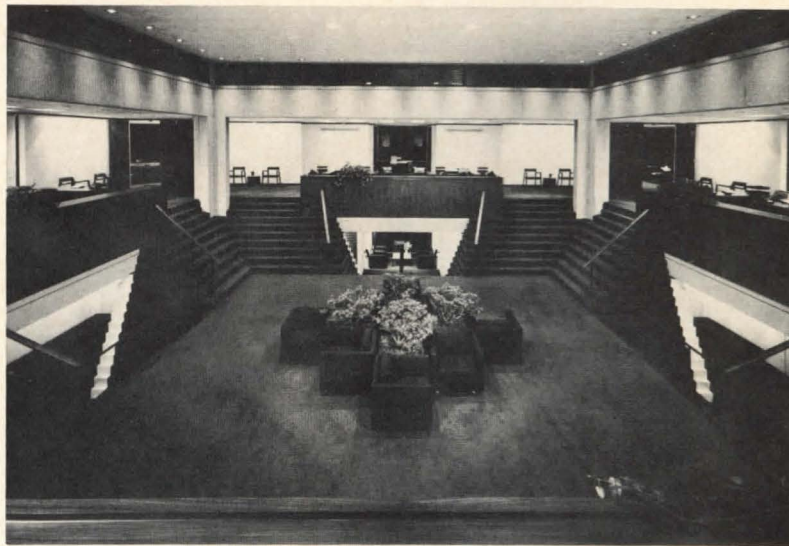
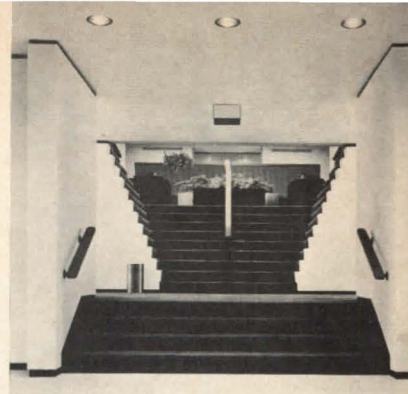
Photo (and above): Hickey & Robertson







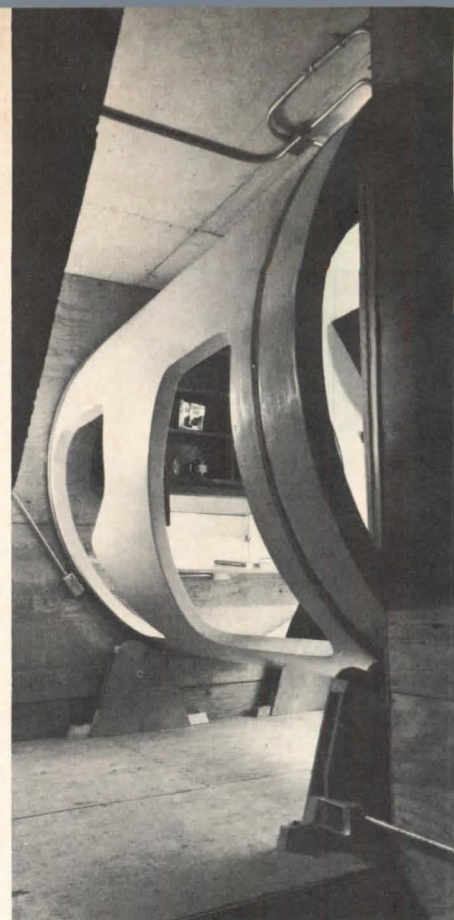
Skidmore, Owings & Merrill (Chicago), under the design direction of Walter Netsch, has produced as the central atrium space for the Illinois State Bar Association headquarters in Springfield, Illinois, one of the truly distinguished interiors of our decade. The half-level central court, which Netsch calls an "inter-space," is approached from the lower level by axial stairs on the long sides; the second level is approached diagonally by stairs at the corners. These latter steps are continued down along the sides of the axial stairs in what project interior designer Don Powell calls "a topological definition of the sides." The skylighted space is "a variation," as Netsch says, "on the Mayan temple step form," its diagonal geometry further dramatized by red carpeting. Furnishings here are planned for do-it-yourself flexibility to accommodate three formal arrangements: for informal receptions, for quiet conversation (without disturbing the staff on the surrounding upper level), and for formal occasions. Black silk cube-like chairs and rosewood cube tables are used around bronze planters to negotiate these variations without "the lethal razor sharp weapons of Mies tables slicing through quiet conversation groups." Movable furniture is not always systems furniture in this controlled manner. Robert W. Peters was the project designer.



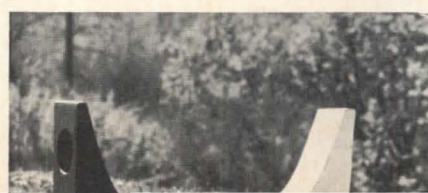
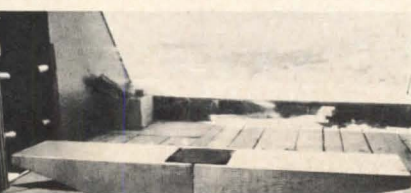
Photos, this and facing page: Orlando R. Cabanban

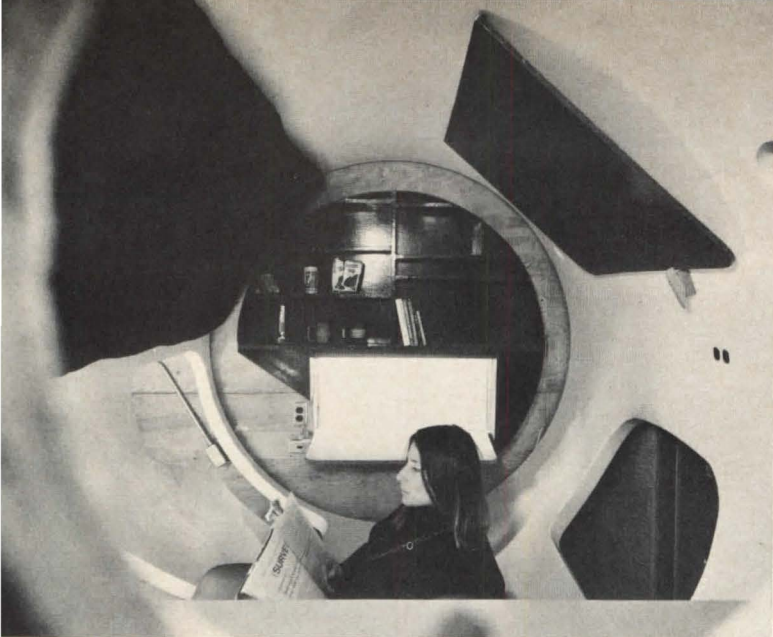


Tom Luckey also designed and built a bedroom for Yale professor Fritz Steele that ingeniously reanalyzes the functions of such a facility and consolidates them into a minimal space. The 9' x 9' bedroom contains a bed, a chair-sofa, a desk, and a table within a 6-ft diameter, 8-ft long cylinder that can be rotated to lower into position the furniture to be used at a specific time; the black-canvas upholstered bed and sofa back are zippered to the rotating unit. Ports in the wall of the cylinder admit lighting and the user to the various furniture elements. Oak hoops (1 1/4 in.) frame the cylinder, which has a double wall of 1/4-in. plywood painted glossy white. The cylinder rolls on four heavy-rubber floor-mounted casters against 4-in. wide, 1/16-in. thick metal strips that are overlayed on the drum. The unit is heavy enough so that it brakes itself when occupied, but it can act as a swing for sitters, and can even spin the occupant around full circle, upside down as in the weightless sequences in the film "2001: A Space Odyssey."



Sellers and Hosford developed a furniture series based on a single component that is flexible enough to provide chairs, sofas or benches, and tables — a one-piece series. Designed for use in confined spaces, the unit is only 11-in. wide, and a standard 28-in. high and 19-in. long. Used singly as a chair, it can be ganged to form a table, it can be counterweighted (through the cut-out handle) and then strapped together by a plug connector. Flat sides of the unit are 3/4-in. plywood; curved side is 1/4-in. plywood. Sellers and Hosford used epoxy paint and oil paint with urethane varnish to make components indoor-outdoor. The units can also be assembled into a totem pole.

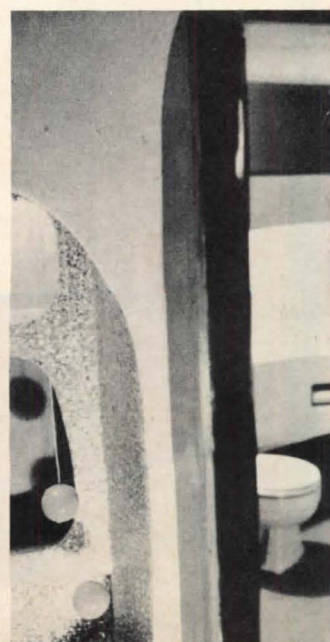




Photos, this and facing page, except as noted: David Hirsch

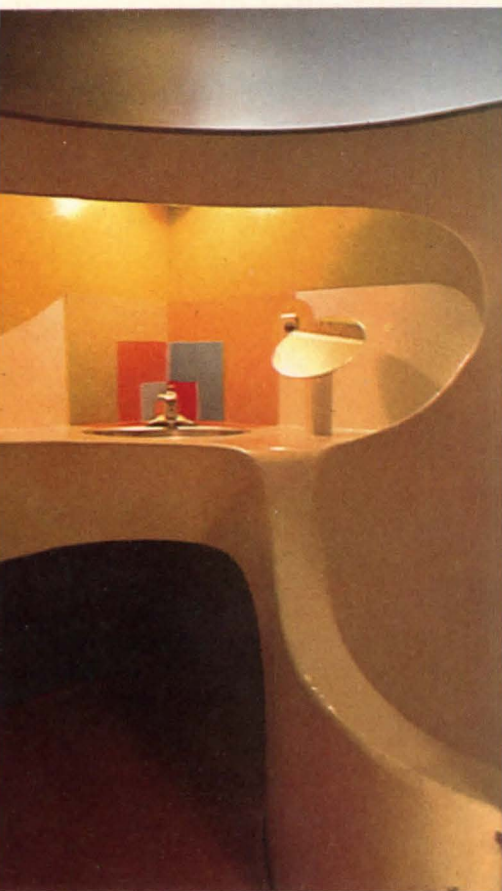


Photos, this and facing page: Sellers and Hosford



Extensions in the materials and methods of forming, joining, and finishing interior elements are leading us more and more into the production and acceptance of the completely synthetic environment.

THE SYNTHETIC ENVIRONMENT



"An incredibly exciting way to find out about materials," say David Sellers and Charles Hosford, who designed a bathroom (above and facing page) surfaced with epoxy and luminous highway warning paints. Fine sand added to the paint and a coating of urethane varnish give additional protection.

The take-over by synthetics of the interior environment is only a palace coup. Interior design's dream of fully utilizing the materials, science, and technology of this century cannot be realized without the revolutionary overthrow of the entire building establishment.

Drastic change is absolutely necessary to topple the present concepts, organizations, and practices of a feudal building system whose power structure squats atop the hope of the rational development of new materials. Until this is done, the synthetic environment will remain a thin veneer of change over existing building systems, a 5 or 10 mil coating of miraculous substance covering commonplace building materials.

Industries characteristically go through three states of development: first, the gathering and guarding of techniques; second, the rationalization of technical skill to eliminate superstition, training of technicians and the dissemination of knowledge; and third, a search for new methods, new materials, and new applications. Whereas building science for the most part is only creeping out of the first stage, materials development, particularly in synthetic materials, is entering the third stage.

The resulting discrepancy between technology and its potential drives manufacturers to concentrate on minor refinements of existing products, diverting the pile-driving power of research and development into cracking the market for peanuts in minor stylistic innovation.

More impatient designers like Doug Michels declare that they are interested in the "totally synthetic and totally abstract environment." Says Michels, "We

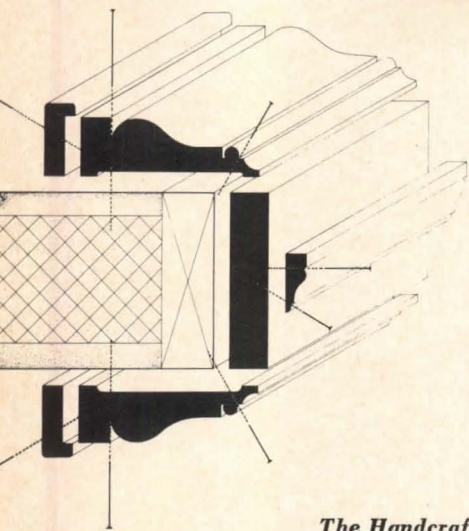
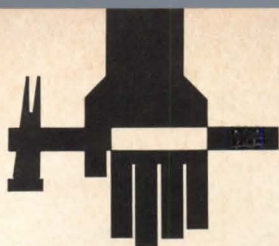
have to learn to design and to live in those supercontrolled environments that will be necessary when we go to the moon or to the underwater frontier." However, their only means of by-passing the second stage of building development is by using the new materials of stage three empirically. The result is a synthetic environment of very thin surface coatings covering over the old "magical" building systems of stage one.

Significantly, these radical jumps occur outside existing zoning, codes, building practices, and other restrictions. They occur in individual houses, world's fairs, or, occasionally, promotional undertakings by particular manufacturers.

The Earth Is Not An Inexhaustible Tree

The continuing depletion of lumber supplies seriously affects that backbone of the interior designer's craft: millwork. Native wood veneers have declined in quality, whereas foreign veneers have increased in use. Residual materials such as particle core, mineral core, and pressed board panels are promoted as a result, with a consequent increase in the use of synthetic surfacing materials to cover them. High-pressure decorative laminates, vinyl coatings, the ubiquitous printed paper wood grain, and plastic surfaces of many kinds and varieties frequently supplant traditional natural wood veneers.

A contradiction in material and technology is the result. Synthetic materials appeared gradually in woodwork manufacturing, slowly usurping the place of natural wood products. The result is that highly sophisticated materials are being



The Handcraft Age:
*Gathering and
Guarding Information*

machined by simple woodworking machinery. The woodworker today places a plastic laminate sheet on the surface of a panel and a backing sheet on its back, then edges the four sides with plastic laminate strips. There is no reason why the inside should be of wood or why the process should occur in a woodworking shop. A one-operation plastic extrusion is certainly as sensible a solution. Given the machinery, a completely synthetic panel would undoubtedly be more economic to produce and would look more like wood.

Wrap-Up Revolution

One innovation in woodworking has been heralded as constituting a revolution: wrapping cores. The high price of hardwoods is repugnant to furniture manufacturers, claims Bechtold Engineering Corporation, the agitators of the revolution. By surfacing inexpensive core material, furniture manufacturers can save 50 per cent over the cost of hardwood.

Any kind of veneer can be wrapped around almost any shape of particle board, metal, melamine plastic, polyesters, vinyl, wood, aluminum laminates, and so on, in widths of one-half in. to 30 in. in unlimited lengths, at 50 ft per minute.

Plastics: Phony Tinsel?

The history of civilization, according to a spokesman for the plastics industry, progressed through the Stone, Bronze, and Iron Ages merely to serve as a prologue to the Age of Plastics. Beginning with the axiom that materials change design and design changes environment, and ending on the note of men make buildings and buildings make men, the plastics industry concludes that man will be made over in the dawning age of plastics — presumably into some suitable

plastic material.

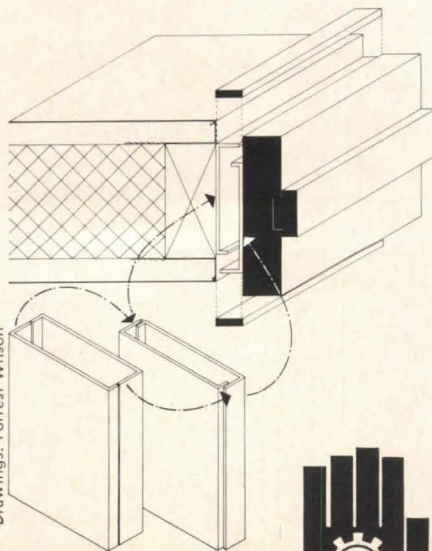
This argument, however, contains one fallacy: Building is still in the Stone and Bronze Ages.

The plastics industry states it would not be surprised at the emergence of an all-plastic building. Architects would; they remember one of the last to be developed, recently on display in Disneyland.

A program of education for builders and the public is being launched by the plastics people. They say the program is directed toward "greater" acceptance of plastics in construction, which is a misnomer. The use of plastics as a structural material is almost nonexistent. However, the industry is directing its attention to a hardly revolutionary approach, the non-structural uses of plastics. This is an area in which plastics already excel. Their ability to provide excellent insulation, durability, wearing surfaces, and resistance to corrosion is well known. The fact remains that it is the structural potential of these synthetic materials that lies untapped and must be solved before their use can reach significant proportions in building interiors.

The drawback to plastics, which limits them to surface applications, is that of flammability and durability. There is a further problem in lack of reliable information as to predicting long-time behavior. As a result, unconventional structures such as prefabricated second homes, vacation houses, limited code mobile homes, avant-garde buildings such as those at the world expositions, are the only available proving ground for plastics to illustrate their potential.

The Machine Age:
*Rationalization of
Technical Skill*



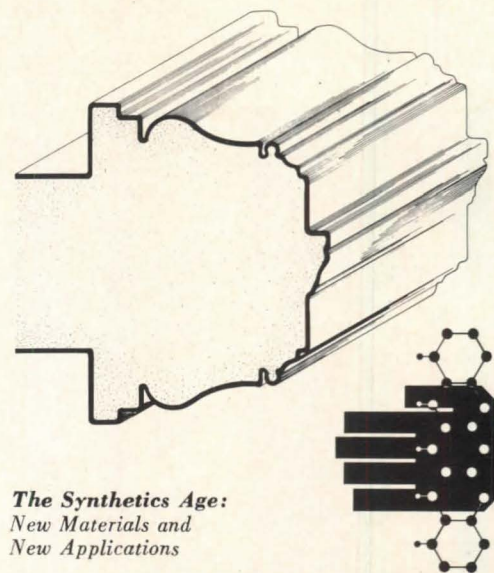
Drawings: Forrest Wilson



High-Pressure Laminates

High-pressure laminates consist of multiple layers of thin material, usually paper, that have been impregnated with a thermosetting resin and bonded under heat and pressure to produce a surface highly resistant to stain, heat, wear, and moisture.

Basically, the laminate is composed of core and surface assembly. The core is made up of layers of kraft paper impregnated with phenol-formaldehyde resin; the surface is composed of highly pigmented refined alpha pulp paper and a protective overlay sheet. The alpha sheet serves both as an optical barrier to the dark color of the kraft core stock and, after proper resin treatment, as a physical barrier to the flow of phenolic resin from

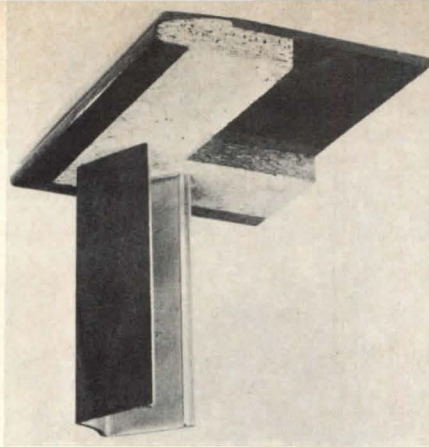


The Synthetics Age:
*New Materials and
New Applications*

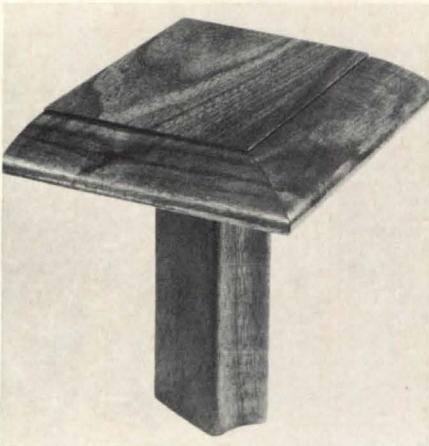
the core into the decorative face of the laminate. To protect the printed pattern, an overlay sheet is placed over the alpha barrier sheet. Both print and overlay are impregnated with melamine formaldehyde resin.

Melamine formaldehyde resins are colorless and possess light stability, hardness, abrasion-resistance, water- and heat-resistance, clarity and inertness toward most household chemicals. The pressing operation takes place under heat and pressure.

Despite the controlled nature of the manufacturing process, there is the possibility of injecting the human design element. Peter Fuerst, manager of Decorative Product Development and Manufacturing at General Electric's Cochoc-ton (Ohio) plant, encouraged an architect to paint directly on the decorative print sheet, laminated and immortalized the architect's work in melamine-



The high price of hardwoods is triggering a wrap-up revolution. Shown is machine-wrapped wood veneer over particle core.



Photos: Courtesy, Bechtold Engineers

formaldehyde for a building lobby. Fuerst also reports that it is possible to press any number of materials into the surface such as leaves, burlap, or Campbell Soup wrappers.

However, style is a hazard. Valuable space has to be given over for storage of the "lines" which can number as many as 4000 different panel patterns. "The whole business is an art rather than a science," comments Fuerst.

The next step, say some of the men working in research and development of high-pressure plastic laminates, is an entire loadbearing wall system that uses the tremendous strength potential of the material. At present, structural use is limited to raised flooring systems.

The obvious direction is post forming on heavier backing sheets, which would give a high-strength shell construction. Westvaco, a leading supplier of paper core stock to laminators, recently announced a new paper that facilitates post forming. Fuerst reports that laminates are often bonded to foam core, but no laminator combines the two processes. If someone were to discover a means of manufacturing the core and the décor sheet simultaneously, they would revolutionize the industry, claims Fuerst.

However, the future for innovation is not brighter in this area than in any other. There are no new post forming shapes currently on the horizon for volume sales, reports Johns-Manville, manufacturers of melamine laminates. Mansville is concentrating on fire retardation.

Most of the plastic laminate manufacturers contacted by P/A are playing it

safe, reporting that they develop new products for the market as the market requires. They proudly claim that such a system reflects the true needs of design, and for the limited market provided by a Stone and Iron Age building technology they are probably correct. But for the technology of the creative synthetic environment, their response is neolithic.

Energies in the plastic laminate industry are being concentrated on patterns, colors, and embossing. In other words, research and development is concentrated only 5 mils deep in the surface of the synthetic environment.

Plastics Laminate Joinery

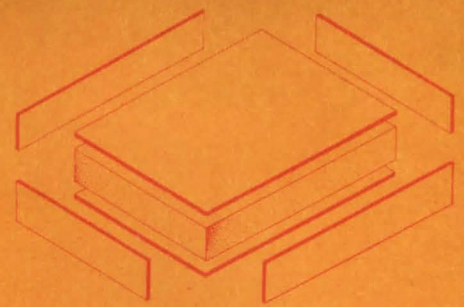
High-pressure decorative laminate is an exceptionally fine material. Joinery is the major problem and it is in this area that no real progress has been made. Innovation is curtailed by the end use of the sheet itself. The manufacturers concern and responsibility ends, for all practical purposes, with the delivery of the product to the user.

The most difficult problem presented by plastic laminates is that of joinery. The joints and joinery illustrated here are the best that detailers have been able to devise.

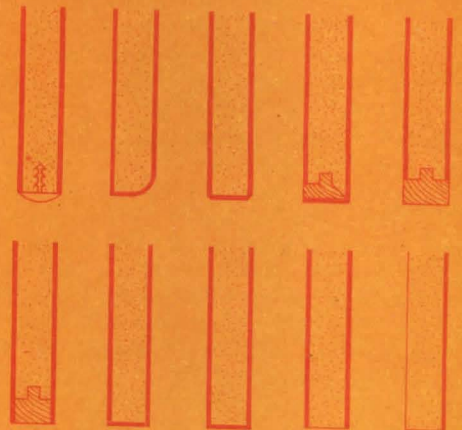
Woodwork fabrication and erection is divided into two distinct trades and skills: carefully supervised shop fabrication and hand erection in the field. Shop equipment might be the best available, in some instances as sophisticated as that of the laminator. However, detailing that dictates the design and use of this machinery is geared to field erection. In the last analysis, the \$6 hammer, the \$10 saw, and the 40¢ nail set are the factors that direct the millions of dollars invested in machinery and material development of the manufacturer of high-pressure plastic laminates.

Joinery is based on the same principle as is all contemporary woodwork: expensive face material hiding inexpensive cores. Fastening is concealed in varying scales of complexity, ranging from puttied nail holes to concealed metal clips.

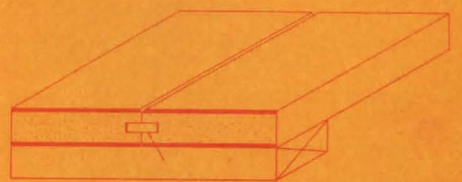
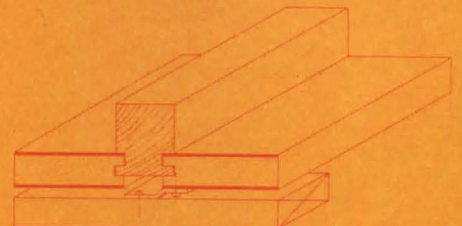
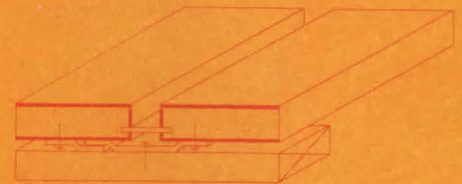
Strangely enough, the most efficient method of fastening laminate material has been perfected on economy projects and is almost never used in prestige applications. Where the sophisticated woodworker fears to adhere panels to the wall with adhesives, the contractors for supermarkets, bowling alleys, and the like have been setting panels by the mile in just this fashion for the past 15 years



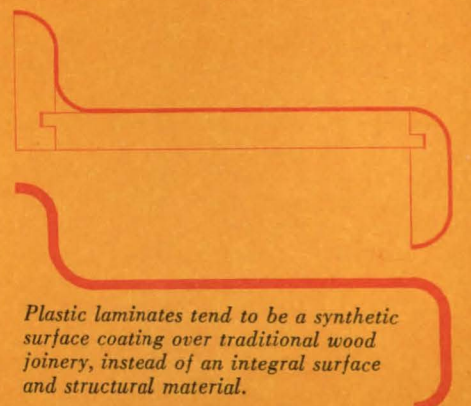
The objective of plastic laminate detailing, which is to conceal the core, is achieved in several ways:



Concealing the core on panel edging.



Hiding the core at the joint.



Plastic laminates tend to be a synthetic surface coating over traditional wood joinery, instead of an integral surface and structural material.

or longer.

When joints occur, the objective is to cover the base material and secure the panel to the wall while connecting it to the adjacent panel and concealing the fastening. This is seldom difficult. It is the wide expanse of panel between joints, head, and base that constitute the problem. For this purpose, metal clipping systems have been developed that are fairly standard practice in most high-quality installations.

The end objective of detailing, concealed fastening, and hiding the base material is complicated in that the $\frac{1}{8}$ -in. core stock of the plastic laminate is considered base material. This leaves the 5 or 10 mil thickness of the face sheet the only acceptable surface to be displayed. This is a dimension much finer than even the close tolerances usually met by woodworking.

Paint

The most significant changes have occurred in the material that has been a synthetic for a long period of time—that of coatings. Here, the manufacturer does not have to worry about the state of building technology, unless he is preparing to introduce a loadbearing wall color.

The greatest change to date is that latex paints have almost totally taken over interior decorating. The shift in these paints themselves has been toward flatter mat surfaces in most of the market. Designers have been willing to sacrifice cleaning and maintenance efficiency for this type of finish. The main problem for the paint manufacturer is the anticipation of color preferences for the basic color line.

In predicting how the coatings industry might contribute to the synthetic environment, which, after all, is their bread and butter, Pittsburgh Paint Company conducted a series of interviews with a number of their marketing and research specialists on what the future might hold for the coatings industry.

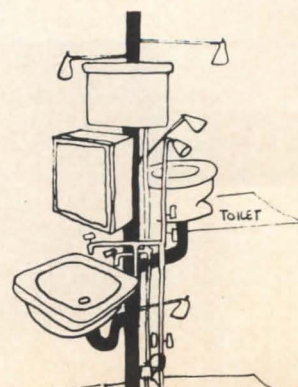
They predicted that the combination of technical advances and increasing labor costs would accelerate the trend toward fully automated factory finishing. Metal coating techniques will favor ultra-high-speed roll coatings. Where roll coatings cannot be used, a perfected variation of electrostatic and electrophoretic coating will be used. The experts predicted further development of such "far-out" methods as film deposition by blow discharge to permit resin synthesis and application in a single step.

Air pollution will have a strong effect on coatings development. Stringent air pollution regulations will give added impetus to several trends already dictated by economic considerations: first, the

Photos, this page: Sellers and Hosford



Glass-fiber surfacing over traditional wood framing changes an entire bathroom to a waterproof shower stall. Tom Luckey was the designer.



elimination of the organic solvents in paints; and, secondly, a de-emphasis in baking as a method of curing films.

Historically, the costly use of solvents and thinners has been necessary for the handling and application of coatings. They contribute nothing to the final film, while adding to the cost of raw materials, storage, shipping, and application. Current efforts are focused on reformulating coatings with solvents that are least objectionable from the standpoint of air pollution. By the end of the century, most paints will either be water-thinned or formulated as solids.

Baking ovens, because they cause air pollution, involve costly production time, and use valuable space, will become as rare as steam locomotives, predict PPG experts, due to the development of faster and cleaner curing techniques. Many coatings will be cured by some species of radiation-electron, gamma, microwave, and so on. Others will take advantage of new methods of chemical catalysts, which will allow controlled cures at any ambient temperature.

Lifetime durability coatings with service lives at least equal to the objects they cover can be taken for granted. This means that roughly three-quarters of the repaint market will cease to exist.

Coatings will have to evolve beyond simple decorations and protective functions and find additional roles in all phases of environmental control. This, they emphasize, is the most significant trend in coatings development.

Among those paints on which preliminary research has been done are the electrically conductive organic polymers. A conductive paint in the communications field could revolutionize printed circuitry, enable the whole surface of a building to be used as a radio or TV antenna, permit relatively simple installation of burglary or fire alarm systems, and perhaps make wall-sized TV screens a reality.

Acoustic and thermal-controlled coatings may be obtained by the application of alternate spray-applied coats of closed cell and open cell rigid foams, providing an efficient way of combining sound-proofing and insulation with decoration of large auditoriums. Paints may be developed that increase in light reflectance with increasing temperature, thus minimizing heat accumulation from solar absorption. A spin-off of the space development effort will be new inorganic polymers offering a degree of fire-resistance scarcely contemplated today.

Conductive coatings will be particularly well represented in heating applications, heat radiating interior walls, for example, and de-icing coatings incorporated in the construction of roofs, walk-

ways, streets, and airport runways, according to PPG.

Conductive coatings, by applying a static charge, would repel airborne dirt particles from interior painted surfaces and would eventually be trapped on oppositely charged precipitators in the air-circulation system.

Specialty coatings may be used to release desirable additives into the atmosphere at a controlled rate. If the additive is a slightly volatile germicide, for example, the resulting paint can be helpful in maintaining an antiseptic condition required in a hospital. The same techniques can be extended to produce coatings with built-in insecticides, deodorants, attractive scents of various kinds, and even tranquilizers or stimulants.

The PPG panel of experts say that natural materials will have passed into oblivion as victims of the realistically printed laminate surface. The wood industry will survive not as a direct supplier of building materials but as the source of fiber for composition paneling.

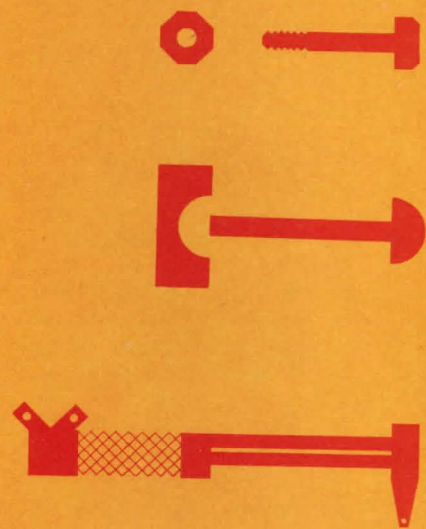
Repainting is the easiest way to change surface appearances. The coatings industry will be obliged to supply coatings that can change appearance without repainting. A clear coating containing additives and applied over a light-colored paint might produce a coating that would darken in strong light and lighten in weaker light. Such a system could control space temperature by maintaining relatively constant reflected illumination in a factory despite varying light intensity throughout the day.

Apparent color depends in part on the spectral composition of the illuminant. Through the combined efforts of coatings formulators and lighting engineers, controlled metamerism will be used to produce predictable color changes by varying the wave length mix of an artificial light source. Another route to a chameleon-like coating will take advantage of new pigments that change color when exposed to a special chemical rinse or vapor.

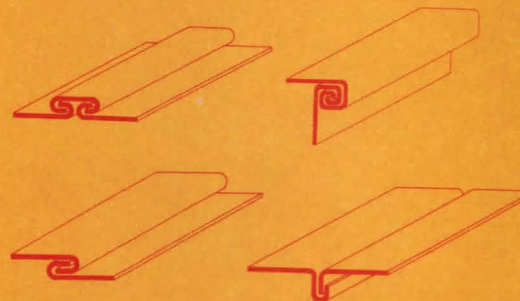
The possibilities in the coating industry seem unlimited, and research that can be spared from daily market problems can be devoted quite easily to the unlimited needs of the synthetic environment, unhampered by lagging building technology.

Synthetic Metal Surfaces

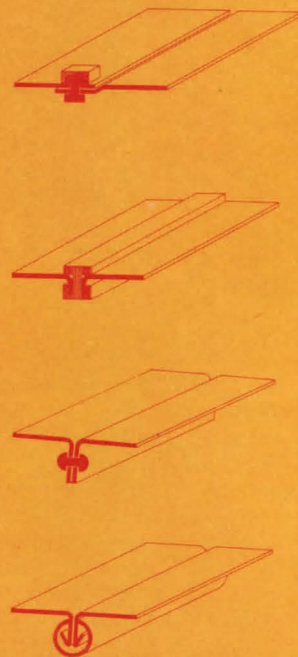
Synthetic metal coatings are beginning to appear further back in the basic process of production. Where formerly finished surfaces were applied to manufactured items as the last act of production, they are now increasingly found on roll and sheet metal prior to fabrication.



Traditional metal fastening methods, using the bolt, the rivet, and the weld . . .



. . . are being supplanted by ingenious joinery to conceal edgings under pre-coated metal surfaces.



There are six distinct classes of prefinished metal, according to a recent manual on the subject published by *Materials Engineering*. These are pre-painted; plastic to metal laminates; pre-plated metals; other metal-coated metals such as hot-dipped; textured metals; and pre-anodized aluminum. All of these are distinguished by being supplied to the manufacturer with a ready-to-use finished surface.

The advantages to the fabricator over former production techniques is uniformity in color, gloss, brightness, texture and consistent thickness. He is also freed from the nuisance, expense, insurance, and loss of shop space required for finishing operations.

These advantages frequently outweigh the chief disadvantages, which are the inability to use conventional methods of fastening and the necessity of concealing exposed edges. It is also essential to educate employees in care and handling of prefinished material; shops and work areas must be entirely dirt-free.

Conventional fusion welding techniques cannot be used with prepainted, preplated or plastic-to-metal laminates and special care must be taken when using these methods for hot-dip coated metals. However, resistance, spot, magnetic

steel surfacing is the economic production of the prized #7 finish. In normal production, the highly polished rolls used in stainless production impart a very hard surface to the steel. The surface has to be annealed and pickled before it can be polished successfully. During the process, the surface is subject to oxidation. Stainless steel is now being worked in a hydrogen atmosphere, which prevents oxidation and permits the economic production surfaces equivalent to #7.

Extruded stainless steel has reached the competitive market, according to the Alumiline Co., which reports that it can compete favorably with aluminum door assemblies. The company uses extruded sections for door rail, pull handles and thresholds of extruded 300 Series stainless steel.

The extruding process done by a company in Chicago uses molten glass as an extrusion die lubricant. This publicized innovation caused a great deal of interest when it was announced a few years ago. However, it has not had as extensive an application as was then predicted.

Copper, one of the most attractive of the architectural metals due to its wide color range of alloys and patinas, seems to have developed little in interior use over the past few years. Military demand

got so much competition from these other fellows in the materials business that we have to be on top of every development," comments an Armco spokesman.

Metals are undoubtedly performing colorfully, but in combating the encroachment of plastics into the metals market, they have had to take advantage of the new plastic coatings.

Technology in Search of Design

"It is incredibly boring," said a young designer, "to do the same thing over and over again. That is why we find it so exciting to work on these things without a backlog of information."

The things he was talking about are the possibilities inherent in the new technology of synthetics. The underlying structure used by this designer in this particular project (p. 187) is fairly standard wood framing, but it is the surface coating that brings the design into this century. The irony is that innovation is due to the imaginative use of common materials—materials too common to be used in architecture, although commonplace in building. For example, he employed a seamless epoxy with vinyl chips commonly used in public toilets, which is about as common as one can get. The walls and fixtures are ordinary plywood with two-part epoxy paint application. The luminous paints are warning reds and yellows stocked by a local supplier for the highway department.

This was not an arbitrary selection of coating. According to the architects, the manufacturer and highway engineers say these paints are incredibly durable. A fine sand was added and a coating of urethane varnish such as that used in bowling alleys and large truck weighing scales was used as an additional protective coating.

The bathroom with stacked fixtures (p. 190) owes its design concept to the fact that the architects devised a means of converting a freely built wooden structure into a waterproof room. This would have been almost impossible, or, if possible, expensive and unreasonable with traditional tile. Glass-fibered plastic applied to the entire space formed an internal plastic shell. The floor of the shower and the floor of the tub were additionally reinforced due to the movement of the plywood caused by the shrinkage of the framing lumber. Where hairline cracks appeared, they were simply patched with the same jell used on the glass-fiber mats.

The architects report that the glass fibers were laid down in reverse of the normal system, which is to lay the good side into a mold and jell over. In this instance, the jell coat had to be put on the wall, causing it to "drool a bit." Aside from this minor technical drip and small



Plastic-hewn oak beams can be raised by a little adz but they do not stand up forever.

force and projection welding is possible; other fastening methods that can also be used include lock seaming, snap fitting, riveting, and adhesive bonding.

Armco Steel reports the increasing popularity of precoated metals while cautioning that they are not "cure-alls" by any means. All coatings are not compatible with all forming operations.

Coatings and joints need careful engineering. The problems of metal joinery approach those of wood: a thin synthetic surface that cannot be damaged or perforated and joints must be made either decorative or concealed with exposed metal edgings turned under or rolled back, as some of the typical metal fastening details shown here illustrate.

An important development in stainless

seems to have converted it to an almost "semi-precious metal."

Research appears to be devoted to developing permanent protective coatings, which, the Copper Development Association reports, is close to success.

Copper sheeting metal and wooden doors have become quite common. However, the industry reports the new development of copper wallpaper in three different patterns of statuary finished copper.

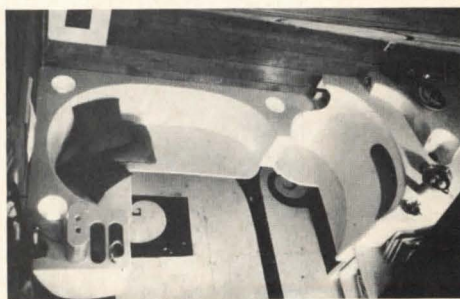
There is a great deal happening in the development of metals, according to Armco. They say that they cannot afford to think of themselves solely as a steel company. "That's why we're so interested in plastics, paints, and exotic combinations of steel with other materials. We've



Skin-deep synthetic environment created with surface coatings is the result of David Sellers' and Charles Hosford's remodeling of the Tack House at Prickly Mountain, Vt. (See p. 150 MAY 1966 P/A). Slurpy epoxy-coated living room furniture swirls over into the kitchen equipment. Recessed lighting is reflected from an epoxy-painted circle on the wood ceiling.



Photos, this page: Sellers and Hosford



difficulties in applying heat lamps for curing, the application proved entirely satisfactory.

The architects of the bathrooms plan to go into a combined research and building program. The materials are "just sitting" there, they say.

Conclusion

If the synthetic environment is not to be restricted to world expositions, individual houses, and Disneylands, it will have to become more than a thin veneer over building systems we have had for centuries. At present, its major impact is in the realm of coatings and surface materials. Detailing has become highly complex, but this is primarily caused by the inherent contradiction in applying sophisticated surface covering over underlying traditional materials.

There has not been a great deal of help from large corporations manufacturing building materials. For the most part, they have shied away from the firing line. Instead, they prefer the behind-the-lines activity of supplying raw materials to small manufacturers and contractors who bravely shoulder their blunderbusses to do battle with the building industry.

There are certainly marvelous new materials "just lying there," as one designer said, but this is not a new state of affairs. Designers have been trying to harness technology to reasonable design from the time of William Morris. There is a difference however: In Morris' day, they were trying to teach manufacturer's taste. Today, designers are trying to direct the manufacturing process toward environmental solutions. This is potentially more profitable than taste, since it spells markets and as a consequence offers the possibility of success.

The battle against the present building market may be an uphill fight. But there are a number of factors that may tip the scales in favor of synthetic materials. Not the least of these is the social pressure for remaking our environments, which may result in large-scale government and corporation participation in the building market.

The emerging synthetic environment is only a surface veneer, but this does not necessarily have to be permanent. If it is to merge with architecture, since interior design is essentially an architectural discipline, the synthetics will have to become structural, or at least be more than a cover for traditional joinery.

The famous plastic house might have been seen in Disneyland, as we mentioned earlier, but that is not necessarily bad. The Disney Corporation has jumped into the environmental battle. It is planning and building a model city — and not for laughs, either.—FW

Carpeting has expanded beyond the fixed limits of the living room rug, and lapped up to the very perimeters of our dwellings; it has climbed the walls, and, in some cases, spread across the ceiling. Certain designers have extended its potential even further, giving it a new role in the wide open, electric, synthetic, sybaritic environment. Entire rooms have been virtually wrapped up in carpeting where it has engulfed not only the floor, but furniture, sitting platforms, and those notorious "conversation pits" to create an environment appropriate for the pursuit of turned-on tranquility.

Now, it seems, carpets are on the verge of conquering all outdoors, bringing the realm of luxury to backyard, patio, sidewalk — even the countryside.

What Is It?

Indoor/outdoor carpeting was introduced some five years ago as little more than a glorified door mat with modest ambitions. It was of a Spartan felted fabric and dyed in a limited number of colors. Today, the felted carpets, which still account for most indoor/outdoor installations, have been joined by carpets of several other constructions available in a fairly wide choice of color.

Included in the more recent additions are a looped pile, with a surface barely distinguishable from the strictly indoor variety, and a so-called plush cut pile that resembles nothing so much as fake fur. The latter has become familiar in bathrooms during the past year or two, but there are apparently no practical limits that would keep it from replacing a lawn or covering a concrete patio.

Not to be ignored are the related materials variously known as synthetic turfs, recreational surfaces, or, more bluntly, artificial grass. Initially used for sports fields, they are now invading the gardener's domain in both residential and resort installations. Like most synthetic substitutes, they offer the attractions of low maintenance — no weeds, no mowing, no watering, and no hay fever.

Who's Using It?

Architects have been conservative in specifying outdoor carpeting, either for aesthetic reasons or because it is, as yet, a comparatively unknown quantity. However, a recent survey revealed that West Coast professionals have been somewhat more adventurous than their colleagues in the Eastern establishment. This will come as no surprise to California designers who pride themselves on having a superior road map to Where It's Happening.

The present success of indoor/outdoor carpeting is supported primarily by the individual homeowner — the great American consumer. And, perversely enough,

SOFT-EDGE EXTERIORS

Carpeting, too, has been extended beyond its traditional limits. From the confines of luxury prayer rugs, it has spread outside to the terrace, the stadium, and paradoxically, back inside into the kitchen.

70 to 80 per cent of his purchases go inside, where the fabric's remarkable toughness and ease of maintenance recommend it for such areas as kitchen, bathroom, and basement. There are even "outdoor" carpets that are now manufactured solely for indoor use.

Commercial and institutional clients (hotels, resorts, schools, hospitals) are becoming bolder in following the residential lead, and have begun to discover the practicality of indoor/outdoor carpeting in certain areas, both inside and out.

Carpeting the City

Among the many pop and straight uses that architects, manufacturers, and individual consumers have found for indoor/outdoor carpeting, the hard-edge hard-surface environment of the city seems to offer unusual opportunities. The core of a big city is already a highly man-made thing, and is indeed a series of semi-indoor spaces walled in by buildings and open to the sky only along streets, over rear courtyards or above an occasional park.

The day may come when city spaces will be further "interiorized" by carpeting — not a bad idea, given the unending drabness of concrete sidewalks and unyielding abrasiveness of concrete playgrounds. Already, stores around the country are beginning to carpet their sidewalks as an eye-catching bright spot along the street; hotels are also using it on sidewalks to add a note of luxury; and there have been a few timid experiments with synthetic turf in playgrounds and schoolyards.

The New Sod

Artificial grass was once seen only in window displays or stage sets. Now, all the world's a stage. Since the Houston Astrodome was carpeted in synthetic turf three years ago, this addition to the plastics vocabulary of outdoor environments

has been used on tennis courts, boardwalks, around swimming pools — and in bathrooms. The tees and greens of a regulation golf course in Tennessee have been laid in the material, and a resort hotel in the Catskills has put down two acres of lawn in plastic grass.

Although this could obviously be just one more tasteless intrusion of man on nature (who wants to loll in the shade of the old apple tree on a carpet of polyethylene grass?), architects have become interested in its potential for areas where it is not meant to fool anyone. Again, the city presents a number of possibilities: waterside recreational areas, sunless courtyards, and public spaces subject to heavy traffic.

It is interesting to note that the stimulus leading to today's synthetic turfs originated with a city problem. It was at the urging of Educational Facilities Laboratories, which was looking for something to protect the city child from his concrete play surfaces, that manufacturers began to work on them.

Landscape architect Paul Friedberg, after an initially negative reaction to the material, changed his mind when he saw an installation in a New York City public playground. He now plans to use the material in some of his future playground designs. Another landscape architect, Robert Zion, agrees that playgrounds are an ideal application. He also feels that, although the product is now too green and too perfect, improvements in the color and texture, bringing its appearance closer to the real thing, would make it acceptable for use in combination with the chlorophyll variety to protect areas of heavy wear. It has also been suggested that the possibilities for architectural use could be expanded if a few imaginative non-grass colors were available.

There are presently three types of synthetic grass on the market. The most common type, and the one with broadest

application, is tufted from ribbonlike, synthetic filaments that do have a certain resemblance to blades of grass. It is now available from several manufacturers, the most ambitious of which offers six different turfs—all intensely green—for both sports and “landscaping.”

Density and thickness of the backing vary, depending on the use for which they have been engineered. “Pile” heights range from about $\frac{3}{16}$ in. for tennis to almost an inch for golf greens. There are two surface textures: dense and close-cropped for most sports, or comparatively loose with long, slightly curled strands, suggested by the manufacturer for lawns.

A second type of “grass substitute” now available is composed of inch-high blades molded onto a thin backing sheet and installed in interlocking, foot-square tiles. These tiles caught the imagination of a young designer with an apparent yearning for a bit of the greensward in his big-city apartment. His answer was a gardenlike bathroom, sodded with scrubbable grass.

Recently introduced by a large manufacturer, the third kind of artificial turf has the appearance and texture of a rather coarse cut-pile carpet. Color is mellowed by mixing black fibers with the green, and the backing is $\frac{5}{8}$ in. of rubber. It is being installed on sports fields, where the nondirectional pile is said to prevent the unnatural bounce of balls, which has been a problem at the Houston Astrodome. (Some of the recent additions to ribbon-like filament turfs also make this claim.)

There is also a hybrid that does not fit neatly into either the carpeting or synthetic grass categories. The fiber is ribbon-like, but the pile is partly looped and partly cut. There are several colors available, and the filament has a glossy celophane sheen that might fit into the psychedelic scene.

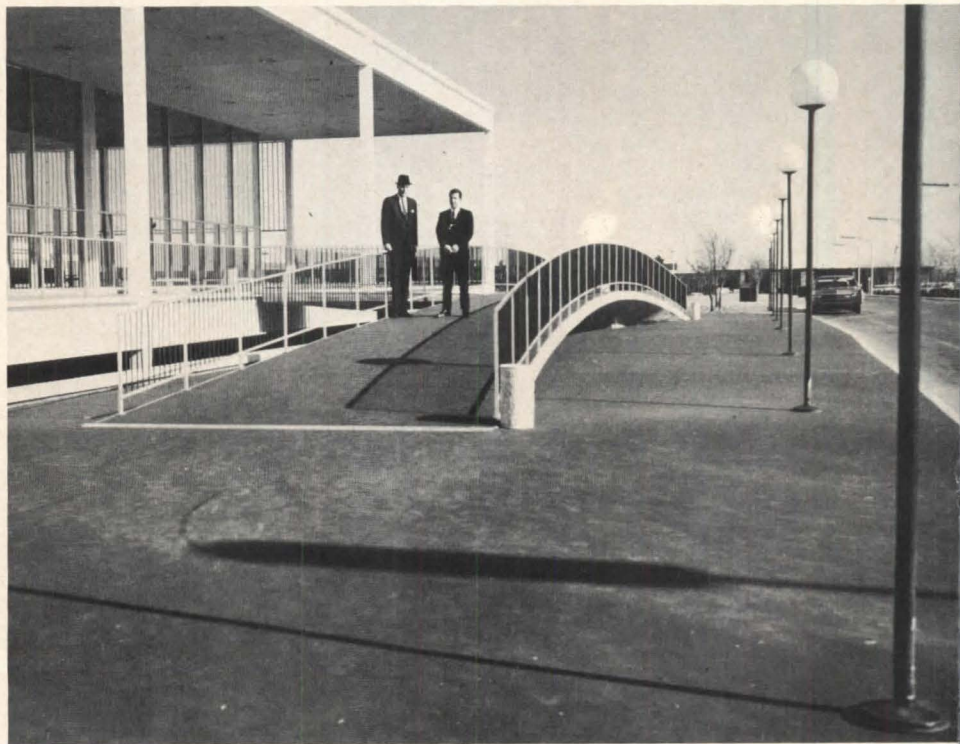
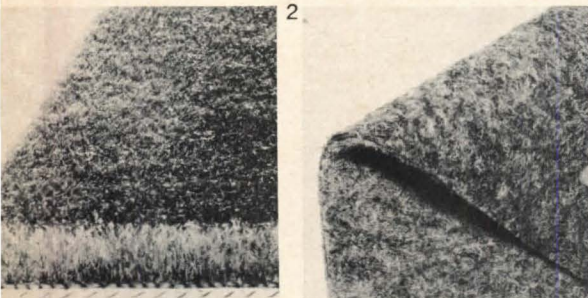
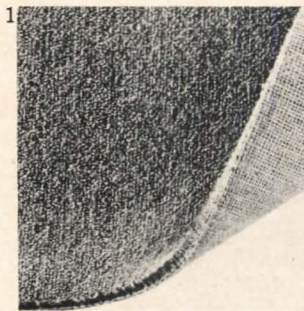
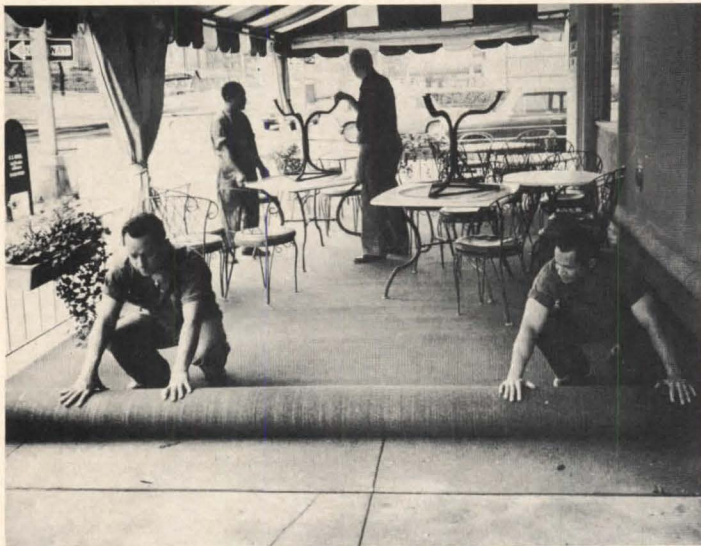
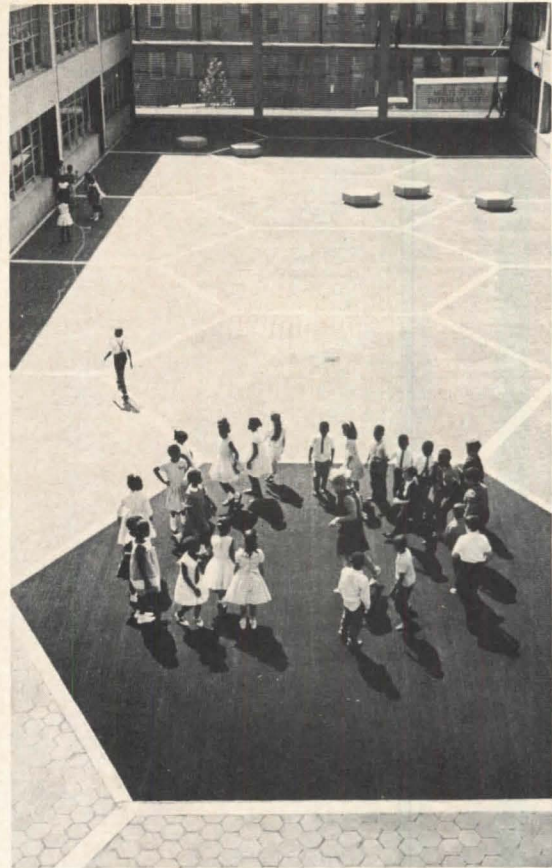
Practical Capabilities

This newest success story from a very active industry has been witness to more than one short-lived failure. Certain fibers and carpets have been withdrawn from the market, and further changes and improvements can reasonably be expected. At last count, there were well over 30 companies manufacturing either synthetic grasses or carpeting for the outdoors. The reliability and quality of some of these have been firmly established, while others have not.

The once-small manufacturer of underpadding that originated indoor/outdoor carpeting in its present form has grown to a company of major proportions on the strength of the new product. The felted material it introduced (now manufactured by a number of other companies) is needle-punched onto a mesh



Photo: Richard C. Lewis



Soft-edge exteriors run the gamut from hotel sidewalks and outdoor cafés to city playgrounds and airport terminals. Although indoor/outdoor carpeting is used inside more frequently than out, the gardenlike bathroom below is not a typical application. Designer Derek Romley laid the floor in plastic grass tiles similar to the one shown in photo (4).

The dense, tufted carpeting (1) has a low, looped pile similar in appearance to traditional indoor carpeting. Felted types (2) still account for most installations. A deeper, cut pile with a soft furry texture (3) is recommended for sybarites. Inch-high blades of "grass" (4) are molded into interlocking, foot-square tiles. In wide use are the synthetic turfs (5) tufted from ribbonlike filaments less than 1/16-in. wide. The one shown is recommended for lawns, but denser, tougher varieties are being used on football fields and playgrounds shown on these pages.

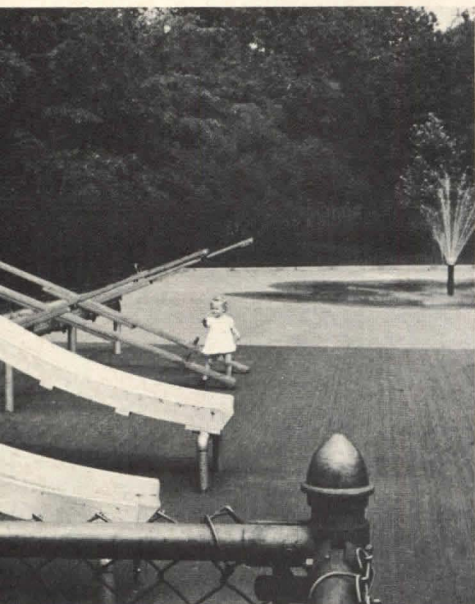


Photo: Alis Runge



Photos: Louis Reens

backing in a manner similar to the process for underpads. It is an unusually tough surfacing, and initial problems of pilling and fuzzing have reportedly been conquered by improved techniques that compress the fabric to about 1/4 in.

Looped and cut pile carpets are made with the tufting process on the same type of equipment used in the manufacture of traditional indoor carpeting. At least two flocked outdoor carpets are now available. And there is a family of solid vinyl "carpeting." The latter is really a matting that has been textured and colored to simulate fabric.

All fibers are synthetic (primarily polypropylene, which became available in a continuous filament in 1962) and are reported to have unusual qualities that suit them for the outdoors. A recent study of indoor/outdoor carpets by Bernard Berkeley, Foster D. Snell, Inc., a subsidiary of Booz-Allen Applied Research, has this to say about the qualities of polypropylene: "Polypropylene fiber has low wettability, is resistant to a great variety of maintenance chemicals, acids, and alkalis, has a low build-up of static electricity, and is light in weight. It has excellent wear resistance, comparing favorably to nylon, and has good strength. Like other synthetic fibers for outdoor use, it is solution-dyed to make the color part of the fiber. The limitations of the dyeing process, however, restrict the number of available colors. Resistance to sunlight and heat is attained by incorporating stabilizers into the plastic before it is extruded in fiber form."

There are, of course, other fibers available, including nylon, acrylic, and saran. And perhaps there has been an improvement in dyes since the study was published last year, because the many samples reviewed by P/A offered, over-all, quite a wide selection of both solid colors and tweed mixtures. Solids tend to be bright while tweeds are more subtle. White, however, is rare.

There are also speckled and striated patterns, and felted carpeting is available with embossed patterns or overprinted with geometric and floral designs. (It is questionable whether the last two are suitable for general architecture applications in their present state of design.) Carpeting is available in standard rolls, usually up to 12 ft and some is being manufactured in tiles.

Manufacturers' claims for durability and resistance to heat, cold, fading, tearing, rot, mildew, shrinkage, staining, wear and abrasion were all proved remarkably accurate in recent tests conducted by the Consumers Union.

The majority of samples tested, however, revealed one serious flaw—flammability. Although samples that failed the flammability test did not actually

"flash into flame," they continued to burn slowly once they were ignited. Products of the 13 companies tested do not, obviously, represent the entire indoor/outdoor carpet field, but do include many of the leading manufacturers.

As might be expected of carpets made from such durable fibers, cleaning is simple. Outdoors, they can simply be hosed down, while vacuuming is the easiest solution indoors. Because of the danger of electric shock, they should not be vacuumed while wet unless a machine designed specifically for that purpose is used. Although fibers are resistant to stains, the marks that do remain can usually be washed off with water or a dilute detergent. Grease stains can be removed by most of the chemicals in commercial cleaning kits, unless specifically prohibited by the manufacturer.

The principal maintenance problem arises from the fact that, once wet, the carpeting has a tendency to retain water. If the carpet is of a manageable size, it can be hung to dry, or water can be broomed or squeegeed off. *Consumer Reports* points out that this represents a hazard in laying the fabric over wood decks, since continued dampness could rot the wood.

There are several choices when it comes to installation, the simplest being to lay the carpeting on the ground or floor with no attachment. Indoors, carpets can be installed with double-faced pressure tape or laid conventionally over a pad for additional cushion. If this is done, however, they will have about the same limitations as traditional carpeting. Although the felted and looped-pile types are quite compact and dense, both are now available with a secondary backing of vinyl foam or rubber waffle pad that adds springiness.

Outdoors, they are attached with a waterproof cement. However, in one sidewalk installation, driving rains have loosened carpet tiles laid over uneven sections of concrete. The solution, in this case, was to refinish those sections of concrete causing the trouble. But perhaps a better adhesive would have been just as effective. Manufacturers should be consulted on sports installations, which are highly specialized.

Taken in toto, the prospects for indoor/outdoor carpeting seem good. Like all new materials, it can be improved and further diversified. Like all synthetics, it will, and is, being misused. But for the architect, it opens up new possibilities, as well as providing an alternative surfacing for problem areas, whether the problem is one of weather, wear, or imagination. Even with its present limitations, indoor/outdoor carpeting represents a substantial addition to architectural materials.—AR

This is the age of the nude bulb. Since the time when people like Andrew Carnegie had the first mansions wired for electric lighting in the 1880's, when all lamps went exposed, we have come full circle. In the intervening years, the object of lighting design has been to conceal the source of light and eliminate brightness. Today, however, there is again a general desire to see the light source. The explanation for the return to the naked bulb is at least partially psychological: Lighting designers find that people are more comfortable, in a synthetic environment, when they are aware of the sources of light, sound, air, and so on. Then, too, the infiltration of Pop Art (with its predilection for exposing the ordinary) and of decorative functionalism into the interior furnishings field is responsible for some of the new lighting design. The light source—and even such prosaic paraphernalia as wiring, switches, and sockets—has become a decorative element. Whereas in the past manufacturers designed all lighting equipment, today architects are increasingly interested not only in the design of fixtures, for example, but in the technical detailing that surrounds the bare lamp itself. Some manufacturers will assemble any combination of lamp jacket, socket, and filament if lamps are ordered in a minimum quantity; they will also alter filaments at a small cost that is practically negated

when a sufficient quantity of lamps is ordered. And, since the cost of lamps is only 10 per cent of the cost of lighting, the expense is truly negligible.

For noncommercial installations, the Pop influence and the desire to design *all* features of an environment has led to an interest in the lighting designer's version of the do-it-yourself kit. In Europe, at least, manufacturers are marketing systems kits complete with lamps, jacket, sockets, and so on, to be assembled in any desired increments and patterns. In this country, designers frequently find that the easiest—and the cheapest—way to get what they want is to hit the nearest hardware store for a pile of standard parts and plug them into each other on the job. Ordinary plugs and sockets become visible parts of the lighting fixture.

Together with the increasing interest in lighting fixtures as a design element goes the architect or designer's growing enthusiasm for light itself as an architectural medium—the most kinetic one of all. Just as light is the element most successfully used to bring the natural world into a synthetic environment, it is kinetic light that designers are using to reflect the outdoor world of the urban and rural environments. "People have always sought to order the world on the basis of what they saw," Hugh Hardy comments. "And," he reminds us, "what we

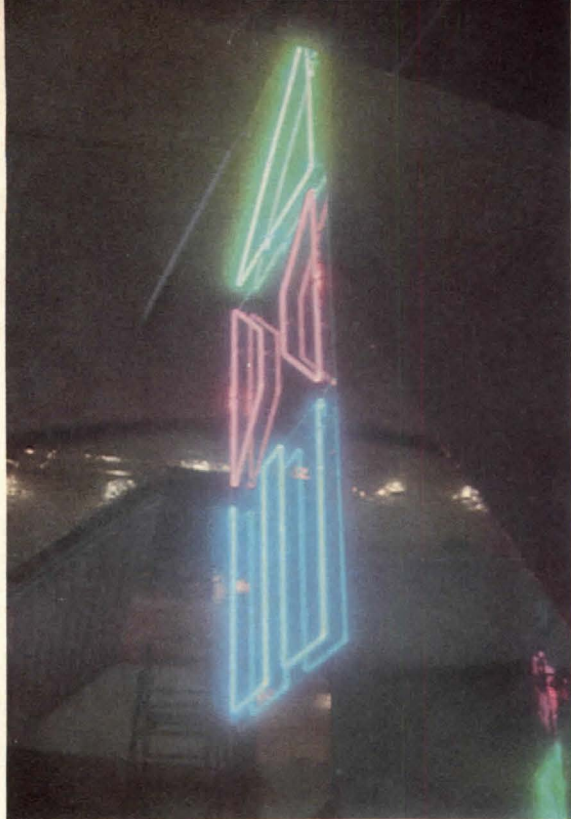
are designing today is for artificial light—for light falling on objects from one side. When a car goes by at night, it is made by solids, but we don't see that because of the lights, the chrome, and the stripes created by lights in motion. Today's designers are aware of light and motion and the things they see at night, and they are grabbing onto that as their imagery," he points out.

Both the flashing, floating neon work of artists like Billy Apple and Chryssa and its counterparts in stores, nightclubs, and homes rely to a great extent on a number of new automatic switching devices, some of which have been on the market for only a year or so. The new devices offer tremendous lighting flexibility and a wide variety of effects, and one of their most attractive advantages is their low cost—any one of these devices is available for about \$20.

One of the fields in which light as a creative medium can perform the greatest wonders is automatic projection. The closest approach to the complete synthetic environment is proposed by Michels/Feild of Washington, D.C., who call themselves Environmentalists. The synthetic environment to them is a powerful one. "One thousand amps of power wherever you want it for instant media," exclaims Michels. To create a stage of film studio with a flick of the switch—that is the idea. All of this would take place in an anonymous room, but one that has the capability of being transformed instantly into any number of environments. (See "Instant Interiors," pp. 174-180, JUNE 1967 P/A.) The synthetic environment would be a set of back-up equipment, props to make an infinite number of environments. Jack Lenor Larson believes that "interior design, using an ever-changing array of projected color and pattern, can be as universally and inexpensively available as recorded music." And David Sellers and Charles Hosford are already investigating the qualities of lasers and holograms for projecting three-dimensional images on walls or even in empty space. The possibilities for lasers are enormous, they feel. In combination with a series of mirrors, a laser and a single lamp might fill an entire building with light. Although both lasers and holograms are presently far too expensive to be considered for interior design purposes, Sellers and Hosford feel that it is none too soon to begin investigating them. "It's like the telephone," says Sellers. "Once it's been invented, you want to know what it will do and how you might use it. It won't always be out of our price range."—JP

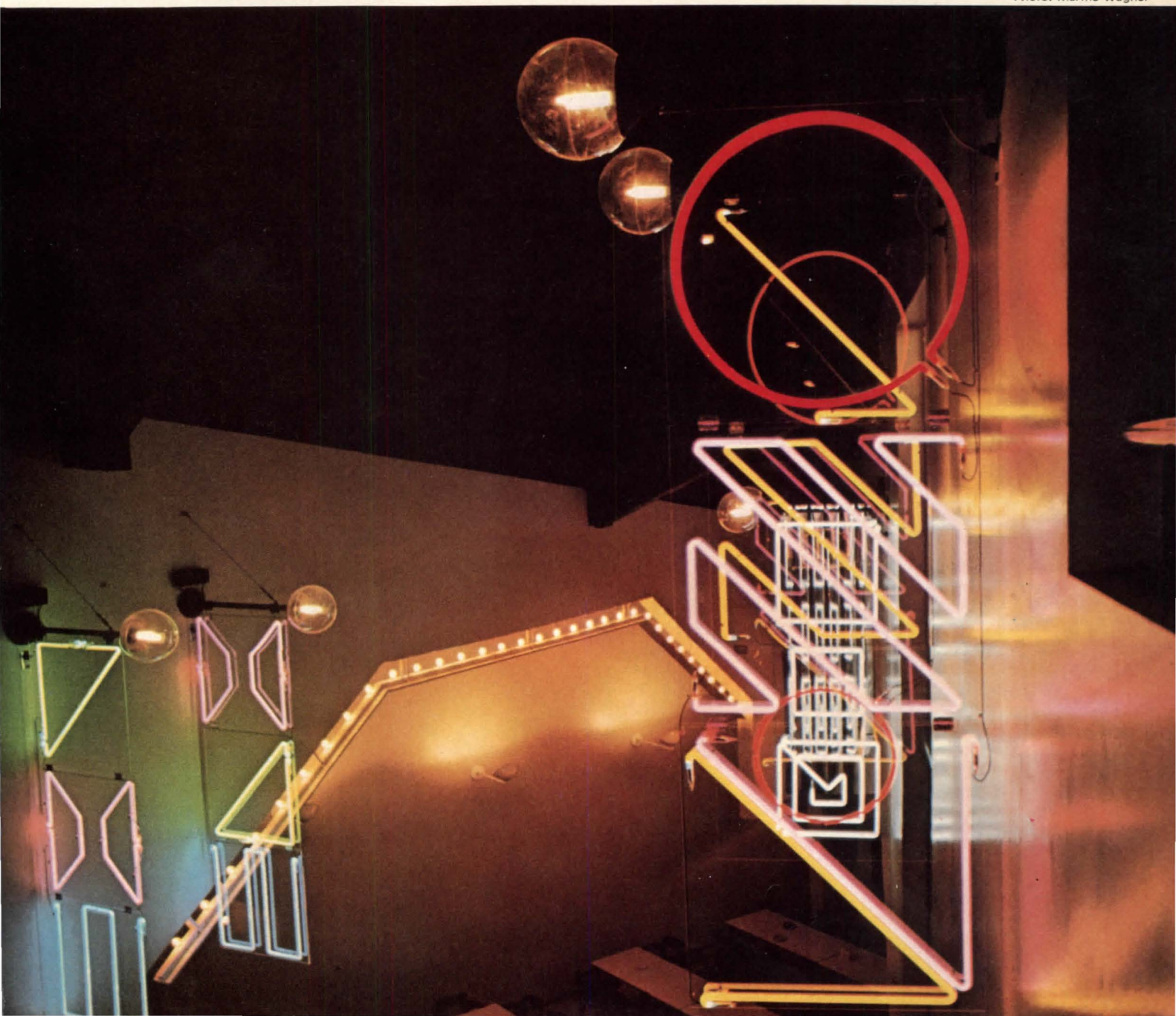
The wildest, most kinetic medium of our electric environment is artificial light — especially now that switching has become almost magically automatic. Interest in a changing, evolving environment, and in nonstatic forms and growth will undoubtedly extend the manipulation of this artificial medium.

THE KINETIC ELECTRIC ENVIRONMENT

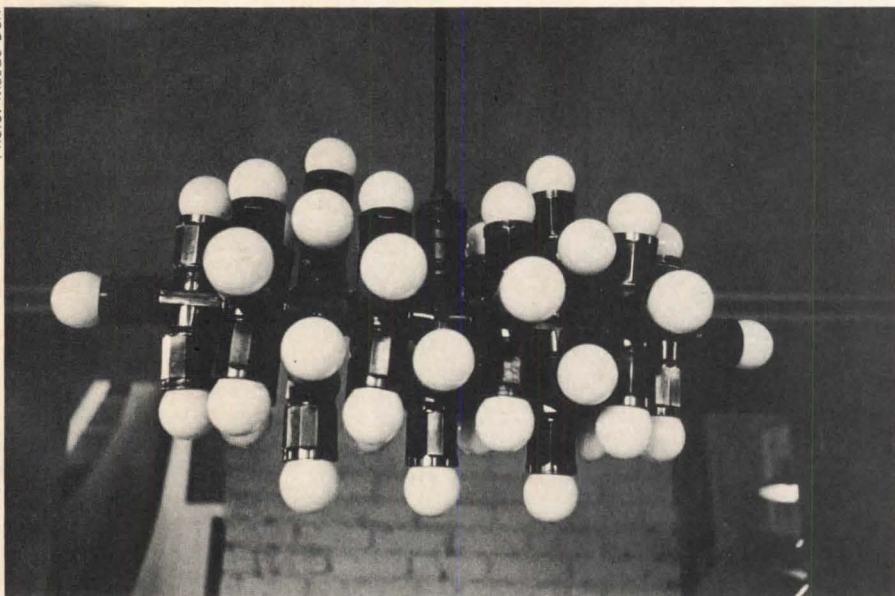
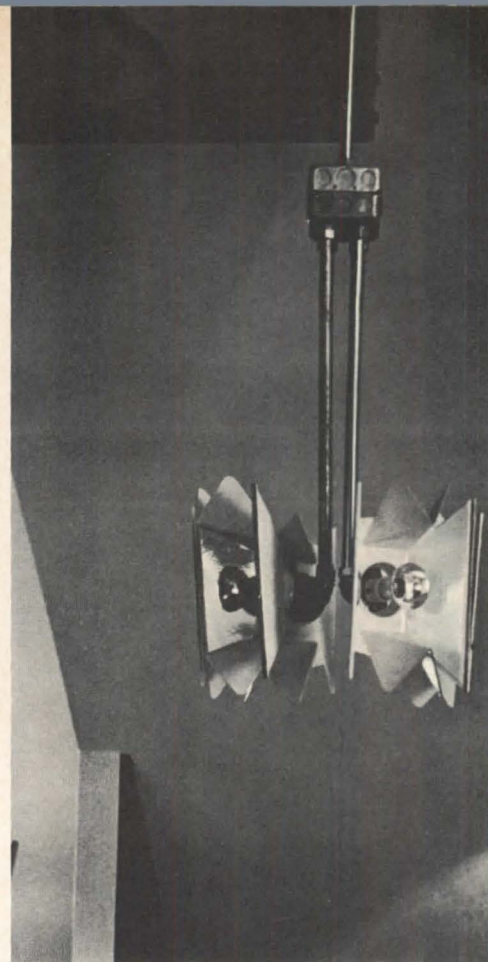
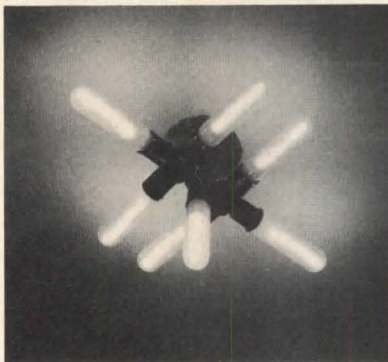
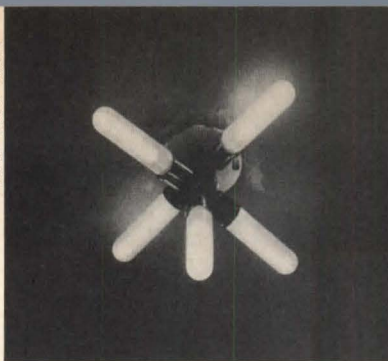


The Elm City Electric Light Sculpture Company, a group of designers including William Grover and Jerry and Martha Wagner, has brought neon sculptures out of the art gallery and into a more permanent environment. For Charles Moore's Faculty Club at the University of California's Santa Barbara campus, they have created six colorful neon banners — the most flashy updated medieval heraldry.

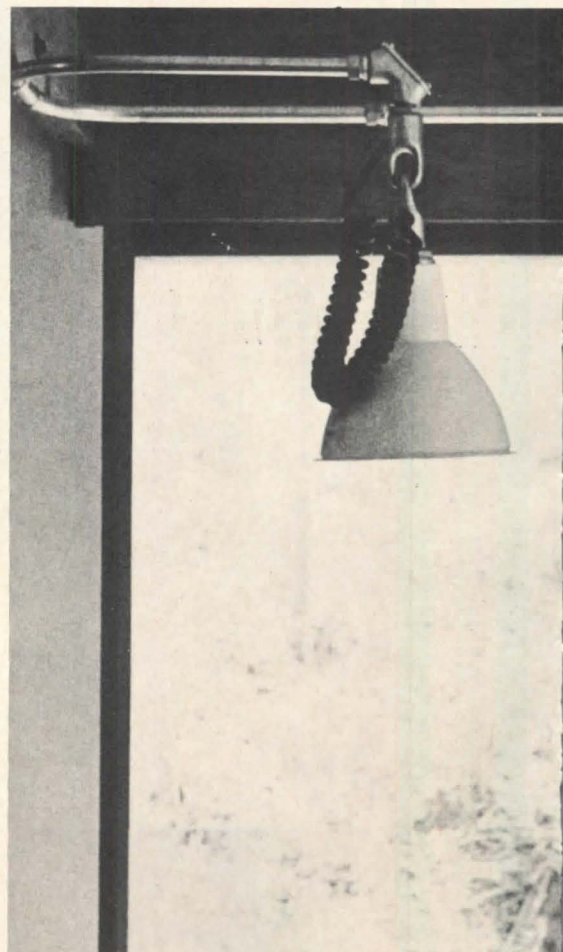
Photo: Martha Wagner



The night before the Madison Avenue boutique Contessina, designed by Peter Gluck, was scheduled to open, lighting consultant Paul Gloss was faced with the task of supplying and installing — before 9:00 the next morning — lighting fixtures for five fitting rooms. His solution was to go to the nearest hardware store, buy a number of standard tubular incandescent lamps and sockets, and plug them into each other in five different patterns, one for each fitting room. Each fixture cost approximately \$4.50.

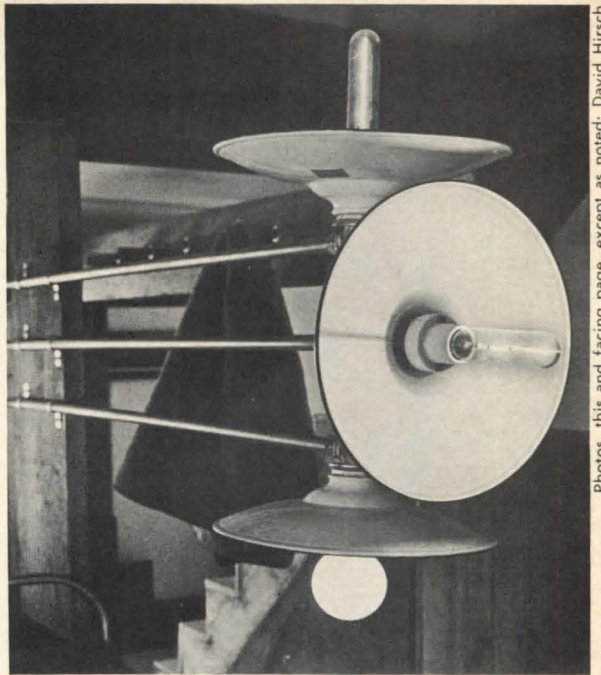
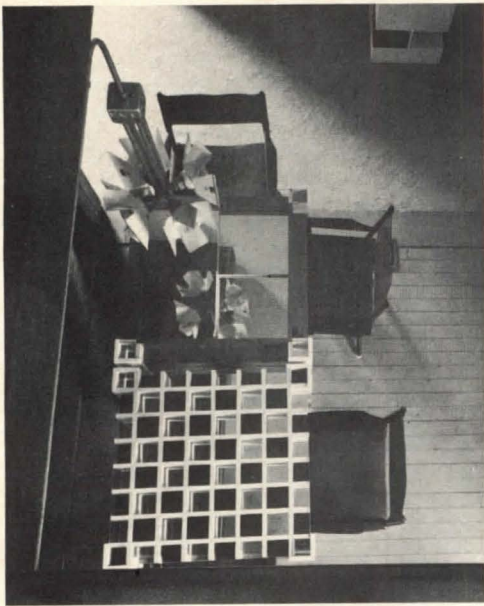


William Grover used standard parts, readily available from the local hardware store, to make a chandelier for Charles Moore's house in New Haven. Inspiration for the design came from an article in a German lighting journal, which showed a similar fixture constructed from specially manufactured parts. While Grover was installing his fixture for Moore, designer John Kirk saw it, and later came upon the same magazine article Grover had seen. A fixture Kirk subsequently designed — one that is very similar to Grover's — is now being marketed by Design Research. Kirk feels that even if he had not seen Grover's work, he would eventually have developed his own version of the idea, simply because of his interest in bare bulbs and kit constructions.



Sellers and Hosford have added coiled cable that serves as a Pop Art design element as well as a functional element permitting extension of the light to other locations.

Fixtures with baffles or louvers on sides, top, and bottom, normally used in industrial corridors, are clustered by Charles Hosford and David Sellers to create a chandelier with exposed spotlights.



Photos, this and facing page, except as noted: David Hirsch

Industrial fixture typical of the late '20's was originally marketed by the Reflector and Lighting Manufacturers Institute. Charles Hosford and David Sellers use the white enamel fixture with different kinds of lamps in a residential corridor.

Light mural in Paul Rudolph's apartment is composed of many plastic photo transparency holders epoxied together. Instead of transparencies, some of the containers hold pieces of shiny foil, bright-colored reflective plastic, or miniature photographs. Behind the scene, red night-lights plugged into tap-a-line wiring exude a pink glow that suffuses the mural's surface.

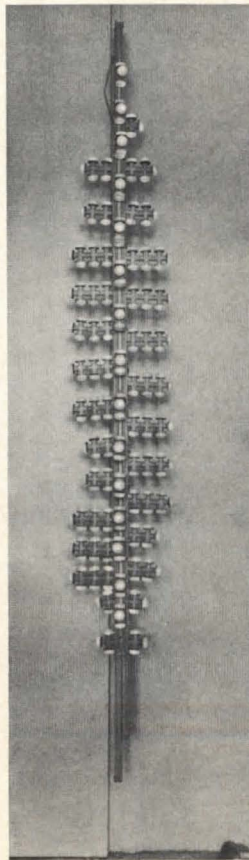
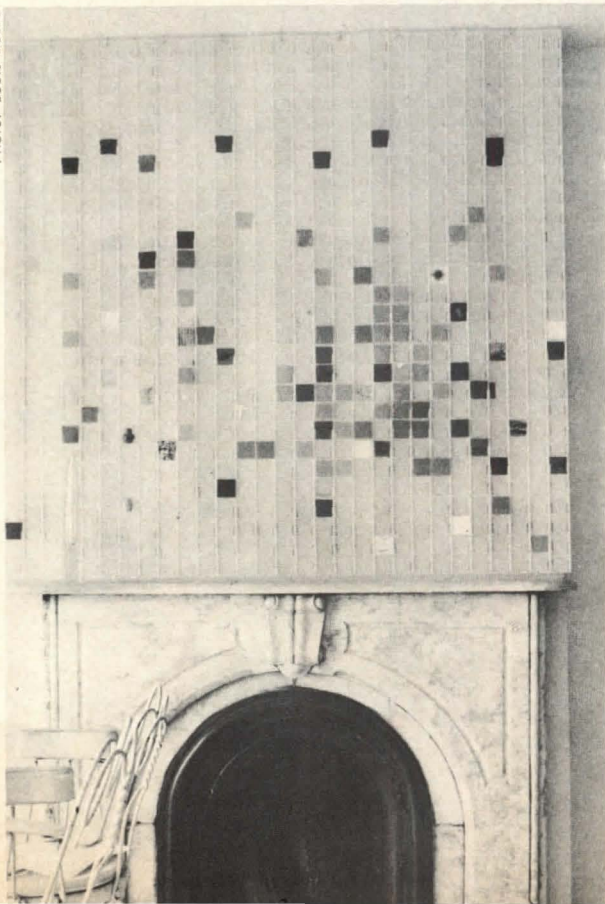
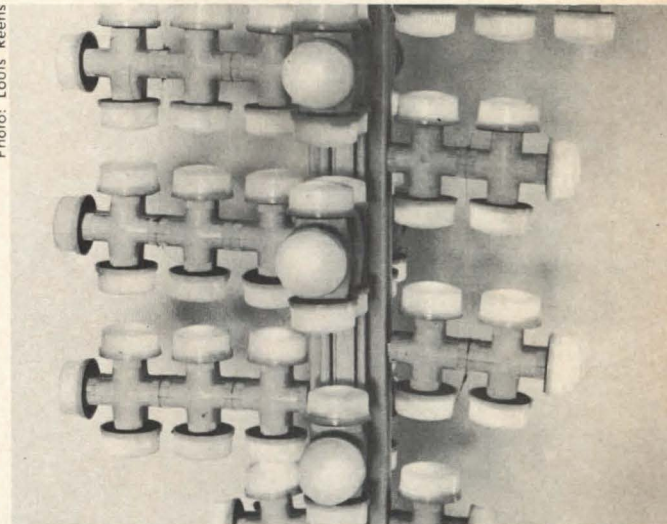
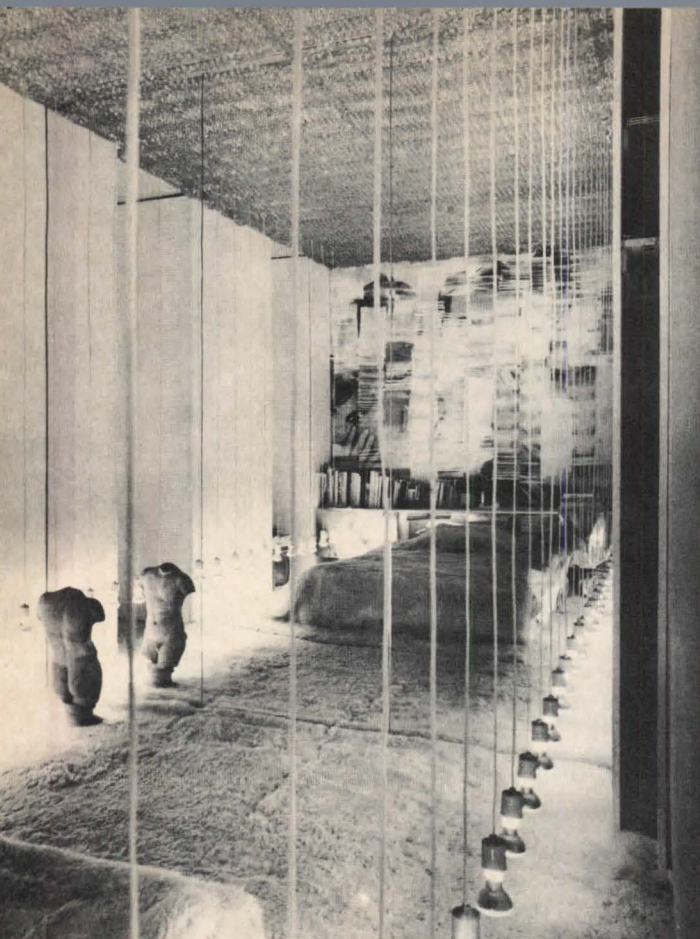


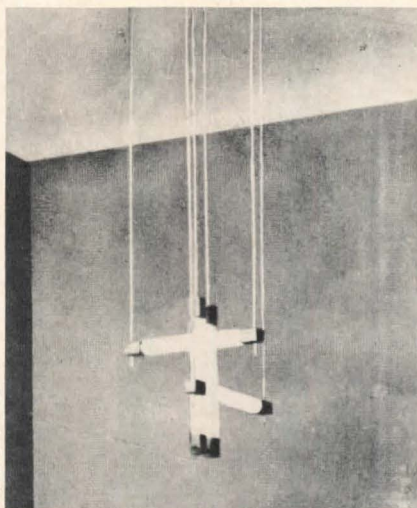
Photo: Louis Reens



Orange-glow night-light lamps plugged into white, rubber three-way sockets are ganged and strung on tap-a-line fixture to make a hanging light sculpture in the vestibule of Paul Rudolph's Manhattan apartment.



In the orange bedroom of Paul Rudolph's apartment, the warm glow of incandescent lighting is concentrated close to the carpet in two lines along the room's longer walls. Strip mold wiring is hidden in the ceiling, and lamps are suspended on long exposed cables.



Chandelier designed in the 20's by G. Rietveld for a doctor's consulting room is a happy combination of old and new. The elements — exposed fluorescent tubes — are modern, but the style is De Stijl. Richard Bertheaux, Assistant Professor of Architecture at the University of Washington, Seattle, notes, "As far back as the Bauhaus, there was great interest in light as a creative medium. But it has been only in the last 10 years that artists as a whole have tackled light as a legitimate medium."

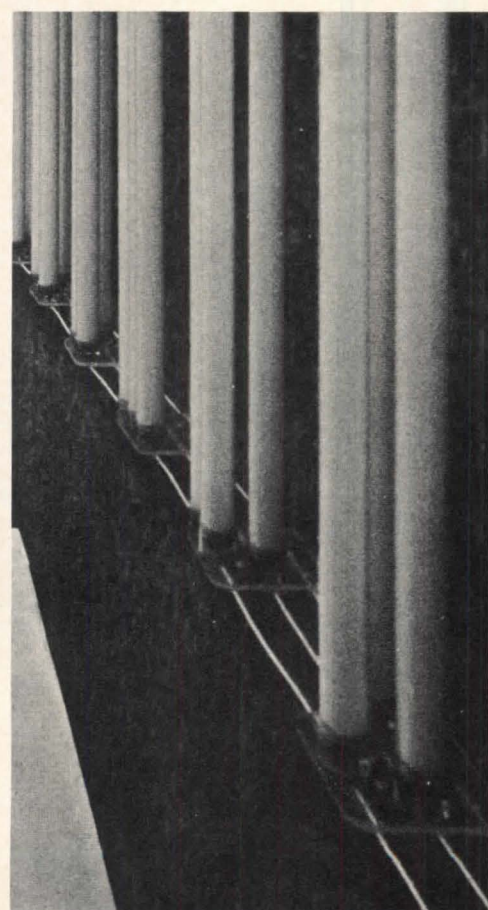
Photo: Louis Reens

Photo: Dr. Franz Stedinger

Photo: Louis Reens



The shimmering chandelier designed by Warren Platner for Georg Jensen's new showroom uses acrylic plastic and bare bulbs to achieve a delicately ethereal atmosphere against surrounding solid, all-white masonry. Slabs of clear acrylic are suspended both horizontally and vertically from the coffered concrete ceiling. Lamps shine directly down into the room and up into the coffers. Since concrete-work was not to be altered, the architect was unable to conceal necessary conduits. Instead, he used wire-mold conduits which qualify under New York City Code as junction boxes, so that all wiring could be run in from two sources. Lamp sockets are covered by rectangular tubes that are only slightly thicker than the conduits themselves. Lamps are standard R20 incandescent with a special mirror finish (manufacturers will provide special finish at low cost if lamps are bought in quantity). Platner believes it likely that these lamps will become standard products, as did those he used in the Ground Floor restaurant in the CBS Building. As a matter of fact, the Jensen showroom appears to be an all-light version of the Ground Floor. Together with the reflective surfaces of the lamps, the two planes of acrylic actually reflects themselves, the light source, and the concrete above. While direct downlighting provides a warm sunny glow, the uncovered lamps add myriad sparklings that put the environment nearer the realm of fantasy than the natural world of sun and sky.



Photos: Joel Katz



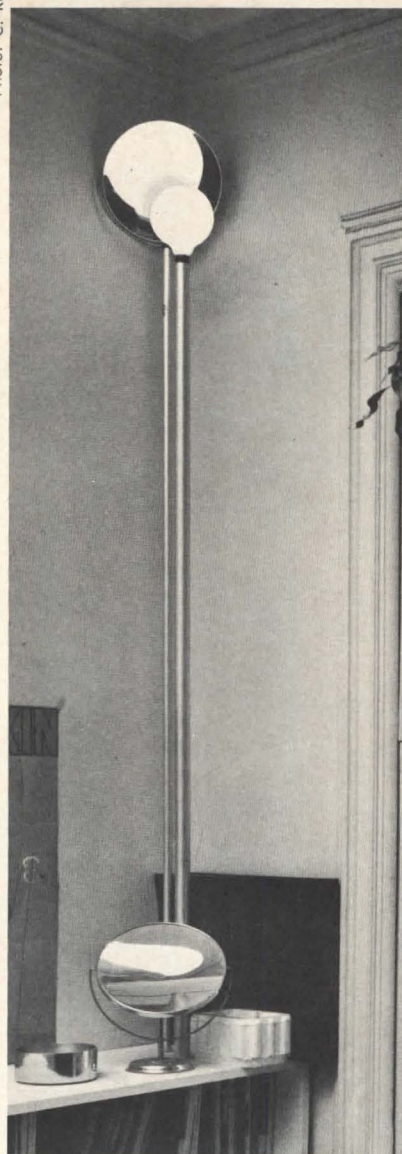
Photo: C. Ray Smith

Ordinary Christmas-tree lights add glitter to glassware on a table in the apartment of P/A Associate Editor C. Ray Smith.



Naked fluorescent tubes are virtually the sole element in the most kinetic window display imaginable without the use of live models. Suspended tubes change position and flash on and off. James L. Nuckolls of Bolt, Beranek & Newman designed the fixture for Bonwit Teller, New York.

Pulsa, the environmental lighting display integrated with Project Argus at Yale (p. 152), exhibits a sophisticated handling of technical and aesthetic details. Neon tubes are butted vertically and ganged horizontally to form a "light" wall. Butted ends are encased in a plastic sleeve that conceals junctions (bottom). Wires feeding ganged tubes create a pattern at the bottom of the wall beneath their clear plastic bases.



For a standing fixture, Peter Hoppner used two shaving mirrors attached to top and bottom ends of steel tube to reflect light from an exposed incandescent lamp.

Photos: Robert Perron

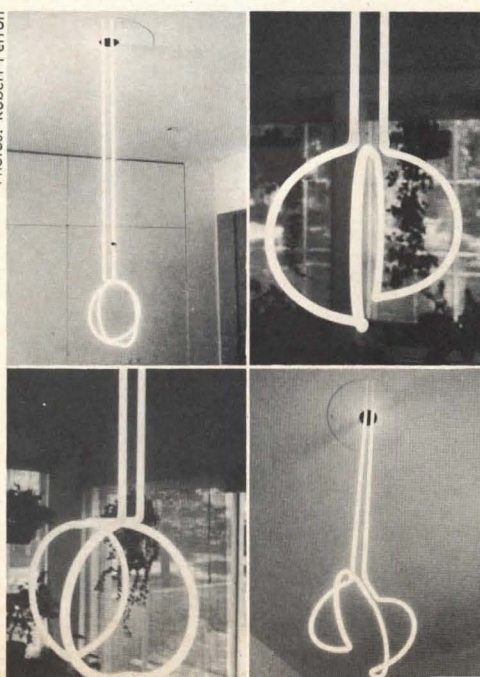


Photo: Louis Reens

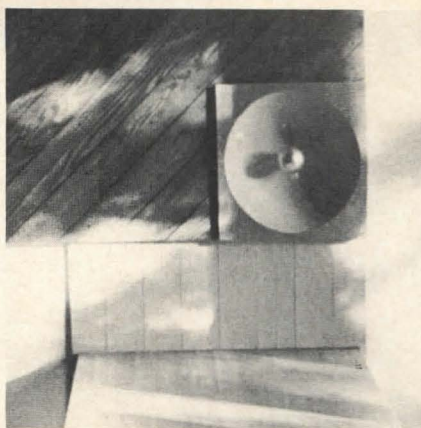
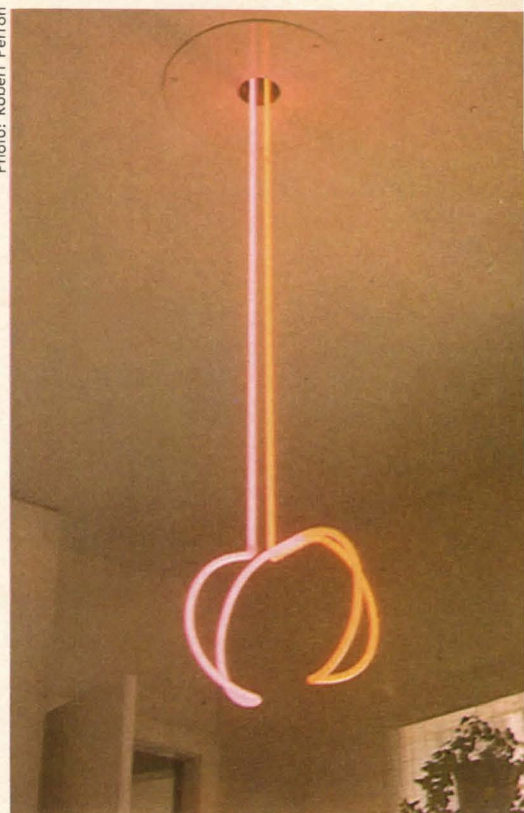


Photo: David Hirsch

Wall fixture by Charles Hosford centers a single silver bowl lamp in a block of solid wood whose shape is determined by the salad bowl that has been carved out of it.

Photo: Robert Perron



The neon tube assumes remarkable grace in a neon chandelier designed by Jerry Wagner for Yale professor Felix Drury. The technical mastery that permitted hiding all electrical connections is especially worthy of note; connections are concealed beneath a circular polished chrome plate that reflects the tubes, making them appear to flow from the ceiling in a liquid motion. Another detail that seems to have been successfully mastered is the problem of the inherent weakness of neon tubing. Since the tubes will not support their own weight beyond a certain length, the design called for careful calculation. Gold and pink lamps are on a dimmer; colors draw attention to the dining table in the center of the all-white room.

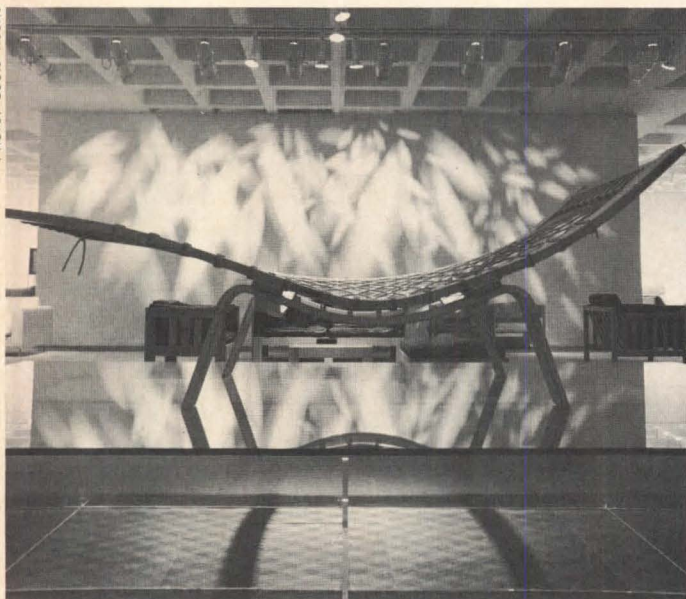


Experimenting with instant interiors, C. Ray Smith projected the walls of Rudolph-designed Christian Science Reading Room in Urbana, Illinois, onto a wall in Rudolph's own apartment. It produced instant monumental seersucker walls and brought a Rudolph-designed interior in Illinois into a Rudolph-designed interior in New York.

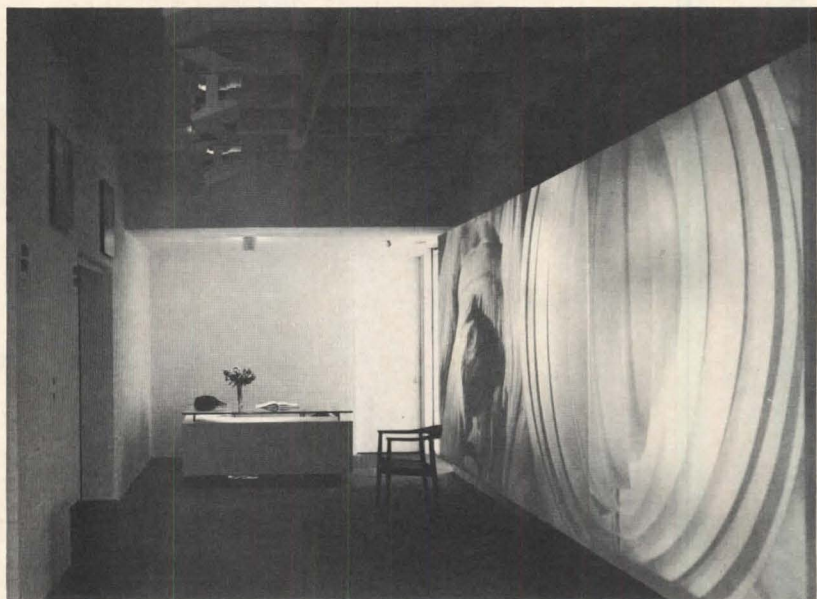


Projections: Bolt Beranek & Newman, Inc. Equipment: Courtesy, Kliegel Bros., Inc. Photos: Louis Reens

Photo: Louis Reens



Furniture in the Jensen showroom is displayed against an ethereal background of wispy plant-like images. These images are projected in silhouette on white walls, creating a small piece of sylvan fairyland inside a commercial loft.



Photos: Ezra Stoller

Projections constitute a very practical addition to the trading room of New York's largest over-the-counter brokerage firm. Before re-design by The Miller Organization, many traders at the New York Hanseatic Company were unable to see the ticker tapes, and the noise of men shouting quotations back and forth across the room caused impaired hearing among traders. To solve the problem of blocked views, The Miller Organization turned the room into an amphitheater and installed a series of projectors. Market quotations are projected onto walls and partitions so that each trader has a full view of the facts he needs.



Warren Platner wanted the bold effect of a billboard to fill the long blank wall that confronts visitors coming off the elevators into the reception area of the Georg Jensen showroom. Far more flexible, however, are the projected photographic collages he chose instead of a real billboard. Slides are changed daily, and more can be added cheaply, should visitors or staff become blasé toward the original set. Platner chose projections over paint for an additional reason: Light has a quality of its own that makes the picture a living thing. "I'm using light here as a material," he notes. Standard 2" x 2" slides are used, fitted into special mounts designed by George Izenour. Slides are projected into mirrors opposite the screen in order to extend the distance over which the images can be projected.

Photo: Bill Rothchild

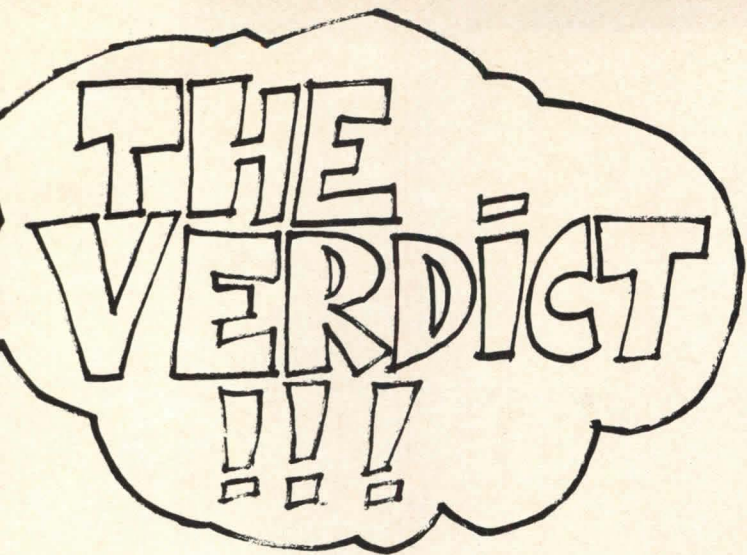


When P/A Associate Editor C. Ray Smith wants a visual escape from his urban surroundings, all that is needed is a flick of a switch to bring Niagara Falls into his living room. Projecting the Falls (as seen from the tourist boat "Maid of the Mist") onto the fireplace wall produces the splendid sight of water pouring over the fireplace—without putting out the fire.



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





ARE YOU READY?

In the case of the Supermannerists vs. the Establishment, are you ready for the verdict?

First, there is no guarantee that the new design approach is approved simply because there are manifestations of it in a particular school or area.

Where no examples were manifest, about half of those replying to P/A's survey (see p. 150) were happy it was not happening there (although one admitted that the faculty blamed themselves for this). Most of those opposed insist that "it will not last" and is "only a passing fad."

Of these negative comments, the most amusing (especially since it comes from an area near hippiedom) is the following reply, which we quote in its entirety: "I am pleased to report that we observe only the normal superficial interest in mirrors, silver, stripes, permissiveness, and chaos, etc. To the foregoing you might add fluorescent colors, posters, old boards, bare feet, long hair, moustaches, loud music, and girls." (Perhaps appropriately, that whiplash ending makes the answer ambiguous.)

On the other hand half the observers approved of the new design.

There is some diversity of opinion on the merits of the movement even within the same faculty groups, however. And controversy also abounds in the opinions concerning the origins of the movement and its objectives.

The Case of the Prosecution

Those who speak out against the new design phenomenon maintain that it is "too visual and form-oriented," that it has "too little social significance," that it is "precocious ex-

periment," "undesirable," and "irresponsible." In Chicago, recognized stronghold of the Miesians, University of Illinois professor H.F. Koeper says that architects reject this kind of "triviality because it is a kind of architecture of incident and anecdote, which people look to for entertainment, like clothes. Most Miesians are against what Frank Lloyd Wright called 'architectural millinery.'"

Houston's Eugene George also protests: "The participation fools one into thinking that one has accomplished something of great merit. It seems to solve problems in a superficial way that does not really approach the main problem at all. Instant success seems to be a substitute for work."

Cranbrook's Glen Paulsen, New Mexico's Thomas Vreeland, Jr., and Yale's Felix Drury (the two latter in favor of the movement) agree that the surface and presentation techniques sometimes become so engrossing and exciting that designers forget to include any content, such as development of program or structure. However, these are extreme compensations for regimentation and monotony, as the educators point out.

Aesthetics alone seems recognized as the greatest danger for architectural students of Supermannerism: For perhaps the first time since Gutenberg, architecture and interior design have become almost as purely visual as the fine arts. While architects are designing room environments, the artists are now designing environmental rooms. Over the past year, the Architectural League of New York, to name just one example, has installed an exhibition series of environmental rooms by artists working with light, vinyl, wind machine, and texture for the benefit and presumed edification of local architects. These elements are being installed by architects in real rooms, as the preceding pages have demonstrated. Architects seem to have caught up with the fine arts.

The question is, can they keep it up? This is one of the major criticisms of the new investigations. That is, if architecture students devote all their attention, interest, and energy to room decoration, how are they going to learn to keep buildings up?

"They should learn to be architects and study engineering," graphic artist Barbara Stauffacher maintains, "and not rely on graphics as a crutch."

"Students don't spend all their time painting stripes and photographing things or discussing the value of straight talking," counters Howard Barnstone. "They go to structure classes, building techniques classes, cost and estimating classes, and office practice classes. If, in design, they spend time discussing the value of straight talk, it is better than coughing back a warmed-over Yamasaki."

Nevertheless, the strongest criticism of the new movement is that its aesthetic investigations "glorify subjectiveness and purely personal expression," as Robert P. Burns puts it, "at the expense of the more serious architectural needs of society."

Those dedicated to this greater significance of social concern and to the "serious" involvement of architects in social issues therefore decry the aesthetic investigation as only "a minor part" of the total picture of architectural practice, which, they feel, must be increased in scope, not intensified, by additional visual games. Obviously, it is not enough to base an architectural philosophy entirely on humor. And although most admit that the surface techniques add valuable humor to our architecture, they would probably agree with Gunnar Birkerts that this particular humor "reveals creators laughing at themselves, clowning, but at the same time hiding truth behind their masks. This superficiality indicates an inability to formulate any appropriate new architectural principles."

The critical evidence in the balance of this question may be whether both the new social concern of architects and the aesthetic investigations are (or can be) part of the same

new movement, or whether they are opposing activities. Perhaps in answer, several designers and architects whose work is shown in this issue are both involved with social considerations, and also working with the new aesthetic investigations.

Washington State University's Donald R. Heil adds, "Such irrational experimentation may well persist until there is a cyclic reacceptance of the validity of reason as the most productive method of surviving in an alien environment."

The Case for the Defense

"A new direction is always healthy," Bill Lacy maintains, "since it forces evaluation of the old and the new."

Most of the supporters acclaim the benefits of such re-evaluation as the movement has inspired. According to Frederick Eichenberger of North Carolina State University, "The benefits are 'purgative,' and the only dangers are to custom, which should be threatened continually. The use of such pejoratives as ambiguity, permissiveness, and chaos are indicative of the Calvinistic concern for truth and noble thought that was and is the dark side of the modern movement."

Similarly, Robert P. Burns regards as a positive aspect of the "rebellion" that it "attempts to expand the consciousness of the environment by exploring some of the techniques and methods by which this consciousness can be intensified."

As most of its supporters agree, the new design contributes "vitality and excitement," adds to "our vocabulary of vision," and releases liveliness and imaginativeness and a heightened sense of design." It must be patently clear, if all too often overlooked, that paint, like soap and water, can make enormous improvements to our urban environment. Furthermore, it has focused new attention on interior design, which is significant, as Chip Lord suggests, "because it may determine whether architects or interior designers will design the cubicles we plug into megastructures or omnibuildings."

This current re-evaluation, of course, is not confined to architectural spheres alone; it has correspondents throughout our cultural picture.

As in all revolutions, moral liberty and physical freedom are its banners. "It is no surprise," comments Frederick Eichenberger, "that the kids who cut their eye teeth on computers and who were fed systems and systematic thought with their pabulum, have embraced the joyous, spontaneous sensuality of all the afore-mentioned responses. They know that not every design decision is an equally big moral deal. Having at their disposal, as we never did, the tools and techniques for rational, objective, rigorous design, they are not afraid to wing it where winging it is appropriate."

This very activity, proponents affirm, is a cause for rejoicing. "The kids are alive and kicking," comments Michigan's Robert C. Metcalf. "They don't believe the old ways have worked. We should all be glad for that belief."

Those who close their eyes to the possible benefits of the new approach may be resisting their own professional rejuvenation. "To fear the movement," says Austin's Alan Y. Taniguchi, "would be like fearing the new generation."

Before "change for the better" can be achieved, obviously "change for the sake of change" must be accepted. Howard Barnstone reminds us of the observations of Father René Couturier, the French priest who arranged for Le Corbusier's commission at Ronchamps. He said to a friend, "I have known artists all my life; I have been an artist; I have been a religious for most of my life; and if there is one truth I can tell you, it is that change is inevitable." Barnstone continues, "The reign of the Knoll Planning Unit as the major factor in interiors lasted well over 10 years, from 1955 to 1966 at least. Some change was bound to come to this fixed set of rules."

"This may be the cause to awaken the profession to the obligation of meeting future needs in environmental design," Austin's Alan Taniguchi adds. And Houston's Eugene

George agrees, "We must always challenge the educational structure." Others, too, see design details "free of discipline, function, and other rationalizations" as something that may "very well relax future academic requirements."

"The phenomenon is undeniably here and irreversible," Thomas Vreeland proclaims, "and needs only to be intelligently controlled to be a welcome addition to sensitivities and perceptions."

Finally, Bill Lacy adds, "It does not greatly matter whether we approve or disapprove of it. The question is whether the influence will be content to destroy form or whether it will grow into a new aesthetic based on the acceptance of man-made, artificial surroundings."

Conclusion: A Warning and a Plea

What the new movement may do, as a catalyst, is to permit architects "to accept *all* the world," Hugh Hardy predicts. Like others, he is concerned about how small a percentage of available materials architects have considered within their sphere of interest until now. "If you look at the shiny polished surfaces on all those Park Avenue buildings," he explains, "you realize what a tiny book has been opened to design them."

"In this age of pluralism," Richard Oliver comments, "the point seems to be to expand our vocabulary rather than restrict it, to make our architecture more diverse rather than less so. Supermannerism encourages us to seek complex order, ambiguous order, and allows us to include things rather than exclude things. I want the choice of Supermannerism or anything else that seems suitable to the problem at hand."

"There are so many ways today," Hardy continues, "and we should open ourselves to all of them—jets, subways, Reno, Williamsburg, Mies."

Hardy, Oliver, and others therefore feel strongly that the new movement should not be promoted or misinterpreted as a substitute for anything else we have ever had, but rather, that it be recognized as an *addition* to our vocabulary, and *expansion* of our vision.

The new design, Kenneth Carbajal adds, "dictates a different way of living life, re-examining the basic needs of a meaningful existence, and attempting to provide for these needs instead of producing merely another aesthetic status symbol."

And Robert Metcalf says, "This expression is not an attempt to create chaos; rather, it is another way of ordering and organizing; it is another technique added to the range of those current." Similarly, some office planners recognize office landscape as "just one more tool in our office design kit."

To have Supermannerism or Office Landscape or synthetics alone would again be to have only one way of doing things, these designers feel. They urge a free, open-minded acceptance of a broader, wider, more spacious, visual, textural, functional, and emotional world.

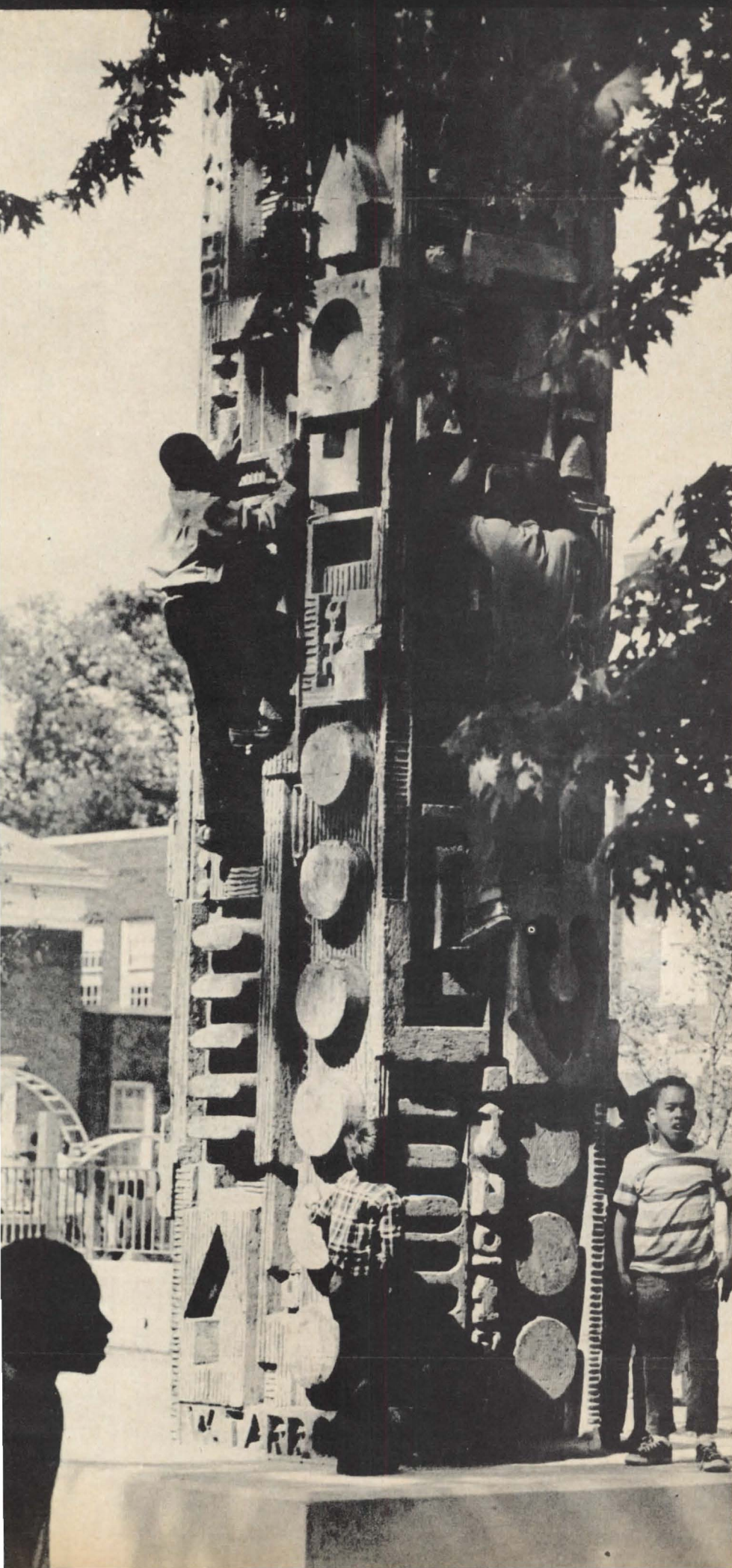
Supermannerism, then (or whatever one chooses to call the new design movement), is a flurry of optical, textural, and formal games to amuse us during our wrenching shift of scale. It is an ephemeral decorative means of expanding our vision from the single room and the single building toward the super-scale of megalopolis and toward the daily awareness of outer space. Like other rebellions and revolutions in our day, like the frightening onslaught of riots, strikes, and assassinations, this revolution may portend the decline and fall of rational architecture as we know it. It may be a desperate fling before the deluge of individualism by the computer—a kind of humanistic *fin de siècle*. At the same time, however, the new approach seems also to inspire the functional analysis of life systems and life styles in a fresh way. Despite current controversy, Supermannerism may yet prove to be a catalytic transition to the long awaited, plasti-sized, synthetic age of man in cosmic superspace—the Buck Rogers age of the Third Millennium.—CRS

(The architects, educators, students, and designers who aided P/A in preparing this issue are listed on p. 304.)

PLAY PLAZA "COOLS IT"

"Bless you, bless you! This playground saved the neighborhood," exclaimed the elderly black man, wringing the architect's hand. He was referring to the wave of anguished violence that swept Washington, D.C., after the assassination of Martin Luther King, Jr., when businesses and buildings belonging to black and white alike were fired and vandalized. The place to which he referred as "cooling it" for the surrounding area is the new Buchanan School Playground, opened last spring by Mrs. Lyndon B. Johnson, donor Mrs. Vincent Astor, and District of Columbia Mayor Walter Washington. Also in proud attendance at opening ceremonies were the playground's designers, architect Simon Breines (Pomerance & Breines, New York) and landscape architect M. Paul Friedberg (M. Paul Friedberg & Associates, New York). The success of the playground has been even greater than we predicted in the NOVEMBER 1966 P/A (pp. 176-179), or than the two previous collaborations of the designers: Carver House Plaza and Riis Plaza in New York.

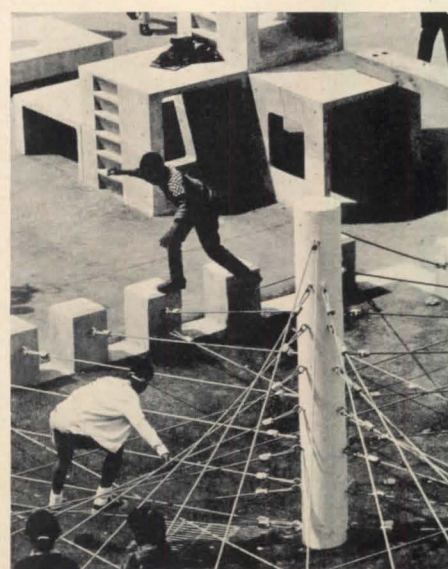
Situated at the corner of 13th and E Streets in Washington's black southeast section, the playground was formerly a typical weedy, asphalted, link-fence adjunct of Buchanan Elementary School. Its transformation from grub into social butterfly began two years ago, when the Vincent Astor Foundation assured the Washington, D.C., Board of Education of its sponsorship of a new play plaza on the site that would not only provide a recreational area for school children, but also a center for adult relaxation and recreation. Thus, the playground doubles in brass as a school facility in school hours and a neighborhood community and play center the rest of the time. There are no forbidding fences to turn away people — the basketball court is sunken to form an amphitheater, where it also can act as a center for performances, dances, and community gatherings. Additionally, in warm weather, water is sprayed out over this space for children (and uninhibited older folk) to frolic and play in. Up a rise from the court-amphitheater



Photos: David Hirsch

is exclusively the children's province, an Oz of magic mountains, death-defying wire rides, platforms, ladders, sand pits, slides, climbing bridges, towers, turrets, swings, cable jungles, and ramps. All made of safe, durable materials (as is the whole playground): wood blocks and timbers, concrete, cobbles, brick, and sand. Bordering the site on the two street sides are generous areas for resting and meeting people. A richly embossed sculpture tower for climbing on embellishes the 13th Street side. Across the E Street front is a combination snack bar-restroom-administrative office building that spreads its wings as sheltered terraces for eating and sitting around. This little complex gives the playground an "edge" on the street.

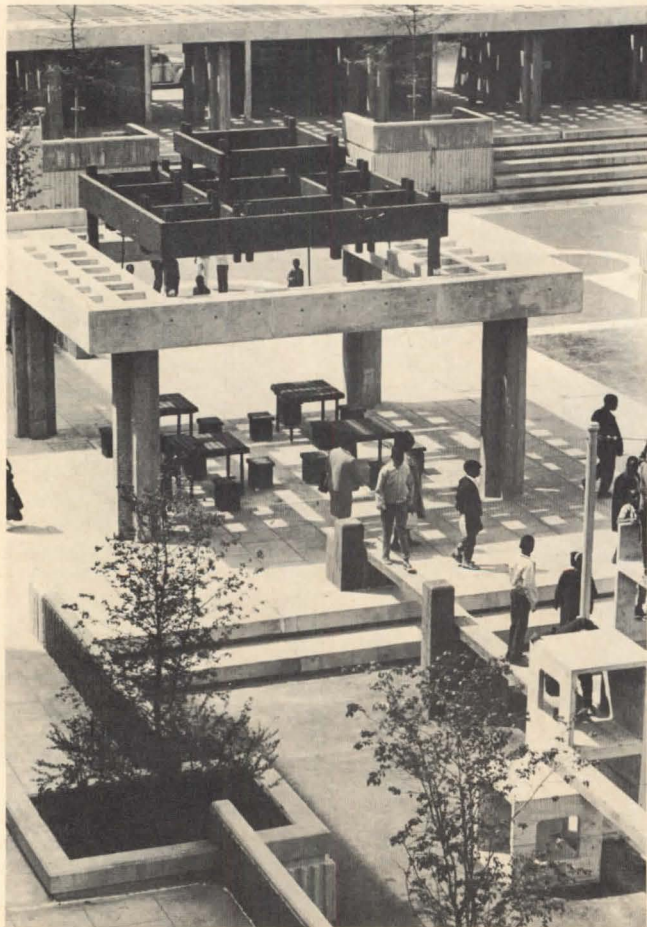
"When so many need your help, it becomes urgent that you look beyond the usual market and find new areas of service," said Lady Bird Johnson at the AIA Convention last June, and Breines and Friedberg, with Mrs. Astor's assistance, are performing just such community-minded acts with such a creation as Buchanan School Playground. The undisturbed state of the area in the violence of last spring testifies to the fact that, once involved and treated with dignity, people respond with pride and joy. "These people are frustrated and furious, but they are not stupid," says Si Breines. "Why spoil something that is so directly and obviously useful? Vandalism against structures is the manifestation of urban social unhappiness with which architects are mostly directly concerned. Perhaps, if our buildings could be made as relevant, accessible, and enjoyable as these playgrounds, there would be less resentment wreaked on them." This is obviously a test that Buchanan has passed — and successfully. It relates to people, so people relate to it. — JTB



Before . . .

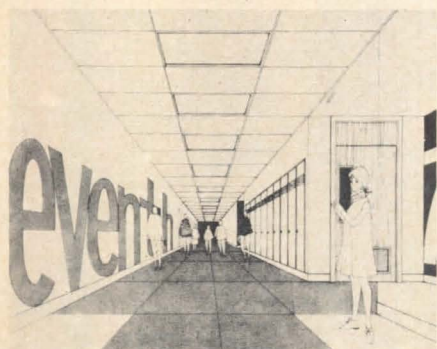


. . . and after



PLAN TO BRIDGE THE GAP

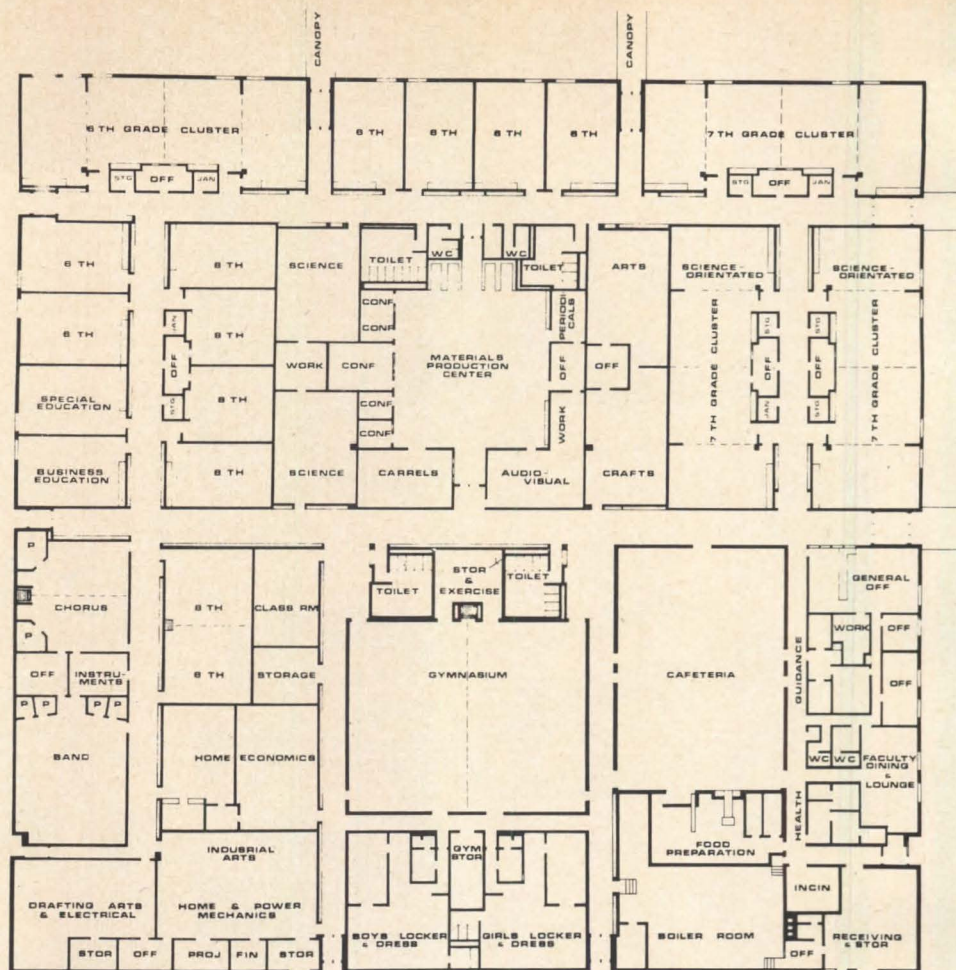
"What am I?" asks the preadolescent, and teaching systems have usually told him authoritatively and forced him into a mold to fulfill their predictions. The middle school concept was devised to break this pattern. It is, in many instances, a free-form school where the confusion and searching of the adolescent and pre-adolescent can be matched by a rich mixture of teaching methods to help him discover himself. The middle



school can be as much a search for the teacher as the student. It is in the realm of this "possibility planning" that architects can make their greatest contribution.

Student intellectual growth is dependent upon options, but options must be for the teacher as well as the student. It is now generally agreed that there are not necessarily more options provided in "schools without walls," fixed classrooms, the house school plan, or any other fixed plan mechanically administered. Options are delicate things that can be made physically possible by the architect, but must be nurtured by the school staff.

The possibilities offered by the compact loft plan shown here were carefully considered to bridge the gap



between grammar and high school for that tender age of confusion: pre-adolescence to adolescence. It is still a project, and its value cannot be determined until it has been evaluated through use. Use is dependent upon many other factors than that of architecture. It depends upon the teaching staff being as flexible as the plan, of the architect's follow-through that will instruct the teaching staff in the use of the instrument provided. But it does offer the possibility that the stars can be born of the nebula of adolescent confusion instead of having the dust of celestial curiosity and wonder hardened and burned to a cinder through friction against fixed classroom walls and authoritarian teacher discipline.

The Hamilton District Middle School for Sussex, Wisconsin, by architects Brust & Brust, is a cluster classroom concept to affect the transition from grammar school to high school for grades six, seven, and eight. Planning allows the option of either team-teaching or fixed classroom instruction.

Operable walls allow the formation of various sized groups from 2 to 100 pupils; and organizational and room arrangements change so that particular philosophies of education can be implemented. The plan is conducive

to teachers working cooperatively together for the benefit of particular children.

Students in grades six and seven are assigned in groups of 200 to four teachers. Grade six emphasizes the self-contained unit. Grade seven will permit the individual interests and academic skills of individual teachers to be utilized to the utmost. In grade eight, more specialization begins in preparation for the more formalized high school experience.

The advantages of the loft plan are realized: corridor length is reduced, minimal perimeter walls cut building cost, building compactness reduces heat loss and facilitates air circulation, and traffic movement is reduced and made more efficient.

Interior design will implement the school's excitement. Color is to intensify as the tempo of activity increases in the circulation spaces. Graphic designs using exploded numbers and large letters spelling numbers, six, seven, and eight will relate the students to the area of the building containing their respective grades. The size of the graphics is to be exaggerated for abstraction but will follow the scale height of the average student for the corresponding grade. As the student grows, so will the graphics. — FW

YEAR-ROUND CAPE CULTURE

Provincetown, Mass., which nurtured the aspiring Eugene O'Neill in the teens of this century, may be in for a substantial injection of cultural adrenalin. The Cape Cod town has been, for the most part, a summertime-only operation; most of the artists and writers and performers who make up a large part of the warm-weather population withdraw to more profitable locations when the season of openings dawns. Provincetown even had the embarrassment of being classified a depressed area in a Government report, its cold-weather income accounting for only 10 per cent of the total.

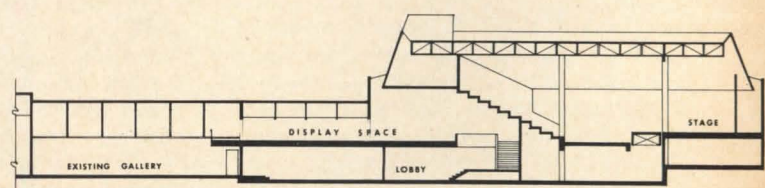
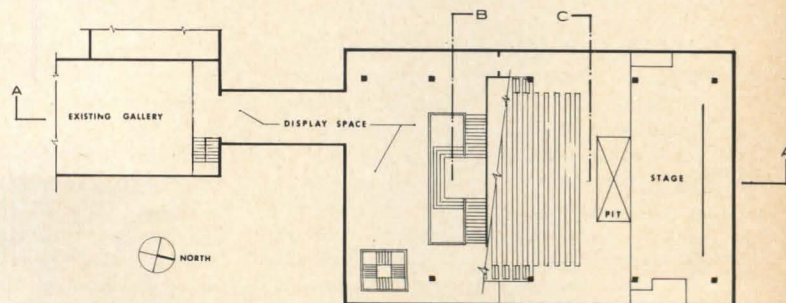
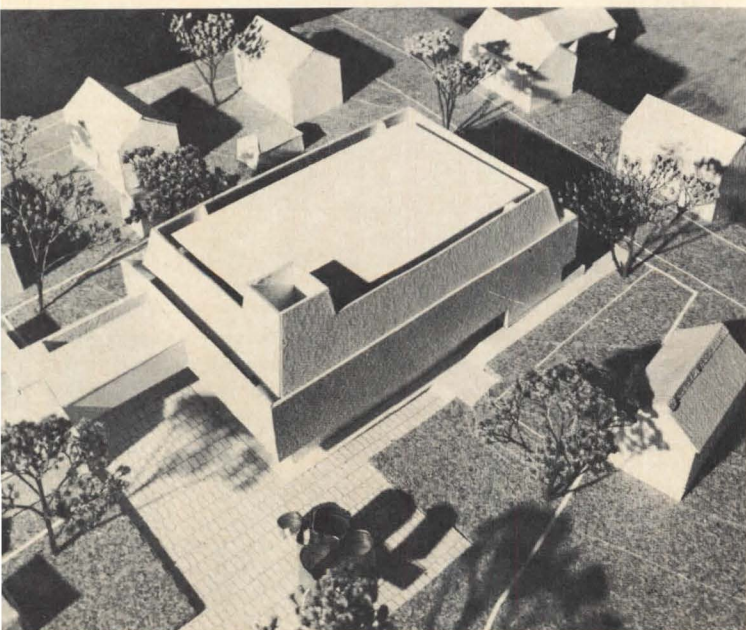
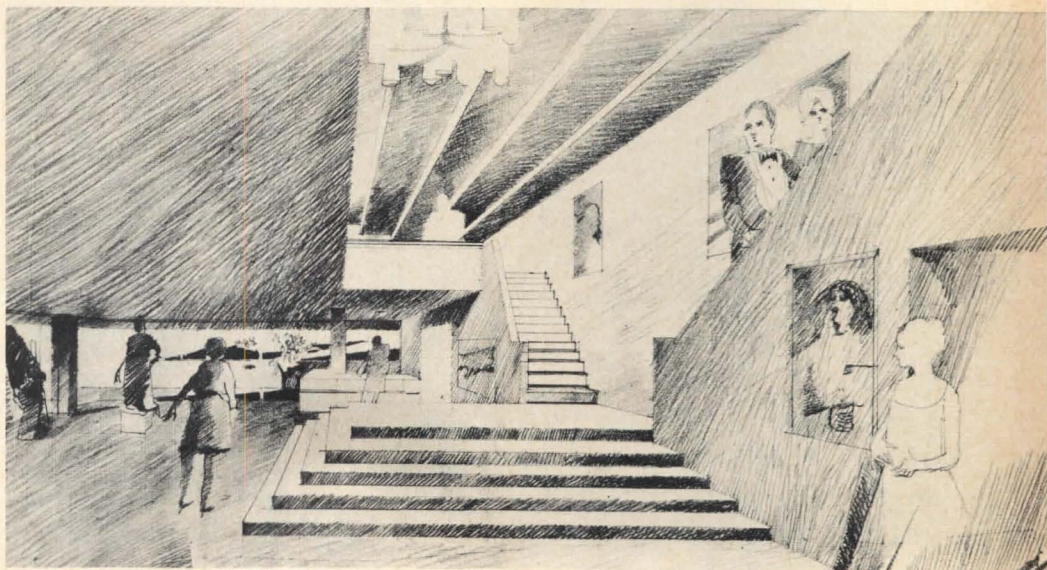
Following a survey made by Boston University, it was decided to attempt to attract to the town not new industries, which would have been quite out of character, but to emphasize what it has going for it already. Consequently, the Economic Development Administration and other branches of Government are being urged to underwrite (for about 80 per cent of the costs) a year-round teaching, creative, and performing organization to be known as the Provincetown Art Association Center for Performing Arts (the name Provincetown Academy of the Living Arts has been advanced as another possible title).

Visual testament to the vitality of the new project is the design by Architects Design Group, Inc., of Bos-

ton, for a new arts center and school-performing addition to the existing Provincetown Art Association Gallery near the center of town. This proposal will include a 400-seat experimental theater, stage work facilities, new galleries and sculpture court, and an addition to the present studio exhibition spaces.

On the exterior, the addition will be a discreet contemporary translation of the Cape Cod idiom found in surrounding structures: straight-forward planar façades, gray shingles, neat trim, and pitched roofs. Inside, more exciting spatial involvements will occur as the lobby stairwell pene-

trates the gallery space and the gallery extends out over a bridge to the existing display space. Above all this will be double rows of peripheral skylights admitting light into all public spaces, including the theater. At night, the sloped and shingled upper section of the building will be lit by rows of incandescent fixtures in the lower periphery of skylighting, creating a community landmark. Structure will be poured concrete walls and fire-proof steel roof and floor construction. The weathering white cedar shingles will clad the roof above ribbed vertical concrete walls. Paving will be exposed aggregate concrete.



SECTION AA

EXHIBIT DESIGN

THE EXAMPLE OF THE TRIENNALE



A report from Milan by David Hirsch, followed by an interview with Hardy, Holzman & Pfeiffer, designers of a major Triennale exhibit.

The (14th) Quattordicesima Triennale di Milano (Subject: The Greater Number Problem) is closed. Several published documents, many newspaper articles, and a considerable number of confused and confusing rumors remain. One fact to be observed is that the group of dissenters who occupied the Triennale for the first 15 days were artists who objected to their omission from the exhibition. In Italy, there is an historic relationship between the arts and architecture. One cannot forget here that the greatest works were the accomplishment of the super artist-architect. Thus, to categorically deny the artist exhibition privileges had to be a provocation to them. And, of course, the most successful contemporary technique to express their anger was to take over the exhibition and prevent its opening until the last handful of dissenters was dragged out by the police.

The action of the artists also caused the

resignation of prime mover Giancarlo di Carlo from the Triennale committee. He found himself disagreeing in principle with the artists and despising the police action. As an attempt to mediate the grievances of the artists, he had suggested that they ought to create some very temporary works to be exhibited in several cities. In effect, he was saying that, in order to be accepted in an exhibition with such contemporary subject matter, it was necessary that the artists themselves be made aware of their role in the "Greater Number." The artists could, in turn, ask the architect to build transient dwellings of discardable materials. To some exhibitors (the Archigram Group), this is not an absurd suggestion. If "The Greater Number Problem" is at all definable, a layman visitor to this Triennale would hardly be able to express it. The Triennale committee had hoped for one message: that while man is capable of making objects with great technological sophistication, he is not really able to put this technological capability to use in solving the environmental problems for the "Greater Number." To present such a point of view requires a happy coincidence of cooperation among those special exhibitors invited to participate. From the reputations

of the groups selected, one really could have expected a better showing.

Archigram's super-pill, a huge transparent tube that advertises the "Milanogram," sardonically alludes to this kind of future environment. Most of the best exhibitors, however, were less concerned with the potentials of technology than they were with more immediate humanistic and sociological implications of "The Greater Number Problem." And, of course, some of the exhibits were far more effective representations than others. — D. HIRSCH

P/A talked with three American architects — Hugh Hardy, Malcolm Holzman, and Norman Pfeiffer — whose exhibit in the International Section was ideally placed (and perhaps designed) to be a focal point for demonstrators. Hardy said that the aggrieved artists were quite gentle and content with carrying placards and writing graffiti on an occasional white wall, with the exception of the exhibition by Alison and Peter Smithson, where they defaced surfaces and ripped down hangings. Why just this one? "The Smithsons were trying symbolically to represent Florence as a grand time and place in Italy, I think, whereas it represents a tyranny of authority and academia that young artists want to get away from," according to Hardy. In addition, the presentation, though no doubt sincerely intended, came across as a parody or put-on, a camp version of Florence, and as such was resented.

What were the reasons for the "riot"? Evidently, there was little student participation or interest. Reportedly, word was sent up to Milan from the activists at the University of Rome to ignore the Triennale because it did not represent a major policy involvement for students. But as a major "professional taste-making machine," in Hardy's words, it was of great importance to artists, who objected strenuously to their exclusion. "The artists were really saying, 'We want in,'" says Hardy. "They weren't saying there should be no Triennale. They were saying we would like to change it so we will be a part of it." How this will be accomplished while simultaneously continuing the participation and exchange of ideas with designers from all over the world that was instituted this year by Giancarlo di Carlo remains for the future to divulge.

What did the Triennale indicate about the state of exhibition design? There were represented the two extremes of exhibit design, Holzman believes. "There were guys who figured out how every little screw and nut and bolt fit together and there were guys who assembled a lot of

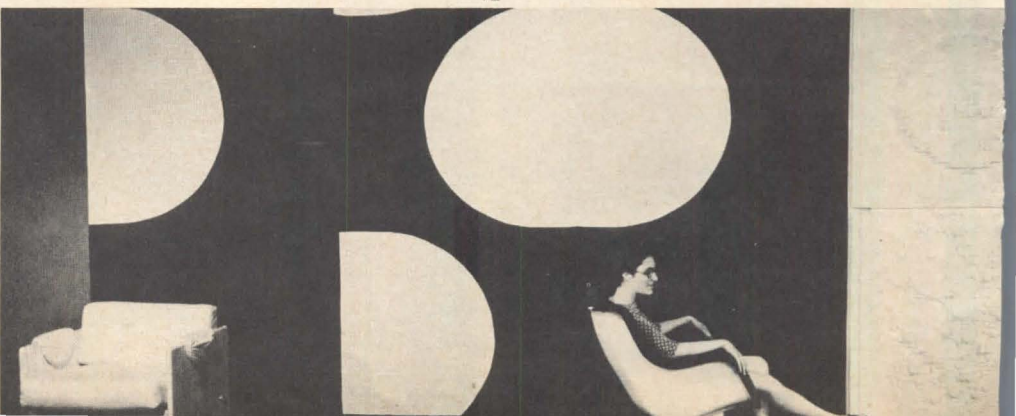
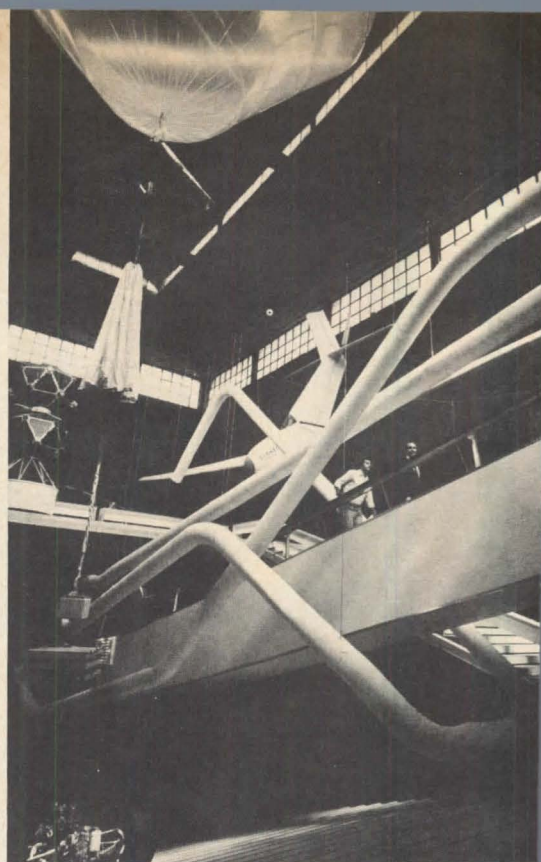
A black and white photograph capturing a massive protest against the Russo-Calviotti trial. A dense crowd of people fills the background, many holding up handmade signs. Visible slogans include "SI TORTURA", "RUSSO CALVIOTTI LIBERO", "LIBERO RUSSO", "NO TORTURA", "NON VERGOGNARSI", "STUDENTI OPERAI", "VERDONATI", "PERDRAID", "SCUOLA STUDENTI", "RITARDANDO IL CARCERE", "AVVIO LA LAVORATA", "STATO TORTURATO", "NO CARTELLI", "L'OPERAIO", "LA MIA PENA E COME VOSTRA", "NO ALLE TORTURE", "STUDENTI OPERAI", "VERDONATI", "PERDRAID", "SCUOLA STUDENTI", "RITARDANDO IL CARCERE", "AVVIO LA LAVORATA". In the foreground, the scene is one of chaos and destruction. A light-colored sedan is overturned on its side, partially crushed. Next to it lies a large metal barrel. To the left, a sign for "STAR BOUTIQUE" is visible on a building facade. The overall atmosphere is one of intense civil unrest and public demonstration.



- 1



seemingly chaotic material, threw it together, and then asked people how it should be pushed around. Giancarlo di Carlo's 'riot scene' was an example of this." The gamut was run between "a sort of pristine technical sensitivity" such as the Swiss exhibition, and a kind of "happenings" exhibit where the designers sought to introduce the street or the real environment with all its accidents into the Triennale palazzo. Of their own exhibit, Hardy says, "We were trying to make visual images out of the hardware of the street, trying to show that there is as much fun — and beauty, too, but mostly fun — in that as there is in the gewgaws and carvings and block upon block of 'design' that there is in older architecture." The future direction of exhibitions might be just this. In order to attract people, their involvement and participation in the exhibitions will become just as necessary as the involvement and participation with their real environments is becoming. "I think the people who are designing art and exhibit 'environments' and that sort of thing are closer to something meaningful than those who are still designing the perfect joint for exhibitions," says Hardy. "They are beginning to make people aware of things. I'm put off by seeing ranks of products with labels attached. It's a book technique used in the wrong place. If you're showing a toaster,



9. Hans Hollein: Supermarket, Plastic-Extruded Goggled Bureaucracies.
10. Great staircase: Technology for transforming environment.
11. Archigram: Vision of the city encapsulated in "Milanogram."
12. Introduction: The Greater Number.
13. Furniture from Finland.

you should feel heat and be aware of bread."

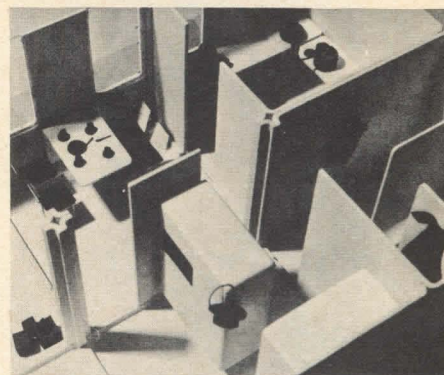
Is such a show as the Triennale a valid activity for today? "Maybe it is just a product show like the U.S. auto show," Holzman answers, "but perhaps Giancarlo was right, and it can also be used as a forum for the exchange of ideas. It's not so different in intent than a world's fair, only a whole lot smaller." The problem is getting people to come, and not turning into a purely "in" show for professionals. "Hasn't a design exhibition become a thing that people who design exhibitions go to?" asks Hardy. There has never, in the United States, he thinks, been an intellectually oriented exhibition, unless you count some of the earlier world's fairs (certainly not the last New York fair). "But we have going for us here and now really wild exhibitions such as the auto show that have the potential for being turned, in part, into an exploration of ideas and possibilities as well as just a straight products show. It would be good to inoculate something like the home furnishings show with some of this creative idea juice. It would be even more relevant to this society than the one in Milan."

To accomplish exchange of viable ideas, structured institutions such as the Triennale must be open to change, as people learned this summer in Milan. "The Triennale in the past has been merely a showcase for the wares of established designers," according to Norman Pfeiffer. "With the acceptance of new problems brought about by rapid change, this will no longer do. It is unfortunate that such a meaningful contemporary thought as the 'Greater Number Problem' should be forced to express itself in such a traditional manner—each exhibit confined to its own boundaries within the walls of the Palazzo; each with its own front door. It will no longer do to have exhibits of this kind for two months, then send its participants home and write a book to tell what happened. To have value, the Triennale of the future must provide an opportunity for a continuing dialog, a continuing means of communication. It must deal with other designers in other countries and other institutions in different areas. If the outcome, information, or results of future Triennales are to be of any value, they must be put into the hands of political and financial institutions, must reach the awareness of the people who can instigate needed changes."

USED CUBE LOT

A constant housing complaint has been that building technology has not been capable of duplicating the mass production advantages of the automobile. Two Berlin architects, Bernd and Myra Ruccius, have devised a cube system with which they propose to remedy this complaint. Their cube contraption will not only incorporate the virtues of the mass-produced automobile, but will also provide the glories of the used-car lot in the remarketing of used cubes.

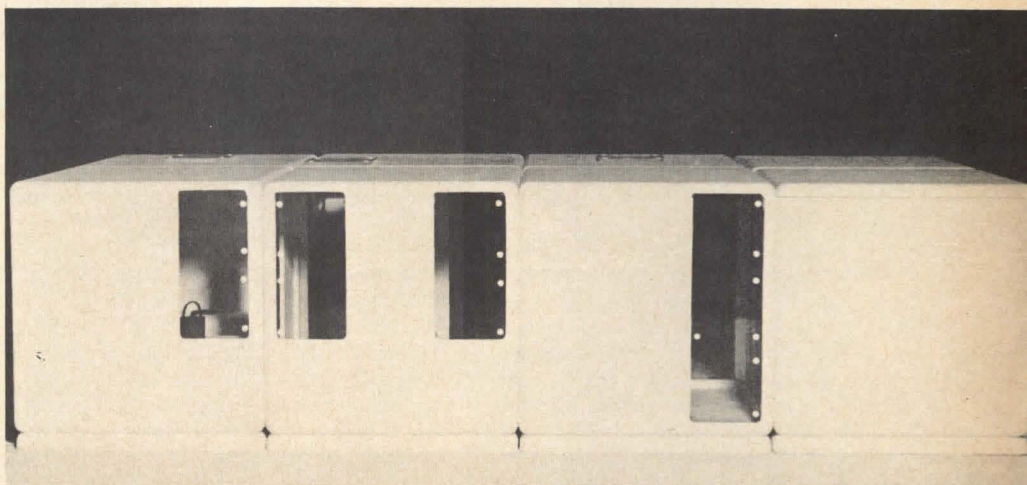
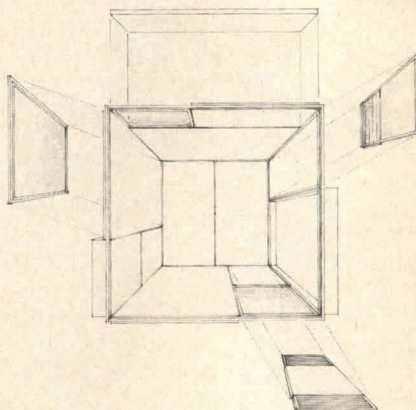
The architects report their cube system is available at \$800 per cube, f.o.b. Berlin. It allows the prospective homeowner to accumulate cube components gradually. They recommend an initial eight-cube apartment that can be added to as the family



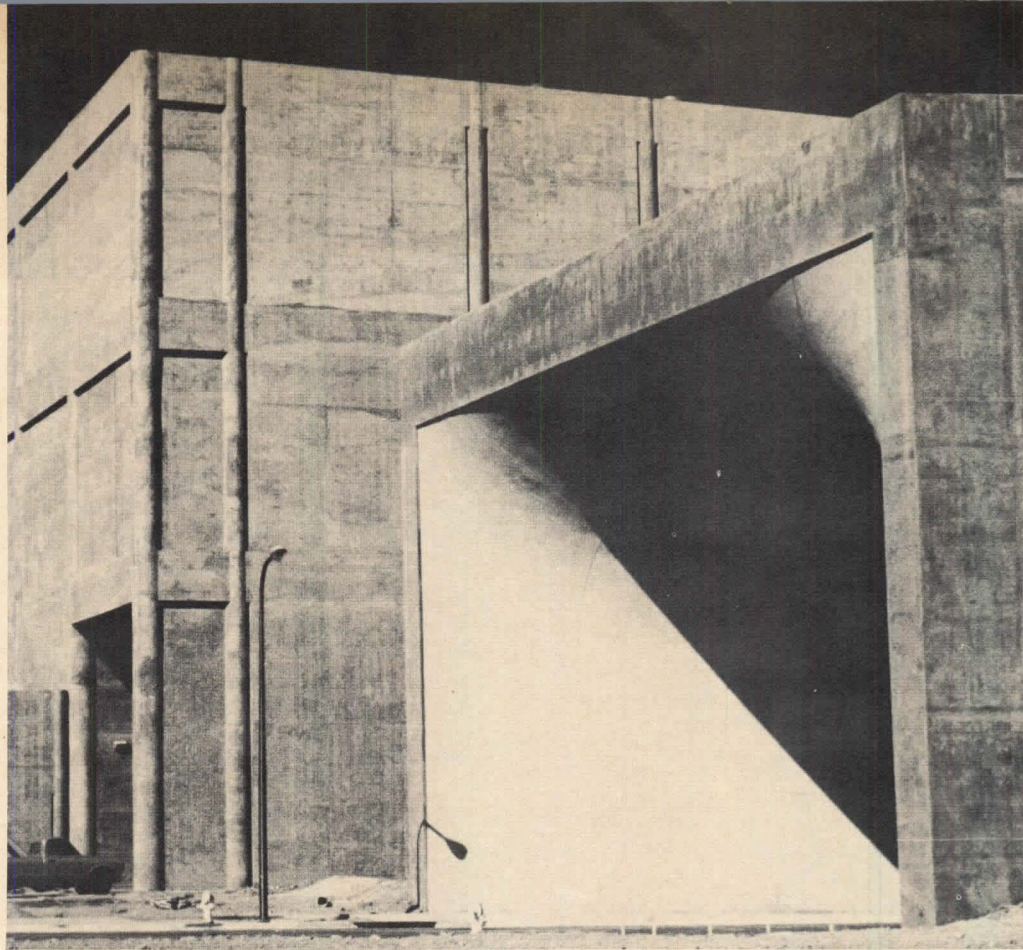
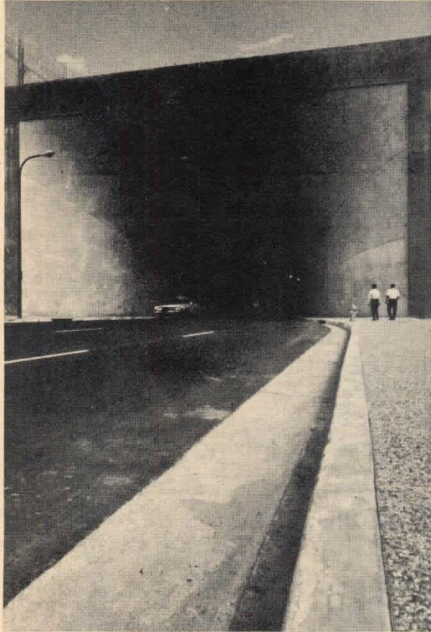
grows, and disassembled and sold as used cubes when the grown children leave the cubehold to begin collecting cubes of their own.

Cubes are roughly 8'-4" on a side and can be attached horizontally and vertically. They incorporate furniture, plumbing, and stairways for vertical access. Weight per cube is about 1000 lbs. The cubes are attached to each other with neoprene gaskets and "plastic screws." The architects advise that a cube catalog is available and that custom cubes will be manufactured upon request.

The convertible cubes also accommodate exterior walls, skylights, bathroom fixtures, door, windows, and empty space. The architects propose that cooperative cubes be contemplated for communal cohabitation. — FW



Adjacent to tunnel is Bunker Hill Central Plant by DMJM. It will provide centralized mechanical services to area and will expand northward as renewal progresses, half buried in the hill.



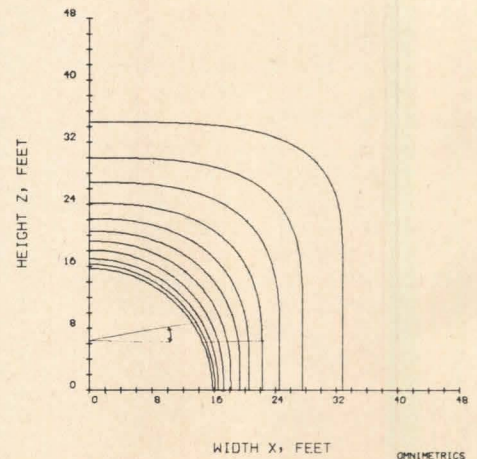
SYMBOLIC UNDERGROUND

The Bunker Hill redevelopment area of Los Angeles represents an attempt, at last, to unify the center of the "city without a center." So far, there have been high-rises put up in the surrounding area, and Welton Becket's effusion to the performing arts gleams whitely to the north. Although all the Victorian houses on Bunker Hill, former residences of tycoons who would take the short "Angel's Flight" funicular down the hill to work, have been demolished, Angel's Flight has been preserved, and the Bradbury Building and its great court space has managed to resist destruction nearby. The ultimate future of the area as a whole is still unknown from a design and planning point of view, of course — whether it will assume a convincing urban character, synchronizing use and movement in a humanistic environment, or will follow the simplistic measures of commercial expediency that have produced the Park Avenues, Wilshire Boulevards, and Market Streets of the United States remains to be seen. It is positive, however, that a great deal of building here — commercial and high-rise residential — will make Bunker Hill a new focus for Los Angeles.

Whatever over-all form the area might take, however, it now has for

beginners a monumentally scaled renewal symbol — "a work of civic art achieved by technological means," in the words of the architect. Appropriately enough for Los Angeles, it is the entrance to a vehicular tunnel under the hill.

The Third Street Tunnel, running east-west under Bunker Hill, was opened in 1901. To provide a new scenic overlook in the area and support street widening and grading above, the tunnel has been extended 120 ft to the west. This provided the opportunity to create a symbolic "architectural sculpture" of some meaning to the swift-moving lives of Angelenos. The result, by Daniel, Mann, Johnson & Mendenhall (Cesar Pelli, then Director of Design, has departed; A. J. Lumsden, then Assistant Director of Design, has become the Director), is a fitting portal that assumes a grandeur as a "seen" work of sculpture while at the same time functioning visibly as a kinetic experience for people moving through it. The tunnel extension simply is a transition from a small semicircular opening (the connection with the original tunnel) to a large, rectangular one (the new opening). The persuasive form of the extension was created by constructing a progressively growing curvilinear lath and



Computer read-out on form.

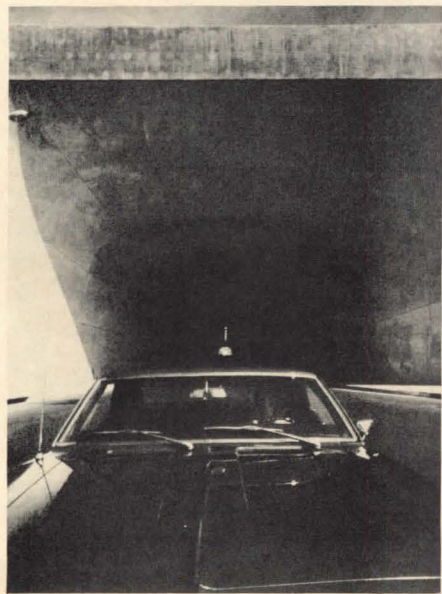
plaster liner within the shell of the rectilinear structure of reinforced concrete.

The process of arrival at the shape of the tunnel and its mouth was by careful study in model form, followed by computer analysis. First, sketch models of various ideas were constructed. When the arch-to-rectangle design had been selected, a built-up clay model over ribs approximating several cross sections of the space was carefully fabricated, and plaster casts made from that master. The casts were cut on several axes and

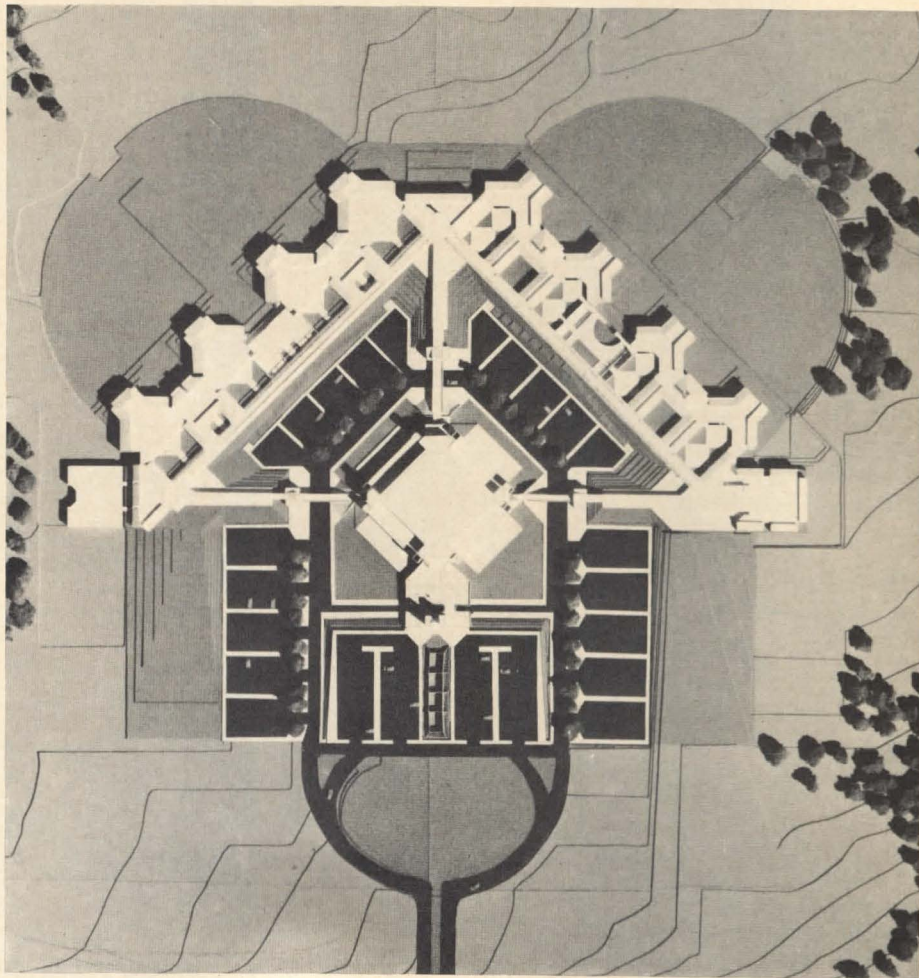
traced to produce various sections through the surface, then these drawings were fed to the computer, which translated them into smooth curves, analyzed the resulting equations, and printed out a series of points for the contractor's use in building the shell. This translation from the model to construction drawings relieved the designers of the time-consuming and mundane chores of plotting out a conception into mathematically buildable terms in dependably accurate and usable format. Cesar Pelli says, "I consider this work rather important, not only as to how good it looks, but as to what it represents in terms of design approach: the path from idea to form. And I believe this is the real issue today, not stylistic differences."

If one concentrates on the process of the design, and the fact that an appropriately shaped and scaled civic structure was its goal, one might overlook — although some will not — the lath-and-plaster nature of the product. Visibly, environmentally, perhaps even emotionally (in a time-and-motion sense), the tunnel seems to work. Perhaps, in this instance, knowing what the thing is made of is of peripheral importance. Pelli has commented on the traditional dichotomy wherein "the engineer designs his structure and the architect 'makes it look good.'"

"These problems [presented by the tunnel and the adjacent Bunker Hill Central Plant] are really outside the range of both disciplines," he says. "Here, a different understanding is required: a sympathy for the toughness of the problem (and this goes beyond functions, it includes tight budgets, short schedules and political complications) and at the same time a great respect for its urban role. And, if one is successful, these are not competing aims but they reinforce each other." — JTB



POOLING PUBLIC HEALTH CARE



Combining health facilities with central service complexes that can meet nearly all the needs of a district's population is becoming a strong trend in private and public health care for both urban and rural areas. For a rural region in the northeast portion of Arkansas, a region that encompasses several economically depressed counties, seven state agencies have chosen to pool their resources in order to reach inhabitants of the area with the medical services they need. In this case, the consolidated approach is meant not merely to make it easier for patients to get help, but mainly to provide the opportunity for treatment where none was available before.

Participating agencies in the Northeast Arkansas Regional Service Center are the State Hospital, which will maintain a Community Mental Health Center (CMHC) consisting of in and out-patient service, day and night hospital service, 24-hour emergency care, and consulta-

tion and training facilities; the Rehabilitation Service, offering resident rehabilitation for mental patients; the Office of Rehabilitation Services for the Blind, to be supplemented by district field offices; the Welfare Department, which will offer comprehensive services; the Public Health Department, with offices and clinics and a Regional Health Laboratory and Training Center for laboratory technicians, nurses, and other medical personnel; the State University, which will operate a Human Behavior Laboratory for training and research; the Department of Civil Defense, which will maintain a regional information service center.

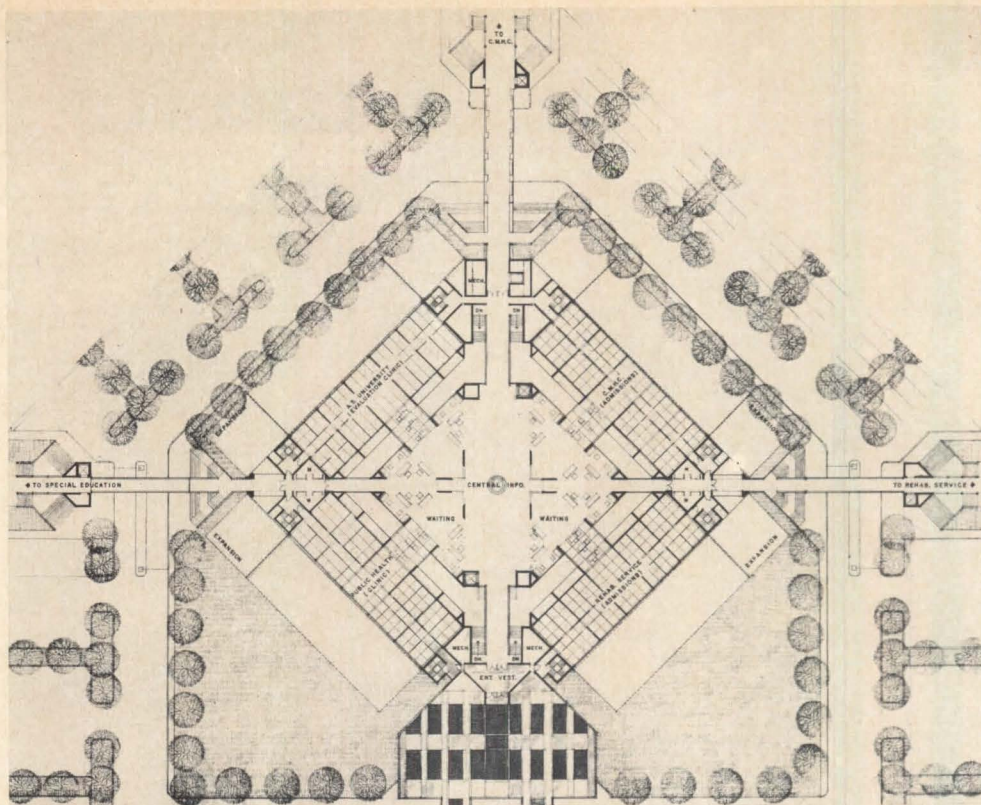
In planning the structures that will house all these agencies with their sometimes overlapping functions, Little Rock architects Wittenberg, Delony & Davidson neatly sorted out the kinds of functions to be provided, without regard to the individual agencies that are to administer

them. Similar services are logically grouped together.

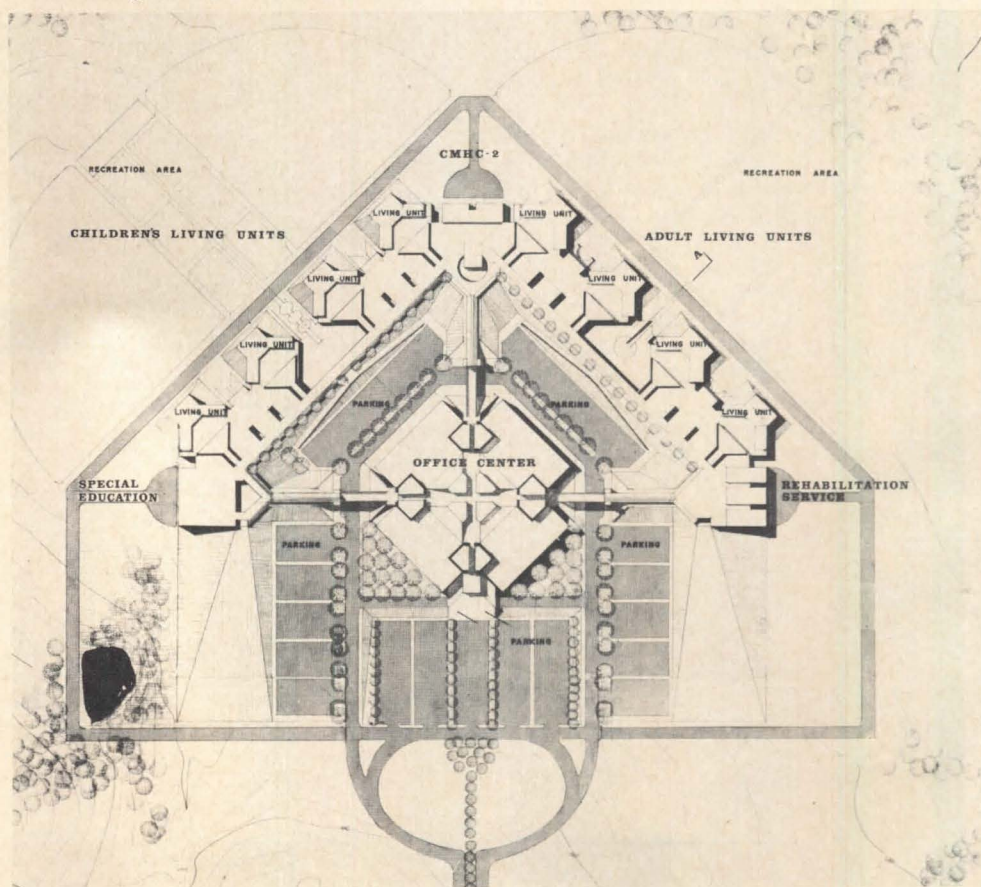
The designers found that essentially four types of facilities were needed: in-patient services, evaluation and clinic facilities, administrative areas, and conference and training facilities. Level one of the main, rectangular building is designed to accommodate the administrative units of the Welfare Department, the CMHC, Rehabilitation Service, and Rehabilitation Service for the Blind. A public cafeteria also occupies the first level. On the second floor, the State University, CMCH, Rehabilitation Service, and Public Health Department will maintain clinic and evaluation facilities for both in- and out-patients. The area also serves as the admissions unit to the three in-patient services and is connected to them on the same level by pedestrian bridges. Level three houses offices for overall control and administration of the complex.

Separated from the main building by a parking lot are living units and treatment facilities for in-patients who are mentally retarded or physically disabled. Rooms are oriented toward the wooded site, and sloping roofs let light flow into the living spaces from two directions.

In-patient units are constructed of wood and masonry; the office and clinic center is of concrete. Structural consultants are Wooten-Smith & Weiss. William B. Thompson is the mechanical consultant. — JP

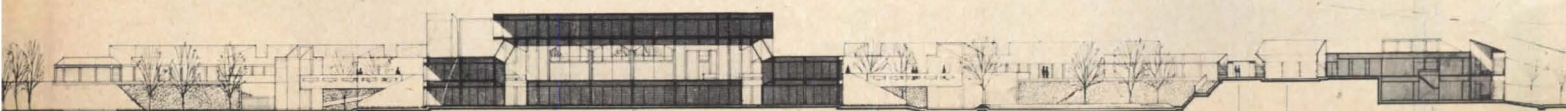


Main building: administration and clinics.



Site plan.

Section.



One of the newest uses of one of the oldest building materials is the sandwich panel, made by bonding a thin slab of marble to an insulating core and adding a hard-board backing. Such a panel is only half the weight of a 2" slab of marble but has four times the insulating value.

The example shown here is the Livonia National Bank, Livonia, Michigan, one of six banks in a chain using the same construction technique. Vermont Pearl Danby

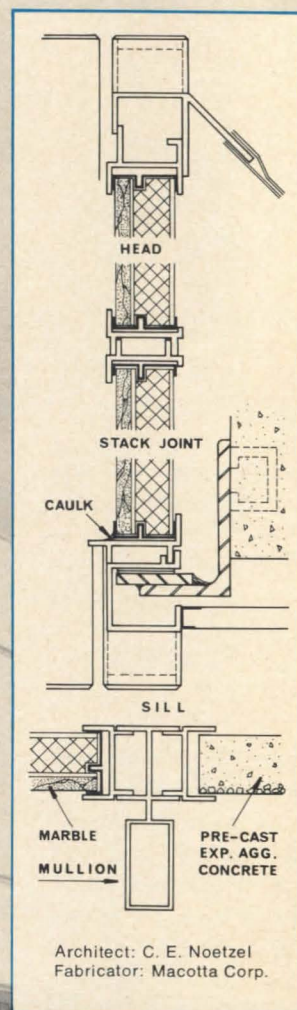
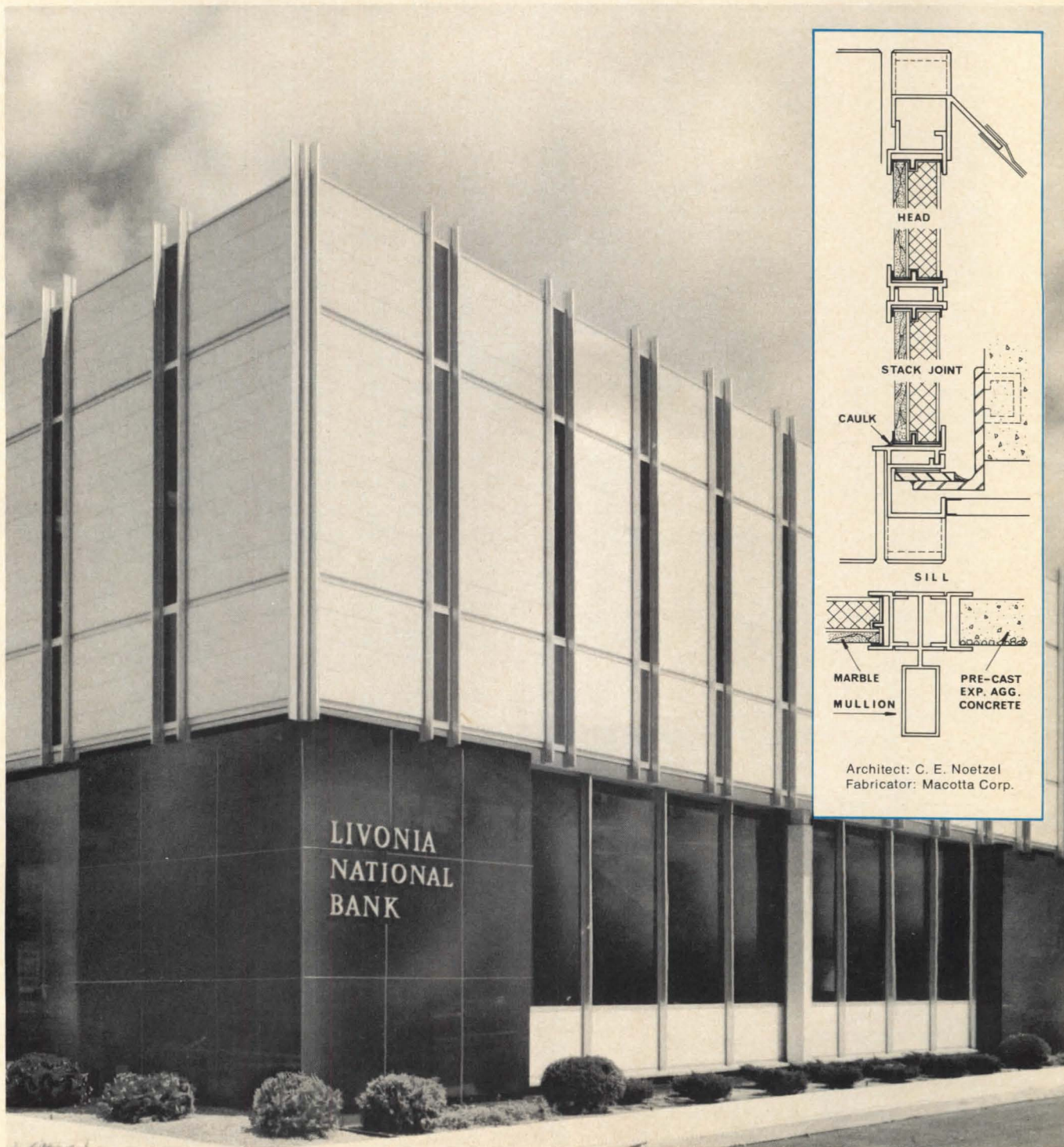
Marble was chosen for this particular project, but any other exterior Vermont marble could have been used.

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THE SPECIFICATION SECTION

BY HAROLD J. ROSEN

Guidelines are needed to standardize the format of a technical section to make it universally applicable to computer systems. Rosen is Chief Specification Writer for Skidmore, Owings & Merrill, New York City.

One of the more difficult concepts to comprehend in specifications writing is the scope of a specification section. How is it defined? What are the ingredients? What is the content and arrangement? Is it fixed? Must the contractor award a subcontract based on its limitations? What is a trade section? What is a technical section? How does one number the various parts? What are the proper terms for the various parts?

By tracing its development, one can recognize why these questions exist. The appellation "trade section" probably stems from the 19th-Century practice in England of using section titles such as Excava-

tor, Mason, Carpenter, Painter, and Glazier to describe the work of these sections. The work was done by tradesmen who were hired directly by the general contractor as expert craftsmen in their trades rather than as subcontractors who probably did not exist as we know them today.

As subcontractors came into being, the section title Excavation, Masonry, Carpentry, Painting, and Glazing defined subcontractor business enterprises instead of the crafts. These specification sections were awarded by the general contractor to business trades rather than journeymen trades.

As the process of design and construction become even more sophisticated, new section titles came into being that encompassed neither craftsmen nor subcontractor business trades. A prime example is Environmental Rooms. Is there a craftsman trade that performs this work? Is there a subcontractor's trade that performs this work?

One now finds that the manufacturer is playing a larger role in construction than the craftsmen around whom the early specification sections were written, or the subcontractor trades that have been familiar to us in recent years. Many items are now completely shop fabricated and assembled, and so require minimal installation at the site. Traditionally, specification sections were written around on-site manufacturing and installation procedures, such as cast-in-place concrete, plastering, and built-up roofing.

The specification section today can more appropriately be titled a Technical Section rather than a Trade Section, to keep pace with a changing technology. It defines a "unit of work," which is described in its contents. The content of the technical section may vary

from project to project as determined by the specifier. He can be inflexible and write cast-in-place concrete to cover 5 cu yds of concrete in a residence foundation wall, as well as 1 million cu yds of concrete in a project for a water storage dam. Or, if he wished, he could include the 5 cu yds of concrete for the residence under the Masonry section and take the 1 million cu yds of concrete for the dam and write separate specification sections as follows:

3A Concrete Formwork

3B Concrete Reinforcing

3C Concrete Testing

3D Cast-in-Place Concrete

Each of the individual sections on concrete will be a unit of work of considerable monetary magnitude. The specifier may elect to write these individual sections for his own convenience, or on the premise that this is the way in which the contractor will award the subcontracts. However, the contractor has the prerogative of awarding separate sections in any manner he chooses. He may award them in any combination or separately, whichever best suits his buying power or his general supervision.

With computerized processing, master or guide specifications become a necessity. Without masters or guides, computers are useless. One finds that masters can more readily be written covering reduced narrow-scope sections. For example, in many geographical locations, lathing and plastering is usually performed by a single subcontractor. But this does not preclude writing several master sections as follows:

9A Metal Furring and Lathing

9B Metal Studs

9C Gypsum Lath

9D Gypsum Plaster

9E Acoustical Plaster

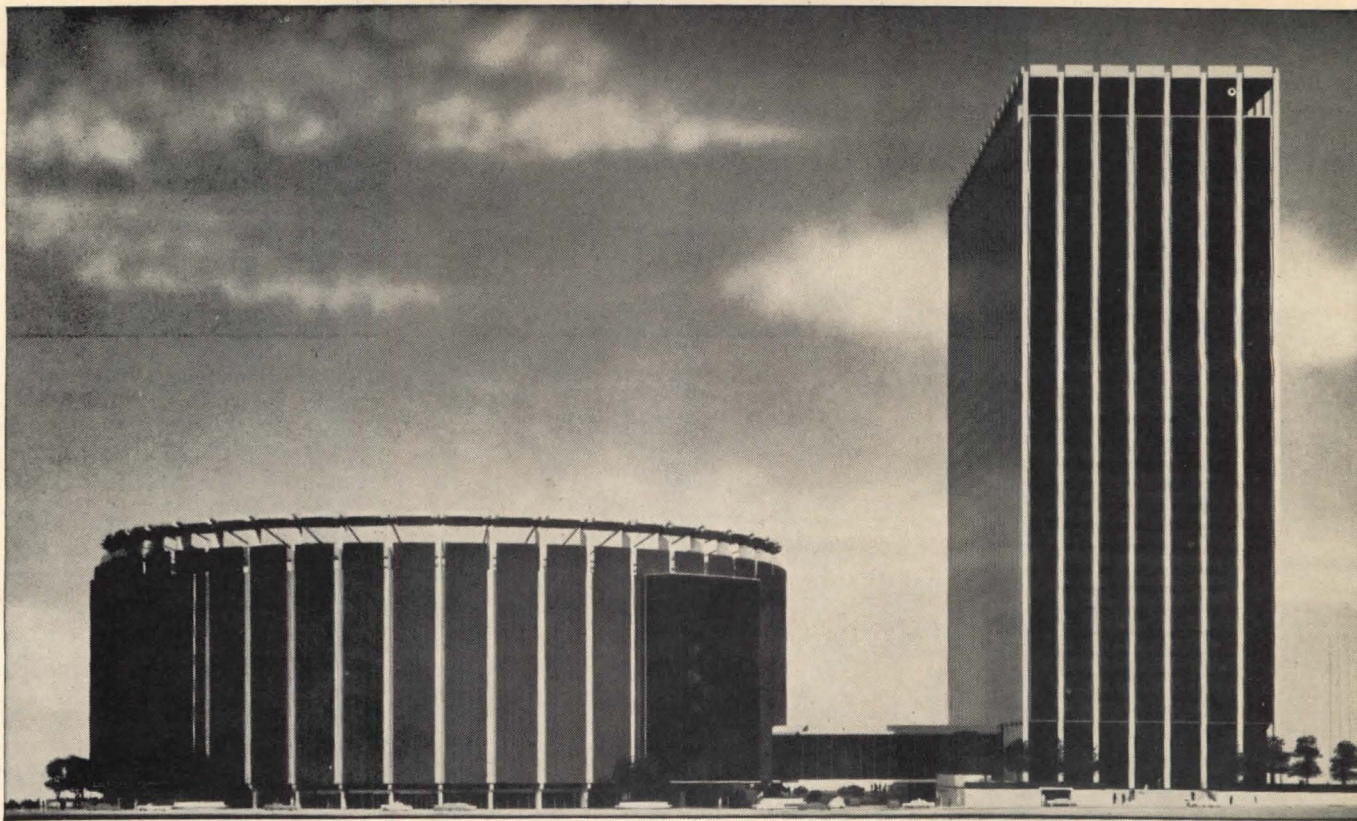
9F Stucco

Once these masters are prepared, the project specification is easily edited and written, and the general contractor makes subcontractor awards as he wishes, or lumps all of these sections into a single subcontract.

There has been a tendency in the past for specifiers to try to write technical sections based on how they thought contractors would let their subcontracts. This is not actually an obligation of the designing architect or engineer. The contractor is charged with the responsibility for construction. How he makes subcontract awards and executes construction procedures and sequences may vary from contractor to contractor. He should be given the latitude he needs to achieve this end result, and this can be more readily accomplished by the use of narrow scope technical sections.

Equally important to the specifier is the method he uses in programming his technical section. For too long, specifiers have had no national guidelines on section formats or on proper nomenclature to describe whether the instructions in their technical section are headings, articles, paragraphs, or items. Nor has much attention been paid to numbering systems within the technical section. Although the Uniform System establishes the location of the technical section in a book of specifications, the section format, arrangement, content and numbering systems have been neglected.

A CSI committee is currently reviewing several proposals, and it will recommend a universal format.



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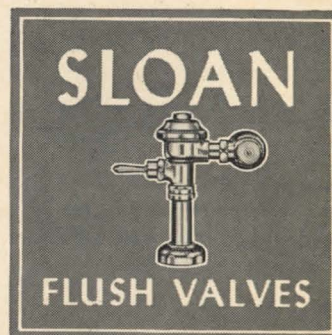
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SUBSTANTIAL PERFORMANCE OF CONTRACT

BY BERNARD TOMSON
AND NORMAN COPLAN

Citing a recent case in New York, P/A's legal team confronts the question of what constitutes "substantial" performance of a contract, which then determines the amount of compensation owed the contractor by the owner.

When a contractor has not properly performed or has not completed his performance, disputes often arise as to the amount of compensation to which he is entitled. Although it is a general rule of law that one who breaches a contract is not entitled to additional compensation thereunder, a builder who has not fully performed may nevertheless recover the balance of the contract price (less the cost to the owner of completion) if he is deemed to have "substantially" performed. What constitutes "substantial" performance, and whether a breach exists sufficient to deprive the contractor of any further compensation, is often difficult to determine.

To protect the owner against a contractor who has inadequately or incompletely performed, the usual construction contract provides in substance that, in the event of

such default, the owner, upon appropriate notice, may perform the work and deduct the cost thereof from any moneys payable to the contractor. Such a provision, while primarily designed to protect the interests of the owner, may, under certain circumstances, serve the interests of the contractor. This is illustrated in the case of *Soundwall Const. Corp. v. Moncarol Const. Corp.*, 290 N.Y.S. 2d 363.

The plaintiff in this case was a masonry contractor who had contracted with the defendant, as the owner of three apartment houses under construction, to provide certain work and materials in connection therewith. The contract between the parties provided for the payment of approximately \$443,000, on account of which the plaintiff had received approximately \$394,000. The plaintiff contractor filed a notice of lien in the approximate sum of \$49,000 and brought an action to foreclose it. The plaintiff had originally contended that it had duly performed its contract, but during the trial amended its pleadings to state that it had "substantially" performed the contract. The defendant owner contended that the plaintiff could not recover any unpaid balance of fee because the plaintiff had not substantially performed, but had "in fact breached its contract by leaving the job without excuse," with 22 items of omitted and defective work.

The Court found that the total of work uncompleted by the contractor amounted to approximately \$23,000, and that such default was not sufficient to compel a finding that the plaintiff had failed to substantially perform. The Court said:

"The term 'substantial performance,' as used in connection with a building and construction contract, is a relative term, and there is no fixed formula, or mathemati-

cal rule, for determining whether or not such a contract has been substantially performed. Accordingly, the question of substantial performance is one to be determined in each case with reference to the existing facts and circumstances . . .

"The omissions hereinbefore described were not pervasive in the sense that they constituted such a deviation from the general plan of the work contemplated by the contract that they could not be remedied and the three apartment houses occupied as planned. The \$22,867.60 here found to be the reasonable cost to the defendant for completing the largely peripheral work that plaintiff omitted, including rectifying that which it had performed poorly, does not, in relation to the gross contract price of \$442,997.38, negate a finding that plaintiff completed the contract substantially."

The Court, in further support of its conclusion that the contractor was entitled to the balance of his unpaid fee less the cost to the owner of completing the unfinished work, relied upon the provisions of the construction contract, which specifically authorized the owner, in the event of the contractor's default, to have the work completed by someone else and charge the contractor with the cost. The Court concluded that the language of the construction contract, even though primarily directed to protect the owner against a defaulting contractor, nevertheless prevented a forfeiture of the balance of the contractor's fee by its very terms. The Court stated:

"Plaintiff's refusal to return to the job to complete the work, even if inexcusable and otherwise a ground for withholding recovery . . . is not here conclusive in view of the provisions of paragraph 11 of the basic contract which provides for the completion of the work by the Owner in the event the Contractor fails to do so . . . and deduct the cost thereof from the payment then due or thereafter to become due."

The defendant owner, in addition to counterclaiming against the contractor for the unfinished work, also counterclaimed for damages in the approximate sum of \$18,000, based upon the penal provi-

sions of the Lien Law of the state. The law of New York provides that, in any action to enforce a mechanic's lien, if "the Court shall have declared said lien to be void on account of willful exaggeration, the person filing such notice of lien shall be liable in damages to the owner." Generally, the measure of damages for willfully exaggerated claims have been limited to the amount willfully exaggerated. The lien in question had been filed by the contractor's attorney, and was based upon the allegation that the contractor had fully performed. The contractor admitted advising his lawyer that all work had been completed, and had not informed him of any omitted work. The Court concluded that the plaintiff's failure to deduct four concededly omitted items of work from the amount claimed to be due in the notice of lien was not a mere unintentional inaccuracy, but a willful exaggeration, for which the defendant owner was entitled to recover the reasonable value of the items omitted in the approximate sum of \$9000.

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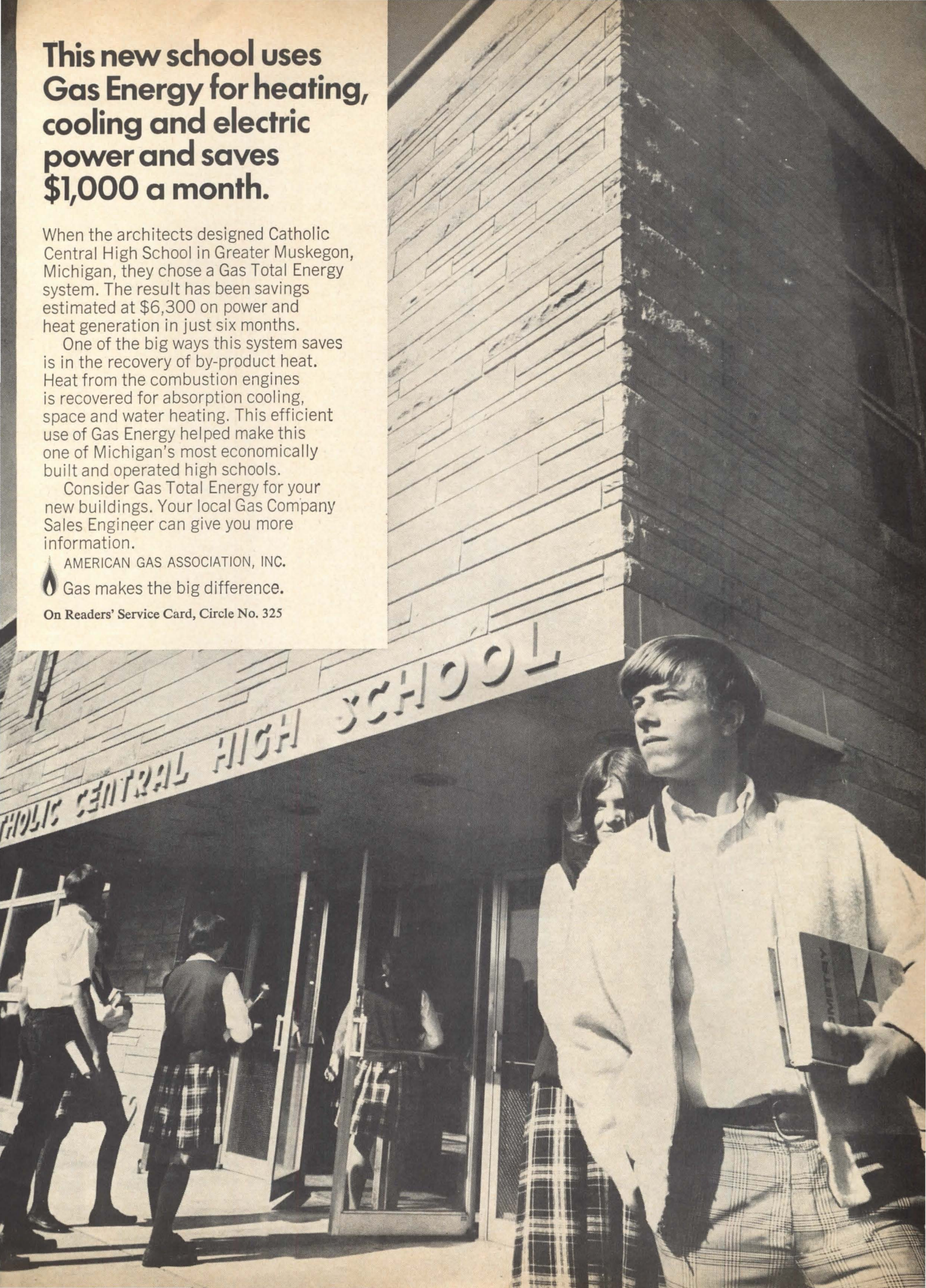
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A COMPUTER PRIMER

BY ERIC TEICHOLZ

COMPUTERS IN ARCHITECTURAL DESIGN. David Campion. Elsevier Publishing Company, 52 Vanderbilt Ave., New York, N.Y., 1968. 320 pages, illus., \$12.50. The reviewer is Director of Graphic Services for the Laboratory for Computer Graphics, Graduate School of Design, Harvard University, and President of Design Systems, Inc., a computer consulting firm for architects.

David Campion, an English architect who is with the London firm of Cusdin, Burden & Howitt, has taken the plunge. He has written the first book on computers and architecture. This, in itself, is an event.

Two problems facing an author of a book on computers and architecture for the layman were partially overcome by Campion. One is stated at the outset. "Developments take place so rapidly in the computer field that it is difficult to keep pace with them." But Campion compensated for "built-in" obsolescence by making his bibliography and index as current as possible. The other major problem is that a certain amount of sophistication in computer technology and its related jargon is necessary before the applications of computer technology to design processes can be discussed. The book is intended to form an introduction to computer techniques "for

those people who wish to learn about computers and their applications in architectural design." However, the author has painted too small a picture of what the "state-of-the-art" is and what the implications of it are for the design profession.

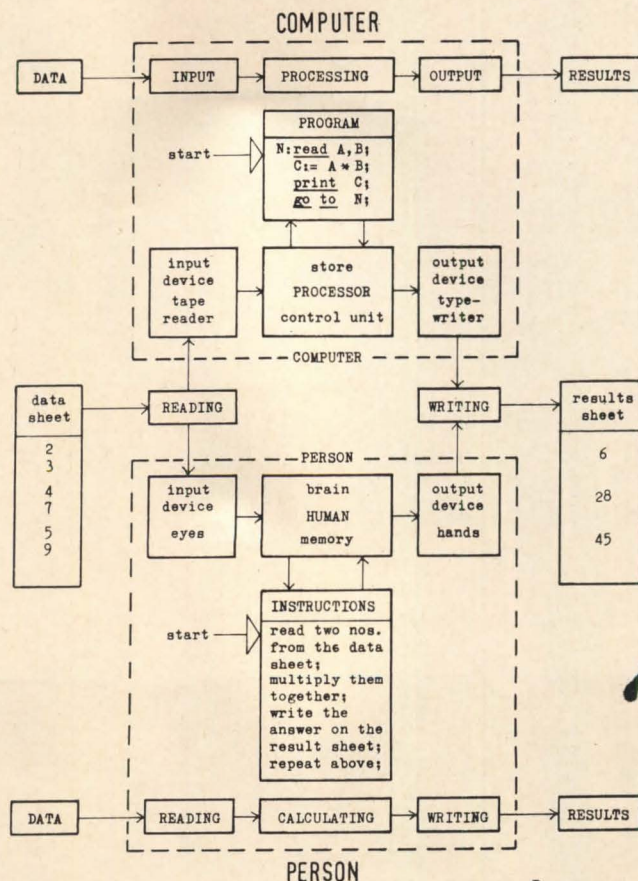
David Campion's book is a "formula" book, written like a textbook and, as such, succeeds very well. The first 140 pages are devoted almost exclusively to a discussion of computer technology. This thorough and concise section of the book deals with how computers work and with "computerese," the language of computer buffs. Campion has tried to dispel some of the myths and rituals that make up the "black box" image of computers that seem to be so prevalent among architects. This in itself makes the book worthwhile for the architect who has, thus far, managed to ignore the computer "revolution."

The first half of the book includes an "Introduction to Computer Techniques," a discussion of "Computers and Their Peripheral Equipment," "Computer Programming Languages," an "Introduction to Computer Programming Techniques," and a chapter on "Computer Programming: The Language of ALGOL." Although thousands of pages have been written on these same subjects (one need just send for the reading list to an introductory course on computers given at M.I.T.), Campion, with the aid of numerous diagrams illustrating how machines process information (several of which look like architectural "bubble" diagrams), presents the laymen with a good primer on computers that architects can read and understand.

In the book's second part, the reader is presented with descriptions of several computer programs that perform

tasks related to design. For the most part, the examples chosen are simple bookkeeping programs that architects, if they read the first part of the book, can understand. The scope of the programs illustrated by Campion is much too narrow. Perhaps the author has tried to keep the programs simple so that the reader can understand their operation, or perhaps his manuscript was "frozen" so long ago that he could not report on recent work being done on computer-aided building design. Whatever the reason, Campion fails to stimulate the reader with the great potential of the computer as a design partner.

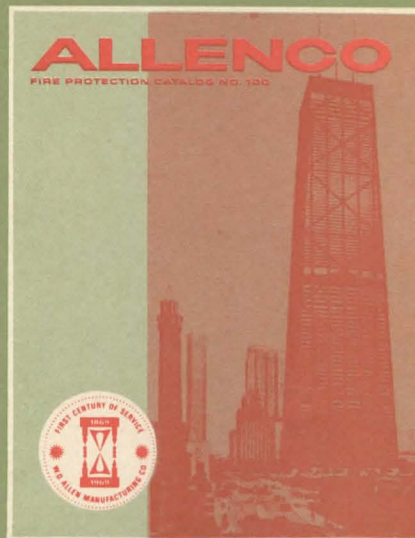
Computer programs are classified in four major headings: Management, Design, Design and Contract Documentation, and Office Administration. Examples of computer programs that calculate room and floor areas, that generate network analysis (PERT or CPM) diagrams that calculate reverberation time, that relate to Bjorn and Knud Bindlev's CBC (Coordinated Building Communication) coding system for materials in producing bills of quantities, and that generate perspective drawings are some of the programs presented. In the "Design" category at least a dozen computer programs are presented, only four of which were written since 1965. By far the most interesting is his own "simulation" program in which he establishes a computer model of a dining room that can be tested and changed under different design conditions. Even here, Campion fails to explore the implications of his program. If more sophisticated examples could not be found in architectural design (which they could, e.g., Nicholas Negroponte's URBAN 5 program written at M.I.T.), one need



Comparison between a person and a computer carrying out a calculation: a diagram from *Computers in Architectural Design*.

Continued on page 236

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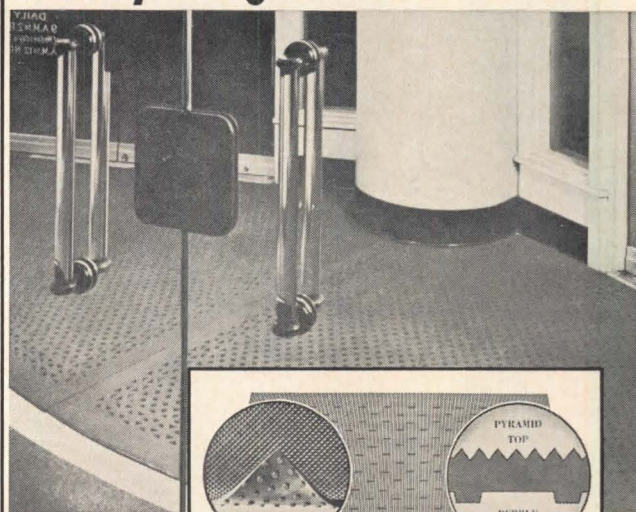
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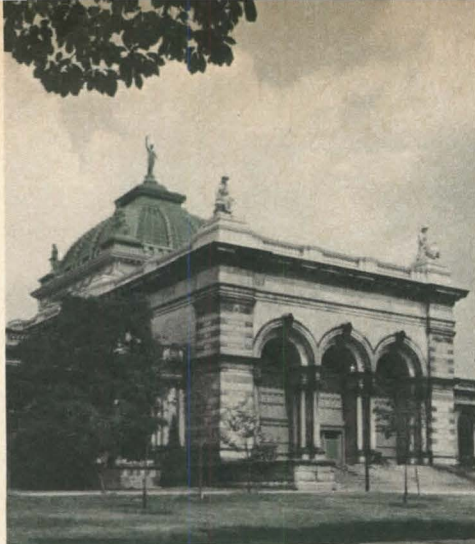
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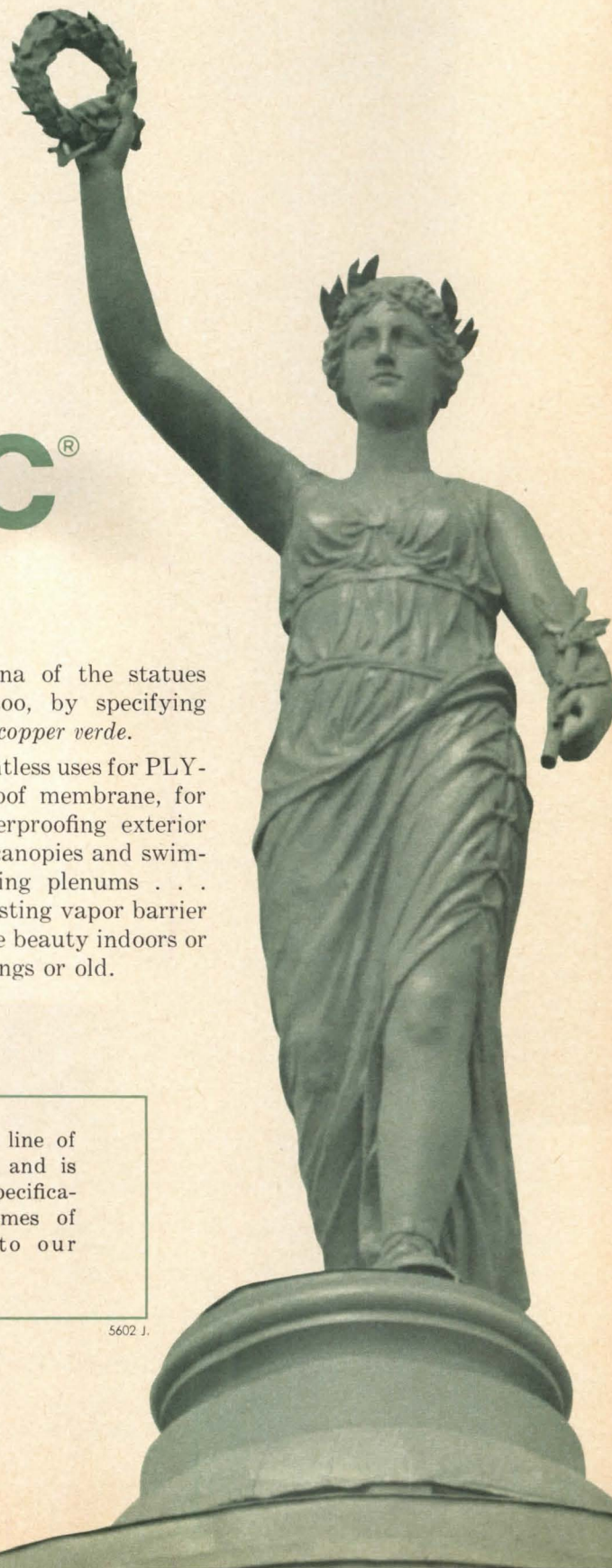
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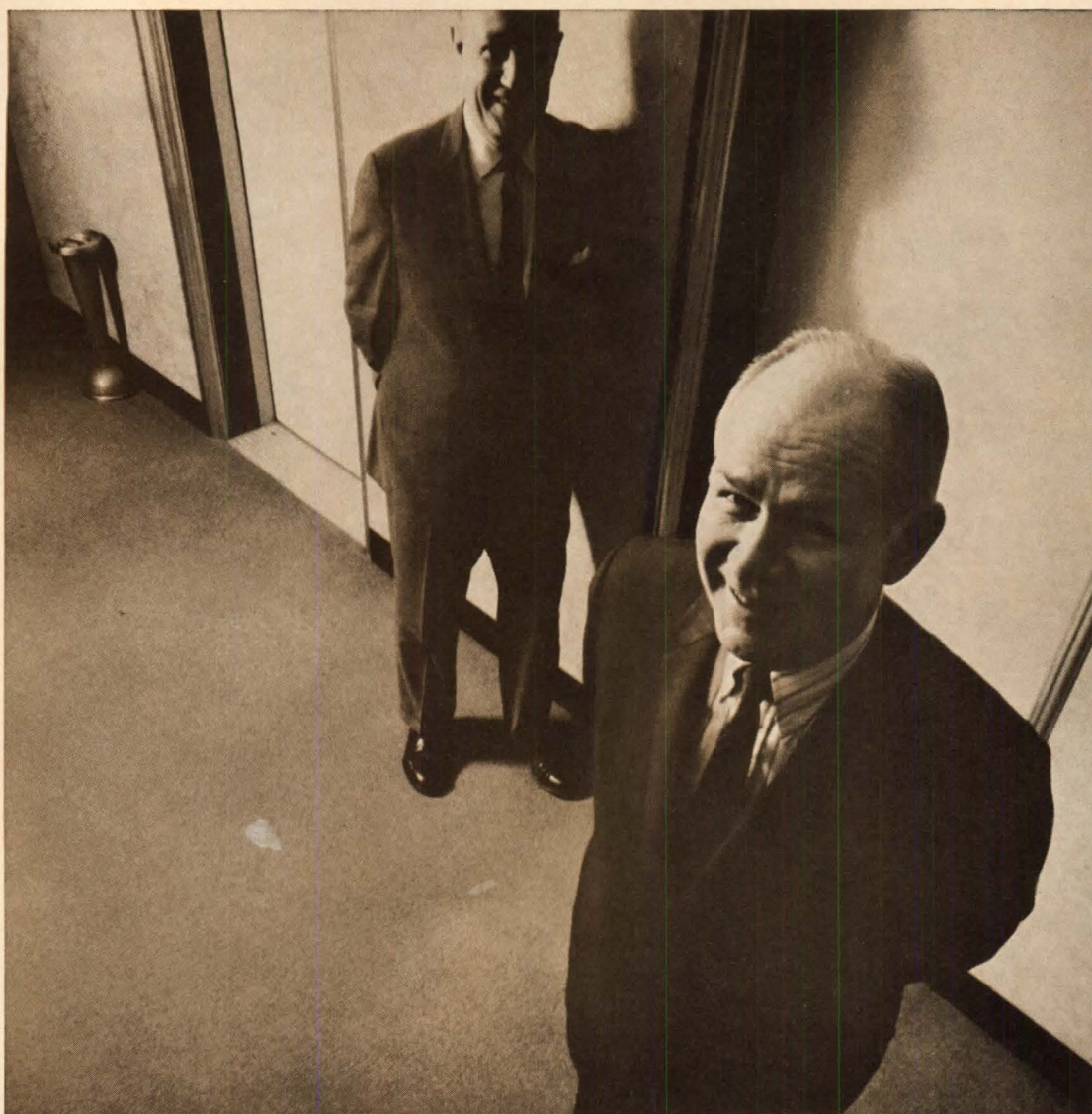
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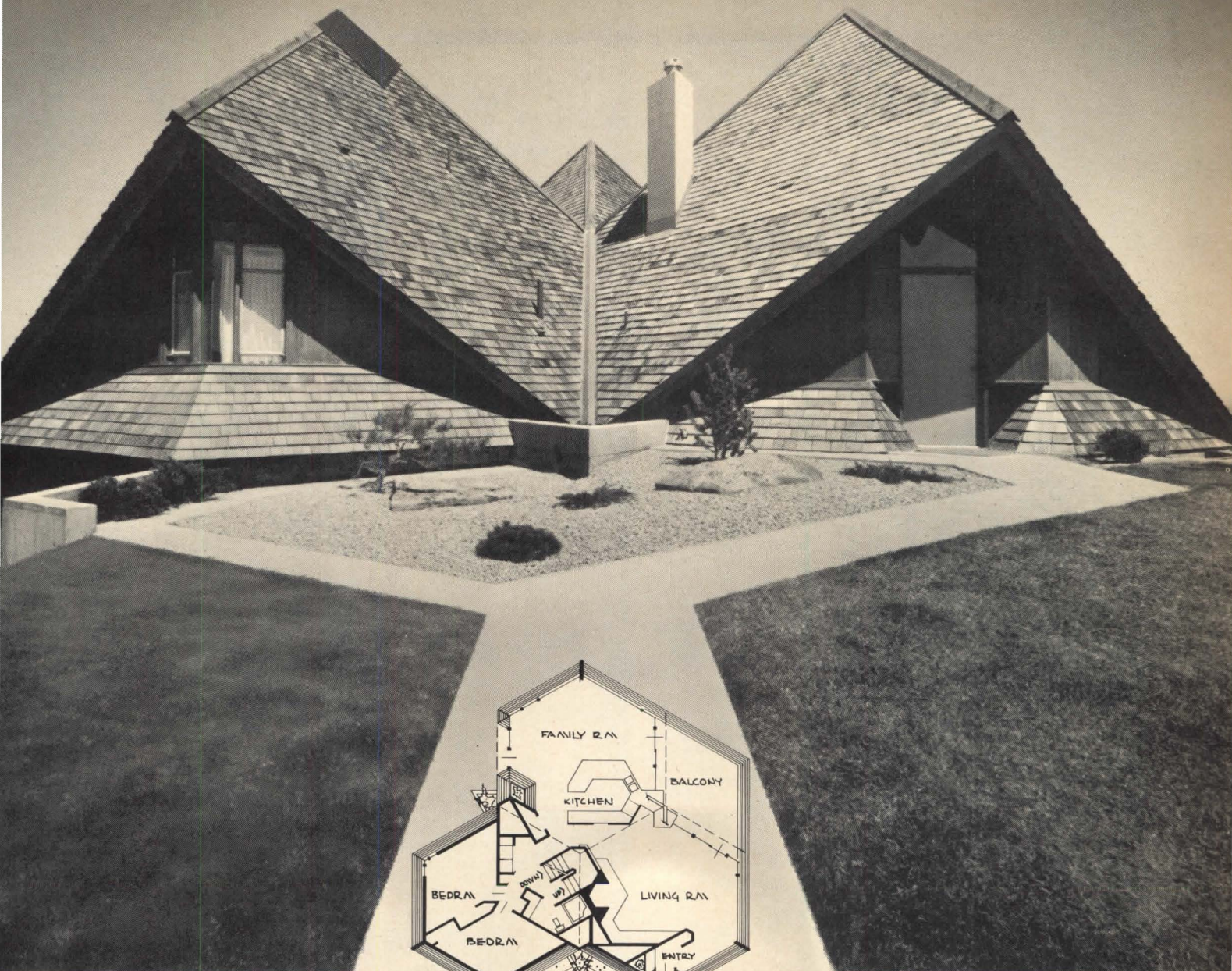
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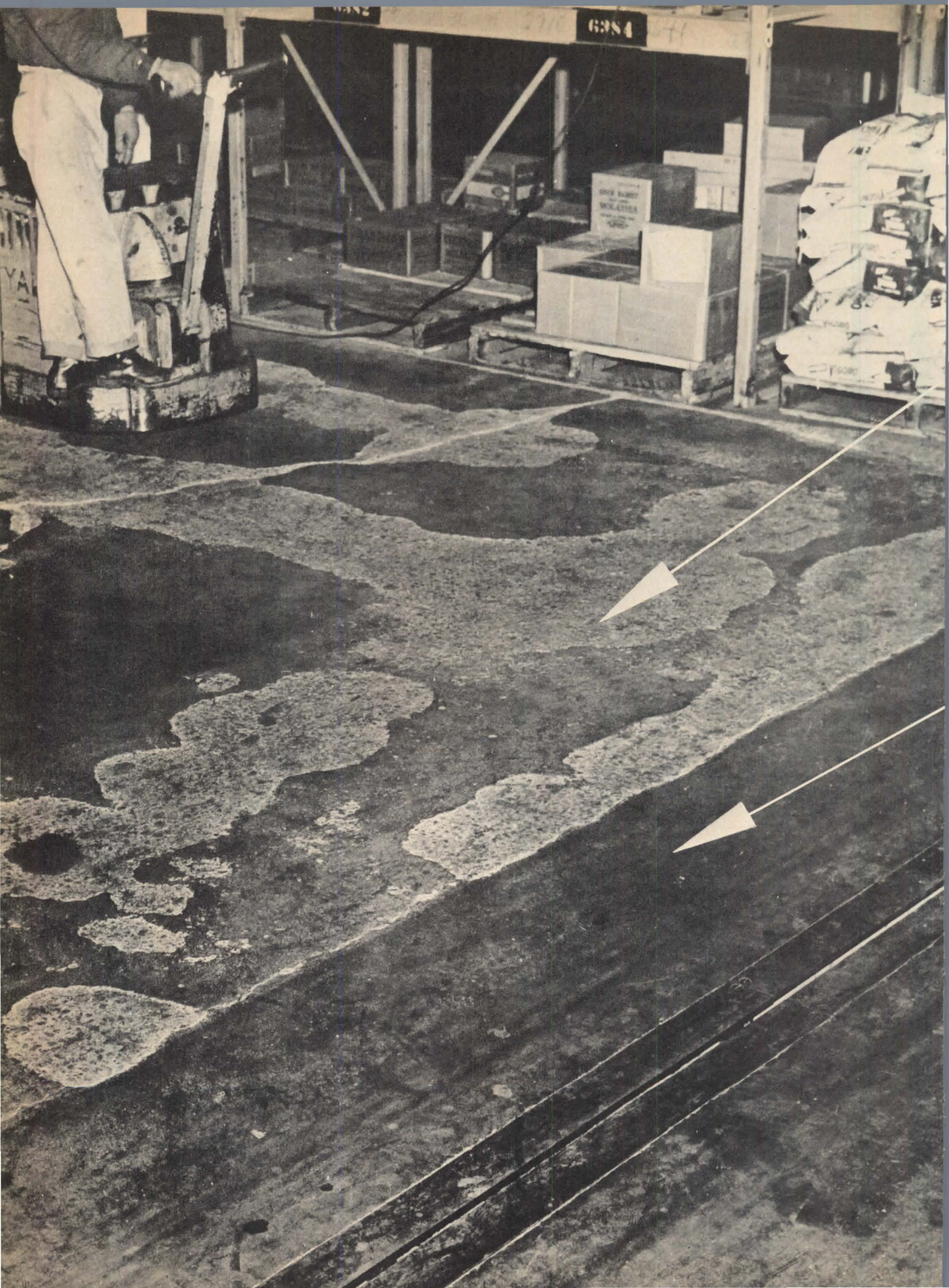
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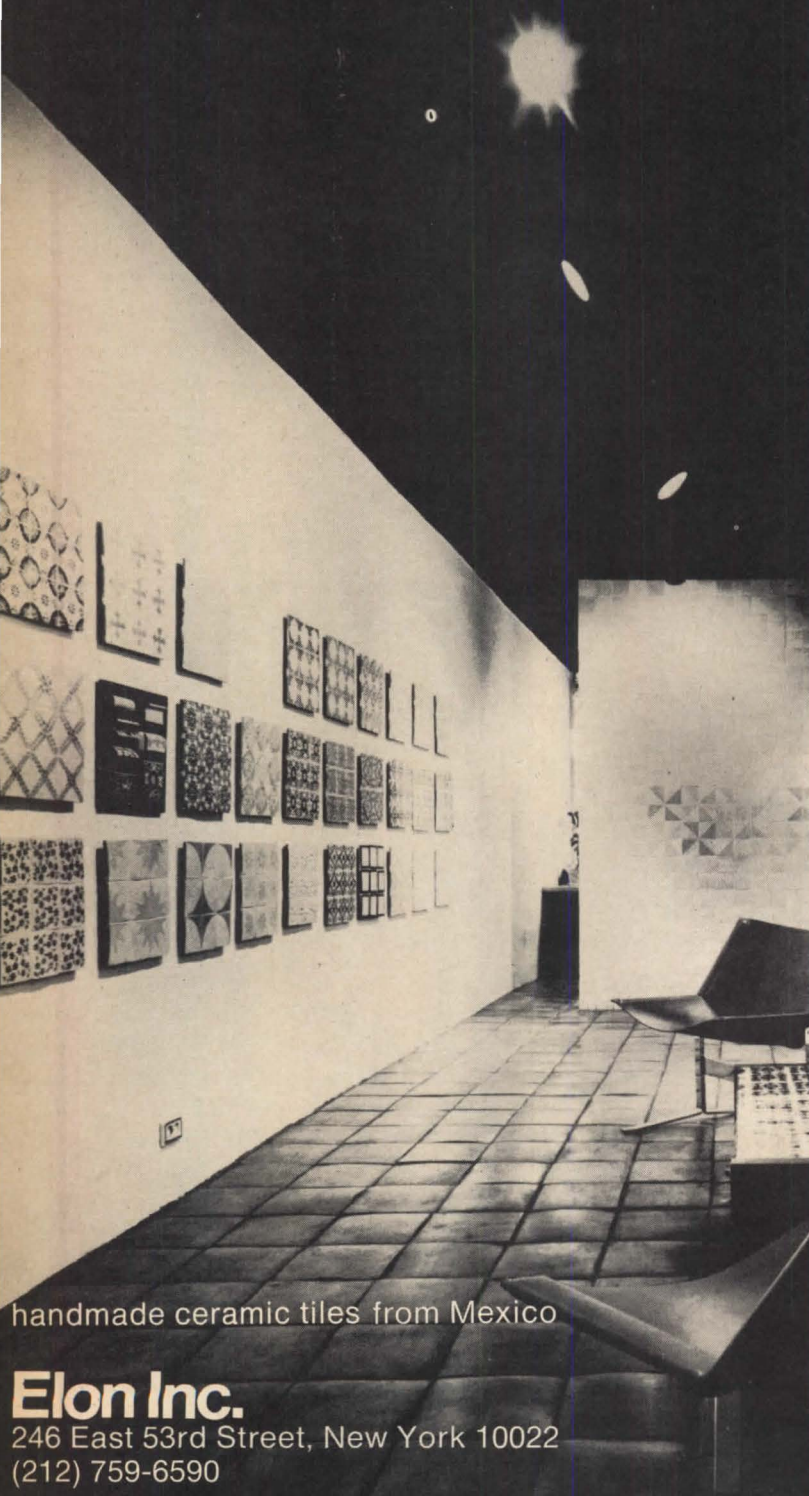
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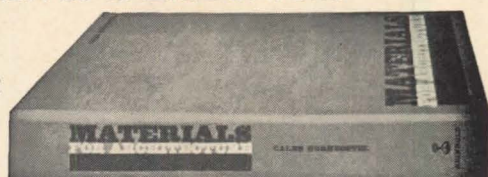
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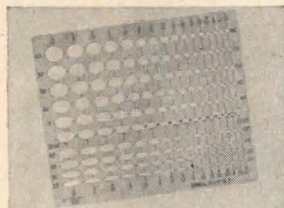
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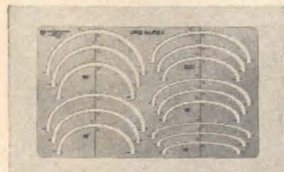
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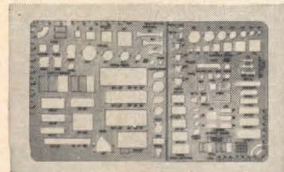
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Continued from page 226

only look at the automotive and aerospace industries to prophesy about the future. Many large corporations have developed highly sophisticated computer simulation techniques that are used in the design process.

The author is aware of his shortcomings when he explains that: "The use of computers in [architecture] is yet very much in embryo;" and further: "There is as yet very little published information on the subject." Finally, in the conclusion of the book, Campion states: "If this book appears to the reader to be disappointing, with regard to the amount of light which it sheds on architectural application of computers, then it will be realized both how little work has so far been carried out in this field and how much lies ahead."

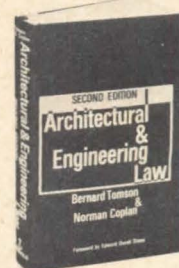
David Campion is a member of the Design Research Society—a group of researchers that periodically meets to discuss current developments in design research. What impressed me about Campion and the Society was the scholarly and conscientious attitude they have toward new methodologies involving architecture. When I talked with them they were better informed about developments in the United States than I. This is indicative of the difference between research here and abroad. England is very advanced in researching, documenting, and disseminating new methods and techniques of design and construction. Their architecture testifies to this. On the other hand, little of the innovative research being done in computer-aided building design is conducted abroad. England simply does not have the personnel or money necessary to accomplish "open-ended" research. The United States has hundreds of researchers using millions of dollars' worth of equipment doing research in computer-aided building design, but with very little communication between researchers. Because of the expenses involved, most open-ended design-related research is done in universities, but U.S. government organizations, unlike those in England, make no attempt to collect and disseminate the information produced by the researchers. The only two U.S. newsletters dealing with new design methodologies are the *SICCAPUS Bulletin* (c/o Association for Computing Machinery, 221 East 43rd Street, New York, N.Y. 10017) and the *Design Methods Group Newsletter* (c/o Sage Publications, Inc., 275 South Beverly Drive, Beverly Hills, California 90212).

Campion did not undertake the task of researching and reporting on the breadth of work currently being carried out in

Continued on page 240

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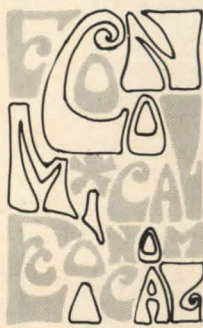
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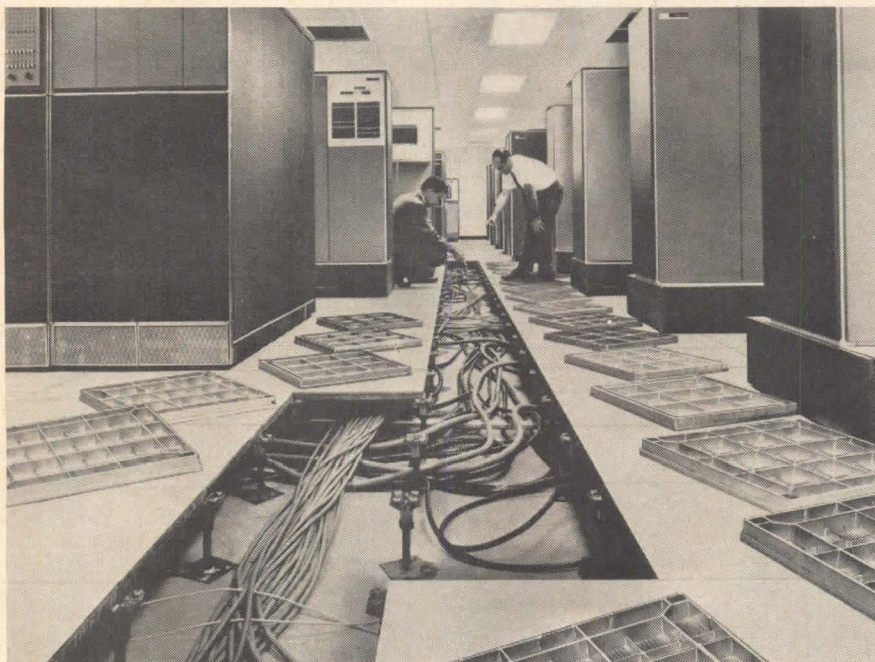
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Continued from page 236

our universities. What is missing from his book is a discussion of the implications of computer-aided design. Also lacking is a discussion of the social implications of computer-aided design. Behavioral scientists based in several U.S. universities are working with technologists in the design area, but no one, as yet, has tried to document and evaluate this work. To some extent it is the old story of researchers re-inventing the wheel.

Architecture is still filled with ritual, myth, and ceremony. Campion's book, the first of its kind, helps us take an analytical look at the state-of-the-art of the computer revolution. It is a partial glimpse of what is possible, and within the limits that Campion himself has set up, his book is successful. What is needed is a supplement to "Computers in Architectural Design" that answers questions Campion does not raise.

Ecological Suicide

BY EDWARD K. CARPENTER

NOT SO RICH AS YOU THINK. *By George R. Stewart. Illustrated by Robert Osborn. Houghton Mifflin Company, 2 Park St., Boston, Mass., 1968. 248 pp., \$5.95.* THE FRAIL OCEAN. *By Wesley Marx. Coward-McCann, Inc., 200 Madison Ave., New York, N.Y. 1967. 248 pp. \$5.95.* The reviewer is an Associate Editor of P/A.

Every person in the United States — man, woman, and child — throws out only a little less than a ton (1600 lb) of garbage and junk each year. The annual accumulation in the U.S. is 125 million tons, and we spend \$2.5 billion to do whatever it is we do with it.

Just what we *do* do with it and why we should not is the subject of these two books, which are calm pleas for rationality and neatness, for further understanding of human ecology, and for conservation of our natural heritage so that ultimately we may conserve human life. One deals mostly with problems on land, the other with the ocean. They come at a time when the actions of the ignorant and indifferent threaten to make the world a stinking morass — or worse. Calm voices, no matter how wise, are often ignored. But authors Stewart and Marx have marshaled their facts so carefully and presented them with such vitality that both books are hard to snub.

Man is at the upper end of the scale of natural predators. Nothing preys on him except other men. So voracious is his appetite that he threatens to exterminate the natural food on which he depends.

Continued on page 250



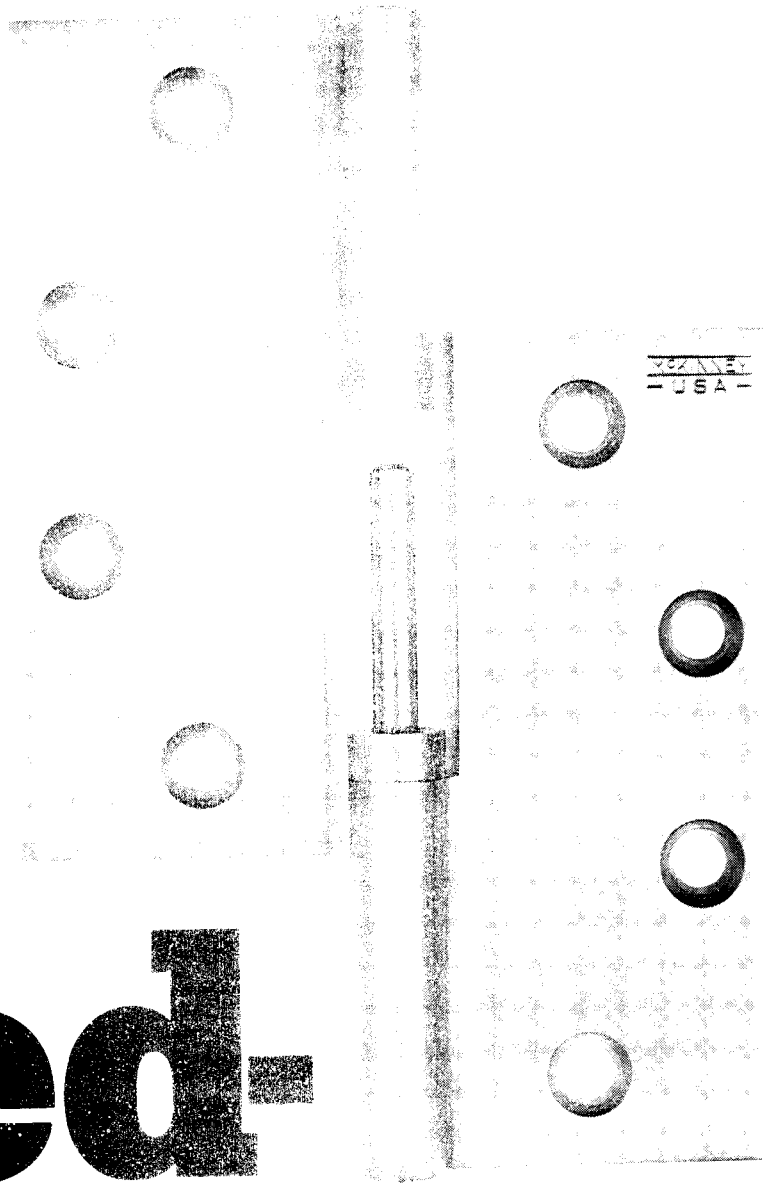
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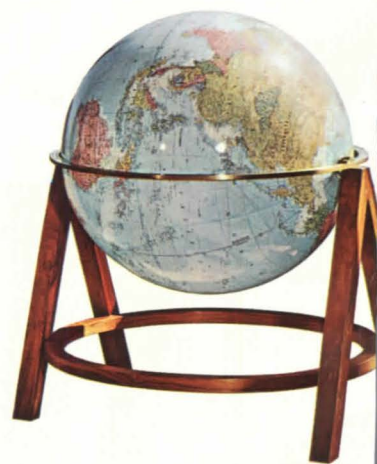
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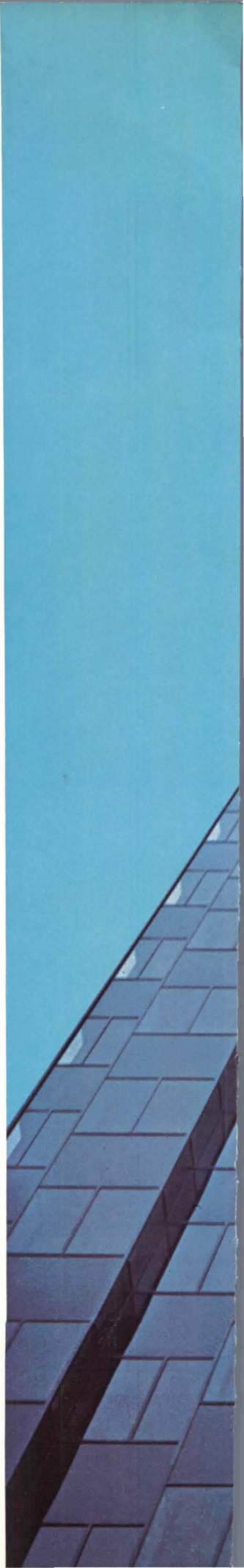
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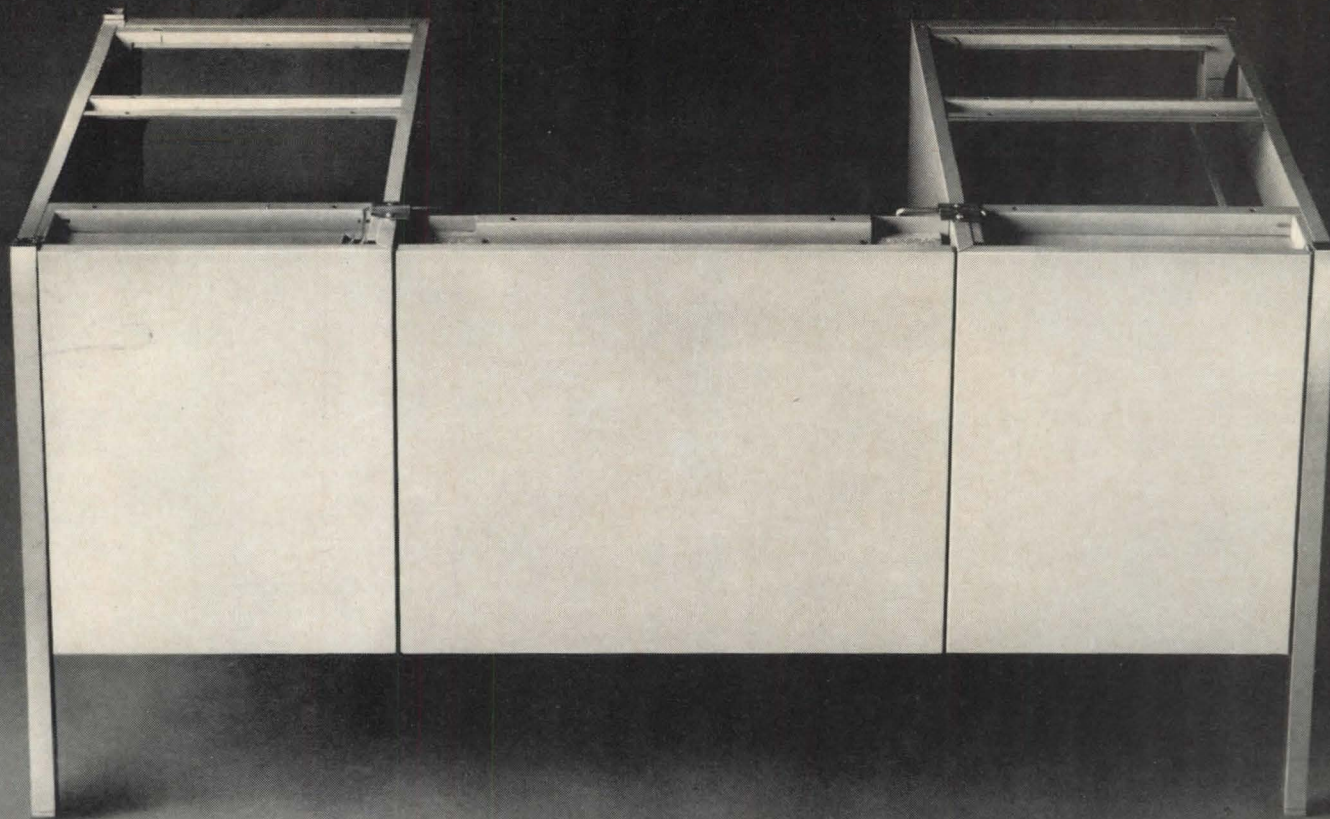
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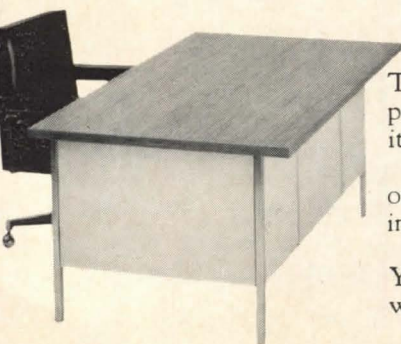


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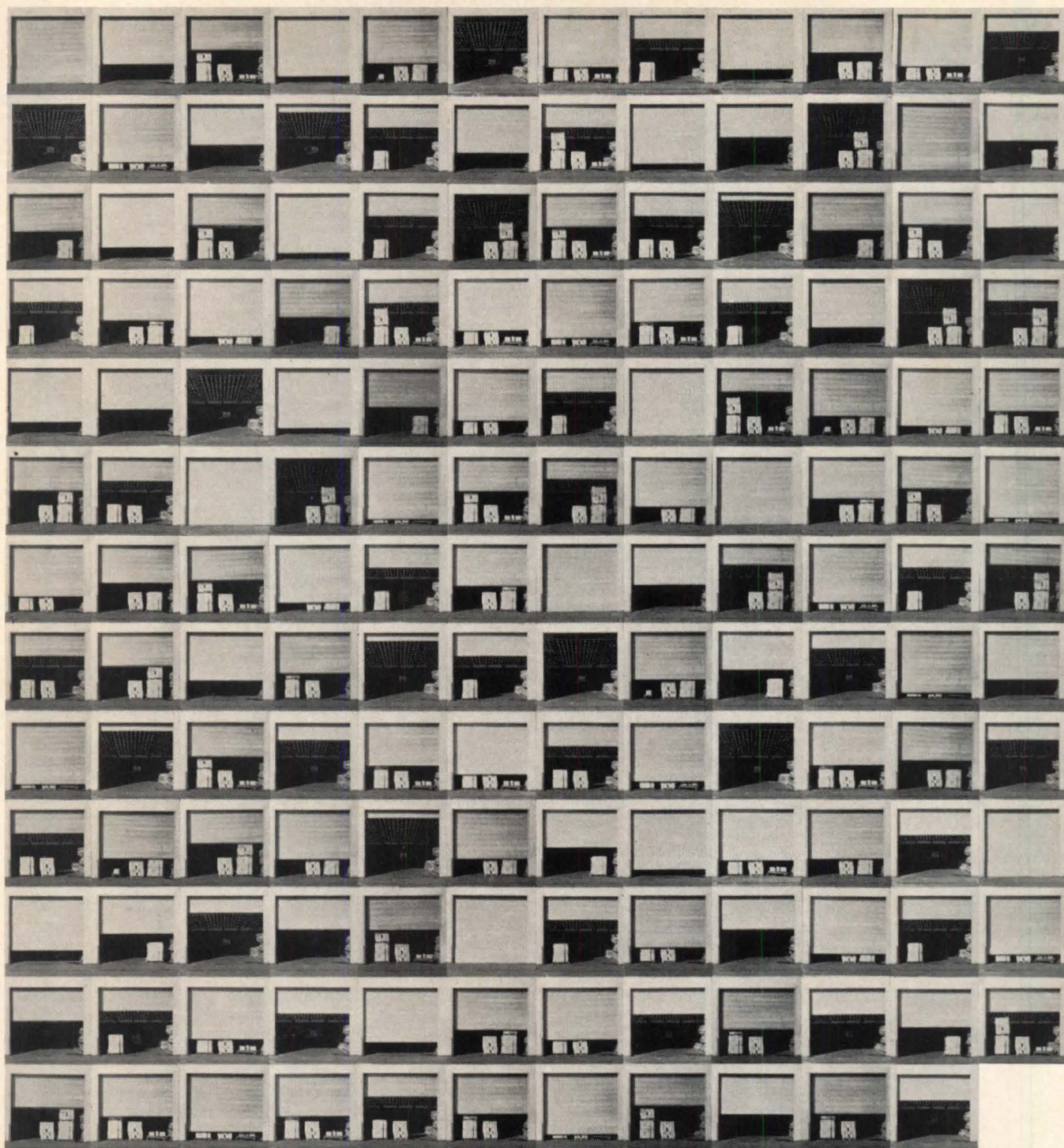
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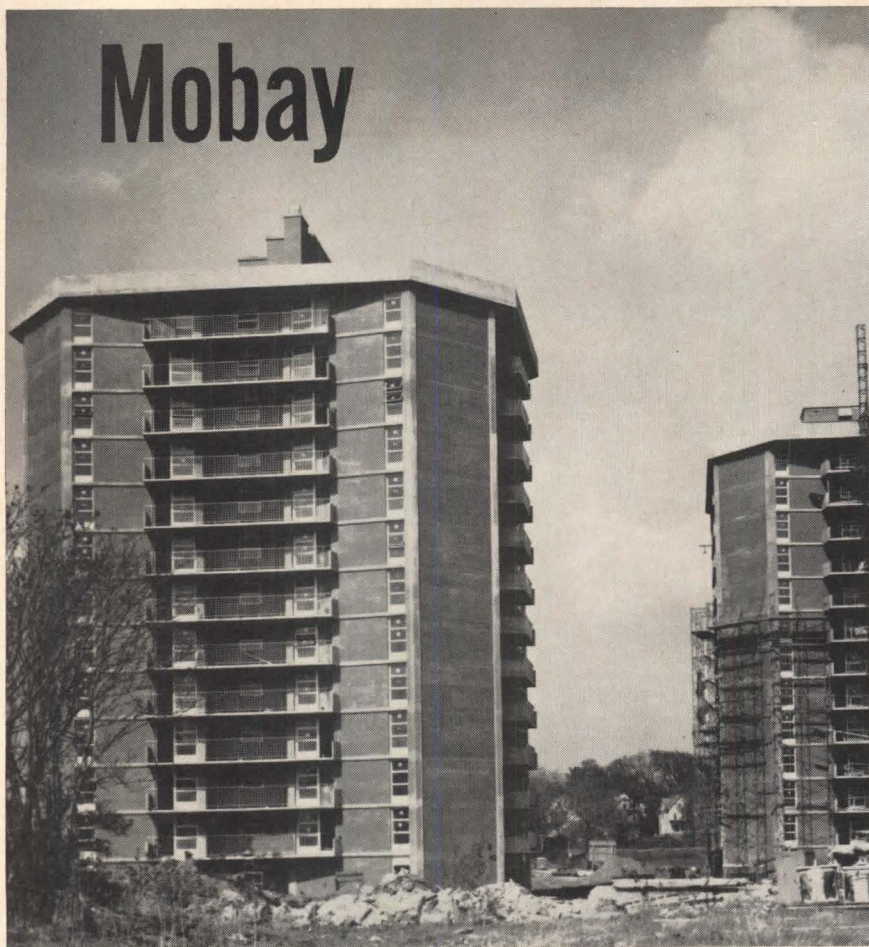
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Urethane mix is injected through spaced access holes in the finished cinder block wall. Pressure of expanding foam forces it into every chink to form seamless thermal barrier. Exudate signifies filled cavity.

LEFT:
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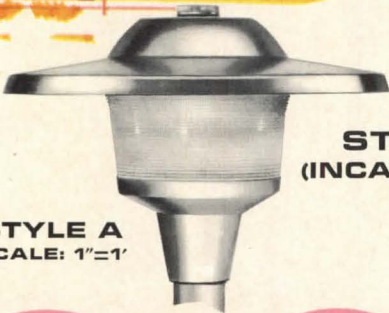
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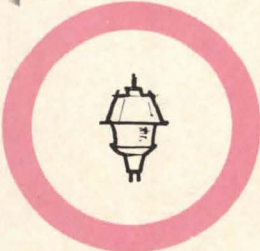
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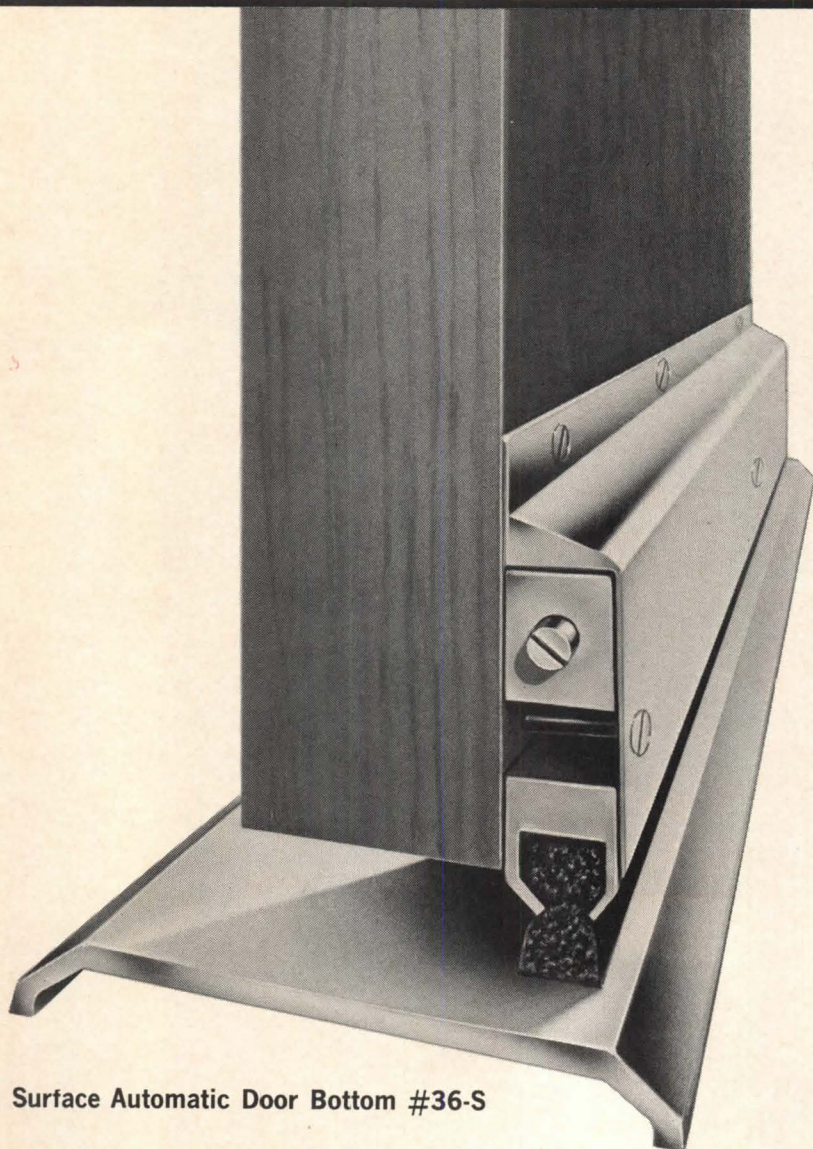
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Continued from page 250

phenomena and through careful control of conditions that yield the most pleasant, productive environment, can man hope to maintain his position on top of his particular ecological heap. There is little use in spraying the orange groves if the ultimate result is to kill off mankind. Perhaps if we do rush ahead impetuously, paving the countryside, we will avoid the fate that Dr. David M. Gates, Professor of Botany at Washington University, testifying before a Congressional Committee, predicted for the U.S.: "We will be remembered," he told them, "for an elegant technological society that underwent biological disintegration because of a lack of ecological understanding."

Circles Unlock Doors

BY JEFFREY ELLIS ARONIN

THE SECRETS OF ANCIENT GEOMETRY AND ITS USE. Vols. I and II. By Tons Brunés. Rhodos International Science Publishers, 41, Nygaardsvej, Copenhagen, Denmark. 1967. 583 pp., illus. The reviewer is an architect practicing in New York City.

In ancient Greece, Plato conducted at Athens a school of philosophy. Its entrance requirement was a knowledge of geometry. A sign over the gate to the olive-grove site of the school read: "Only he who is familiar with geometry shall be admitted here."

Although many books have been written on ancient geometry, these new volumes, beautifully printed with two-color illustrations and handsomely bound, are the most lucid I have read. Unlike other authors, the Danish engineer Brunés has a passion for history, combined with a profound sense of mathematics. As a Freemason, he understands the application and possibilities of secrecy. "Secret geometry," he points out, "was protected from the blasphemous gaze of outsiders by a wall of silence . . . The occult geometric system which existed as a hidden and sacred factor in the mystery-shrouded temples of those days" has only now been revealed. This ancient geometry—and it was used over a very wide area—was the basis of knowledge for the Temple bretheren and knitted them together into a sort of trade union or craftsman's guild.

How nice it would be if our profession of architecture could be such a guild, where clients would not be able to delve into the secrets by which we earn our bread! For, once secrets are known, others enter into spheres that are, some like

Continued on page 264



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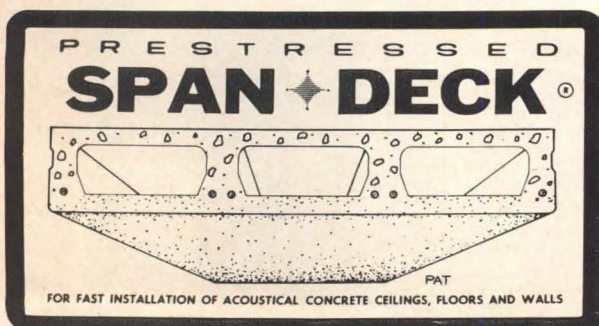
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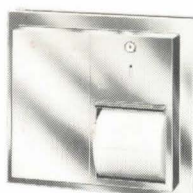
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Continued from page 260

to think, a birthright. Who are we to grieve when we have handed our knowledge to them for the asking?

The book covers many subjects: There are examples of ancient buildings oriented to the sun. There is speculation on numbers, for instance, that the digits of the hand and foot, numbering 20, formed the basis of numerical systems and even found their way into the languages of the world: the Aztek *uinal*, the French *vingt*, the Danish *snes*. The derivation of the foot, the dimension of which varies in different countries, is reviewed; its standardization is shown. One wonders, after reading the carefully related merits of the metric system, why it has not been adopted in the United States. When the United Kingdom goes metric in 1972, the U.S.A. will remain the only major industrial nation still in the old standard. We architects should exert all the influence at our disposal to modernize our measuring system.

Squares are triangulated, discovery added to discovery until circles are formed. The numeral 7 appears over and over again, as it does in the Bible and in our everyday language: "he was in his seventh heaven," the seven wonders of the world, and so forth. As one advances through the pages, the circles begin to resemble a Bucky Fuller dome. Its almost divine form was a sacred symbol in an era when geometric knowledge had its roots in meditation on the sun and moon, which were used to plot locations of columns and proportions of Temple columns.

The works of Pythagoras and Plato are explored. Triangles, squares, and circles on every page. All logic. More temples, triumphal arches, cathedrals. Temple of Ceres, the Parthenon, the Arch of Titus, Cologne, the Pantheon. Human figures, the forehead, throat, pelvis, hip, knee, foot—all are triangulated; vases and jars, too.

The author introduces a new term, the "sacred cut," which he has given to an observation that calls to mind another term long-established in ancient mathematics: the "golden section." He considers that a major difference exists between these two conceptions: "Whereas the *sacred cut* can be traced to countless examples of ancient buildings, designs, etc., the same cannot be said for the *golden section*. . . . The golden section is more over out on a limb, so to speak. All on its own. It belongs to no 'family' or system of geometric thinking." Can we draw any comparison with two large architectural societies in the U.S.?

I have always found it hard to believe that the great works of art of old were

Continued on page 286

...and not a student has entered its halls.

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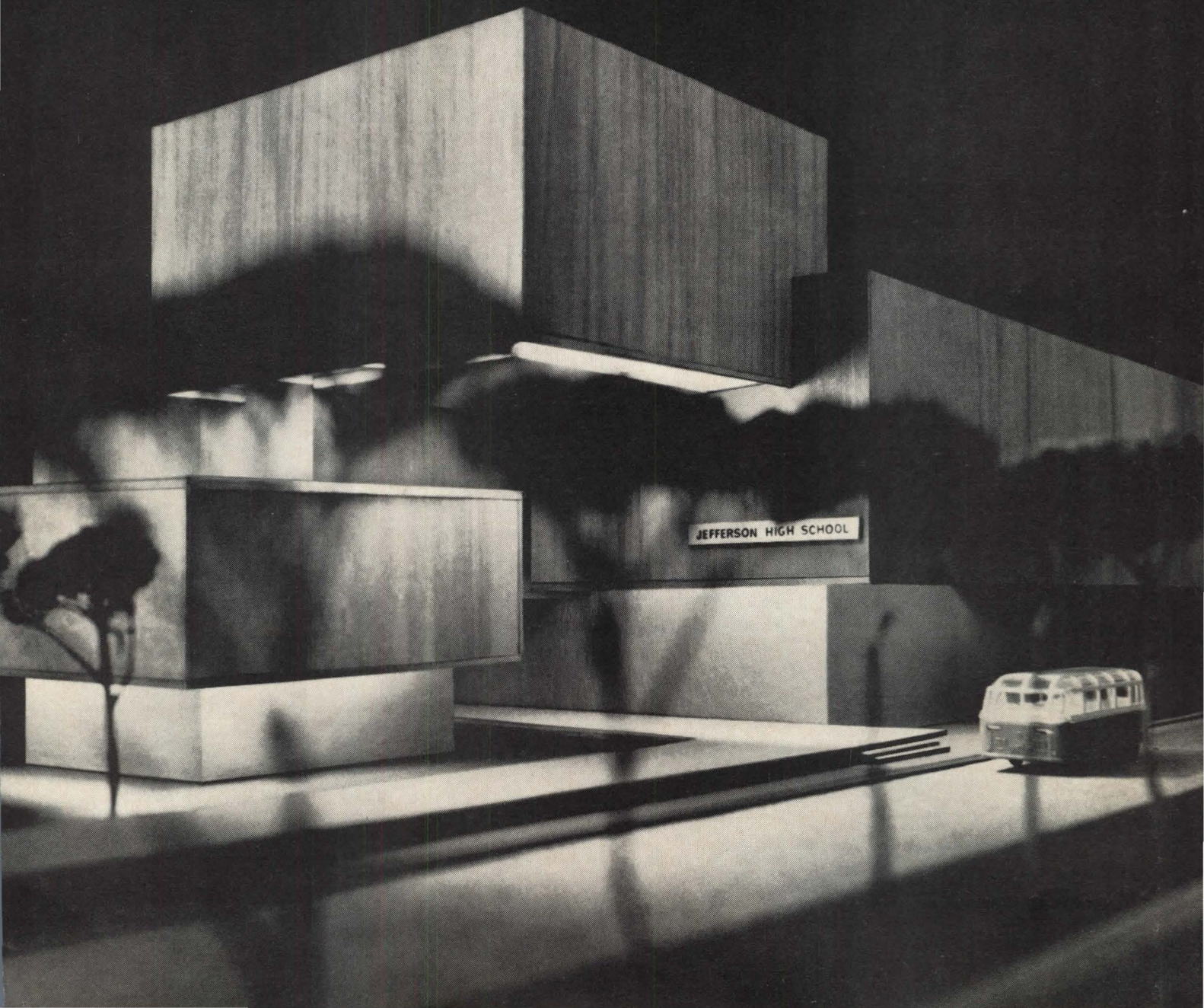
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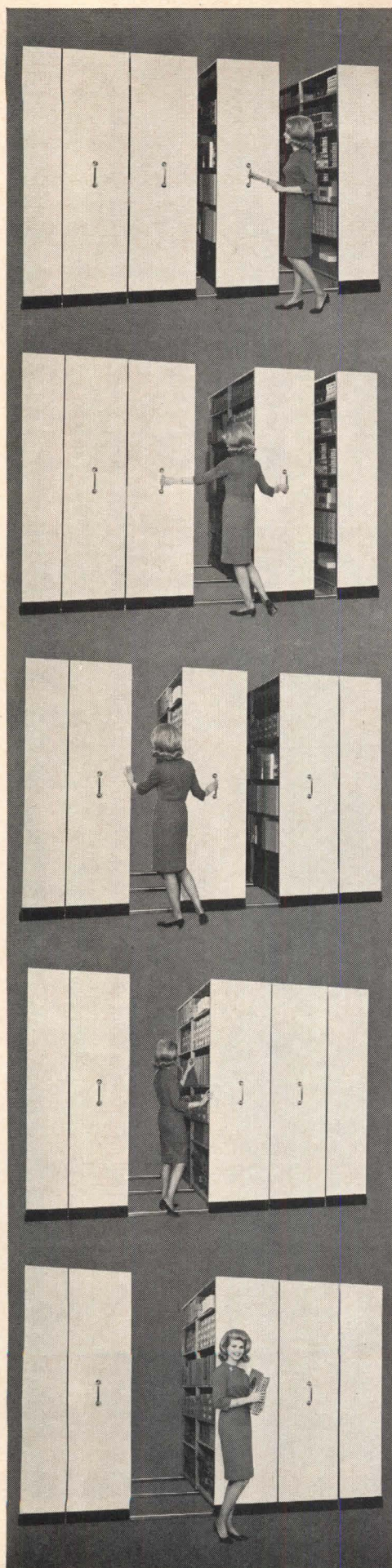
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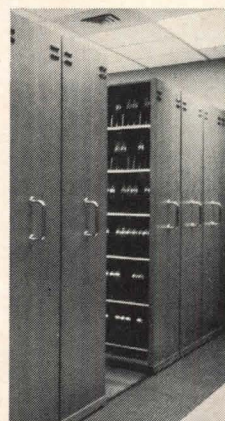
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1. Reverse board-and-batten plywood on this Cape Cod home is abraded cedar, with 12-in. "boards" and a natural wood stain. Architects: Bedar and Alpers. Builder: Emil Hanslin.

2. Rough sawn Philippine mahogany, an exotic newcomer to the textured plywood family, is siding for a group of San Francisco townhouses. Like other plywoods, it's available in many patterns: reverse board-and-batten (as here), V-groove, saw-kerfed, Texture One-Eleven, channel groove or plain.

3. This Fellowship Hall, first unit of a new Methodist church in Cedar Rapids, combines rough sawn cedar Texture One-Eleven siding with other strong, natural materials. Architects: Brown, Healey and Bock; David Brost, Project Architect.

4. This is simply rough sawn plywood with battens at joints. Detail is from a house in Bellevue, Washington, designed by John Anderson.

5. Paul Wilson Bosholm, A.I.A., designed his own small office building in Palo Alto with an ingenious use of rough sawn plywood siding and closely spaced battens.

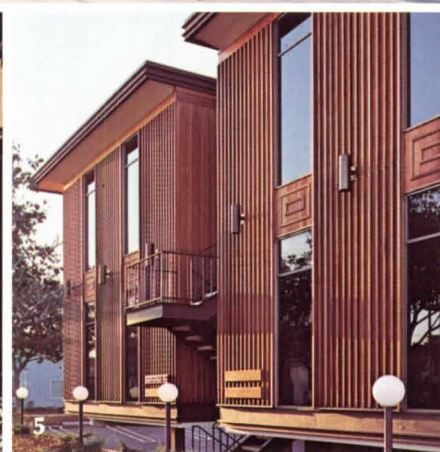
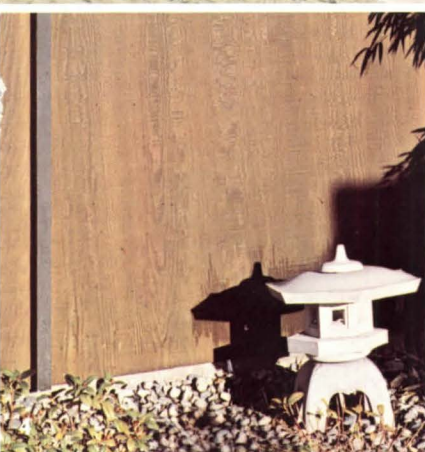
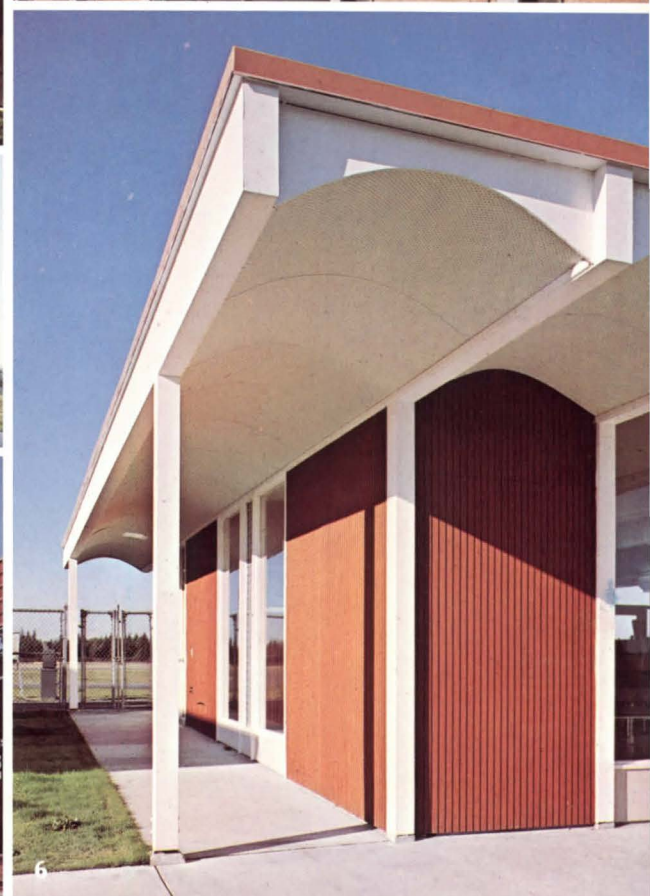
6. Plywood siding is ideal for commercial buildings. It's neat, easy to maintain, and may be applied directly to studs without sheathing. This is T 1-11 on a passenger terminal of a small Northwest airport. Architects and Engineers: Seifert, Forbes & Berry.

7. Siding on this house in Des Moines, Iowa, designed by John D. Bloodgood, is bleached rough sawn redwood plywood.

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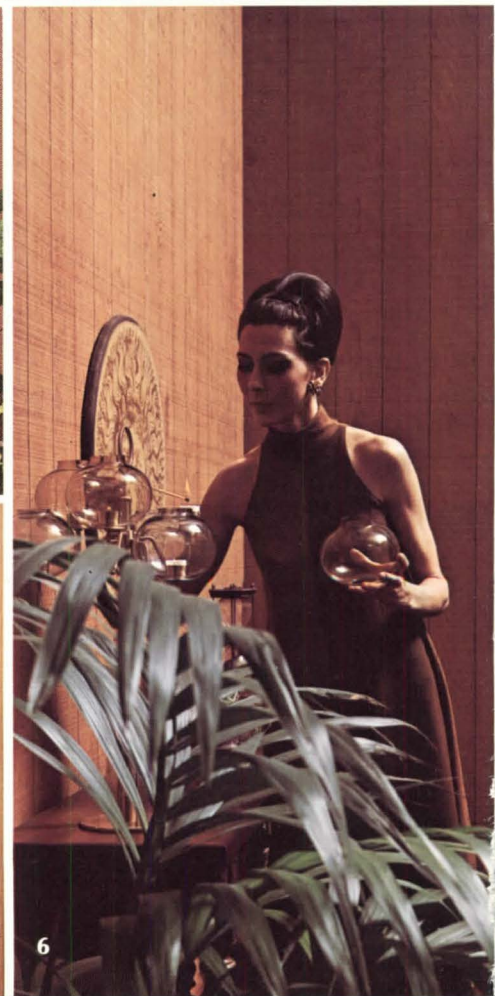
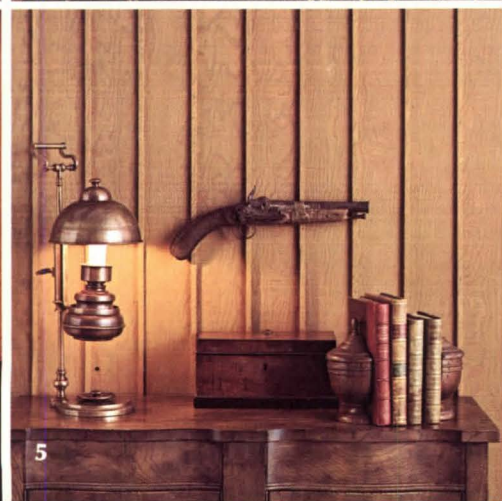
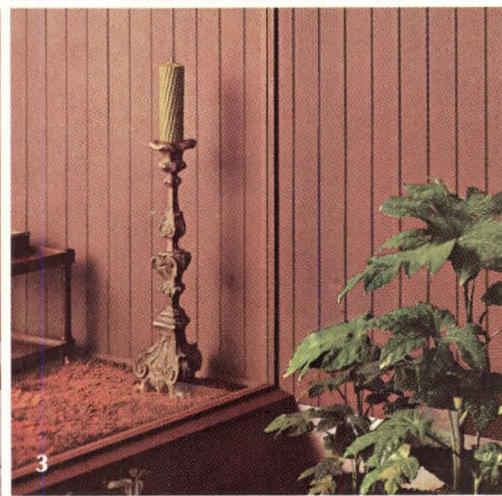


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1. An imposing entry, paneled in one of the newest in textured plywoods: rough sawn fir, with narrow grooves eight inches o.c. The same plywood may be used as siding, too, if a melding of indoors-outdoors is desired.
2. Rough sawn redwood plywood

panels the library in a new home designed by Robert Martin Engelbrecht. Warm-hued, unadorned paneling lends itself well to open-shelf bookcases.

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4. Cedar plywood paneling lends depth and dignity to the walls of this

executive office. Installation method is simple and effective: first, black rectangular "frames" are painted on wall sheathing, then two-foot-wide panels of plywood are centered in frames and glued in place. Spacing between panels, and distance from floor and ceiling may be varied at will.

5. Definite pattern is given wood paneling in a man's room by narrow battens every four inches. Rough sawn plywood is available in redwood, Douglas fir, cedar and lauan.

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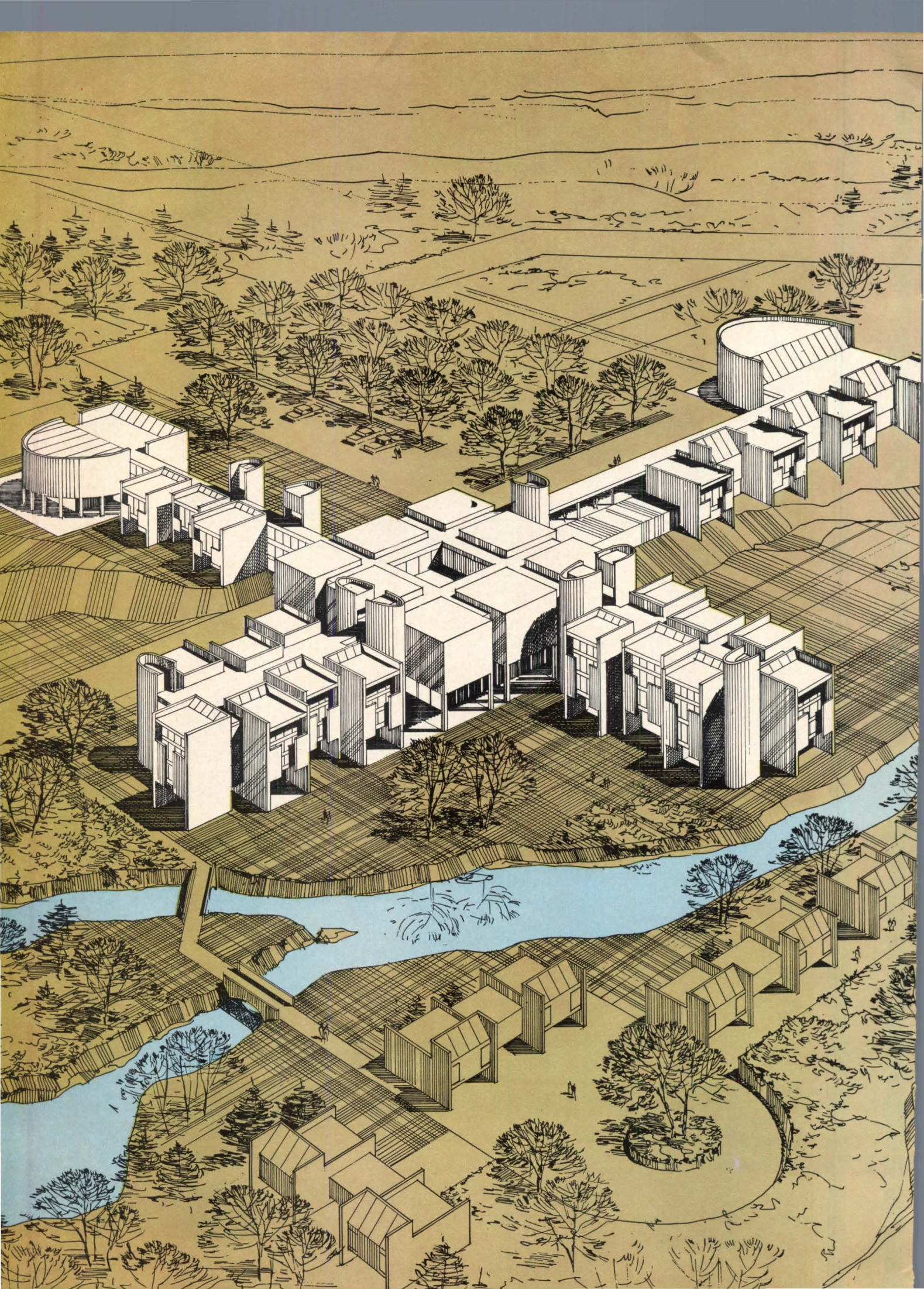
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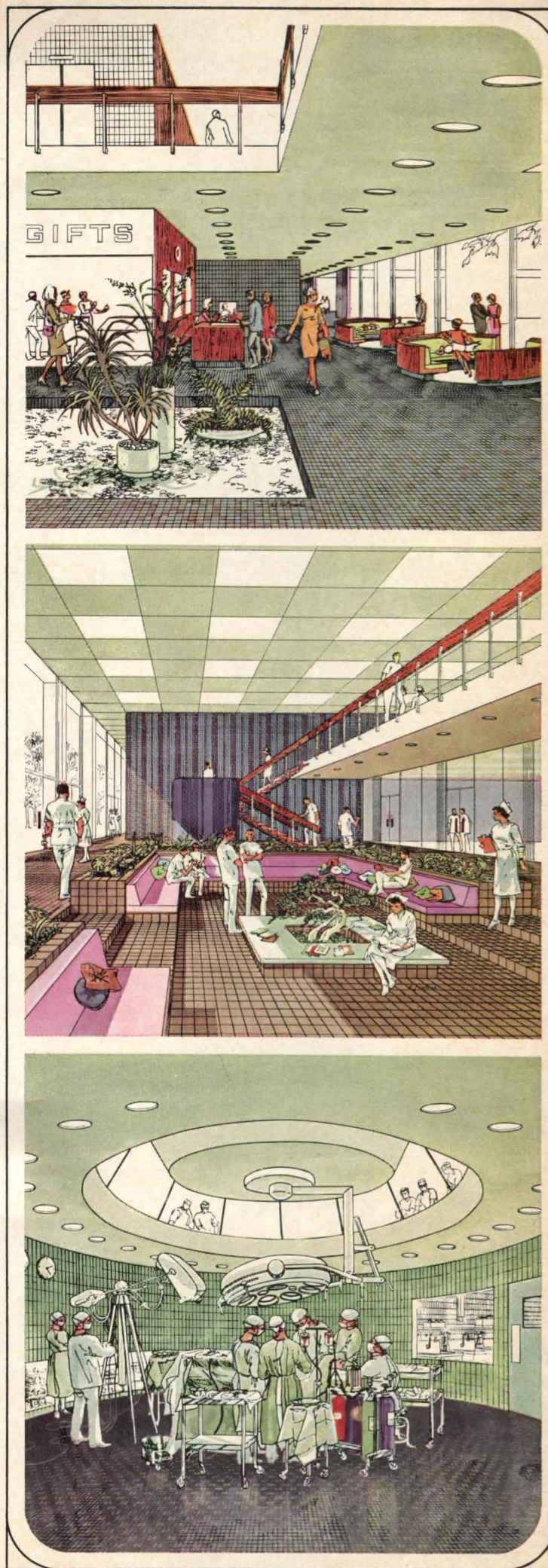
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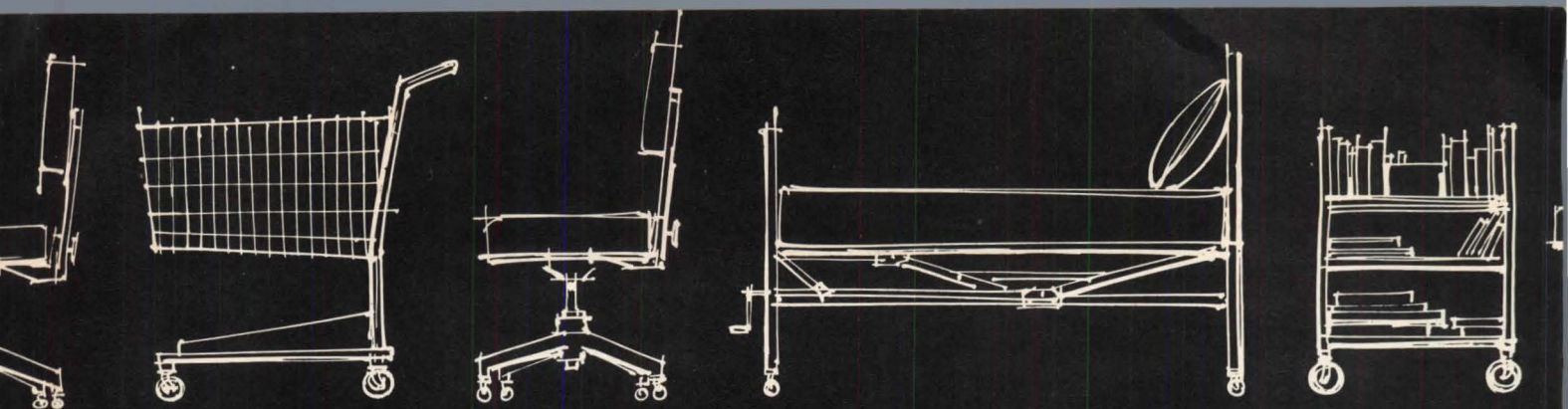
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Editors Note: Sometime ago Maurice Powell, Universal Carpet Service, Detroit, Mich., contacted us about carpet going into several Ford Buildings in Dearborn, Mich., the first of what has become a continuing contract. The job called for carpet from that would provide a firm enough surface to permit free movement of cars, wheel chairs and the like without the use of special wheels or casters. The carpet for the installation was of a tightly constructed fiber with double jute back. The procedure developed by Powell was the giving directly to the floor to date several thousand yards have been put in by Powell's method.

Word has gotten around the country about the method for this particular work, with many questions received by the editors of Installation Specialist from readers. We want to Powell and asked him to spell out the procedure published here. Keep in mind that it is a procedure developed to do a special job for the customer and to meet the special requirements of the installation. We advise you to check with your producer before attempting

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Mr. Powell said that the new method is a great improvement over the old method of using a cushion back on the carpet.

Left, from Installation Specialist
Below, from Floor Covering Weekly

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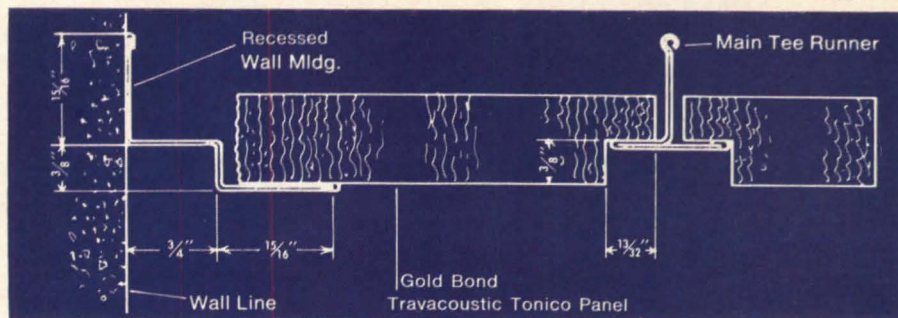


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This research center's roof is "painting" itself



The Battelle Research Center, Seattle, Washington. Architects: Naramore, Bain, Brady & Johanson, Seattle, Washington.

This research center in Seattle stands in the center of a residential community, and is designed to be compatible with the surrounding area. Its outstanding feature is the roof which is made entirely of bare USS COR-TEN High-Strength Low-Alloy Steel. As COR-TEN Steel weathers, it "paints" itself with an attractive, dense, tight oxide coating that retards further atmospheric corrosion. If it is scratched, it heals itself, and the longer it weathers, the better it looks.

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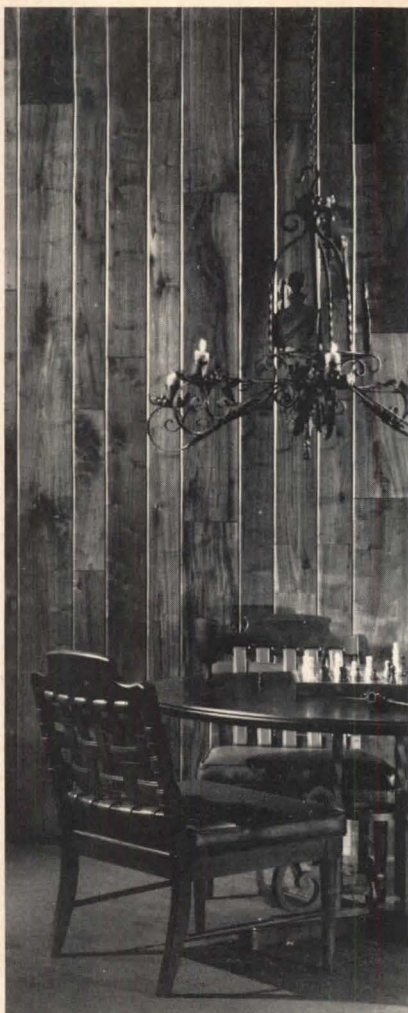
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Continued from page 264

indeed constructed on geometric principles. It often seems that the proponents of such theories would be rationalizing their views. However, Tons Brunés gives an excellent case for the role of geometry in works of art of all sorts. He shows, too, that the development of our Arabic numeral system was also on geometric lines, as was the alphabet used by all in the Western world.

The game of chess is also discussed, as well as the standard size of writing paper now in use in Europe. In all spheres of life, says Brunés, is that connecting thread, ancient geometry, which is the key that opens many different doors and permits us to discover what lies behind.

Art Talk for Architects

BY WALTER KIDNEY

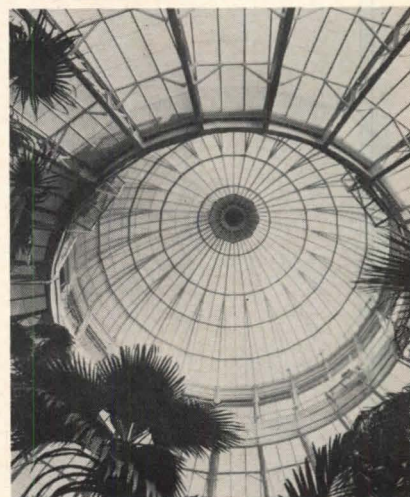
HYDRA: A GREEK ISLAND TOWN. *Constantine E. Michaelides. The University of Chicago Press, 5750 Ellis Ave., Chicago, Ill., 1967. 94 pages, illus., \$10.50. The reviewer is an Associate Editor of P/A.*

On the positive side, this is a well-illustrated study in urbanism of the sort that has become pleasantly familiar in the last few years. After giving background information on history, trade, and so on, the book goes on to discuss the formal character of the town of Hydra and of its individual components, with a coordinated presentation of plans and photographs to explain matters. This is to the good; a Greek island town is not a very direct precedent for planning a modern neighborhood, given our conditions of traffic, policing, and public sanitation (the streets of Hydra are very clean); still, one can look at all those laboriously paved, white-washed, in-and-out little alleyways and dream.

The text of the book, however, suffers in two ways. First of all, the historical background is presented in unnecessary detail. Such background is important, but a summary of the facts would have been quite adequate, and the space saved could have been used perhaps for more pictures of random places around the town. Secondly, the text suffers from the architectural equivalent of art talk. Instead of saying, for instance, that the outer openings of a certain row of houses are purely functional in their size and placing, the author comes at us with: "Windows and doors are punched through the house façades in an irregular pattern. The size of these openings responds to technical considerations (introduction of natural light, ventilation, ther-

Continued on page 300

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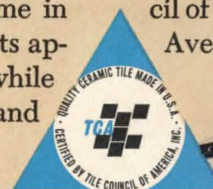
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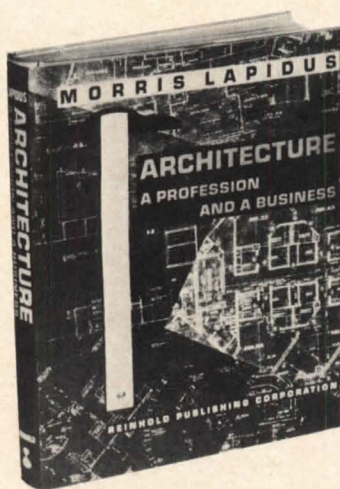
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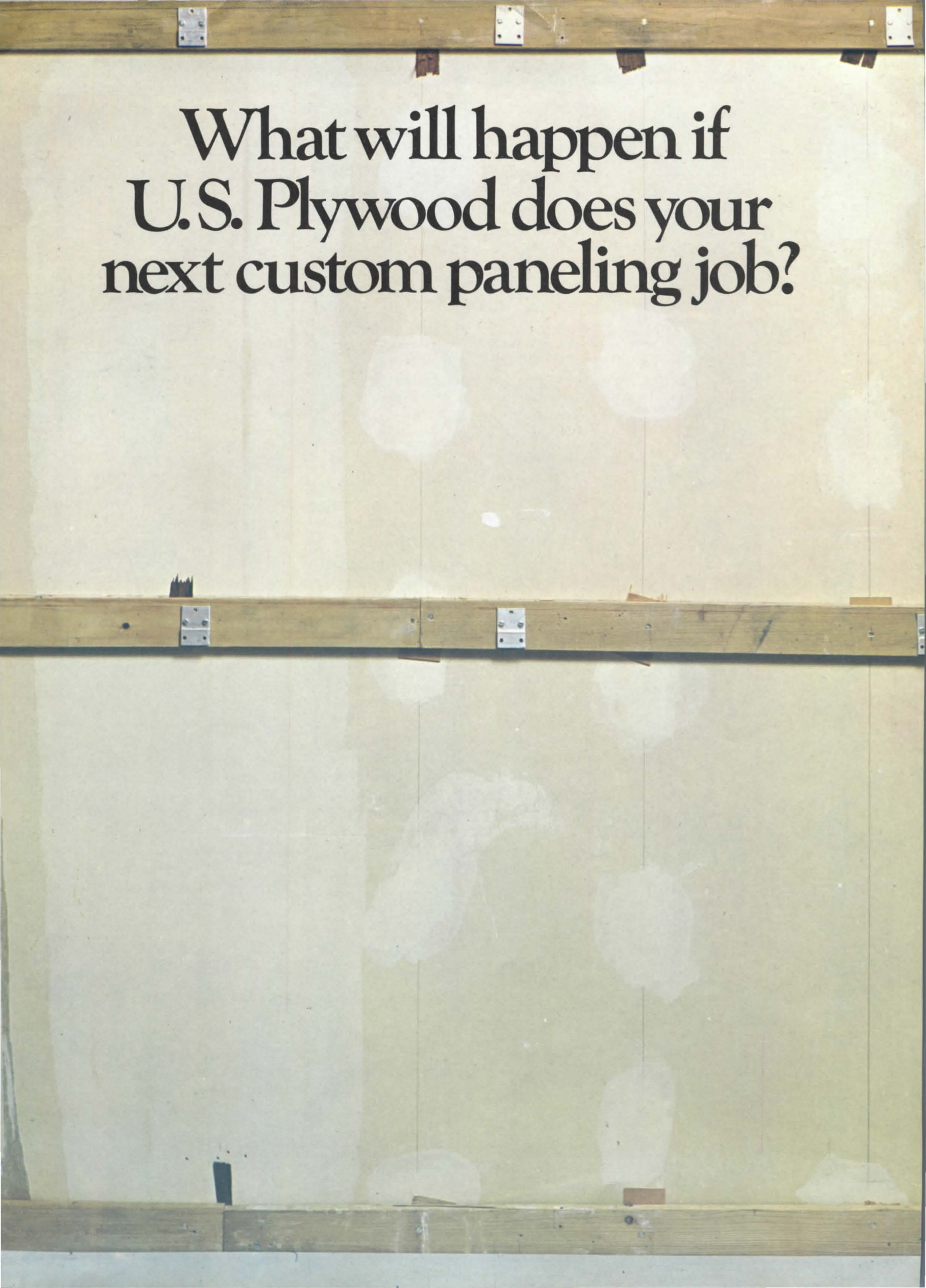
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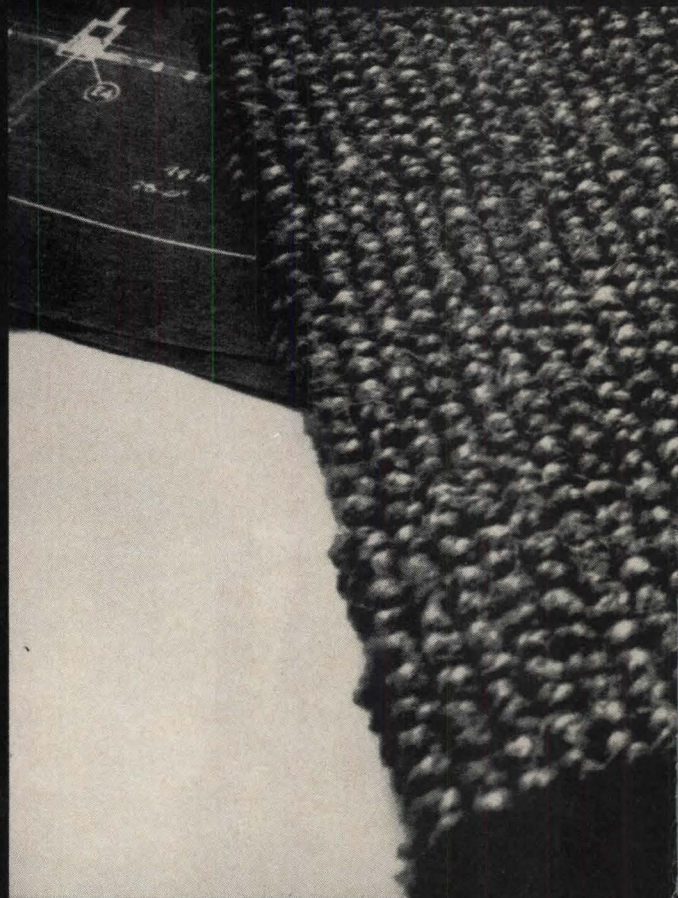
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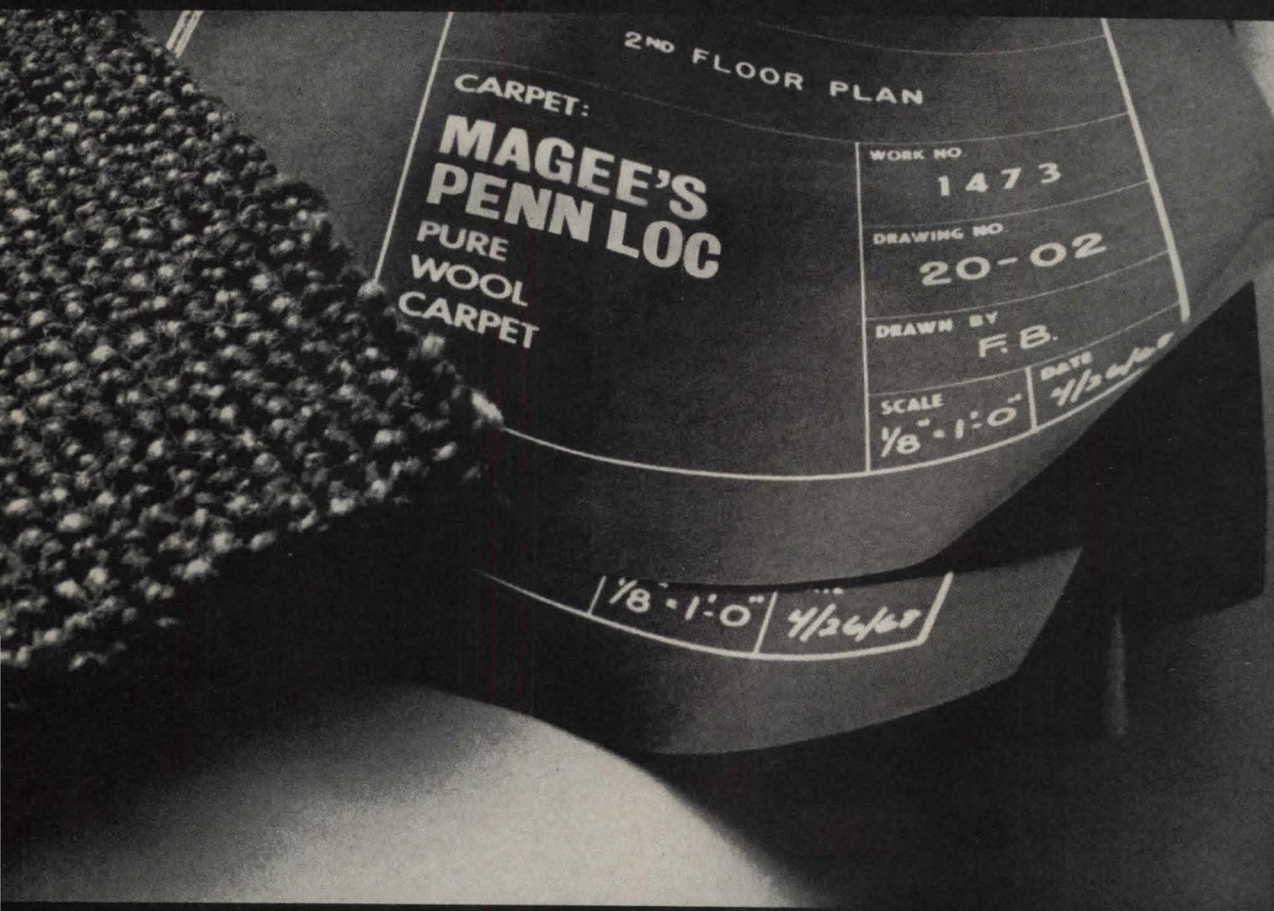
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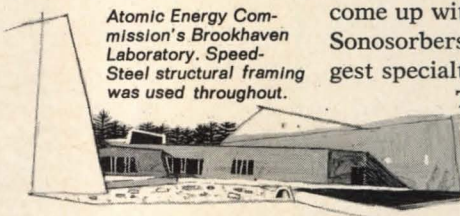
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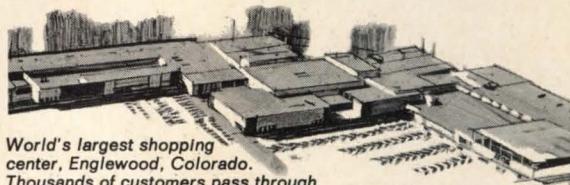
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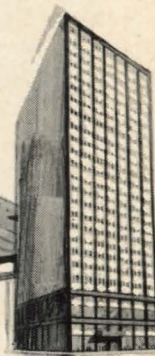
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Continued from page 286

mal insulation, available materials of construction, and so forth). Both the size and the location of the openings conform to the traditional requirement for a monolithic and continuous façade, which in this case enhances the concept of the enclosed architectural space."

Now, most windows are pierced to admit light and air; nobody builds with unavailable materials; and, in areas with a strong building tradition, it is the buildings that *do not* conform to the tradition that want singling out. Perhaps this is carping, but it does seem to me that the text lets the visual material down a little.

NOTICES

New Branch Offices

THE JAN BERGENDAHL FELLOWSHIP, Architects and Designers, whose main office is in Sweden, has opened new offices at 1408 S. Bayshore Dr., Miami, Fla. 33331.

THE LEO A. DALY COMPANY, Architects, Engineers, Planners, Omaha, Neb., has opened a second office at 1025 Connecticut Ave., N.W., Washington, D.C. 20036. The firm has appointed JAMES M. INGRAM, JR., assistant to the executive director of the Omaha office.

ECKBO, DEAN, AUSTIN & WILLIAMS, Landscape Architects, San Francisco, Calif., announce the opening of a branch office at 1649 Kapiolani Blvd., Honolulu, Hawaii.

New Addresses

HAROLD LEWIS MALT ASSOCIATES, INC., Industrial Designers, 1049 Thomas Jefferson St., N.W., Washington, D.C. 20007.

EWING MILLER ASSOCIATES, Architects and Engineers, Planners, 788 S. Third St., Terre Haute, Ind.

THE PERKINS & WILL PARTNERSHIP, Architects/Engineers, 1 N. Broadway, White Plains, N.Y.

RICHARD D. WALKER, Architect and Engineer, 154 E. 9th St., Durango, Colo. 81301.

New Firms

OFFICE OF RICHARD BERGMANN, Architect, 112 Main St., New Canaan, Conn. 06840.
KARSON BESINGER & ASSOCIATES, Architects and Planners, Carpentersville, Ill. 60110.

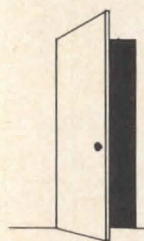
ENVIRONMENTAL PLANNING & RESEARCH, INC., Architects and Planners, Fine Arts Bldg., Suite 911, 410 S. Michigan Ave., Chicago, Ill. 60605.

ISAIAH EHRLICH, Architectural Consultant for Planning Hospitals and Related Facilities, 25 W. 43 St., New York, N.Y. 10036.

ROE ASSOCIATES, Architects and Engineers, 700 Kinderkamack Rd., Oradell, N.J.

ARMANDO Q. ROLLOLAZO, Architect, 1537 21 Ave. S., Seattle, Wash. 98144.

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Where should the



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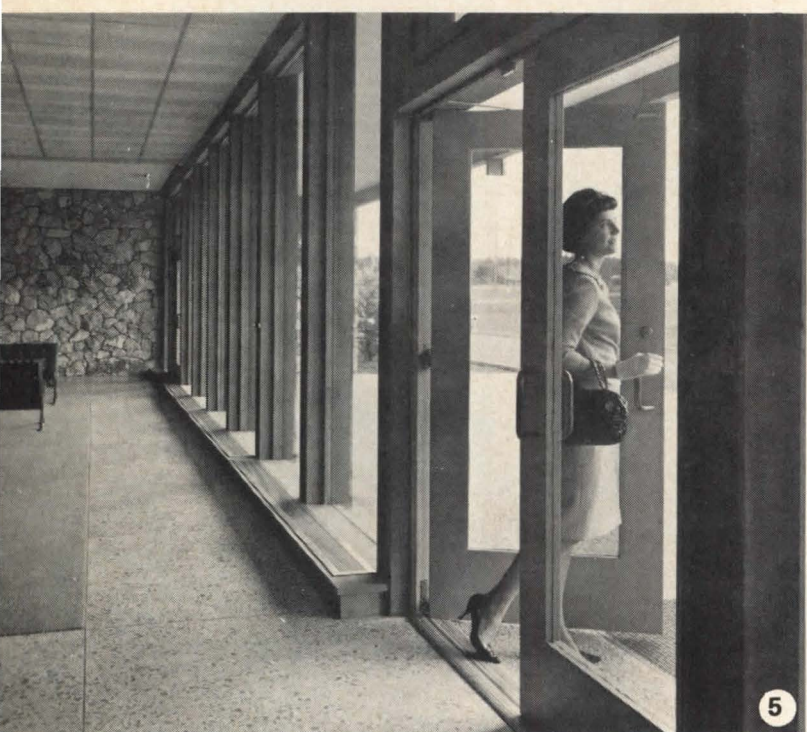
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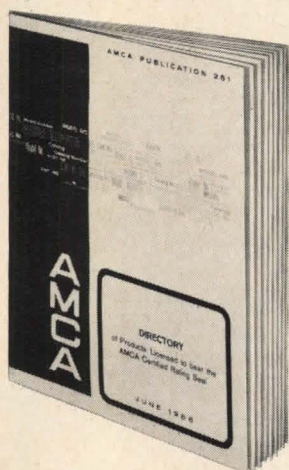
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Continued from page 300

STEVENS AND MCCOY, Consulting Engineers, 928 Penn Ave., Wyomissing, Pa.

New Partners, Associates

LEE CRABTREE ASSOCIATES, Architects, Hartford, Conn., announce that JAN BENDETSON has become an associate in the firm.

KAHN & JACOBS, Architects, New York, N.Y., have admitted IRVING H. KAPLAN to general partnership in the firm.

RICHARD C. MARSHALL & CHESTER BOWLES, JR., Architects, San Francisco, Calif., have named RICHARD S. TERAMOTO an associate in the firm.

PANCOAST/FERENDINO/GRAFTON, Architects, Miami, Fla., announce the election of four new associate partners: EDGAR BALDWIN, JORGE L. DELGADO, JOSE FEITO, and J. BRUCE SPENCER.

PARSONS, BRINCKERHOFF, QUADE & DOUGLAS, Consulting Engineers, New York, N.Y., have named three new associates. Those named are JAMES G. BOYD, PAUL F. BRAUTIGAM, and JOSEPH GOLDBLOOM.

ROGERS, TALIAFERRO, KOSTRITSKY, LAMB, Architects and Planners, Baltimore, Md., have made TED A. NIEDERMAN an associate in the firm.

SAUER & DEVITO, Architects and Planners, Philadelphia, Pa., announce the appointment of LYNN CHARLES TAYLOR as an associate in the firm.

TARAPATA-MACMAHON ASSOCIATES, INC., Architects, Engineers, Planners, Bloomfield Hills, Mich., have appointed MARION F. YUHN, R. JEROME CHAMBERLAND, and FRITZ K. HOMANN associates in the firm.

Elections, Appointments

ALEXANDER & MOSKOWITZ, INC., Planners, New York, N.Y., announce that DAVID MALAMUD has joined the firm as Senior Planner and Urban Renewal Director.

BOLT, BERANEK & NEWMAN, INC., Acoustical Consultants, Van Nuys, Calif., have appointed RONALD L. MCKAY as associate manager for architectural acoustics in their Los Angeles, Calif., office.

CANDEUB, FLEISSIG & ASSOCIATES, Planning Consultants, Newark, N.J., have named FRANCIS S. NOONAN as program specialist in the Hartford, Conn., regional office.

COMMONWEALTH ASSOCIATES, INC., Architects, Engineers, Planning Consultants, Jackson, Mich., announce that JAMES M. HENDERSON has become manager of utility planning in the Systems and Consulting Engineering Division.

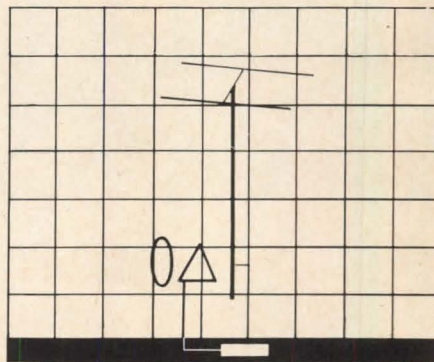
THE GEORGE M. EWING COMPANY, Architects, Engineers, Planners, Philadelphia, Pa., has named ABBOTT W. THOMPSON to the position of design architect in the firm's headquarters.

GIFFELS & ROSSETTI, INC., Architects and Engineers, Detroit, Mich., has appointed ROBERT L. PETTERSON head of its specifications department.

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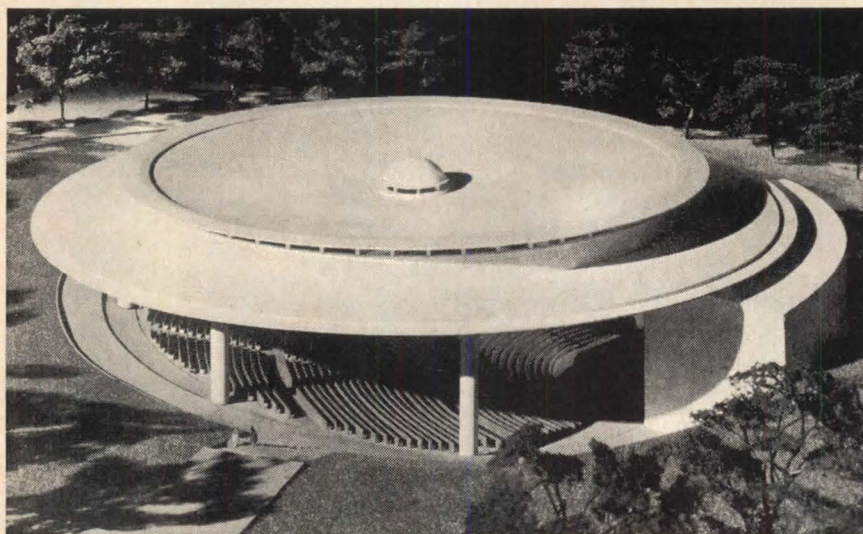
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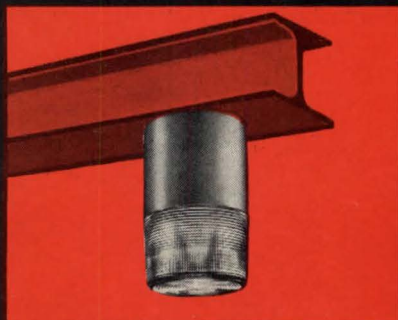
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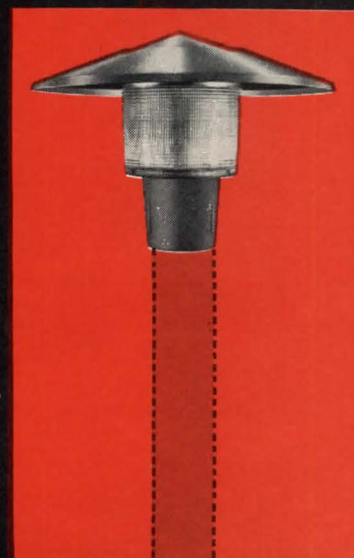
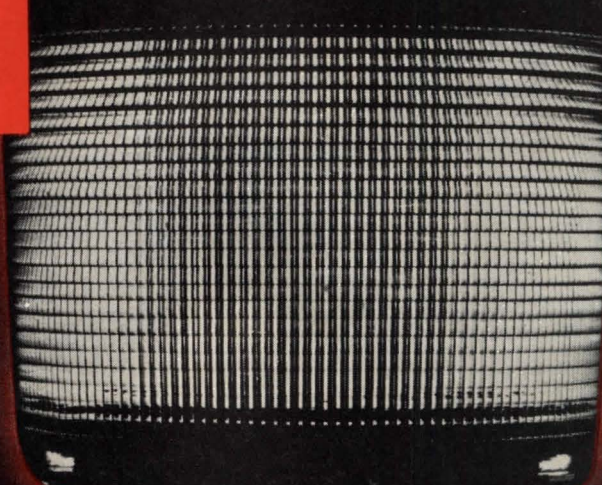
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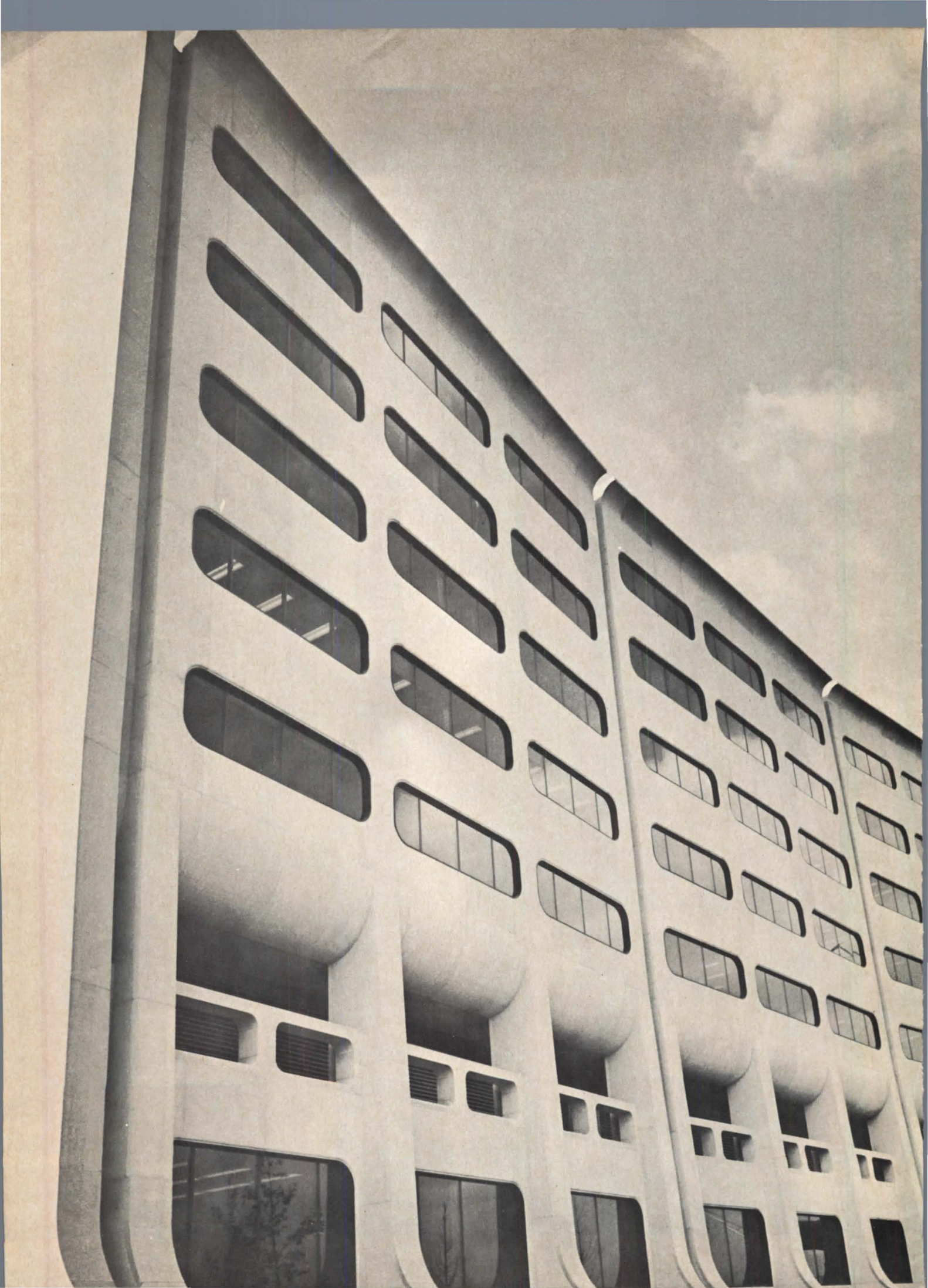
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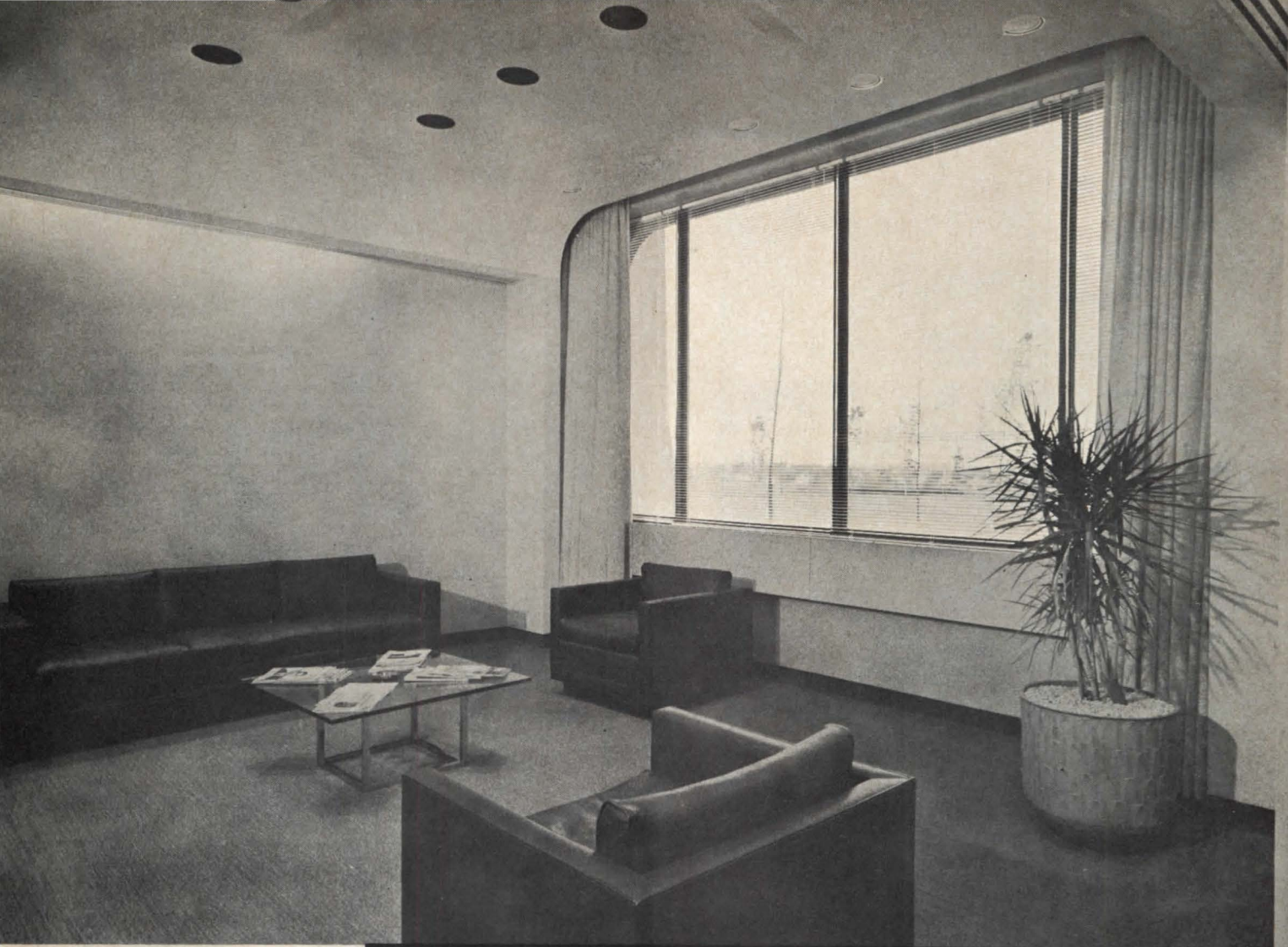


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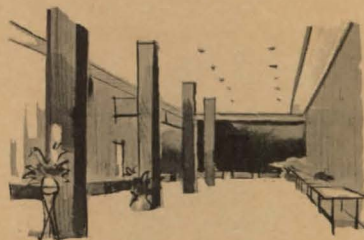
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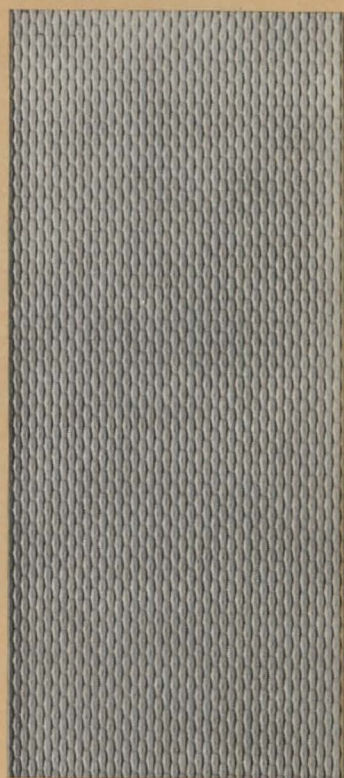
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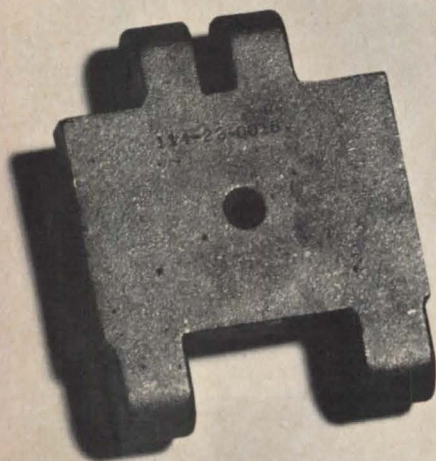
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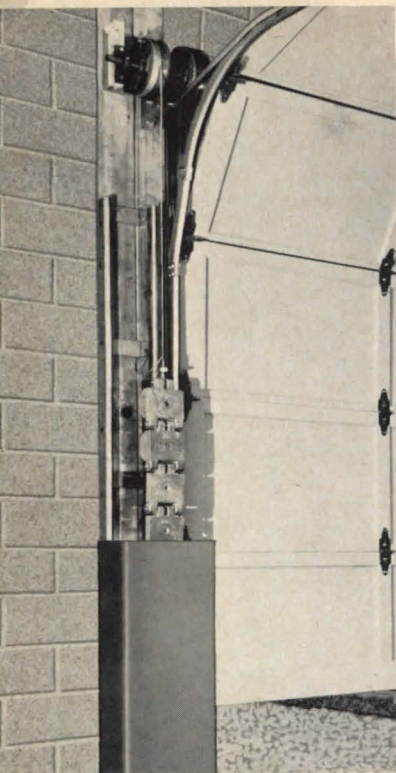
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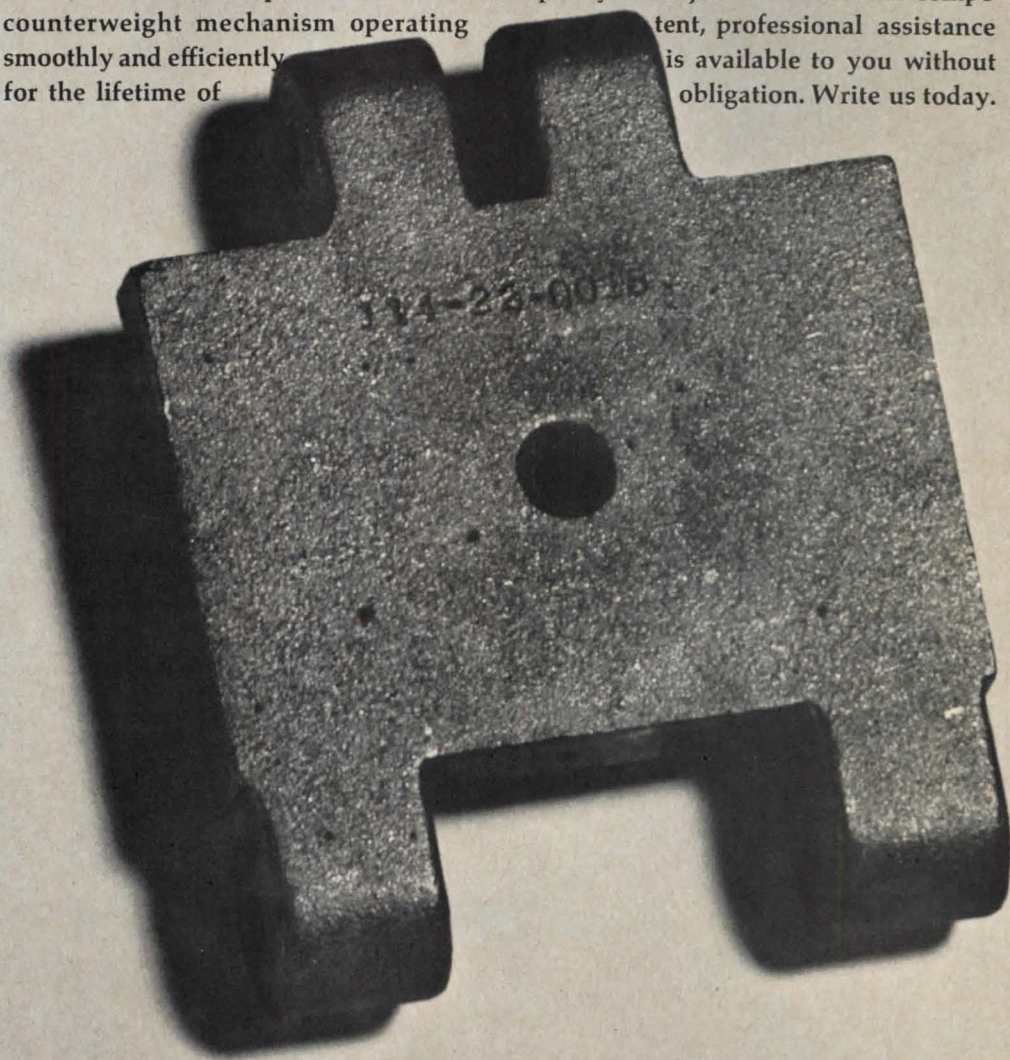
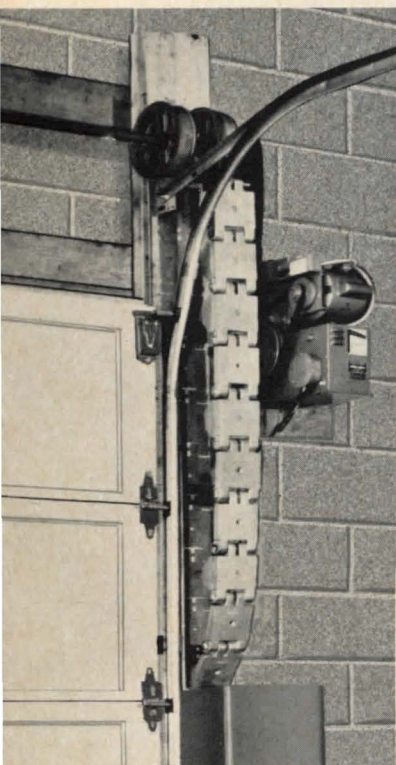
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**In some places,
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These eerie excavations are actually the entrances to ancient underground dwellings—still in use—in Siwa, Egypt.

The grassy mound at right is Philip Johnson's contemporary art gallery in New Canaan, Connecticut.

Worlds apart in time and space, they seem somehow similar. Merely an interesting architectural parallel? Or are both expressions of an underlying human need to be enclosed and insulated by the earth?

These "buildings"—and the questions they raise—were part of a special report on "The Earth" that appeared in a recent issue of *Progressive Architecture*. In this report, P/A editors exhaustively examined man's relationship to the earth—and the earth's relationship to architecture.

They outlined the history of excavation and reclamation. They explored the attitudes toward the earth of various architectural "schools"—dig *into* it versus build *on* it versus rise *over* it. They probed the moral, esthetic and economic implications of drastically altering the landscape. And they capped it all with a round-table discussion by prominent architects.

To prepare this 60-page, 40,000-word report, P/A editors spent three months just digging. They searched out, organized and interpreted material from dozens of sources.

They interviewed architects and builders.

They called on business and government experts.

They pored over thousands of photographs and drawings.

And they read literally millions of words about man's use and abuse of the land he lives on.

Digging like this is a way of life with P/A editors. It's part of P/A's in-depth editorial approach to major subjects of interest to architects.

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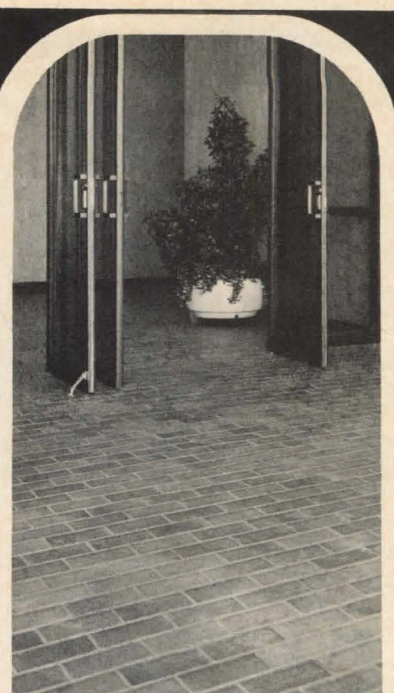
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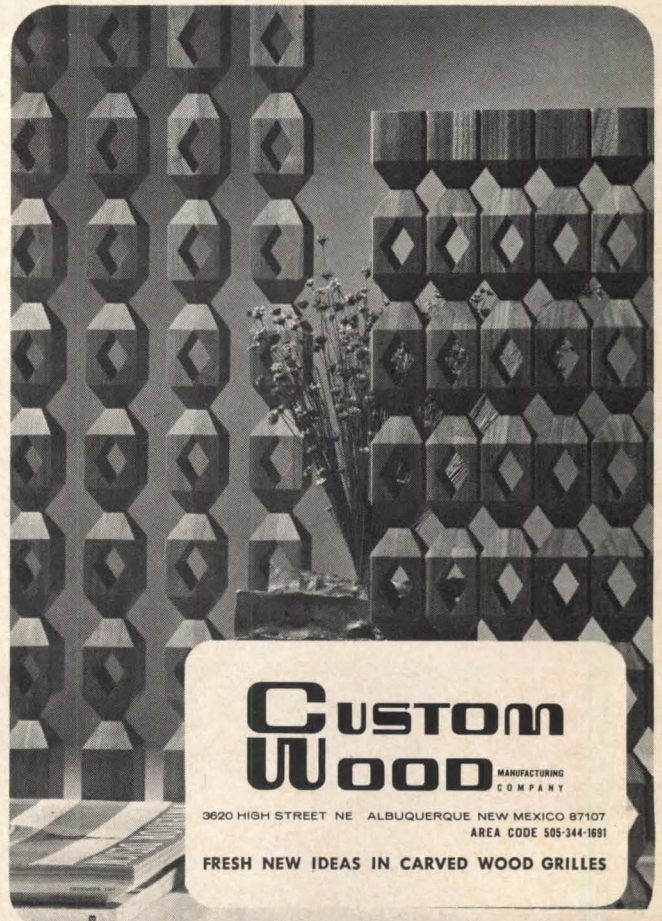
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