



Installation: Trans World
Airlines Executive Offices,
605 Third Avenue,
New York City

Designers: Leonard,
Colangelo and Peters,
New York City

Building Architects:
Emory Roth & Sons,
New York City

Floor shown: VP-624
Smoky Onyx

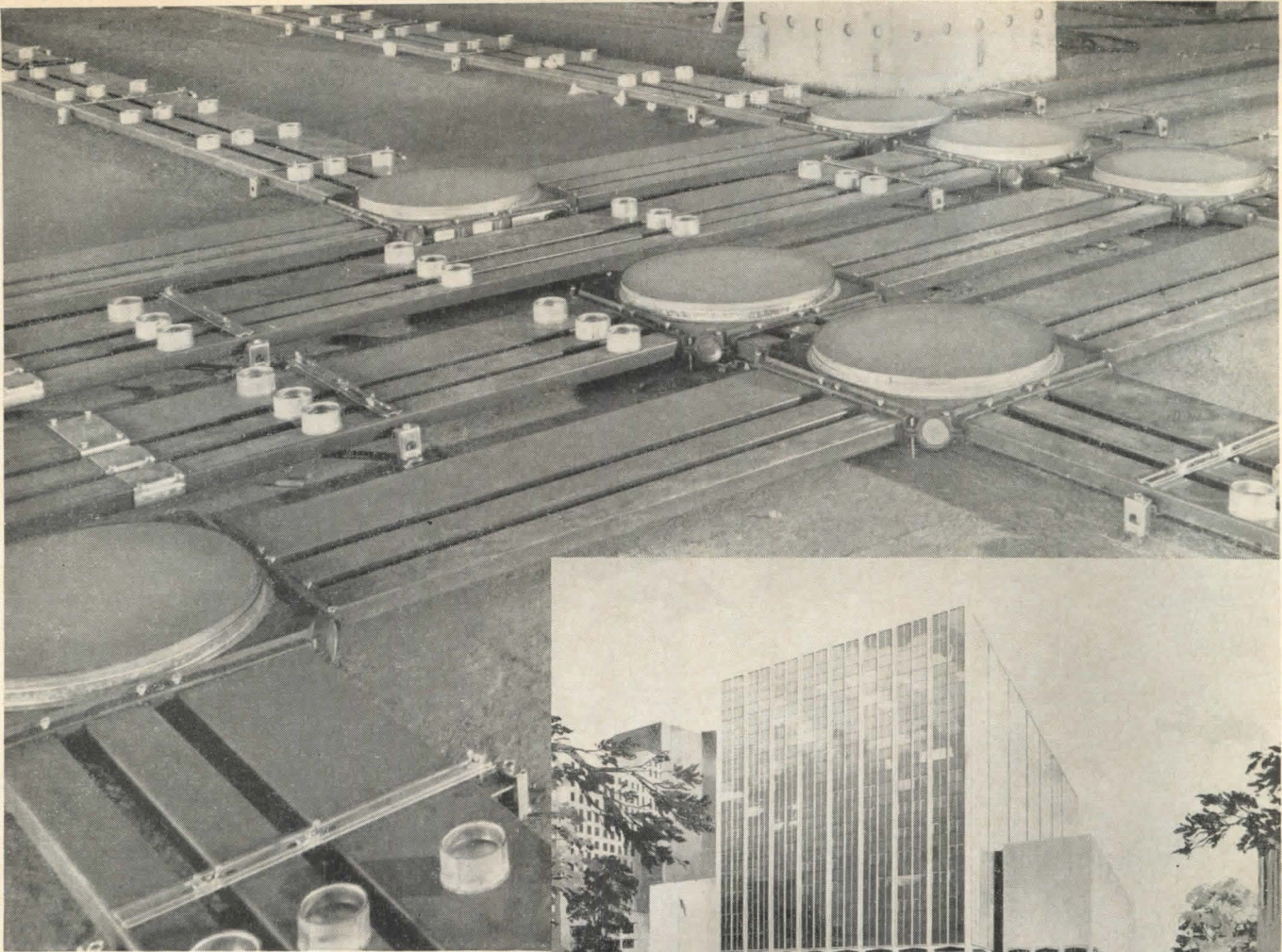


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Progressive Architecture® November 1966

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A monthly service to P/A readers who desire additional information on advertised products and those described in the News Report, who wish to order Reinhold books, or who want to enter their own subscriptions to P/A.



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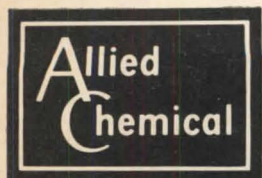
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VIEWS

The Establishment: Unkissed by Age

Dear Editor: I was both amused and disappointed after reading the title page comments of Benjamin Thompson and Jan Rowan's Editorial in the AUGUST 1966 P/A.

Their message seems to turn on the rather astounding notion that the "philosophy of the teenyboppers" and their

"cool, with-it, way-out life" is somehow a cleansing tide that will wash over us, clearing away all dreary inhibitions, and leave us once again bare in the sunlight of innocence. I fear these gentlemen have fallen prey to the Cult of Youth, presently flowering in entertainment, fashion, and soda-pop ads. We have always had the frothy titillation of youthful antics: bobbed hair and bathtub gin; bobby-sox and big bands. Some kinds of fun are merely more fashionable and appealing than others.

Yet since when has the realm of "sen-

sual wholeness" been confined to the young generation, and since when has the "new wave of ideas" flowed only from the "ppy, poppy . . . wiggling rock-and-roll joints"? No wonder that these joints seem incredibly vital and vivid when compared to the dull ritual of overblown conferences. However, is it not possible that one mistakes the foam of fashion for the stuff of creativity? It is awareness of all the senses in genuine unself-consciousness, regardless of locale or generation, that is at the root of "wholeness." Neither conferences nor dis-cothèques add one wit. And it has always been this wholeness, this attempt to divine one's roots in the earth, that has generated the creativity of saints and sages and sculptors alike.

Since I myself reside within the gilded halo of the "way-out" generation, I am only too well aware of the inhibitions passed on to us. I am equally aware of the legacy created by the "original avantgardists" who now are labeled The Establishment and dismissed. These men are perhaps old today; that is merely time touching them. Much of their work however, remains unkissed by age. And after the giving and the getting, my generation must choose between the fruit of creativity and the pap of Pop Kulch. Those gifts we choose and those we create ourselves shall then be the measure of our time.

Youth does not belong to us any more than it does to our fathers or to our sons. Wholeness, on the other hand, belongs to those who will cultivate it.

Under 25, way-out, and wiggling,

KEN RICCI
New York, N. Y.

Aspen Conference: An Elusive Success

Dear Editor: Concerning the International Design Conference in Aspen, Colorado (p. 72, AUGUST 1966 P/A):

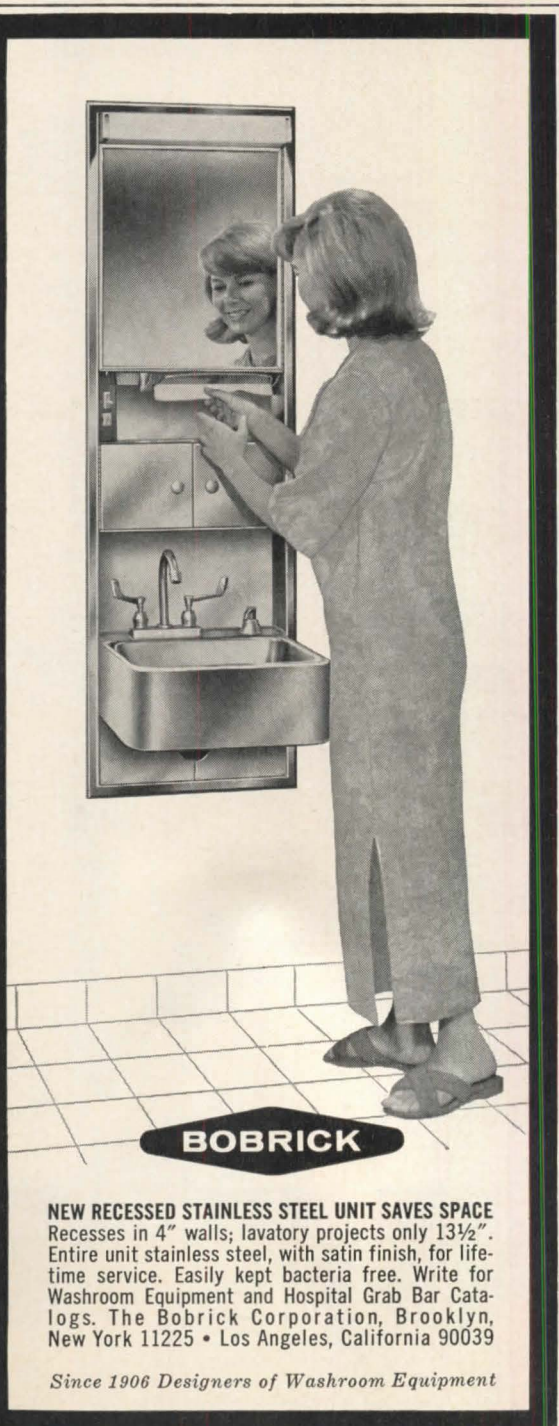
Kaufmann: "There is no such thing as beauty without ugliness." *Banham*: "Let's put birds back into orbit." *Moldonado*: "Theory of reducing design to research is self-defying." *Lionni*: "We must refuse to act in situations that we do not fully understand." *Dreyfuss*: "A good designer reveals the subject and conceals the artist." *Henry Wolfe*: "Dentists don't have such conventions as this. . . . They don't try to fix the world; they fix the upper teeth." *John Cage*: "City planning is obsolete. . . . There is need for global planning." *Gyorgy Kepes*: "Confess and profess . . . but do not claim a universal validity." *Thompson*: "Our functionalism only

Continued on page 11

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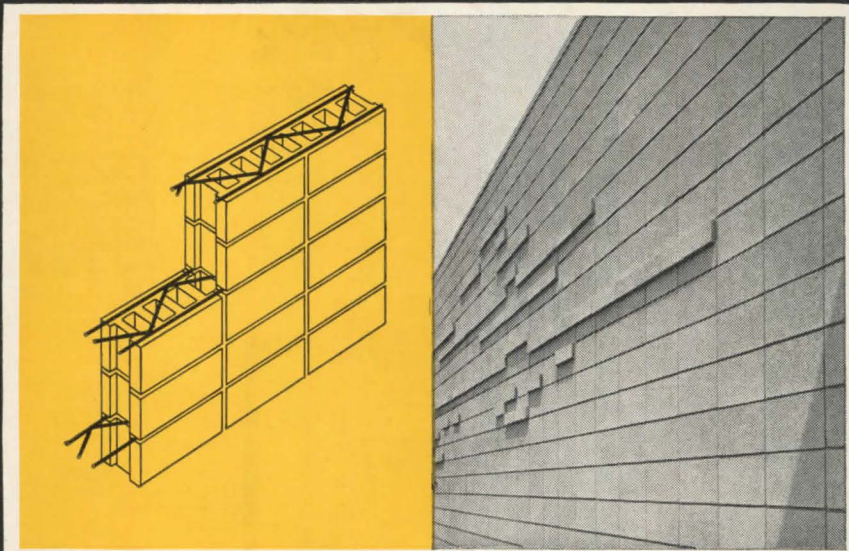


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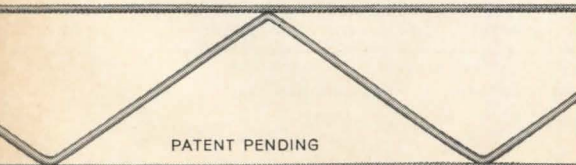
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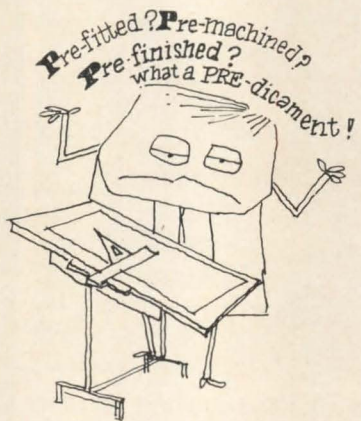
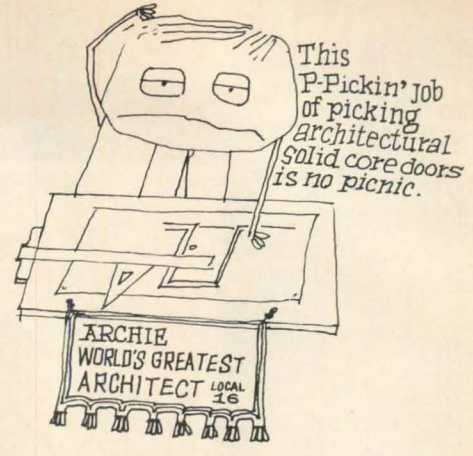
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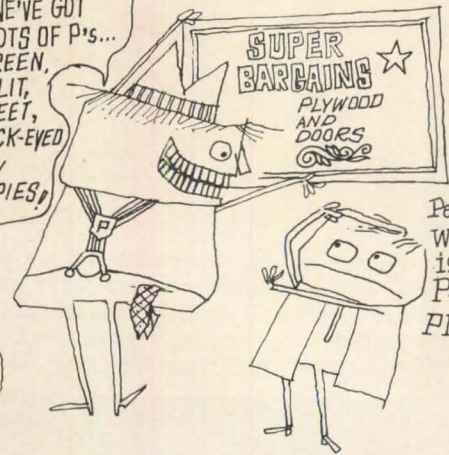
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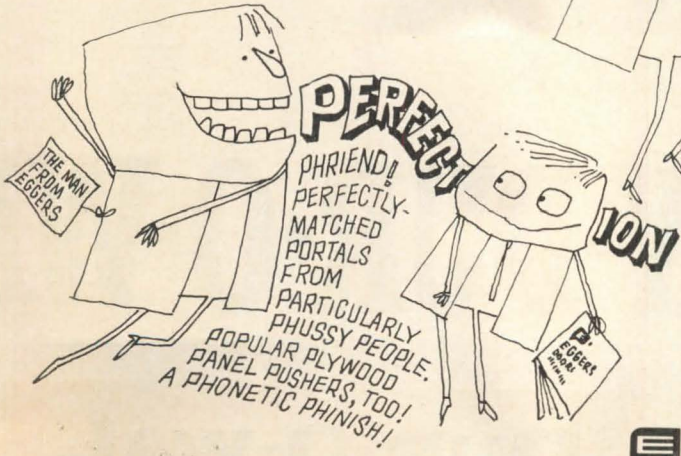
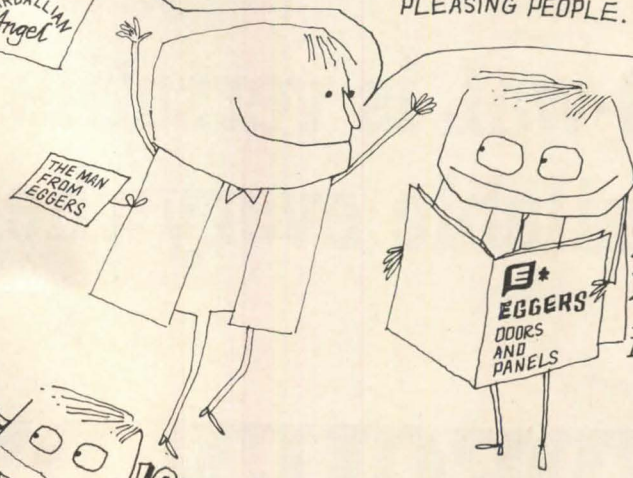
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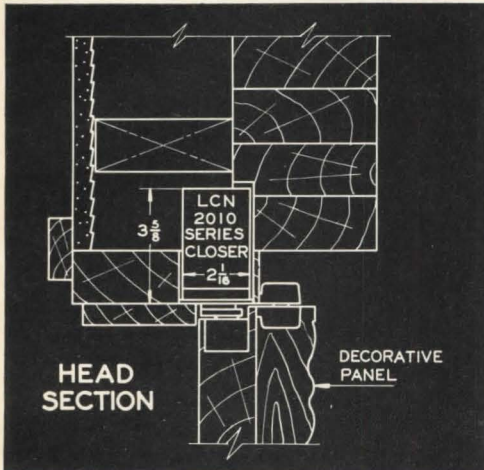
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1166

Continued from page 6

proves that we are properly toilet trained." Farson: "The quality of life is for the first time within our control." Yaacov Agam: "In art you see everything, but in reality your vision is limited." Ben Shahn: "Chaos is the poetic element in a dull and ordered world."

These were just a few thought-provoking statements from each of the speakers at the Aspen Conference. Certainly there were dull moments. Man just does not bristle with new ideas continuously. Yet to say that the avant-garde is the old guard completely out of touch with a new wave of ideas, as Jan Rowan did in his Editorial, is the admission that architecture is fashion design, which changes with each new hit song and each new Dior dress.

"'The Sources and Resources of 20th-Century Design' . . . were very much alive in the jazzy, oppy, poppy, relaxed and free atmosphere of the wiggling rock-and-roll joints," writes Rowan.

He confuses source (the original and ultimate cause) with the effect (the outward expression—oppy and poppy). He would be right if we were talking about the sources of 1966, but a span of 100 years should have a broader base for design than a teen-age craze that is admittedly refreshing but also very much of a passing thing.

The conference represented a conglomeration of thoughts, a search for artistic identity, with some of the swing design apparent; the modern native genius of the primitive Africans was just as vital as a pop film. The very reason for this difficulty in summing up of what was actually said is proof of its elusive success.

GEORGE A. HARTMAN

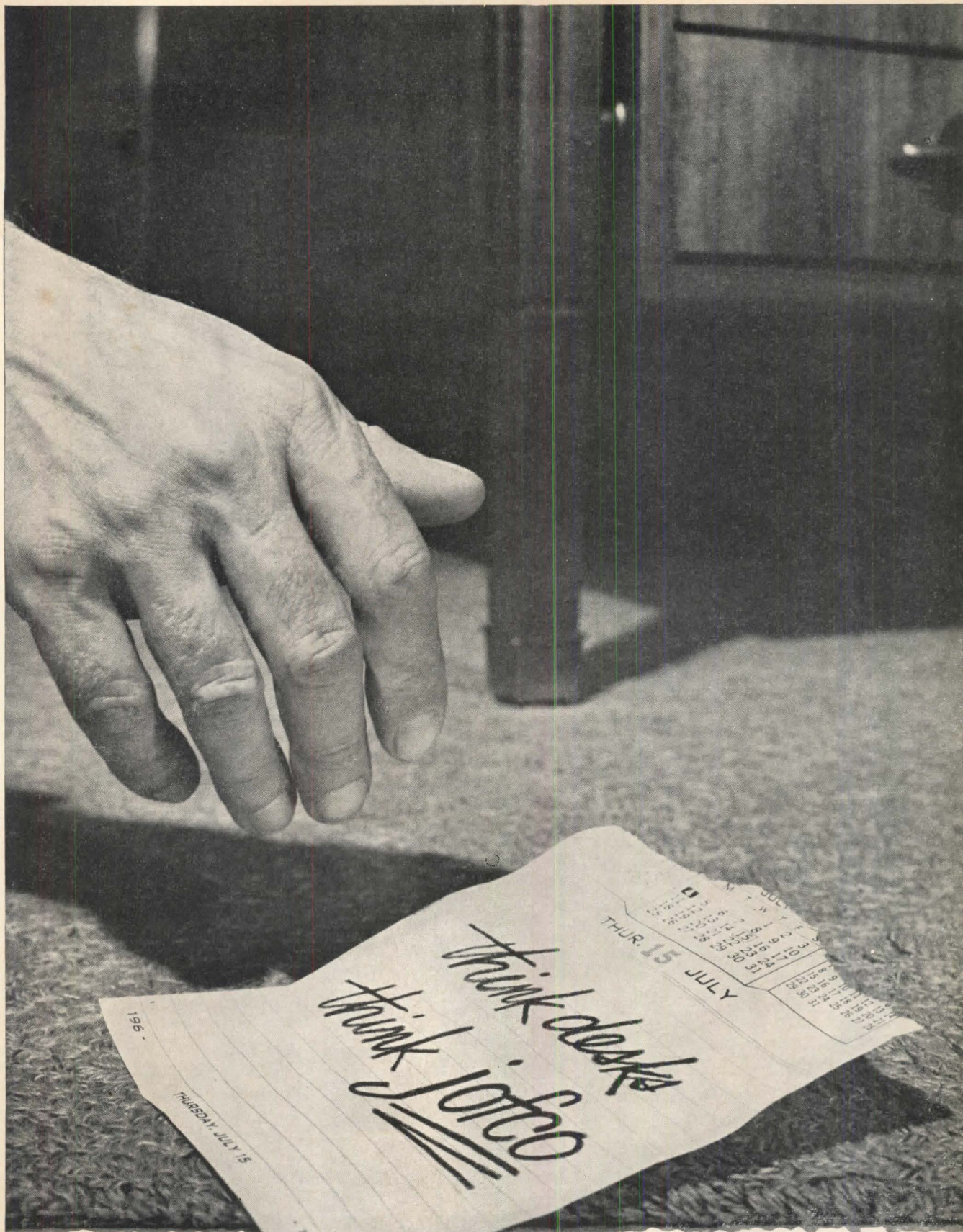
Friedrich Schiller Stirs in His Grave

Dear Editor: In your concluding comment on the work of "playscapist" M. P. Friedberg (p. 72, AUGUST 1966 P/A), you note that "Friedberg's philosophy of designing for play has an antecedent" in that turn-of-the-century British 'humanist' Friedrich Schiller, who once propounded: 'Man only plays when he is human in the full sense of the word, and he is only completely human when he is playing.'

May I deliver the source of one of my favorite quotations from the perils of dry wit, the British, and/or unwarranted quotation marks? It was German humanist (no quotes) playwright Friedrich

Continued on page 14

Views 11



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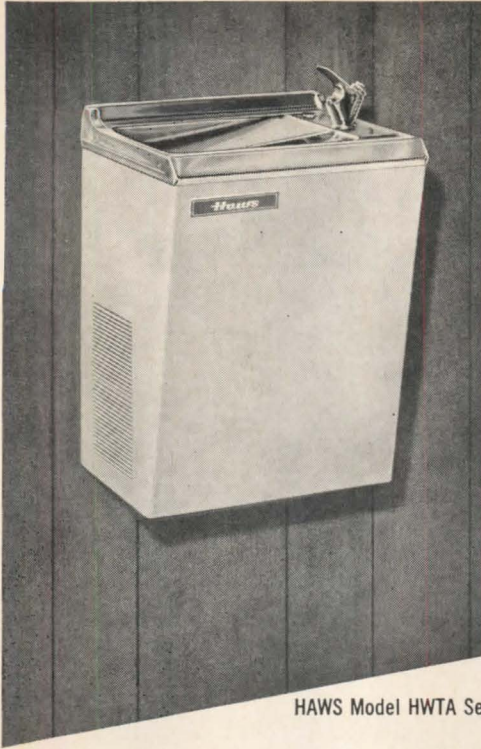
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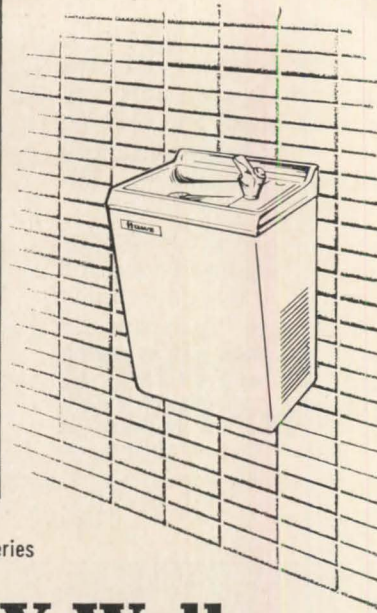
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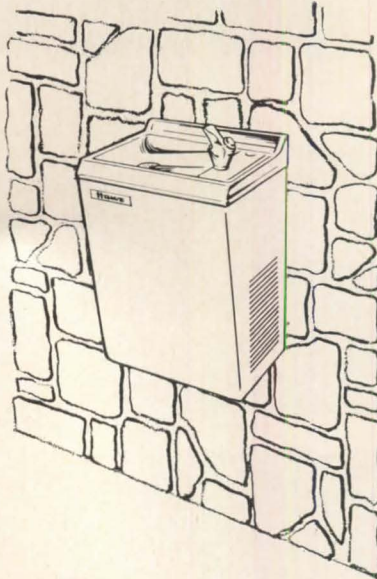


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Continued from page 11

Schiller who made the observation (in *Letters on the Aesthetic Education of Man*). And while he might have flourished at the turn-of-the-century, it wasn't at the turn of the last one.

RALPH WILCOXEN
University of California
Berkeley, Calif.

Landscape Architects Look at Buildings for Recreation

Dear Editor: We who are directly associated with recreation, and the subsequent changes its presence can exert on the landscape, remain impressed, as designers, by the concern P/A has shown through its article on "Buildings for Recreation" (JULY 1966 P/A). Even though the feature's scope is limited to major architectural elements and does not include the minor—only in size and function relative to the feature's content—and more utilitarian recreational architecture, the subject deserves applause. The amounts of land necessary for a viable recreational facility fluctuate, depending upon population pressure and land availability. However, this variance in size should in no way limit the quality of architecture in the development plan. Regardless of a project's scale, these man-made elements are by their nature obvious intruders and have therefore the same potential of imposition on the landscape. Visitors readily identify themselves with these objects in the landscape, chiefly because these elements usually serve extremely necessary (utilitarian) roles in the function of the recreational development plan (i.e., entrance and comfort stations, snack shops, dressing rooms). The structures used are often minute compared to the total use areas involved (camping, swimming, parking, picnicking, boating, etc.) but are, in fact, because of their obvious presence, gigantic in terms of visual effect.

We continue to be impressed with some architectural design solutions, as those shown by P/A, which would be, by their presence, an addition to the visual continuity generated by any recreational facility. Yet we are chiefly concerned with architectural solutions seen in large state and Federal projects (including highways). Projects whose daily use amounts are gigantic. Projects in which structures are few in number and generally utilitarian in concept. Projects that seem directed by architectural administrators rather than

Continued on page 24



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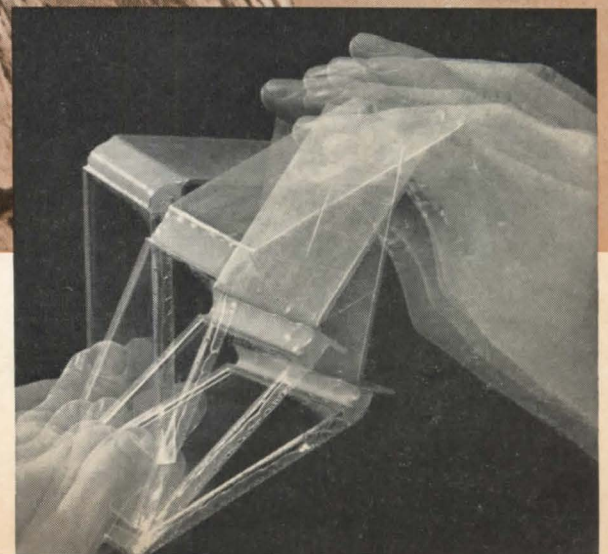
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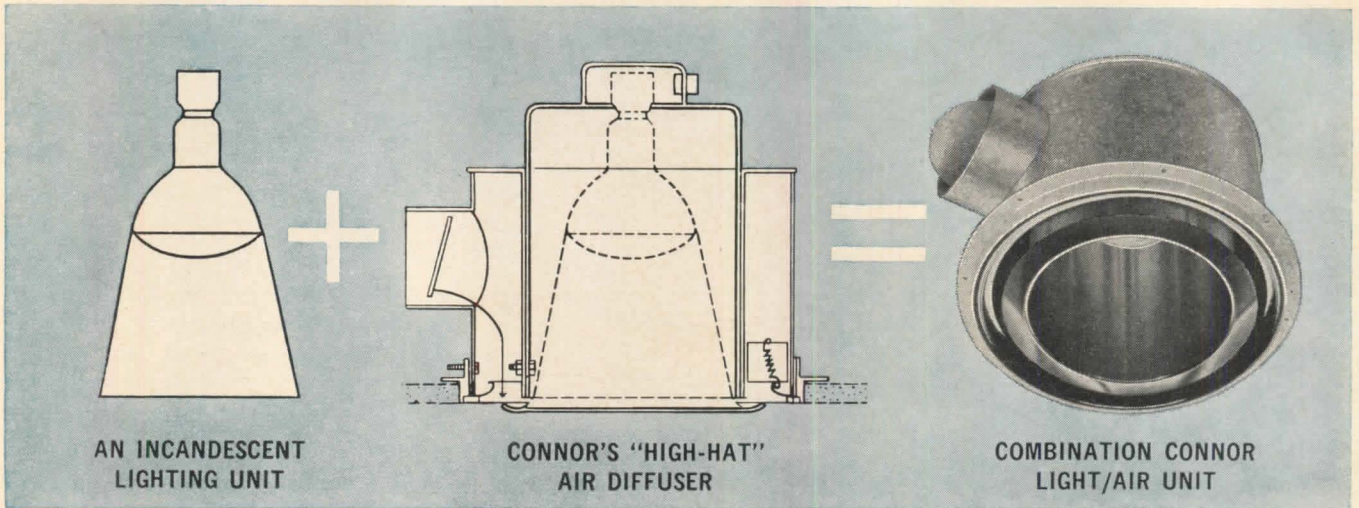


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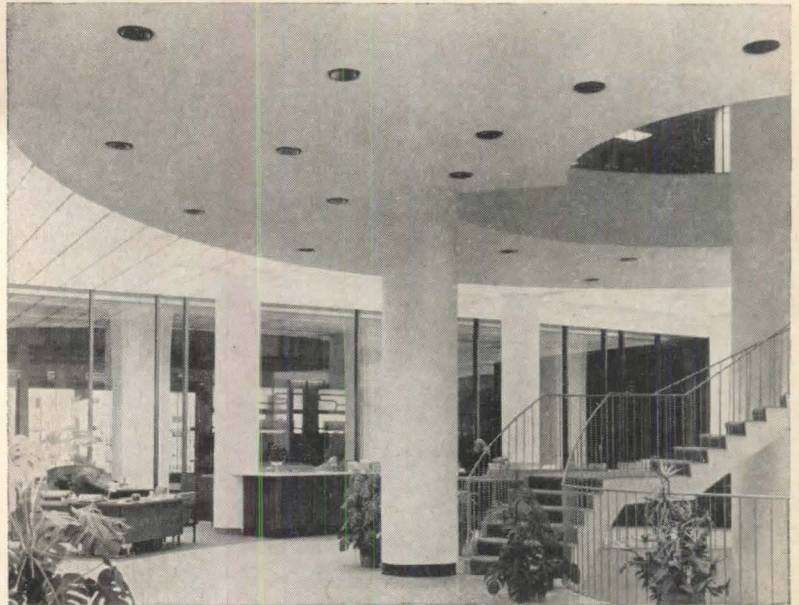
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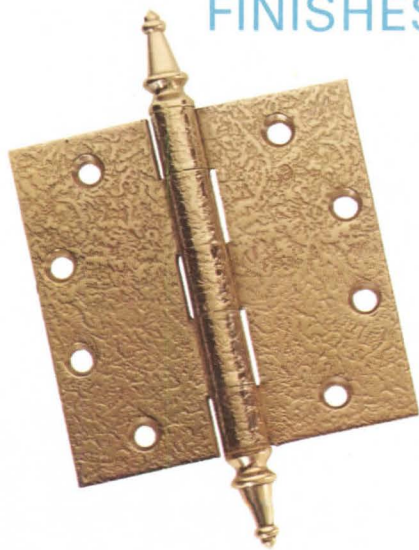
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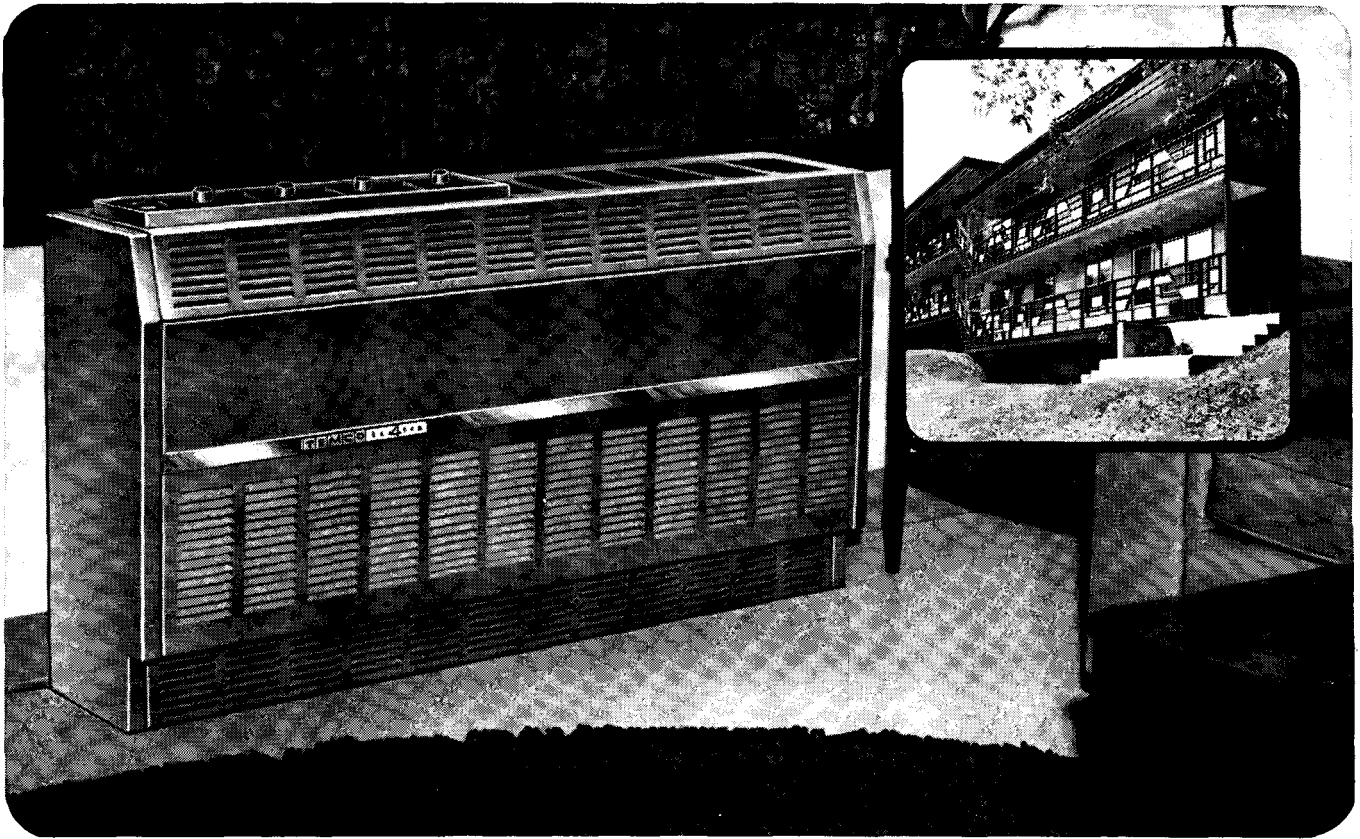
French Classic Bishop Acorn Castle Byzantine Lancer Cathedral Crown Dorian

End embellishment for Brasscraft, the heavy gauge hinge of solid brass by Hager.

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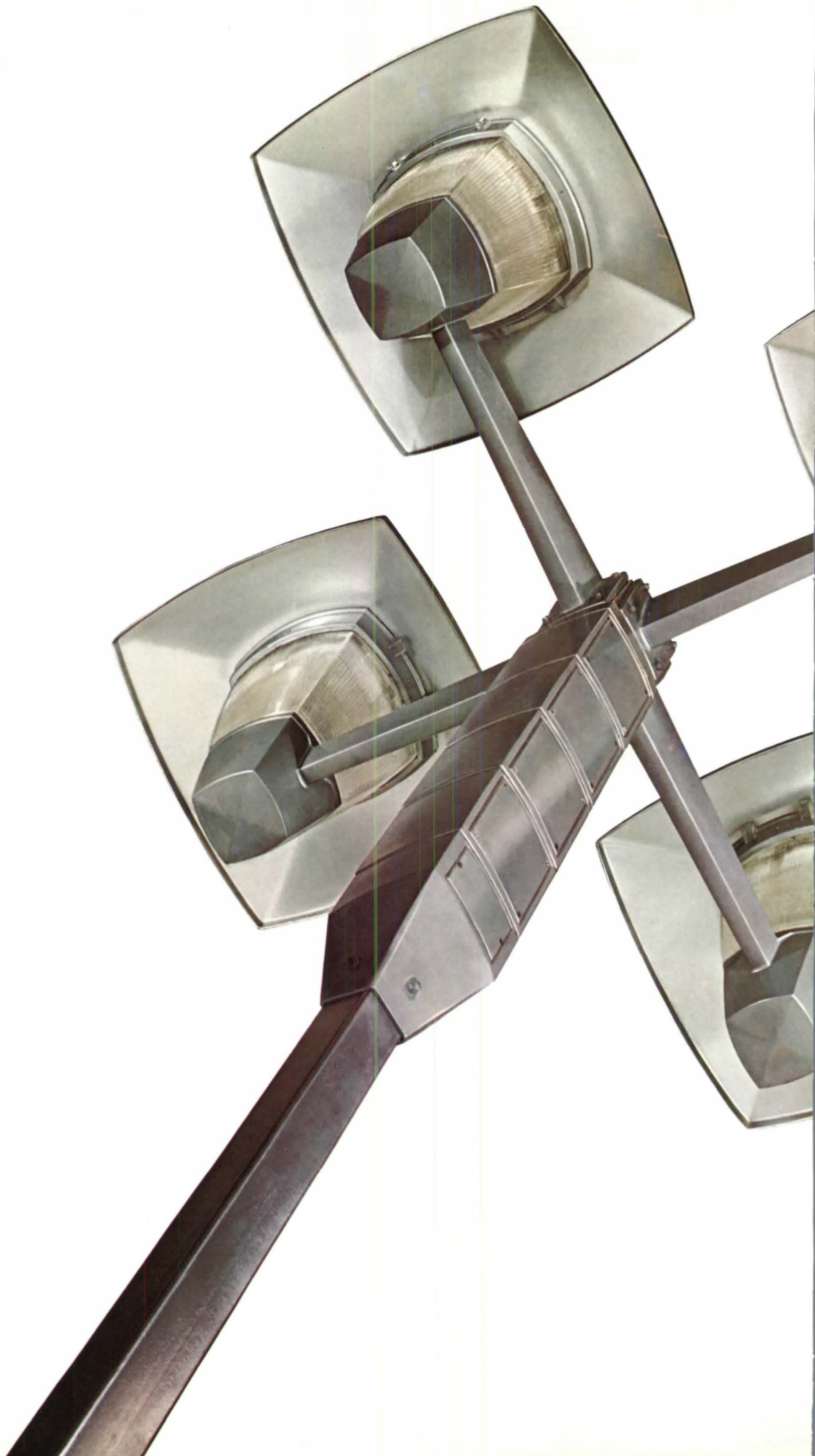
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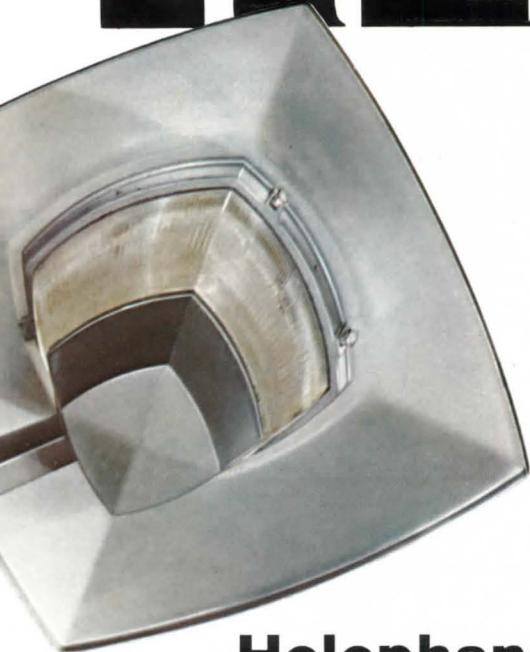
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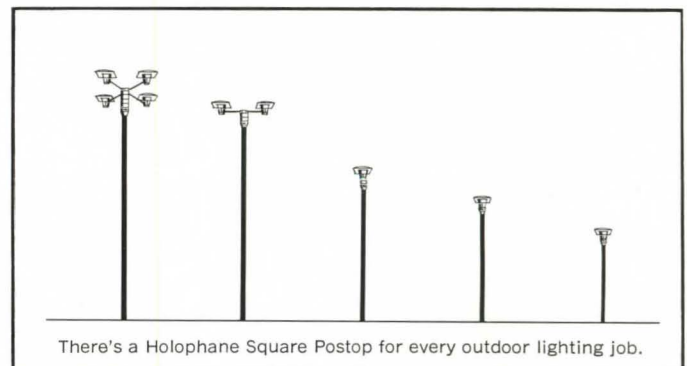
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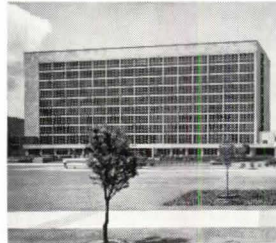
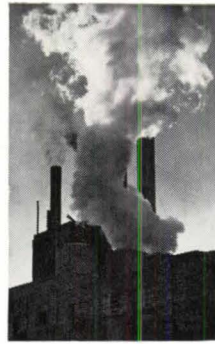
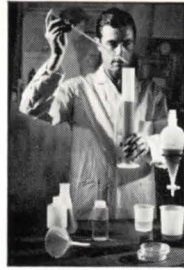
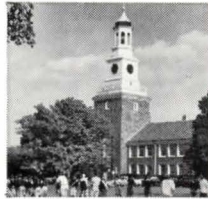
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24 Views

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Continued from page 14
progressive, contemporary professionals. Projects that, with disturbing regularity, produce design solutions conspicuous in their mediocrity and obviously failing to respect the landscape in which they are placed. These types are not only noxiously conspicuous, but inappropriate as well.

We are well aware of factors limiting architectural success—for example, the ever-present, aesthetically suppressing bureaucracy of state and Federal agencies and the budgets they present. Yet these factors should not be used as scapegoats for mediocrity in architectural problem-solving. Unfortunately, these limiting factors *do not* also limit the visual effects created. Considerations such as siting, color, and graphics are in themselves worthy of more extensive investigation. So-called "temporary comfort stations," or other structures of programmed impermanence, are often positioned as intermediaries in view corridors; these, *too*, are "Buildings for Recreation." Signs are curiously confusing through a lack of forethought, and furthermore, cannot be omitted from the realm of recreational architecture. Noxiously ugly and inappropriate colors regularly loom before us from the forest glade or roadside rest area, as if the structures were of such design significance (hardly the case) that it should be displayed for the world to behold. Unfortunately, the world, in many cases, beholds. Again, desired architectural success should not be controlled (or supplanted) by the scale of the project. We should like to see increased sensitivity to buildings *in* the landscape and less dichotomy of the design disciplines that seem to produce buildings *on* the landscape. The importance of such considerations deserve accelerated exposure—something P/A has started; if only it could continue it.

THOMAS E. NELSON; JAMES GILBERTSON;
RONALD CHRISTMAN; ALBERT E. PRATT
Sacramento, Calif.

A Note from Abroad

Dear Editor: We have not renewed our subscription with your magazine because we cannot associate ourselves in any way with your Government's Vietnam policy.

MICHAEL O'SULLIVAN
Dublin, Ireland

CORRECTION: In the article, "In-Use Evaluation of Psychiatric Facility," which appeared in the AUGUST 1966 P/A, the name of one of the authors, Thomas Peel, was omitted, and the order of the other two authors, Edith Zeller and Lawrence Good, was reversed.

NOVEMBER 1966 P/A

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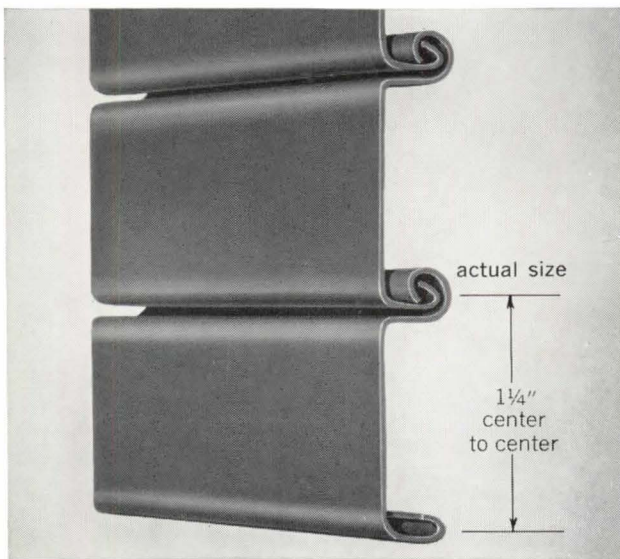
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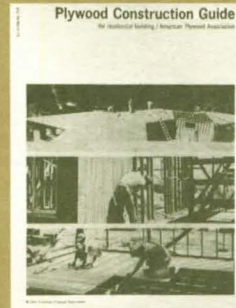
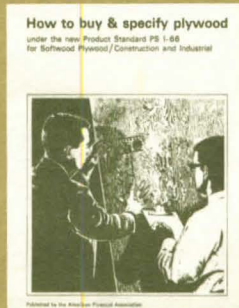
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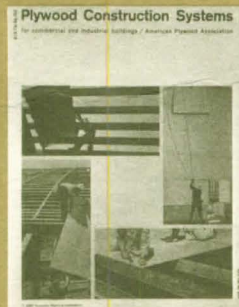
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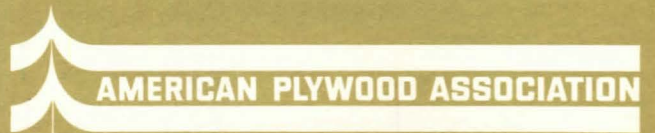
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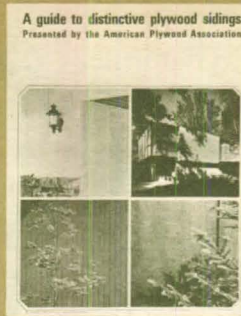


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Plywood Design Data File (continued)



4. Plywood Components. Pictures and diagrams show variety of uses and advantages of components — box beams; curved and flat stressed skin panels; folded plate roofs; radial folded plates. Short form specs on each.

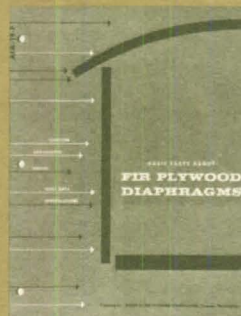


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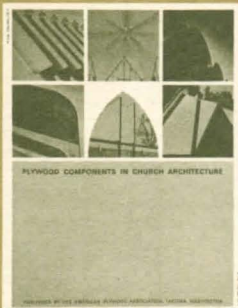
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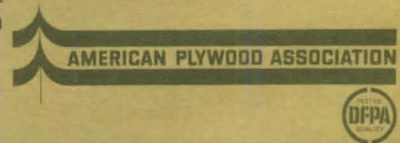
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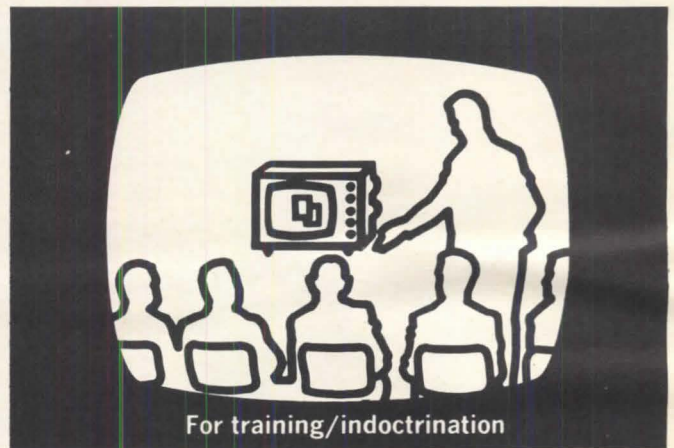
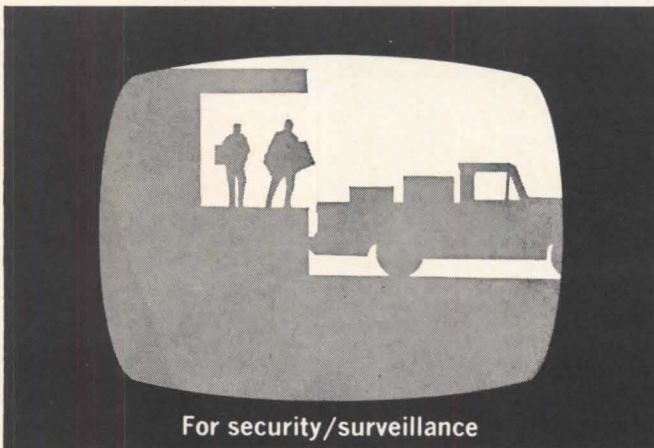
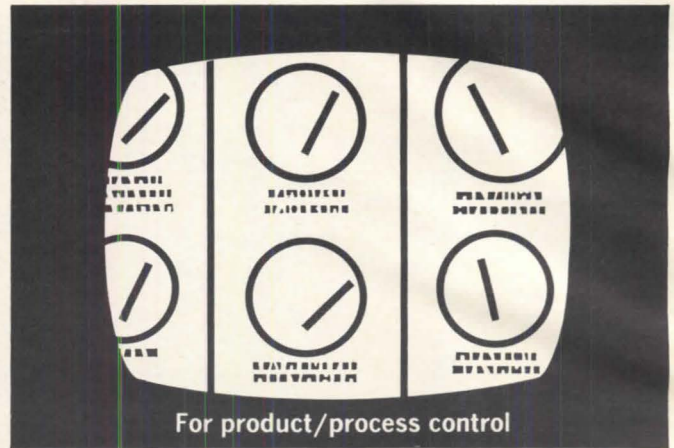
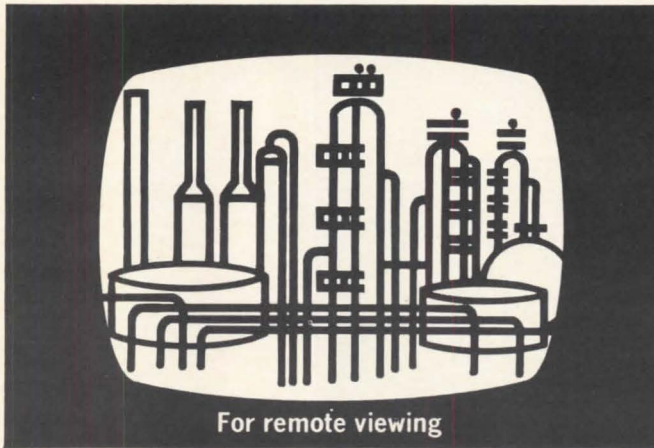


Architects:
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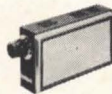


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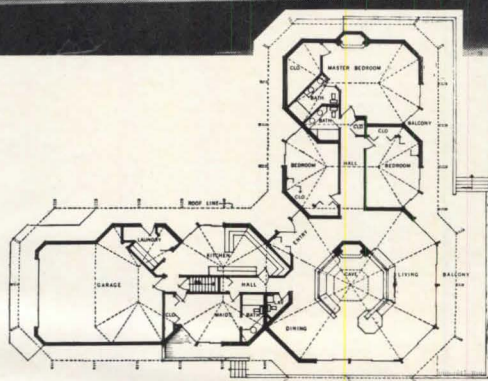
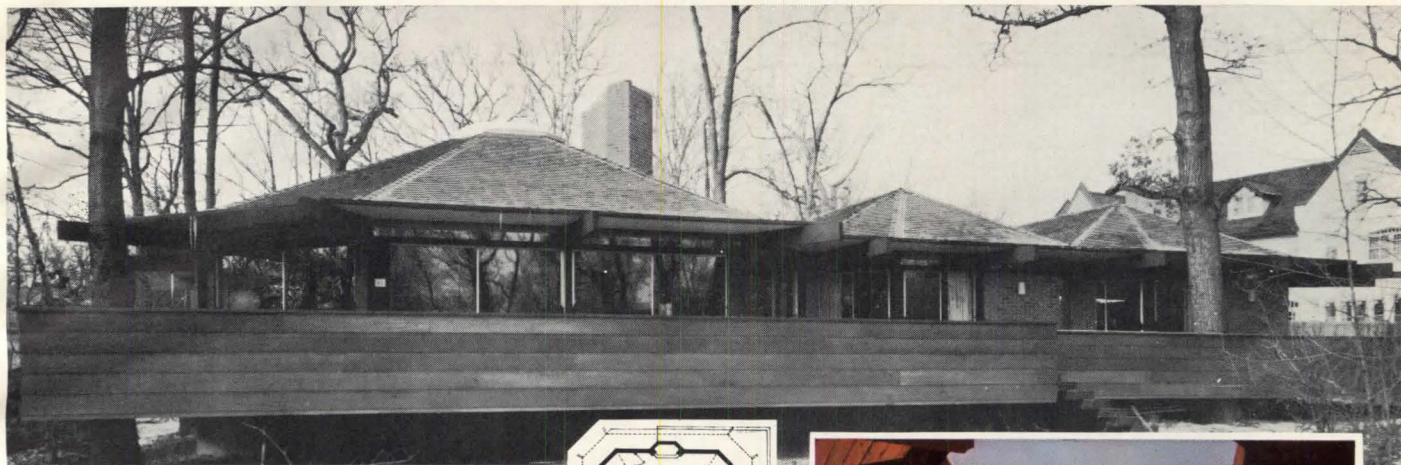
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Erickson and Stevens enhance a modern day "cave" in a sophisticated country home with ceramic tile.



The focus of this home located in a wooded area of Winnetka, Illinois is the "cave"—a room within a room. It was designed to meet the owner's requirement of an intimate yet not isolated conversation area. The cave, as well as the surrounding entry, dining and living areas have ceramic tile floors.

The philosophy behind the design of this home is the use of a prismatic plan offering maximum opportunity to capitalize on spectacular views in all directions. At the same time, privacy is accommodated by the adaptation of individual, adjoining living "cells," each with its own roof.

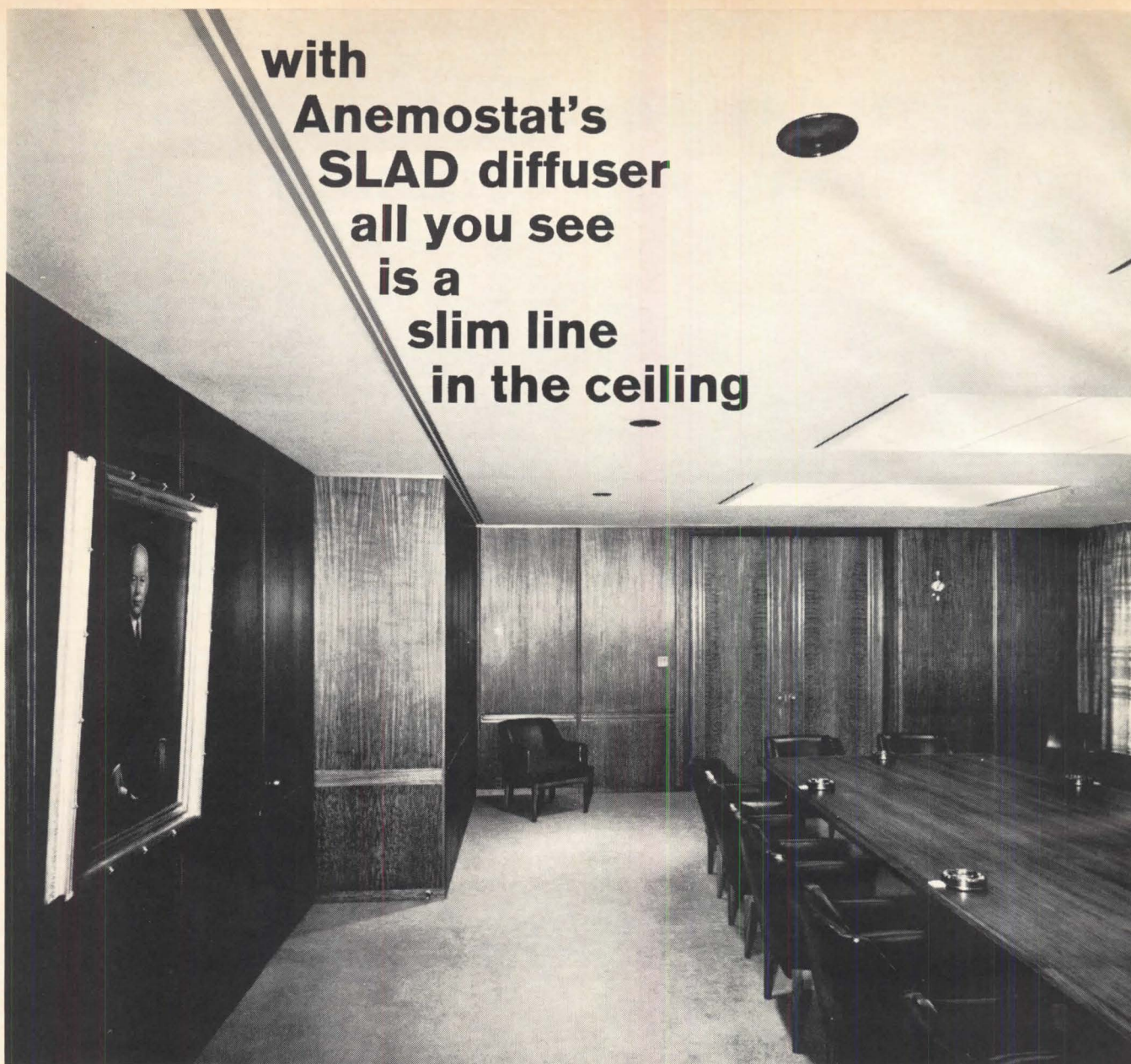
Throughout the home, architects Erickson and Stevens have made extensive use of ceramic tile for decorative as well as functional values. Bathroom vanity tops, tub enclosures and walls are finished in random blend ceramic mosaic tile with quarry tile floors. In the kitchen, counter tops and backsplashes are tiled for color harmony and durability.

If you're looking for a material with limitless possibilities in combined decorative and functional use, look for ceramic tile made in the U.S.A. and Quality Certified by the Tile Council of America. The triangular seal at the right is your assurance of glazed wall tile, ceramic mosaic tile and quarry tile that is tested to meet the most rigid government specifications. For more information about Certified Quality tile, a material that can be used with confidence indoors and out, write: Tile Council of America, Inc., 800 Second Avenue, New York, N.Y. 10017.



MEMBER COMPANIES: American Olean Tile Co., Inc. • Atlantic Tile Manufacturing Co. • Cambridge Tile Manufacturing Co. • Carlyle Tile Company • Continental Ceramic Corporation
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Company • Summitville Tiles, Inc. • Texeramics Inc. • United States Ceramic Tile Co. • Wenzel Tile Company • Western States Ceramic Corp. • Winburn Tile Manufacturing Co.

with
**Anemostat's
 SLAD diffuser**
 all you see
 is a
**slim line
 in the ceiling**

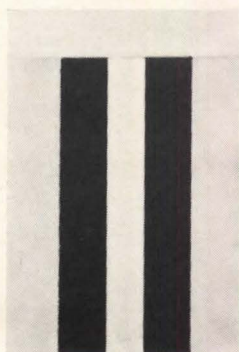


Two-slot SLAD installation in conference rooms of Irving Trust Company, 1 Wall Street, New York. Single-slot SLAD diffusers are used beside ceiling light panels at right.

yet it's the most versatile linear diffuser you can specify

Anemostat's Straight Line Adjustable Diffuser (SLAD) mounts flush and clean without visible screws or fasteners. Whether installed in ceiling or side wall, or in the sill beneath windows, SLAD never intrudes on your design. Concealed key-ways and alignment clips let you mount the units end-to-end in a clean, unbroken line.

Air handling flexibility. SLAD's unique pattern control element lets you adjust volume and distribute air vertically, in either hori-



zontal direction, or in *both* horizontal directions. SLAD serves as a supply unit, return unit or a combination supply-return, and is available with from one to eight slots. It's manufactured of attractively finished extruded aluminum, with natural-anodized face.

For full mechanical and performance data on this versatile linear diffuser, write for Catalog 66S, Anemostat Products Division, P.O. Box 1083, Scranton, Pa. 18501.



ANEMOSTAT® PRODUCTS DIVISION
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Style Leader 125 Entrance Package—shown in Permanodic Medium Bronze No. 28.

**The entrance is an invitation.
 Its beauty should attract...
 The Kawneer 125 Styleleader does.**



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IMPROVED

FESCO BOARD ROOF INSULATION

can take

If you thought the old Fesco® Board was windproof . . . look what's on deck for you now!

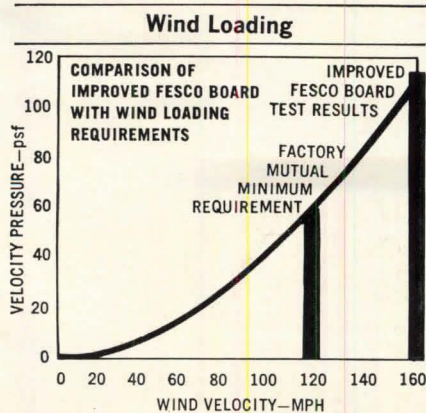
New Improved Fesco Board roof insulation exceeds the Factory Mutual velocity pressure minimum of 60 pounds per square foot by 100%. That's equivalent to resisting uplift from winds blowing at 160 miles per hour.

Other wind stresses? Improved Fesco Board has *twice* its previous shear resistance to the tearing force of wind across a roof. *Three times* as much tensile strength to overcome internal stresses generated by wind or structural movement. And a tough new Top Coating that bonds the insulation tightly to the built-up roofing.



double hurricane force winds

That's not all. Improved Fesco Board has 100% greater resistance to punishing foot and wheel pressure. It handles better, with minimum breakage . . . mops easier, installs faster. As always, it bears the Underwriters' Laboratories "incombustible" rating. As always, it's essentially waterproof, even under prolonged soaking.



Results shown above are obtained under controlled laboratory conditions without consideration of the possible effect of air foil or other wind forces.

Wind-safe, fire-safe, water-safe, Improved Fesco Board outperforms other roof insulations on practically every count.

Write for complete information to Johns-Manville, Dept. (PA), Box 111, 22 East 40th Street, New York, N. Y. 10016.



Johns-Manville

On Readers' Service Card, Circle No. 361



**Clear, lustrous
Starlux plate glass
relieves a
powerful facade
of concrete**

Architect: Paulsen, Gardner and Associates

© American Saint Gobain 1966



Its upper windows aglow like firing slits of a fortress, Shapero Hall of Pharmacy at Detroit's Wayne State University makes a bold silhouette against the dusk. The building's upward-and-outward configuration is completely functional. It places those activities most in need of space and isolation (such as animal quarters and large laboratories) in the top levels. Heavy traffic activities are centered in the two-story base which includes a lobby and 160-seat lecture hall.

Shapero Hall is glazed with ASG's Starlux® twin-ground, polished plate glass. Floor-to-ceiling lights of Starlux ring the lower floors, making them open,

light-filled and inviting. After dark, these extensive walls of superbly clear glass form a pedestal of light for the building's powerful superstructure. Here, slim Starlux windows help relieve the weight of the massive concrete tiers.

Starlux contributes to this unusual building the unique qualities of the finest polished plate glass—superior clarity, visual fidelity and lustrous transparency. Starlux is the premier product in the full line of architectural glasses manufactured by ASG. For complete information about Starlux, write: Dept. E-3 American Saint Gobain Corporation, P. O. Box 929, Kingsport, Tennessee 37662.

Starlux twin-ground plate glass by...



How to get tenants into your new building earlier.

And how to keep them longer.

JONES
COMPANY
306

There is one answer to both problems: steel.

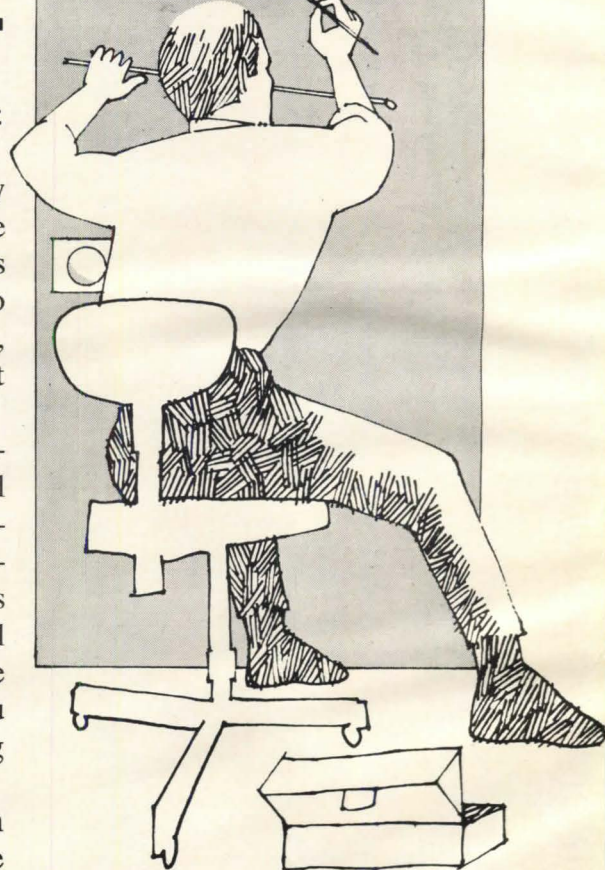
Steel goes up fast. It goes up in any season. There is no waiting for the weather. A steel frame usually means lighter, less expensive foundations, so you save time there, too. Simply put, when you build with steel, you collect rents sooner.

How about 15 years from now? Statistically, a building built this year will need to be remodeled in 15 years to accommodate changing tenant requirements, and only steel-framed buildings can be altered *economically*. A steel

frame can often be severed, extended, or bolstered without damage to the building's structural integrity. That's nice to know, when you realize that tenants' changing requirements can make a building physically obsolete overnight.

A USS construction representative will be glad to discuss steel in detail with you. Contact him through our nearest sales office or write U. S. Steel, 525 William Penn Place, Pittsburgh, Pa. 15230.

JONES & SON
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306 308



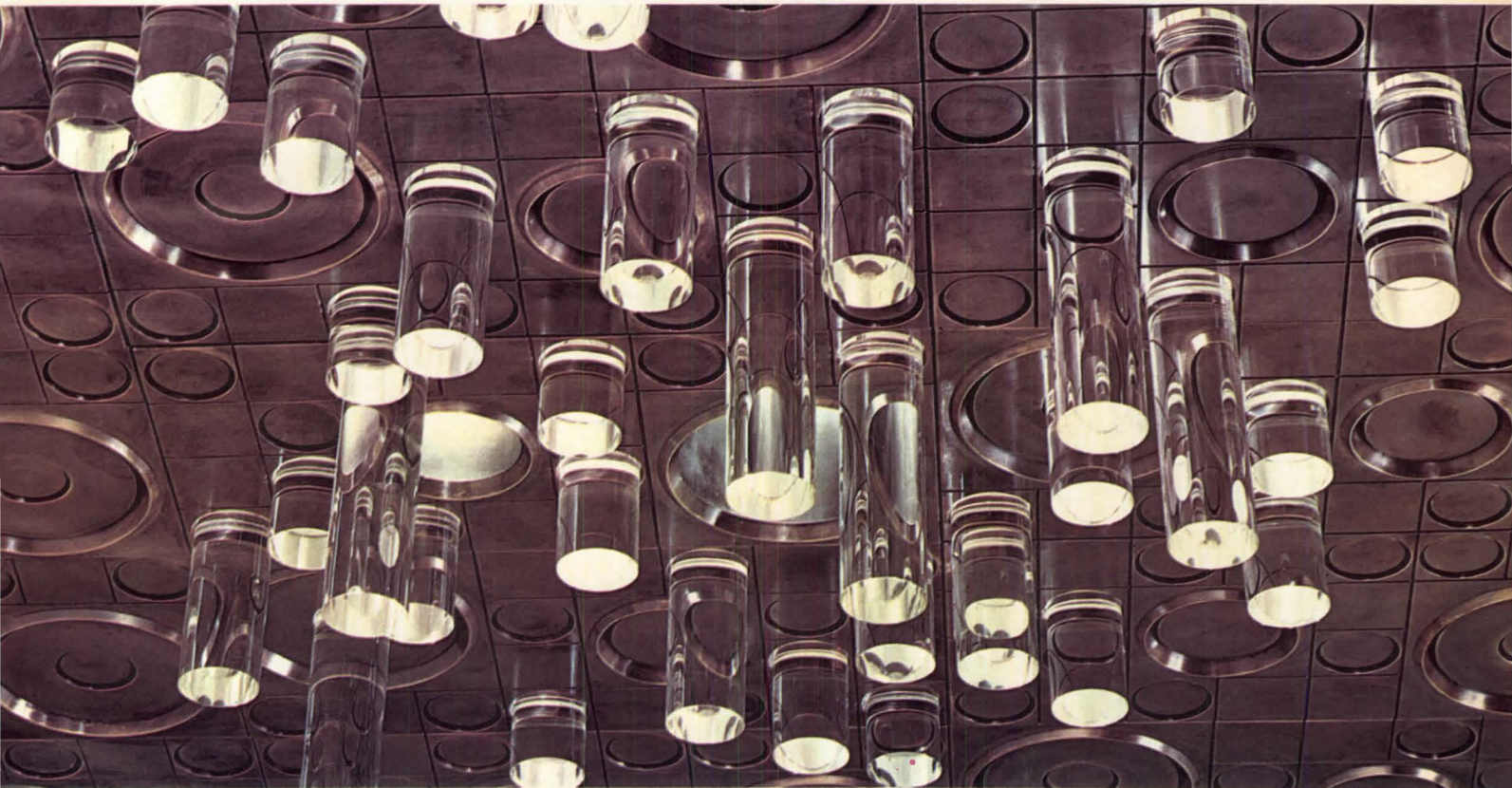
TRADEMARK

United States Steel: where the big idea is innovation

this is a ceiling lighted



this is a lighted ceiling



CELESTIAL®, A KALEIDOSCOPE OF LIGHT PATTERNS CREATED BY 2½" DIA. POLISHED ACRYLIC ROD AND DIE CAST ALUMINUM, IS SHOWN IN EXCLUSIVE WEATHERED BRONZE PLATE.

The crystal chandelier was the symbol of old-time opulence. It was elegant, cumbersome, fragile and hard to clean. Celestial®, by I.C.I., is the ultimate in modern munificence. It recaptures the elegance of crystal chandeliers. Yet it's infinitely versatile, practically eternal, and maintenance is nearly non-existent. For your next extraordinary structure, seriously consider Celestial®. It transcends anything else under the stars.

Celestial® is one of a new series of lighted ceilings we produce for the purist. May we send you our Catalog? Write to Integrated Ceilings, Inc. 11766 West Pico Blvd., Los Angeles, California 90064, GR 8-0043

INTEGRATED CEILINGS, INC.

Casting a new light on architecture

On Readers' Service Card, circle No. 311

This handsome building had a severe glare problem.



Nothing has ever replaced the natural light. Yet, too much of it can easily turn into a very annoying glare problem, as the Illinois Bell Telephone Company recognized. What was needed here, as in many other fine buildings, is a fabric that gets rid of the glare, yet remains a see-through fabric to let just enough of the natural light get in. This is one of the reasons why Ben Rose, supplier of the fabric, together with S. A. Maggio, A.I.D., and K. Ragos, interior designers, decided to select Fiberglas Beta draperies. They are not the only ones. Every day more architects and interior decorators are expecting Fiberglas to be a problem solver. It is. Fiberglas is:

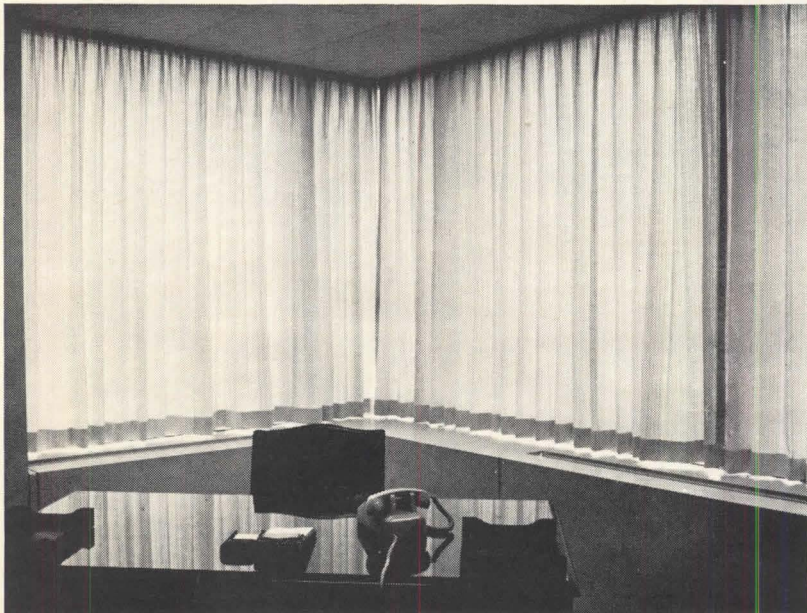
Sturdy: Fiberglas is flame-resistant, unaffected by humidity, resistant to sun. Won't stretch or shrink.

Economical: Fiberglas is washed, not dry-cleaned, never needs pressing or alterations due to change in size. Fiberglas also helps reduce heating and air-conditioning costs because it insulates—year round.

Beautiful: Fiberglas fabric allows free play with color, texture and pattern on the inside and looks uniformly beautiful from the outside.

So if your building happens to have a glare problem, or any other kind of problem, look into Fiberglas, the problem solver fiber for problem solving people. For more information and Fiberglas fabric resources write:

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Fiberglas* Beta* drapery fabric solved it.

Illinois Bell Telephone Building: Architect: Holabird & Root. *Fiberglas and Beta are Owens-Corning trademarks. Owens-Corning Fiberglas makes the Beta yarn, not the fabrics.

You see
Stanley
in all
the best
places.



Places like M.I.T.'s Earth Science Building, Children's Memorial Hospital in Chicago, and the Grow National Bank in San Antonio, Texas. Places

characterized by exceptional design. Places where style and utility go together. Stanley hinges help set your building apart. Clean. Stylish. Lasting.

Consider elegance, then decide Stanley. Stanley Hardware, Division of The Stanley Works, New Britain, Connecticut. **STANLEY**
On Readers' Service Card, Circle No. 402

In fact, Myrtle Desk's designers have planned it so you have a choice of more than 53,261 best seats. Some designed especially for the mod movement. Some for classical drama. And some to work well with just about any staging you might choose.

The cast includes new talent as well as the old stars. And, the complete showing has passed box office tests for su-

perior construction, deep comfort and long life. As for beauty, the reviews have been glowing . . . in fabulous fabrics, rich vinyls and lustrous leathers.

So be selfish. Get some rave notices yourself by selecting the best seats for your designs. See the entire production from the beginning in the Myrtle Desk Seating Catalog waiting for you at Myrtle Desk, Dept. P 116, High Point, N. C.

How can Myrtle Desk offer you the best seat in the house?

We work at it.

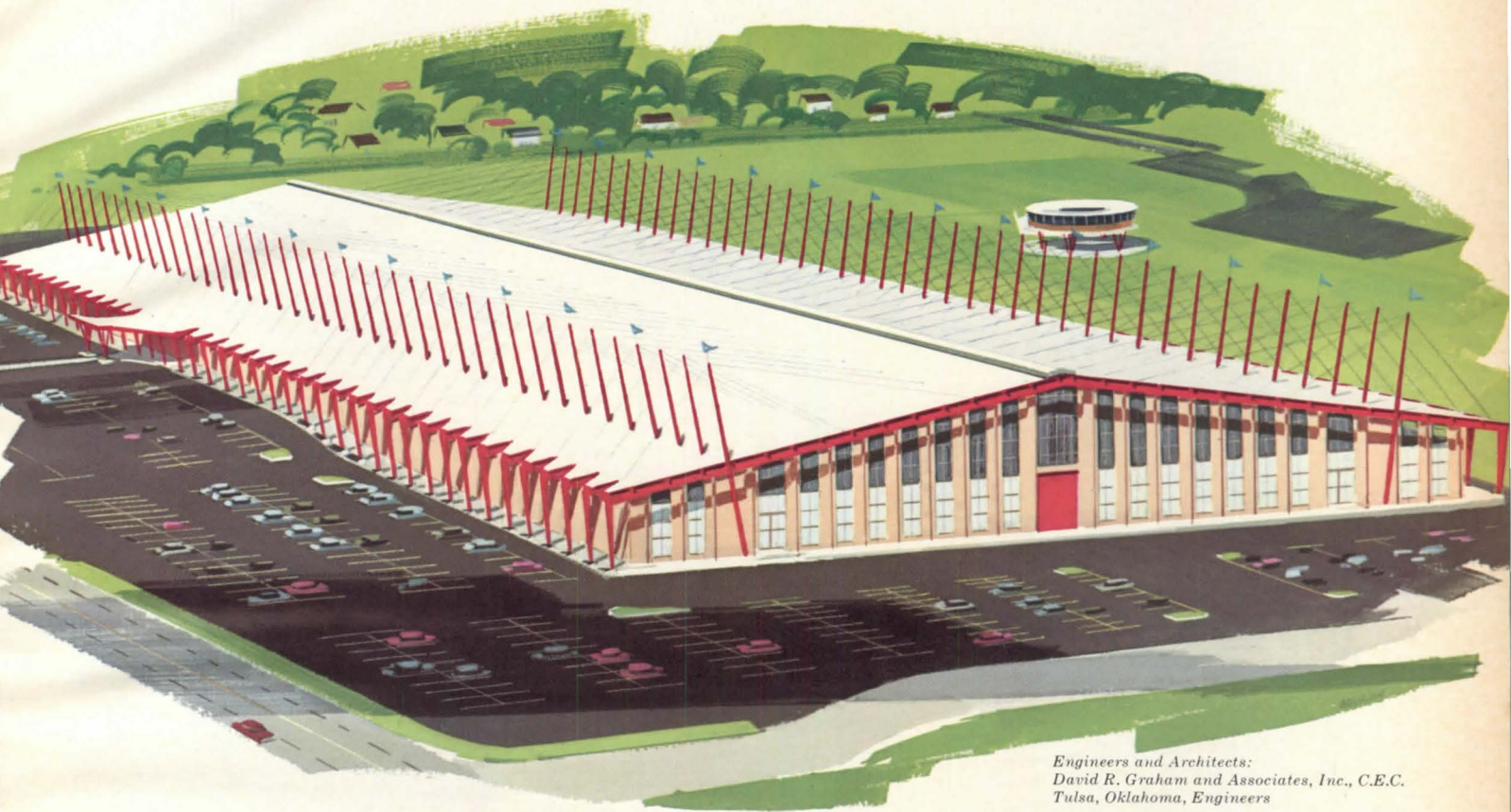


Showrooms: CHICAGO, 1162-1163 Merchandise Mart, Telephone 527-2540 • HIGH POINT, NORTH CAROLINA, Taylor Street, Telephone 883-4136 • Representatives: NEW YORK, Harry Nechamen, WATKINS 9-8383; LOS ANGELES, Wholesale Office Equipment Company, ANgelus 8-6104; SAN FRANCISCO, Wholesale Office Equipment Company, YUkon 6-6972; SEATTLE, Wholesale Office Equipment Company, MAine 2-7143; DENVER, Wholesale Office Equipment Company, TAbor 5-6174.

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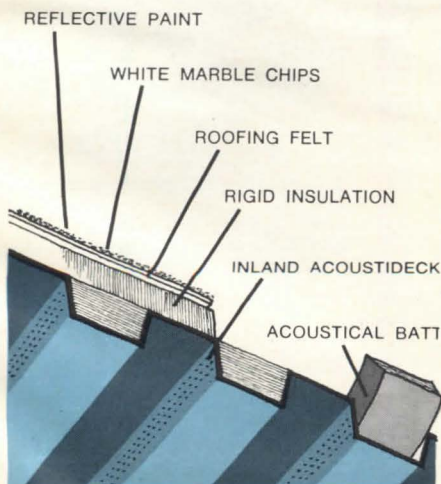
MYRTLE DESK!

They go to great lengths in Tulsa to house expositions



Engineers and Architects:
David R. Graham and Associates, Inc., C.E.C.
Tulsa, Oklahoma, Engineers
Bert E. Griffin, A.I.A.
Architect

World's largest cable-supported roof— 404' x 1200' — is Inland Acoustideck®



Excessive noise in the Tulsa Exposition Center is entrapped in fiber batts through perforations in the vertical webs of the Acoustideck panels. Insulation over the deck is topped with asphalt-impregnated felt and then a layer of white marble chips. This is coated with a highly reflective white paint.

Talk about thinking big—there are 10½ acres of clear-span space under the Inland Acoustideck roof of the new Exposition Center Building on the Tulsa State Fairgrounds!

Structural framing of the building consists of two symmetrical cantilevered halves supported by steel cables. Principal structural members are shop-welded steel box columns and girders. Lightweight beams span between the girders.

Inland type N Acoustideck spans the 13'-10" between these beams. The inherent diaphragm action of the deck provides lateral bracing for wind loads, thus eliminating the need for extraneous X-bracing.

Acoustideck was a logical choice for this suspended roof system, because it weighs less than half of equivalent poured-in-place or precast construction—and carries normal loads over greater spans. The roof on the Tulsa Exposition Center is designed for a snow load of 20 psf. Because Acoustideck absorbs sound, it dampens the high noise level rampant in exhibit areas.

Acoustideck—with a protective two-coat baked enamel primer—is part of a complete line of Inland roof systems. See Sweet's, section 2i/Inl. Or write for catalog 248 to Inland Steel Products Company, 4069 W. Burnham St., Milwaukee, Wis. 53201.

Inland Steel Products

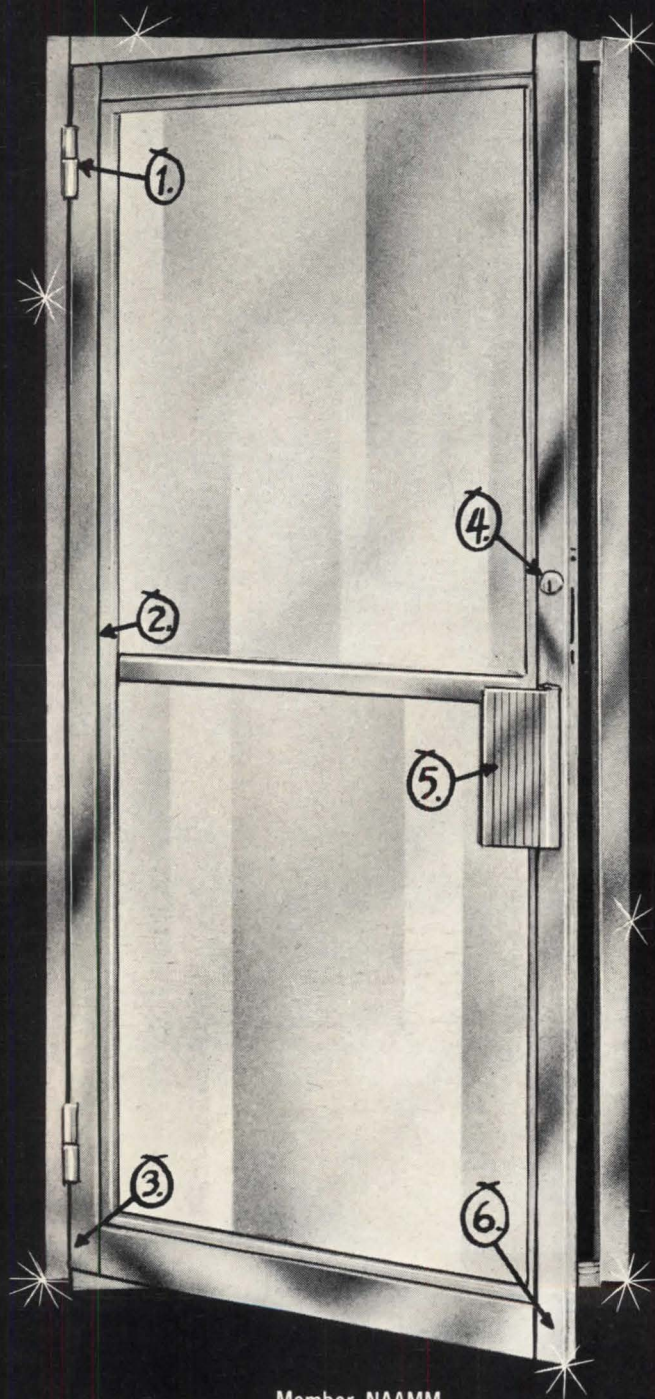


EP-59

On Readers' Service Card, Circle No. 357

The Patented Adjustable Butt Hinge

is just one of six solid reasons why Natcor says "install it...forget it".



Member NAAMM

(Significant in design, flexibility and a lifetime of trouble-free operation.)

Natcor offers a complete line of 5 door types and 4 basic framing systems in Clear, Anodized, Kalcolor and Duranodic finishes — with a custom styled look for greater visibility and handsome appearance. Quality materials and advanced engineering principles add six solid reasons why a Natcor entrance is a lasting entrance. Install it . . . Forget it!

1. Patented, adjustable Butt Hinge — Ball Bearing with frame reinforcement for extra endurance.
2. Snap-In Vinyl Glazing Bead — Just one member to snap in during glazing of door — saves labor.
3. Quality Extrusions — Door Stiles and Rails of fully extruded aluminum, $\frac{1}{8}$ " thickness throughout, as specified by architects.
4. Maximum Security Lock — Extra Safe — with $1\frac{3}{8}$ " throw, case hardened steel bolt and weather-stripped face plate for pairs of doors.
5. "Sure-Grip" Pull Handle — Broad selection of contemporary styled stock, interchangeable — Push-Pull Hardware.
6. Reinforced Corner Construction — Heavy, concealed reinforcement brackets are firmly bolted to door stiles. Tri-clad welding of each joint after bolting results in complete rigidity.

For full information on Natcor's complete line of doors and entrances, see our catalog in Sweets, or write —



THE NATCOR COMPANY

since 1920

P.O. Box 9321, Nashville, Tenn.

This is
Profile light[®]

Looks good, lights better...





See?

This is the rectangular revolution in good light and good looks. Profile light, above, illuminates the new Iverson Mall in Washington, D.C., and below, a neighborhood center in Timonium, Md.



Profile light provides the bright, even illumination you see here for shopping centers large, medium and small.

Customers see and come in. Traffic moves. Vandals and thieves can be seen before they do their dirty work.



Each Profile light fixture directs more than 85% of its beam onto the parking lot surface, something conventional lights can't come close to. And it does this uniformly, in a large rectangular pattern. In place of the usual hot spots and dingy corners, you'll get even light with fewer poles, fewer fixtures.

And from the outside looking in, there's enough light to advertise, but without glare. Your neighbors will thank you.

All this is the revolution in good light and good looks that Profile light has created. Check the additional information and cost comparisons on the next page. Then check Crouse-Hinds for a specific proposal for your shopping center.



No hot spots or dark spots here. Profile light spreads bright, color-true illumination evenly—on the ground, not in somebody's eyes.



There's versatility with Profile light. Fixtures mount on poles, walls, or as shown in this loading and package pickup area, on a pole attached to the wall.



See how Profile light punches brighter, more uniform illumination onto the parking lot of this Queens, New York, supermarket, with very little spillover.



Exceptional economy. A single pole with four Profile light fixtures invitingly lights a small local shopping center parking lot.





Profile light[®]

THE RECTANGULAR REVOLUTION IN GOOD LIGHT AND GOOD LOOKS

COST FACTORS Figures given are dollars/ 100,000 sq. ft. of parking area at equal illumination levels shown†	QUICK COST COMPARATOR				PARKING AREA LIGHTING SYSTEMS			
	AVERAGE COMMERCIAL PARKING AREAS				COMPETITIVE, HEAVY TRAFFIC PARKING AREAS			
	4-400W, 120V luminaires on 30 ft. aluminum poles †Average: 2 footcandles with 1 fc minimum				4-1000W, 480V luminaires on 40 ft. steel poles †Average: 3 footcandles with 1.5 fc minimum			
	Profile light Metallic Lamps	Profile light Lucalox Lamps	Profile light Mercury Lamps	Streetlight Mercury Lamps	Profile light Metallic Lamps	Profile light Mercury Lamps	Streetlight Mercury Lamps	Decorat Large A Lumina (4000W Si Unit) Mercury L
INITIAL COST Includes fixtures, lamps, poles, materials, labor, etc.	\$4850.	\$5350.	\$5040.	\$6410.	\$3740.	\$4000.	\$4340.	\$3950
OPERATING COST/YEAR Power, maintenance, relamping	\$ 257.	\$ 258.	\$ 273.	\$ 273.	\$ 366.	\$ 416.	\$ 527.	\$ 496
ANNUAL OWNING COST Amortization of initial cost plus annual operating cost	\$ 952.	\$1009.	\$1069.	\$1264.	\$ 882.	\$1107.	\$1140.	\$1217



More than 85% of the beam from Profile light goes right here. On the ground in large, bright rectangles of light. You'll need fewer poles, yet gain a higher level of illumination.

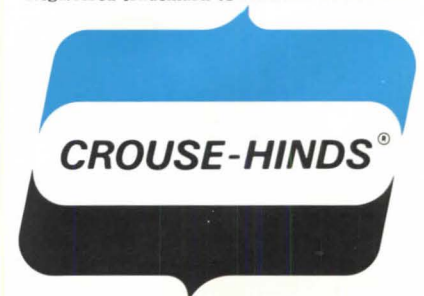
The maximum to minimum ratio of light can be held to any level.

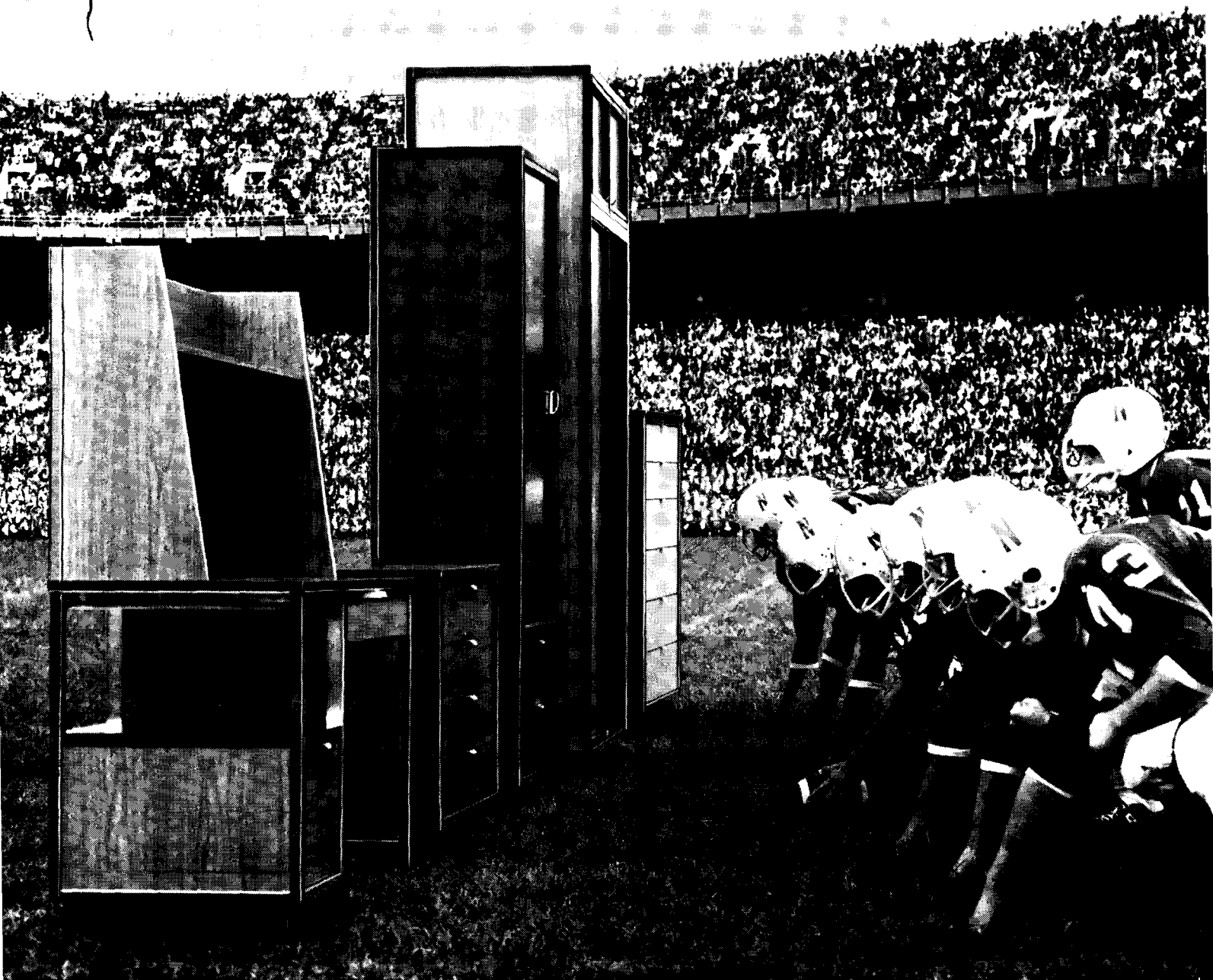
Profile light comes in 400 and 1000 watt sizes. Choice of economical mercury vapor, color-true metallic vapor or the new Lucalox* light sources. One, two, three or four fixture arrangements.

The chart gives you a quick comparison of cost. Our home office computers will detail out layout and specific costs. We'll include recommendations on other Crouse-Hinds fixtures for facade lighting, open malls, signs, security entrances, walkways, driveways.

Call the Crouse-Hinds lighting specialist or distributor near you. Or write Mr. J. S. Haney, Outdoor Lighting Department, Crouse-Hinds Company, Syracuse, N. Y. 13201.

*Registered trademark of General Electric Co.





Designed by Herbert C. Saiger, A.I.D.

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This architectural dormitory furniture shrugs off hard knocks like an all-American. Features steel framework welded where necessary for maximum strength... steel side panels... tops and doors of virtually indestructible fused laminates... smooth sliding steel drawers with integral reinforced sides... nothing to warp or chip ■ Built-in System '70 units meet federal standards for long-term loans. And how

versatile they are. Custom tailor them to your needs... combine them to meet large and small requirements as well as dimensional and design specifications ■ Available in glowing wood grains and solid colors. Write us. Let us quote your next job. **The Troy Sunshade Company**, Division of The Hobart Manufacturing Company, Troy, Ohio 45373.

Troy

Show rooms: One Park Avenue, New York/Merchandise Mart, Chicago/612 Grant Street, Troy, Ohio/ Dallas Trade Mart, Dallas, Texas/Houston Homefurnishings Mart, Houston, Texas
On Readers' Service Card, Circle No. 431

A free-form expression of its function

Northland Theatre At Northland—Detroit, Michigan
Architect: T. Rogvov Associates, Inc.

Overlooking the world's largest shopping center, the Northland Theatre is designed to show its function with exterior lines. Hence, the slope up to the high screen (which accommodates both Cinerama and Cinemascope) as well as the curved end wall. There is not a straight wall in the plan of the 24,050 sq ft column-free interior.

Resembling an outstretched hand placed on a table, this unique building was most economically framed with steel because of (1) the great variation in the plan dimensions, (2) the building slope, and (3) the long spans. Fabricated in two sections, trusses were shop-welded. They range in length from 88 to 101 ft.

Whatever shape you have in mind, remember that structural steel can be "tailored" to every architectural form. And it offers a set of practical advantages no other material can match.



Exterior of the Northland Theatre is of grey-brown brick, with a limestone canopy fascia and a copper roof (copper was etched to assure even weathering).

BETHLEHEM STEEL

Bethlehem Steel Corporation, Bethlehem, Pa.



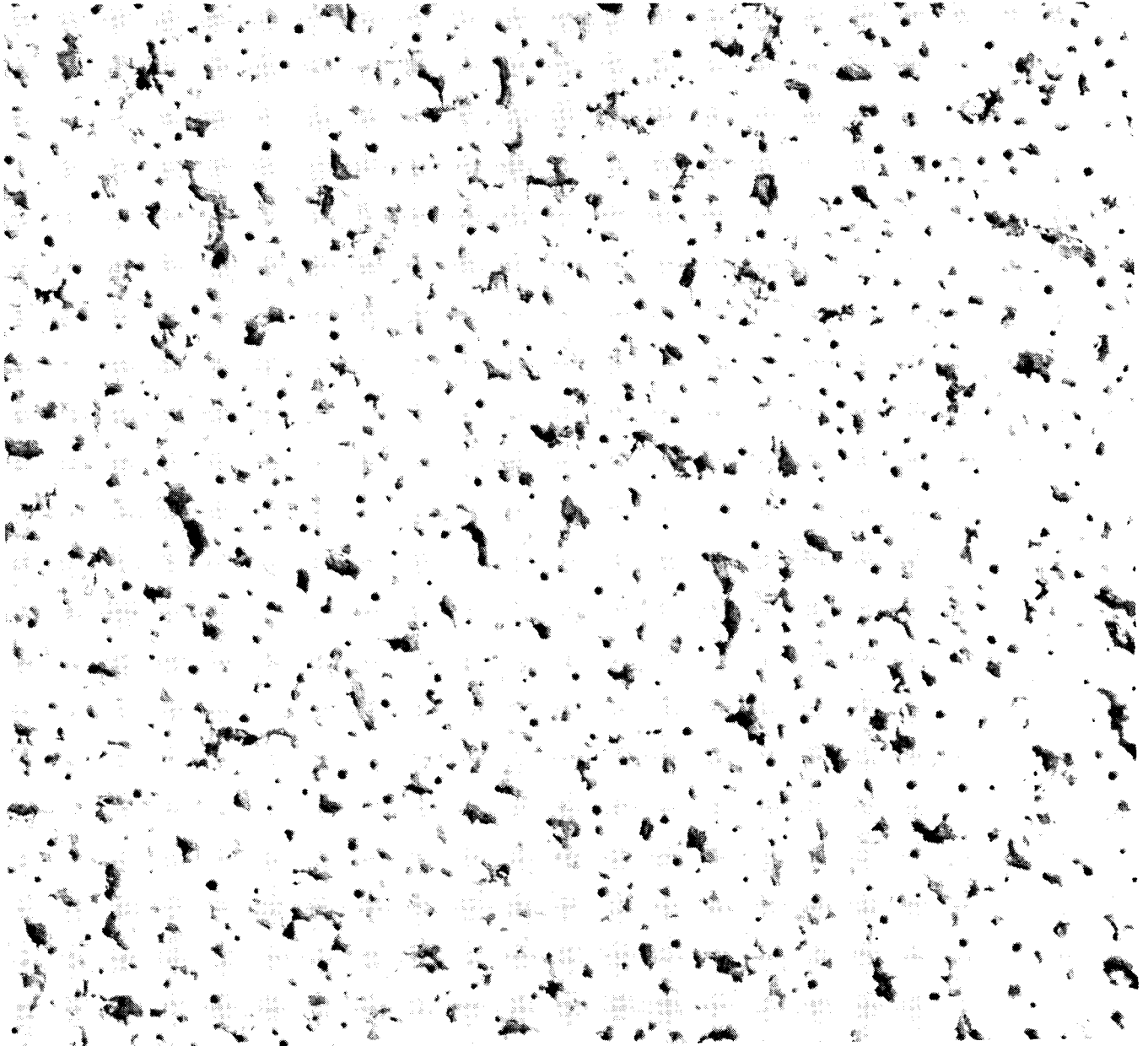


*Owner: Northland Theatre.
Developer: E. Sloan & Co.
Structural Engineer: Ray W. Covey
& Associates, Inc.
Fabricator: Arrow Steel Company.
Erector: Argo Steel Construction Co.
General Contractor: Cronk and Tocco, Inc.*

JOHNS-MANVILLE

Temper-Tone 360

FISSURING SHOWN ACTUAL SIZE



New: 360-degree fissuring for overall ceiling elegance

Here—in response to architects' requests—is a sound control ceiling with fissures that look natural, yet have no tendency to line up in parallel ranks. The first truly omni-directional acoustical tile of its type. Temper-Tone 360 by Johns-Manville has a 360-degree fissure design that is an improvement upon nature . . . puts an end to

unsightly checker-board or parallel optical patterns . . . produces elegant, even-textured suspended ceilings with the same visual effects from all viewing angles. And the 12" x 12" tiles can be placed as they come to hand—without concern for orientation.

You'll want all the data on new Temper-Tone 360. On its other ad-

vanced design features. On its fire resistance, high attenuation value and light reflectance. On its excellent sound absorption. Write for Bulletin AC 101A. Johns-Manville, 22 E. 40th Street, New York, New York 10016.



Johns-Manville

Architect Haigh Jamgochian designs a contemporary "tree house"

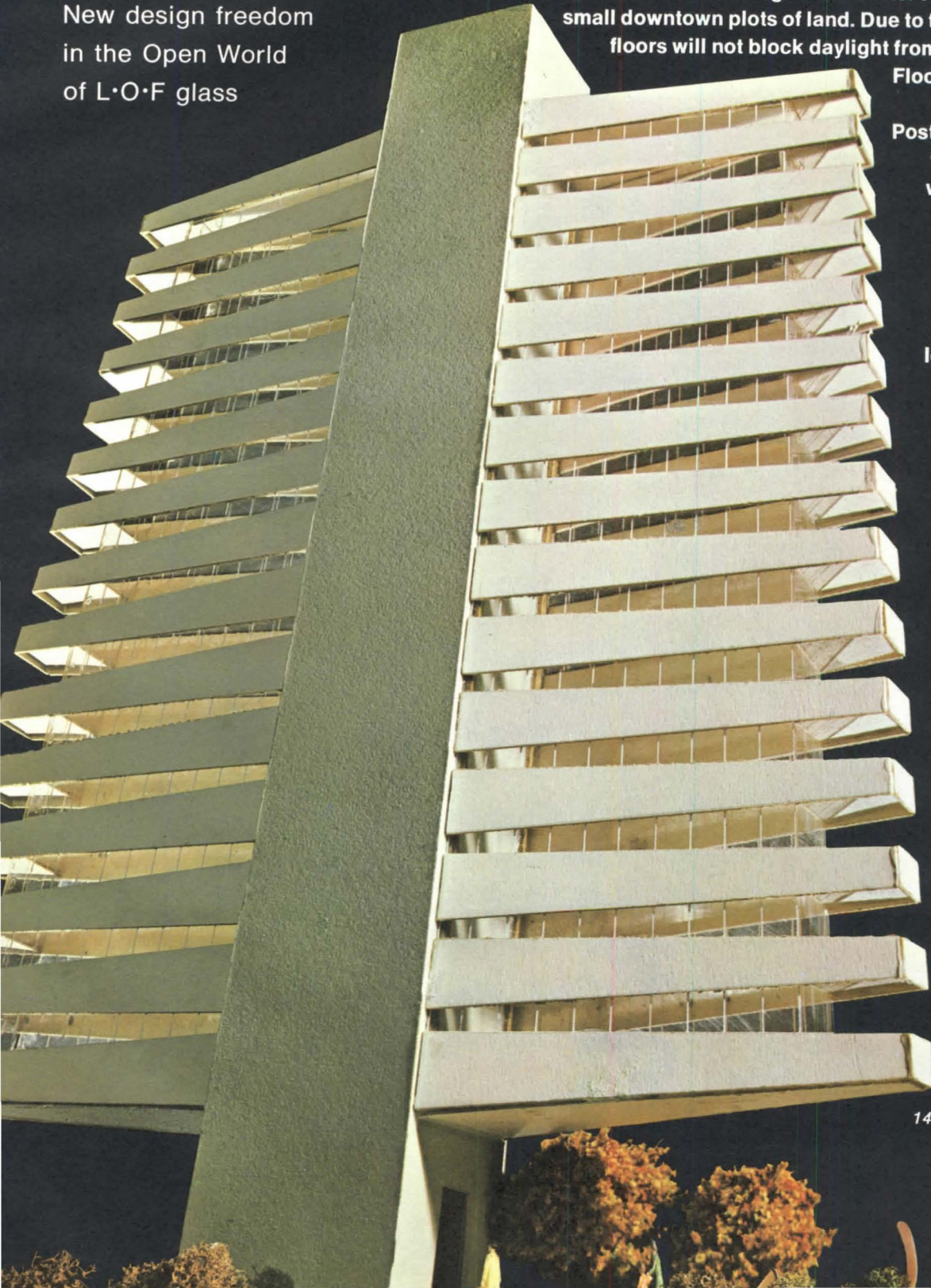
New design freedom
in the Open World
of L·O·F glass

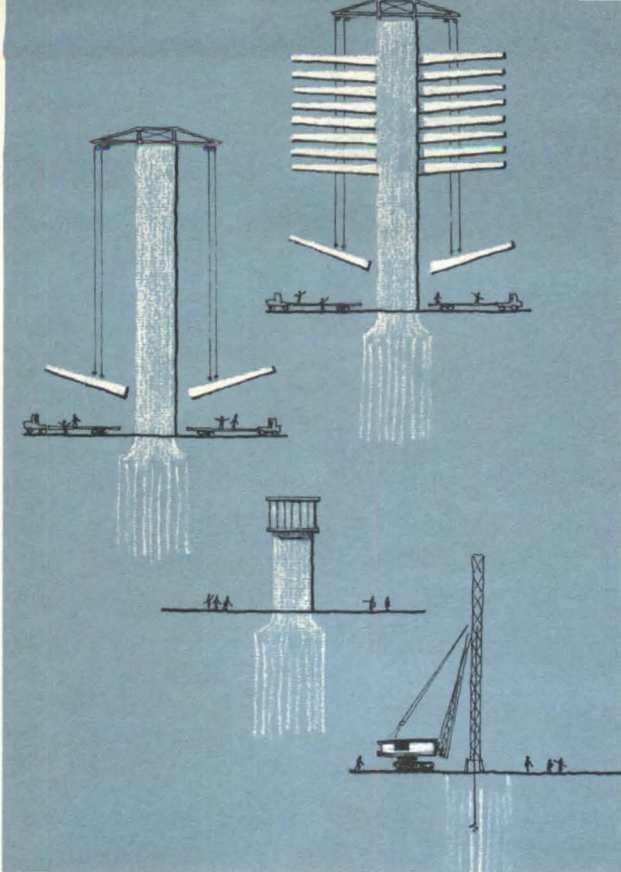
Each floor is attached to the trunk like limbs of a tree. The trunk is a central "slip formed" concrete core. This cantilevered design concept is suitable for apartments, office buildings and motels. The design permits use of small downtown plots of land. Due to their tapering shape, the floors will not block daylight from neighboring buildings.

Floor units are precast, then hoisted into position. Post-tension cables support the floors. Sill-to-ceiling window walls are added, and sliding glass doors lead to balconies at wing ends.

The type of glass used depends upon building location and orientation. *Parallel-O-Grey®* and

14-story apartment designed to fit on a 25-foot urban lot.

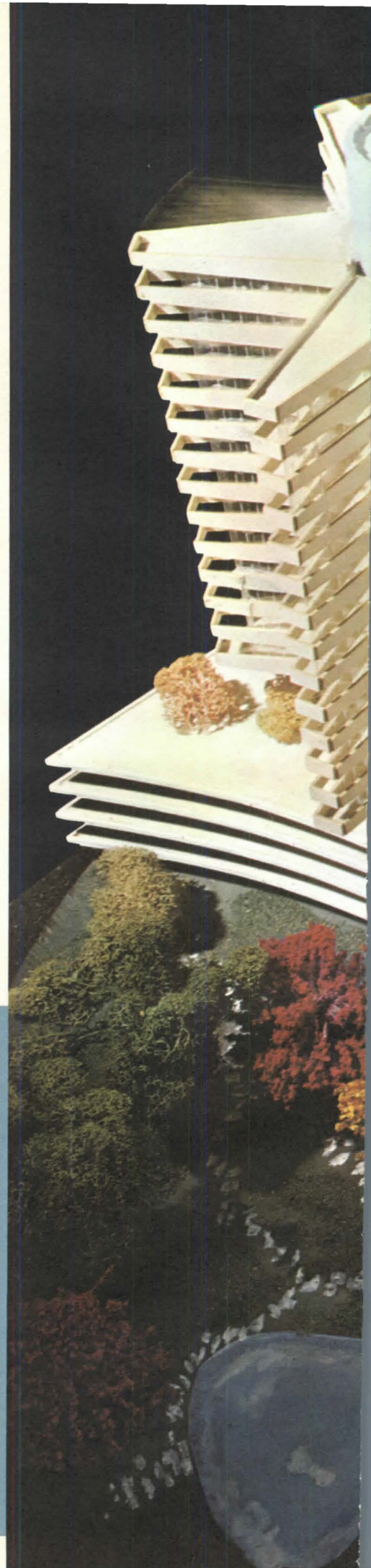
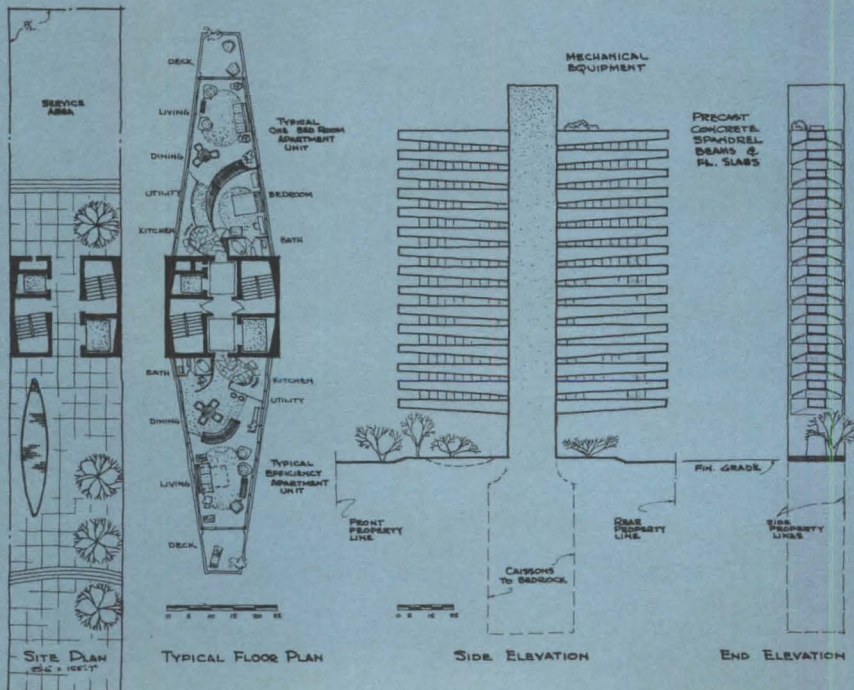




Caisson-type foundation for mechanical core goes down to bedrock. Precast floor units are hoisted into position.

Parallel-O-Bronze® Plate Glass are recommended for sun heat and glare control. **Thermopane®** insulating glass will reduce heating and air-conditioning costs.

A two-wing version of the "tree house" apartment can be constructed on a 25-foot-frontage lot at a cost, the architect estimates, of \$20 per square foot. Additional units would reduce this cost. Ideal for urban renewal. Floor plan and variations of "tree house" buildings are shown. They were conceived by Architect Haigh Jamgochian of Richmond, Virginia.



672-room motel with double towers that can rotate so that all views of an area can be seen from each room every hour.





115,000 sq. ft. office building.

L·O·F makes a particular kind of glass for every purpose in Open World design. Refer to Sweet's Architectural File or call your L·O·F Glass Distributor or Dealer listed under "Glass" in the Yellow Pages. Or write to Libbey-Owens-Ford Glass Company, 811 Madison Avenue, Toledo, Ohio 43624.

Architect's original sketch of the "tree house".

L·O·F GLASS FOR APARTMENT BUILDINGS

POLISHED PLATE GLASS

Parallel-O-Plate®, 13/64", 1/4"

Heavy-Duty Parallel-O-Plate, 5/16" to 1"

Parallel-O-Grey®, 13/64", 1/4"

Parallel-O-Bronze®, 13/64", 1/4"

Heat Absorbing, 1/4"

(grey, bronze and heat absorbing plate are available in heavy-duty thicknesses.)

Rough Plate

INSULATING GLASS—Thermopane®

SPANDREL GLASS—Vitrolux®

Vitreous colors fused to back of heat-strengthened glass

HEAT-TEMPERED GLASS—Tuf-flex®

Doors and sidelights

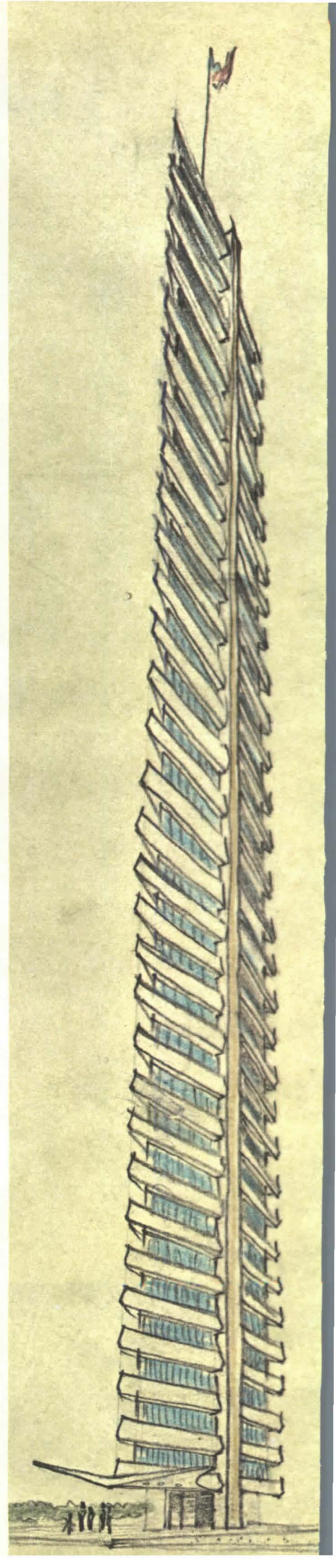
WINDOW GLASS

PATTERNED & WIRED GLASS



Libbey · Owens · Ford Glass Co.

Toledo, Ohio



P/A NEWS REPORT

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

November 1966

BUILDING MATERIALS INDUSTRY PLANS RESIDENTIAL MORTGAGE LOANS

NEW YORK, N.Y. Building materials suppliers are probably more upset than anyone about the current slump in residential building, and characteristically they plan to do something about it. Speaking to the Producers' Council, Gene C. Brewer, president of U.S. Plywood, suggested a "joint mortgage lending program." He pointed out that "companies and individuals with a stake in the prosperity of the construction industry could form a lending corporation which would provide supplemental funds to primary mortgage financiers, permitting them to make loans up to 90%" of a building's value.

This type of supplemental financing, known as "piggyback" financing, has been offered by individual suppliers, such as the General Electric Company, since last year. Brewer's proposal would mark the first time that the resources of manufacturers were pooled to offer wider financing. What the building suppliers would do is provide financing covering a gap not filled by primary lenders. "If the primary lender were restricted to loans of not more than 75%, the new corporation would provide funds for the additional 15%," Brewer explained. "This would not be written as a second mortgage, but as a single mortgage loan. The borrower would be required to pay only one quarter of 1% additional to obtain the high-ratio loan." Although some primary lenders have expressed reluctance to enter into piggyback arrangements, this reticence may be overcome by having piggyback lenders accept the primary lender's evaluation of the property. Industry sources believe an initial \$10 million in equity capital would be put up by those corporations and individuals with a stake in the construction field. Another means of financing under consideration is the use of the in-

dustry's pension funds.

In his speech, Brewer also called for closer communication between manufacturers and architects. He suggested that the Producers' Council hold "problem-solution panels at the working level to encourage the beginning of a continuous dialogue between the industry and leading architects." According to Brewer, "The architects would be expected to discuss in depth their plans for the years ahead. The producers would then attempt to design products and services to meet upcoming needs. The problem-solution discussions could be published and offered on a regular basis to all segments of the industry."

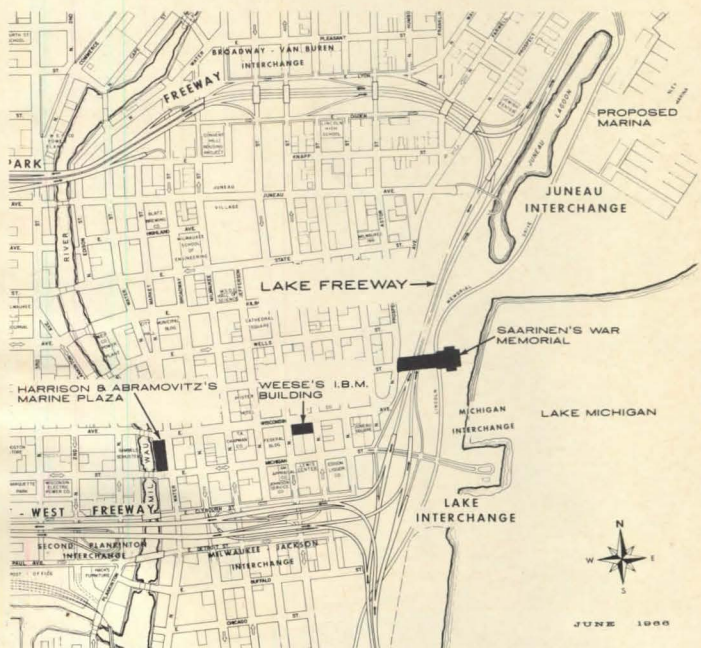
EMMONS RESIGNS FROM BART

SAN FRANCISCO, CALIF. Surrounded by much ballyhoo, the Bay Area Rapid Transit District has been following a downhill course through political and economic quicksand. Its much touted concern for design is, at the same time, proving to be little but so much talk. The most recent note of disillusion was struck in late September when Donn Emmons, principal in the firm of Wurster, Bernardi & Emmons, resigned from his position as consultant to the engineers retained by BART. Lawrence Halprin, who had been serving as consulting landscape architect, also resigned. Emmons and Halprin found they were not being consulted, that the design and planning of the system was being done entirely by the engineers, and that, as a result, no thought or effort was being expended to make the system fit the area it will serve. They stated, for example, that work on elevated structures has gone on with "virtually no planning or architectural guidance for the past year and a half, and they are being designed, with small regard for appearance or effect on adjacent environment."

In his resignation, Emmons advised that a consulting architect be retained, reporting directly to BART, with responsibility equal to the engineers'. In a subsequent telegram to the board, Emmons stressed that his resignation

was a step toward clearing the way for such an appointment and stated that "all the professional experience and resources of my firm will be available to BART and the new architectural consultant to accomplish this end."

MUDDLE IN MILWAUKEE



MILWAUKEE, WIS. Milwaukee's lakefront has always been one of its greatest assets. It stretches for miles beneath a high, sloping bluff; and because of the foresight of some early city fathers, much of the lakefront land was turned into spacious, well-maintained parks. To the north, there is Doctors' Park; to the south, Grant Park; and, in between, fronting on the downtown area, are Juneau and Lake Parks. They are havens for people from all over the city, who flock there in hot weather with their picnic baskets. Some even bring mattresses and spend the night. Fires along the beach can be seen late on summer evenings.

Lincoln Memorial Drive, built in the late 1930's, wends its way along the lakefront, starting at Eero Saarinen's War Memorial, past a long, shaded lagoon, a yacht club, a curving stretch of public beach, and a gun club. Few cities in the country can boast

such an enlightened use of a waterfront. The Drive, far from becoming a speedway for motorists passing to and from town, became an automobile promenade of sorts, from which motorists watched Lake Michigan in all its moods, from which boys in convertibles whistled at girls on the beach, and along which Sunday motorists could park and wash their cars. In short, the Drive, instead of cutting the city off from the lakefront, made it even more accessible. It is not unusual even today to see a line of traffic come to a halt while a mother duck leads her family from the lagoon and across the road on some unexplainable mission.

Now, for reasons almost too well known to mention, the roadbuilders want to change that. Milwaukee's plight, while far from unique, is nonetheless pathetic. Proposed plans call for an eight-lane expressway that would knife along a portion of the


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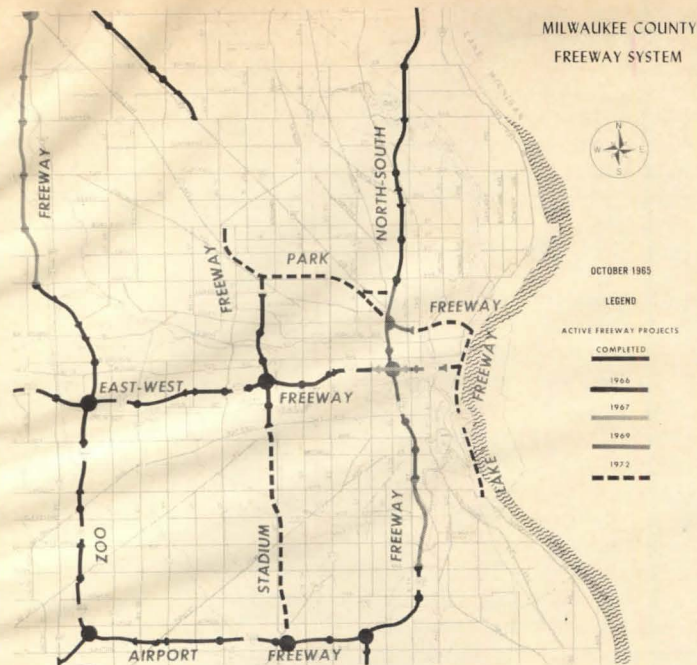
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downtown lakefront, decisively cutting it off from the city behind it. Those hardy souls who manage to penetrate the barrier to be thrown up by the Lake Freeway, as it is to be called, will be able to eat their bratwurst sandwiches to the accompaniment of the roar of freeway traffic. A day on the Milwaukee lakefront will become like a day spent next to any other interstate highway.

Interstate highway funds are involved. The lakefront extension of the Milwaukee Freeway system is estimated by the County Expressway Commission to cost about \$26 million. Half this amount would be put up by Milwaukee County, and half by the Federal Government. Proponents of the roadway argue that the county would lose Federal funds if the Lake Freeway is not built. This all-too-familiar argument is not unlike the logic of a Nazi prison camp commandant arguing that he would lose government funds if he failed to build a gas oven.

Milwaukee is in great need of a well-planned transit system. There is no rapid transit. The vastly curtailed railroads offer no commuter service to suburbs, and the automobile remains the only efficient means of getting to and from downtown. Belatedly, Milwaukee started a freeway system, with arteries running into the center of town from the west, south, and north. But, according to most Milwaukeeans, an extension running along the lakefront is needed

about as badly as Atlanta needs a baseball team — in other words, not at all. There is adequate automobile access to the downtown area from the wealthy residential area to the northeast along existing city streets, especially with the north-south freeway carrying traffic into town from outlying areas. The reason the loop along the lakefront was added seems to be that parkland, already owned by the county, is cheap. But is it? The ultimate cost to Milwaukee residents can hardly be measured. Where will people go on summer evenings and weekends if the lakefront becomes undesirable? How will downtown residents like opening their windows on summer nights to get the lake breezes and find instead that they are inhaling exhaust fumes from cars and trucks? Residents of Philadelphia, New Orleans, and San Francisco, all victims of the penurious planning of the Bureau of Public Roads, can tell them. Downtown merchants, so anxious for these roads, fail to understand that, far from bringing more people into the city, these rivers of concrete, if mishandled, only make it more desirable and easier to leave town.

Fortunately for Milwaukee, there is still hope. An informal group of concerned citizens gathered 48,000 signatures (they needed only 45,000) for a petition calling for a referendum on the issue to be put to the City of Milwaukee residents. On April 4,

1967, they will be asked to vote on whether they think the freeway extension through the park and along the lake is consistent with Milwaukee policy. If the vote is no, the city can recommend to the county that the route be restudied. It is an involved procedure. But in the time gained perhaps the Bureau of Public Roads can be made to see that you do not have to pave it just because it is green.

THE BREUER PAPERS

SYRACUSE, N.Y. On the eve of the opening of Marcel Breuer's Whitney Museum in New York, Syracuse University announced the acquisition of many of Breuer's drawings and manuscripts. The papers, which cover his work from 1934 (three years before he came to the U.S.) to 1953, include correspondence, preliminary sketches, memoranda, billing data, contracts, and blueprints. In all, there are more than 20,000 items. They will become part of the Syracuse University Manuscript Collection and will be available to historians and students.

THANKS FOR THE MEMORY



Photo: John-Peter Hayden, Jr.

NEW YORK, N.Y. When the Ziegfeld Theater opened on February 2, 1927, with the bubbling, easily forgettable production of *Rio Rita*, it was the beginning of an era. In a way it was the end of one, too. The house, which seated 1638 and gave everyone an uninterrupted view of the stage, was ellipsoidal in shape, interrupted at the stage by an opposing curve of a small stage apron. At the time, both the curved walls and the

curved stage apron were in opposition to the more classical shapes of theaters, with their flat walls and consequent fan-shaped auditoriums. The uninterrupted sight-lines were also unusual for a legitimate theater. Perhaps the most significant innovation, however, was the console lighting.

Between 1927 and 1931 — during which time *Show Boat* opened there, Jimmy Durante made his first Broadway appearance there, and Ruby Keeler and her husband Al Jolson sang from a runway extending out into the orchestra — the performances were lighted automatically from a switchboard console set to operate without human intervention. It was a system that became a forerunner for systems that have their optimization in the new Met at Lincoln Center. But by 1931, the economics of show business had suffered a reversal, and the Ziegfeld became a movie house.

Designed by Joseph Urban and Thomas W. Lamb, the Ziegfeld set — or at least solidified — a design style that has been much copied. The façade carried simple, large-scale decoration; and the exterior expressed the shape of the auditorium. On the false proscenium façade, curving between two gigantic pilasters, were two huge masks.

In the early 40's, showman Billy Rose bought the theater for a price reportedly near \$500,000. (It had cost \$2 million to build in 1927.) After about 10 years, Rose refurbished it, restoring it to its original opulence — right down to the gold carpeting. The ceiling mural was still the largest oil painting in the world. (Michelangelo's Sistine Chapel ceiling was the second largest.) Unlike Michelangelo, who lived in a less complicated age, architect Urban had to join the paperhangers' union to end a two-month dispute about who would put the mural in place. The paperhangers put it up.

To raise money for the restoration, Rose entered a contract with NBC, and to do so he passed up a chance to produce *My Fair Lady*. If he hadn't, the Ziegfeld might still be standing. It isn't. This fall it came down, to make way for an Emery Roth & Sons-designed office building.

1967 ARCHITECTURAL WORK MAY REACH RECORD LEVEL

Although most architects across the country grumble about the possible effects of tight money, the average architectural office has more work on the boards than at any time since PROGRESSIVE ARCHITECTURE first forecast coming architectural business 11 years ago. According to 1332 respondents to P/A's annual business survey (the only one of its kind in the architecturally designed building field), the average office has \$6,160,000 of work on the boards for 1967. This is an 11 per cent increase from an average of \$5,518,584 projected in last year's P/A business survey, and represents potential health in the architecturally served construction industry at a time when many economists and pundits are widely pessimistic.

There is some pessimism among architects, too. They are afraid that the money situation will worsen, leaving many designs on the drawing boards. One California firm, with about \$2,500,000 of work in preparation for 1967, notes: "Every project in this office is held up from bid by lack of financing. If this is not corrected, there will be no architectural practice in 1967." Not all, of course, paint this black a picture, and indeed most offices continue the optimism, born of affluence and evident in last year's survey. They point to a healthy economy, increased public spending for urban renewal projects, and the simple need for more buildings as the population grows. What pockets of doubt exist seem to represent the effects — or expected effects — of a shifting architectural practice.

Most severely affected by current tight money, a factor almost every architect believes will influence business for the coming year, will be small firms, working on small projects for which financial institutions are not so willing to put up funds. Depending on how tight money actually becomes, many young architects and principals of small firms may be going back to work for larger firms that maintain a broader scope of business.

Shift in Housing and Industrial Work

Part of the shift in architectural practice is seen in the dips taken by housing and industrial work. According to the survey, industrial work will be down a significant 23 per cent from 1966. Housing continues to drop, and total housing starts, multiple (low and high rise) and single residential will be off a total of 7.3 per cent. Still, it is interesting to note that private residential work will almost double that of the 1966 total, partially offsetting an 18 per cent decline in multiple residential work. Apartment vacancies throughout the country are still running close to 7 per cent, and multiple residential building will probably not turn around until this overbuilding has been absorbed. Private housing, however, at least that which is architecturally designed, may make a strong turn. The availability of financing and the height of the interest rates will probably determine whether this turn can be made in 1967.

Public Use, Health, Urban Design, and Defense Show Significant Increases

In addition, public use construction should increase about 90 per cent, and work in health construction by 20 per cent. Some of this work in health shows the incipient impact of Medicare. But most of it undoubtedly stems from the overcrowding of facilities brought on by an increase in population and a gradual proportional increase in persons over 60 years old. Both the increase in these areas and those in urban design (up 20 per cent) and defense (up 12 per cent) show the increasing effect of Government spending for construction. According to the survey, 33.5 per cent of all architectural work will be for government, local or Federal.

Eight of the 10 geographical areas of the country report gains in business. And, in 1967, California, Nevada, Hawaii (where business in the average office has almost doubled) will replace the Great Lakes region as the

most active area. In seven regions, education work is the most prevalent type (as it was before). Exceptions are California, Nevada, Hawaii, where public use tops the list; Texas, where commerce is the busiest category; and the North Central states, where health work predominates.

Most Work in Preliminary Stage

It is perhaps significant that at this time only 39 per cent of work for 1967 is in the working-drawings stage. Depending on the difficulty of gaining financing, the outcome of that portion still in the preliminary stage could be questionable. On this outcome, of course, depends whether or not the architectural profession in the U.S. will have a record year.

One Type of Work

Specialization is down slightly from 1966, with 9.3 per cent of all firms reporting specialization in one architectural category (Table 5). The most popular category for specialization is, of course, education, as it was in last year's survey. Defense is missing from this year's specialization list and no firms reporting specialize in urban design.

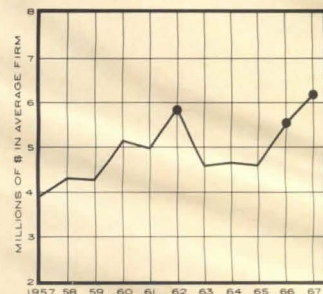
Commercial Work Most Widespread

The categories of activity found in the responding firms is indicated by percentage in Table 4, contrasting with Table 3, which shows categories by dollar volume. More firms (58.1 per cent) work in commercial structures, although education represents the greatest dollar volume. Only slightly more than half the firms reporting do education work. Approximately one-third have work in health and public use, and slightly more than a third (36.4 per cent) have private residential work on the boards.

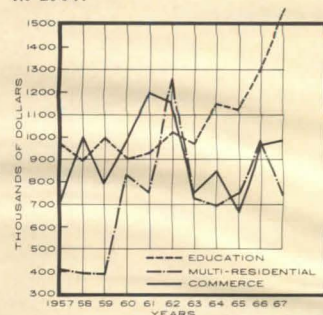
Size of Firms

In the past 11 years, the P/A business survey has shown that by far the greatest percentage of firms throughout the U.S. have up to nine employees. This year is no exception, with 79.6 per cent (Table 6) fitting this category. But firms with fewer than 4 employees have increased almost 10 percentage points, and

those with more than 20 employees have increased 1.5 percentage points, now representing slightly more than 10 per cent of all firms. Largest decreases are in firms with from 5 to 9 and 10 to 19 employees, which have declined jointly 23 percentage points from last year.



Eleven-year breakdown of dollar volume of business in average firm. Survey shows that 1967 will be busiest year for architects since survey began in 1957.



The three most active building categories are plotted for last 11 years, showing average dollar volume in each category in average firm. Education continues its steady growth.

The percentage of firms with \$10 to \$50 million on the boards has increased from 10.4 per cent last year to 13.9 per cent this year. But, of course, the majority of offices (84.7 per cent) have less than \$10 million of work in progress.

Reasons for Past Performance

Questioned about the increase in architectural business during the past 15 years, most architects attribute the rise to the needs of an expanding population coupled with a spreading understanding of the contribution an architect can make. To say, as one respondent did, that expanding architectural work stems from "more need for buildings" is to oversimplify. Perhaps closer to the truth is the reply of one architect, who wrote that "buyers want more luxurious space to shop in, live in, work in and lounge in. The architect, because of his training, is best qualified to create

this." Also given credit for the increase are the growing complexity of architectural work, the desire of some public and civic leaders to create a better environment, and advertising, aimed at architects, which shows continued improvements in materials and design.

Setting the Pace

What will be the factors affecting design trends and archi-

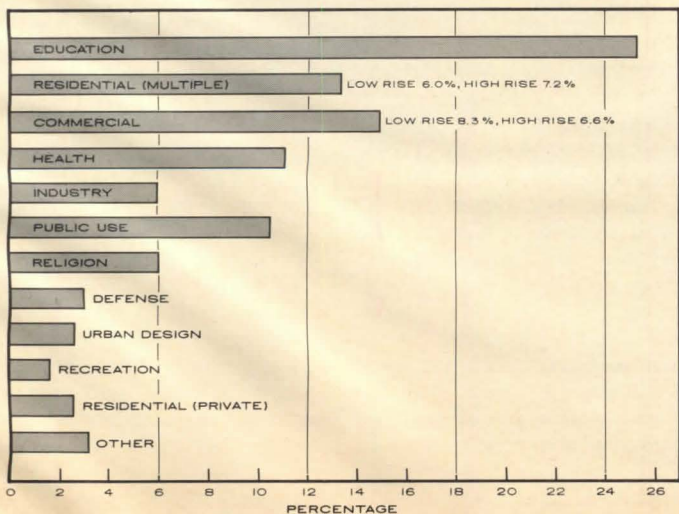
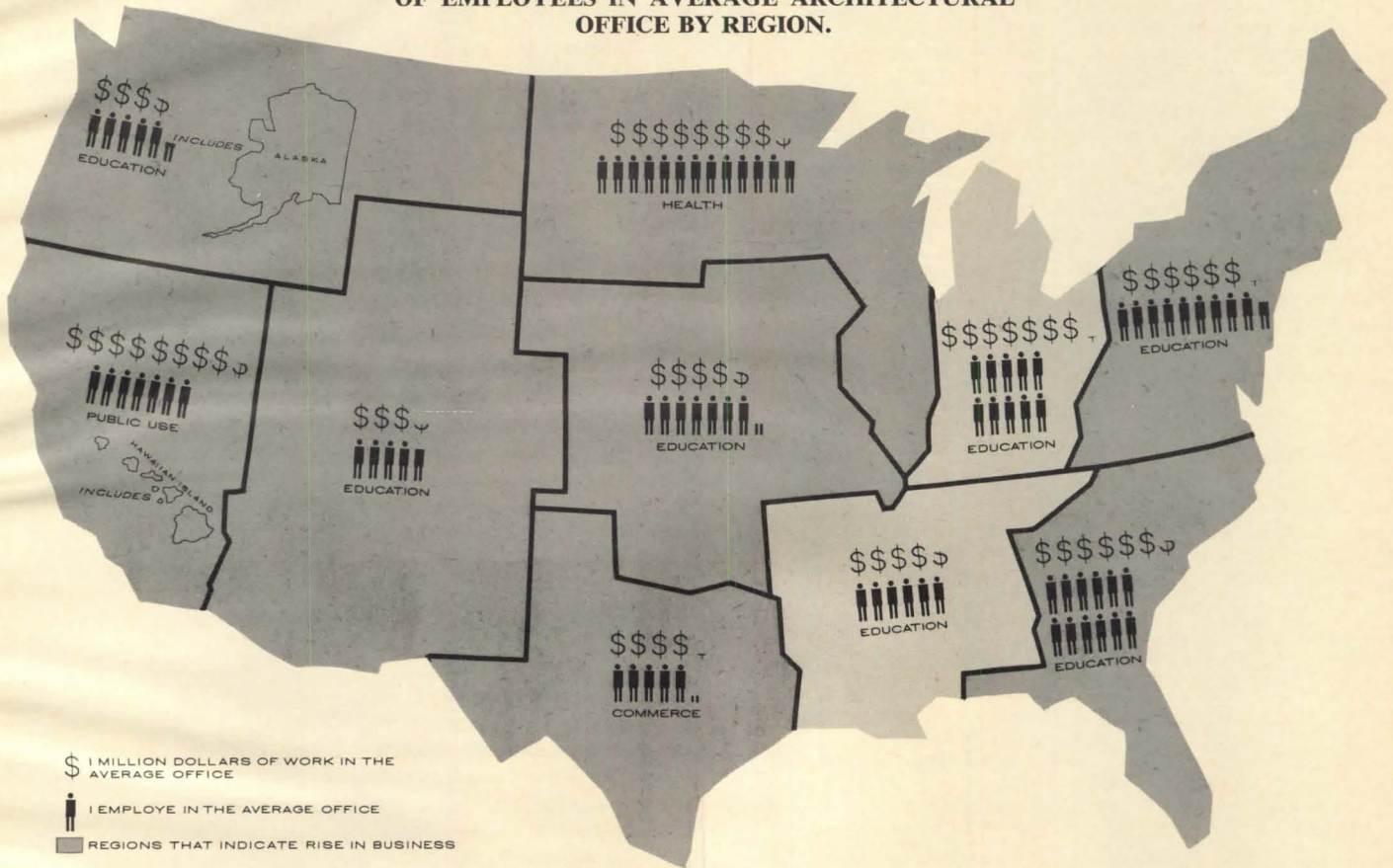
tectural practice in 1967? Many architects feel that today's high interest rates, coupled with increasing costs of labor, will lead to a vigorously renewed search for less costly building solutions. A Kansas City firm whose work for 1967 is up 15 per cent over this year states: "Economic slowdown will be followed by a return to conservatism in design. Flights into structural

fantasy and nonfunctional block stacking will be replaced by a more useful and more mature rationale." Some architects see the cost squeeze leading to more prefabrication and an increased use of plastics. Also, the labor situation, where more money is paid less skilled workers for less work, will lead, according to a Maryland firm with 20 years' experience, to architects spend-

ing more time in the field. They must "accept much longer construction periods for their projects," they believe.

And the Viet Nam war will, many feel, strongly influence developments in 1967. Allocation of materials to the war effort is seen as leading to shortages affecting construction. Some respondents believe that the architect will

U.S. MAP SHOWS DOLLAR VOLUME AND NUMBER OF EMPLOYEES IN AVERAGE ARCHITECTURAL OFFICE BY REGION.



Bar graph shows what percentage of work, in the average office throughout U.S., is in which category. Percentages add up to 100.

TABLE I
Number of Firms Reporting and Regional Distribution

Region	No. of Firms	% of Firms
Northeast	403	30.2
California-Nevada		
-Hawaii	176	13.2
Great Lakes	127	9.5
Southeast	124	9.3
North Central	114	8.6
Texas	81	6.1
Western Mountain	81	6.1
Central States	80	6.0
Gulf States	74	5.6
Northwest	72	5.4
Total Response	1332	100.0

Percentage of replies from the Northeast are up slightly this year and down slightly from the Southeast and the North Central regions. Otherwise, the distribution remains much the same as in the past, with replies coming in from every state in the Union.

TABLE II
Average Dollar Volume By Region

Region	Average \$ Volume
California-Nevada	
-Hawaii	8,550,000
North Central	8,310,000
Great Lakes	7,020,000
Southeast	6,480,000
Northeast	6,190,000
Gulf States	4,670,000
Central States	4,620,000
Texas	4,180,000
Northwest	3,687,000
Western Mountain	3,202,000
National Average	6,160,000

Average dollar volume lead moves from Great Lakes States to California, Nevada, Hawaii, where the amount of work for the coming year almost doubles. National average is highest since P/A survey started 11 years ago. It is up more than \$500,000 from last year, and almost \$200,000 higher than 1962, the previous record year.

become increasingly a member of a team that includes planners, contractors, engineers, and construction companies. An Illinois architect who reports a 25 per cent increase in business for next year states: "Of major concern to most architects in our area is shortage of trained people. We note that fewer young people are attracted to architecture because of the five to six years it takes to get a degree. Therefore, I fear that industry will take a stronger position in the construction business."

Despite the cost squeeze, many architects see a greater freedom of expression emerging, led by the styles of a new wave of architects. But the work of the established older practitioners, such as Louis Kahn, will continue to have an impact on design. And, as usual, many respondents feel that the design trends in the next year will be strongly influenced by projects published by the architectural press.

TABLE III

Dollar Volume Averages and % Distribution of Work by Types of Buildings in All Regions

Type of Building	% of All Firms' Work	\$ Volume in Average Office
Education	25.2	1,562,000
Commerce	14.9	952,500
Low Rise	(8.3)	(528,500)
High Rise	(6.6)	(424,000)
Residential (Multiple)	13.2	833,800
Low Rise	(6.0)	(372,300)
High Rise	(7.2)	(461,500)
Health	11.2	700,000
Public Use	10.5	662,000
Religion	6.0	372,000
Industry	6.0	369,500
Other	3.2	210,200
Defense	3.0	192,200
Residential (Private)	2.6	173,000
Urban Design	2.5	154,500
Recreation	1.7	121,700
Total Work, All Respondents	100.0	\$8,222,985,208

Work in Religion is more than double that of last year. Residential (Private) and Public Use show increases almost as large. Largest decline is in Industry, and although Commerce moves into second place behind Education — replacing Residential (Multiple) — it is actually down slightly from last year.

TABLE IV

Activity of Architectural Firms in Types of Buildings

Types of Buildings	% of Firms Reporting Current Work
Commerce	58.1
Education	53.7
Residential (Multiple)	39.3
Residential (Private)	36.4
Religion	34.7
Public Use	32.8
Health	32.3
Industry	25.0
Other	10.4
Urban Design	5.1
Defense	4.7
Recreation	1.5

Most U.S. firms have work in more than one category, so percentages add up to more than 100. Distribution is quite similar to last year.

TABLE V

Specialization of Architectural Firms

Types of Buildings	% of Firms Doing Only This Type of Work
Education	2.1
Residential (Private)	1.6
Residential (Multiple)	1.5
Commercial	1.3
Religion	.9
Industry	.7
Health	.5
Other	.3
Public Use	.2
Recreation	.2
Total	9.3

Total specialization has declined slightly since last year. This year, no firms report specialization in either Defense or Urban Design.

TABLE VI

Sizes of Architectural Firms

Size of Firm by Number	% of National Total
Up to 4 Employees	57.60
5-9 Employees	22.00
10-19 Employees	10.35
20-39 Employees	6.60
40-100 Employees	2.48
Over 100 Employees	.97
(Total: 1332 Replies)	100.00

Size of Firm by \$ Volume of Work on Boards	% of National Total
Under \$1 Million	29.7
\$1-10 Million	55.0
\$10-50 Million	13.9
\$50 Million or Over	01.4
Total	100.0

Percentage of firms with more than 40 employees has increased slightly, while number with up to 4 employees has increased almost 12 percentage points. At the same time, percentage of firms with more than \$10 million of work on the boards is up.

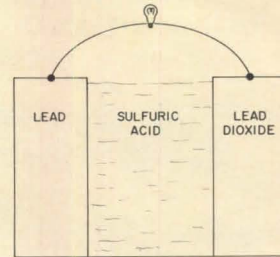
THERE'S AN ELECTRIC CAR IN YOUR FUTURE

DETROIT, MICH. The Ford Motor Company announced last month that it was working on a battery that will, when perfected in a couple of years, drive a small car — "a sub compact," they call it — at 40 mph for distances from 150 to 200 miles. In crowded New York City, where the average car speed on traffic-clogged



FORD ELECTRIC CITY CAR CONCEPT

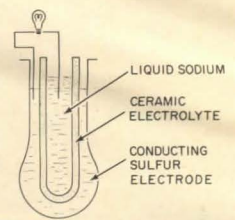
LEAD ACID STORAGE BATTERY



SOLID REACTANTS, LIQUID ELECTROLYTE

ON DISCHARGE, ENERGY IS EXTRACTED IN EXTERNAL CIRCUIT WHILE BOTH ELECTRODES AND ELECTROLYTE UNDERGO CHEMICAL CHANGE.

FORD SODIUM BATTERY



LIQUID REACTANTS, SOLID ELECTROLYTE

CURRENT IS CARRIED BY SODIUM ATOMS WHICH GIVE UP ELECTRONS TO EXTERNAL CIRCUIT, TRAVERSE SOLID CERAMIC ELECTROLYTE AND REACT WITH SULFUR.

streets is estimated to be 13 mph, and average daily driving distances about 26 miles, the Ford electric car would be a boon indeed. To recharge the battery, a user would plug it into his household circuit once a week. According to Ford, the operating cost per mile would be something like .657¢, as compared to more than 2¢ for present cars. Moreover, the battery-operated car would be silent and fume-free, two sterling attributes that should make every noise-rattled, fume-choked city dweller stop and prick up his ears. Unfortunately, any shift to small electric cars will undoubtedly be a slow, painful one, as drivers tend to resist giving up their speedy, powerful status symbols. If Ford does bring forth its electric car, at least there will be an available alternative.

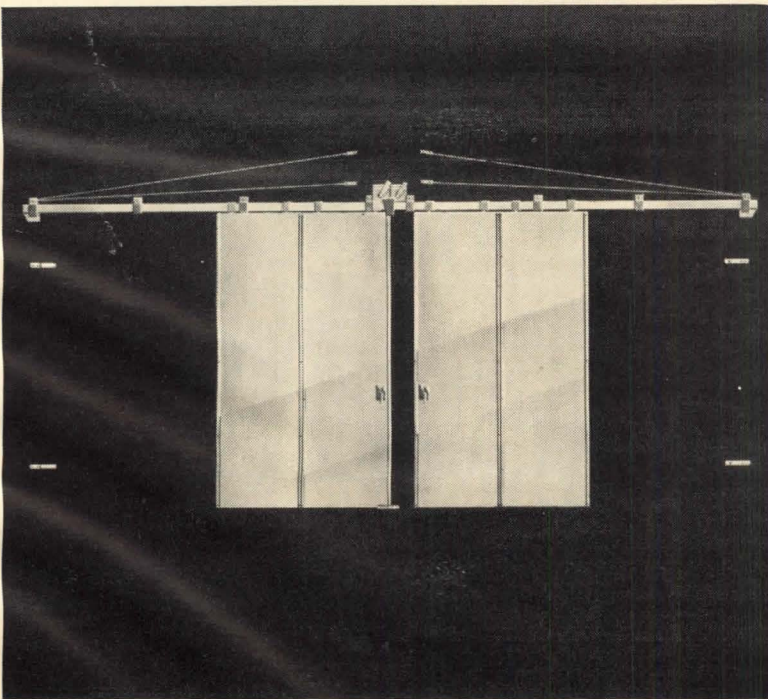
Up to now, experiments with electric cars have been less than promising. To power even a small car, so many conventional lead acid batteries are needed that both motor compartment and trunk must be filled with them. One experimental model of this type weighed about 6200 lbs and cost more than \$4000; in addition, it could travel only about 40 miles before needing 12 hours of recharging. Ford's

sodium-sulphur cell battery would power two starter-sized motors, and the whole unit could fit under the front seat of the small, four-passenger car.

Such small city cars have long been a dream of designers. In an interview with P/A, industrial designer Raymond Lowey, who designed the postwar 1947 Studebaker, which gave the automotive world the coming-or-going look so fashionable in automobiles since then, pointed out: "If you take a conventional car, cut off the motor compartment in front, cut off the trunk in back, cut off the space taken on each side by the wheels and fenders, you have a car that will carry four people comfortably and take up about half the space. The motor would go under the driver's seat." This is precisely the car Ford now envisions. General Motors is said to be working on somewhat similar battery-powered cars, but is not yet ready to make an announcement. "Ford always likes to talk about their research projects," said one GM official. The automotive companies obviously see the demand for noiseless, fumeless, efficient transportation. It is up to the rest of us to see that the demand is met.

The neat door

Beautifully functional. Functionally beautiful.



That's Steelcraft's new "J" sliding labeled fire door. Clean, flush design. Looks like it belongs—not just something to be tolerated. No crazy-quilt patchwork. No ugly weights, or counter-balances.

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On Readers' Service Card, Circle No. 403

AWARDS

"Citations for Excellence in Community Architecture" have been awarded by the AIA to the cities of **San Diego, Calif.,** and **Albuquerque, N.M.** San Diego was the recipient of an award for its Mission Bay Park (see below), a project that involved dredging the channel of the San Diego River and conserving 27 miles of tidal shoreline. Albuquerque's citation was the reward for an extensive remodeling of public space in the city's downtown area . . . At the annual convention of the American Institute of Building Design, **Glendon P. Bowman** and **Carl Cristiano** received the first annual Louis Siegler, Inc., Holly Division "Environmental Control Award." The two building designers were commended for their improvements in heating and air-con-

ditioning applications and design in their Madrid cooperative apartment in Arcadia, Calif.

PERSONALITIES

Hugo Erickson, member of the St. Paul (Minn.) firm of Tolitz, King, Duvall, Anderson & Associates, has taken office as President of the American Public Works Association. He is a former city coordinator and director of public works for Minneapolis . . . **H. R. H. Prince Philip, Duke of Edinburgh**, is the first honorary member of the Concrete Society, founded last month in London. The new organization comprises the Reinforced Concrete Association and three other groups, which have merged in an effort to organize and publicize the British concrete industry.

SAN DIEGO BUILDS A WINNER



SAN DIEGO, CALIF. Noted in the "awards" column this month is the AIA's "Excellence in Community Architecture" award to the city of San Diego. The city received the citation for its Mission Bay park — 4600 acres (approximately half land and half water) of tidal flats with 27 miles of shoreline that have been developed for public recreation.

Early in the project's history, 20 years ago, it was stipulated that 75% of the area be retained for public parks and beaches; the remaining 25% was to be leased to private concerns for supporting facilities. Today, Mission Bay offers boating, fishing, and swimming hotels (Vacation Village Hotel, 1), restaurants



(Restaurant of the Islandia Hotel, 2), and marinas, as well as general recreation areas.

The park shows considerable architectural diversity, which was purposely achieved by retaining many architects to work on it. And just as there is a pleasing mixture of recreational facilities, so is there a pleasing mingling of land and water: There are canals, basins, fountains,

pools, and lagoons. The water is bordered by boardwalks, crossed by bridges, and pierced by piers and pilings. Certain buildings have emphatic vertical designs, providing points of orientation

for park visitors.

Cost of the entire project is expected to be \$106 million (\$50 million private and \$56 million public funds, including a \$2 million bond issue approved by the city in 1945).

THAT GREAT ARCHITECTURAL PASTIME—BASEBALL



NEW YORK, N.Y. Caught in a deceptively relaxed pose, the tough, aggressive baseball team fielded by the office of Edward Larrabee Barnes shows that style is a matter of inner spirit, not external trappings. Although some of the 10 teams in the league composed of New York architectural offices had jerseys and names (sample: The Rocks — Edward Stone's team), the Barnes group relied on understatement. It won them first place in the league, which staged its games evenings during the summer and fall in Central Park. Architect Michael Lawn, of Kelly & Gruzen, kept track of the schedules and standings, and was supposed to present the winners with a post-season trophy. Although Ed Barnes was not present when the photo (above) was taken, he was a frequent competitor in



Photos: Maude Dorr

center field. Edward Stone and Wallace Harrison caught occasionally for their teams.

These were the final standings:

	Won	Lost
Edward Barnes	7	1
Clarke & Rapuano	7	2
Harrison & Abramovitz	6	4
Edward Stone	5	5
Philip Johnson	4	4
Marcel Breuer	4	5
Victor Gruen	2	4
SOM	2	4
Kelly & Gruzen	2	6
Max Urbahn	1	5

BREUER, TANGE TO DESIGN FOR FLUSHING MEADOWS

NEW YORK, N.Y. In a luncheon speech to the women's auxiliary of the New York Chapter, AIA, Commissioner of Parks Thomas P.F. Hoving announced plans to create recreational facilities in Flushing Meadows, site of the 1964 —

65 New York World's Fair. Exactly what will be done will be left up to Marcel Breuer, Kenzo Tange, and Lawrence Halprin, whom the Parks Department has commissioned to submit designs for a sports park there. In his

At the ripe old age of two this building was recaulked with G-E Silicone Sealant.



(The original caulk couldn't stand the weather.)

Was it the Florida heat or a hurricane named Dora?

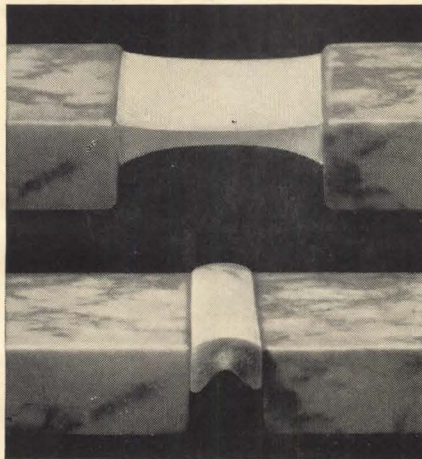
Chances are, both caused the polysulfide caulk in this Florida hospital to break down in just two years. (And it was guaranteed for five!)

Now, General Electric's Silicone Construction Sealant is doing the job. It's providing superior protection day in and day out. And it'll survive Hurricanes Dorothy, Dolores, Donna and Dinah!

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GENERAL ELECTRIC

On Readers' Service Card, Circle No. 427

speech, Hoving suggested facilities for both indoor and outdoor sports that could be used either formally or informally. He mentioned a touch football field and a drag strip. But both the design and the specific nature of the facilities will be left up to the architects.

Getting such top-notch talent to prepare designs is a welcomed change for New York City, and would indeed be welcome anywhere. Hoving's announcement came less than a week after Mayor John Lindsay had announced an invited architectural competition for a \$5,700,000 combined police station house, stable, and riding ring in Central Park. Invited to submit designs in the \$100,000 competition were Edward L. Barnes, Marcel Breuer & Associates, Kelly & Gruzen, Philip Johnson, and Whittlesey, Conklin & Rossant. All are New York City firms.

SIGNATURES SOUGHT TO PROTEST VIETNAM WAR

NEW YORK, N. Y. A group of New York architects concerned with the effect of the Vietnam war on the construction industry (see business survey, p. 60) and on human values, formed last month the Committee of the Planning Professions to End the War in Vietnam. In a plea for petition signatures to send to the White House, they note that "leading representatives of all fields of thought, of the arts and sciences, and of the professions, except notably our own, have called for an end to the killing." They hope to add the voice of the planning profession to those already raised in protest. What they want is sensible negotiation at the conference table and a cessation of fighting. All professionals are invited to send signatures, followed by identifying professional initials (AIA, ASCE, AIP, etc.) to Maxfield F. Vogel, Committee of the Planning Professions to End the War in Vietnam, Room 331, 101 Park Avenue, New York, N.Y. 10016. Contributions of \$5 or more are also invited to cover the costs of the campaign, including advertising in professional magazines.

THE CHICAGO PICASSO



Photos: Hedrich - Blessing

CHICAGO, ILL. Within eight months, the plaza in front of Chicago's soaring Civic Center will have a specially commissioned 50' sculpture by Picasso. To be constructed of the same corrosion-resistant steel as the building it will decorate, the sculpture will rest on a 20' x 30' granite base and will weigh 125 tons, almost as much as "The Mayflower," which brought the pilgrims to Plymouth, Mass. An idea of what the sculpture will look like when it takes its place in the plaza can be seen in the photo of the model superimposed on a photo of the Civic Center (above).

Back in 1963, before construction work started on the Center, the architects (C. F. Murphy Associates, Supervising Architects; Skidmore, Owings & Merrill, and Loeb, Schlossman, Bennett & Dart, Associate Architects) decided that a monumental sculpture was needed as a focal point in the plaza. According to William Hartmann, partner in SOM's Chicago office, the architects "decided to ask the foremost artist in the world if he were interested in designing such a monumental sculpture. . . . We wanted the sculpture to be the work of the

greatest master alive."

Armed with their vision, Hartmann and his colleagues — C. F. Murphy and Norman Schlossman, together with Sir Roland Penrose, Picasso's biographer — went to the artist's home in Mougins, France, in 1963. They took with them a model of the Civic Center site and a fat album of photographs of Chicago in all her moods and guises. "We included photographs of famous men and women from the Chicago area," Hartmann recalls. "Picasso appreciated this human element in our presentation and even became excited when he recognized an old acquaintance."

"My friend!" exclaimed Picasso, looking at the photo of author Ernest Hemingway. "I taught him everything he knew about bullfighting. Is he from Chicago?"

Hartmann believes that what finally persuaded Picasso to accept the commission, something he has rarely done, was "the bigness, vitality, and dramatic beauty of a still young city."

In May 1965, the artist completed the 42" steel model, which is on display at the Art Institute of Chicago's Gallery of 20th-Century European Art, one of 145 works by Picasso the Institute now has in its permanent collection.

Sir Roland, Picasso's biographer, says this about the sculpture: "Serene and evocative of many interpretations, the great head is more than a head. At first sight, it is the head of a woman with ample flowing hair. The simplicity of the outline and the economy with which each component part is used to build up the whole prompts the imagination to fill in the empty spaces and also encourages other associations, just as words in a poem can convey more than one meaning. The two winglike shapes that are her hair suggest with equal truth the fragile wings of a butterfly or the powerful flight of the eagle, while at the same time the rods that connect them with the profile seem to contain the music of a guitar. . . . The materials of which it is made are primarily air and light, held together decisively by the rigid metal. This is noticeable in the span shaped

like a head, which is framed by the air and connected by a veil of rods with the profile. With admirable precision, the profile rises through mouth and nose to eyes and forehead. Subtlety, simplicity, and strength combine throughout to make this splendid evocation of that concentration of wonder — a woman's head."

COMPETITIONS

The New York Chapter, AIA, has announced the 1967 competition for its \$6000 Brunner Award. The award is made for advanced study in the architectural field. Applications are available at Chapter Headquarters, 115 E. 40th St., New York, N.Y., until January 1, 1967. Projects must have been submitted by January 15 . . . The AIA has announced its nineteenth annual program of National Honor Awards for work by American architects on projects completed since January 1, 1962. All building types are eligible. Preliminary application must be submitted with entry fee before November 25, 1966. Write for program and entry forms to 1967 Honor Awards Program, The American Institute of Architects, 1735 New York Avenue, N.W., Washington, D.C. 20006.

CALENDAR

Monday and Tuesday, December 12 and 13, the **American Society for Engineering Education** will sponsor a meeting of its Continuing Engineering Studies Division at the Sheraton-Chicago Hotel in Chicago. Various ways of meeting the need for continuing the education of engineers will be discussed. For further information, contact J. W. Hostetter, Assistant Dean of Students, Polytechnic Institute of Brooklyn, Brooklyn, N.Y. . . . The sixteenth session of **Commission Internationale de l'Éclairage** (International Commission on Illumination) will be held June 19-28, 1967, at the Shoreham Hotel in Washington, D.C. For application, write to U.S. National Committee of CIE, Secretary, L. E. Barbrow, c/o National Bureau of Standards, Washington, D.C. 20234 . . .



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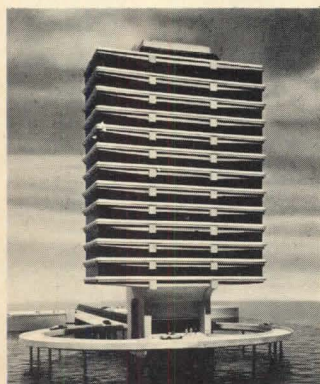
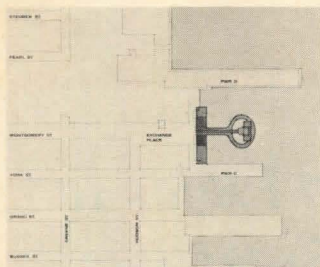
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On Readers' Service Card, Circle No. 404

Session '67 of the **Alberta Association of Architects**, 318 Revillon Building, Edmonton, Alberta, Canada, will be held at the Banff School of Fine Arts, March 20-23, 1967. Theme of the session will be architectural education . . . Robert Marquis, president of Northern California Chapter, AIA, will address the Conference of the **Society of Plastics Engineers**, to be held November 28, 1966. His topic is, "Plastics in Home Building." The meeting will take place at the Sheraton-Thunderbolt Hotel, Millbrae, Calif.

OFF-SHORE OFFICE BUILDING



JERSEY CITY, N.J. The view from the Jersey City water-front, once you get beyond the debris and decay that litter it, is as spectacular as a three-ringed circus act with live unicorns. To the north, up the Hudson River, is the George Washington Bridge; to the south, spanning the mouth of the New York Harbor, is the

Verrazano Bridge; and to the east is the skyline of New York City.

When the Kurt Orban Company, importers of steel and machine tools, decided to build a Jersey City office building, they wisely decided to capitalize on this asset. To do this, they bought up 14 acres of shore and river bottom with riparian rights for slightly less than \$200,000. On their property, which lies some 200' offshore, they plan to erect a 12-story building. It will be connected to the shore by a covered walkway and a roadway that circles beneath the building, providing access for cars and also acting as a buffer against stray shipping. The first-floor level of the building will be about five stories above the river, high enough so that tenants there can see over surrounding structures.

Designed by architect Bernard Rothzeit, with Schupack & Zollman as structural engineers, the building will be set on pilings sunk to bedrock, about 75' beneath the water's surface. The exterior utility tower will serve as support for precast T-girders, 122' long and weighing close to 60 tons, which will, in turn, support each floor level. The girders can be floated to the building on barges, then lifted directly into place. Construction cost is expected to be about \$3,500,000.

PRODUCT LITERATURE: AN ARCHITECTURAL AID?

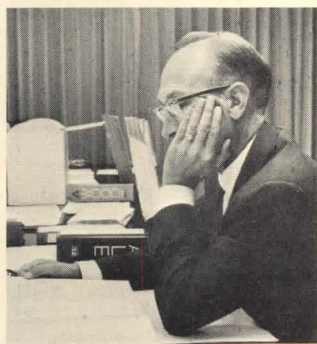


Photo: Del Ankers Photographers

WASHINGTON, D.C. Some of the gripes architects and consulting engineers have with product literature and advertising were pinpointed recently by the Committee for Construction Industry Product Literature (a group sponsored by five organizations: the AIA, Consulting Engineers Council, National Association of

Home Builders, Producers' Council, Inc., and Sweet's Construction Catalog Services). In September, the committee held a competition — its first — to select outstanding examples of product literature and advertising aimed at four groups: architects, consulting engineers, home builders, and lumber and building material dealers. Of 629 entries, almost half, (299) were for architects, 101 for consulting engineers. Winners will be named at a dinner in New York City on November 10.

R. Lloyd Snedaker, (above) a partner in the Salt Lake City architectural firm of Snedaker & Budd, was chairman of a panel of five architects, selected by the AIA, which judged the architectural entries. In an interview conducted especially for P/A, Snedaker had these comments:

"There's been a steady improvement over the past few years in most categories of manufacturers' literature. Notice I say 'most' categories. I'm very disappointed, as I think most architects are, about the lack of comparative cost data in literature we receive. . . . These are of extreme importance to architects. We've been preaching to manufacturers for years about the need for such data. The manufacturer wants, among other things, to feel free to change his prices any time he wants to. Now, the architect understands the manufacturer's point of view. Listing comparative cost data can be a tricky thing, but it can be done because a few enlightened producers are doing it.

"I'm also concerned — and again, I think most other architects would agree with me on this point — about the quality of maintenance literature we receive. Or, perhaps I shouldn't say quality; I think *lack* would be a better word. Most manufacturers don't give us what we need. . . . The very practice of architecture relies heavily on the maintenance factor. Take a hospital, for example. Obviously, its initial cost is important, but it is minor over the years compared to the maintenance cost."

Since maintenance information is so important to the

practice of architecture, why is there such a dearth of literature?

"That's a question you'd have to ask a manufacturer. It could be there is the feeling that, 'Making the initial sale is important. What's in it for us after that?' Well, anybody who indulges in this sort of thinking is guilty of a fallacy. Say an architect has a choice of two or more competing products of similar quality and cost in making his specifications. In most cases, of course, he does. Now, if one producer provides accurate, complete, well-organized maintenance literature and the others don't, whose product is the architect going to specify? The question answers itself. Now, maybe its simply a lack of communication between producer and user. Perhaps a great many manufacturers are not fully aware of the importance of maintenance material."

What about trade advertising? Do you think it has any value and does it influence you in any way?

"Well, if it doesn't influence architects, somebody has been wasting a lot of money. Of course, advertising influences us, just as it influences everybody else. And, the effect that it has on an architect is in direct proportion to the quality of the ad. . . . I'd say that the creative people preparing the ad ought to keep in mind that the first thing you've got to do to get an architect to read your ad is attract his attention. How do you do this? It's very simple. You get our attention the same way you would get anybody's. An eye-catching format — simple and uncluttered — good color photography, high-quality reproductions. It should be brief, to the point, and honest. Now, in an ad, you can't tell everything, but if, after you have gotten our attention, you want to hold it, you must tell us something we want to know. There must be enough data to enable us to compare this product with other products in its field. New uses should be suggested. And, we should be given enough information to make us want more. If an ad does all this, then it's a good ad."

What you're saying, then, is



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Norton Series 6120 Uni-Trol door controls were used for all public entrance doors on both the exterior and interior doors. Shock absorber in the holding mechanism prevents damage to door and frame at full open position. Built-in holder can be engaged to hold the door open for customers. Note how the attractive styling blends with the door and frame.

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1121



Norton Uni-Trol controls prove particularly valuable to the satellite Automotive Center. Items purchased at this store are more likely to be bulky. Customers appreciate the convenience of an open door when they leave with their purchases.

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Have your representative make an appointment to demonstrate.

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that creating a good trade ad directed to architects involves exactly the same factors as creating trade advertising for any other profession? Is that correct?

"I think I gave that impression, didn't I? Well, I should have gone further. No, I think that advertising people should take into account the way an architect thinks. The architect has — or ought to have — a highly defined aesthetic sense. A four-color ad that appeals to this aesthetic sense will be read where the same ad in black and white wouldn't be. Because the average architect is far busier than he used to be, the total impact is becoming increasingly important. Not only that: We're getting more and more literature every year, which means that there is greater competition for our attention."

Frank W. Riederer, head of the Chicago consulting engineering firm of Frank W. Riederer & Associates and head judge in the consulting engineering category, echoed Snedaker's opinions: He pointed out, for instance, that only one piece of maintenance literature was entered in the competition. And he felt that ads should be eye-catching. He went on to say, "In an ad, the information should be brief but accurate. An ad doesn't satisfy your appetite; it whets it. A good trade ad should be presented in such a way to make you say to yourself, 'This is something I want to look into.' I think — and I feel sure that most engineers would agree with me on this — that one of the best ways to stir up interest is a case-history ad. Also, more information is needed on product limitations; we need to know what a product can do, and what it can't do."

In trade advertising, is the consulting engineer receiving

the credit he deserves?

"I'm glad you brought that up, because the answer is a resounding no. This is one of the engineer's biggest complaints. . . . Just to give you an example: I've seen ads from the manufacturer of the structural steel that was used in a building. Who was the person most concerned with this aspect of the building? The structural engineer, of course, but his name is conspicuous by its absence. I would think that advertisers would realize that engineers look at ads with engineers' names in them."

A TOUCH OF ACRYLIC-POLYMER



Photo: Helga Photo Studio

NEW YORK, N.Y. Artist Frederick Terna has lived in the United States since 1952. Before that, he studied art in Paris, and still earlier he lived in Austria, his birthplace. Most of his work is in etchings and lithographs, although he also works in oils, and, most recently, in tonda-acrylic polymer. These latter efforts consist of pebbles and sand embodied in plastic, and they can be applied to canvas and framed. Shown above is Terna's "The World." Its rough surface is meant to be touched, which adds another dimension to the viewer's experience. Terna's work is on display at Etchings International, a firm that specializes in art work for offices, homes, and hotels in New York City.

WASHINGTON/FINANCIAL NEWS

By E. E. HALMOS, JR.

The real battle over the President's much-desired "Demonstration Cities" program (S. 3708) centered on two matters that weren't present in the

original proposals at all:

(1) Aid the land-developers (by insuring mortgages) for acquisition of suitable plots for large-scale community de-

velopment. This was inserted in the bill in the Senate.

(2) A fear that certain provisions (in Title II) favored action by regional groups, rather than local governments individually — regional groups that would, in the end, said opponents, be answerable only to the Secretary of Housing and Urban Development, who would approve their formation, actions, and funds.

The aid to land developers has always seemed questionable to many legislators, who see it as use of public funds to aid private industry, regardless of any eventual advantages. (Idea is to aid developers in obtaining funds for such "new towns" as Reston, Va.) Many local government officials opposed such a move, on ground that such aid might permit the formation of developments that could kill existing political subdivisions.

The second objection — to the local "supergovernment" idea — was by far more important, and involved fears of further forced integration of schools. (A very poorly timed "leak" of some Office of Education plans for school integration, including busing of children from one neighborhood to another, didn't help, either.)

What bothered Congressmen and many local officials was the requirement under Title II that "all applications for Federal loans or grants to assist in carrying out (almost any project) must, after June 30, 1967, be submitted for review by a metropolitan-wide, comprehensive planning agency."

A vocal minority of the House Banking and Currency Committee declared: "The proposed . . . title would divide the country into new Federal community development districts — a new administrative or political unit that would look to the Federal Government, rather than the states, cities, and other localities for guidance. Title II would place the shadow of HUD over every metropolitan area. . . . Virtually every local governmental decision . . . would be subject to review. . . . To whom would the people turn to exert their proper voice in local and even metropolitan government?"

In all, it was another lesson

in how not to get legislation through a harassed Congress; and it pointed as well to a widespread tendency in Washington today to overload basically laudable bills with too many hastily conceived and often controversial measures.

There was not nearly as much opposition to other portions of the bill (which offers great challenges to architects and planners): a two-year authorization totaling \$900 million for planning and program assistance for urban renewal projects; changes in FHA programs to make more low-interest financing available to nonprofit housing groups; and a number of technical changes in existing legislation.

(An important companion bill to the Demonstration Cities program — the Urban Mass Transit Act amendments [S. 3700] — sailed easily through Congress. It provides, among other things, grants to public bodies for technical transit studies; research and development and demonstration projects; grants for training of technical and managerial personnel.)

Portable Pension Plan — A bill proposing a "portable pension" that specifically covers technical and professional employees had no chance for passage this year, but proponents will certainly revive the measure next year.

It would have a profound effect on the operations of almost every architectural or engineering firm in the U.S.

Idea of the bill (HR 16832, introduced by Representative John Dingell, Michigan Democrat) is embodied in two provisions:

(1) Pension plans would qualify for favorable Federal tax treatment only if they provide that an employee's right to fund in his pension account became nonforfeitable after 10 years of employment or less.

(2) A "clearing house" would be set up (in the Department of Health-Education-Welfare) to facilitate transfer of employees' vested pension credits upon separation from their jobs.

Thus, when an architect let some of his staff go because of change in work load or for any other reason, he could keep the employees' "vested" pension credits and pay the



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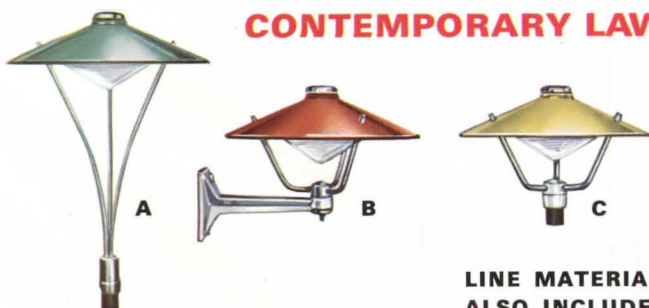
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TURN PAGE 

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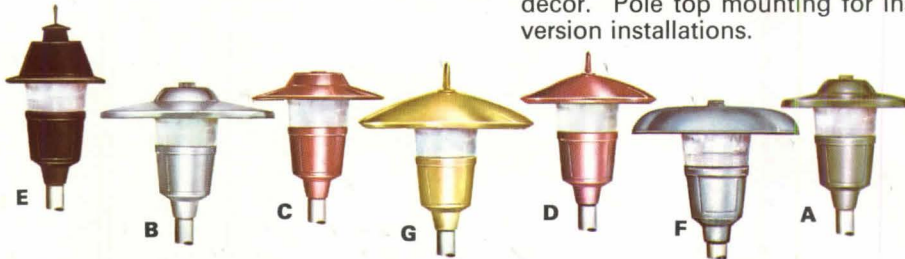
FOR ENTRANCES • WALKS • DRIVEWAYS • LAWNS • GARDENS • PATIOS • CHURCHES • SCHOOLS • MOTELS
OFFICES • INDUSTRIAL AND COMMERCIAL BUILDINGS

To 175 watts mercury • 189 watts incandescent • 8000 lumens • 0.8 maintained footcandle

STYLEKING

(Scale: 1"=3')

Diversified, graceful styling plus a choice of 9 dynamic colors. Cover interchangeability gives added versatility. Will match any architectural decor. Pole top mounting for installation economy in new and conversion installations.



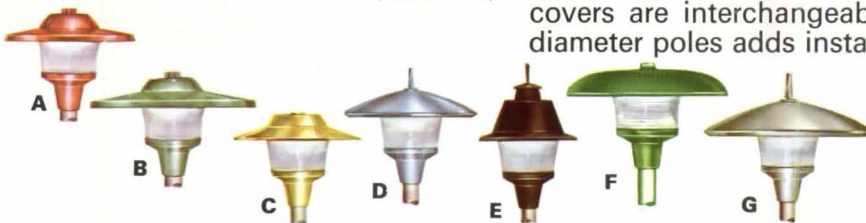
SPECIFICATION

For lamps rated to 175 watts mercury or 189 watts incandescent; constant-wattage, high-reactance or reactor ballasts; IES Types I, I-1 way, II, II-4 way, III, IV and V distributions; 3-inch and 7-inch mounting fitters; photocontrol accommodation for Styles A, B, C, and F units.

STYLETTE

(Scale: 1"=3')

Complete choice with 7 designs and 9 colors, to match every architectural design and mood. In addition, the distinctive covers are interchangeable. Pole top mounting for 3-inch diameter poles adds installation economy.



SPECIFICATION

Designed to operate incandescent lamps rated up to 189 watts. IES Types I, I-1 way, II, II-4 way, III, IV and V distributions; 3-inch mounting fitter; includes built-in photocontrol.

LAWNAIRE

(Scale: 1"=2')



Contemporary styling combined with application flexibility. Available in a choice of 9 decorative colors. For mounting on 3" OD pipe.

SPECIFICATION

Available for use with 75-, 100- and 175-watt mercury lamps; internally mounted high-reactance ballast; IES Types II, IV and V distributions; built-in photocontrol.

STYLED SUBURBAIRE

(Scale: 1"=2')



Economical, quality lighting plus fresh, modern appearance. Open refractor reduces dirt and moisture accumulation. Mounts on 1 1/4-inch pipe support. Choice of 9 decorator colors.

SPECIFICATION

Available for use with 189-watt incandescent, 100- and 175-watt mercury lamps; high-reactance or reactor ballasts; IES Types I, I-1 way, II, II-4 way, III, IV and V distributions; built-in photocontrol receptacle.

TRADITIONAL LAWN-GLO

(Scale: 1"=2')



Efficient, controlled illumination combined with charm and styling of Early American whale oil lantern. Long lasting beauty and minimum maintenance achieved with cast aluminum base and cover plus shatterproof, acrylic plastic refractor. Available in black or white with gold finial, roof, and refractor clips.

SPECIFICATION

Available for incandescent lamps through 150-watts as well as a 100-watt mercury lamp with high-reactance ballast; mounts on standard 3-inch OD yard light post; supplied with or without photocontrol.



Wall Mounted

DUSK-TO-DAWNER

(Scale: 1"=2')



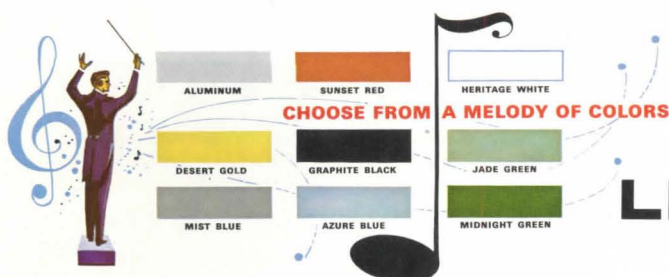
Fresh, modern lines and styling plus excellent lighting. Aluminum finish blends with all types of architecture. Mounts easily on poles or flat surfaces; also available for mounting on 1 1/4-inch pipe supports.

SPECIFICATION

Available for use with 100- and 175-watt mercury lamps; internally mounted constant-wattage, high-reactance, reactor or constant-current ballasts; IES Types II, III, IV and V distributions; built-in photocontrol receptacle; completely pre-wired, including power supply leads.

FOR COMPLETE INFORMATION on Line Material's line of outdoor lighting contact your L-M Distributor or write Line Material Industries, Milwaukee, Wisc. 53201.

690



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INDUSTRIES



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On Readers' Service Card, Circle No. 369

pension due when the former worker reached retirement age. Or, he could transfer the money to a special fund set up by HEW, which, in turn, could transfer the credits to a new employer, or keep them itself and pay the pension when due.

There's no certainty that architects will like this idea: For one thing, it could completely destroy the "holding power" of generous pension plans on key employees; for another, it would entail enormous added bookkeeping operations.

Congress Okays GSA Building Funds — The long-planned but much delayed completion of the grandiose "Federal Triangle" in downtown Washington finally moved a step closer to realization, with Congressional approval of funds totaling \$96 million for Federal buildings that the General Services Administration wants to build in various parts of the U.S.

Of special interest are plans for a \$41,300,000 building to replace the present Coast Guard headquarters (an unsightly brown-brick structure at 13th and Pennsylvania Ave.); and a \$26,600,000 structure that would be an extension of the Internal Revenue building a block away.

The latter would involve demolition of the horrendous old Post Office building — a gray-granite structure that is a relic of the Teddy Roosevelt era — except for its landmark clock tower.

Together, the two new structures would complete the "Federal Triangle," which now consists of the newer Post Office, Internal Revenue, and other structures in the area between Pennsylvania and Constitution Avenues.

Under any circumstances, of course, actual construction couldn't begin until five years from now — even if new designs are prepared, as ordered, by Presidentially appointed planners seeking to rejuvenate "the Avenue."

Other new Federal buildings okayed by Congress include: a \$27,400,000 courthouse and Federal building for Atlanta, Ga., and a \$21 million post office in the same city; a \$79 million post office extension in New York City; \$23 million for a post office,

courthouse, and Federal building in Syracuse, N. Y.; a \$28 million "portal" building in Washington, D.C., to balance the Labor Department annex at the Mall entrance between 2nd and 3rd Streets, N.W.

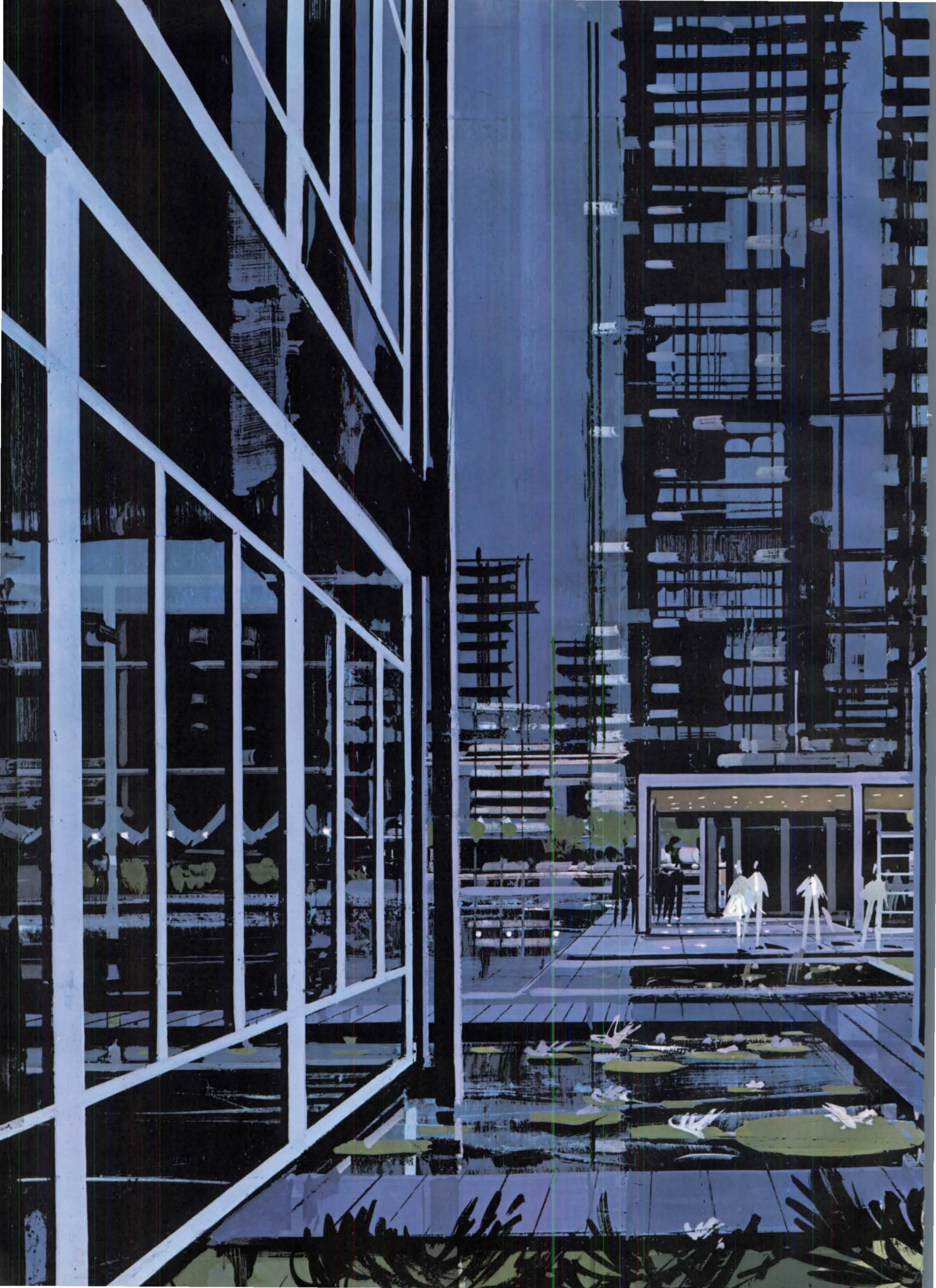
Financial — With an eye on hoped-for adjournment about mid-October, Congress kept pouring money into the construction economy, via regular appropriation bills. Notable, for example, was approval (with a minimum of debate) of the annual military construction bill (\$1 billion); the annual public works construction bill (Army, Civil Works, Bureau of Reclamation, etc., for a total of \$4,100,000,000).

But the real concern of the construction industry was the probable effect of hasty Congressional action (at Presidential urging) to eliminate the 7 per cent investment credit permitted many companies over the past several years to encourage construction of new plants, as well as ending the allowance for accelerated depreciation in the case of certain buildings.

Most industry observers believed that removal of the credit and depreciation allowances would have little real effect in curbing inflation, but that it would have an immediate and drastic effect on the construction industry itself. Contractors, engineers, and architects who must gear themselves for business that lies years ahead will be hard hit — and rapidly — by any widespread cancellation of industry expansion plans.

Meanwhile, the industry itself continued to forge ahead steadily, on a dollar-volume basis. In August, according to the Commerce Department, value of new construction put in place was \$7 billion — up about 3 per cent from a year ago, despite the continuing downturn in the housing field.

The Census Bureau, incidentally, came up with an important figure: It estimated that, in 1965, homeowners spent a total of \$11,440,000,000 for upkeep and improvement of residential property. The total includes \$7,750,000,000 spent by owners of properties containing one to four units; the remainder, by owners of properties containing five units or more.





This steel window won't rust.

It's finished
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Polyvinyl chloride is impervious to moisture. We put it on our window four times as thick as paint, using a Ceco-researched method, an exclusive process. This is a resilient finish. It doesn't crack or chip. It gives. We call it Cecoclاد. There is no other finish like it.

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We'll be glad to sell you whatever window you want. We make them all. But if you'll take our unbiased advice, you'll specify the Cecoclاد window. It's incomparable.

Send for colors, test data, specifications, samples and comprehensive list of projects built with Cecoclاد windows throughout the country. The Ceco Corporation, general offices: 5601 West 26th Street, Chicago, Illinois 60650. Sales offices and plants in principal cities from coast to coast.

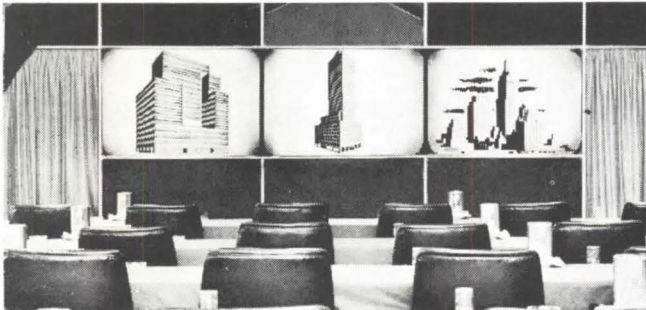
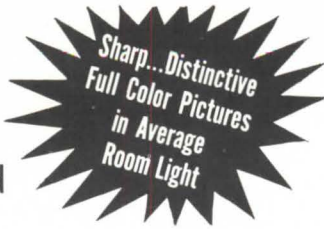


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encased in colored polyvinyl chloride four times thicker than paint.

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IN-WALL REAR PROJECTION
SCREENS BY POLACOAT



Training Facilities at Bear Mountain Inn, N.Y.

LENSCREEN utilizes the modern concept of rear screen projection which conceals projection equipment, eliminates distractions and provides full image sharpness in regular room light. Every detail of a motion picture, slide film or other projected motion display is reproduced in full color and contrast.

Glass LENSREEN is soundproof and fireproof when mounted in a permanent In-Wall installation. Available in heavy plate to 10 feet by 22 feet, other materials and sizes also available.

In-Wall Glass LENSREEN is ideal for Board Rooms, Briefing Rooms, Class Rooms and Auditoriums.

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On Readers' Service Card, Circle No. 439



FINK DOME

A unique structure for architectural and industrial uses — designed to exacting tolerances, accommodating large vertical loads. Highly versatile as convention hall, arena, theatre, etc. Proposed dome shown is 900-ft. dia. at base and used as covering for existing ball park. For more information, forward to us the approximate size, required interior loads, together with details of application and surrounding terrain characteristics to:

General Conveyor Inc. of
N. Calif., General Domes Div.
1821 Mt. Diablo Blvd., Walnut
Creek, Calif. or Phone (415)
934-9121.



On Readers' Service Card, Circle No. 418

Terrazzo Epoxy topping

TRAZOPOXY

retains OLD WORLD CLASSIC BEAUTY
AND MEETS 20TH CENTURY DEMANDS
of HIGH STRENGTH and DURABILITY

OF SPECIAL INTEREST



If floor loads and levels are critical.

Weights only 3 lbs. s.f. 3/8" thick.



Compared to 30 lbs. s.f. 3" thick required for terrazzo.

No underbed required, apply directly to concrete, brick, steel or wood.

OUTSTANDING DURABILITY

Creates a impenetrable surface to most materials, with more than twice the impact resistance of terrazzo.

FLEXIBILITY

TRAZOPOXY'S resiliency eliminates floor crack problems. Can be applied to flexible long spans and bridgings.

Unlimited range of design and color

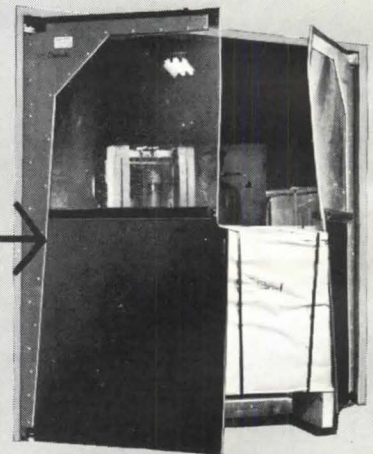
STA-CRETE, INC.

115 New Montgomery St., San Francisco, Calif.

On Readers' Service Card, Circle No. 401

NEW TRAFFIC DOOR

IMPACT PANELS



- Positive "Straight Edge" Closure • Greatest Resistance to Impact • Attractive Appearance
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KELLEY "CAMATIC" TRAFFIC DOORS

New plastic-alloy laminate bottom panels will stand up to the heaviest impacts of non-stop traffic. Even after hundreds of thousands of openings they "hang straight" for positive environmental control. Get the Traffic Doors you know will stand up.

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PRODUCTS

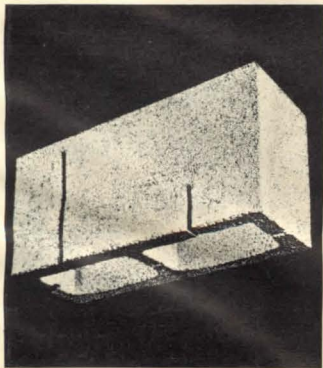
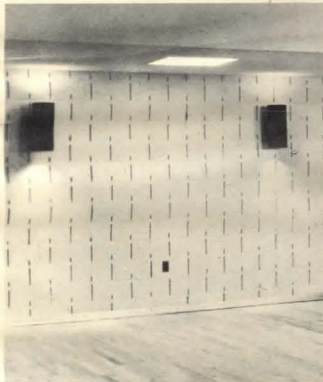
AIR/TEMPERATURE



Infrared gas heaters for ceiling installation in large spaces such as hangars, warehouses, and gymnasiums are said to cut annual fuel costs. "Re-Verber-Ray" radiant sources are ceramic tiles and stainless-steel rods capable of withstanding temperatures up to 1800-2000F. The three new models cover from 85 to 255 sq in. each. Detroit Radiant Products Co., 1297 Terminal Ave., Detroit, Mich. 48214.

Circle 100, Readers' Service Card

CONSTRUCTION



Slotted blocks absorb low frequencies and give patterned relief to large wall areas, says manufacturer. "Soundblox" cavity-slot designs, closed on three sides with precisely dimensioned slots on the exposed side, act as damped resonators. Auditoriums,

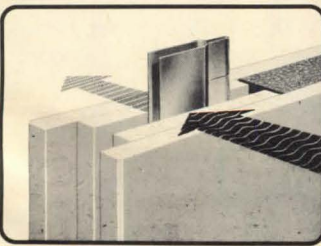
noisy factories, gymnasiums, and other spaces where noise absorption and sound control are important, benefit from absorption in the low frequencies that penetrate many other building materials. Sound Transmission Class (STC) for 6" Type A blocks is 49; Type B blocks, with a fibrous filler, are STC 47 and have a .65 noise reduction coefficient. Nominal dimensions are 8" x 16", in 8", 6", and 4" widths. The Proudfoot Co., P.O. Box 9, Greenwich, Conn. 06830.

Circle 101, Readers' Service Card



Bentonite-filled panels applied to retaining walls prevent below-grade water penetrating to basements. When bentonite gets wet, it swells to a gel 10 times its dry volume, preventing water seepage by expanding into cracks in the concrete wall. The 4' corrugated kraft "Volclay" panels are attached to foundation walls with staples or mastic. American Colloid Co., 5100 Suffield Ct., Skokie, Ill. 60076.

Circle 102, Readers' Service Card



Sound wall with "Sound Attenuation Spacer" has been added to manufacturer's line of movable wall systems. Metal, roll-formed clips inhibit passage of sound waves with a "tuning fork" action. The 3"-thick wall panels comprise 5/8" gypsumboard faces;

two 5/8"-thick gypsumboard spacers at each end of panel with sound attenuator between; and 2" glass-fiber insulation blanket in core space. Sound Transmission Class is 44. Vaughan Walls, Inc., 11681 San Vicente Blvd., Los Angeles, Calif. 90049.

Circle 103, Readers' Service Card



Blackboard is a wall and no longer black. School walls, either fixed (but demountable) or sliding, offer entire sections of chalk panel in 11 colors. Magnetic accessories for steel-faced, gypsum-core panels include chalk trays, tack boards, and magnetic "thumbtacks." Another panel designed for the classroom acts as a projection screen. Special service panel consolidates location of clock, intercom, thermostat, switches, and outlets. E. F. Hauserman Co., 5416 Grant Ave., Cleveland, Ohio.

Circle 104, Readers' Service Card



Soft stainless-steel flashing costs 40% to 50% less than copper and has a higher strength-to-weight ratio, states manufacturer. AISI Type 304 stainless has a dull matte finish and will not discolor or streak adjoining metals. Soft-temper, no-springback "MicroFlex" is available in coil or sheet widths up to 48" or cut-to-order for roofing and flashing

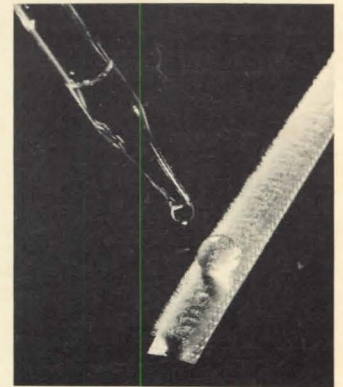
applications; .012", .015", and .018" or available in other gages by specification. Washington Steel Corp., Washington, Pa.

Circle 105, Readers' Service Card

Eight new colors in the Porcelain Enamel Institute's "NatureTone" series are matte-finish earth shades plus off-white and gray. They are keyed to the PEI code system used as a guide by specifications writers. Color sample card available. Porcelain Enamel Institute, 1900 L St. NW, Washington, D. C. 20036.

Circle 106, Readers' Service Card

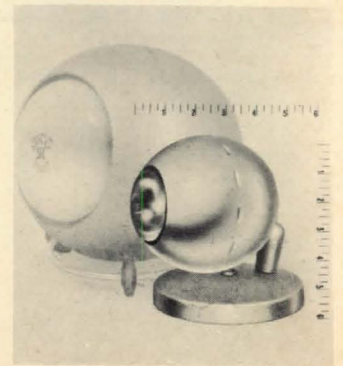
DOORS/WINDOWS



This weatherstripping (silicone-treated woven pile) will support a drop of distilled water for 15 minutes—five times longer than required to meet the Architectural Aluminum Manufacturers Association Specification 701.1, reports manufacturer. Results for this and other tests (wear, crush, etc.) are available. The Schlegel Mfg. Co., 1555 Jefferson Rd., Rochester 23, N.Y.

Circle 107, Readers' Service Card

ELECTRICAL EQUIPMENT



Baby spot, the "Mini-Ball," accommodates 100-w, R-20

Amplex lamp. Designed for accent display lighting, the aluminum fixture can be easily concealed. Globe, 4 $\frac{3}{4}$ " dia., is mounted base down on stem and round base measuring 4 $\frac{1}{8}$ " dia. Extended life of miniature fixture is said to be assured by increased ventilation. Amplex Corp., 214 Glen Cove Rd., Carle Place, L.I., N.Y. 11514.

Circle 108, Readers' Service Card



Floodlight is designed for control of light pattern and maximum light output and efficiency. "Day-Arc" 1000-w fixture uses metallic vapor lamps, standard clear or color-improved mercury lamps. Aluminum, two-piece reflector; 180° swivel mounting; medium and wide beam spreads. Appleton Electric Co., 1701 Wellington Ave., Chicago, Ill. 60657.

Circle 109, Readers' Service Card



Yoke-mounted spotlight allows 358° vertical rotation and 180° horizontal rotation. Comes in 5"- and 6"-dia. extruded aluminum housing with choice of exterior and interior finishes; removable grooved baffle. Pendant mountings also available. Prescolite Mfg. Corp., 1251 Doolittle Dr., San Leandro, Calif.

Circle 110, Readers' Service Card

FURNISHINGS

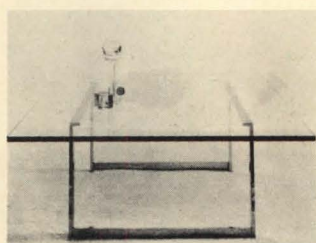
Forest grain paneling is a prefinished hardboard featuring an extra-tough surface. The clear, catalyzed, durable top coat is said to protect the wood print grains permanently. A variety of wood shades is offered, from dark Nestucca walnut to light Tula-tin birch. Panels are available in $\frac{1}{8}$ ", $\frac{3}{16}$ ", and $\frac{1}{4}$ " thicknesses and 4' x 8' and 4' x 16' units (cut to other sizes on order). They also are available without grooves and in punched board patterns. Panels meet the requirements of Commercial Standard CS 251-63, and have a Class 111 Flame spread classification. Forest Fiber Products Co., P.O. Box 68, Forest Grove, Ore. 97116.

Circle 111, Readers' Service Card



Conference table, designed by Robert Becker, has a sculptured appearance, achieved in part by radius corners and edges. Its frame comes in either walnut or oak and the top is of rift oak. Three sizes are available: 84" x 40", 96" x 42", and 120" x 42". Helikon Furniture Company, Inc., 315 E. 62nd St., New York, N.Y.

Circle 112, Readers' Service Card



Glass-top tables, geometric in design, stand 16" high on sleigh bases of polished chrome bar stock. Tops are of $\frac{3}{4}$ " plate glass with polished edges; they are available in 36" or 40" squares, a 24" x

48" rectangle, or a 36" circle. Robert John Company, 821 North Second Street, Philadelphia, Pa. 19123.

Circle 113, Readers' Service Card



The Matador Line of chairs has a steel frame covered with polished chrome. Its form-fitting, contoured back stands free of the arms (which are cantilevered, with solid oil finish overlays) and the back attaches to a flexible back-strap. The seat is of molded latex rubber. One may choose between fixed, revolving, and self-return base. Companion desks, filing cabinets, and other units are also available. McDowell/Craig, 13146 Firestone Blvd., Norwalk, Calif. 90650.

Circle 114, Readers' Service Card



Double built-in oven cleans itself electrically, automatically. The sliding of a locking lever and turn of a dial starts the process, during which safely controlled high heat transforms grease and oven spatters into harmless vapors. Shelves may be cleaned as well as walls. The 24"-wide unit comes in turquoise, yellow, single or two-toned copper, and a two-toned Tahitian green as well as white. Manufacturer notes that only two screws are necessary for installation. Frigidaire Division, General Motors Corp., Day-

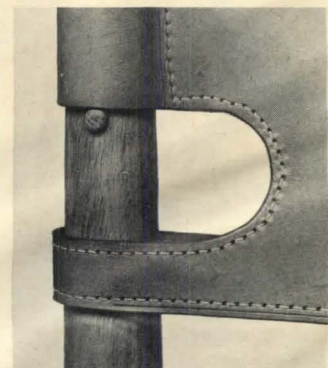
ton, Ohio 45401.

Circle 115, Readers' Service Card



The 3000 Line of metal office furniture by Yawman-Erbe includes a desk with a drawer suspension system which, according to the manufacturer, is the strongest in existence. The drawer, riding on steel ball carriers rather than the now conventional nylon rollers, hangs from the desk top. Tops come in wood or wood-patterned textolites. Frames are available in 14 standard colors or any others specified. Design allows the desk to be shipped disassembled, then re-assembled on delivery. Companion files, chairs, and public seating are also available. Sterling Precision Corporation, 103 Park Avenue, New York, N.Y. 10017.

Circle 116, Readers' Service Card



Two new furniture groups by C.I. Designs offer sturdy, comely seating in rugged grains of solid oak or ash. The Ash group, created for "contract" use in collaboration with Hugh Stubbins, includes

How do you measure comfort?

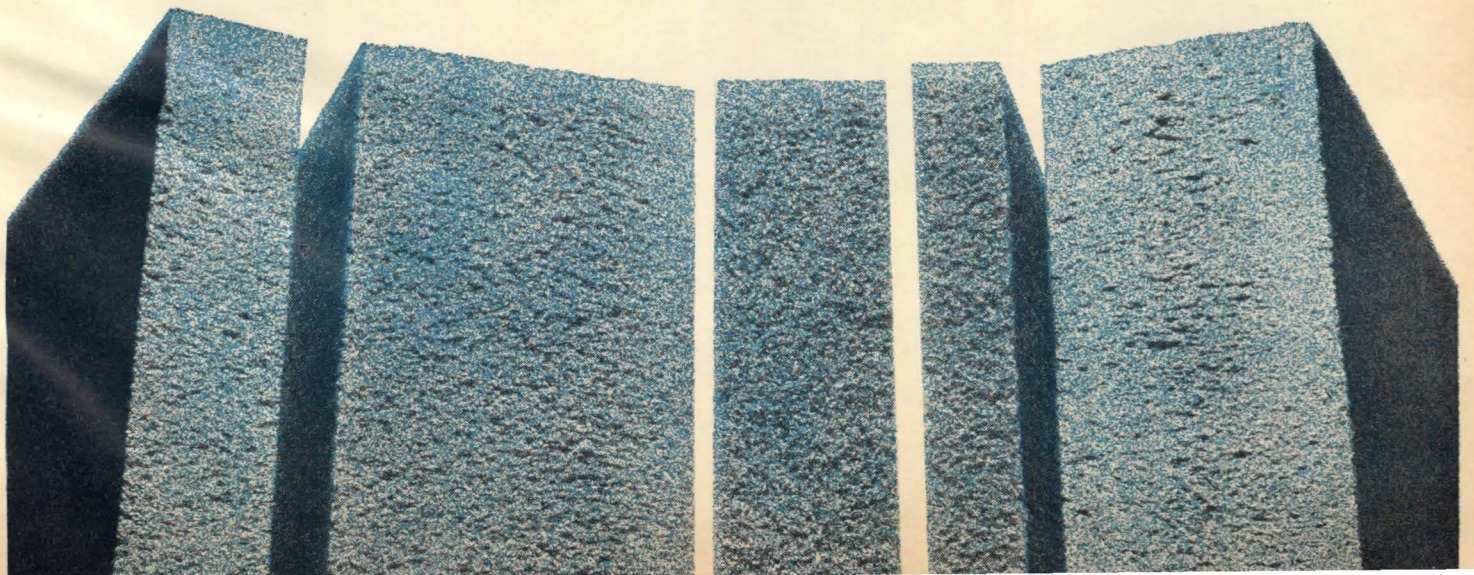
In inches of Styrofoam.

Compared to other insulations, a little Styrofoam® brand insulation board goes a long way. Little is needed for the comfort level you want, the economy you expect. Styrofoam not only gives superior insulation efficiency, but it is moisture-resistant and requires no vapor barrier. Specify Styrofoam in one of your buildings

now and it's comfort is available for years. It won't rot, mold or deteriorate. It's light as well as easy to install. And Styrofoam insulation is versatile. Use it over masonry construction, in perimeters or forms. Then give it any finish you like—gypsum wallboard, wood paneling or plaster.

There's a good way to learn more about Styrofoam. Check Sweet's Architectural File 10a/Do. Or write The Dow Chemical Company, Plastics Sales Department, Midland, Michigan 48640.

Styrofoam is Dow's registered trademark for expanded polystyrene produced by an exclusive manufacturing process. Accept no substitutes... look for this trademark on all Styrofoam brand insulation board.



all-wood pieces, and pieces upholstered in C.I. (or other) fabrics. Part replacements are possible. The Oak group, conceived by Borge Mogensen, features chairs with solid oak frames and adjustable saddle leather seats and backs. Companion tables of solid oak are also available. Wood comes in its natural state, or in standard finishes. C.I. Designs, 230 Clarendon Street, Boston, Mass. 02116.

Circle 117, Readers' Service Card



Economical carrel offers compact study corner for \$65 (volume price). Solid-core units, locked into aluminum frame, will be sent "on approval" to school administrators and architects in the U.S. or Canada to prove that the low price tag does not mean an inferior product. Uniline, 420 Alabama Ave. NW, Grand Rapids, Mich.

Circle 118, Readers' Service Card



Library component system known as The Libra Series has bookshelves, magazine shelving, storage cabinets, wardrobes, and bulletin boards that lock in place and thus eliminate need for built-ins. Recessed tracks (adjustable on 1/2" centers) allow for an infinite variety of component combinations. Companion book trucks, lecterns,

dictionary stands, tables, and study carrels are also available. All pieces are made from select walnut veneers with solid lumber cores. Hardwood House, Inc., 10 Saint James St., Rochester, N.Y.

Circle 119, Readers' Service Card



Planter benches of molded glass-fiber construction provide concentrated seating space, yet leave walls free for shelving in areas such as department stores. They are available in smooth matte finish, three-dimensional finishes in earth tones, and a coarse surface suggesting masonry. Seat is pitched to permit runoff into the body of the planter. Drainage holes can be supplied, casters can be mounted inside bases, and bases can be scribed to a given degree of slope. Custom sizes and designs will be executed upon request. Architectural Fiberglass Division of Architectural Pottery, 2020 South Robertson Blvd., Los Angeles, Calif. 90034.

Circle 120, Readers' Service Card

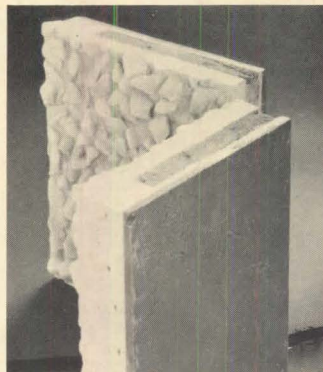
OFFICE EQUIPMENT



Desk-side phone table helps keep working surfaces free. Available with top drawer for dictating machine or open shelf (shown) with file drawer below. Unit may be built-in or free-standing. Corry James-

town Corp., Corry, Pa.
Circle 121, Readers' Service Card

SERVICES



Two-faced precast wall panels have thermosetting copolymer resin base and urethane or honeycomb insulating core. Made to architect's specifications, panels may be faced with such materials as aggregate, tile, limestone, marble, etc. Panel shown is aggregate one side and man-made slate on the other side. "Wall-Tite" unit is half the weight of concrete and twice as strong, claims the manufacturer, with a "U" factor as low as .09. A considerable cut in installation time is said to be possible using the panels. Mortite Corp., Passaic, N.J.

Circle 122, Readers' Service Card



Twisted curlicues, jelly-roll curves, conical tubings and curved, tapered forms in molded plywood can be mass-produced by a new molding technique on high-speed presses at low cost, claims manufacturer. Suitable for furniture and decorative paneling, for example, the fabricating presses will mold many types of wood in layers from 3 to 46 plies. Manufacturer states technique "has been developed for architects and interior decorators" — presumably a custom service for special designs. Molded Plywood Div., Plycraft, Inc.,

39 S. Canal St., Lawrence, Mass.

Circle 123, Readers' Service Card

SPECIAL EQUIPMENT



Antipollution unit cleans flue gases from apartment house incinerators. Scrubber, installed either in basement or on roof, enables owners to comply with clean-air laws being passed by many cities, states manufacturer. Fumes are cooled and put through water chamber where high-velocity centrifugal action precipitates solids, making gases clean enough to exhaust into atmosphere. The 3000 cfm "Hydro-Volute" incinerator scrubbers require 15 gpm of recirculating water. Johnson-March Corp., 3018 Market St., Philadelphia, Pa. 19104.

Circle 124, Readers' Service Card



Turbine dishwasher has only two moving parts and requires only two connections — hot water and drain; since it operates on water pressure, there is no electrical connection. Manufacturer claims it can be installed for "50% of the cost of an electrical washer." Vulcan Mfg. Co., Inc., P.O. Box 3460, Maplewood Sta., St. Louis, Mo. 63143.

Circle 125, Readers' Service Card

Mr. Architect:

you can't specify

the contractor,
so be sure the windows in the building reflect the high standards of
your design. Windows are opened, closed, slid, pushed, pulled, raised,
lowered, locked, unlocked, bumped into, jumped into and out of, cleaned,
covered, uncovered, scorched by sun, frozen by cold and wind,
drenched by rain, sleet, snow, and hail outside, and pampered with
temperature and humidity inside. Windows account for the most visible
used and abused space in a building. So, when you can't specify the
contractor, make sure the windows are the highest quality on-time
windows available. Specify unsubstitutable Bayley steel, aluminum,
or stainless steel

windows.

Write for new 1967 window catalog



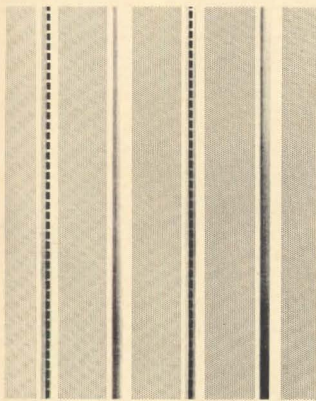
BAYLEY

THE WILLIAM BAYLEY COMPANY, Springfield, Ohio

On Readers' Service Card, Circle No. 429

MFRS' DATA

ACOUSTICS



Thin-strip acoustical ceiling system is designed for quick and low-cost installation. Narrow, perforated strips of aluminum are backed by a fiber barrier and a glass-fiber pad for sound absorption. Brochure describes five types of "Mirawal-Dampa" strips and gives sound absorption and sound transmission graphs. Photos, accessories, edge molding details, specifications, color sample card. 8 pages. Mirawal Co., P.O. Box 38, Port Carbon, Pa. 17965.

Circle 200, Readers' Service Card

CONSTRUCTION



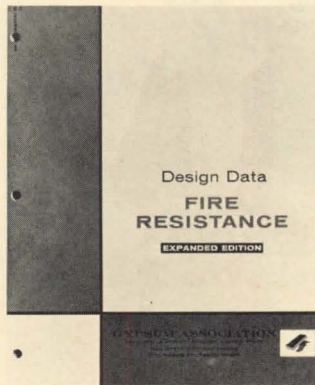
Ground slab design and construction manual is divided into two sections—slabs on grade and slabs supported on walls or piers. Booklet covers theory and practice for residential and commercial projects. Tables, photos, design data. 20 pages. Wire Reinforcement Institute, Dept. SG-90, 5034 Wisconsin Ave. NW, Washington, D.C. 20016.

Circle 201, Readers' Service Card

Curtain wall panel faced with "Brickplate," a high fired ceramic material, provides an exposed masonry surface in a

tile thickness. The 1 $\frac{3}{4}$ "-thick panels can be backed with various materials (plywood, steel, etc.), and insulated with foamed polyurethane. Glazed and unglazed facing is available in a range of colors; 3" x 8" or 4" x 8" modular brick sizes with maximum panel dimensions of 4' wide x 12' high. Cross-sections and specifications. 4 pages. Gail International, 582 Market St., San Francisco, Calif. 94104.

Circle 202, Readers' Service Card



Design booklet on fire-resistant gypsum assemblies contains six sections: general information, floor-ceiling assemblies, partitions, columns, beams/girders/trusses, and roof decks. Hourly rating charts tabulate construction details, fire test reference numbers, and Sound Transmission Classes. The expanded edition also includes a number of cutaway views and cross-sections of construction details. 42 pages. Gypsum Assn., 201 N. Wells St., Chicago, Ill. 60606.

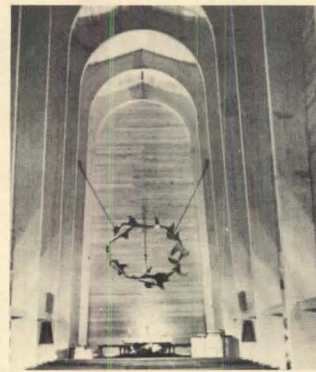
Circle 203, Readers' Service Card



Picture story of prefabricated components used in a variety of buildings, from a country club to a factory. Structural steel skeleton with

metal curtain walls (sandwich and window panels available) and four metal roof systems can be combined in many ways to enclose space. Three color systems. Butler Mfg. Co., 7400 E. 13 St., Kansas City, Mo. 64126.

Circle 204, Readers' Service Card



"Structural Glued Laminated Southern Pine" gives design information and engineering data for laminated beams and arches. Property chart for standard members lists nominal and finished sizes, weight, etc. Booklet gives typical shapes; beam design charts for bending, shear, and deflection; and general and standard appearance grade specifications. 12 pages. Southern Pine Assn., P.O. Box 52468, New Orleans, La. 70150.

Circle 205, Readers' Service Card

Results of exposure tests on porcelain-enamel-coated steel and aluminum are reported in "Weather Resistance of Porcelain Enamels." The seven-year study (by the National Bureau of Standards and the Porcelain Enamel Institute) at seven test sites around the country show that, on the average, the higher the acid-resistance rating, the better the enamel samples weathered. Both matte-finish and glossy samples were used. Oddly enough, the least severe changes were observed in samples at a site in smog-ridden Los Angeles; they gathered an adherent film which, the report states, "may have partially protected the enamels from weathering action." Test results are tabulated in six pages of charts showing color and gloss retention, acid test ratings, etc., for different types and colors of enamel; manufacturers are not named. Explanatory text and technical graphs supplement this data.

16 pages. Price: 20¢. Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

DOORS/WINDOWS

"The Growing Case for the Daylighted School" takes issue with the windowless-school trend. Comparative cost tables show the daylighted school to be less expensive in over-all construction, operating, and maintenance costs. The case is also stated in terms of student well-being, along with the claim that windows provide more effective classroom illumination. Architectural Aluminum Manufacturers Assn., 35 E. Wacker Dr., Chicago, Ill. 60601.

Circle 206, Readers' Service Card



A series of five entrances in "Permanodic" finish aluminum and coordinated push-pull hardware are presented in a color brochure. The four anodized colors for entrance frames include two bronze hues that will add warmth to commercial or apartment buildings. Color photos. Kawneer Co., Inc., Dept. P, 1105 N. Front St., Niles, Mich.

Circle 207, Readers' Service Card



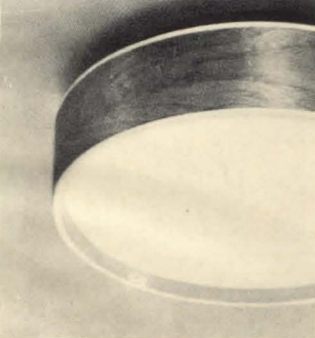
Venetian blinds sandwiched between double glazing is feature of brochure/catalog on windows and curtain walls.

Two-component sash on venetian-blind unit may be unlocked and opened for cleaning interior faces of glass. Blinds are raised, lowered, and tilted by a single crank handle. Window (over-all thickness 3 $\frac{3}{8}$ "") opens on vertical or horizontal pivot. Other aluminum windows shown are projected, casement, reversible, and monumental series. Low- and high-rise curtain-wall systems are briefly detailed. Cross-sections, photos. 16 pages. Samson Window Corp., 62-35 30th Ave., Woodside, N.Y. 11377. Circle 208, Readers' Service Card

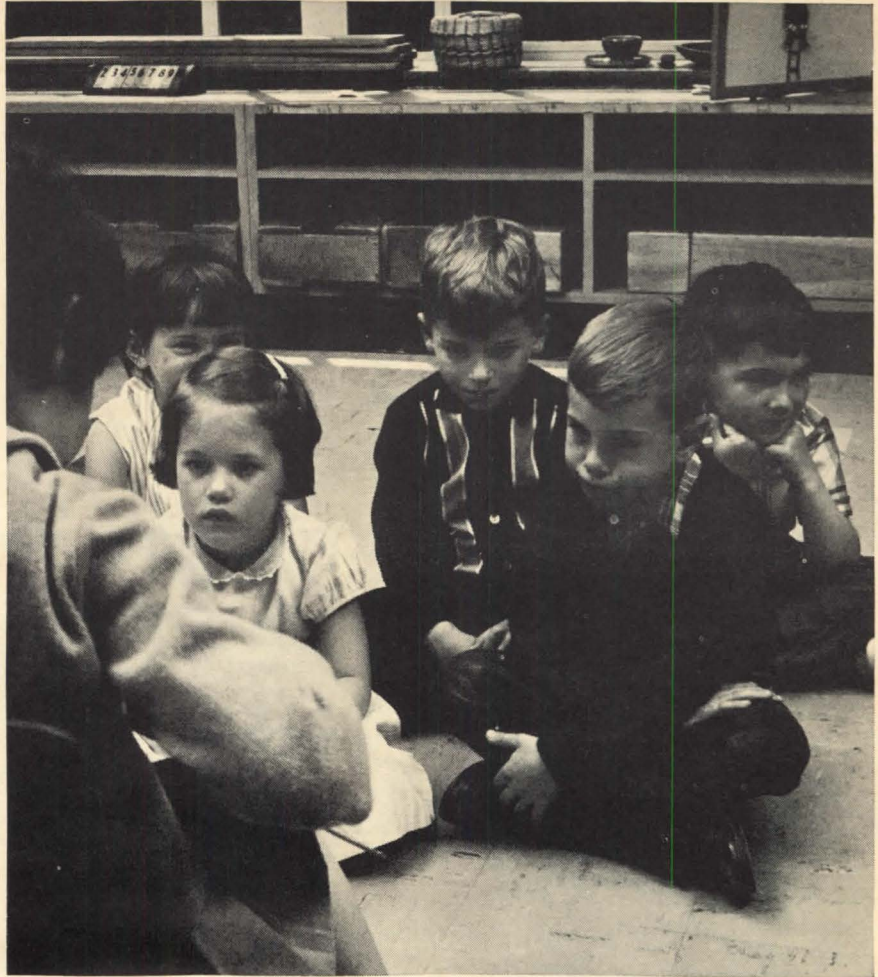
Guide standards for fire doors and windows cover the use, installation, and maintenance of fire-door assemblies, windows, glass blocks and shutters. This 1966 revised edition of NFPA No. 80, containing material that has been incorporated into numerous building codes, has been developed as a guide to good practice. 80 pages. Price: \$1. National Fire Protection Assn., 60 Batterymarch St., Boston, Mass. 02110.

**ELECTRICAL
EQUIPMENT**

WALNUT DECORATED DOWNLIGHT
SM51-55-57



Lights for the ceiling and a few for the wall are cataloged by type — recessed downlighting with ellipsoidal, cylindrical, or square reflectors; and surface-mounted rounds, squares, "eyeballs," and a shallow walnut-wrapped cylinder (shown). Some fixtures may also be pendant-mounted, and there is a multipurpose recessed cylindrical housing that will accept 71 front and trim variations. Milky glass globes, rectangles, and other shapes for wall mounting are suitable for indoors or outdoors. Photos, dimensions, photometric data, and descrip-



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right *through* a mirror**

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On Readers' Service Card, Circle No. 368

tions of finishes, wattages, lenses, etc. 24 pages. Emerson Electric Co., 8100 Florissant Ave., St. Louis, Mo., 63136. Circle 209, Readers' Service Card

FURNISHINGS

Antique ceramic tile for exterior and interior use is described in a color-illustrated four-page brochure. The tiles have smooth or rough surfaces (rough one resembles the pockmarked skin of a baked potato) and a double glaze impervious to weather. Colors seem time-tested (stone

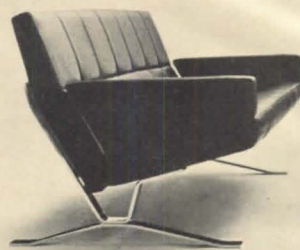
wall gray, burgundy red, rust). Sizes listed. Hoganas Ceramic Co., Riverton, N.J. 08077. Circle 210, Readers' Service Card

NuTone's Idea Booklet for kitchen and bathroom planning contains floor plans, sketches, and illustrations. Installations are shown in contemporary and traditional styles for kitchens (equipped with range ovens, dishwashers, disposers, range-hood and exhaust fans, electric heaters, built-in food centers, music-intercoms, etc.) and bath-

rooms (with "vanitories," gardens etc.). Architects could usefully give this 62-page booklet to clients interested in bathroom and kitchen planning. NuTone, Inc., Cincinnati, Ohio 45227. Circle 211, Readers' Service Card

Vinyl brick floor tiles, shown in a four-page brochure, come in single-, double-, and triple-brick units. Called the "1776 vinyl brick," the line is inspired "by 200 years of American Heritage": Bunker Hill Red, Lexington Pink, York-

town Tan. Pictured are herringbone designs, and rows and squares of bricks accented by vinyl strips. Sizes are listed. Robbins Products, Inc., Tusculumbia, Ala. Circle 212, Readers' Service Card



The Independent Suspension Series of furniture includes various seating units (settee, sofa, armchair) designed by Dave Woods for lounging areas (especially business and public spaces). Pieces with mirror stainless steel frames and up-tilted seats and arched-forward backs suggest a steam-shovel scoop. Six-page brochure includes specifications and photographs showing seating units, armed and armless, in various arrangements. It also presents a companion table. J. G. Furniture Co., Inc., 160 E. 56th St., New York, N.Y. Circle 213, Readers' Service Card



The Service Module System comprises various units (for example, a storage compartment providing outlets for razor, toothbrush, etc.; a dressing area with mirror and light). Designed by George Nelson, they may be surface or door-mounted, as well as built-in. They come in epoxy colors (blue, gray, yellow) or specially treated, moisture-resistant, natural-wood finishes (cherry, walnut, or birch). Interiors are of sheet-

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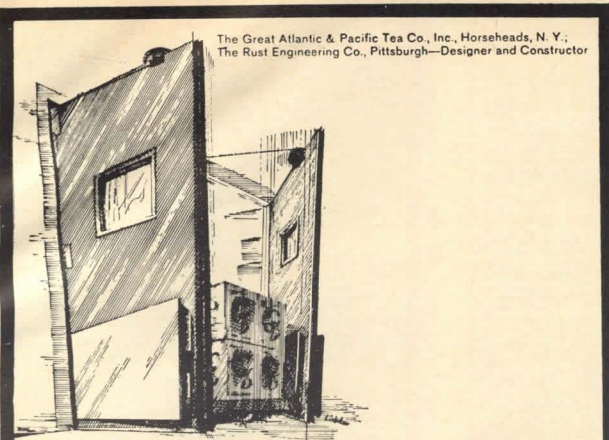
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GET YOUR PERSONAL REPRINT OF P/A's OCTOBER "CONCRETE" STORY

A limited number of reprints of the editorial section of the October issue of PROGRESSIVE ARCHITECTURE have been set aside for our readers.

This was the issue that explored the subject of Concrete from top to bottom. It looked in depth at the uses and mis-uses of concrete in office buildings, houses, hospitals, saloons and state capitols. It gave cogent answers to the question: "What is the future for this most promising yet controversial of building materials?"

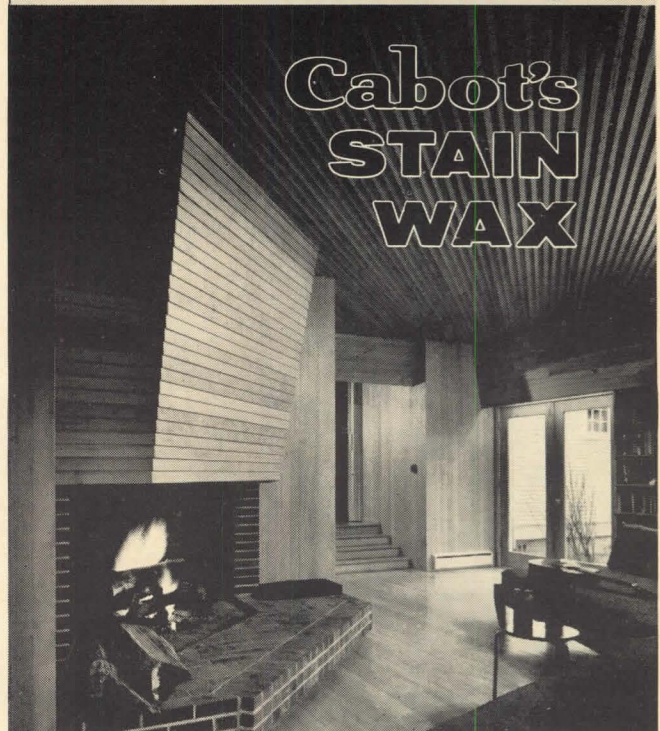
Comments and critiques on concrete were supplied by experts from all sides of the building industry — architects, designers, engineers and builders.

Get your own personal copy (or copies) at \$1.00 each of the October Concrete reprint by checking #450 on the Readers' Service Card at the back of this issue. We'll bill you later.

On Readers' Service Card, Circle No. 450

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 breathtakingly 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.



Cabin on Mt. Rainier, Wash.; Architect: Liddle & Jones, Tacoma, Wash.; Cabot's Stain Wax throughout.

Bring out the best in wood with Cabot's Stain Wax. Easy to apply and economical; available in thirteen distinctive colors plus black and natural.

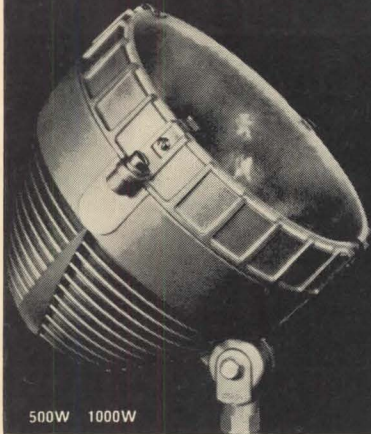


SAMUEL CABOT INC.
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On Readers' Service Card, Circle No. 331

NEW



500W 1000W

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More compact fixtures**

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STONCO

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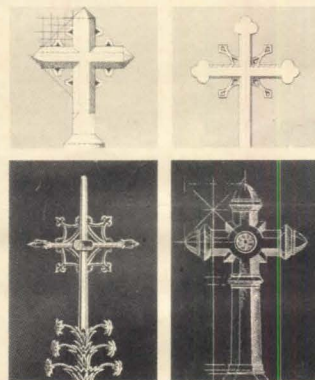
metal backing. A page with samples of colors and finishes accompanies the six-page color- and diagram-illustrated brochure. Howard Miller Company, Zeeland, Mich.

Circle 214, Readers' Service Card

Draw-Matic automation allows one to open traverse draperies and similar sliding objects (for instance, plywood doors, maps, and charts) with a flick of a switch. It can be coupled with a time device, incorporated with lights, and geared to radio or solar control. A fold-up brochure discusses and illustrates the unit's various applications and gives specifications. Draw-Matic Engineering Company, 13052 W. McNichols Rd., Detroit, Mich. 48235.

Circle 215, Readers' Service Card

SPECIAL EQUIPMENT



The cross form has had a complex history since the beginnings of Christianity. A detailed brochure illustrates a great number of them, giving the names and a brief comment on the symbolism and history of each. The illustrations may be used as guides for designing, choosing, and ordering a cross from the manufacturer. Traditional Latin, Greek, and French designs are included. There are also contemporary examples. 40 pages. Overly Mfg. Co., Greensburg, Pa.

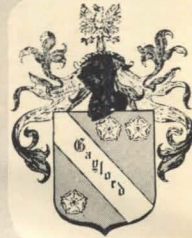
Circle 216, Readers' Service Card

PROGRESSIVE ARCHITECTURE NEWS REPORT

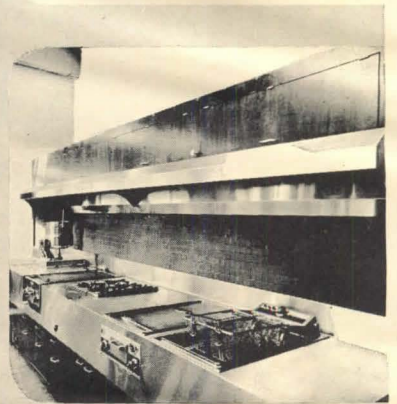
REINHOLD PUBLISHING CORPORATION
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NEXT MONTH IN P/A

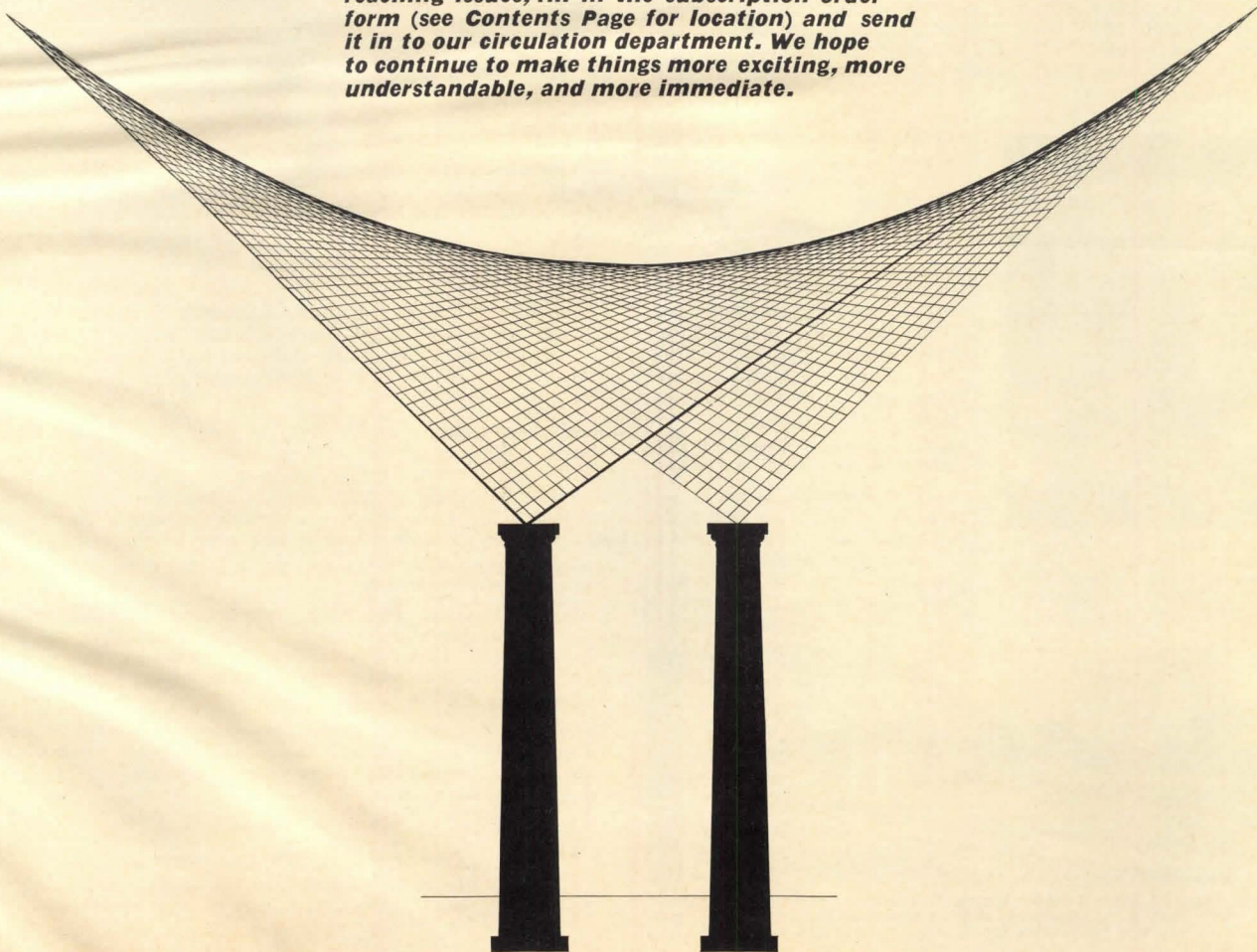
Prepare to Meet Thy Future!

By the end of this century, every element involved in shaping our lives and society will have undergone phenomenal changes. Philosophy, religion, science, technology, aesthetics, social sciences — all the factors influencing man and his surroundings are even now in a state of revolution that will completely change the face of the world in the future.

The December issue of **PROGRESSIVE ARCHITECTURE** will examine all the aspects of the many disciplines that are in this state of flux, and what they might come to mean decades from now. Special attention will be given, of course, to the coming role of the architect — if that is what he will be called — in the altered scheme of things.

If you are not planning to retire into a deep cave and let the rest of the world go hang, the December issue of P/A will be of great significance to you, both as a practitioner and as a member of society. We are excited enough about it to believe that it will be required reading for any thinking architect for some time to come.

To get the December P/A and 11 more far-reaching issues, fill in the subscription order form (see Contents Page for location) and send it in to our circulation department. We hope to continue to make things more exciting, more understandable, and more immediate.





THE PRESCON MEMO NEWS

THE PRESCON CORP.: 502 CORPUS CHRISTI STATE NATIONAL BUILDING — CORPUS CHRISTI, TEXAS 78401

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SCHOOLS POST-TENSIONING ENCOURAGES DESIGN FLEXIBILITY WITH ECONOMY

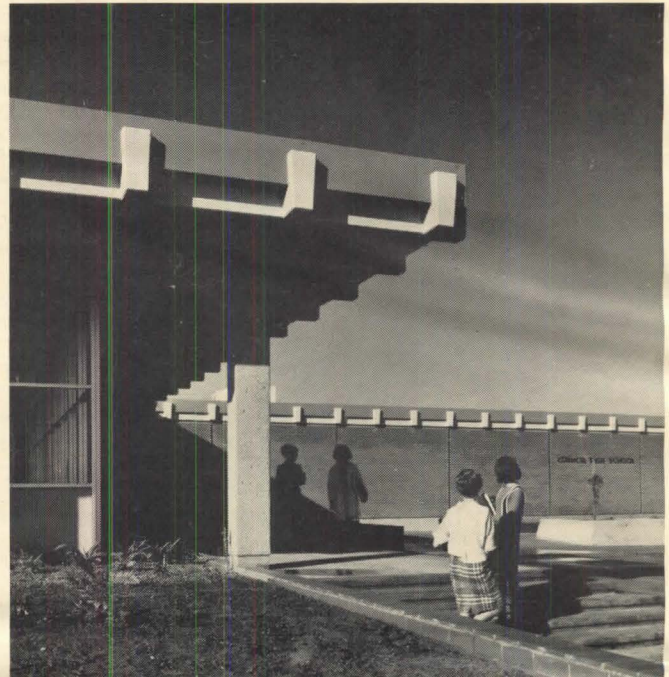
School design problems have been solved by many architects and engineers with the Prescon System of post-tensioning for prestressed concrete. Examples near you can be pointed out by a Prescon representative.

The multiple-award winning Estancia High School, Costa Mesa, California, features a "Great Court" surrounded by academic areas all under one roof. The 200,000 square foot roof was a post-tensioned prestressed waffle slab on a 5-foot square module. The waffle slab is 23¾" deep using 8" joist stems and 20" deep pans. Spans varied from 25' to 35'. The roof system was designed for zero deflection under dead load.

Design criteria called for (1) 2,000 student capacity (2) departmentalization (3) flexibility in number, size and organization of departments and teaching stations. All exterior and interior walls are non-bearing demountable throughout the academic areas. Building costs were \$1,586.00 per student.

Architects—William E. Blurock & Associates; Structural Engineers—John A. Martin & Associates; General Contractor—Robert E. McKee.

At Bishop College (Dallas, Texas) where all buildings are permanent type, post-tensioning was widely employed. The Prescon System was used in classroom, dormitory and library structures. It contributed to economy in materials, forms and construction speed. (The men's dormitory was occupied in 8 mos.) The flat plates are 8" thick and cantilever 4' in all levels of several structures. Bays are 24' x 26', with columns 12" x 20" and designed for 50 lbs. live load, plus partitions. The Zale Library on the campus has slabs 9½" thick, with 4½" drop panels at columns. The first and second level slabs are designed for 150 lbs. live load, plus partitions. Cost, including library furniture, less than \$13.50 per sq. ft.



Estancia High School, Costa Mesa, Calif.



Roy E. Larsen Hall, Harvard University. Architects: Caudill, Rowlett & Scott; General Contractor: Wexler Construction Company.

E. D. Mayes, structural engineer, pointed out that among advantages of post-tensioning were: (1) elimination of deflection in the slab to reduce partition placement problems; (2) use of thinner slabs for reduced floor-to-floor height resulting in lower material costs. Flat plates allow easier mechanical distribution, and ceiling finish can be applied directly to under side of slab.

Architect—Donald B. Kleinschmidt; Consulting Engineers—Mayes & Brockette.

A Ft. Morgan, Colorado, school utilized four structural systems, all post-tensioned: (1) two-way waffle slab; (2) one-way joists and one-way zee-type sections; (3) folded plates; (4) haunched slabs.

Prescon coated, as well as grouted tendons were used. The library is a 65' x 90' clear span area; the auditorium has 90' maximum spans with the balcony framed of post-tensioned cast-in-place concrete to eliminate the need for columns.

Architect—Wheeler & Lewis; Structural Engineer—Russ Kostroski; Contractor—Hensel Phelps Construction Co.

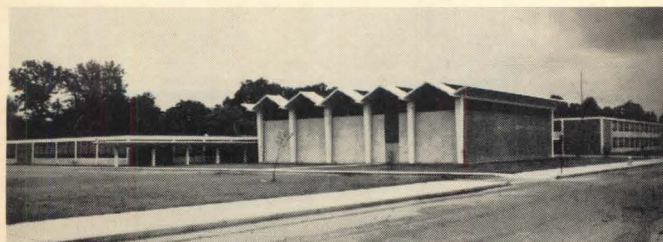
The Student Union Building, Southwest Missouri State College, Springfield, is a four-level structure with 55' clear spans. The second and third floors, and roof have 4" slabs with 6½" ribs on 3'4" centers. Floor construction depth is 2'7½" and 2'11" for the roof.

Field measurement of camber indicated a variance of ¼" — from a minimum of ⅝" to a maximum of ⅞". In addition to being more economical than the original design, post-tensioning provided the benefit of creep and shrinkage control. Post-tensioning sealed the slabs so well that water standing on the upper portions showed no moisture evidence on the undersides.

Architects—Harold A. Casey & Associates; Engineers—Saul A. Nuccitelli; Contractor—Dondlinger Construction Company.

Today's school design and construction requires ingenuity and creativity to meet the evolving educational concepts, yet remain within budgets. Often post-tensioning will enable you to achieve these demands. Remember the Prescon System — post-tensioning with positive end anchorage.

These are but a few of the hundreds of school structures using the Prescon System. For more complete examples and technical information, write for literature, or contact a Prescon representative.



Watkins Overton High School Gymnasium with classrooms, Memphis, Tenn. Architect: A. L. Aydelott and Associates; Structural Engineer: S. S. Kenworthy and Associates; Contractor: Sam P. Maury Construction Company.

The PRESCON Corporation

General Offices: 502 Corpus Christi State National Building
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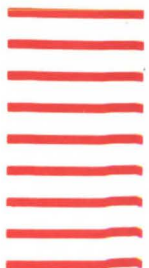
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Quality, beauty and building budgets are the reasons PELLA Wood Multi-Purpose and Twinlite® Windows shine on the contemporary scene. They provide hundreds of design possibilities for residential and non-residential work. In homes, the ladies love 'em because they can be left open when it's raining. Use these awning-type windows singly, stacked, in ribbons or as casements. Even top them off with PELLA trapezoidal units. Operating hardware and other parts are co-ordinated in bronze-color tones to blend with interior color schemes. Self-storing storm and screen panels plus stainless steel weather stripping protect against winter cold, summer heat, street noises and dust. Snap-in, snap-out muntin bars in regular or diamond shapes speed painting and cleaning. Exclusive Glide-lock® under-screen operator locks sash in 11 different positions. (Roto operators also available.)

ARCHITECT: JAMES E. BIGGS, A.I.A.

ARCHITECT: BRACKE & HAYES—BUILDER: DON BEALER CONST. CO.



ARCHITECT: CHARLES VINCENT GEORGE & ASSOC.

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- PELLA WOOD FOLDING DOORS
- PELLA WOOD FOLDING PARTITIONS
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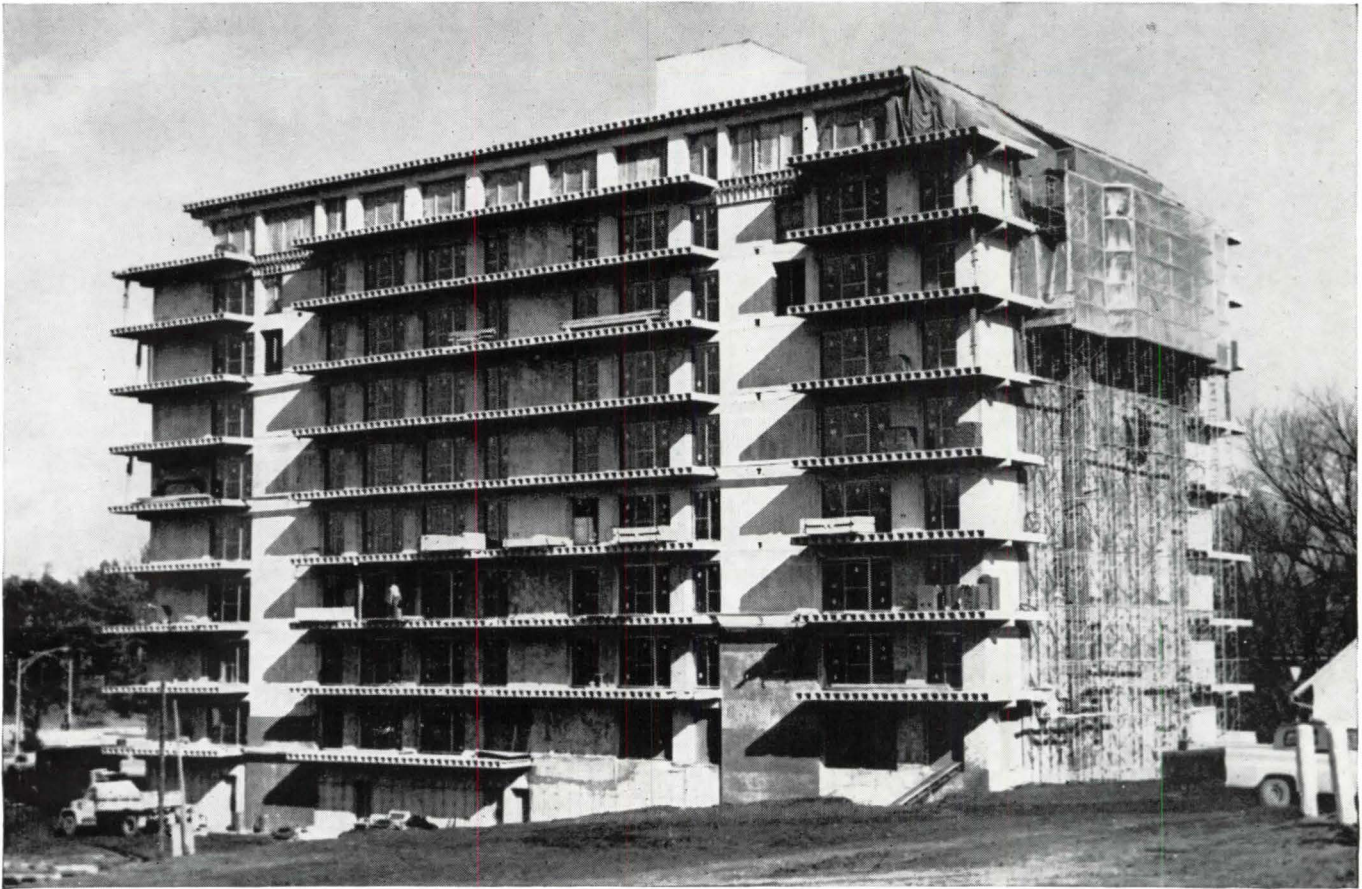
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**WOOD M-P AND TWINLITE® WINDOWS
WITH ALL EXTERIOR SURFACES FACTORY PRIMED**

PELLA MAKES QUALITY WOOD WINDOWS, WOOD FOLDING DOORS & PARTITIONS AND WOOD SLIDING GLASS DOORS

PRESTRESSED CONCRETE SUPPLIER: Prestressed Concrete of Iowa, Iowa Falls, Iowa
OWNERS: J. D. Armstrong and H. D. Paul, Ames, Iowa



Eleven tiers of prestressed concrete slabs form the roof and floor deck of the University Towers Apartments in Ames, Iowa. The deck slabs are 33 feet long and 4 feet wide. A concrete

balcony panel will enclose the terraces and cover the slab ends. The structural frame consists of reinforced concrete with brick facing.

150,000 Square Feet of Prestressed Concrete Roof and Floor Deck Speeds Construction of 10-Story Apartment

Eleven tiers of prestressed concrete SPAN-DECK® slabs were used in the privately constructed University Towers Apartments in Ames, Iowa. These slabs were factory-produced under watchful tolerance control, transported to the building site when they were needed, and quickly erected. Efficiency such as this resulted in adherence to a tight construction schedule.

It's another example of the acceptance of prestressed

concrete to solve today's competitive building challenges. And it is another project in which the prestressed concrete supplier relied on Union TUFWIRE® Products for prestressing. These service-proved products are made by Armco Steel Corporation. For an informative, free booklet describing interesting prestressed concrete projects, write Armco Steel Corporation, Dept. W-7706, 7000 Roberts Street, Kansas City, Missouri 64125.

ARMCO STEEL



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Indigo



A new family of prismatic lens luminaires offering fresh esthetic, performance, and economic values

Indigo is a unique blend of shallowness, clean lines, fresh new styling touches *and* highly efficient, comfortable lighting performance. It is offered in three widths; for surface or pendant mounting. *All Indigo units are competitively priced* to meet budget limitations.

Black finish on end caps, and on sides of channel provide distinctive options for decor planning... accentuate the look of shallowness.

The two and four lamp versions are ideal for lighting stores, offices, classrooms, hospitals, laboratories, hotels, and public building areas. Indigo-1, the companion single lamp unit, is particularly well-suited for corridors,

stock rooms, and utility areas.

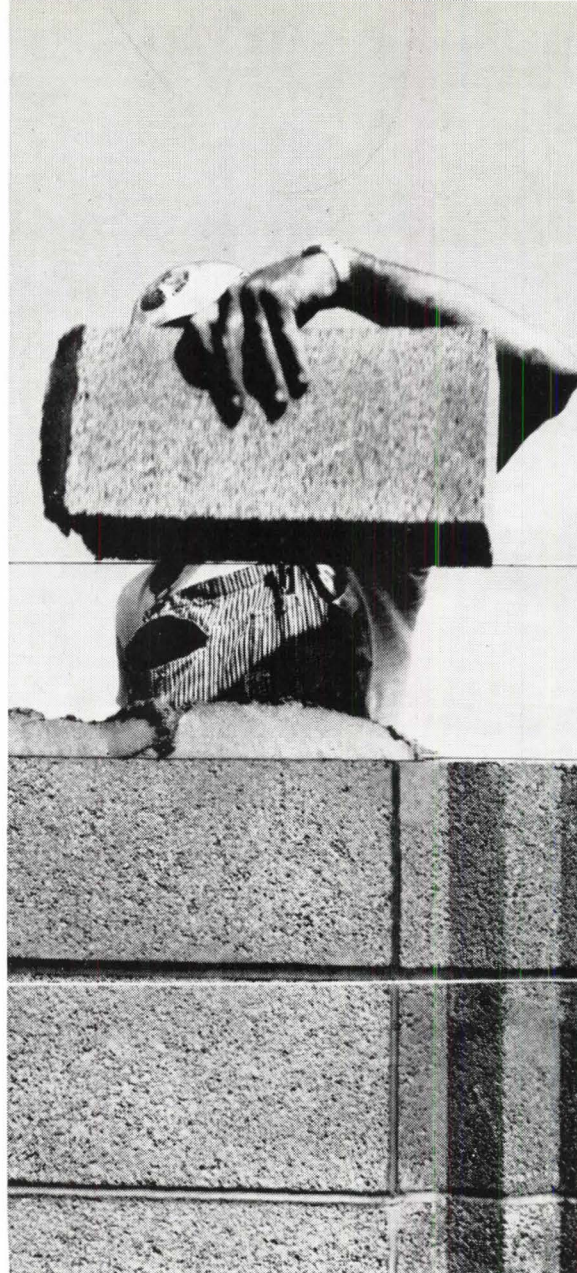
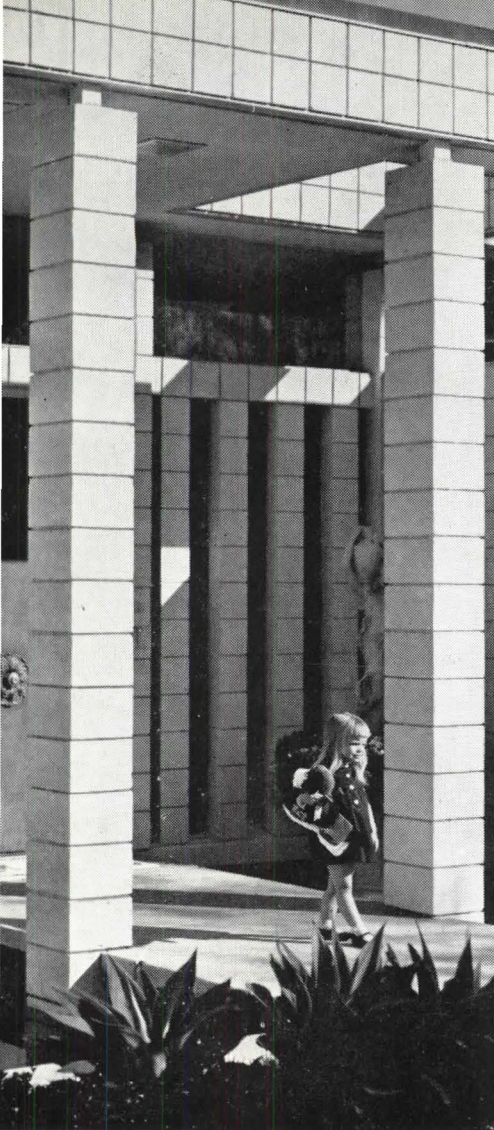
Plastic closures employ the exclusive, Miller M-1 Lens Pattern on bottom exterior and linear, interior prisms along sides. Utilization is high with most of the light directed downward to the work plane or merchandise. Lamp concealment is good and sidewall brightness is low. Result is a uniform, pleasing lighted appearance. Indigo units also available with closure that *satisfies I.E.S. Scissors Curve Requirements*.

For complete information on this outstanding new fixture family — write Dept. 1166, or contact your Miller Representative.



THE miller COMPANY • MERIDEN, CONN. • UTICA, OHIO • MARTIN, TENN.





The Q BLOCK[®] Program stacks everything in your favor

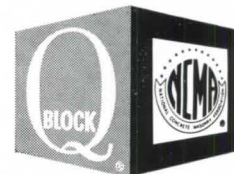
WHEN you're working with quality, things just naturally fall into place. Take the new Q BLOCK program for example. It wasn't long after block producers across the country adopted this national quality control program that building professionals were also eyeing its advantages.

These new standards, set forth by the block industry itself, give architects and builders the opportunity to design and build with maximum assurance of product quality. They have demonstrated their acceptance by *specifying* concrete block produced under the Q BLOCK quality control program—as it reflects all the high standards

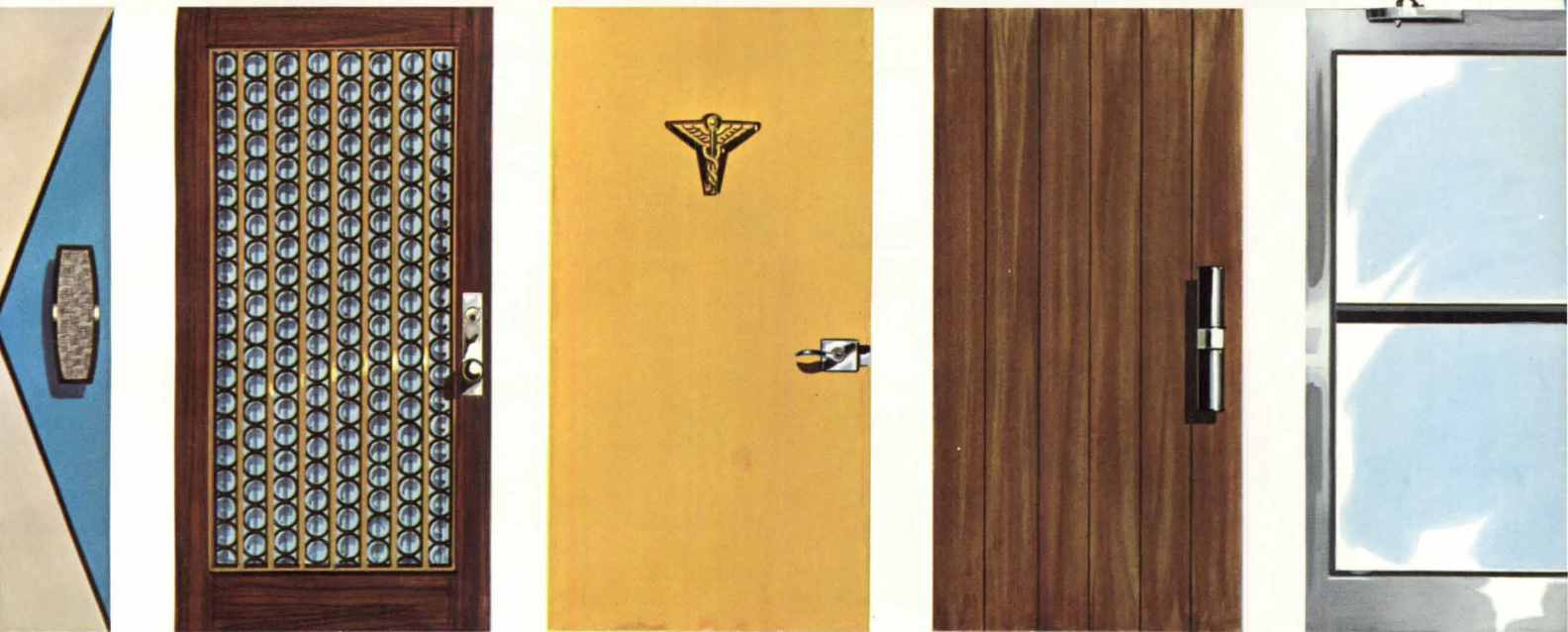
that modern research and technical development can provide, backed up by regular product testing to guarantee that these standards are consistently maintained.

Concrete block, made to Q BLOCK specifications, is concrete block at its best. And better concrete block will always mean wider opportunities and more *confidence for the* modern user of building products.

Members of the National Q BLOCK program are identified by this registered mark. Look for it wherever you specify or use concrete block.



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Americans will never lose their love for the Great Indoors

... safeguard their heritage with **Corbin Hardware!**

There's nothing that is seen and touched more often in the course of a day than doors and door hardware. So why shouldn't door hardware be both beautiful and functional? Ask any Indoorsman what make of hardware combines these features and he'll probably say "Corbin." It's a name he knows and trusts.

So specify Corbin. Accept no Corbin copies. *Insist* on Corbin hardware.

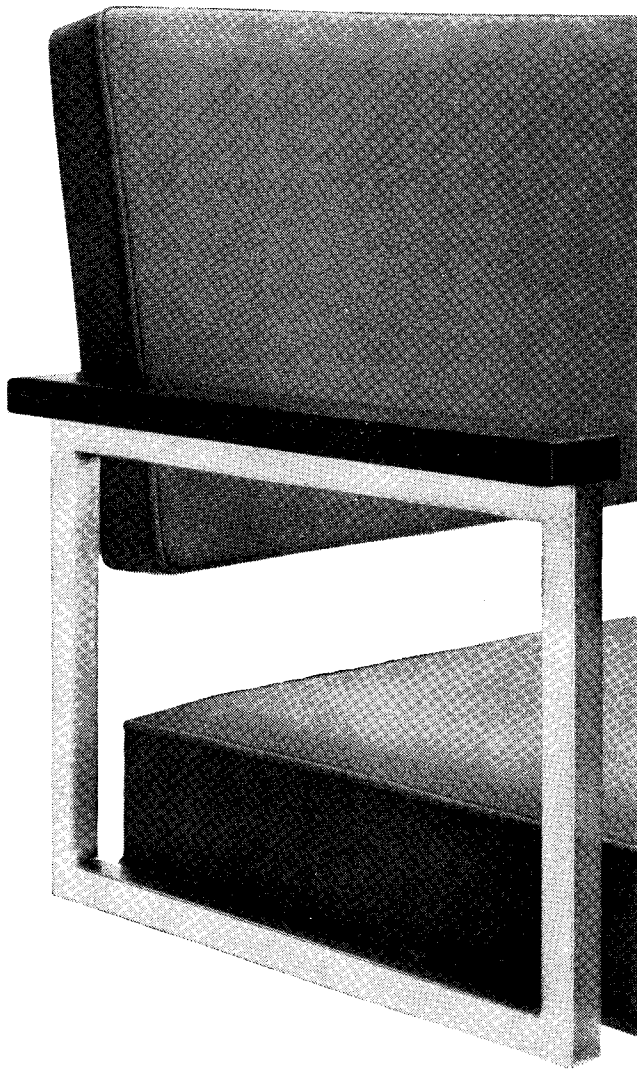
Send for an illustrated brochure on Corbin architectural hardware to: P. & F. Corbin, Division of Emhart Corp., New Britain, Conn. 06050



P. & F. CORBIN

DIVISION OF EMHART CORPORATION
NEW BRITAIN, CONNECTICUT 06050

The upholstery on our chairs is more than nip and tuck



Carefully tailored upholstery in Sturgis 700 Line chairs is a detail that keeps them showroom-new even after long use. We cut the fabric precisely, then seam and welt it with care for custom-tailored fit. It won't ripple or sag.

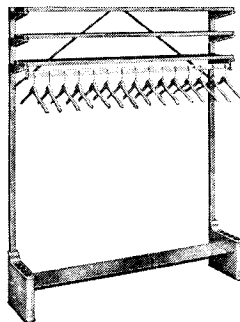
Extra care in upholstering is one way we make Sturgis chairs look better, last longer. Deep comfort, precision-made frames and bases and flawless finishes complete the picture. Get to know the look of Sturgis chairs. Write today for a full-color brochure to Department PA-106, The Sturgis Company, Sturgis, Michigan 49091.



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COAT and HAT RACKS



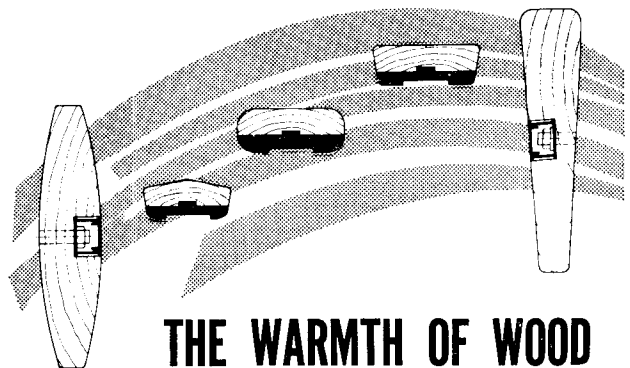
Look into Krueger's complete new selection of 23 Floor and Wall Rack designs for new durability, economy and storage versatility. Each rugged, all-steel unit features the reversible, vinyl-covered 3-Way Hanger Bar, dust-free shelves and complete checkroom accessories—plus colorful choice of baked-on enamel finishes. Full complement of Add-On-Units expands facilities to fit any storage space or room planning need. **Write today!**

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FIVE NEW HANDRAIL DESIGNS FROM**

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Summitville extruded Quarry Tile is a "creative tool" for the design innovator. A wide range of natural colors, sizes and contours offer virtually unlimited opportunities for designing "total floors"... unique and complete. For decor, for interest, for durability, for beauty, for economy, for no maintenance—think Quarry Tile... by Summitville Tiles, Inc., Summitville, Ohio.

Summitville[®]
QUARRY TILE



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If you plan ceilings, you should see this film.

NECA has prepared a film which shows how the integrated ceiling has given you new freedom in interior design. You are free to design a ceiling that heats, cools, lights, communicates, controls sound and beautifies just the way you want it to. Then you can depend on a qualified electrical contractor to install it—and guarantee its performance, too.

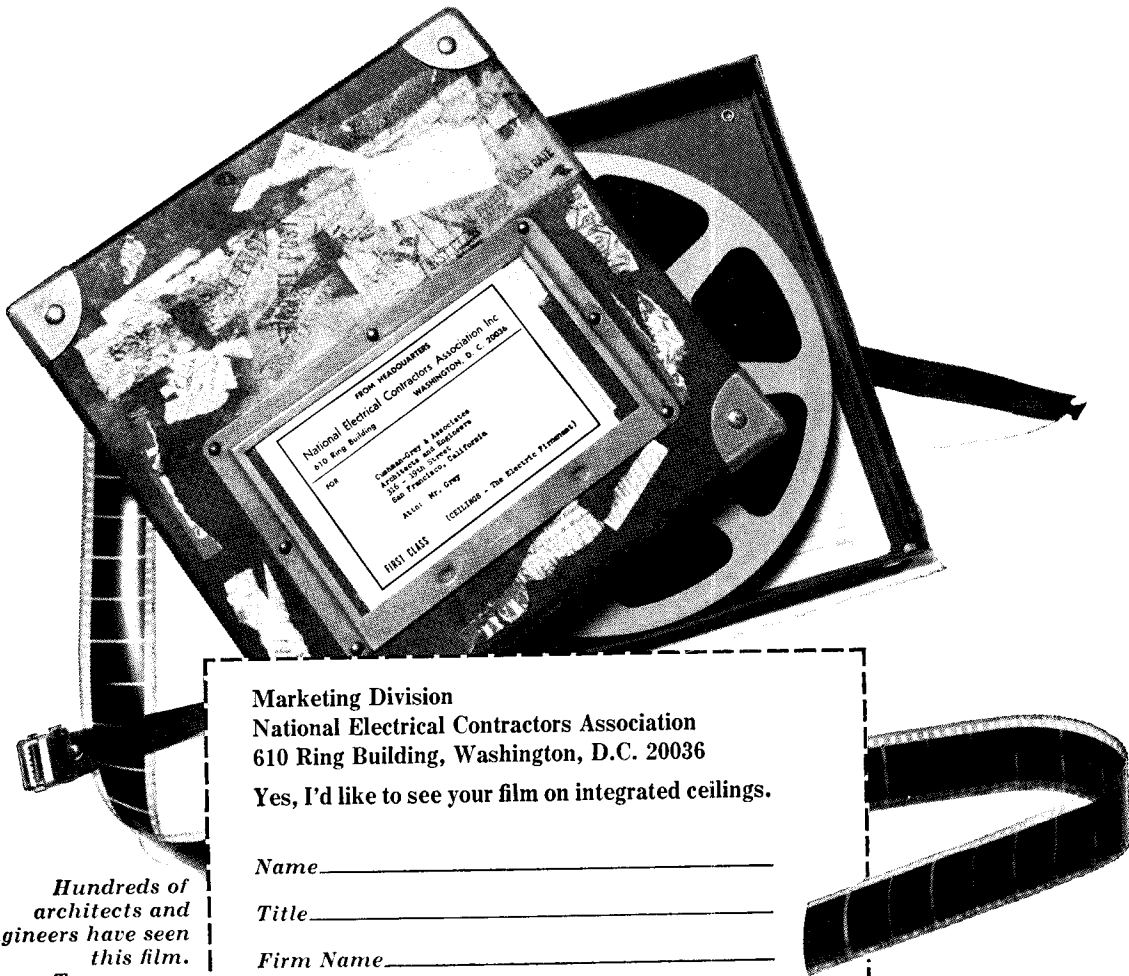
Why an electrical contractor? Because most of the functions of an integrated ceiling are powered or controlled by electricity . . . and electricity is the electrical contractor's business. He has plenty

of experience in coordinating the efforts of carpenters, sheet metal men, plasterers, plumbers, heating and refrigeration men and other specialists—and has available to him established and recognized procedures through which jurisdictional questions can be settled without delaying the job.

Put the integrated ceiling into the hands of your qualified electrical contractor by putting it in the electrical specifications. He'll guarantee the performance, not only of the electrical function, but of the entire job.

Your Qualified Electrical Contractor

NECA—National Electrical Contractors Association, 610 Ring Building, Washington, D.C. 20036



Marketing Division
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610 Ring Building, Washington, D.C. 20036

Yes, I'd like to see your film on integrated ceilings.

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*Hundreds of
architects and
engineers have seen
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To arrange a
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PA-116



PRESTON TOWERS, DALLAS, TEXAS, ARCHITECT: JACOB E. ANDERSON

Amarlite Sliding Glass Doors...featured in Skyscrapers throughout the Free World!



REGENCY HYATT HOUSE, ATLANTA, GEORGIA, ARCHITECT: EDWARDS & PORTMAN



METROPOLITAN MARK II AND SUBURBAN MARK II

Amarlite Sliding Doors ...a bold new engineering and design concept!

The rolling x-unit has been moved to the outside track . . . engineered to form the ideal WeatherWall for all seasons!

Our new sliding glass door WeatherWall rolls right . . . fits tight . . . seals out wind, rain, heat and cold!

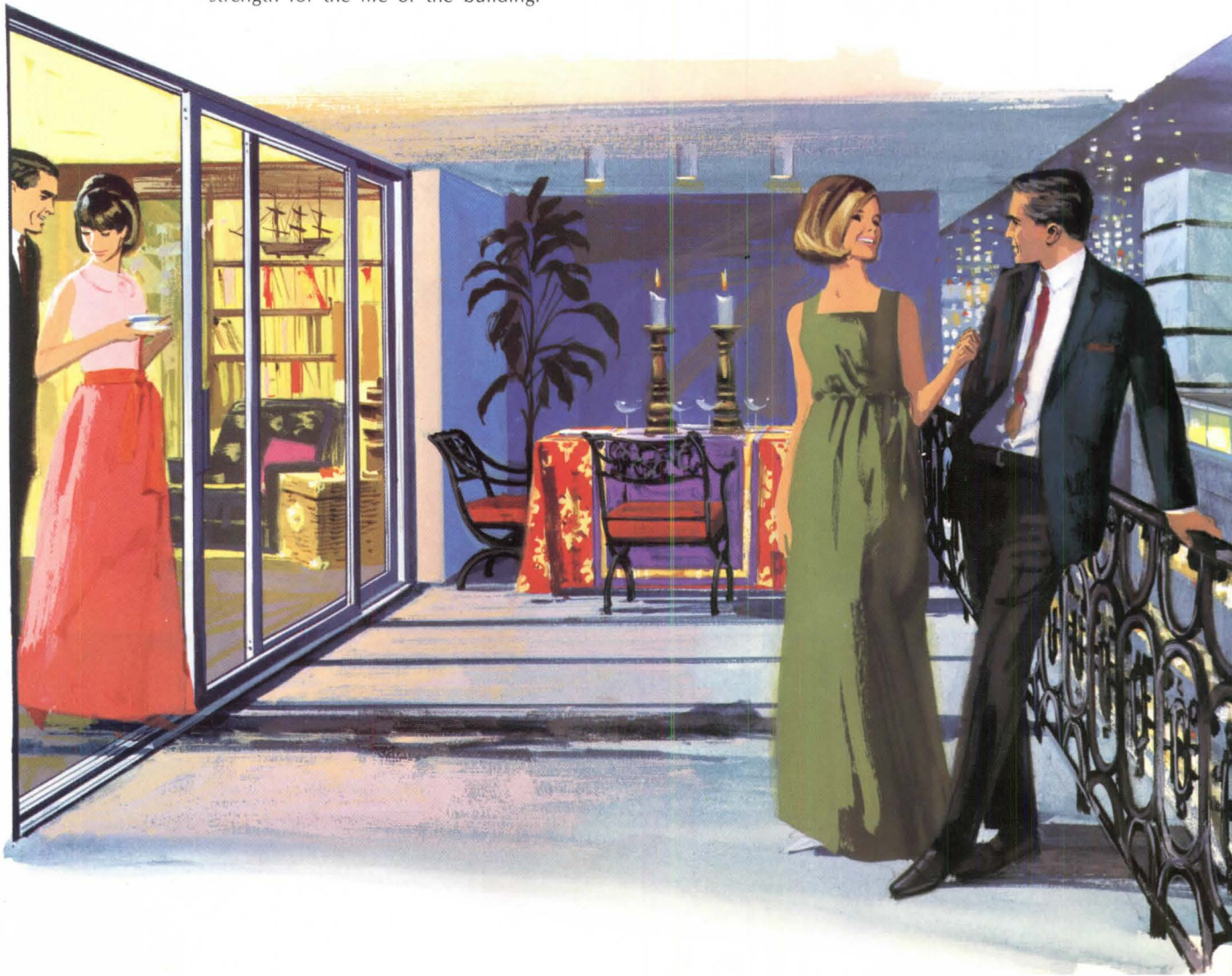
WE PUT THE FIXED DOOR ON THE INSIDE . . . THE SLIDING DOOR ON THE OUTSIDE

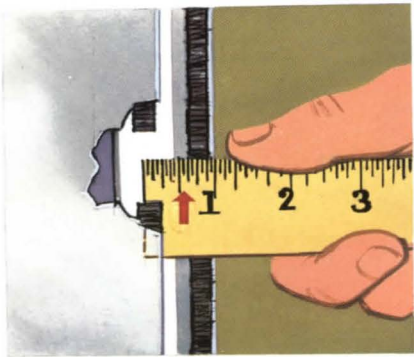
. . . so wind-driven rain or gusts of hot or cold air . . . actually force the WeatherWall sliding glass door tighter against the weather-stripping. The door is surrounded on both sides by tough polypile weather-stripping . . . creating the most effective sliding glass door weather-seal known!



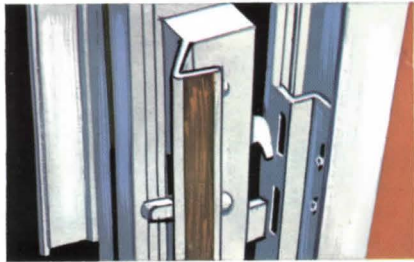
Amarlite WeatherWall design is used in both the monumental Metropolitan Mark II and the (basic construction) Suburban Mark II.

Architect-designed . . . balanced symmetrical sight lines . . . tubular construction for quality and strength for the life of the building.

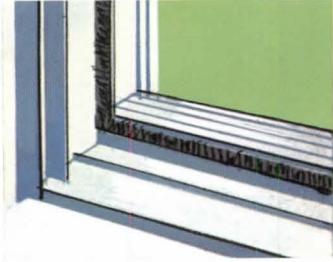




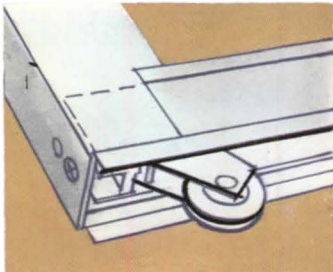
Deeper penetration (9/16 inch) of stile into jamb offers better weather seal. The deep-set jamb maintains its tight seal from top to bottom to compensate for building settlement and less than perfect installation.



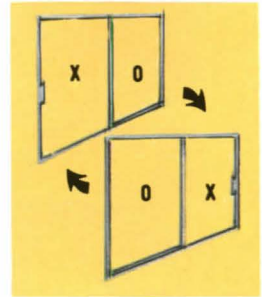
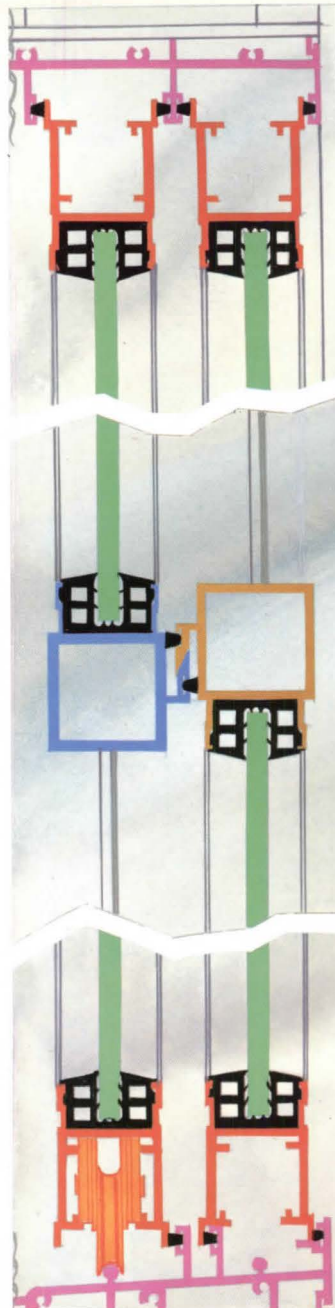
Anti-lift feature provides maximum security. Easily locked . . . can't break fingernails. Door pull is mounted on the sliding outer door. It fits flush with the inner room wall. Pull can't snag draperies . . . allows drapery tracks to be hung even with interior of unit.



Snap-in cover creates smooth threshold . . . prevents heels from catching in door guides. Threshold cover provides a completely engineered drainage control. Polypile weather-stripping at **both sides of door stiles** and top rail provides positive weather seal for both **inward** and **outward** wind pressures. It's resilient, mildew and rot-proof.



Telescoped corner construction working in conjunction with roller assembly housing creates a strong, rigid, positively positioned corner. Stainless steel rollers with sealed, unitized ball bearings offer full 1/2 inch adjustment.



It's **reversible!** The fixed door may be placed left or right . . . on the same basic frame now or later. Glass requirements may be changed at any time from 1/4" glass to insulating glass with only the change of vinyl.

next job specify the Mark II . . . Suburban or Metropolitan sliding glass door offering you more . . . at the most competitive price! We

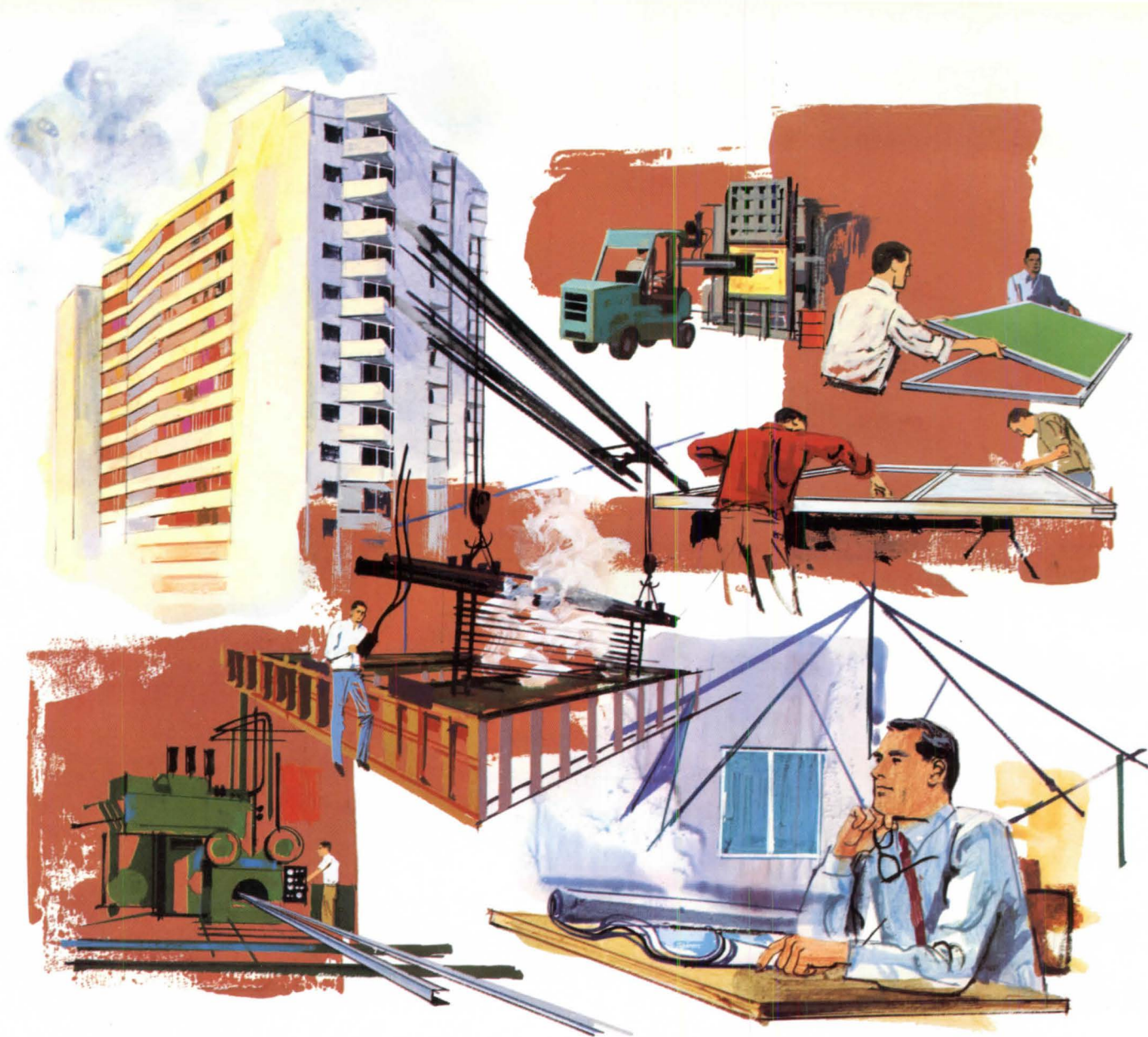
continue to search for better ways of engineer-

ing architectural aluminum for functional, elegant . . . spacious structures! And our bold new WeatherWall sliding glass door is the result of our research, laboratory testing and field experience. Its Tubular construction provides hidden strength . . . greater resistance to wind loading. Furthermore, WeatherWall has true, flush balanced sight lines . . . opened or closed . . . inside or out! Why specify less when you can build a WeatherWall? Use the SUBURBAN Mark II for basic construction . . . the METROPOLITAN Mark II for monumental jobs. For more information, see your Amarlite representative, or write to Amarlite, Division of Anaconda Aluminum, Main Office, P.O. Box 1719, Atlanta, Ga. 30301.

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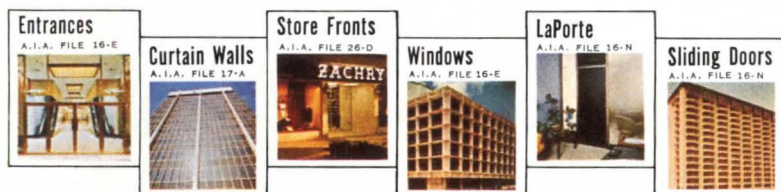


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We operate one of the world's largest and most modern plants for the manufacture of precision architectural aluminum products. We package curtain wall, new lines of symmetrical slide/action and vault/action windows . . . store fronts, entrances, the new LaPorte foam-core door, versatile Mark II sliding glass doors . . . and more.

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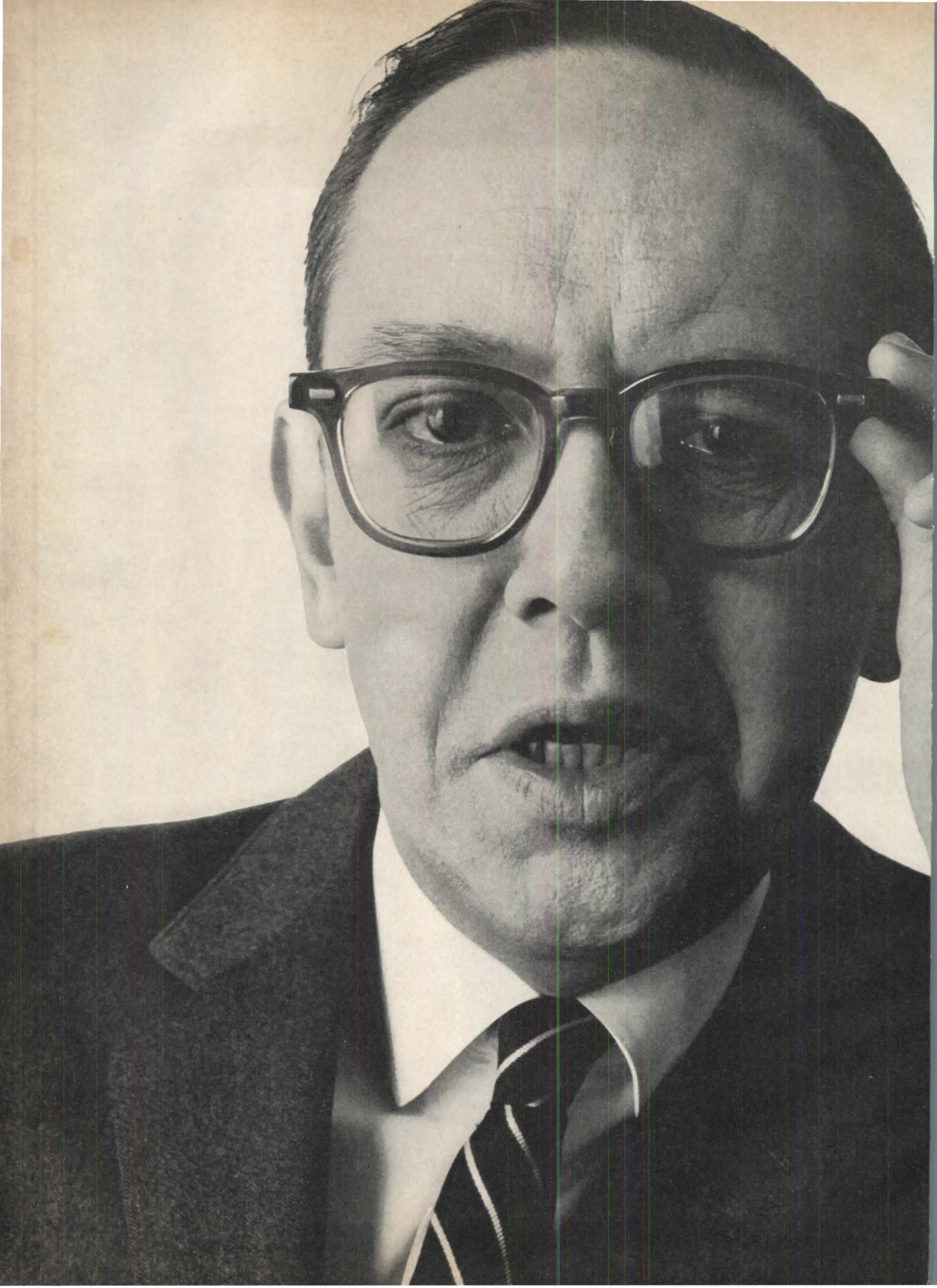
What are the ugliest products in the world?

Not too long ago most architects would probably have voted that dubious honor to fire extinguishers. For example—less than 20 years ago the little beauty below was not only the most effective extinguisher available, but just about the most attractive. Today, everything has changed. At Ansul, the name of the game is design! Design for better performance and better appearance. The Ansul dry chemical unit at the right not only looks good but is, by actual UL test, 9 times as effective as the best

comparable extinguisher of 20 years ago. Another Ansul unit, our new ENSIGN pressurized fiber glass water extinguisher, is available in 48 different decorator colors to meet the esthetic requirements of today's architects. Ansul, the world's leading manufacturer of fire protection equipment, has created a broad line of extinguishers intended to visually enhance your building. We offer a complete consulting service to architects . . . so when fire protection problems come up, call on Ansul.



THE ANSUL COMPANY, MARINETTE, WISCONSIN





Sam isn't much of a lunch date

He'll start talking shop before they bring the menu.

Give you a rundown on vinyls during the entree.

Warm up to epoxies while his coffee gets cold.

With Sam, a business lunch is all business. Because he knows you want facts.

Not folderol.

Facts about the flash point of a new wood sealer.

About a water-repellent coating for limestone.

About hardeners for concrete floors.

That's "table talk" to Sam. And Jesse. And Roy.

And every Man from Devoe.

They know you get enough of the glad hand.

Now try a helping hand.

You can depend on the **Man from Devoe.**

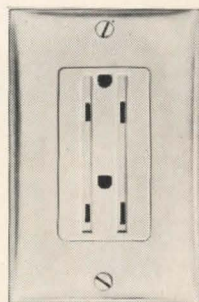
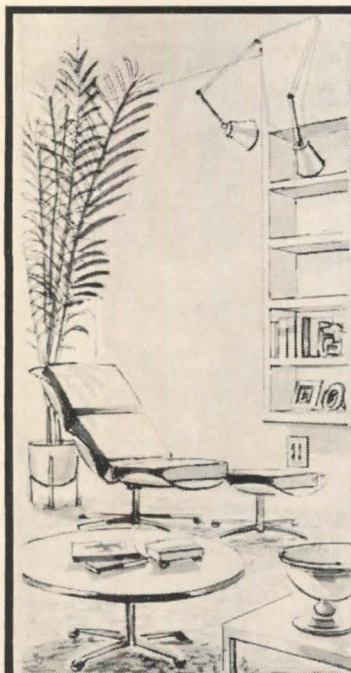
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DEVOE

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Plug Slater

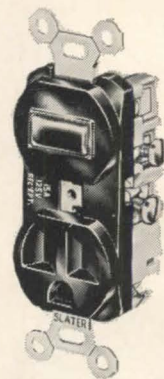
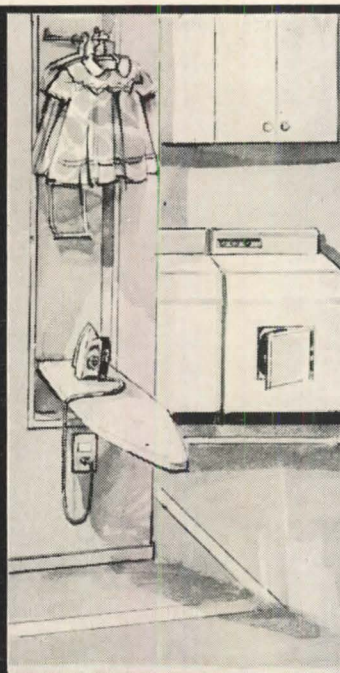
functional receptacles

for modern convenience living



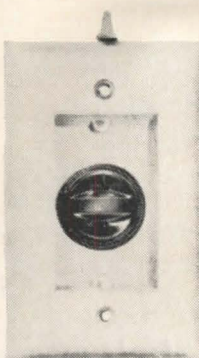
ARCHITECTURAL FACE WIRING DEVICES RECEPTACLE #6242

Architects and engineers are emphasizing beauty of design, as well as performance. Buildings must be both esthetically and functionally attractive. The Medalist "Decorator Group" offers the most advanced design for residential and commercial applications, plus the finest performance of any spec grade wiring devices available.



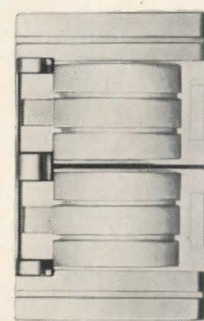
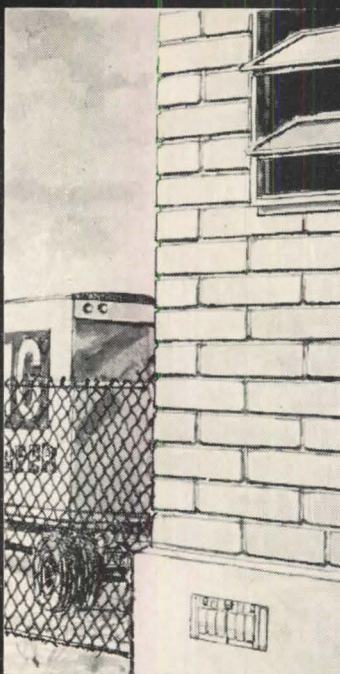
PILOT INDICATOR LIGHT RECEPTACLE #675

Whether it's a laundry iron or a soldering iron... when it is plugged in you'll know it... a constant, safe reminder. The red pilot light indicator receptacle has innumerable applications in residential, industrial or commercial installations.



STA-KLEEN CLOCK HANGER RECEPTACLE #S-371

Whether for a wall timepiece or for an illuminated oil painting, the clock hanger receptacle serves an important function. It eliminates ugly wires... gives a built-in look. Slater makes them in NEMA grounding types, parallel slot, T-slot, with brass or Sta-Kleen plates.



WEATHERPROOF FLIP-LID #M3780

This is the most beautifully designed, skillfully engineered duplex outlet weatherproof cover. It provides protection from the elements for switches, receptacles or combinations. Lids open to 90° and 180°; non-corrosive aluminum die-casting; stainless steel springs; weatherproof sealed gaskets; in grey, green, yellow, white.



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**CONVERTS ANY BATHROOM TO POST-
OPERATIVE OR CONVALESCENT ROOM**

New engineering accomplishment is the answer to self-help and safety in the bathroom for elderly, infirm, post-operative or other physically handicapped persons. *Shelters Arms** is a modern, hygienic aid that provides a firm grip for standing, sitting or rising—swings up and out of way for urinal position—becomes a handy, safe dressing stool with seat and cover down. *Shelters Arms* installs in minutes like any toilet seat on any manufacturer's closet, can be carried easily from one bathroom to another.

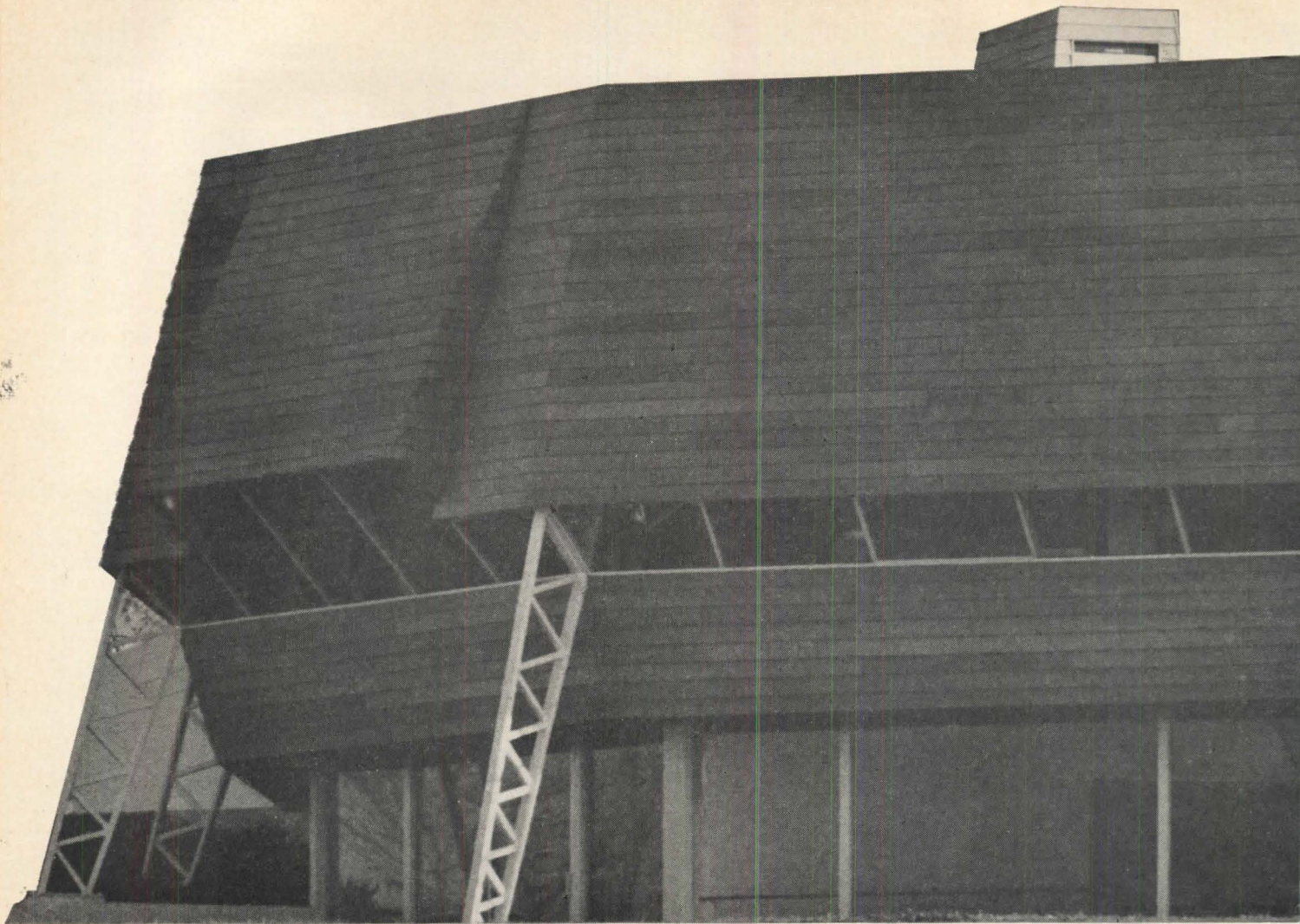
Shelters Arms needs no special wall or floor supports, eliminates the expense of special construction and maintenance, provides maximum sanitation. Extra heavy chromium-plated supporting arms and solid plastic safety grips are rugged and rigid, factory tested to withstand extreme pressures and weight. Comes completely assembled to a hi-impact solid plastic seat (open or closed front). Models available to fit wall hung or pedestal types—either flush valve or tank.

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THE FIRST NAME IN TOILET SEATS—THE LAST WORD IN SPECIFICATION QUALITY SEATS

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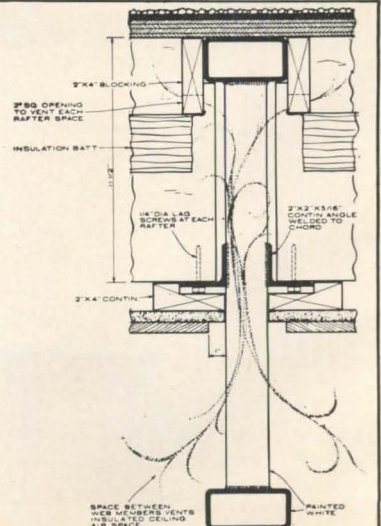
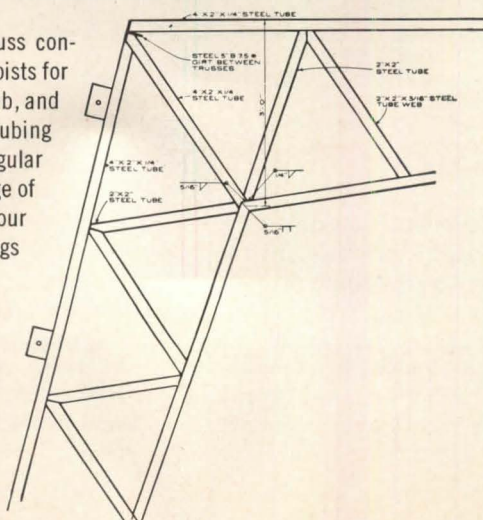


Republic Steel Tubing helps make

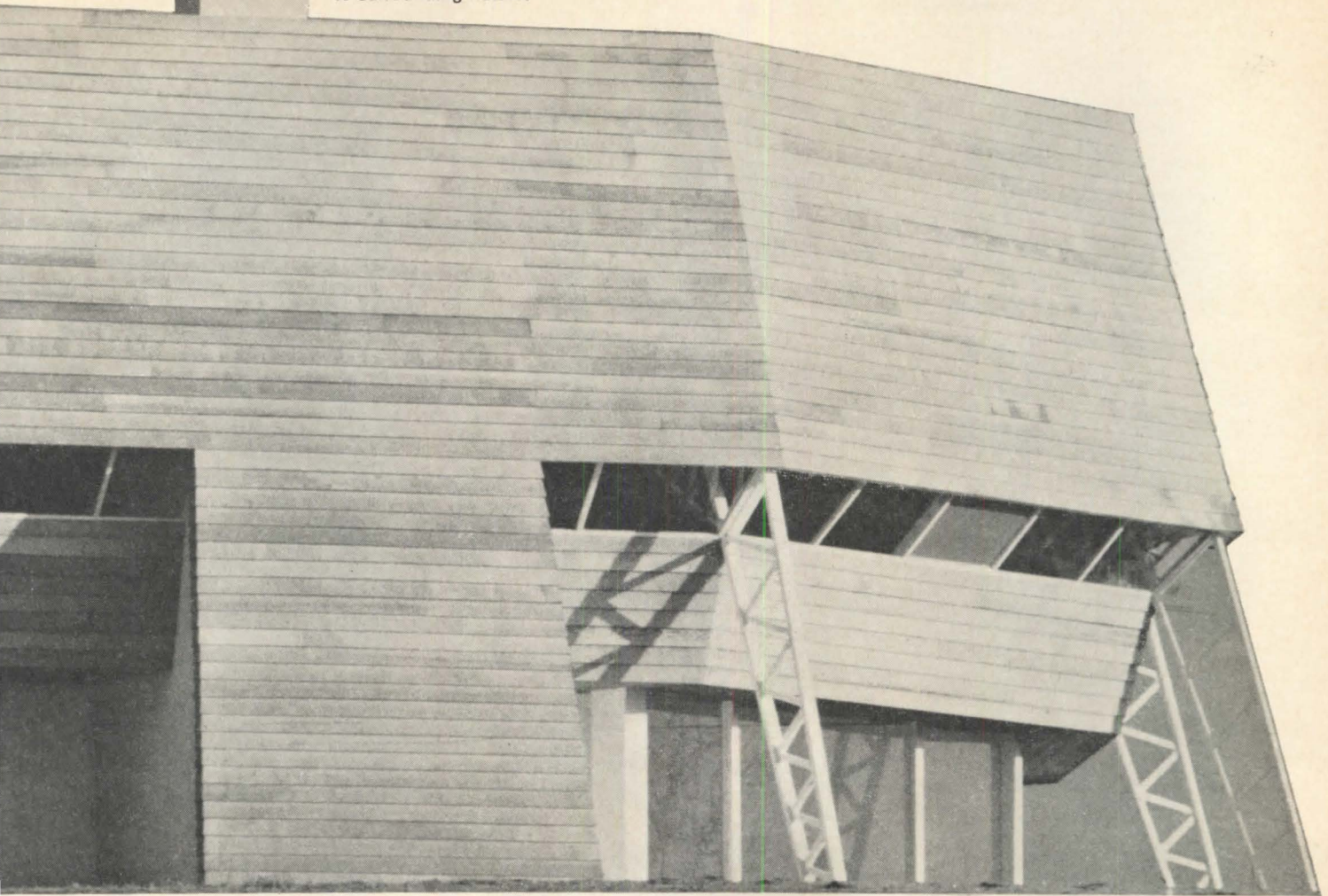
Detailed truss, left, and typical joist to truss connection, right, show steel trusses and wood joists for church roof, reinforced concrete frame and slab, and concrete block infilling. Republic Structural Tubing is available in round, square, and rectangular shapes in a full range of sizes. Take advantage of this high strength welded steel tubing for your next design and construction project. (Drawings courtesy of Progressive Architecture.)



This STEELMARK of the American Steel Industry on a product assures you it is modern, versatile, economical Steel. Put it on products you sell; look for it on products you buy.



The Unitarian Church of Lexington combines functionalism and design in a structure that opens to surrounding nature.



a place of worship a tower of strength.

Architect Herb Greene specified Republic Structural Tubing for trusses in the new Unitarian Church of Lexington, Ky.

The Unitarians of Lexington wanted their new church to be more than just a meeting place for Sunday services. It had to accommodate weddings and square dances and musicales, plus a theater-in-the-round. And it all had to be accomplished with a small budget.

So, architect Herb Greene set to work. He designed a church of steel, concrete, and wood.

The finished two-story structure is supported by ten Republic Structural Steel Tubing trusses. Each truss member is welded onto an I-beam at a point 10 feet from the center of the compression ring. Truss, beam, and ring form an arch that runs into the ground and is bolted onto a concrete footing.

Not only do the white-painted steel trusses add a decorative touch inside, they look like supporting stilts on the outside . . . placed to keep the heavy wooden "umbrella" from tipping.

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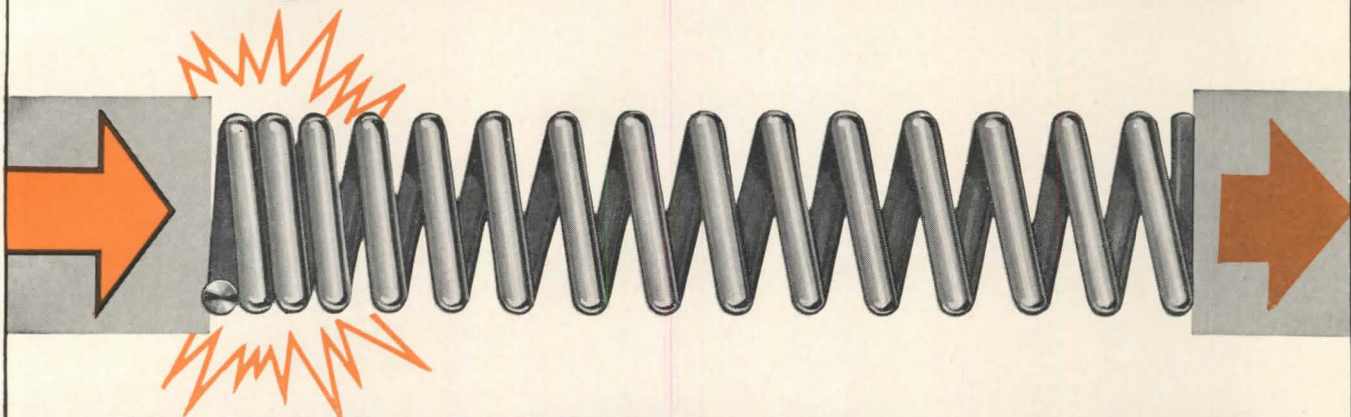
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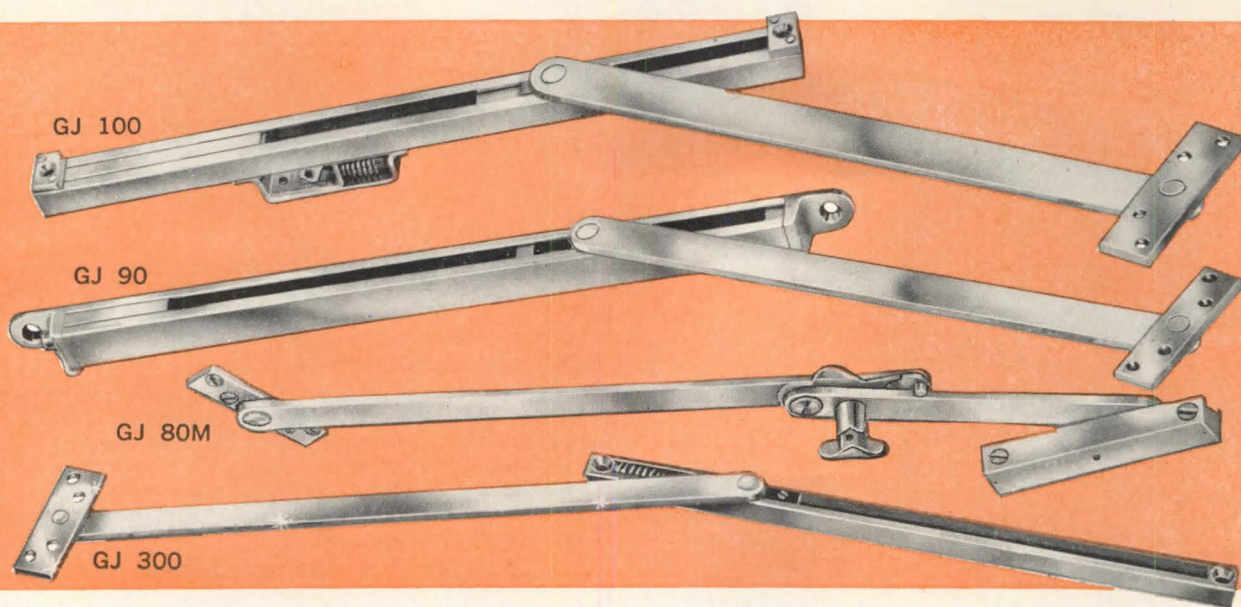
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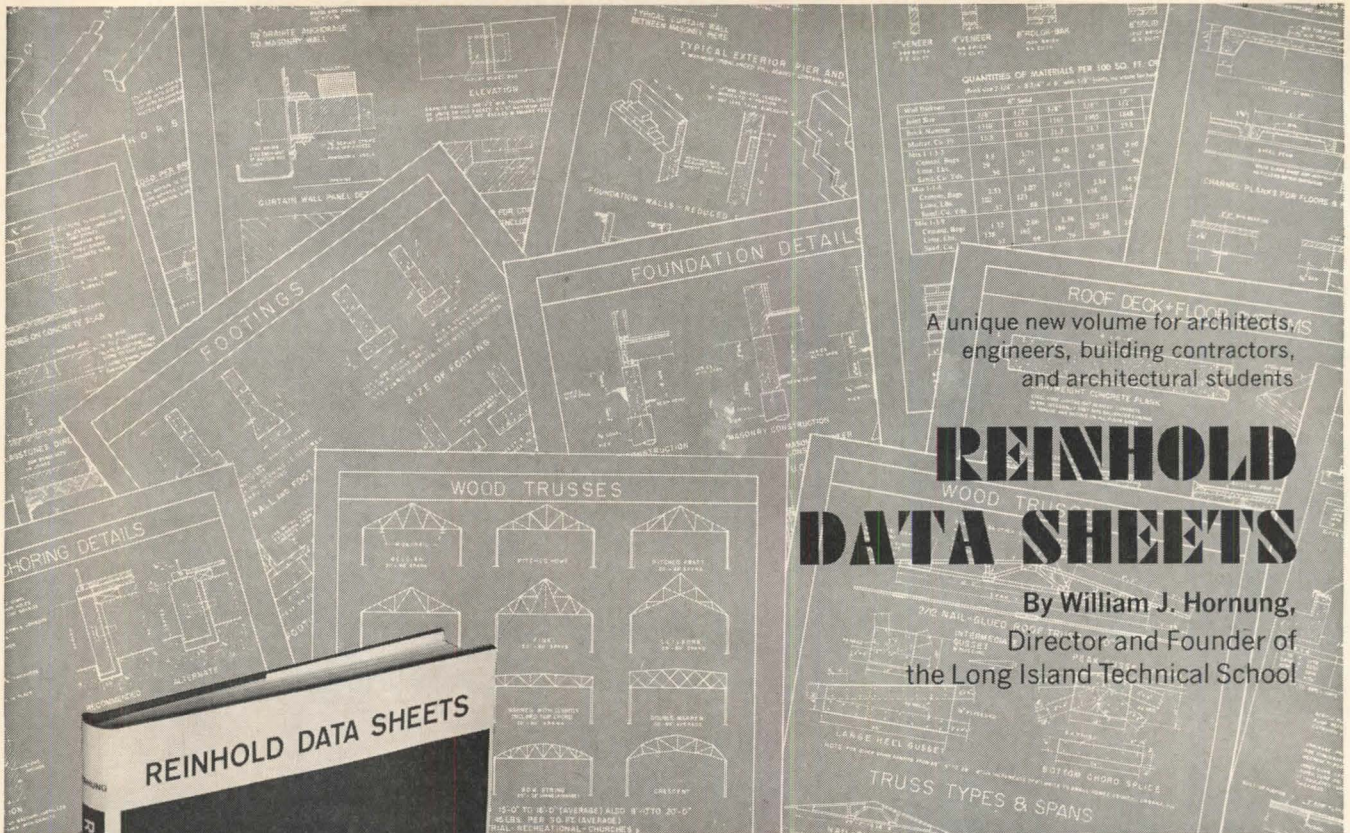
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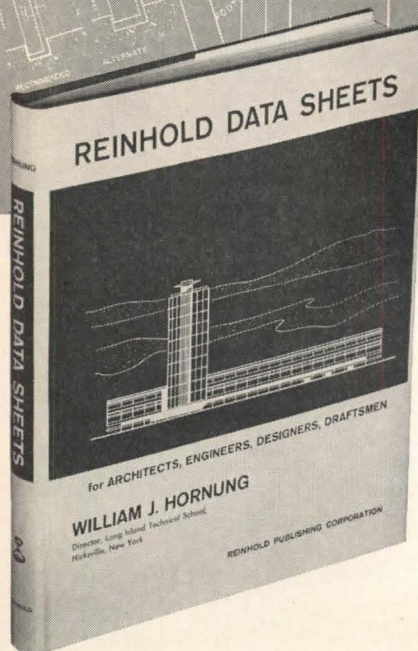
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By William J. Hornung,
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The arrangement of the subject matter is distinguished by the fact that where materials in a certain construction system have been shown in detail, the methods of estimating quantities of these materials have been included. Questions and answers pertaining to mechanical and electrical equipment of buildings have been added for the benefit of those preparing for the Registered Architect's examination.

The practical applications of this book within the building construction, cement, building materials, and equipment manufacturing industries are exceptionally broad. Architects, engineers, and builders will find it especially useful as an up-to-date source of ready reference, and for the contractor it can prove a most efficient aid to becoming better acquainted with new methods of construction. In addition, it is highly adaptable for reference use by students of architectural design and mechanical drawing in technical schools and colleges.

September 1965 256 pages 8 1/4" x 10 1/4" \$15.00



DEPT. M-327
REINHOLD BOOK DIVISION 430 Park Avenue, New York, New York 10022

Builder News III

Part of a series of product-use bulletins published by Mobay to keep architects, engineers, builders and contractors informed on new developments in urethane foam materials for the commercial and residential construction industries.

MOBAY

BN-6

DEVELOPER OF RELOCATABLE BUILDINGS SHOWS SCHOOL BOARDS HOW TO SAVE UP TO ONE-THIRD ON SCHOOL CONSTRUCTION COSTS

One of the big problems school planners face stems from the population explosion itself and is measured by numbers of kids. But size of enrollment is often a simple problem compared to the one of population movement. One family in five moves each year and the resulting enrollment shifts, complicated by consolidation and shifting of school districts for other reasons, have school planners looking more and more seriously at relocatable structures as the most practical answer to the problem.

One leading builder of conventional type schools, the Vinnell Steel Co., of Oakland, Calif. 94623, has developed a modular school concept which successfully combines the mobility of a relocatable unit with the aesthetics, economics and permanence features of a conventional structure built on site.

The modular classroom unit has plan dimensions of 10' x 32' with an 8' overhang at one end and 4' at the other. Each unit is completely prefabricated down to the last finished detail, including tile or carpeting on the floor. Units are interchangeable and are designed to form a complete structure when two or more are joined together.

All adjoining units are self-aligning and, when connected, insure positive alignment of floors, walls and roofs. The modules may be easily separated, hoisted, and transported on state and national highways by stock equipment, or by attachment of a trailer hitch and wheels to the frame, with no unusual permit required.

The main structural support for the units is provided by an all-welded, self-supporting steel frame capable of withstanding all applicable design loads for permanent buildings.

Wall panels are of conventional sandwich-type construction, 2" thick. The exterior surface is 24-gauge galvanized steel, factory finished with 2 coats of baked-on alkyd melamine paint. The interior surface is 20-oz. vinyl sheet with 1/2" fiber or gypsum board backing.

The core and insulation material is self-bonding, self-extinguishing rigid urethane foam, poured in place, with a minimum density of 1.8 pcf, using a foam system supplied by Reichhold Chemicals, Inc., White Plains, N. Y. 10602. Although the



These children will be middle-aged before the 40-year minimum life expectancy of these mobile school buildings expires. A wall core of rigid urethane foam combines structural strength and insulation for long-term economies.

sandwich panels are non-load-bearing, the urethane foam imparts a degree of self-supporting rigidity which makes them true structural components since they form the entire wall enclosure.

From 9 to 12 panels are foamed at one time by means of a special stacking press utilized by the fabricator. Once installed, the panels rest vertically on the floor of the structure, attached at bottom and top to the steel members, and are connected and sealed vertically by extruded aluminum and neoprene mouldings.

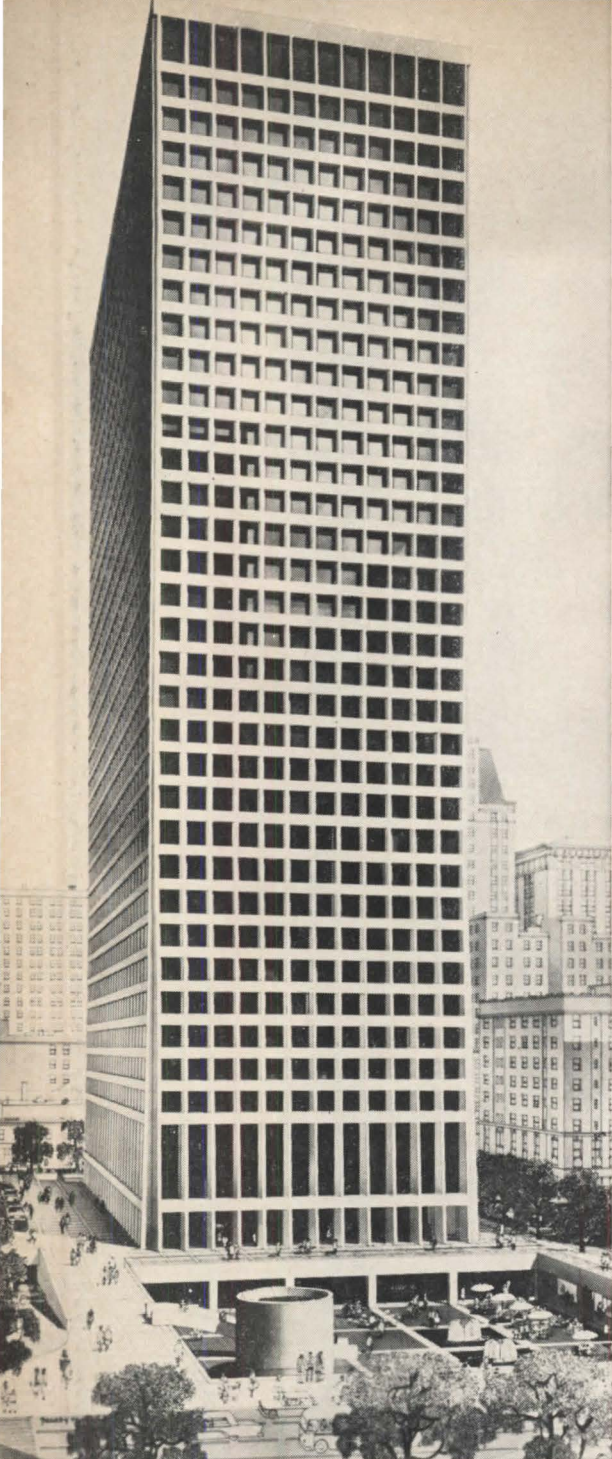
Presently, the finished buildings sell for \$12 to \$14 a sq. ft. installed at the site and are completely ready to use with connection to electricity and water supply. They include heating and air conditioning facilities, all lighting and wiring, plumbing, and finished walls, ceilings and floors. A wide choice of fitted window arrangements is offered. The relocatable buildings are also being marketed for a variety of other uses besides schools, such as stores, restaurants, medical offices and dorms.

For further information on this project, please contact:

Builder:	Vinnell Steel Co. Oakland, Calif. 94623
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For additional information on the use of urethane foam in other insulation and construction jobs, write on your letterhead to:

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DALLAS, TEXAS: 34-story, 1,000,000 sq. ft. One Main Place office building. *Architects:* Skidmore, Owings & Merrill; Harwood K. Smith and Partners. *Engineer:* Herman Blum. *Contractor:* Henry C. Beck.



CHICAGO, ILLINOIS: 33-story, 600-room Holiday Inn motor hotel. *Architect/Engineer:* William Bond & Associates. *Contractor:* Turner Construction Company.



WHITTIER, CALIFORNIA: 172,000 sq. ft. Broadway department store. *Architect:* Charles Luckman Associates. *Electrical Engineer:* C. E. Mauk.



SPRINGFIELD, MASSACHUSETTS: 5,000 sq. ft. Metropolitan Life Insurance Company branch office building. *Contractor:* A. C. Dufault. (Design by Metropolitan Life Insurance Company architects.)



TAMPA, FLORIDA: 8-story, 97,000 sq. ft. IBM office building. *Architect:* Aeck Associates. *Engineer:* Blakely Daniels and Associates. *Contractor:* International Construction Co.



JOHNSON COUNTY, KANSAS: 2000-student, 287,400 sq. ft. Shawnee Mission South High School. *Architect:* Tanner, Linscott & Associates. *Engineer:* Scott, Kinney, Holloway and Perkins. *Contractor:* Sharp Brothers Construction Company.

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More and more architects and engineers are finding that all-electric design, with flameless electric heating and cooling, can hold down first costs for clients in buildings of all types through the elimination of such items as boiler rooms, fuel storage, stacks and long pipe or duct runs.

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November 1966 **PROGRESSIVE ARCHITECTURE**

“Contrary to popular opinion, the creative process is ultimately highly impersonal. The urban designer-architect, painter, and sculptor must direct his inner vision toward those problems and opportunities of an age, and drive toward those essences which differentiate one epoch from another in order to render it simultaneously timeless and of its time. Any artist is merely an instrument who senses the drive of an age, and helps translate them into an environment which serves everyone.”

PAUL RUDOLPH



EDITORIAL

Fine art, one often forgets, is a recent invention. Throughout most of the history of mankind, art for art's sake was a nonexistent concept. Then, a breed of people was born who started producing useless objects called "works of art," which were usually destined to be hidden in a new and questionable building type called "museums."

This rather inane system is supported today by a powerful coterie of fine art worshippers consisting of: gallery owners and museum directors who do not wish to kill the goose while she keeps on laying such big eggs; wealthy collectors whose dignified hobby makes them even wealthier; artists themselves, whose egos hanker for quick fame and riches; and much of the public at large, which has been brainwashed into accepting the idea that art is culture and does not realize that when culture is dissociated from everyday life it becomes merely a fetish and not culture at all.

Before fine art was born, all art served a utilitarian purpose and an artist was merely a talented craftsman—a scribe who illuminated manuscripts, a mason who carved ornaments for buildings, a metal worker who decided to give an iron hinge a more fancy shape. Even painting and sculpture were not for art's sake but a means of communication and enlightenment. The purpose of statuary, murals, and similar "artistic" endeavors was to tell a story, usually of the past for the edification of the living, or of the present for the education of future generations. Those craftsmen who managed to evoke sensory response from the making of everyday objects, or from the telling of stories, we nowadays call artists.

Artists, then, were traditionally a part of a civilization, never apart from it. Through aesthetic means, using available technology, they interpreted the life around them. Because of highly developed sensitivities, they were able, by appealing to sensory perceptions, to make others aware of the aesthetic possibilities of an age: They told their generation what *is*, and, sometimes, what *could be*.

Recent developments in art indicate that perhaps we are at the beginning of the end of the whole perverse fine art idea, because two important trends are evident: an interest in present-day technology such as plastic paints, electronic components, neon lighting, even discarded industrial junk; and a preoccupation with contemporary environment loudly proclaimed in Pop art, typified by the now famous painting of a Campbell's soup can. These trends suggest that the new generation of artists is attempting to re-enter the mainstream of life. Instead of escaping reality, they seem to be saying: "This is what we have. Let's make something of it!" Which is really the traditional call of artists.

Unfortunately, the results of their efforts are still considered "objects of art." Yet my hope is that the next stage of this development will lead to a situation where a man who now assembles a few neon tubes, calls it sculpture, exhibits it in an art gallery, and sells it to a museum for its collection or to a millionaire to serve as a status symbol for his living room, will someday simply work for a neon-sign manufacturer and design neon signs. This is what he *should* be doing. Perhaps there is less glory and less money in designing commercial signs rather than concocting something called "sculpture," but it is the only way that art can return to where it belongs—on the streets, part of everyday life.

Viewed in this light, the strange goings-on in the art world today might lead eventually to a most desirable end: the death of fine art and the rebirth of art.

And how about architecture, since, in spite of its nearly always utilitarian purpose, architecture is also classified as one of the fine arts? Surely, with the death of fine art, architects, when they play the part of artists, will no longer be allowed to escape the artists' role of interpreting the present and setting the stage for the future. To be capable of doing this, architects must understand the forces of our time and the direction into which these forces are taking us—a subject to which the next issue of P/A will be devoted. ■

Jan C Rowan

“Many projects today are so large and complex they cannot be solved with a simple box set down on a site. At this scale a building must become a city, articulate, with an inner excitement of its own; and the traditional division between structure and site disappears: The building is the site, as at Mont-Saint-Michel or Carcassonne.”

KENNETH DEMAY

CUTTING THE SLAB DOWN TO SIZE

*Engineering Sciences Center, University
Colorado, Boulder, Colo.*

PHOTO: ROBERT ISAACS

**Two recent projects—
Marine Family Housing
and the Engineering
Sciences Center at the
University of Colorado—
developed from simple
cerebral slabs to multiunit,
multisensory complexes.**

The final designs make a shameless play for the senses. They beguile the visitor, draw him in, and guide him—Dante-like—through a whole series of experiences: hot-cold, dark-light, high-low, outside-inside spaces. The façades and masses change constantly and stage shifting plays of light, shadow, and texture. They intrigue on all levels to captivate attention.

Both projects started out (in the preliminary design stages) as simple slabs and ended up as complex compounds. The metamorphosis is an interesting example of the current tug of war between two architectural philosophies. For want of better labels, one side could be called the “monumentalists,” the other, the “environmentalists.” The first, following in the footsteps of Mies, finds its inspiration in a preconception, in the supreme prototype, the ideal container—usually a rectangle, a slab. The latter group (still in the process of establishing its leaders), looks for its creative sources in a wide range of specific data: gleaned from the site, the pro-

gram, the senses, the emotions, as well as the intellect. The Miesians are inclined to look at architecture as a monument in open space, as an exercise in façade design, graphic refinement, and in skillfully fitting all the problems into a single serene container. The style has had a great following: It is neat, cheap, and easy to construct. It has almost become habit. The environmentalists, on the other hand, favor letting functions express themselves; they prefer to knit together tightly the building and the site, and play on a whole range of human perceptions with a wide array of architectural tools—not simply façade design, but massing, assemblage, interweaving of space and mass. The environment, climate, and surrounding architecture influence the design. The finished product is somewhat unpredictable in its effect. Unlike in Miesian or post-Miesian boxes, the other three sides are not mirror-images of the first. The architect cannot completely foresee how all the masses will play against one another, how patterns will change in the sunlight. It is not an immutable perfection, but designed for change and for growth.

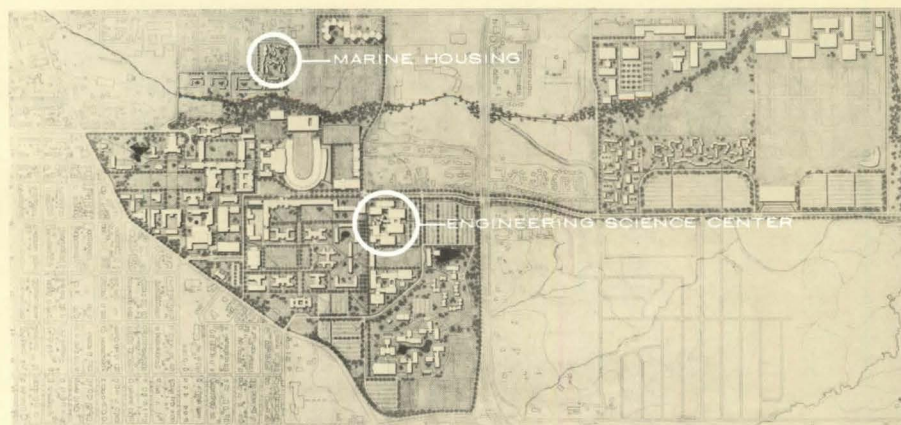
The development of the two projects at the University grew out of an architec-

tural team heavily oriented toward the environmental concept of design. Five years ago, the University retained Sasaki, Walker & Associates, Inc. (now Sasaki, Dawson, DeMay Associates, Inc.) to do a site plan for the expanding campus. The older area had been largely designed by Charles Klauder, who initiated it in 1918 with his own ingenious version of Italian Rural architecture, which he thought more appropriate to the site than the then-current rage for Collegiate Gothic. His solid, simple masses with slanting tile roofs were arranged around courtyards. They formed a bold counterpoint to the backdrop of the Rockies, and the foreground of the plains. His style was later continued—and exhausted—by one architectural film. Both the new site planners and the administration agreed that, in order to infuse new vitality into the campus, it would be wise to hire different architects for each new project. However, they wished to continue the spirit, if not the precise style, of the old campus. Unlike some universities that can tolerate a wide variety of styles within a variegated urban campus, the University of Colorado has a distinct character, in a fairly open setting. So, in order to maintain control over the new additions, two design consultants were named to review all projects: the Sasaki office and Pietro Belluschi.

The resulting schemes evolved out of a dialogue between the two protagonists: architects and design consultants. It is quite clear from the results which side came out the winner. But perhaps more important are the arguments, the statements that clarify the position of a new architectural philosophy that has emerged in the last five years. It is an architecture that is sensuous, expressive, that favors surprise as against the expected, that is rooted in the specifics of its environment rather than in idealized preconceptions.



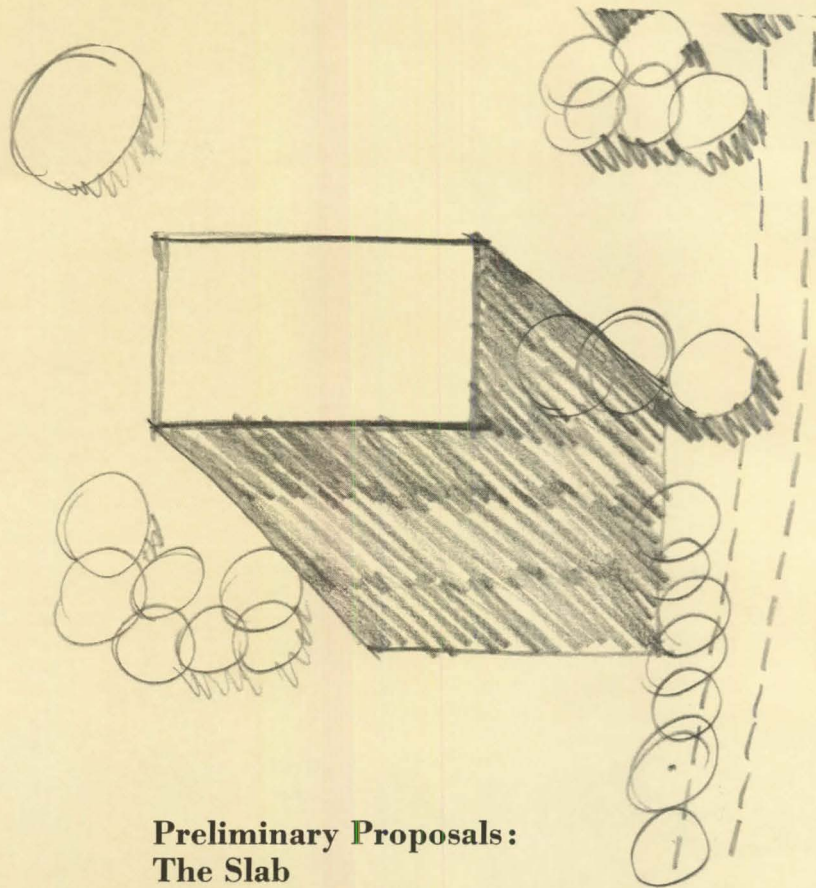
Old campus.



Site plan.

Marine Family Housing

Architects: Moore & Bush, Pietro Belluschi and Sasaki, Dawson, DeMay Associates, Inc., Design Consultants. **Program:** 80 two-bedroom, 50 one-bedroom apartments for married students. **Site:** Restricted area adjacent to playfield and existing married student housing. **Design Solution:** See text at right. **Cost:** Original budget was set at \$10,000 per apartment; final costs came in at roughly \$11,492, including site work. This was well within the total budget, which included the contingency funds. **Consultants:** Sasaki, Dawson, DeMay Associates, Inc., Site Planners, Landscape Architects; Edward R. Bierback, Structural Engineer; Francis E. Stark, Mechanical Engineer; Swanson, Rink & Associates, Electrical Engineers. **Photography:** Maude Dorr.



Preliminary Proposals: The Slab

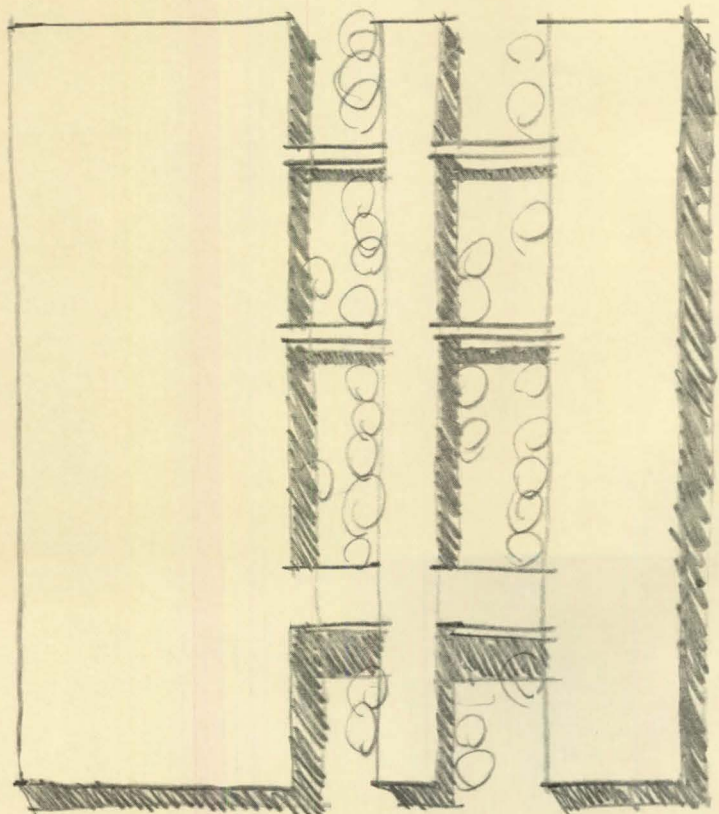
Preliminary designs draw the comment from DeMay that "they look like Hilton Hotels; they could have been anywhere." Sasaki's suggestion: "In such a large program, one should probably not try to contain such diverse

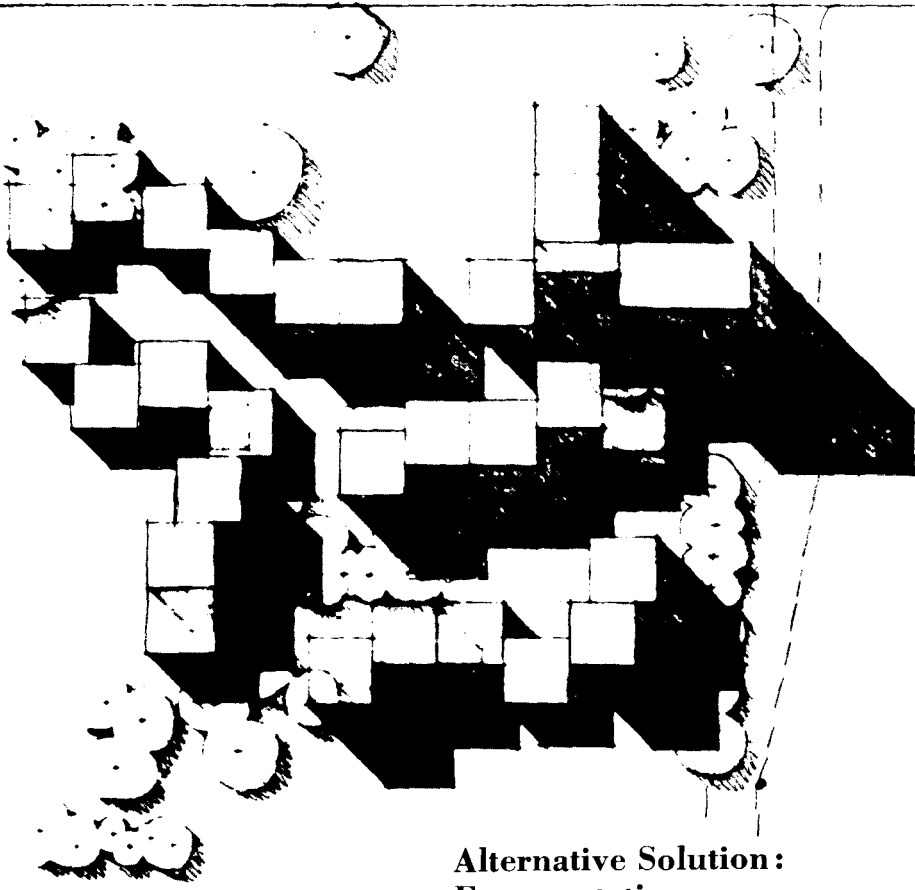
parts in one or two envelopes. Let diversity be articulated, in response not only to the program but also to the region and the environment. The resultant buildings should be expressive and distinctive in character

but also harmonize with the rest of the campus." At this point, the rectangular containers were a wrapping around programs that had not begun to be explored.

Engineering Sciences Center

Architects: Architectural Associates Colorado; William C. Muchow Associates; Hobart D. Wagener & Associates; Fisher and Davis; William C. Muchow, Partner in Charge. Pietro Belluschi and Sasaki, Dawson, DeMay Associates, Inc., Design Consultants. **Program:** Provide laboratories, classrooms, and faculty offices for five engineering departments of the University: Chemical, Civil, Electrical, Mechanical, and Aero-Engineering. Total square footage—263,000. **Site:** A 500 x 600 sq ft lot at the edge of the University campus. Building had to tie into classroom area to the west, and be able to expand to the east. Entrance should continue mall from older campus. Size of the new complex was to be balanced by open playing field to the west. Architects were to design the site to fit in with the scale of the existing campus, even though densities were far greater. **Design Solution:** See text at right. **Cost:** \$13.03 per sq ft, without equipment. Final design came in at \$1 million under original estimate, so that the University got an extra lab—the chemistry one—for "free." **Consultants:** Sasaki, Dawson, DeMay Associates, Inc., Site Planners, Landscape Architects; Ketchum & Konkel, Structural Engineers; Swanson, Rink & Associates, Electrical Engineers. **Photography,** except as noted: Morley Baer.





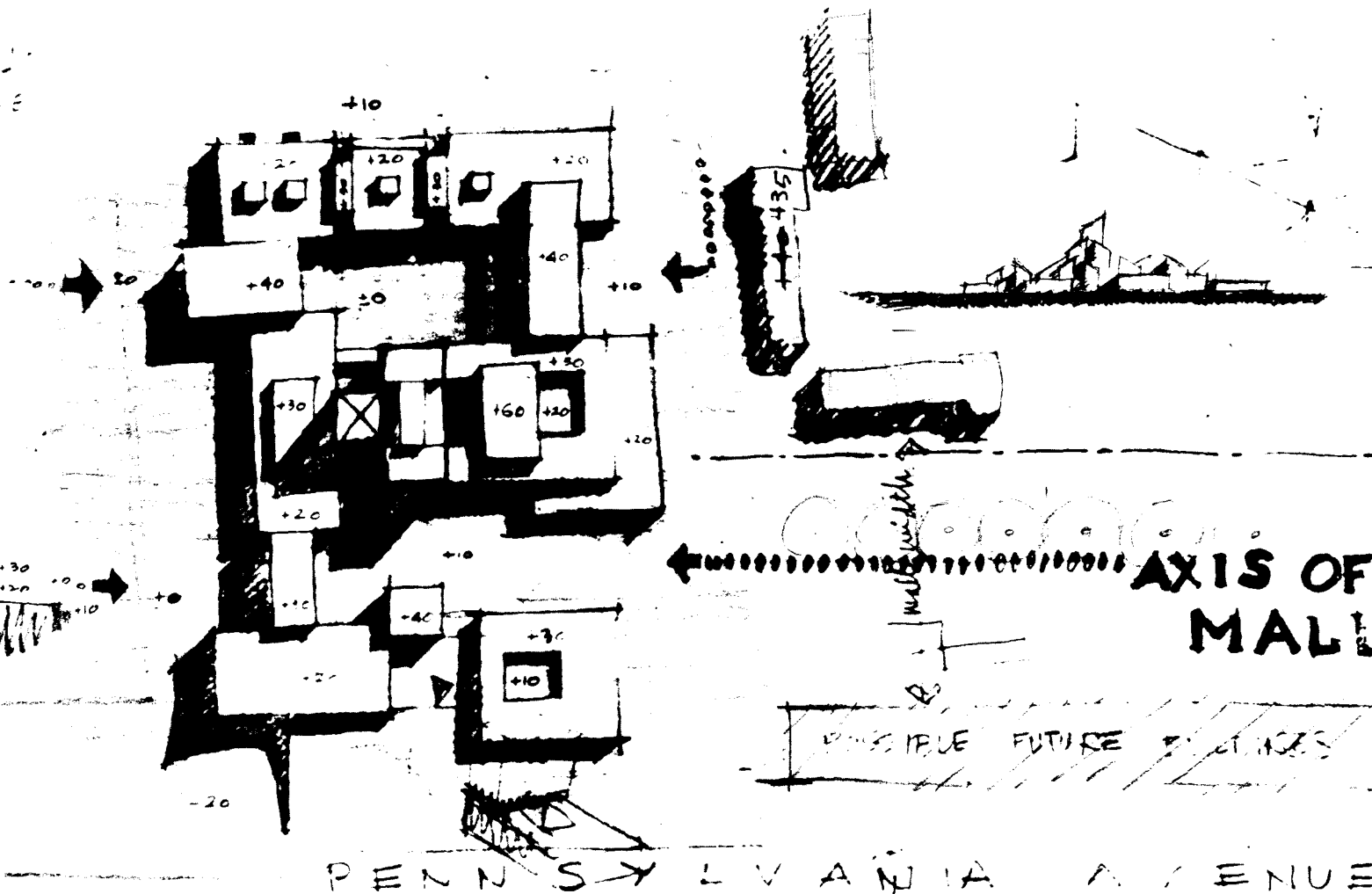
Alternative Solution: Fragmentation

A complex interweaving of mass and open space is sketched out by DeMay for both Engineering Center and housing. In each case, individual functions are freed from monolithic container. Labs, offices,

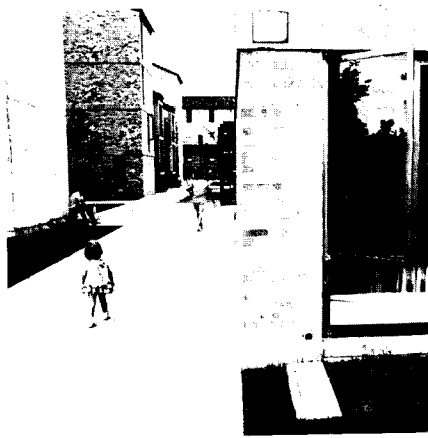
etc., take on their proper dimensions, then are assembled into a composition. Housing is split up into two-, four-, five-, and six-story buildings. Unlike the original campus plan by Klauder, buildings are

not separate units, but continuous masses that wrap around the open spaces. The additive assemblage quality of the complexes will permit them to grow without harming the original composition.

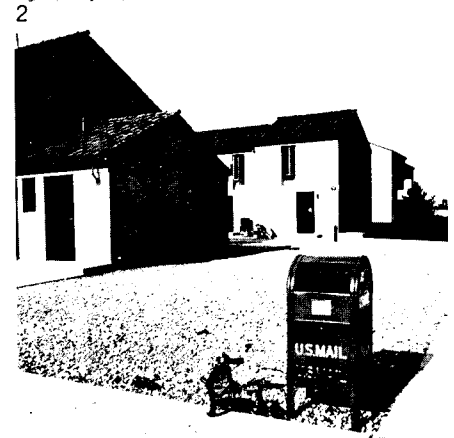
The general massing of the Engineering complex rises to a climax in the center, reflecting the form of the mountains behind. Classrooms and labs are on outside; offices are stacked in towers at center.



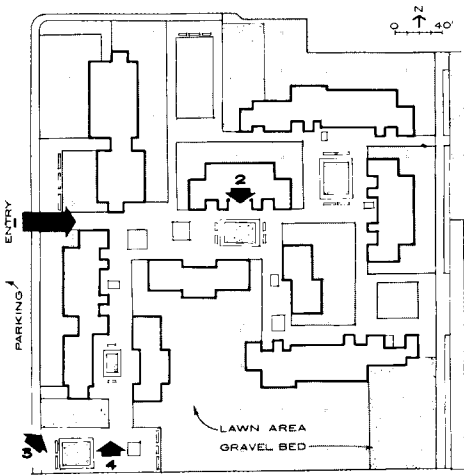
In the Marine Family Housing, space flows between buildings, widening, narrowing, varying in surfacing, size, and activity.



1
Entrance to the complex is between taller units that cut off parking lot from court area. In one court, fathers roll out the barbecue pits onto the pavement, kids circle on tricycles, mothers keep track of their infants from the doorway. In another space, two boys dig themselves into a sandpit; on the periphery, small laundry sheds and pebbled drying lots wait for washing day.



3



Precast concrete floors between units are for sound containment. Concrete block walls filled with sand separate adjacent apartments. Exposed 4 x 10 wood beams 4 ft o.c. support 2-in. tongue and groove decking covered with 1/2-in. plywood and resilient tile on intermediate floors of all duplexes.

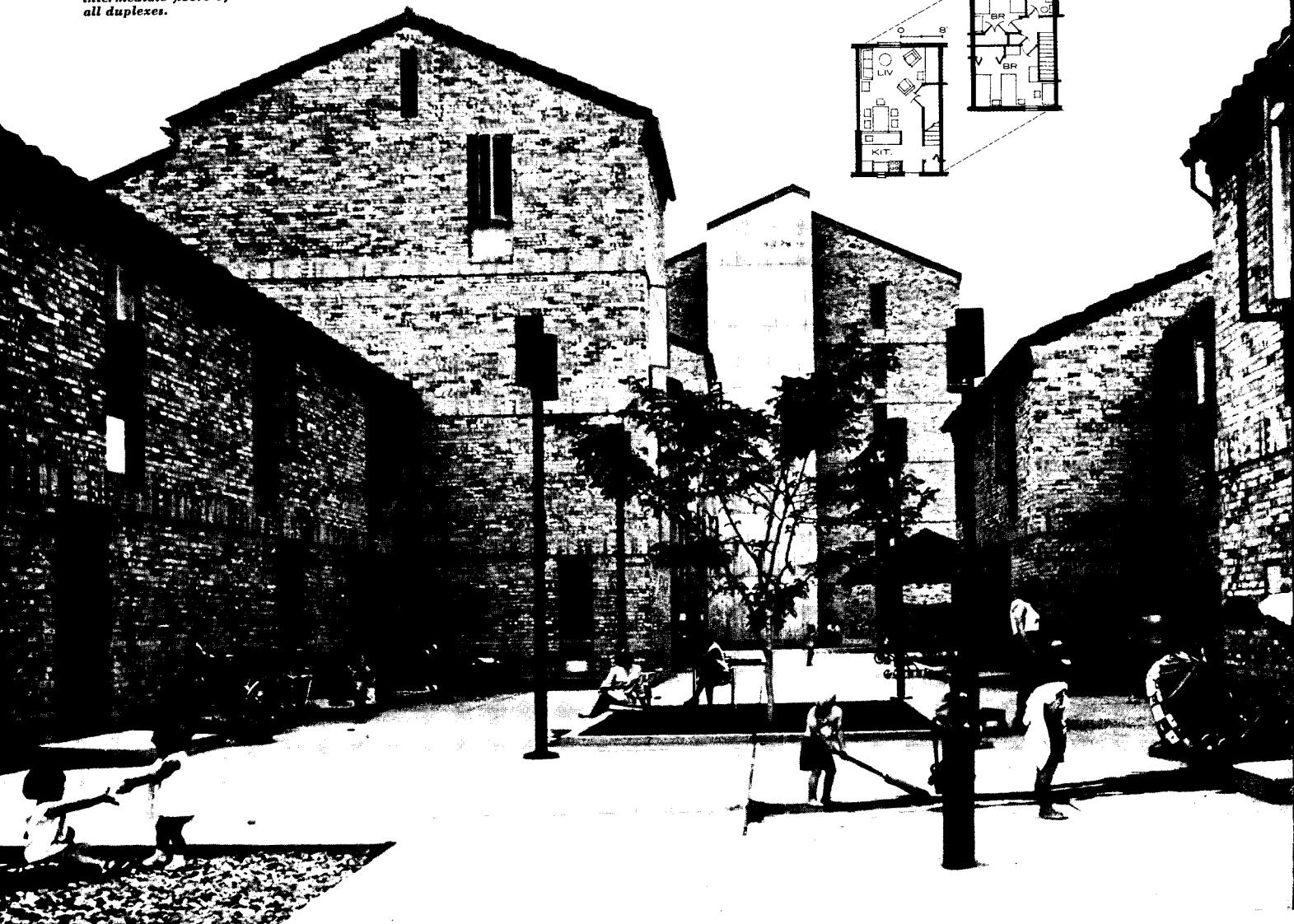
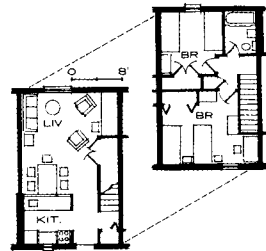
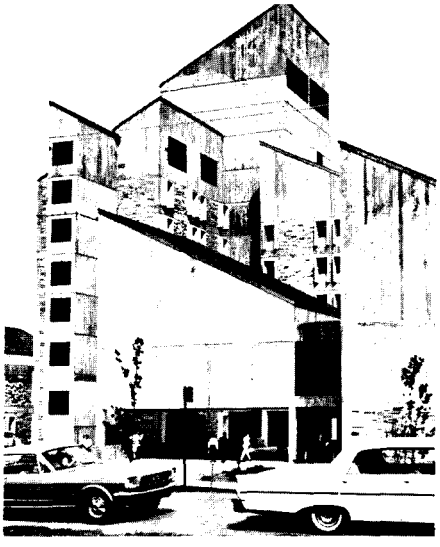


PHOTO: RUSH J. MCCOY

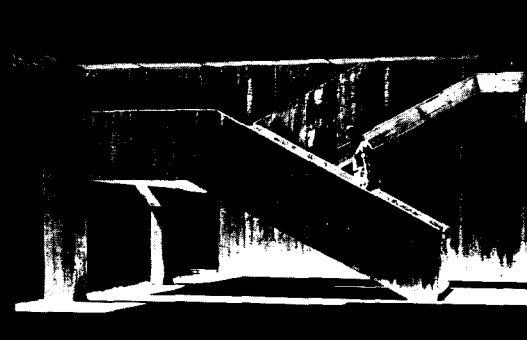


A walk through the complex starts at the western entrance, which is a dark, vaulted, brick and concrete wall from the other campus. From a hot, brilliant, noisy place, a student is led to a quiet, cool space under the lecture hall where bars and water fountains.

"The Engineering Sciences Center reaches out to draw you in," explains DeMay. **"You can get involved with the building, go through it, without ever actually going inside it."**

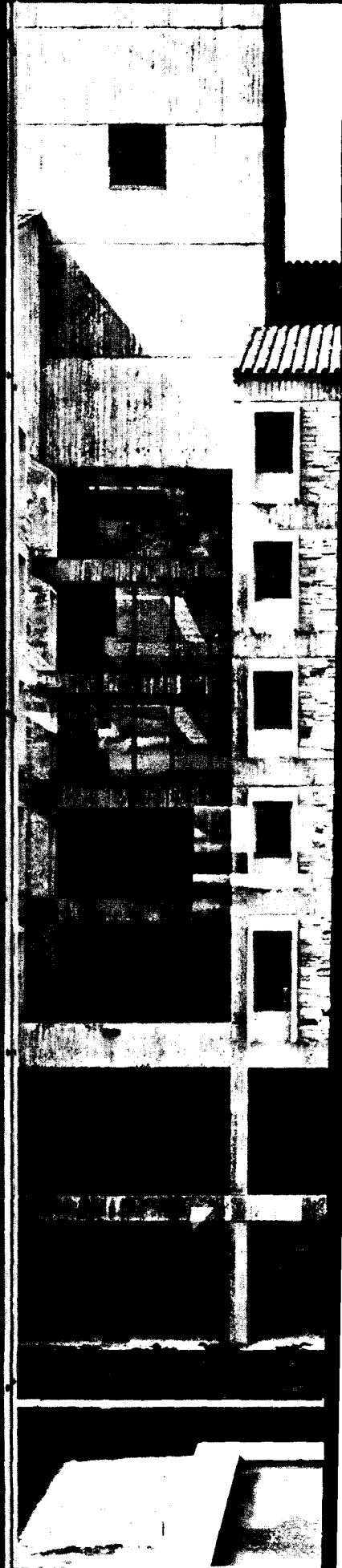
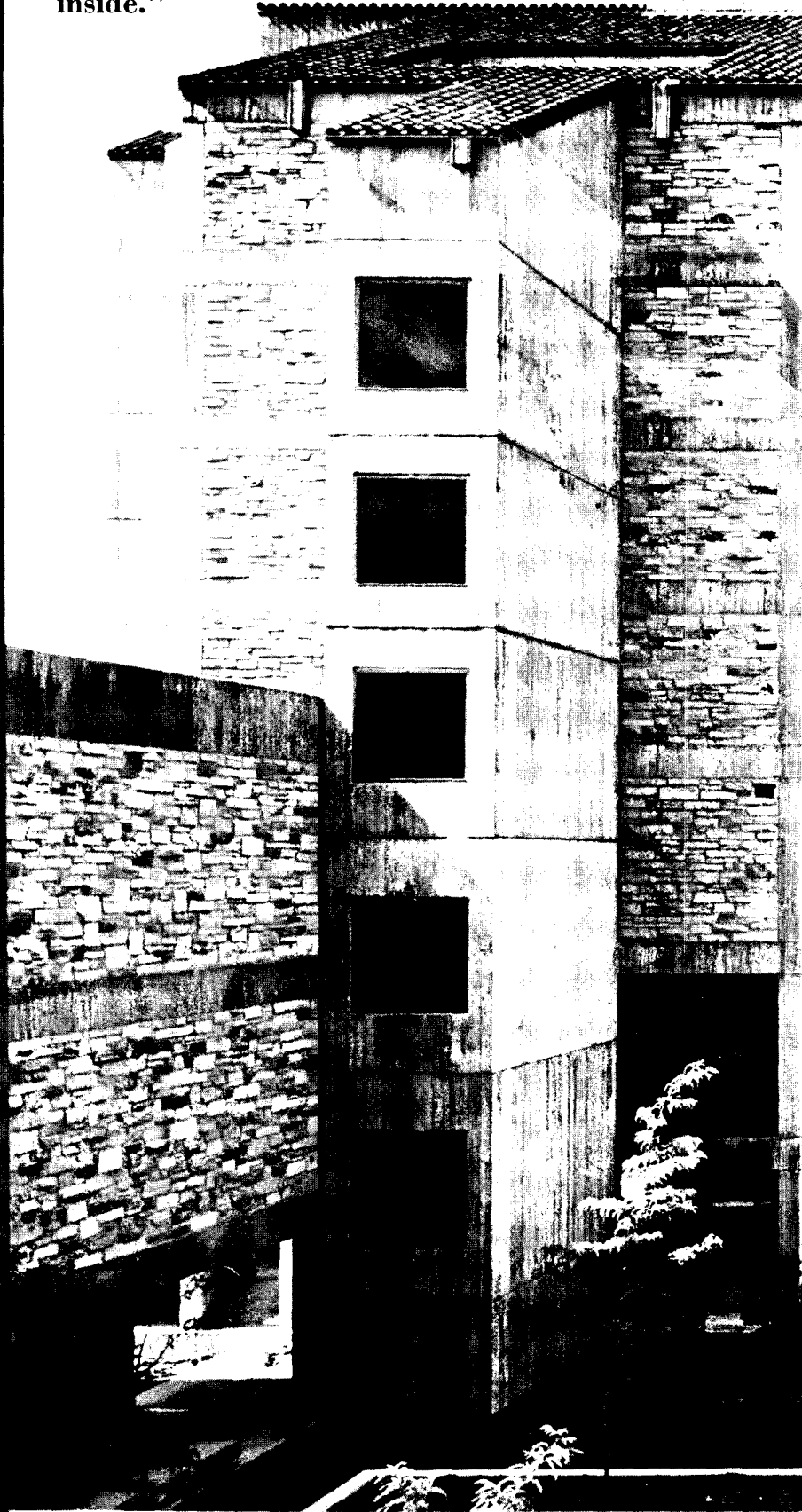


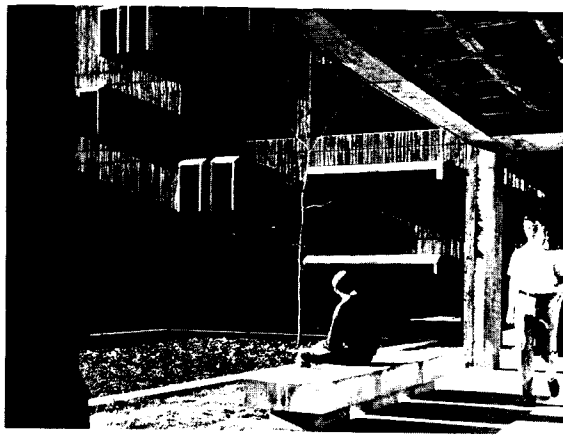
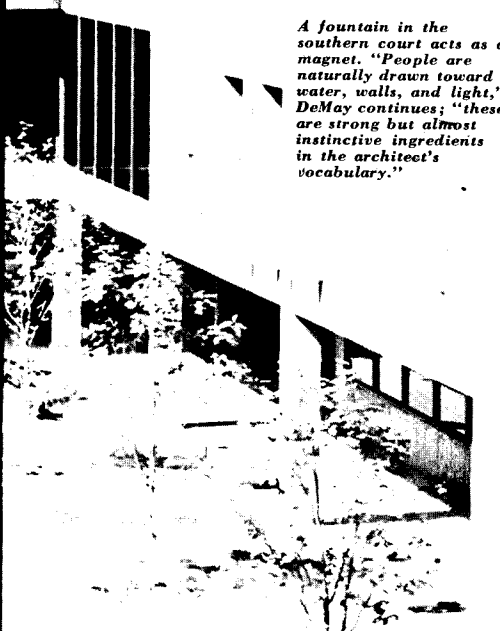
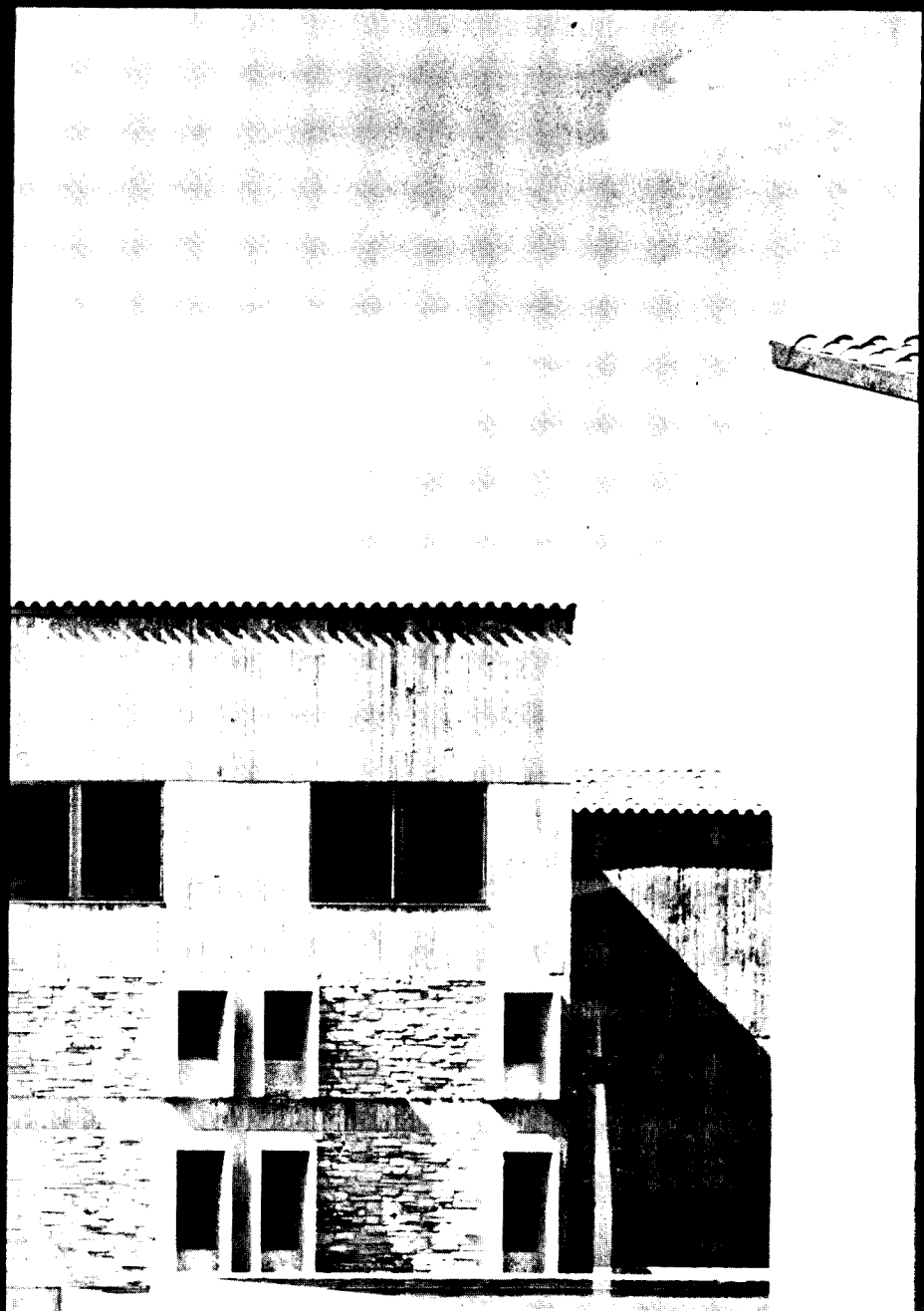
... down a staircase, darker, cooler ...



... to a bright court.

“This is not what you expect a science complex to be. You expect a clean, cold world, and all of a sudden there is green inside.”

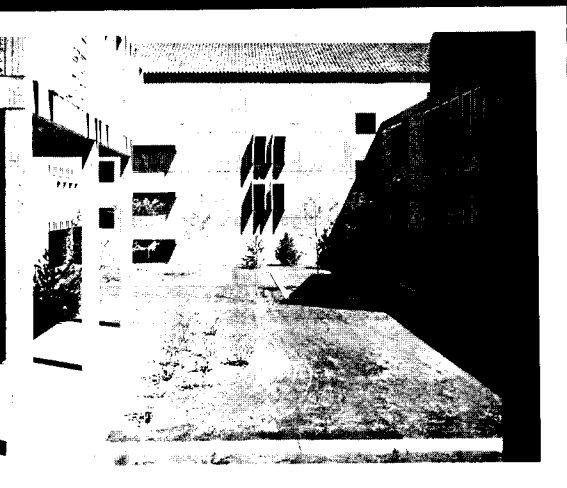




A fountain in the southern court acts as a magnet. "People are naturally drawn toward water, walls, and light," DeMay continues; "these are strong but almost instinctive ingredients in the architect's vocabulary."

"In projects of this size you have to lead a visitor by the hand, through a series of spaces, in the proper sequence, and at the speed you wish him to go, in order to evoke the proper emotional response . . ."

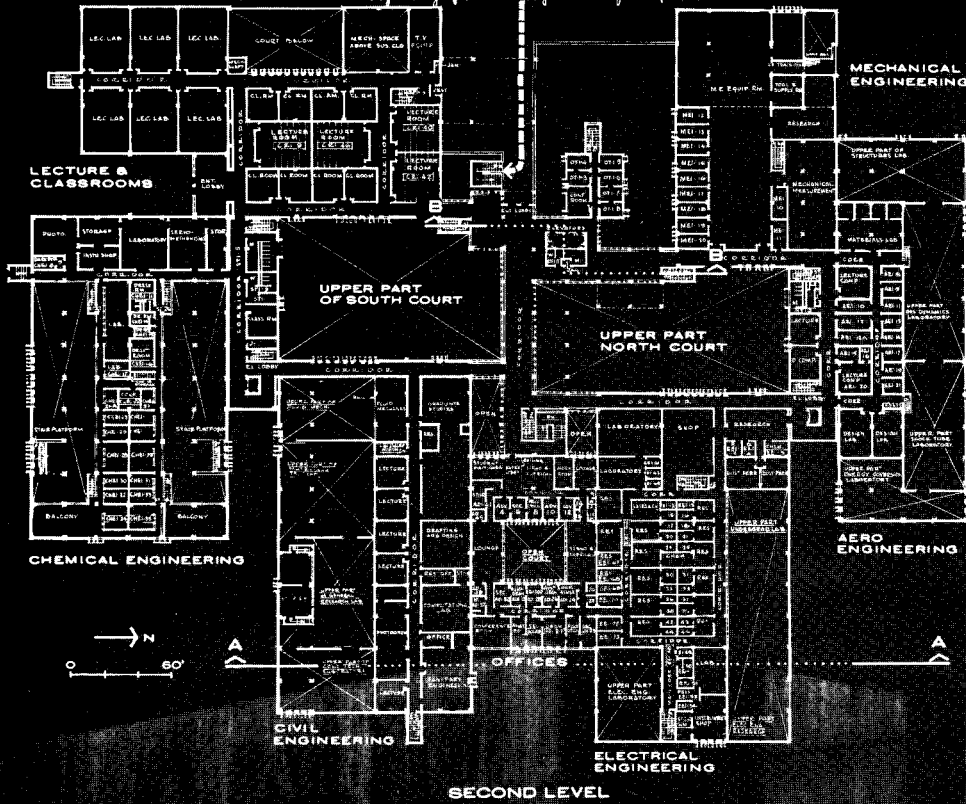
PHOTO: RUSH J. MCCOY



... The north court (left) is secondary to the southern one, and visited later; it has no fountain and from the main entry staircase to the west, it was concealed by a bank of elevators. From either court, a student is led to a low, dark space surrounding a second fountain with rough, turbulent waters. From here, he exits to the east, into sunshine, brilliance—and parking.

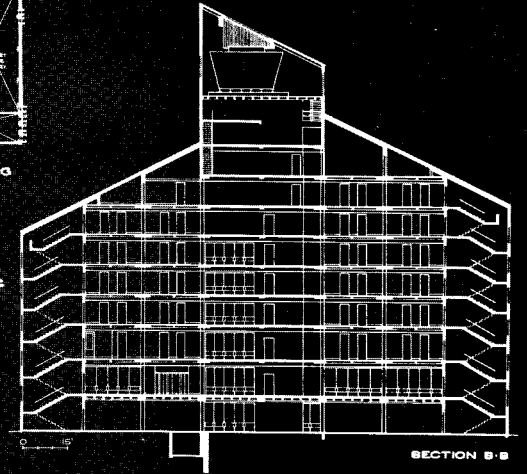


Beginning of tour through building (see photos)

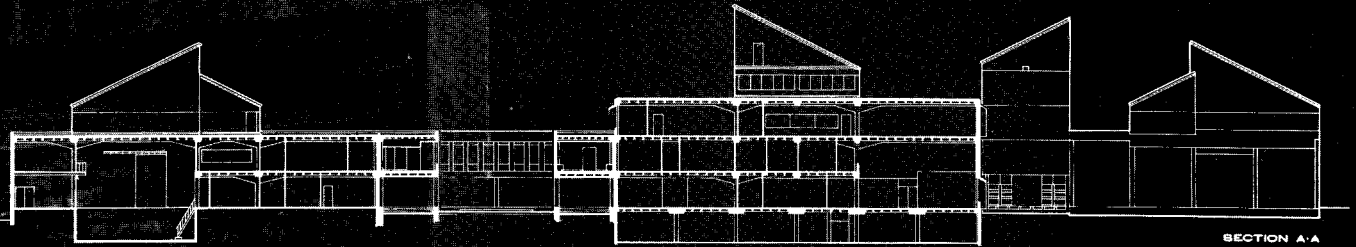


SECOND LEVEL

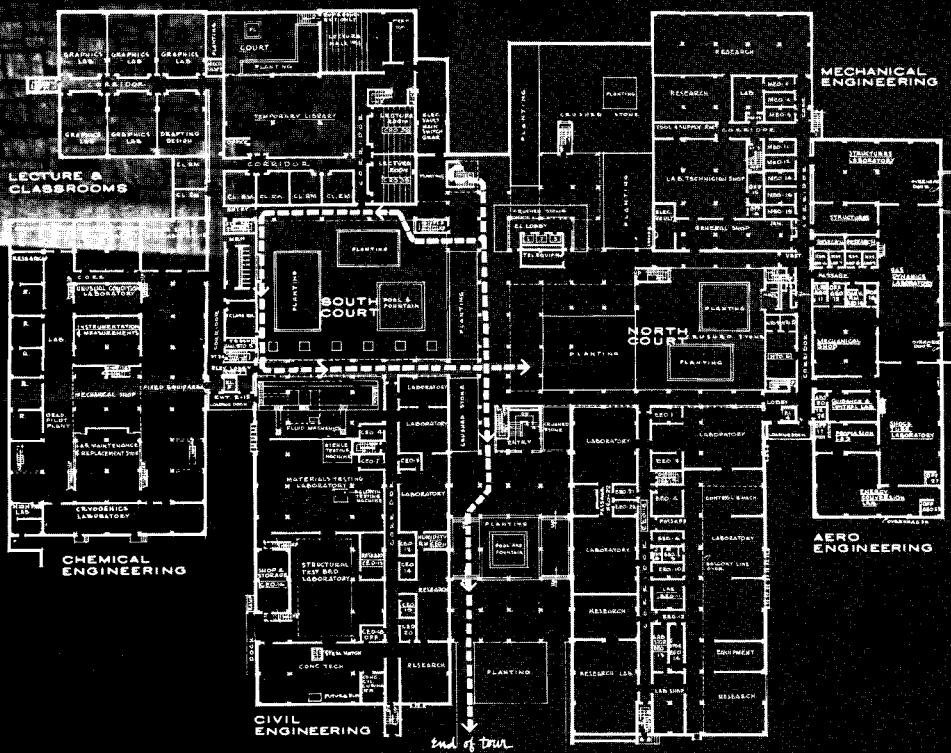
“The hundreds of laboratories take on a fantastic variety of shapes. If we could somehow express this in a wall construction, some of this vitality might come through to the exterior.”



SECTION B-B

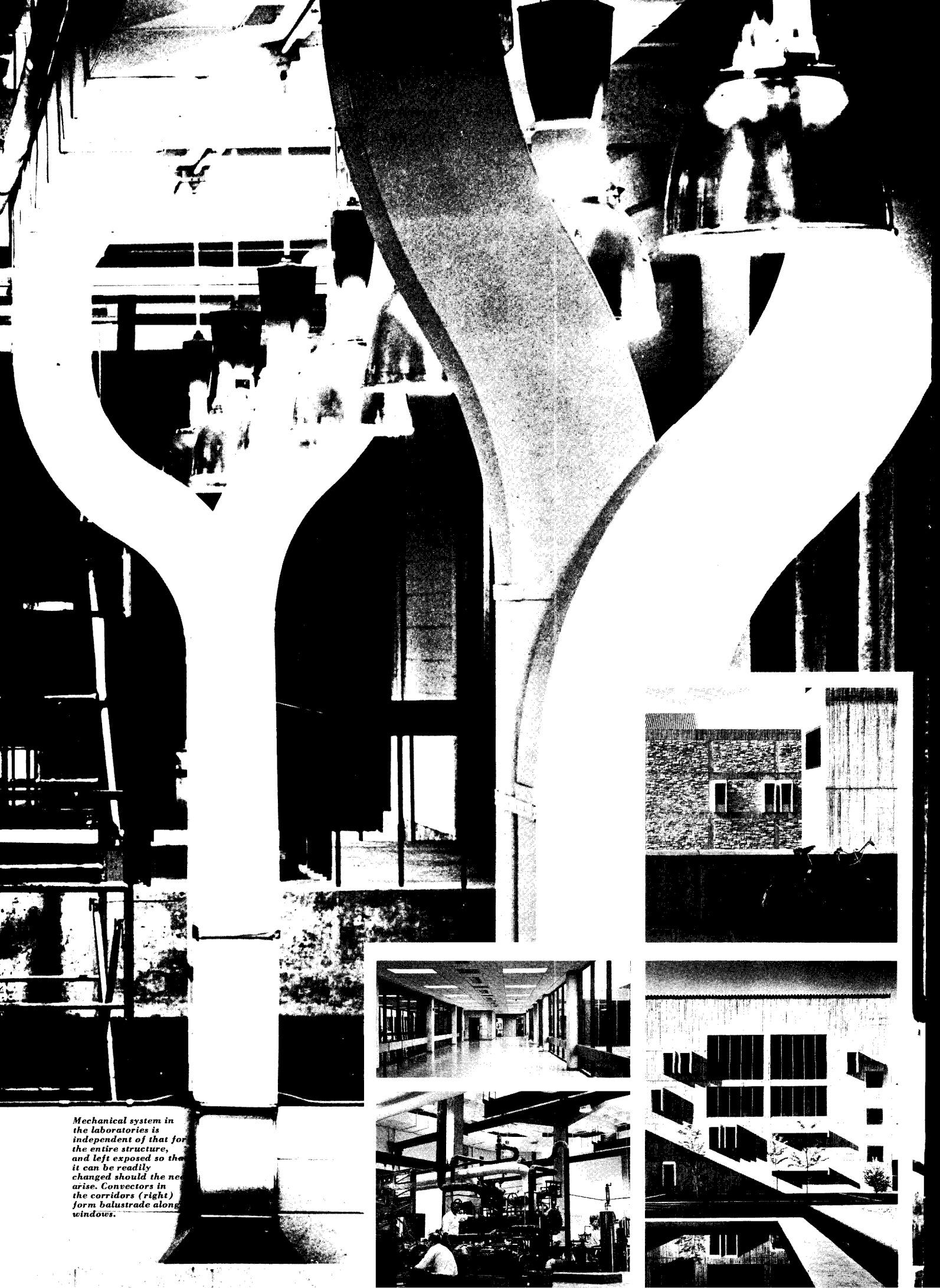


SECTION A-A

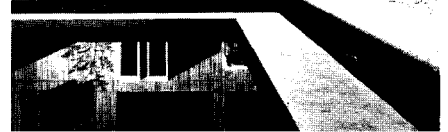
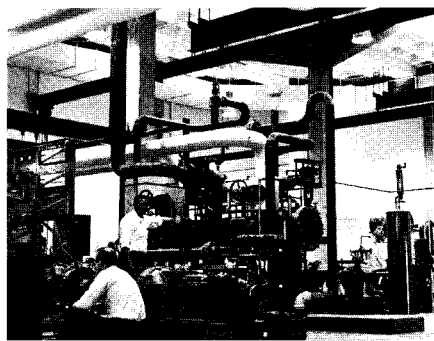
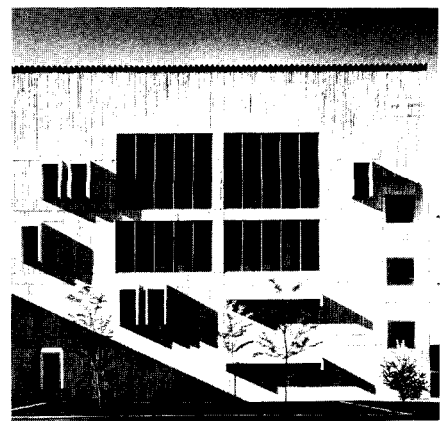
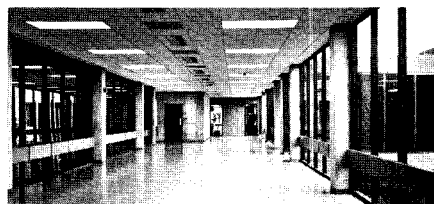
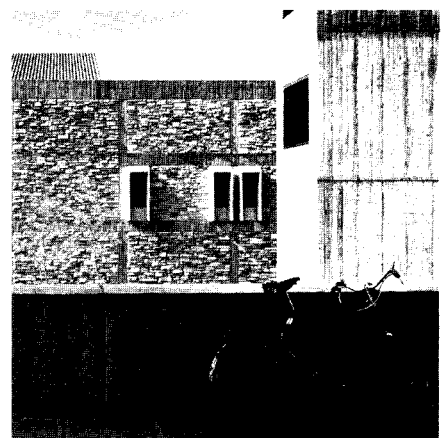


FIRST LEVEL

The unity and excitement of the complex comes from an ordered but expressive functionalism. The basic structure is a cast-in-place concrete frame with masonry infilling: stone on the exterior, concrete block on the interior. The regular rhythm of the buildings is established by the exposed concrete frame and the predominant 20' x 20' bays. Variety comes with the exceptions: 20' x 40' bays for labs requiring long spans, 20' x 10' bays for corridors. Stone infilling and concrete hoods add textural interest. The functional order is also expressed by assigning different window shapes to various areas. Square windows indicate stairways; long horizontal slits, bathrooms; narrow vertical ones, offices; large apertures, laboratories or corridors.

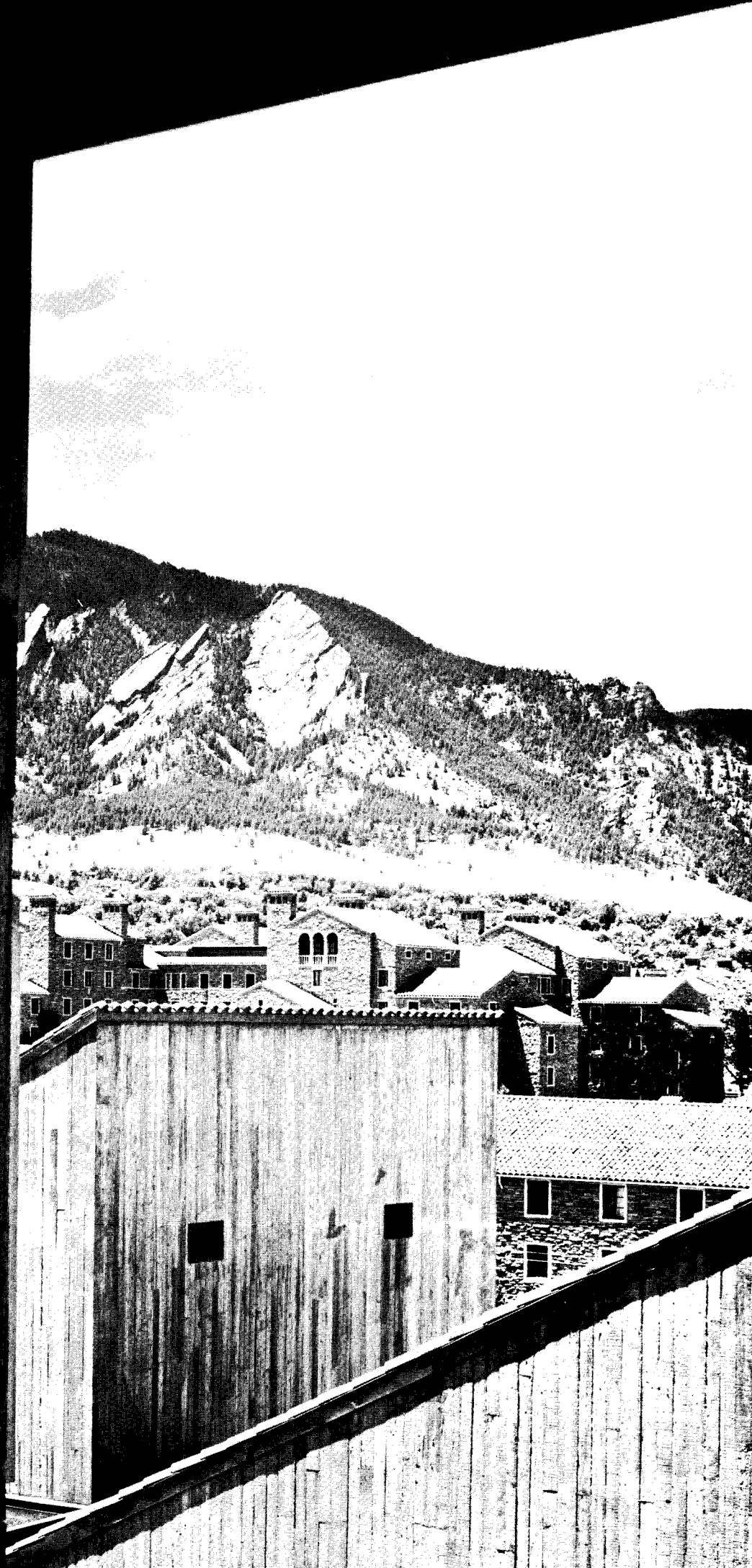


Mechanical system in the laboratories is independent of that for the entire structure, and left exposed so that it can be readily changed should the need arise. Convectors in the corridors (right) form balustrade along windows.



“The laboratories are introverted; it is the equipment that’s important and dictates the character of the interior. Sometimes it’s fragile, delicate as in the chemistry lab, sometimes it’s rough, tough.”

The final building is tough and sensual. As one passing architectural critic commented, “It’s a building born to have a love affair with Yamasaki.” One criticism with both complexes is that DeMay possibly did not push their strength far enough. His clear-cut, rather bold style is apparent in the forthright volumetric character of the complexes, the careful proportions and scaling of the façades, and the obvious delight in playing upon a whole range of tactile and spatial senses. He has caught the spirit of the campus without the need for such literary references as the tile roofs, which seem inadequate in scale to complete such a complex. Local critics and college alumni who have written letters are divided in their reactions to the Engineering Center. Some, on the one hand, object to its brutality and state that it resembles a granary, a factory. At the same time, they acknowledge that it is profoundly human. “It is a campus within a campus,” says the alumni journal editor, Russ Olin. “One fountain is a gushing geyser type that permits one to sit beside it and lose himself in the noise of the water and the hypnotic dance of the spouting columns of water. The other provides the best opportunity for quiet contemplation as the water gurgles over the center and flows out evenly over spout on all four sides of the perfectly level table that forms the pedestal for the fountain.” DeMay has apparently been successful in making the building and spaces provocative, in making them alive. “I am particularly intrigued,” writes a visiting alumnus, Nancy Hawkins, “with the play of shadow on shadow. It would be interesting to make a study of the east and west faces as they are affected by early morning, late morning, early and late afternoon light conditions. I feel it is a building which would breathe in a study of this kind, but, unfortunately, I was not in Boulder long enough to study it.” There is no plainer tribute to a building than that the visitor does not want to leave.



A new building type, not yet visible in the townscape, has been in the developmental stage for many years. Precedents for the Community Mental Health Center go back several decades, but it was not until President John F. Kennedy's Administration that these facilities received nationwide attention, specific definition, and substantial Federal funds. Under Public Law 88-164, passed by Congress in October 1963, \$150 million was authorized for use by the states in the period from 1965-1967, the total broken down into annual appropriations of \$35 million, \$50 million, and \$65 million.

John Kennedy was the first President to address himself with conviction to the problems of the mentally ill. In the historic message of February 5, 1963, he called for "a bold new approach" to the twin problems of mental illness and mental retardation. "Central to a new mental health program," Kennedy stated, "is comprehensive community care. Merely pouring Federal funds into a continuation of the outmoded type of institutional care which now prevails would make little difference. We need a new type of health facility, one which will return mental health care to the mainstream of American medicine, and at the same time upgrade mental health services." In describing the new kind of facility, President Kennedy noted, "While the essential concept of the comprehensive community mental health center is new, the separate elements which would be combined in it are presently found in many communities." (Although first authoritatively commended to Congress in 1963, the Kennedy proposals derived from a report presented to Congress in early 1961, a report that in turn grew out of the Mental Health Study Act of 1955.)

What is a community mental health center? As defined by Public Law 88-164 (Mental Retardation Facilities and Community Mental Health Centers Construction Act of 1963), it is not necessarily a new or a separate building. It may be a wing added to a general hospital or a clinic, or to another mental health facility in the community. Essentially, the center comprises a varied program of mental health services in the community, housed in one or more facilities, under a coordinated system of care. Through the center's varied range of services, a patient will find the type of care he needs when he needs it, as close to his home as possible. He can transfer easily from one method of

A BOLD NEW APPROACH: THE COMMUNITY MENTAL HEALTH CENTER

treatment to another as his needs change, and the clinical data obtained in one phase of treatment can similarly be transferred. Also, whenever practicable, those responsible for his care in one element can continue responsibility in the succeeding. This "continuity of care" makes possible the best care, according to current psychiatric thinking.

To qualify for Federal funds, a center must provide at least five *essential services*: (1) in-patient, or 24-hour, care; (2) out-patient care; (3) partial hospitalization, i.e., day-care for patients able to return home overnight, and night care for patients able to go to work; (4) emergency care, on a 24-hour basis; and (5) consultation and education for community agencies and professional people. To be fully comprehensive, five *additional services* should be included: (6) diagnostic; (7) rehabilitative, both social and vocational; (8) pre-care and after-care; (9) training of personnel; and (10) research into mental illness, and evaluation of treatment.

This definition of the community mental health center, as spelled out in the 1963 legislation, is only a formalization of concepts that have been developing over the years. (The term has indeed been used before, particularly by out-patient clinics; but, with the new Federal regulations, the term is likely to apply to those facilities having at least the five essential services.) According to Bertram S. Brown, M.D., Chief of the Community Mental Health Facilities Branch of the National Institute of Mental Health, the concept is "a clear and direct result of most of the recent developmental trends within the mental health field, both in this country and abroad." He cites the vast increase, since the late 1940's, in community-based out-patient clinics, the similar increase of psychiatric units in general hospitals, and the growth of a variety of new local services that provide less than a full 24 hours of in-patient treatment—the day-care or night-care programs, for instance, that are only feasible if located close to the patient's home. Two additional developments in treatment have had an effect: the use of tranquilizers and similar drugs has made the center concept more attainable, and the close involvement of the patient's family in the program of treatment has made local treatment more desirable.

If this new approach breaks down the isolation under which a patient was for-



DRAWING: CHARLES SCHORRE

merly treated by preventing his dislocation from familiar surroundings, it also decreases isolation in another sense, too. Even when communities have had highly developed mental health services, individual agencies have tended to operate in isolation, and there have consequently been serious gaps in service. "It cannot be overemphasized that the community mental health center movement seeks to accomplish comprehensive services not by duplicating or replacing existing services, but rather by coordinating and improving what now exists and filling in the gaps."¹

To insure that new facilities fit into a coordinated plan, the act requires that each state make an inventory of its existing facilities and needs. These state plans delineate areas for purpose of priority, and indicate probate sites for centers. Once the state plan is approved by the U.S. Public Health Service, any public or private nonprofit organization in the state may apply for Federal assistance in meeting construction costs of a community mental health center. (The word "community" applies to areas of not less than 75,000 and not more than 200,000 persons. Smaller localities can join together to form a "community.") Federal participation varies from one-third to two-thirds of the cost of construction. Funds available to each state are based on population and financial need. The act further requires the designation of a single state agency to administer the state plan. Each local project is submitted through this state agency, for approval by the Community Mental Health Facilities Branch of NIMH in Bethesda, Md. Actually, Congress delegated two agencies to share in administering the CMHC program. NIMH is concerned with programming (the type and arrangement of spaces); the Hill-Burton Agency is concerned with actual construction (safety codes, materials, etc.).

Architectural consultant to the NIMH is Clyde H. Dorsett, the first architect to be hired by this agency in its 20-year history. Dorsett has a master's degree in architecture from Columbia University, where he specialized in the planning and design of hospital and public health facilities. His job involves the evaluation and approval of all mental health centers submitted for Federal funding under Public Law 88-164. As one of the writers of the law's regulations, Dorsett has made it obligatory that architectural design be submitted in three stages, the earliest of which includes schematic drawings. This

has never been done before in Federal procedures. The programming of the facility, based on the specific needs of the community, is an all-important step in the design process, Dorsett feels, and every effort must be made to see that the facility is the best one from everyone's point of view. Communication between architects and mental health people is crucial to successful programming; early communication and a vigorous dialog will help to dispel the misconceptions and preconceptions with which each group views the work and goals of the other.

To spur such communication between architects and psychiatrists, NIMH sponsored the third Rice Fete, held last year at Rice Institute. Over a two-week period, six collaborating teams of architects and psychiatrists gave more than their usual energies to the formulation and solution of six mental health centers. These solutions, and the thinking behind them, will be published by NIMH as Volume II of an exceptionally handsome series. Volume I, recently published, is *Planning, Programming and Design for the Community Mental Health Center*, a case study of a center at San Francisco General Hospital. (Drawing on previous page is from this publication.) Volume III will provide guidelines for the design of a community mental health center, using data developed at the University of Utah.²

Dorsett hopes to expand the architectural consulting and research aspects of NIMH along many lines. Among the most interesting proposals are these:

- coordination of a national committee comprised of architects and mental health specialists who will serve in an advisory capacity to NIMH and to community representatives in their own locales;
- endorsement and/or sponsorship of a graduate training program in interdisciplinary studies on any aspect of psychiatric programming and architectural programming and design, including environmental design considerations for other building types with reference to perceptual and psychological environment;
- promotion of architectural concepts to mental health specialists (the nature and value of architectural services);
- an evaluative clearing house for mental

health and architectural research reports;

- maintenance of interprofessional bibliography;
- establishment of a student program (architectural and mental health) in which students assist in liaison for reporting purposes between institutional and academic projects, thus involving them in research techniques, documentation, and communication;
- continuation of support of architectural research: definition of problem areas, impact of technology, use of electronics, etc.;
- development of "mental health atlas" conceptual systems, utilizing graphic concepts for portraying information input and retrieval in terms of real time, real distance, and services available.

One of the biggest concerns of this agency, however, is to see that the money already authorized is spent for services that are most needed and for facilities that will best provide them. Four of the projects already approved are presented on the following pages.—EPB

¹ The Community Mental Health Center: An Analysis of Existing Models, 1964, a publication of The Joint Information Service of the American Psychiatric Association for Mental Health, available at \$3 from The Joint Information Service, 1700 18th St., N.W., Washington, D.C., 20009.

² Volume I is \$8; Volume II, to be published next month, will be \$12; Volume III, forthcoming in early '67, will be \$5. Volumes may be purchased singly, or as a \$20 package, from Mental Health Materials Center, 104 E. 25 St., New York, N. Y. 10010.

TERRACED GEOMETRY

MARIN HOSPITAL DISTRICT COMMUNITY HEALTH CENTER, Marin, Calif. **Architects:** Ellis Kaplan and Herbert McLaughlin; H. J. Weber, Project Manager. **Site:** Natural depression between two hills northeast of existing hospital building. **Cost:** \$1,200,000; approximately \$28 per sq ft. **Structural System:** Loadbearing walls of cast-in-place concrete or reinforced masonry; interior columns will carry spanning beams and slabs. **Materials:** Exterior walls, cast-in-place or reinforced concrete; interior walls, plaster. **Construction Schedule:** To be completed by the fall of 1968. **Consultants:** Rutherford and Chekene, Structural Engineers; G. L. Gendler & Associates, Mechanical and Electrical Engineers.

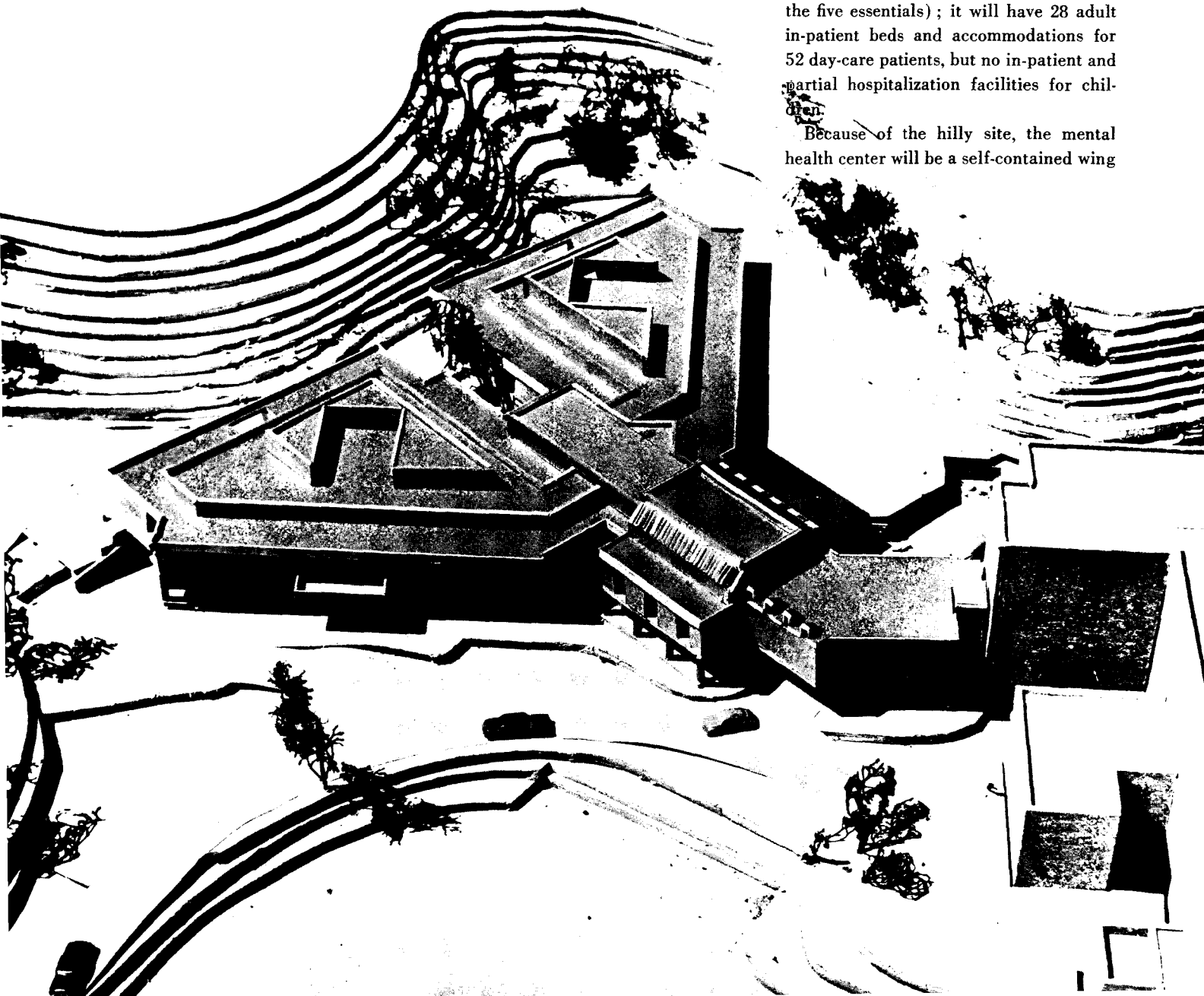
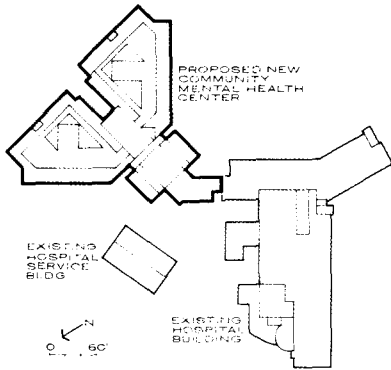
The architects for this project, Kaplan & McLaughlin, have perhaps the most extensive experience in creating this new building type; to date, they have designed five mental health centers. Their first, at San Francisco General Hospital, is the subject of the recent report, *The Planning, Programming and Design for the*

Community Mental Health Center (see p. 132).

In this comprehensive study, they outline design considerations, based on mental health therapy, which seem to be commonly agreed upon by architects: the first is order, "the proper separation of parts and the differing visual expression to the various parts of the building"; the second, clarity of form and space—since the patient is easily confused, "he should be able to sense where he is and be able to go from one part of the CMHC to another without difficulty"; next, scale, flexibility—"a change in program may occur and new and different space demands will accompany it"; and lastly, integration with the community, and security—visual security of staff over patients, plus a feeling of security on the part of patients.

These standards are in evidence in the community mental health center at Marin General Hospital. It will offer all elements of a comprehensive unit (concentrating on the five essentials); it will have 28 adult in-patient beds and accommodations for 52 day-care patients, but no in-patient and partial hospitalization facilities for children.

Because of the hilly site, the mental health center will be a self-contained wing



added to the existing general hospital; it is positioned in a natural depression between two 90-ft-high hills to minimize cut and fill, retain existing oak trees, and provide maximum usable outdoor areas and maximum views.

The resulting scheme is a horizontal, two-level one, which seems to sprout out of the terraced terrain surrounding it, and is connected to the hospital by a bridge (from the upper level of the center to the lower level of the hospital). While this is an unusual ordering of spaces, the design is very much in keeping with a logical division of functions. Out-patient, consultation, planning, and administrative services are housed on the lower level, while in-patient and partial-hospitalization facilities are housed on the upper level.

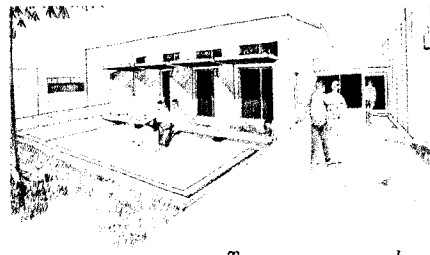
To insure patient-staff continuity, the in-patient and partial-hospitalization rooms are combined. Thus, when patients move from one stage of mental health care to the other, they remain in the same treatment group. There are to be two treatment groups, each with their own patient nucleus, and each occupying one of the upper-level projections (see floor plan). The plan connects the two projections, providing an area where

some facilities may be shared, and also providing easy access for nighttime staff members to supervise patients in both treatment groups. Shared facilities include the secretarial pool, the clinical director's office, and the staff library.

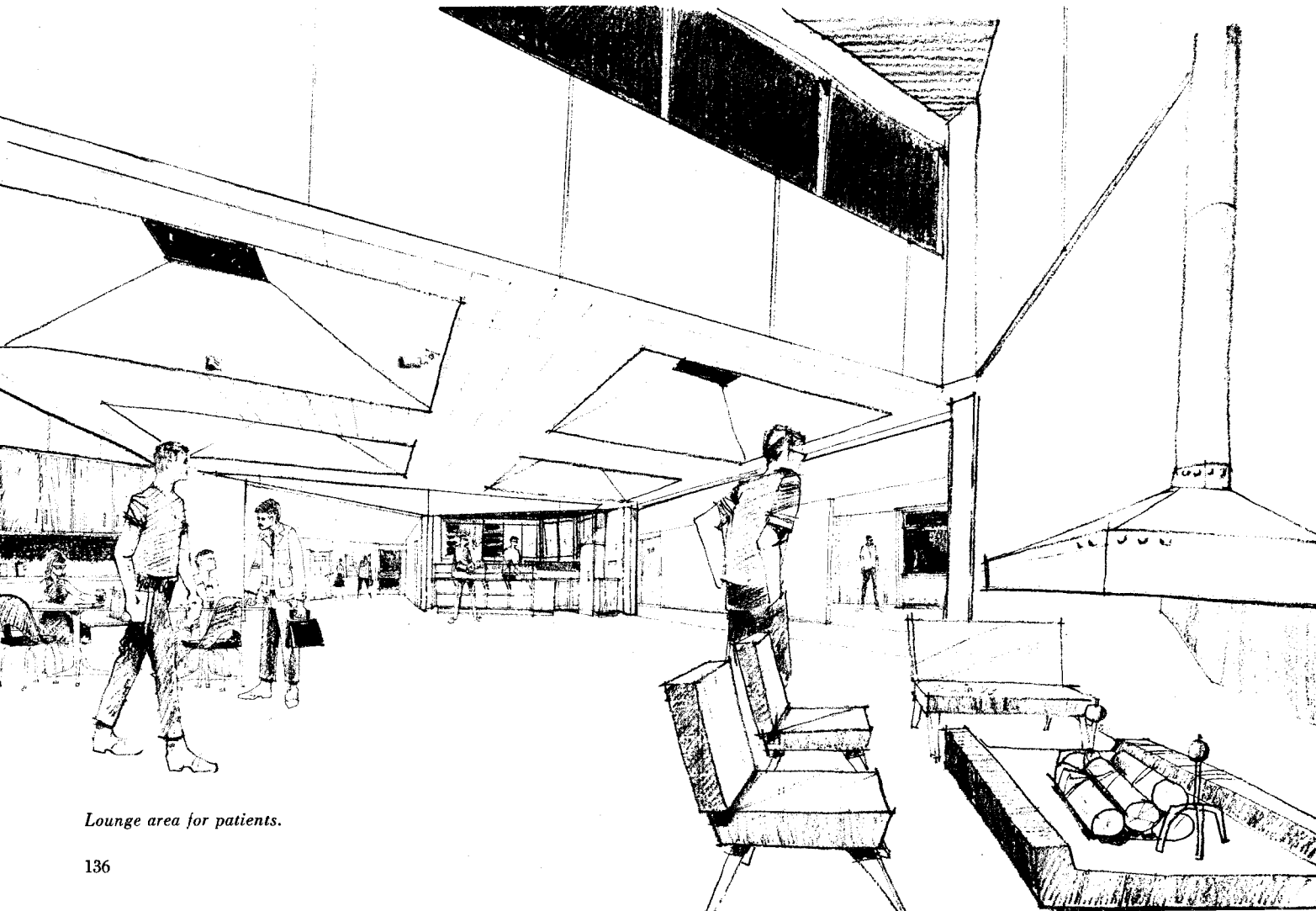
Each projection is designed so that the living and dining area is at the very center of the treatment unit, thus becoming the focal point of corridor activity. As Ellis Kaplan, one of the architects, explains, this placement "mirrors the importance given to treating the patient as part of a

group in a clearly defined environment." The plan also enables the staff to have easy physical and visual control over the area, and eliminates the long closed corridor of many mental institutions. (The architects feel that CMHC's should not resemble hospitals, but, then, they feel that hospitals in general should not look like hospitals.)

Maximum flexibility in the center was sought for reasons of accommodating possible changes in program and allowing moderate expansion. Thus, there are multipurpose rooms, suited to many different activities, which can also be converted into bedrooms, offices, or conference rooms. Physical expansion is possible but is limited by the need to maintain the logic of the scheme and to avoid cutting too deeply into the terrain. Realizing that the population of Marin County is growing, there is a master plan to build another CMHC in the northern part of the county, and a children's community mental health center in the central part. This facility should therefore eventually be serving only the southern section of Marin County, with a predicted possible population of only 125,000, as compared to the present catchment area population of 185,000.



Terrace on upper level.



Lounge area for patients.

COURTYARD COMPLEX

CHILD AND ADULT MENTAL HEALTH CENTER, Youngstown, Ohio. **Architect:** P. Arthur D'Orazio; **Anthony Joy, Project Designer.** **Site:** Some 5½ acres of a 30-acre urban renewal tract adjacent to the downtown area. Tract will contain the Health Center Complex, a community service complex including St. Elizabeth's Hospital, the center under construction, and related facilities. **Cost:** Approximately \$782,825; \$19.57 per sq ft. **Structural System:** Precast concrete frame, slab floors and roofs. **Materials:** Foundation walls of cast-in-place concrete; interior walls, vinyl-covered gypsumboard panels on movable partition system. Floors are vinyl-asbestos tile or carpet; ceilings are exposed concrete slab. **Construction Schedule:** To be completed by fall of 1968.

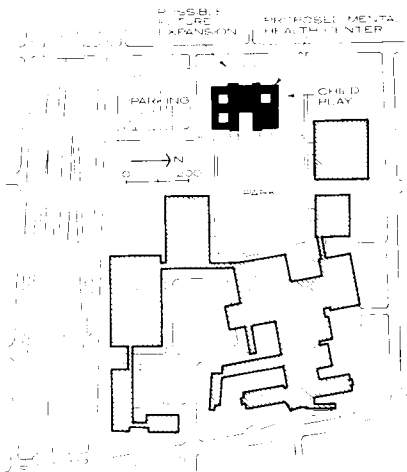
Architect P. Arthur D'Orazio worked almost two years with the Child Guidance Clinic, the Adult Mental Health Clinic, and the Mental Health Association in Youngstown to evolve a coordinated program for the mental health center in which all three agencies are to be housed. Although the services of each are to be expanded, the Child and Adult Mental Health Center will have no in-patient program; instead, an in-patient program coordinated with the center is to be provided at a nearby hospital.

The resulting design solution allows each of the three main units to occupy

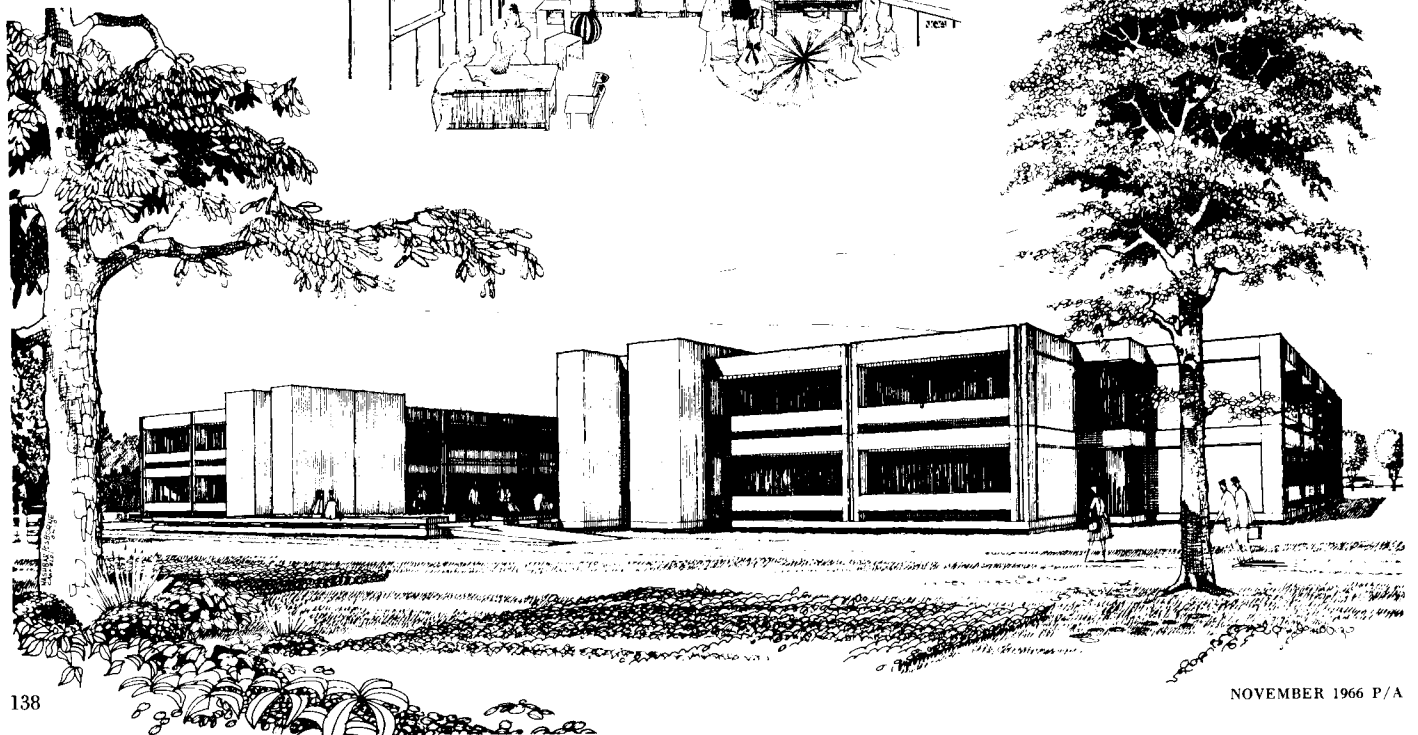
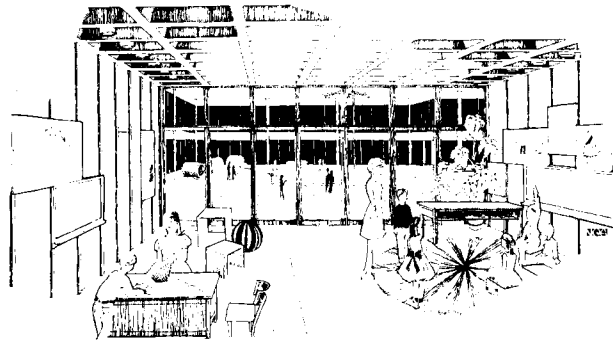
separately defined portions of the building.

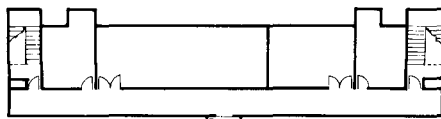
The courtyards—there will be at least one per section—are integrated into the scheme; in fact, the main entrance to the center itself is through a courtyard. The adult wing has two courtyards, one of which is an area for waiting and informal therapy, the other, for adult day-care and therapy. On the other side of the building, the children also have their own courtyard, as well as their own enclosed two-story playroom. (Adults will be able to use a multipurpose two-story room for indoor group activity, situated directly behind the admissions area.)

The design is a clear, well-ordered, and simple arrangement of spaces corresponding well to the functions they will perform. The courtyards are focal points for the treatment units so that interaction among patients themselves, as well as between patients and staff is encouraged, and visual surveillance on the part of the staff is facilitated. The patient will be able to orient himself easily, and the scale is in keeping with the goal of creating a therapeutic environment devoid of institutional overtones, where a patient may be treated on a personal, intimate basis, whether individually or as part of a group.

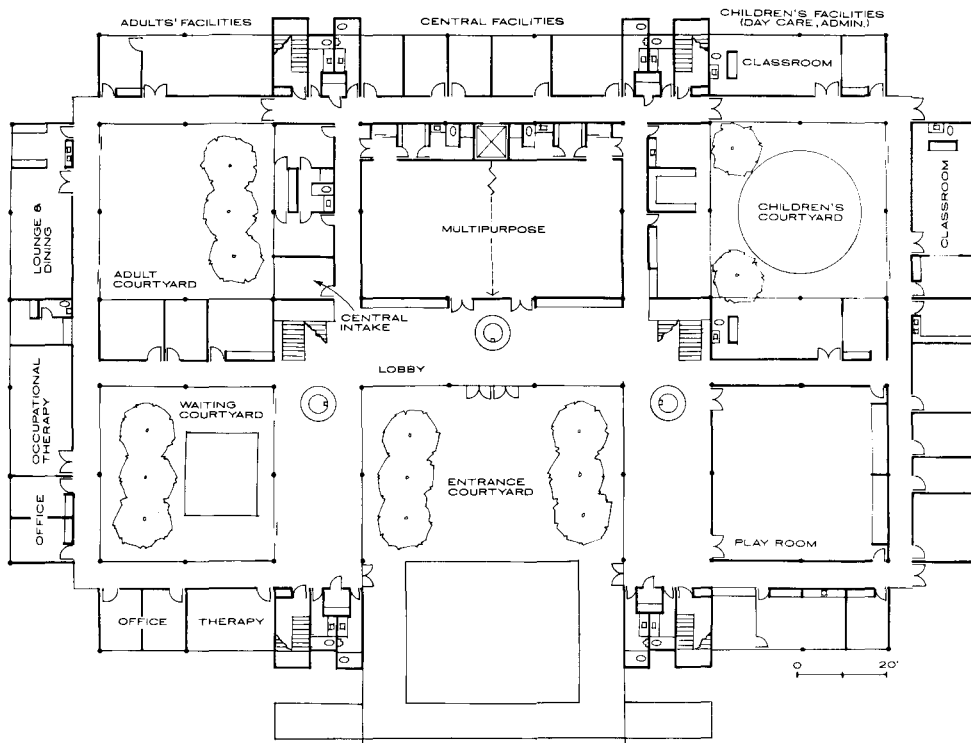


Early rendering of children's playroom.

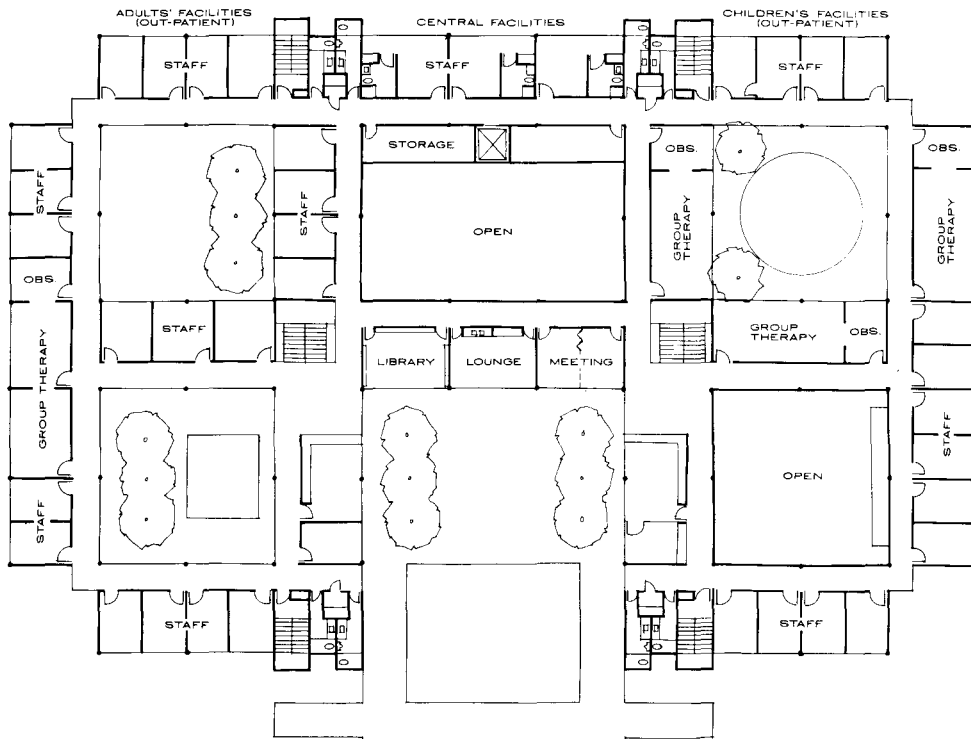




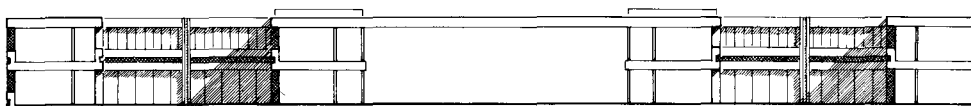
BASEMENT PLAN



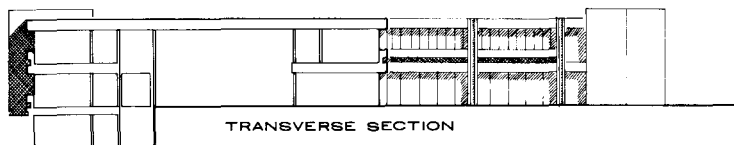
FIRST FLOOR PLAN



SECOND FLOOR PLAN



LONGITUDINAL SECTION



TRANSVERSE SECTION

VERTICAL STACKING

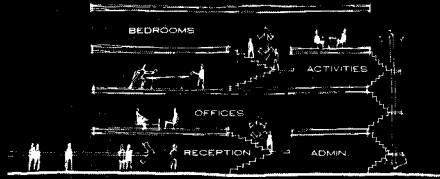
THE MAIMONIDES HOSPITAL OF BROOKLYN COMMUNITY MENTAL HEALTH CENTER, Brooklyn, N.Y. **Architects:** Caudill, Rowlett, Scott, Consulting Architects; Kahn & Jacobs, Project Architects; Irving Kaplan, Project Manager. **Site:** 100' x 155' lot adjacent to Neinken Out-Patient Center on Maimonides Hospital campus. **Cost:** Approximately \$1,500,000; \$33 per sq ft. **Structural System:** Concrete columns and beams, flat slab construction. **Materials:** Exterior walls, brick cavity wall; interior, exposed block and dry wall. **Construction Schedule:** To be completed by September 1967. **Consultants:** Sigmund Roos & Associates, Structural Engineers; Jansen & Rogan, Mechanical Engineers. **Photo:** Jay Hoops.

The Maimonides Hospital of Brooklyn Community Mental Health Center will offer the full range of services of a comprehensive center to a catchment area of approximately 108,000. The population for the most part consists of working-class and middle-class people, few of whom can

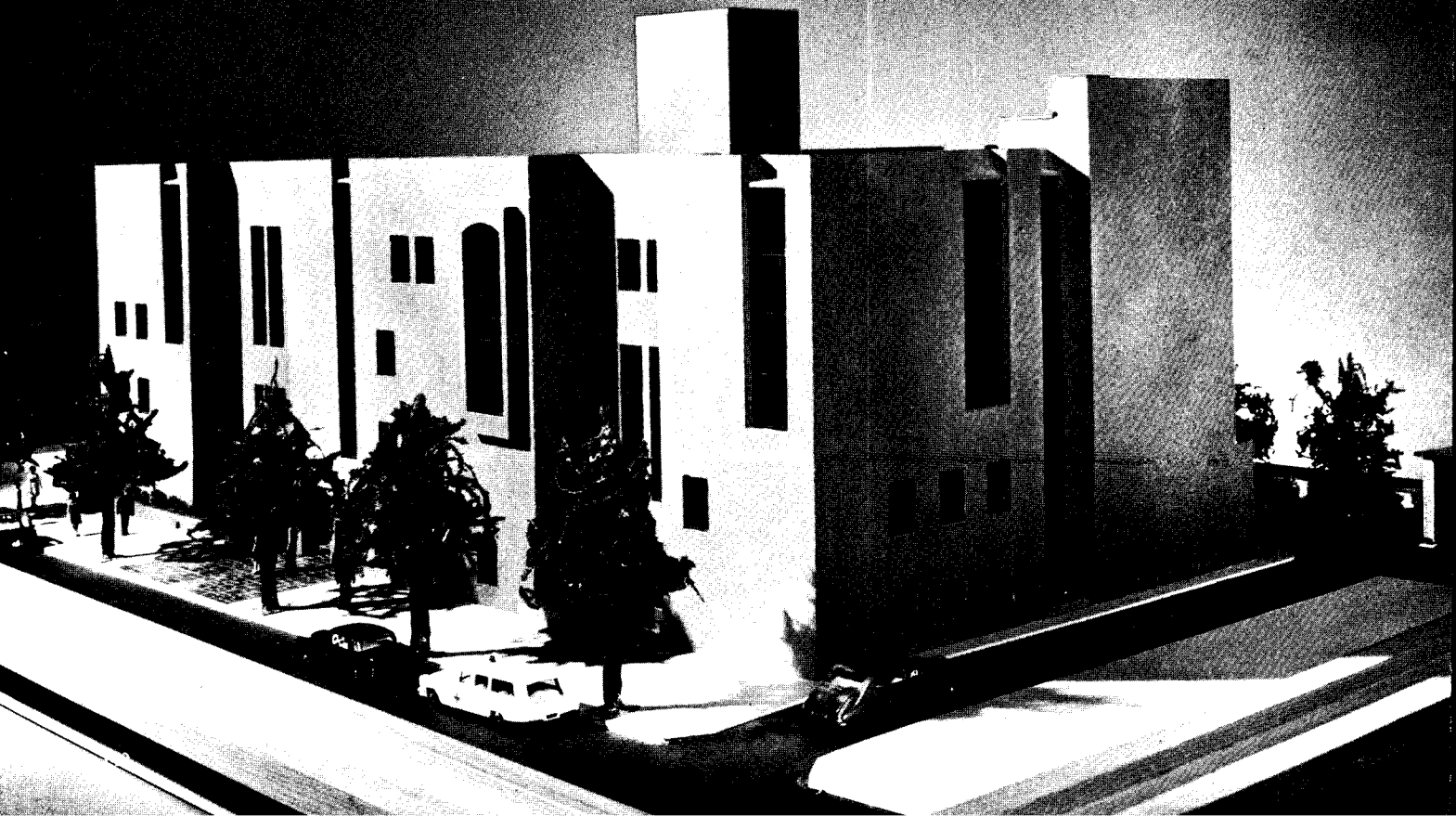
afford extensive psychiatric care on a self-paying basis. Although no extensive study has been made of the prevalence of mental illness in this area, response to Maimonides Hospital's present limited program of out-patient care and community and consultation service shows a need for expanded facilities. Furthermore, in the local area, there is almost no other mental health or psychiatric facility to serve the population.

The consulting architects, led by James Falick, an associate at Caudill, Rowlett, Scott, and the staff of the center worked closely throughout the planning stages. They were concerned with the image the building would present to the outside world, as well as the feeling it would convey to the patients and staff inside. From the exterior, architects and staff wanted the building to be a departure from anything resembling a hospital; they wanted the center to blend in with the scale and character of the neighborhood. Since the surrounding buildings are five- or six-story structures of dark red brick or wood, with arched entrances, Caudill, Rowlett, Scott suggested picking up these characteristics and breaking up the massing to continue a residential scale.

For the interior, they wanted a physical environment to foster a therapeutic ambience; physical dimensions were not to impose harsh demands on the patients' distorted perceptions. The architects and



Central open stairs were designed to connect bedroom and activity areas and reception and office areas to foster easy visual and physical access. Fire regulations under the Hill-Burton code call for closing the stairwells to prevent fumes from spreading too easily in hospitals with bed-ridden patients. Here a concession has been made and only one end of the stairwell has to be enclosed. Meanwhile, the NIMH is working with the Hill-Burton agency to adjust the code for mental health centers where the in-patients are ambulatory.



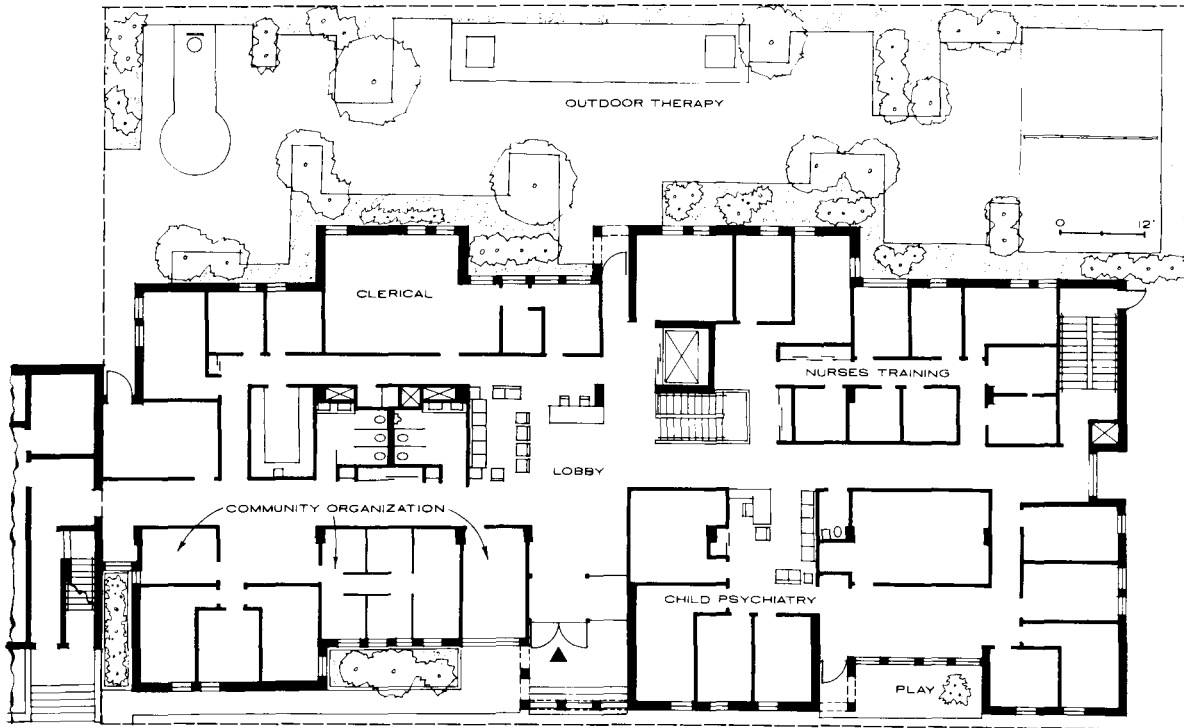
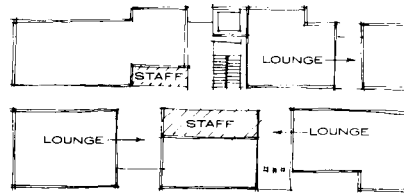
staff would have preferred a horizontal plan for the center: first, for the spatial flow necessary in promoting the socialization and interaction that is an important goal of modern "milieu" therapy; second, for a more intimate human scale and freer accessibility. However, site limitation (100' x 160') and zoning regulations (ground floor could only be a maximum of 10,000 sq ft) necessitated a vertical stacking arrangement.

In the four-story center, space limitations prompted a simple organization of functions by floor. Thus, in-patient (25 beds) and night-patient (16 beds) are

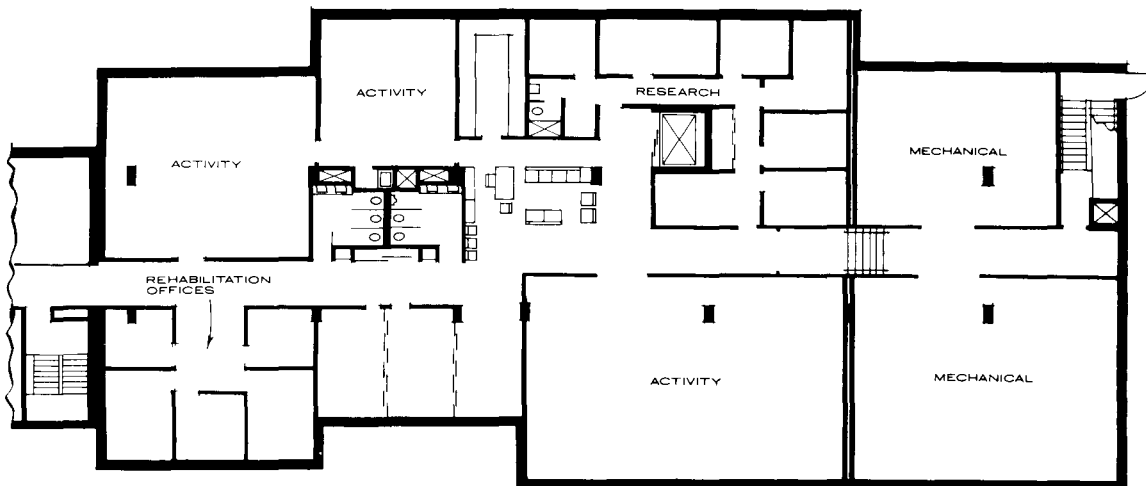
located on the top floor, with activity and some office/treatment rooms on the third floor; the rest of the office/treatment rooms on the second floor, and administrative offices on the ground floor. The outpatient and day-care child psychiatry unit

will also be located on the ground floor, so that children will have immediate access to their own play area. Some services occupy basement space (psychiatric rehabilitation, psychiatric research, and audio-visual control).

Regulations require that corridors be uninterrupted from one end of the building to the other, and clearly defined. In an effort to break up the resulting tunnel-like space, as well as insure spatial flow and flexibility wherever possible, the architects decided to widen the corridor at intervals into open lounge, secretarial, and waiting areas (diagram left). Bedrooms



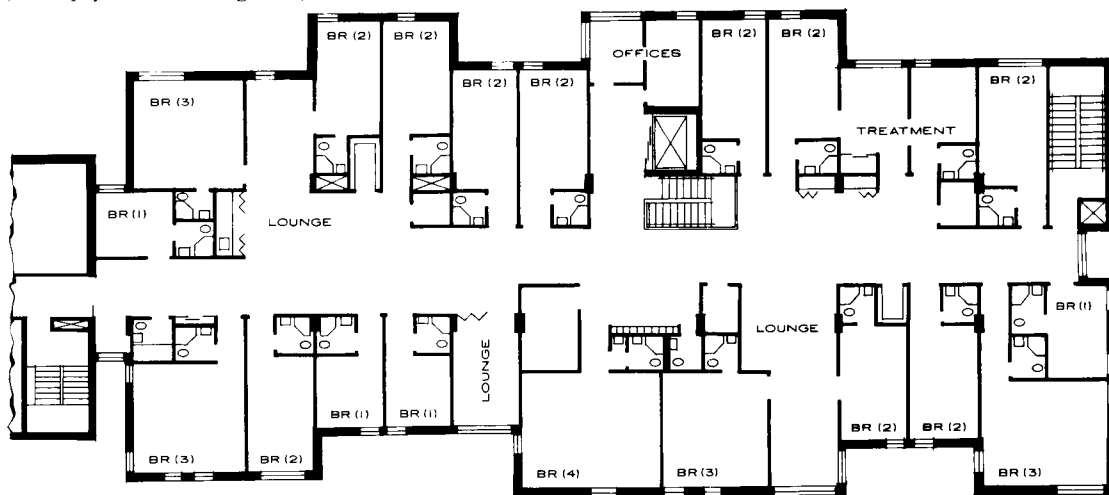
GROUND FLOOR PLAN



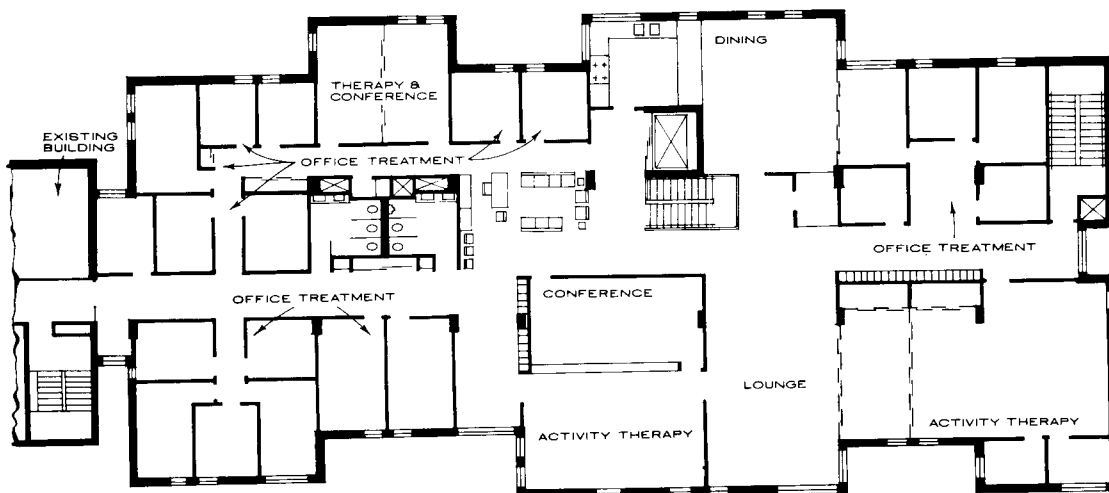
BASEMENT PLAN

and offices are grouped around these spaces, forming small enclaves for gatherings of people. Offices are arranged according to treatment group—that is, rather than grouping all the social workers together, all psychiatrists together,

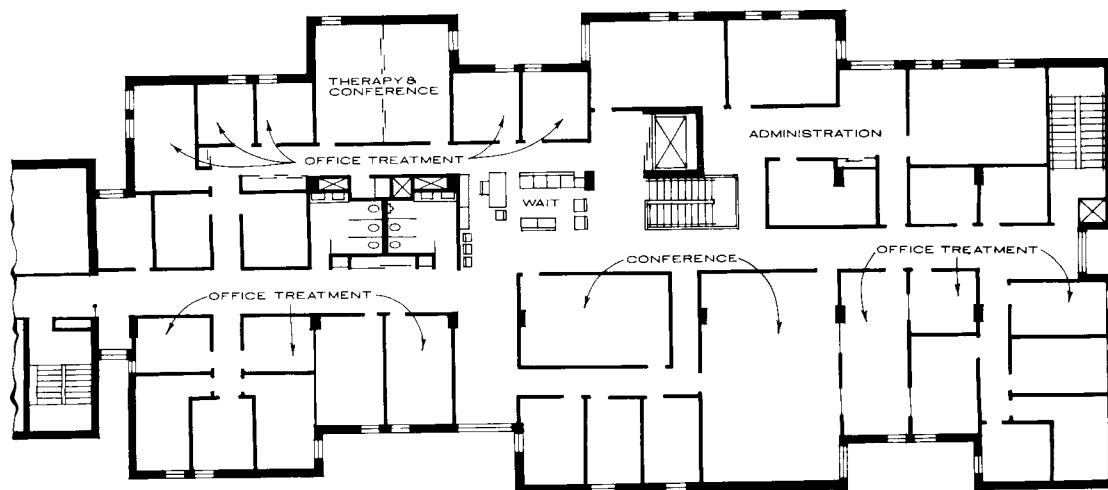
etc., offices are grouped on an interdisciplinary basis. Thus, a co-hesive unit is formed, furthering interaction between staff members themselves, as well as between staff and patients.



FOURTH FLOOR PLAN



THIRD FLOOR PLAN

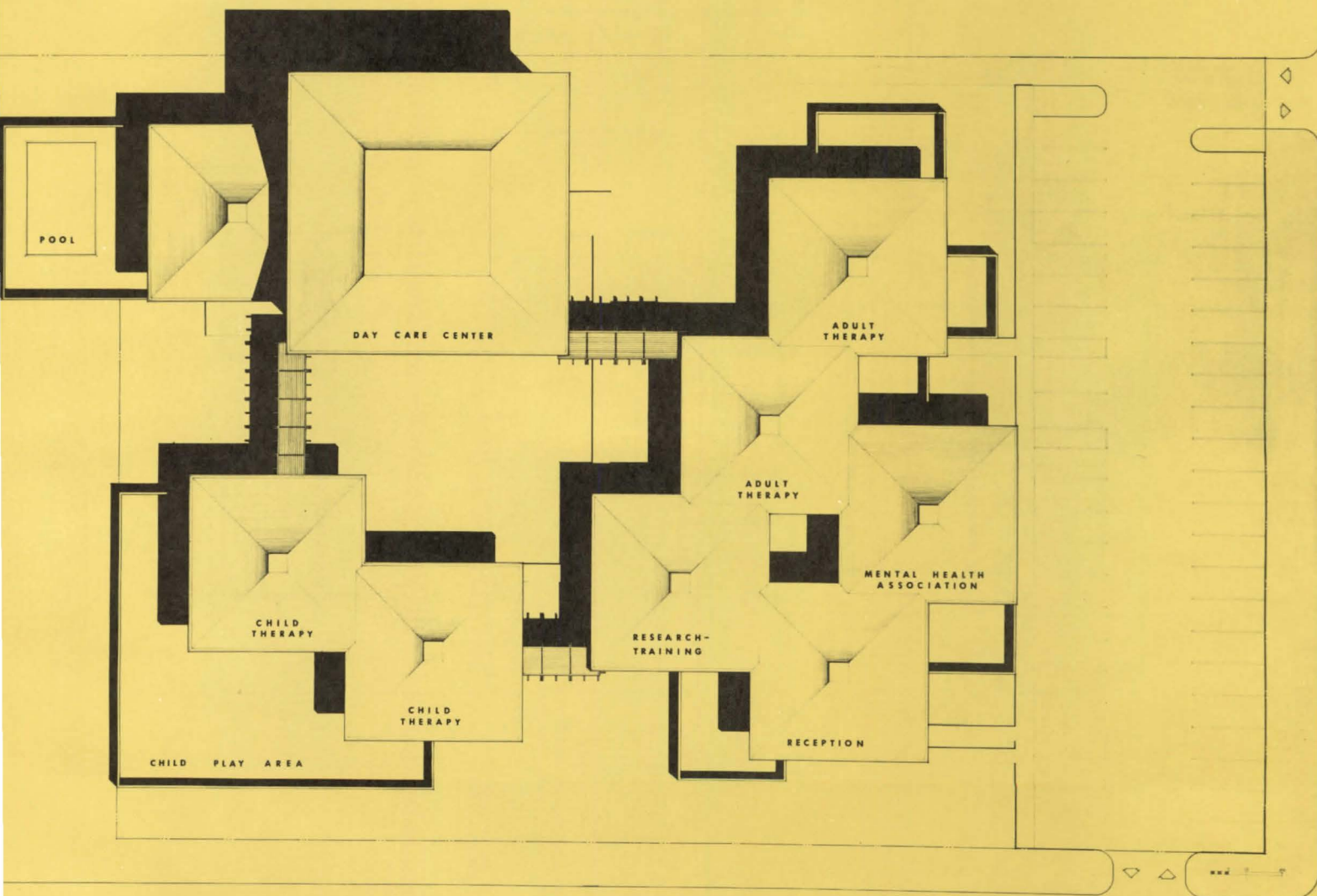


SECOND FLOOR PLAN

PAVILION CLUSTER

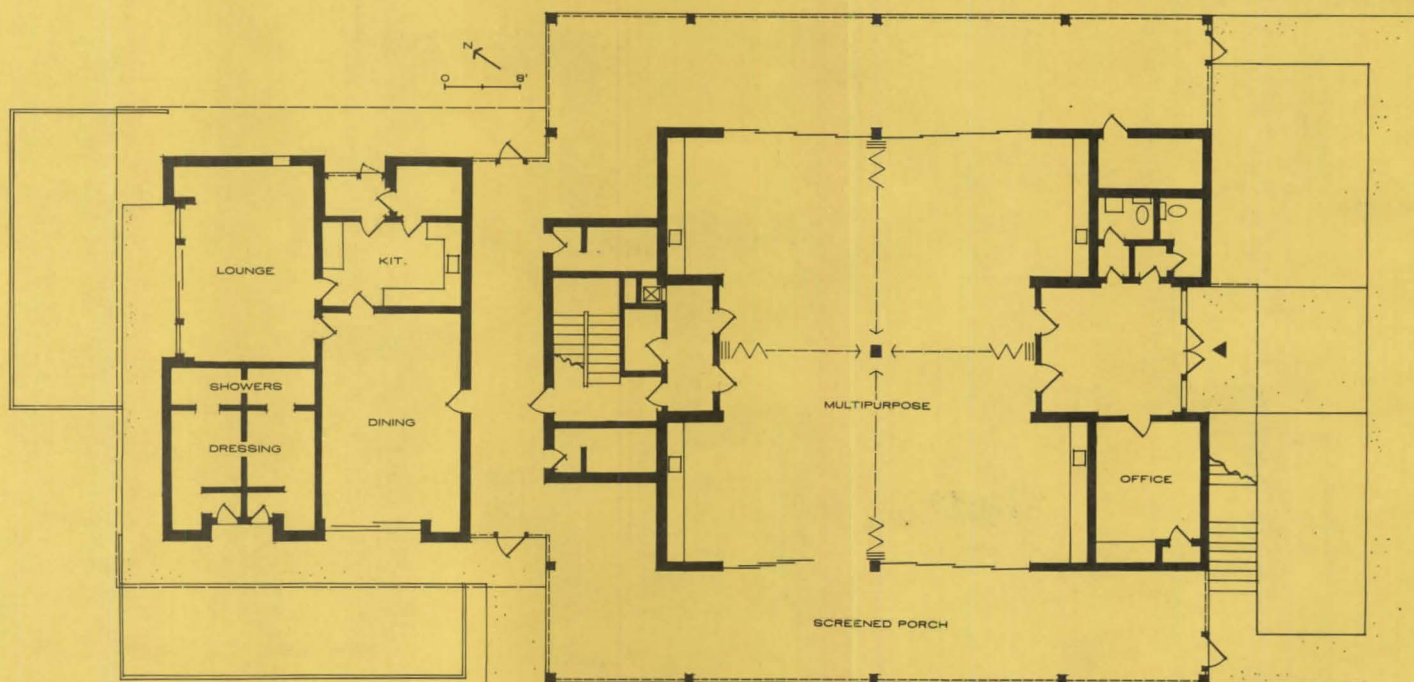
THE GUIDANCE CENTER, *Daytona Beach, Fla.*
Architects: Tye & Mitchell. **Site:** Lot in residential neighborhood, adjacent to elementary school, and four blocks from hospital.
Cost: Approximately \$310,550; \$13 per sq ft (average cost for local office space). **Structural System:** Masonry and wood frame support for one-story units; formed and cast-in-place concrete frame for two-story unit.
Materials: Exterior walls are textured stucco on treated masonry; roof, asphalt shingles on timber frame; interior walls are plaster and wood paneling in one-story units, exposed masonry (frame walls plastered) in two-story unit. Floors are terrazzo on concrete slab; ceilings, plaster, and acoustical tile. **Construction Schedule:** Completion by January 1967.

Speaking of the Guidance Center at Daytona Beach, one of its architects, James Mitchell, commented, "It is hoped and anticipated that the Guidance Center will be accepted in the community just as is the neighborhood drugstore, grammar school, or post office." In order to depart from the "mental asylum" stereotype (thereby encouraging its use by the catchment population of 142,000), the architects and staff thought it best to do away with any traces of a hospital setting. Thus, the Guidance Center will have no sleeping accommodations. It will provide an out-patient program, daytime partial hospi-

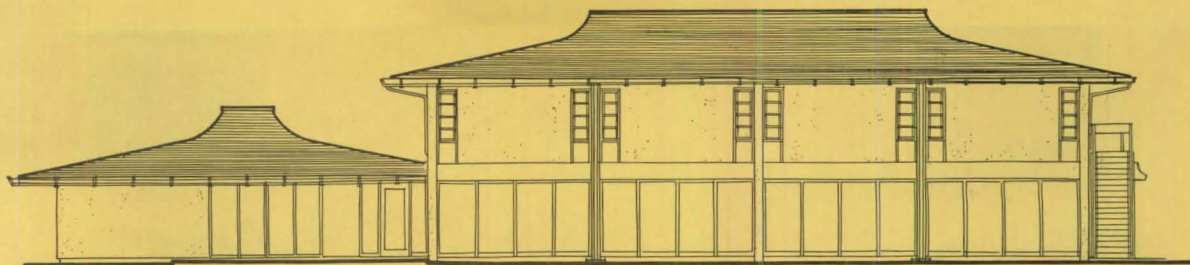




DAY CARE - SECOND FLOOR PLAN



DAY CARE - FIRST FLOOR PLAN



ELEVATION OF DAY CARE CENTER

talization, plus diagnostic, consultation, education, and pre-care and after-care services. (A training program will be added at a later date.)

Consequently, four blocks away at Halifax General Hospital, a one-story, 50-bed in-patient and 24-hour emergency unit is being constructed to supplement the services of the Guidance Center (design is by W. R. Gomon & Associates). The two sections will be closely integrated to insure continuous care for their patients, with a coordinating committee from the hospital and mental health center overseeing proper flow of staff, patients, and records. Together, these two sections comprise the community mental health center at Daytona Beach.

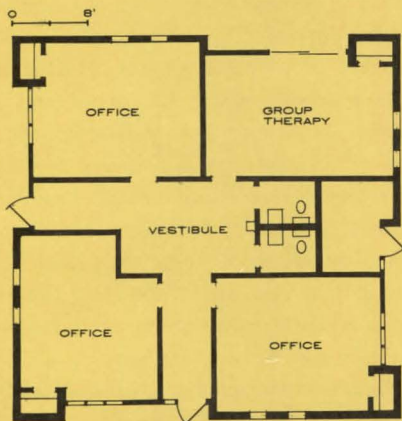
The design of the Guidance Center is in line with the thinking behind the program; remembering the monolithic structures meshed with tiny cubicles and long narrow corridors of the usual mental institution, the architects decided to cluster small pavilions together to house the various functions. While recalling those clusters of bungalows found along U.S. highways in the pre-motel era, these units nevertheless retain the residential scale of the neighborhood, with each pavilion enjoying its own exterior spaces.

The smaller modular pavilions are or-

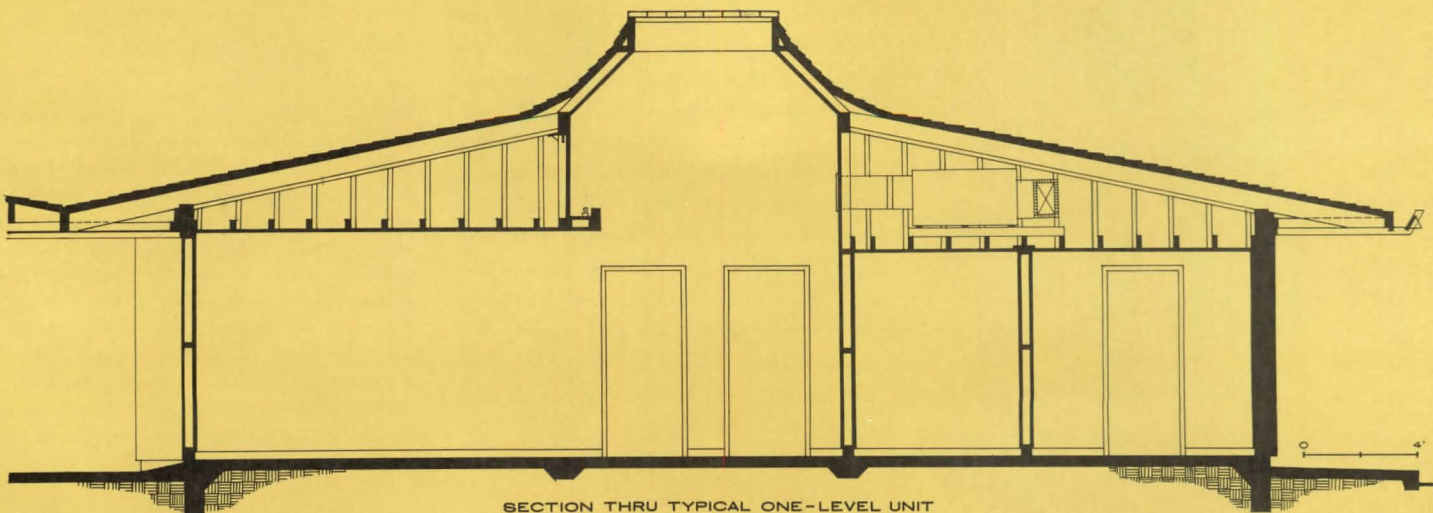
dinarly divided into four large rooms, each of which may be used as a staff office and therapy/consultation area. Wood paneling, carpeting, and furnishings further the "living-room" look.

All the units are single-story, except the day-care center, where space requirements and the lack of over-all site space necessitated two floors. The first floor of this pavilion is a large multipurpose room, which can be converted into four small rooms partitioned by movable walls. On the second level are patient and staff facilities: an auditorium, with professional library, photo lab, music listening rooms, craft and other activity rooms at the perimeter. A swimming pool for patients and staff is located beyond the single-story kitchen/dining wing of the day-care center.

This scheme would probably not work well for in-patients: The assortment of bungalows might confuse and disorient the patient; interaction might be impaired, since spatial flow occurs only on the exterior, from one pavilion to the next. Nevertheless, the plan would seem to work well with day- and out-patients who are able to proceed from their homes in the outside world to the bungalows in the treatment center without feeling a profound change in milieu.



FLOOR PLAN OF UNIT 3



SECTION THRU TYPICAL ONE-LEVEL UNIT

WINDOW COVERINGS

Since the time P/A published "Domesticating Glass Walls"—a review of basic criteria for designing methods of covering windows (p. 148, OCTOBER 1961 P/A)—traverse draperies and venetian blinds have remained the most common type of window treatment: the former, in residential installations; the latter, in "contract" work. However, the most imaginative of our architects continue to invent new methods to meet the specific requirements of their buildings. From Philip Johnson's ingenious tinsel techniques (p. 196, MARCH 1965 P/A), to Paul Rudolph's controversial, brutal cargo nets (p. 127, FEBRUARY 1964 P/A), innovational window coverings do show themselves as a serious architectural problem for the thorough architect. The sober, if less spectacular, examples on the following pages make that clear. Furthermore, in the past few years, several commercial developments have broadened the possibilities of window treatments; among them are the narrow-slatted venetian blind, which is more transparent, and the venetian blind that lowers its entire header mechanism to provide a view at the top of the window, while providing privacy at the lower portion. In this same period, the still available metal mesh drapery seems to have been unexplainedly slighted.

A new question about choice of window covering now is: *Where should it be—inside or outside?* Exterior elements such as an exposed structural frame, structural louvers, or other screening materials are permanent architectural window treatments. Inside, the choices also include shades and vertical blinds, all with several methods of closure—vertical, horizontal, or both. Now, a third area has opened as a possibility for covering the window—that middle ground between inside and outside—the window itself, which can have integral "coverings."

Basically, the critical decision in the choice of window treatment is to find the factor that is most important to the particular installation: economics, light, view, privacy, insulation, light diffusion, acoustical control, or aesthetic appearance. Next, the designer should distinguish between two approaches toward achieving the delicate balance between openness and view, on the one hand, and insulation and privacy, on the other. One approach depends on emphasizing the method of closure; the other is based on the density of the fabric employed.

The following article, based on re-

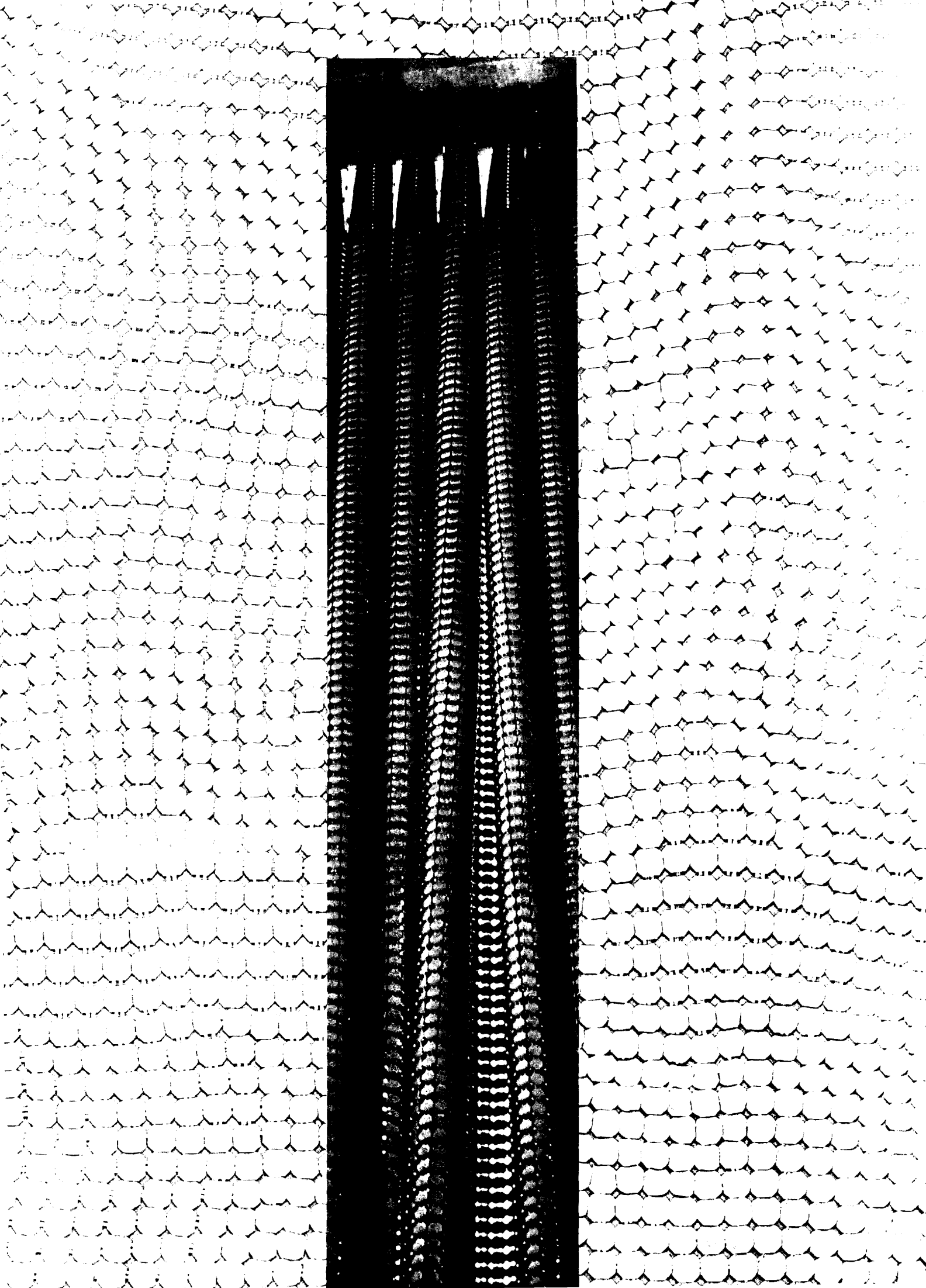
search provided by John F. Ferger of Owens-Corning Fiberglas Corporation, provides a checklist of factors and criteria for choosing window treatments, and serves as a point of departure toward the invention of new methods of covering windows.—CRS

The increasing use of large expanses of glass in modern construction has brought one architectural and interior design problem into more prominent focus: how to cover the glass wall. For buildings as unique as Saarinen's TWA terminal, and for those as classic as the variations on the Miesian theme, selection of uniform window coverings is a primary requirement of the architect and his client.

The most obvious reason for uniform selection—obvious to the professional and layman alike—is appearance. The view from both inside and outside a building may be seriously damaged by haphazard selection on the part of individual occupants: venetian blinds (some up, some down) next to draperies (of all colors and types; some open, some closed) and adjacent to shades (up or down)—in short, a war of vertical and horizontal elements that is disastrous to a uniform architectural envelope.

Yet each type of window covering must be weighed against functional and economic requirements as well as against aesthetic characteristics. Detailed factors of economics are: initial costs, installation costs, maintenance costs, air-conditioning and sound-control costs, the price of heat and light control. Physical requirements for controlling the newly available, wide viewing walls include: working or living conditions; atmosphere; ease of handling coverings in relation to window opening; mechanical equipment in the window area; natural and artificial light requirements; privacy requirements; glare con-

Probbler Chain-Mail drapery, the latest of the indestructible metal window covering materials, is a mesh of "spiders" interlinked with loops—like that used for ladies' evening bags but in lightweight aluminum and therefore larger scale. This satin-finished aluminum mesh, from Harvey Probbler Showrooms, Inc., is used by Paul Rudolph in the first of his buildings for Southern Massachusetts Technical Institute (facing page), exposing the different and equally handsome reverse to the outside. The potential seems great: in the future, will metal draperies be hooked up as radiators to heating systems?



trol; sound control; fire hazard; and amount of maintenance.

Interior Function

In the process of specifying window coverings, the first consideration must be the function of the building itself, for the factors and criteria are different for each type of building and often for each different interior. In an office building, for example, factors such as working conditions, light control, maintenance, air-conditioning and heating costs are of more immediate interest than those of privacy or decorative quality, which would appeal to an apartment-house tenant. Labor costs—in installation and maintenance—are working information to corporate tenants, but of lesser concern to residential tenants. Schools and hospitals have more specific, and more acute, criteria, which make enormous demands on the versatility of a uniform window treatment. Some structures, naturally, by peculiarities in function or construction, would obviate any choice of window treatment whatsoever.

Economics

The first area of direct comparison is economics. (The accompanying charts document the basic cost considerations.) In a speculative building by an irresponsible builder, the choice would predictably fall to a window covering with the lowest initial cost, since replacement costs would not be considered.

Long-term financial factors, otherwise, are revealing. The window covering with the most expensive initial cost is open to debate: The decision is between the vertical blind and the traverse drapery. The latter, it is widely admitted, can involve almost twice the installation cost of venetian blinds. Conversely, due to higher maintenance costs of venetian blinds, it is thought by some that traverse draperies will be less expensive as a long-term investment. Frequent dusting and washing of venetian blinds is said to offset initial costs. With maintenance service supplied on contract, as in many office buildings with multiple tenants, this factor, of course, becomes dependent upon draperies made of a durable fabric.

Insulation

A more complex (and more variable) economic condition is the cost of air-conditioning and heating, since there are enormous differences in the insulatory

properties of different window coverings.

For example, in one office-building installation containing 57,600 sq ft of glass (77 per cent of the wall area), the initial costs of cooling equipment were found to be 25 per cent higher with venetian blinds than with draperies of a very dense glass-fiber casement cloth. This fact was laid to the great insulating efficiency of the glass fiber.

Practical, in-use factors also affect the insulating efficiency of window coverings. Shades, for example, still widely used in residential installations and often specified for schools because of budget, ease of operation, and flexibility, generally are up during daylight hours and therefore provide no insulation advantages.

Solar heat gain, as opposed to climatic heat conditions, also affect heating and air-conditioning costs. Solar heat gain can account for as much as 60 per cent of the total air-conditioning load in a building that has an exterior wall that is 75 per cent glass. A forceful example of this problem is the experience of the Gateway West building in Century City, Los Angeles: On a specific summer morning, the sun was hot enough at 8 A.M., and again at 4 P.M., to develop a solar heat gain of 202 Btu's per-hour-per-foot. Subsequently, the builders installed a relatively close-woven glass-fiber drapery fabric that has a shading coefficient of .37 with the heat-absorbing plate glass of the building. As a result, 119.16 Btu's were reflected, radiated, and convected to the outside atmosphere, cutting the solar heat gain from 202 Btu's to 82.84.

Recent studies by ASHRAE (the American Society of Heating, Refrigerating, and Air-Conditioning Engineers) and independent laboratories have made interesting discoveries about the shading coefficients of specific weaves and specific fibers that may prove valuable to specifiers of traverse drapery materials working in conjunction with mechanical engineers.

Light

Light control, another important factor, must always be considered in relation to privacy. During daytime, both translucent draperies and shades can provide either uniform light transmission or total privacy; if direct sun is desirable, however, the shades or draperies must be drawn and privacy is thereby totally negated. Venetian blinds and vertical blinds offer more control of light direction while still affording complete privacy both in day-

time and at night; however, they do not allow the kind of uniform, diffused light transmission provided by draperies and shades.

Whereas natural light is sometimes a welcome and economical supplement to artificial light, special working conditions demand versatile window coverings for light control. Where only artificial light can be used, room darkening can be effectively achieved with venetian blinds, opaque draperies, or window shades—the three most obvious choices besides permanently blocking off the window. Such a choice will depend on factors other than opacity: operational methods, mechanical equipment, window closing, or accessibility of control.

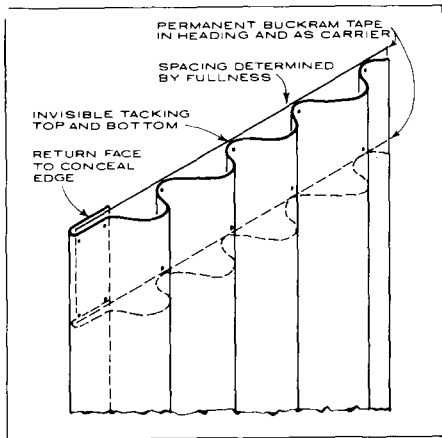
Acoustics

Interior and exterior sound transmission is another problem affecting choice. Ceiling tiles, wall coverings, and floor coverings have traditionally borne the major burden of acoustical control in buildings. Window coverings also can make appreciable contributions to acoustical control. The types of treatments vary greatly in their sound-absorption properties. Exterior as well as interior noises can be more effectively reduced by heavily textured fabrics—and by great quantities of them in deep folds—than by flat coverings, which are sometimes sound-reflective.

Final Choice

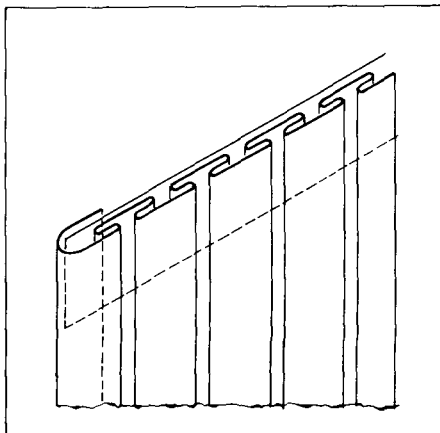
When specifying window coverings uniformly throughout a building, the choice can no longer be made after the building is completed. At that late time, structural peculiarities—such as reveals, protruding equipment, vents, air conditioning, heating units, controls, and partitions—can severely limit a satisfactory selection. The type of window itself, including the type of glass, will obviously influence its covering, yet this might be unsuitable for the particular requirements or tastes of the tenant. Finally, the architect must make a choice of window covering as an inherent architectural element that is vital to both the performance and to the appearance of his building.

To avoid the traditional French pleat that is much overworked on traverse draperies today, Knoll Planning Unit developed "a pleatless pleat" for the vice-presidential offices in Saarinen's CBS building (right). Designer Peter Andes says, "It was devised to minimize the appearance of the pleat and to integrate the softness of the fabrics into the appearance of the pleating technique." Basically, this method is a refinement of the first "tabled" phase of the workroom's procedure, but, Andes warns, "the specifier should beware: It takes excellent tailoring to achieve so casual an effect without sloppiness."



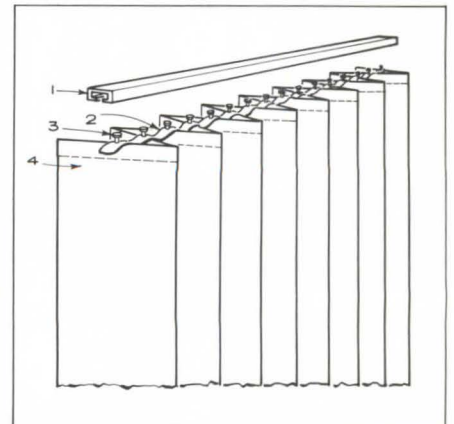
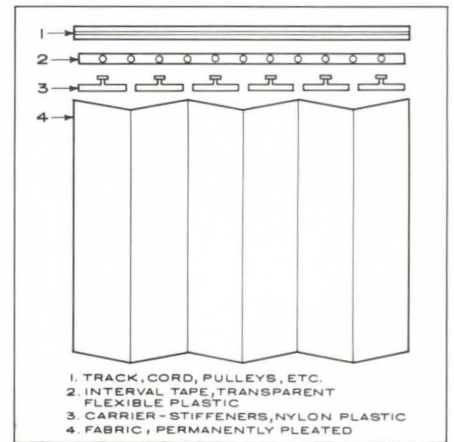
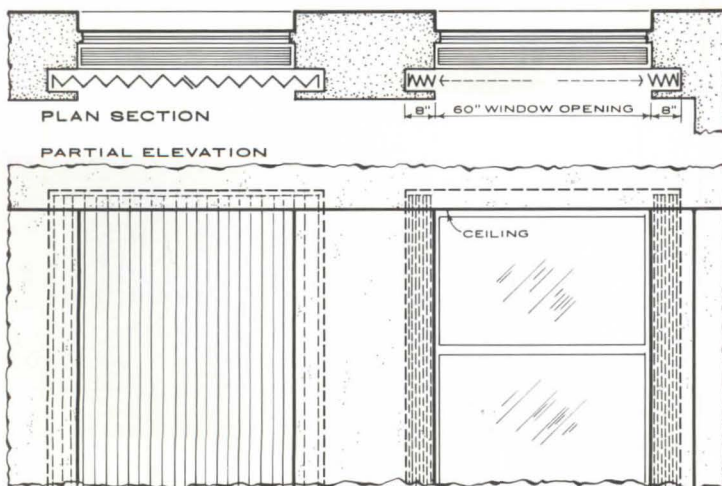
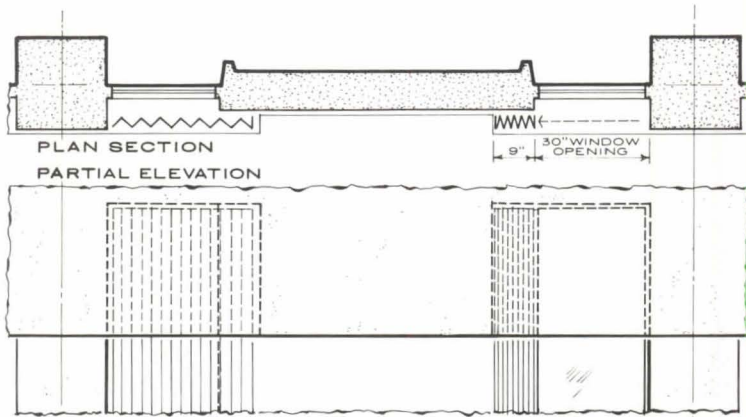
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The Knoll Planning Unit also designed a pleat for the corporate presidential suites at CBS (right). It uses continuous box pleats, therefore yards of fabric, and is grandly luxurious. Here are two thoughtful variations on the common traverse drapery that prove how imagination can expand and rejuvenate tradition.





To provide a window covering that would not invariably obstruct the relatively narrow windows of Minoru Yamasaki's Northwestern National Life Insurance Company building in Minneapolis (left), Carl Benkert of Ford & Earl Design Associates designed a treatment that combines features of the traverse drapery with those of the vertical blind. A permanent pleat system of alternating accordion folds makes a wool fabric hang in straight, controlled, 4-in. panels. The effect is that of a vertical blind made of a soft fabric, or of a traverse drapery that stacks in a small area like a vertical blind. Developed by Isabel Scott Fabrics Corporation with The Wool Bureau, the "Permaneat" system has been commercially available for nearly two years. Recently, Ford & Earl redesigned a gallery-like office where they used the Permaneat drapery to return into an 8-in.-deep pocket, thereby consuming less wall hanging space from the art collection (details at bottom).



Beginning in 1953, when Louis Kahn hung full widths of fabric flat as an interior window treatment for his art gallery at Yale, architects and designers have been giving more and more attention to this technique, which had probably not been used since tapestries were hung this way as window coverings in the Middle Ages. Then, several years ago, Skidmore, Owings & Merrill, New York, developed a multiple track with Kirsch Company that allowed narrow panels of elegant fabrics to be slid across a window wall at will and to stack at the sides—a sophisticated version of the shoji screen. Now, SOM has refined that system even further for Armstrong Cork Company's Engineering Building (right), in Lancaster, Pennsylvania. There, sliding panels of 20-gage steel transparent sunshade are hung from tracks in the return-air grille and run in tracks above the radiant-heating system. The panels stack as one 2-ft-wide panel against the mullions. The question remaining to be answered concerns the amount of cleaning the indestructible panels will require because of their location in the heating system.

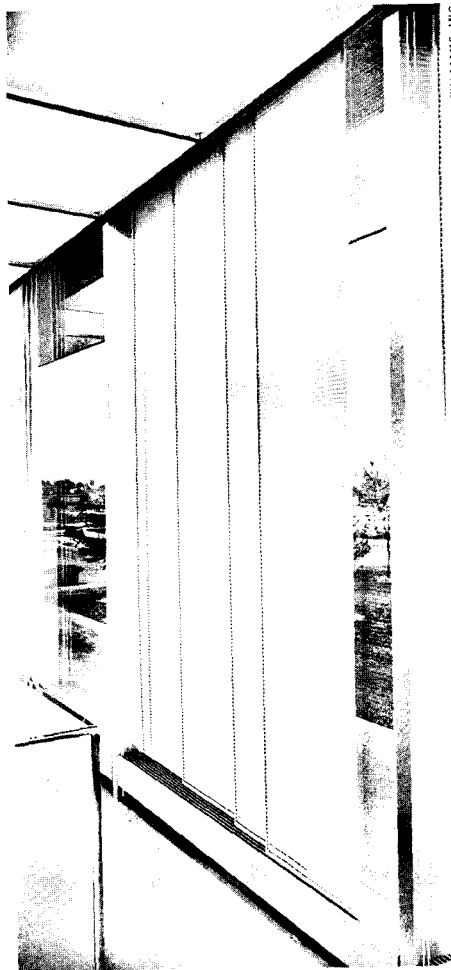


PHOTO: LAWRENCE WILLIAMS INC



PHOTO: LAWRENCE WILLIAMS INC

In the very middle area of possible window coverings—within the window itself—is the horizontally pivoted Amelco window, which is double-glazed and has an operable venetian blind in the 2-in. space between the panes. Used by Kelly & Gruzen at New York's Chatham Towers apartments (FEBRUARY 1966 P/A), the window insulates against heat and sound and provides great variations of light and view (right). It has been found that the higher initial costs are offset by savings in maintenance and air conditioning. No additional window covering should be felt necessary, but if more softness is desired, probably some sort of window shade that pulls up from the floor would be the most facile to install. A future development in this middle area will be the much discussed tinted glass that changes its color to compensate for changes of natural light.

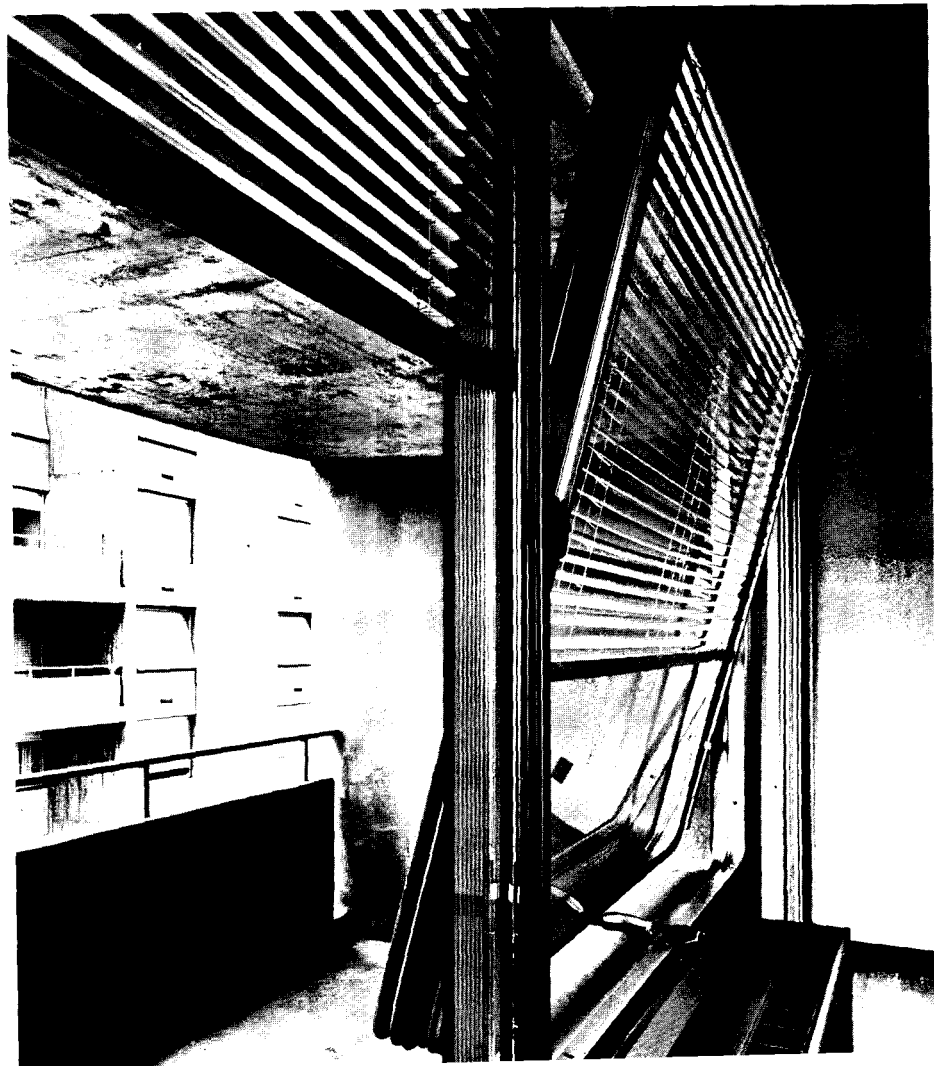


PHOTO: LOUIS REENS



Another window treatment in the "middle ground" is a development that has never been completely explored: a decorative silk-screening between two laminated sheets of glass. Dolores Engle of George Nelson & Company used such a sandwich of Monsanto glass as a partition at the Georgia Center for Continuing Education several years ago (left). The technique might be adapted for window use in areas where privacy and shading are not necessary, but its seemingly permanent and immutable character would make some additional development desirable. "In a closer design," Dolores Engle says, "and with more color than the blue we used, it might diffuse the light as any kind of sheer material could—and it would eliminate that maintenance cost."

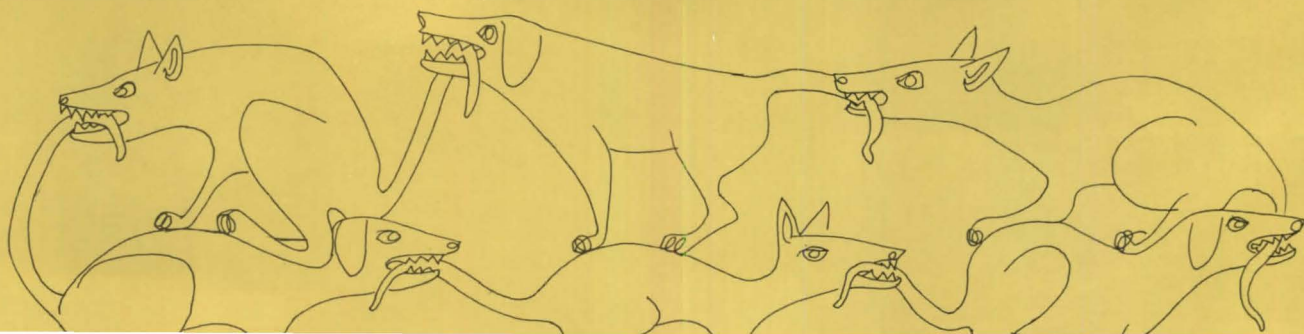
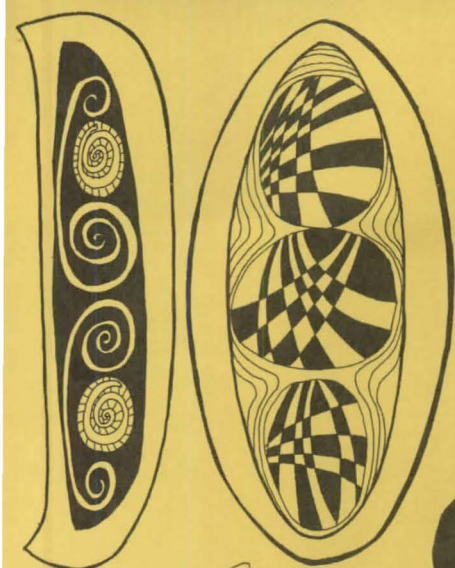
Barring the final refinement of photochromic, variable transparency glass, the window treatment by Skidmore, Owings & Merrill/Chicago for the classrooms of the University of Illinois' Chicago Circle Campus (facing page) is the most economical solution so far devised. The parameters Walter Netsch outlined were, first, to eliminate installation and maintenance costs of blinds and other coverings and, second, to provide only so much glass opening as would make air conditioning economical. In order to permit audio-visual projection in classrooms without blinds, the glass had to be dark, yet the windows also had to admit sufficient daylight so that occupants could see without artificial light. The resulting walls have 24 per cent glass in relation to solid. Since, for projection, the darkest band is needed at a height between 28 in. and 6 ft., the glass is tinted differently: The middle vertical slot of glass has a 2 per cent tint of brown-gray, whereas the top and bottom triangular panes have an 11 per cent tint. The configuration of the concrete wall panels, besides allowing for more light across the ceiling and floor, also helps to bounce reflected light into the classrooms. In addition, the lower triangles serve occasionally as intakes for the a.c. units. Here is minimal design at its most multiple performance.

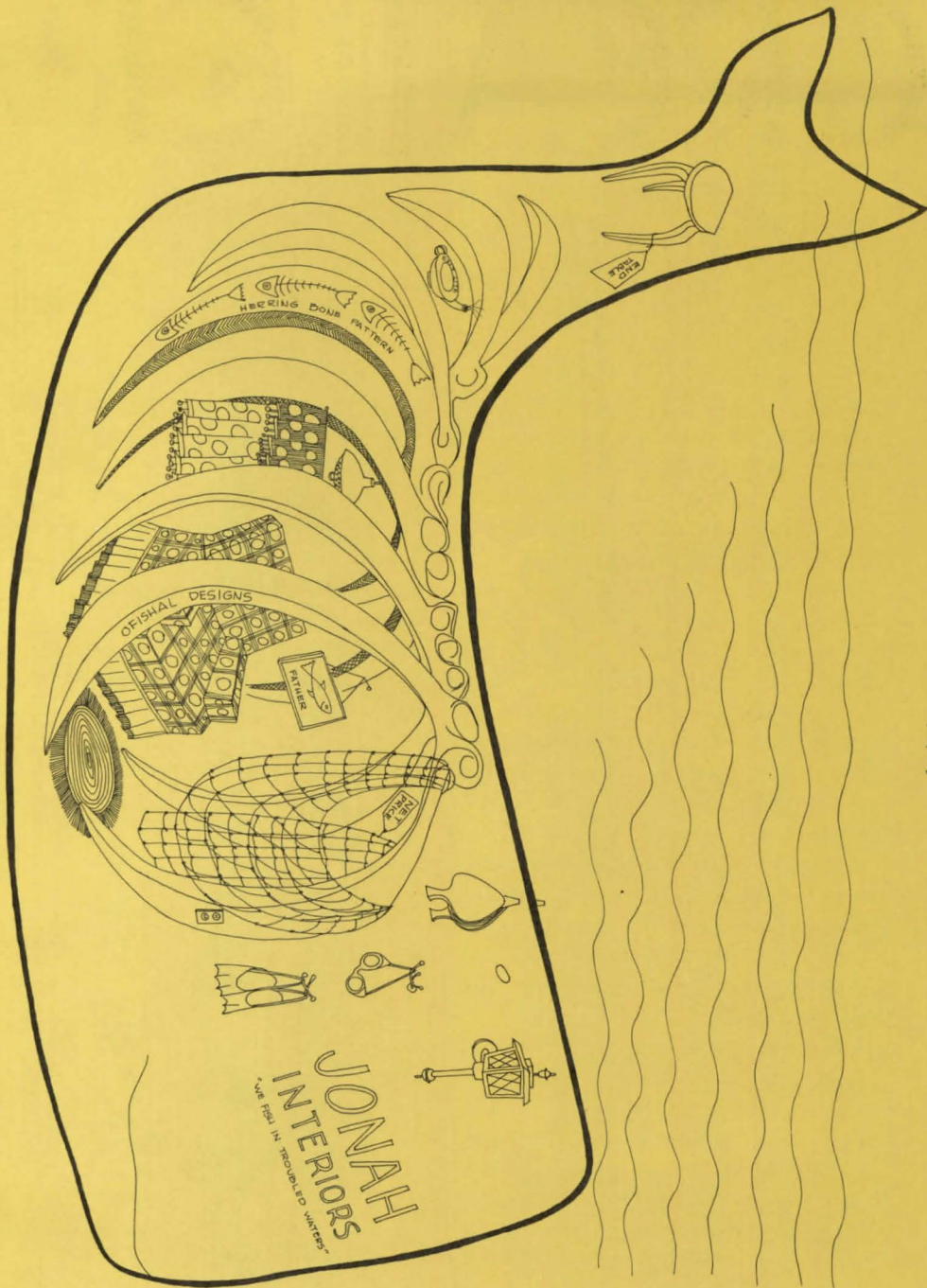


TRUTH & BEAUTY TASTE & FASHION MAKE CENTS?

Historically, it has proven socially axiomatic that the importance society accords a profession is gaged by the monetary remuneration accorded its practitioners. Judged in the light of this truism, the extreme flexibility of the fee structure in the contemporary interior design profession would seem to indicate a deep-seated social uncertainty.

Today's interior designer finds himself unsure of his worth or the value of his professional accomplishments, since he is compelled to market intangibles—truth and beauty, taste and fashion—in competition with mundane commodities whose values can be determined by weight and measure, price and profit.

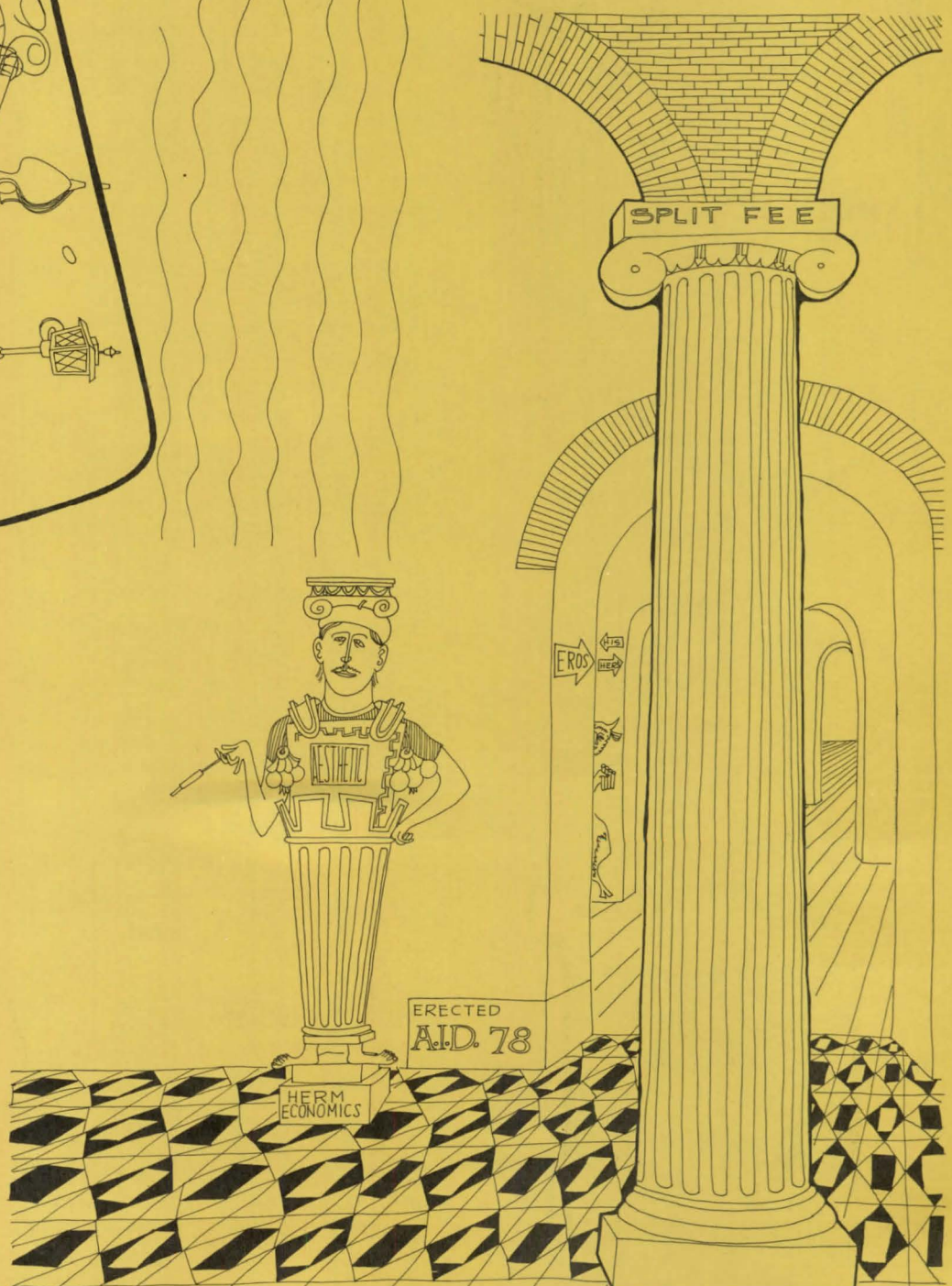




For our next historic example of the social status of the interior designer, we proceed to Pompeii. The greatest proponents of the virtues of truth and beauty, taste and fashion in the ancient world were those prosperous and superb house designers of that ancient city. Their wall decorations represented superbly the merging of client differences, although at times displaying certain excesses in conception. Although the house designer of Pompeii managed to keep his end up, innate modesty prevented him from signing his work. However, here in the ancient world, where the interior designer first succeeded in making ends meet, the fate of his work was to be covered up with ash.

The interior designer has not always existed in such equivocation; in fact, the opposite is true. In past ages, the practice of his profession has been marked by an aggressive assurance, undreamed of in our contemporary society. Perhaps a short historical synopsis of the interior designer's past role may help shed some light on the development of his present equivocal status.

We begin with the earliest known interior designer, Jonah, the Judean who undertook a novel interior design project. He decorated the interior of a whale. He might say that fee was not in question: He was thrown into the job. The whale, however, proved to be one of the first revolting clients. He found that Jonah's design of truth and beauty was out of fashion, and he distinctly disagreed with Jonah's taste. Before Jonah could blubber, the whale threw up the entire business.

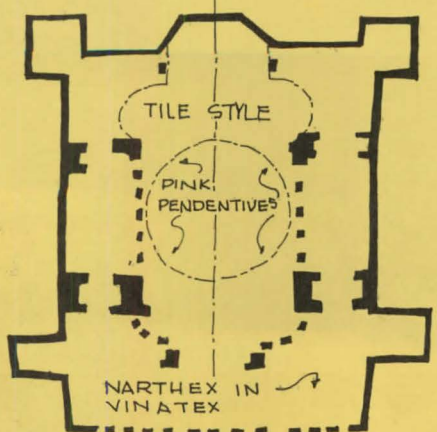


THE NEXT GREAT ERA

OF INTERIOR DESIGN



GOLD IS CHEAPER

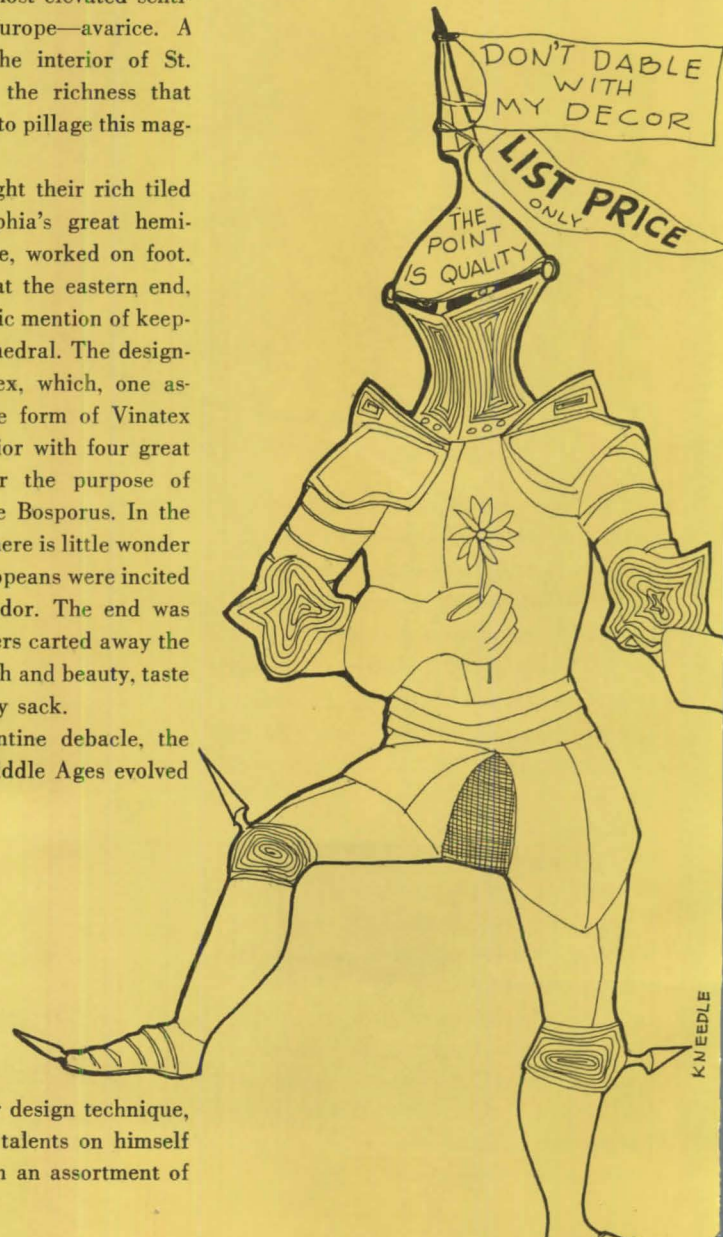


The next great era of interior design to emerge has its paradigm in one magnificent building—St. Sophia, the proud glory of Constantinople. This building represents the ultimate achievement of interior design of the period, and motivated the destruction of the Byzantine Empire. For centuries, Greek fire had preserved the Greek cross, instilling in the heathen a burning desire to leave Christianity alone. However, this bulwark of Christianity was sacked by European Christians on their way to fight the infidel. This tragedy can be traced solely to the work of the interior designers of St. Sophia. Its rich interior motivated one of the most elevated sentiments of medieval Europe—avarice. A brief description of the interior of St. Sophia will illustrate the richness that tempted the Crusaders to pillage this magnificent building.

The designers wrought their rich tiled decoration on St. Sophia's great hemicycles; some, of course, worked on foot. They placed an apse at the eastern end, which is the first historic mention of keeping a monkey in a cathedral. The designers employed a narthex, which, one assumes, was a primitive form of Vinatex and provided the interior with four great piers, undoubtedly for the purpose of docking hoats from the Bosphorus. In the face of this opulence, there is little wonder that the barbarian Europeans were incited to confiscate the splendor. The end was tragedy, as the Crusaders carted away the ideals of Byzantine truth and beauty, taste and fashion, in a gunny sack.

Following the Byzantine debacle, the noble knight of the Middle Ages evolved

ductwork. Although he was occasionally cut to the quick, he was in reality dedicatedly wrapped up in his work. However, the impact of gunpowder deadened his ardor. The explosive situation frequently reduced knightly décor to a feeless frazzle. While in many instances the interior designer's search for truth and beauty, taste and fashion was cut short, on the whole, the age of chivalry went out with a bang.

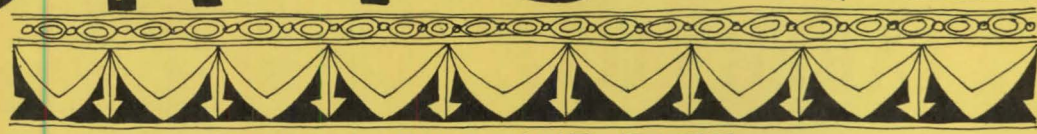


a do-it-yourself interior design technique, wherein he vented his talents on himself by encasing his body in an assortment of

K NEEDLE

THE FORTUNE

of INTERIOR DESIGN



FRESH EGG AND DART

The fortune of interior design that followed the Renaissance can be summed up in two words: bad mannerism. The turning point was due almost single-handedly to the protean effort of one man, a man whose complete negation of architectural principles necessitated that his genius be confined to interiors, where the fruits of his talent would be exposed to as few admirers as possible, thus formulating the principles of contemporary interior design. By placing the columns on brackets in the Biblioteca Laurenziana, he engendered a structural uneasiness and deep-rooted psychic doubt within the architectural profession from which it has never recovered.

Michelangelo's designs undoubtedly reflected the contradiction inherent in the profession of his clients, the Medici. They were merchant princes, an obvious contradiction in terms.

Our foregoing capsulation of history has shown that each era of interior design contained within itself the seeds of its own destruction. So it is today, for the contemporary fee structure of the interior designer signals the end of that age of design so nobly inaugurated by Michelangelo.

With the passing of the Medici, merchant princes forsook nobility and concentrated on merchandising. Interior design became priceless within the extremes that adjective implies—the implication being, value beyond price or worthless. It is at this juncture that we find the present state of the profession.

We are left then with the only possible solution of the contemporary dilemma bequeathed us. If the interior designer, shackled as he is to history, is to alter the course of his inexorable fate, he must fix contemporary values to the cornerstones of the designer's art. Truth must be sold by the pound, beauty by the look, taste by the ounce, and fashion by the minute. In the contemporary idiom, the profession would survive, for its value would be a matter of common cents.

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THE MORMON TABERNACLE

A study discloses surprising structural singularities of one of America's most unusual examples of religious architecture.

BY CARL W. CONDIT

Carl Condit is Professor of Art and the History of Science at Northwestern University. He is currently doing research in the history of building technology and civil engineering on a Smithsonian Institution Associateship.

Although Salt Lake City's Mormon Tabernacle, with its enormous turtleback roof, is a celebrated tourist attraction, surprisingly little is known about the structure. Built a century ago (1863-1868), it is the largest work of timber roof framing surviving, and the only one in which lattice trusses were built as arch ribs.

Despite its mammoth size, the structure was built completely by hand in an area isolated from centers of building activity and railroad lines. Not only was it hand built, but all its materials were hand-fashioned: Salt Lake City had no shops, foundries, or mills.

Early Mormon Architecture

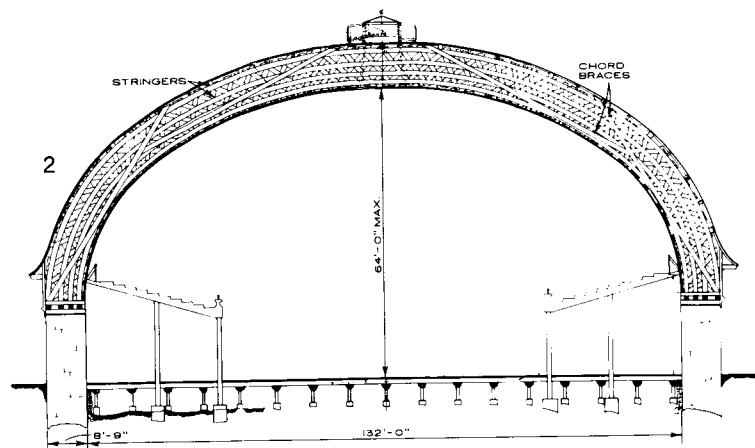
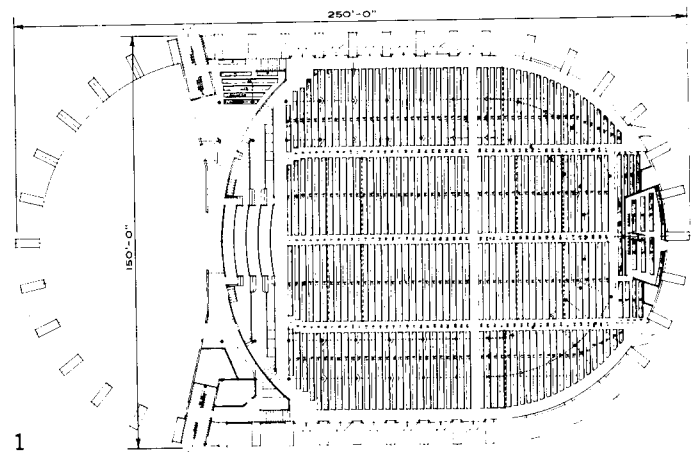
When the Mormons first settled in what was to be Salt Lake City, Utah, in 1847, they constructed "boweries," primitive structures of worship that were actually crude frameworks of trunks supporting interlaced dirt-covered boughs. The boweries were soon superseded by one "Old Tabernacle," a barnlike enclosure with a gable roof supported by elliptical arched trusses. The architect, Truman O. Angell, was actually a local carpenter who nevertheless demonstrated rare engineering skill in building each truss strong enough to carry a load of 8 to 10 tons beyond the dead load of the roof. However, by 1860, this building proved to be too small, and Brigham Young, organizer and leader of the Mormon settlement in Salt Lake City, urged construction of a larger church.

Architects of the Tabernacle

The plans of the new Tabernacle were prepared in 1862-1863; construction was completed by 1868. The idea of a domed and vaulted roof enclosing the whole interior area without intermediate supports is attributed to Brigham Young himself, but

it required a team of three designers to translate the concept into working plans. William H. Folsom was the architect in charge of the total project; Truman O. Angell, official architect of the Latter-Day Saints Church, planned the interior, and Henry Grow designed the roof structure and supervised its construction.

Grow had previously built bridges in eastern Pennsylvania and had secured the rights to the Remington patent for lattice-truss bridges (the original form had been patented by Ithiel Town in 1820). After joining the Mormon Church of the Latter-Day Saints, he migrated to Utah where his lattice-truss highway bridges over the Weber and Jordan Rivers so impressed Brigham Young that he requested Grow to build the Tabernacle roof. Nevertheless, the finished Tabernacle roof far exceeded in its imaginative quality Grow's earlier efforts.

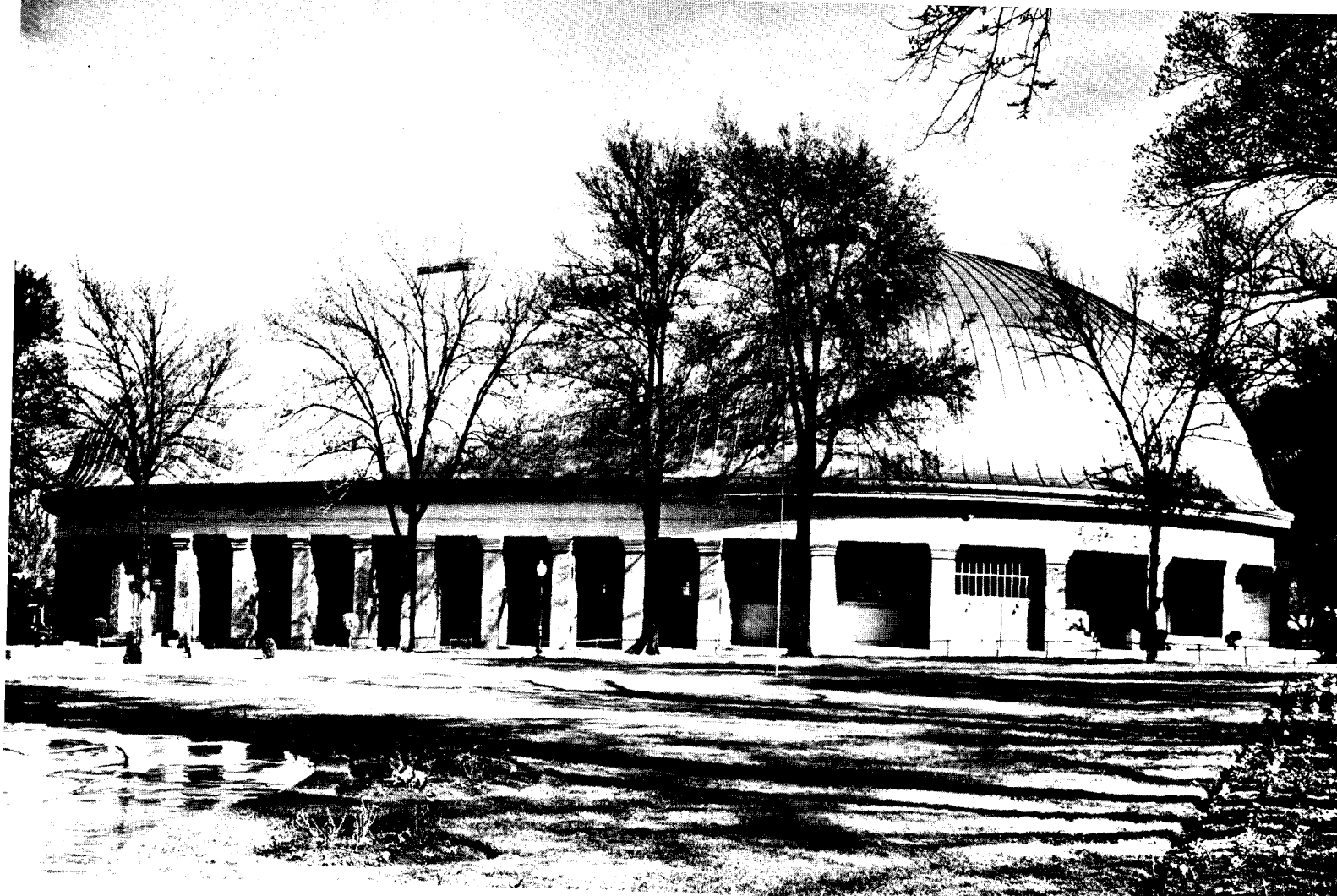


Masonry Columns Support Timber Arches

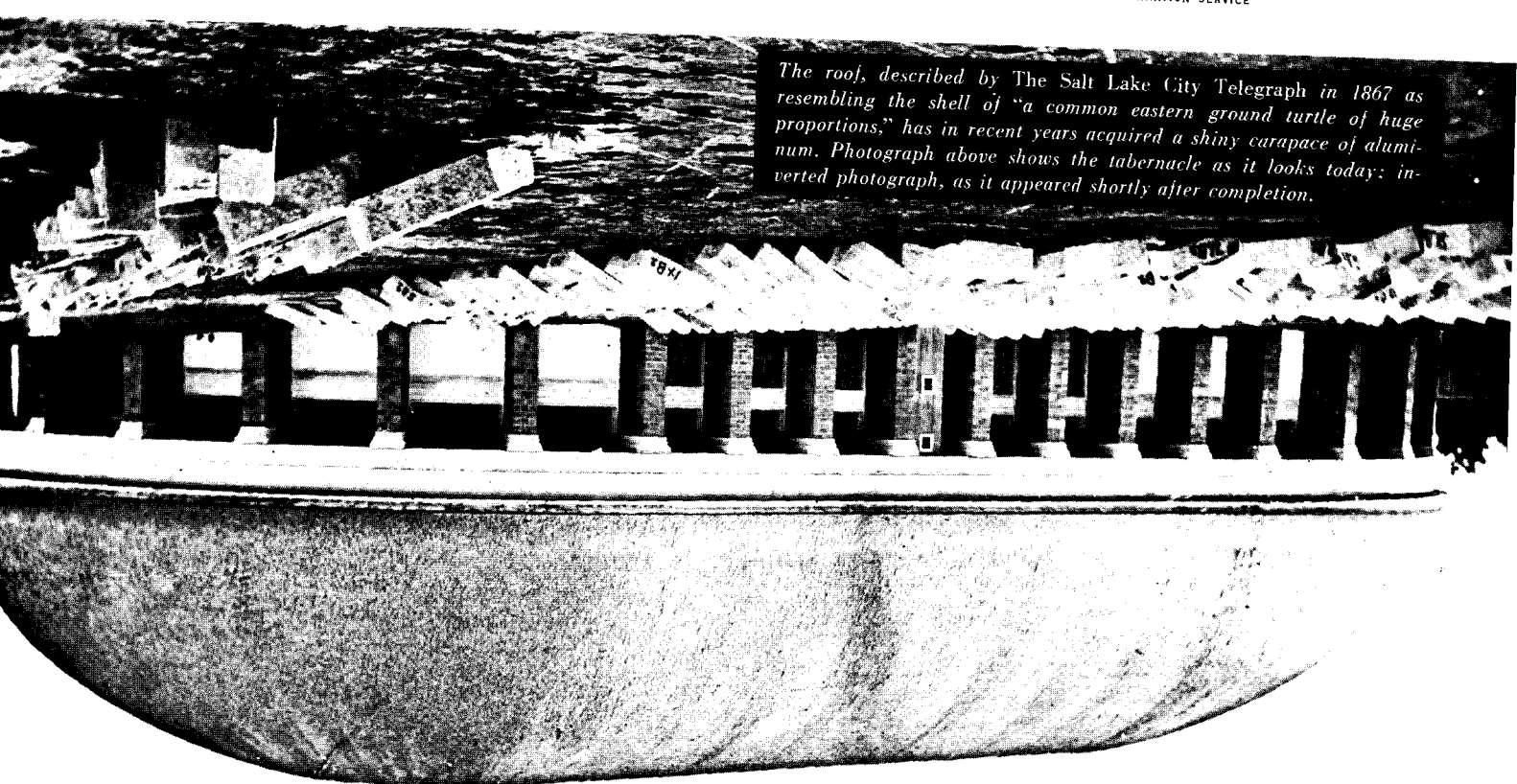
In plan, the 250' x 150' building comprises a rectangle with two semicircular ends (1). Forty-four masonry columns, each 3-ft wide by 8'-9" deep, support the dome-type roof. These 8'-9" perimeter columns reduce the floor plan to 232' x 132'.

Nine lattice arch ribs, spaced 12 ft apart, span 132 ft between columns at the center section of the hall. Each arch rib rises 44 ft. Small ribs springing from columns spaced around the semicircular ends, span to the midpoint of the first and ninth main arch.

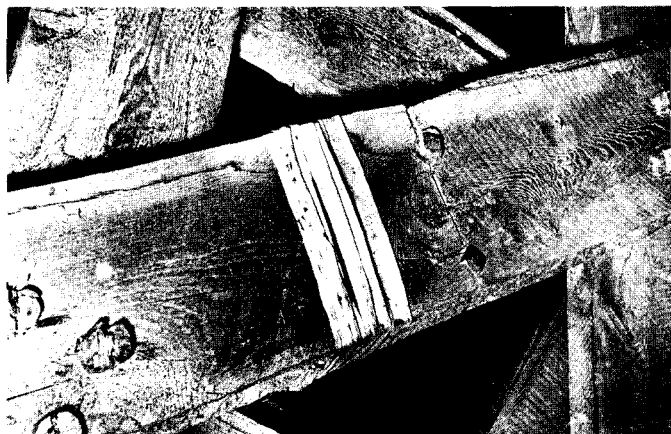
Each arch rib consists of X-braced web members connected on each side to four parallel stringers bent to the profile of the arch ribs (2). The pairs of stringers tie the top and bottom



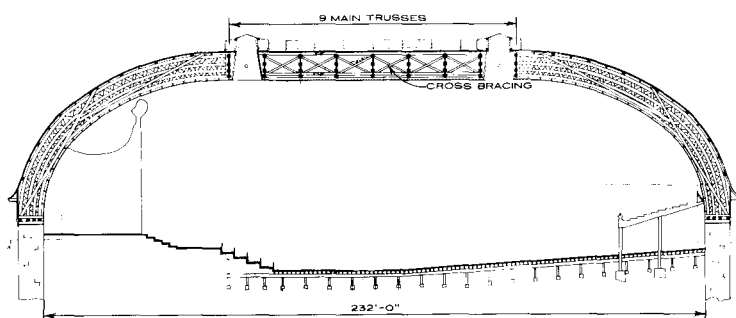
PHOTOS: COURTESY, LATTER-DAY SAINTS CHURCH INFORMATION SERVICE



The roof, described by The Salt Lake City Telegraph in 1867 as resembling the shell of "a common eastern ground turtle of huge proportions," has in recent years acquired a shiny carapace of aluminum. Photograph above shows the tabernacle as it looks today; inverted photograph, as it appeared shortly after completion.



3



ends of the web diagonals, and the other two pairs brace the 9-ft-deep ribs at third points. For mammoth spans, the designer called for equally massive members. The stringers are all 2½" x 12" timbers.

One of a Kind

None of the Town-patented trusses have these intermediate stringers, so it seems likely that they were added either by Remington or Grow. The truss depth is 9 ft throughout, 3 in. more than the pier depth because the web members extend beyond the inner and outer surfaces of the edge ribs, fixing the corresponding surfaces of the pier.

The trusses spring from a three-layered grid of timbers set on top of the pier. This grid is protected on the exposed side by fascia that covers the gap between the soffit of the roof overhang and the top of the masonry. The web members are connected to the rib stringers with wooden dowels. Four holes were drilled through the timbers at each joint, and dowels driven in until 2 in. were left exposed. The dowel ends were then split, and wedges driven into seat the dowel tightly.

The lapped joints in the ribs are staggered and made fast by hand-wrought bolts. When the timber split, the carpenters wrapped the splits in green rawhide that pulled tight as it dried (the original rawhide is still in place; 3). The rib timbers appear to have been bent to conform to the curve of the arch before the truss was fabricated, because the grain of the wood does not "run out" but follows the curve of the timber.

Bracing System

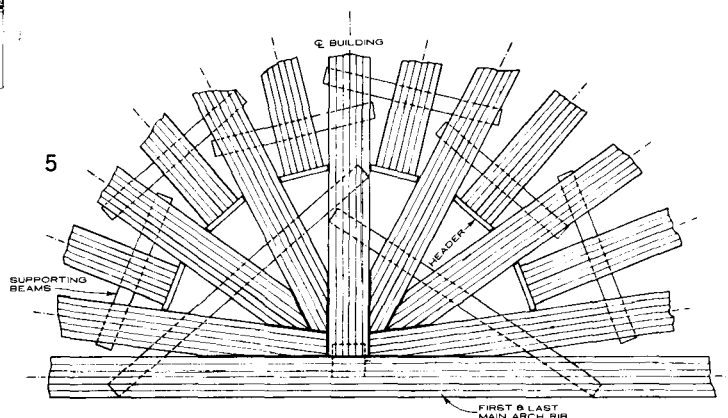
The most complex part of the Tabernacle structure is its bracing system. The primary elements are cross-braced timbers between the nine main trusses (4). A secondary system includes purlins between the top chords of adjacent trusses. Additional bracing is provided by cross braces between the half arches at each end

of the building. Finally, struts were laid as chords over the rib stringers of the main arches. Supplementary bracing at joints is made up of odds and ends of scrap lumber.

The Arching System

The major problem that confronted Grow was bringing the massive semi-arches of the domed ends to a common joint at the crown of the end transverse arches. Because of the great depth and breadth of the arches, it was obviously impossible to bring the radial system to a true common joint. Grow's solution was an effective piece of homely ingenuity (5).

The center half-arch at each end abuts along its full depth and width against the crown of the last transverse arch, the two half-arches thus forming two quarter-ellipses. Three alternate half-arches in each quarter are wedge-shaped at the ends to abut against this joint. The remaining three arches in the quarter are brought up as close to the joint as possible without reducing the width of the truss, and the free ends supported on supplementary beams disposed roughly in a triangular and a semicircular pattern. This radial system, bathed in pools of light surrounded by shadows and black depths, renders a rather bizarre architectural effect.



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Structure of the Interior Shell

The plank roof was nailed to purlins spanning between the trusses. The planking was covered with a protective coating of lime, lamp black, tallow, and salt, the proportions being 5 lb of the solid materials to 40 gal of liquid lime. The shingles and the aluminum sheathing that later replaced them were laid directly on the planking.

The ceiling is plaster embedded with cattle hair, which was laid on lath nailed to rafters fixed in turn to little wooden hangers suspended below the lowermost struts, braces, and ribs of the framing system. The underside of the rafters was cut to conform to the profile of the vault curve.

There has been very little cracking of the plaster, and since the double shell of the roof and ceiling provides ideal protection for the structural system, there has been no deterioration of the framing members.

Structure of the Floor

The floor structure of the Tabernacle is a relatively simple column-and-girder system. The butted-plank floor is nailed directly to joists spanning between log beams, the upper and lower surfaces of which are cut flat to provide adequate bearing for the flooring and posts. Since the latter are carried to separate

sandstone footings, the floor frame is independent of the primary structure. The rise of the floor, calculated mainly for unobstructed sight-lines, is 16 ft. The balcony is an elongated horseshoe in shape. Sloping balcony girders are carried on columns set on independent granite footings. Beams span between the girders to support the tiered floor of the balcony. All wood in the balcony, flooring, roofing, and structural frame is local pine.

Statical Action

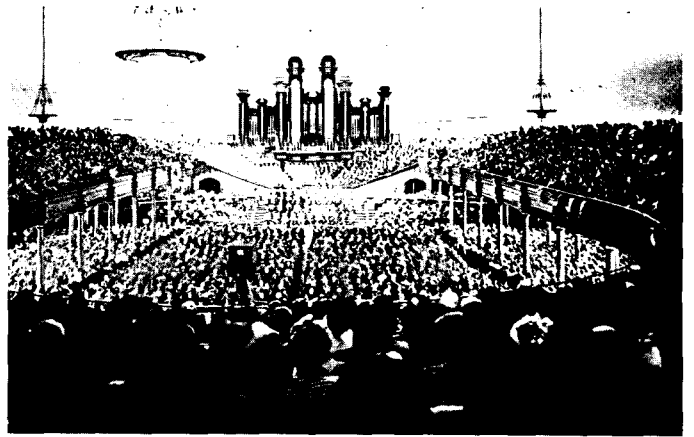
An interesting problem concerning the Tabernacle is the difficulty in assessing the statical action of this huge awkward assemblage of ribs, planking, and piers. The whole system is radically indeterminate, so that it is impossible to calculate exactly the arch thrust and its stresses. Nor is it possible to determine the distribution of forces among the four stringers of the arched ribs. Perhaps, as with bridges, the lower chord carries the full compressive load, with the truss proper acting as a stiffening element. The other three pairs of stringers serve only to brace the web members.

Structural details suggest that the designers held a primitive grasp of statical action, though at the same time they had a thorough knowledge of timber building techniques. The piers, which are of rough-cut sandstone blocks laid to course in lime-mortar joints and founded on heavy glacial gravel about 3 ft below basement grade, are horizontal on top rather than inclined normal to the arch thrust, and seem small in proportion to the size of the roof.

The suspicion that Grow may have miscalculated the shape and size of the piers is suggested by diagonal cracks following the joints near the base of several piers. Although the structural integrity of the Tabernacle is not jeopardized, the cracks do indicate that some adjustment in the masonry has occurred as a result of the bending moment of the arch thrust. A new equilibrium was established, and no further displacement appears likely.

Two factors have probably offset the defects in the pier design: The load is distributed over a large number of piers; and the horizontal component of the arch thrust may be absorbed through internal stresses arising from the membrane action of the roof and ceiling. If the compression is confined entirely to the bottom rib of the arch, this theory is unlikely; if part of the compression is distributed through other ribs, however, shell or membrane action may occur.

Since they had no hardware, carpenters connected stringers to diagonal webs with wooden dowels.



Originally designed to hold approximately 8000 people, the subsequent addition of the horseshoe balcony allowed seating for another 2000.

It is commonly thought that this membrane action occurs with the vault webbing of a Gothic cathedral, but in this case, of course, a more intimate connection exists between the rib and the webbing. Whether such membrane action is possible or not, it is evident that part of the thrust is absorbed as tension in the lowermost planks of the roof, in the peripheral beam of the grid system at the springing line, and possibly in the fascia planks. Thus, the tension absorption in the bottom timbers of the roof has most likely prevented the masonry piers and supporting grid from weakening further.

The Construction Process

The masonry of the footings and piers was built up conventionally from low platforms. The huge trusses were fabricated on the ground and erected into position on falsework, like a bridge truss, before being fixed into place at the springing points. Workmen raised the trusses onto the falsework with block-and-tackle operated by teams of horses.

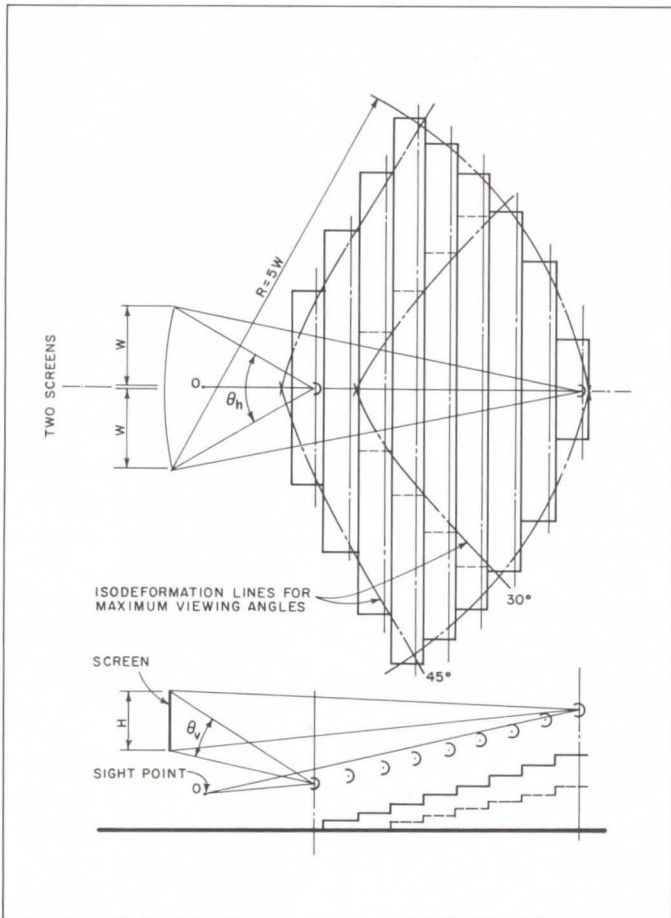
The full transverse arches were erected first, followed by the semi-arches of the domed ends. With the primary structural members in place, the remaining operations followed in order—installation of purlins, planking, and shingles on the outside, lath and plaster on the interior. The maximum number of men on the job at any one time was 205; 70 were engaged in plastering alone during the final weeks of construction.

How It Sounds

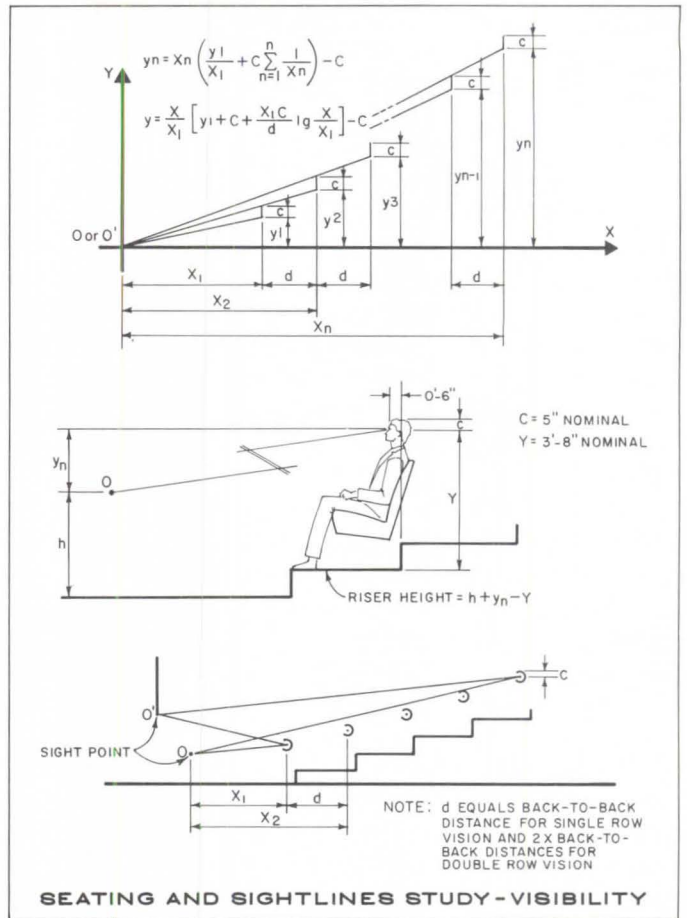
The celebrated acoustical properties of the Tabernacle are a result of both shape and material. The concave ellipsoidal surfaces above the organ and choir blend and hold instrumental and vocal sounds, projecting the reflected waves cleanly throughout the auditorium. The possibility of annoying echoes is further reduced owing to the sound absorbency of the cattle hair embedded in the plaster.

How much of this acoustical excellence is a matter of luck and how much of experience and intuition is difficult to judge today. The structural system is for the most part perfectly functional, revealing an imaginative adaptation of the bridge-builder's art to the requirements of a large public building. The over-all shape, however, seems to have been dictated by the idea of the most convenient form to include the volume, rather than by the search for good acoustical properties. Thus the solution to one problem brought with it the means to solve another—a coincidence that often characterizes the old craft tradition in building.

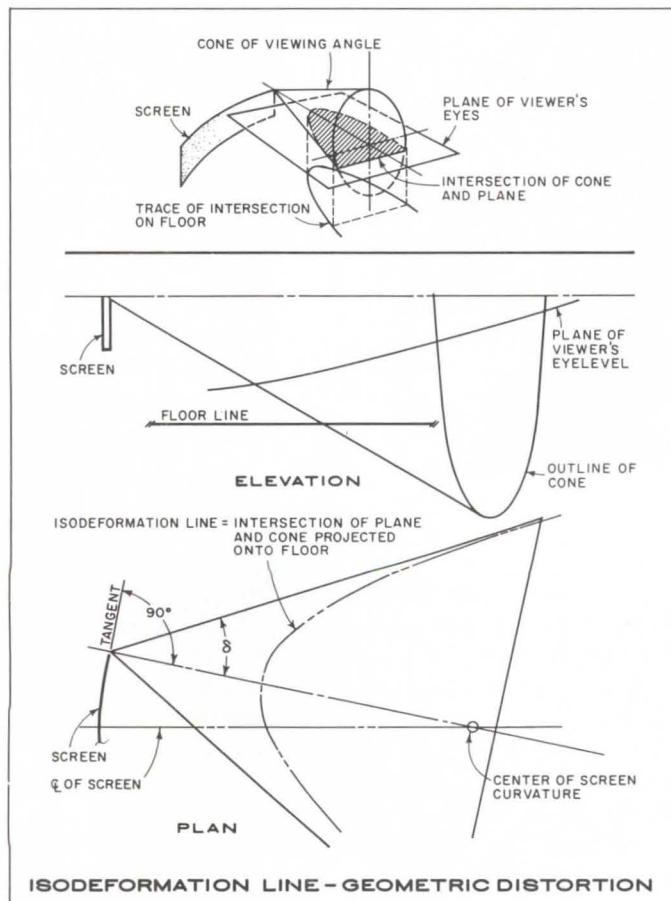
SHADOWS, SCREENS, AND SIGHTLINES



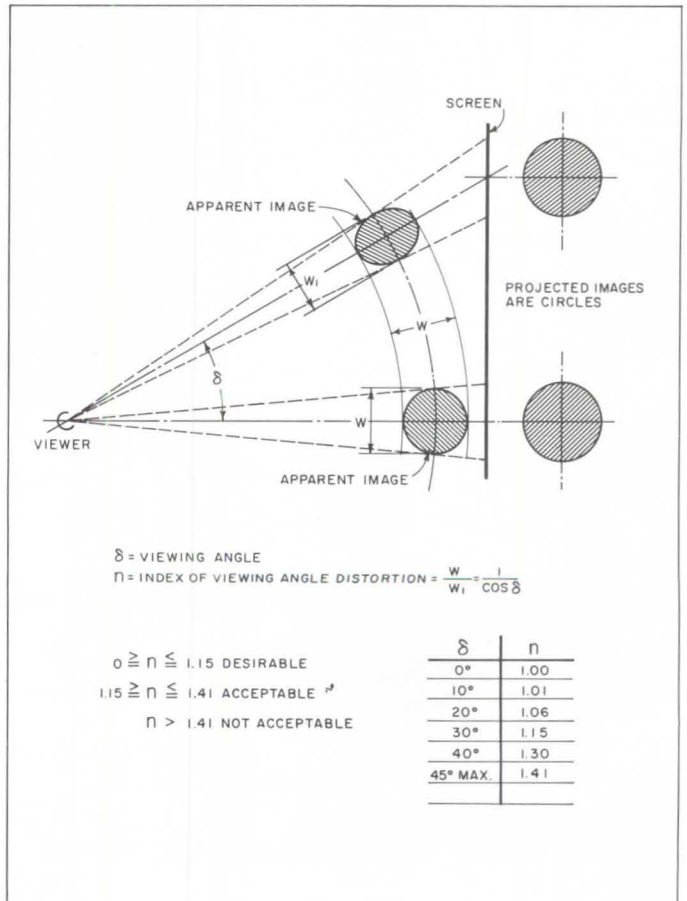
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A guide to designing rooms for screening films and slide presentations.

By William Szabo, an audio-visual engineering consultant of New Rochelle, N. Y.

Although projection and sound equipment varies widely in performance and cost, the basic steps for designing rooms for audio-visual presentations remain constant.

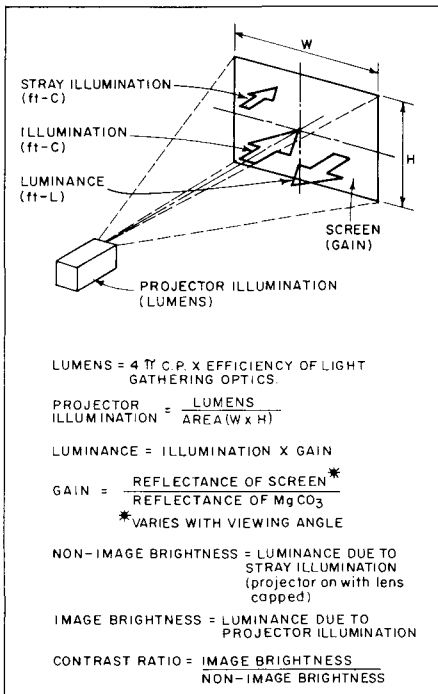
The designer must decide on front or rear projection, determine the size and shape of the screen, establish the brightness relationship between room and screen, insure that the whole audience will see comfortably, and oversee the acoustics, lighting, communications, and traffic.

Front vs. Rear Projection

Image brightness is the major determinant for selecting front or rear projection systems. Three factors have to be considered: the contrast ratio between picture highlights and shadows, the stray ambient light in the room, and the available illumination from the projector.

With these, the designer must also consider the reflection characteristics of a screen for front projection, and the reflections and transmission characteristics of a rear projection screen. The parameters for these conditions are illustrated (5, 6).

By rule of thumb, rear-projection systems are best suited to small rooms with an audience of 25 or less. Front projection is more suited to larger rooms.



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When high ambient light levels are unavoidable, rear projection is usually indicated, since the low reflectance of these screens reduces the nonimage brightness. Also, rear projection is suitable for screens located near the floor.

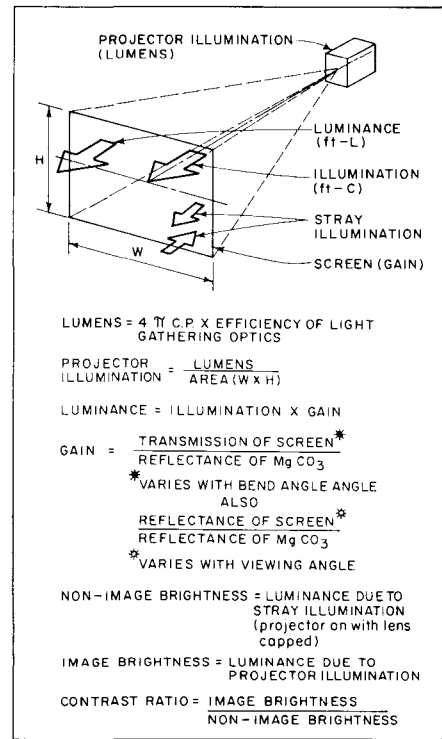
Rear projection is suitable for a space-saving central projection core serving a number of rooms. In this situation, light from the viewing side transilluminates the core and increases the nonimage brightness of adjoining screens. To remedy this requires complicated light baffles that may cancel out the economy of a central core.

Back-to-back equipment rooms for front projection can be used to save space or share equipment. Indeed, wherever possible, front projection should be preferred unless the special requirements of the system dictate rear projection.

Sizing the Screen

The screen size and acceptable viewing area are based on the criteria for legibility, visibility, and geometric distortion of the screened image.

ASA standards recommend the width of a screen should be one-sixth the distance



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to the most distant viewer, to insure that the person furthest from the screen will see a legible image. If this ratio is raised to one-fifth, the designer retains flexibility to fill out the corners of a room without exceeding the recommendation.

To limit the maximum viewing distance, the viewer should not be required to discern details smaller than 1 in. for every

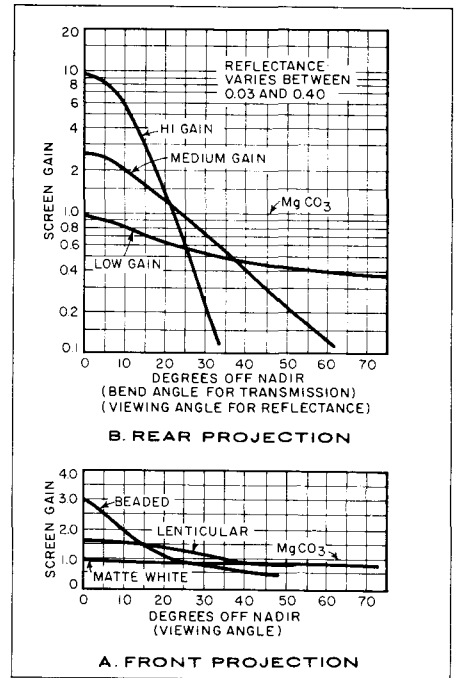
32 ft of viewing distance.

Selecting the Sightlines

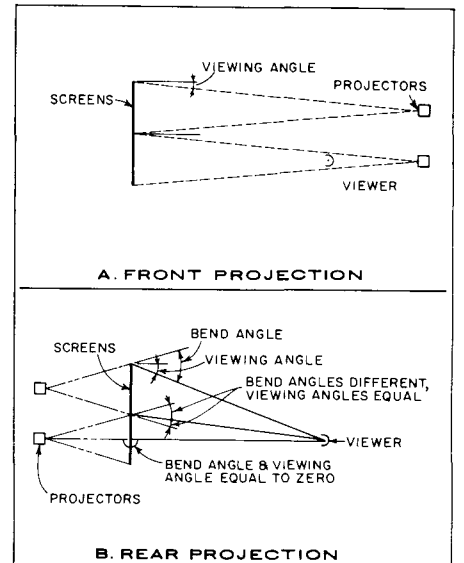
With screen size and maximum viewing distance fixed, the next step is to locate the seats at the ends of the rows close enough to the center to prevent the occupants seeing a distorted screen image.

A plan and elevation of a room seating 163 people is shown (1). Sightlines are designed for viewing two adjacent screens and table in front of them. For the screen image, a viewer can look over the person in front. This is called single-row vision. For the table, two-row vision is allowable; this enables a viewer to see between the persons immediately in front, and then look over the heads in the next row (2).

The maximum allowable apparent distortion of a projected image occurs when



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the vertical viewing angle is 45° . The amount of distortion relative to the viewing angle is illustrated (4).

The ocular subtense θ_h and θ_v (1) should not exceed 90° and 60° respectively. And, for comfortable viewing, the sightline from the front row to the center of the screen should not be more than 15° above the horizontal.

The influence of these criteria on the sightlines and iso-deformation lines (3) usually requires refining the analysis, and often will suggest that a slightly cylindrical screen will yield a larger acceptable viewing area.

Controlling Light

The projector's light source is usually selected to suit the largest image to be projected. This light cannot be varied except within very narrow limits; thus, to control the image contrast ratio, the designer must vary the ambient light, or the nonimage brightness.

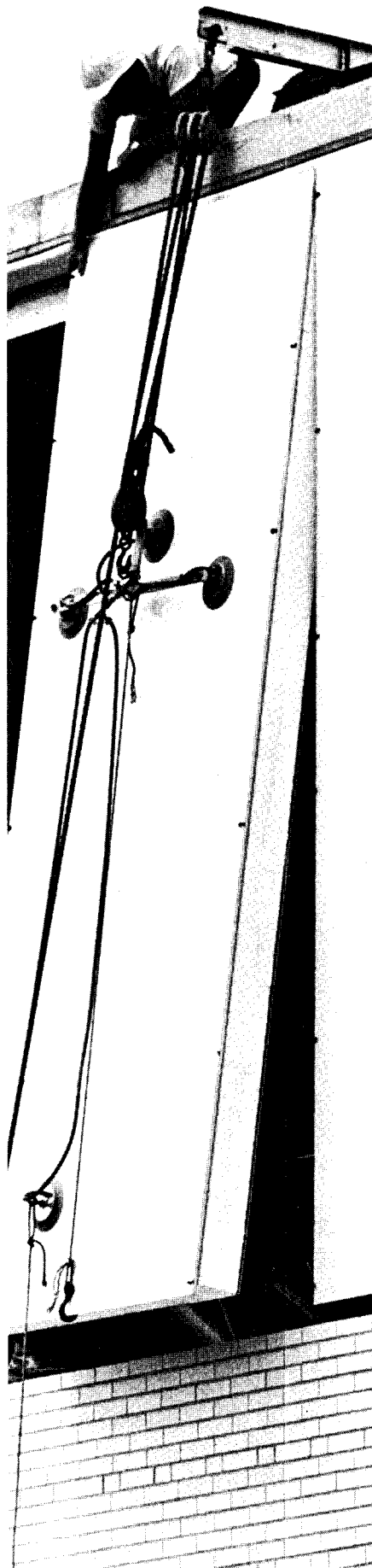
With screens that are not completely diffuse—i.e., matte white—the screen brightness, or luminance, will vary as a function of the viewing angle for front projection, or bend angle for rear projection (8).

This variation in picture brightness should not exceed 3:1. A minimum luminance of 5-ft-Lambert must be provided for clear color perception in the type of installations discussed in this article.

Teaming the Specialists

In addition to designing the physical requirements for a presentation room, the audio-visual engineer also collaborates with other specialists. The audio-visual designer can handle projects that require simple programmed controls such as two slide projectors operated from a single console at a lecture desk, but he will work with others on the more sophisticated systems that may require punched tape readers to control image, sound, and lighting, or even be connected to a computer to show data on the screen.

Visual presentation systems are often installed in rooms doubling in purpose as conference rooms or general lecture halls. But some systems are incorporated in specialized facilities for presenting information. To help decide on the best facilities, an architect should call in a visual presentation systems engineer during early discussion stages of a project so that the best advantage can be taken of space, light, and acoustics.



UPDATING INDUSTRIAL WALLS

A what, where, and how account of aluminum industrial curtain walls.

Aluminum industrial walls, due to their attractive appearance and functional efficiency, are often applied to nonindustrial buildings. They are a natural for such structures as hangars and service buildings; and in the case of windowless wall areas, as at movie theaters, shopping centers, department stores, and airline terminals, they provided, in addition, attractive color and texture.

Some of the most interesting and architecturally successful uses have been made in cases where the wall panels were combined with masonry materials, as on a Chrysler plant in Detroit, and the Pepsi-Cola bottling plant at Quincy, Ill.

These industrial panels are often combined with glazed curtain wall systems, as at the Alcoa Process Development Laboratory Building near New Kensington, Pa.

What They Are

The term industrial wall is a technical description, applying to the wall system itself rather than a designation of the type of building on which it is used. In the

terminology of the metal wall industry, there are three types of metal curtain wall: custom, commercial, and industrial.

The first two are generally built with preassembled framed units and provide substantial amounts of glazing. Industrial walls are defined as those that "consist essentially of preformed metal sheets in stock patterns and sizes."

Industrial metal walls are of two basic types: the single-sheet uninsulated type and the double-faced insulated, or sandwich type. The latter is of most interest architecturally, and it is in this type that the most important design improvements and refinements have been made.

These insulated panels may be either field assembled or preassembled at a factory. With preassembled panels, a contractor installs plank or panel units that form a completed wall, but with field assembly, workmen separately install the interior surface sheets, insulation, and exterior sheets.

Gaskets Seal Panels Faster

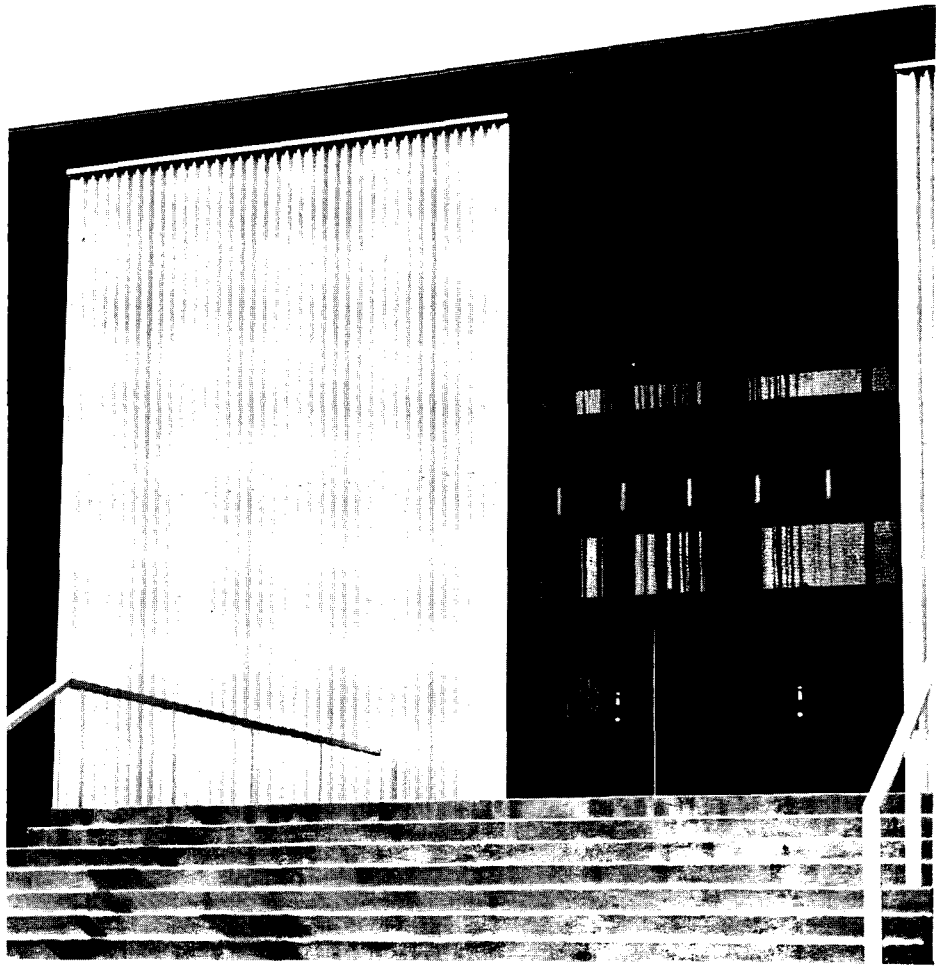
In recent years, the metal wall industry developed some interesting new types and configurations of panels. Manufacturers improved the design of preassembled insulated units to both increase thermal insulating values and simplify installation.

One of these newer designs features tongue-and-groove edge joints, which are self-sealing by means of a built-in vinyl gasket that eliminates the need for caulking. This is a structural panel, which is normally supported only at its ends. It is capable of carrying a 30-psf wind load on spans of 12 ft or more, with a maximum deflection of less than 1/180 of the span.

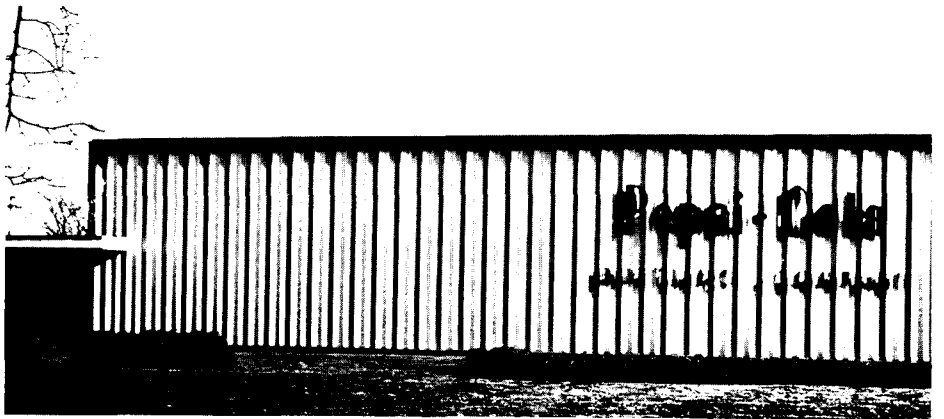
Manufacturers also are developing structural sandwich panels. One panel, Alcoa's Alply, consists of aluminum sheets bonded to a urethane foam core. It is available in 60-in. widths, which compares well with the usual 12-in.-wide mechanically assembled panels.

The flat facing sheet of aluminum, either smooth or patterned, may be bonded directly to the foam core, or, to improve dent resistance, may be backed up with an intermediate, rigid, nonmetallic sheet material. These panels are available in thickness ranging from 1 in. to 8 in., with corresponding U values from .22 to as low as .03. The thicker panels are particularly suitable for building cold storage plants, where a high insulating value is mandatory.

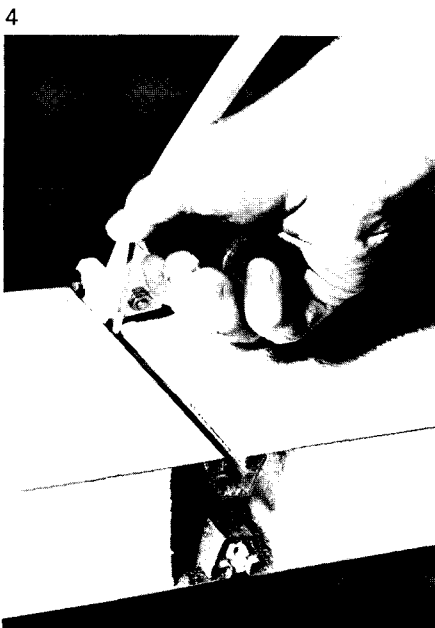
Several jointing systems are offered, the



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Contractor installed 5' x 15' panel in three minutes at Three Rivers Storage Co., Pittsburgh (1). Aluminum and plastic sandwich panels with anodized finish enclose Alcoa Process Laboratories Building, Pittsburgh (2). Porcelain-enamel finish on aluminum sheets, clad Pepsi-Cola plant in Quincy, Ill. (3). Extruded neoprene strips lock into aluminum extrusions to form weathertight joint between aluminum and polystyrene panels (4).

most ingenious being the Alcoa-developed "Snug Seam" system, which uses a neoprene "zipper" insert gasket installed with a special tool. If accented joints are preferred to inconspicuous vertical joints, several types of filler-strip panels with projecting fins are available as mullions.

Spring Panels Into Mullions

To improve the appearance of industrial walls, manufacturers offer facing sheets of new designs for field-assembled insulated walls. Many of them have bolder profiles, larger in scale than the older, standard patterns. Such innovations have undoubtedly been prompted by aesthetic rather than functional reasons, and serve to increase the design versatility of industrial wall systems.

One of the newer facing systems, the H. H. Robertson Company's "Curv-Line" system, uses flat facing sheets with a variety of optional finishes. When installed, these sheets are sprung into a shallow fluted configuration, and secured between roll-formed mullions spaced 18 in. apart.

Joints at the mullions are concealed with snap-on extruded aluminum cover strips, which dispense with sealants and exposed fasteners. Expansion and contraction due to thermal effects offer no problems, and the curved sheets eliminate "oil-canning." Standard liner panels, insulation, and subgirts are used with these facing sheets.

Three Ways to Color

Industrial metal walls need no longer be a monotonous, natural metal color; a wide range of colors is now available.

Three color processes are used: organic (baked enamel) coatings, laminated plastic film, and porcelain enamel. The organic coatings, being the least expensive yet remarkably durable, are by far the most commonly used. Film coatings and porcelain enamel both have their advantages, and are extensively used where the properties they offer are essential.

The organic coatings include some of the newest paint developments, some of which are said to exceed even automobile finishes in quality and durability. Many of the formulations are proprietary, but in general they include vinyls, alkyds, acrylics, and fluoropolymers.

These coatings may be applied either before or after the sheets are formed. Many manufacturers use precoated coil stock; others prefer to apply the coating

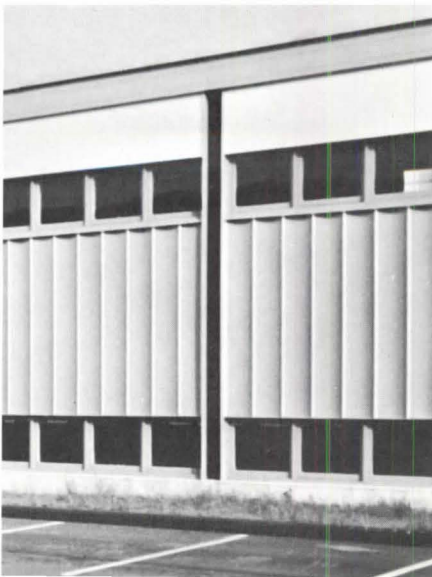
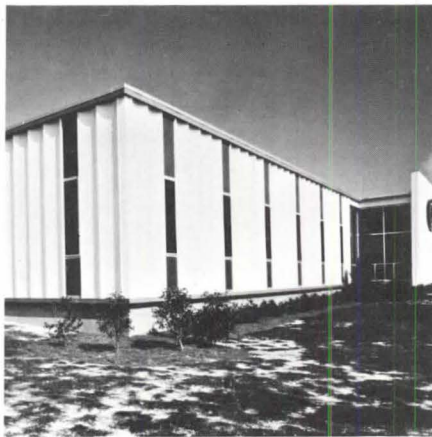
themselves after forming the sheets. In either case, the metal receives careful surface preparation in advance, and after coating, is briefly cured in ovens.

The better coatings have a nominal dry-film thickness of at least 0.8 mil. They are rigorously tested for compliance with exacting standards to insure excellent adhesion, weathering, flexibility, and chemical resistance, and are generally predicted (though not guaranteed) to give 10 years or more of maintenance-free service.

Most laminated film coatings are either polyvinyl-chloride or polyvinyl-fluoride plastics, both of which are supplied in a wide range of colors. They are pre-applied to coil stock, in thickness of from 1 to 10 mils, by licensed pre-coaters.

Although such prefinished stock is generally available, not all wall manufacturers offer film coatings as a standard finish. These films are extremely tough, durable, and weather-resistant, and are easily cleaned with any soap or detergent.

Because porcelain enamel is inorganic, it undoubtedly is the most durable of the three coatings, and also the most expensive. It is always applied to the sheets after forming. Since the process involves ex-



tensive facilities of a special nature, porcelain enamel is offered by only a few wall manufacturers as a standard finish. Recently developed special alloys, as well as improved frits, make porcelain-on-aluminum a superior finish at reasonable cost. The coating consists of an oxide treatment, followed by a single coat of enamel 3 to 7 mils thick, on one side of the sheet only, fired at about 975 F.

New Ways to Fasten

Fastening methods for the single-sheet wall systems are pretty well standardized. Sheet metal screws, either aluminum or stainless steel, with neoprene washers, are used for lap fastenings. Self-tapping screws, or special weldable or tapping studs, secure the sheets to framing members.

Sheets are impaled on either type of stud by use of a rubber hammer, and are secured by a drive-on weathertight aluminum cap.

Various fastening methods, some old, some new, are used on the field-assembled insulated walls. Where sub-girts are used, the common practice is to attach the liner panels to the building frame by plug welds or self-tapping screws. The sub-girts are screwed to the ribs of these panels with sheet metal screws, and then the facing panels are clipped to the sub-girts and die-clinched to the mating panel edges. This provides secure attachment without any exterior exposed fasteners.

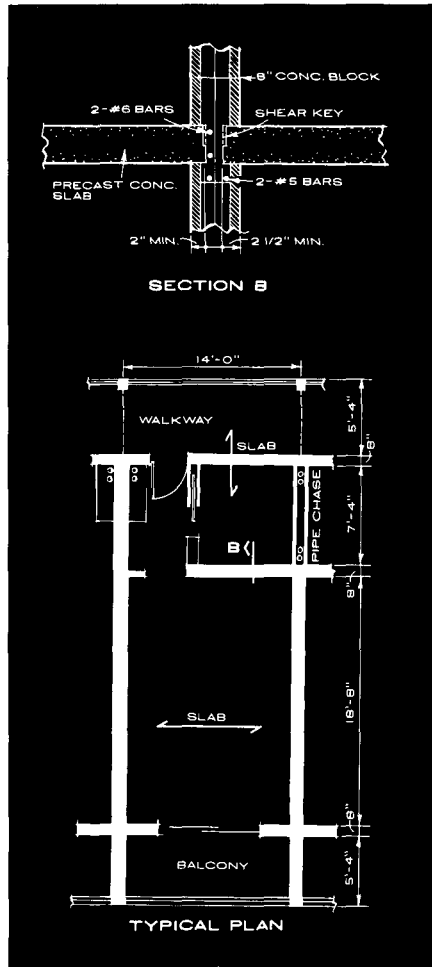
At least one manufacturer, however, has improved on this method, eliminating the die-clinching by using a side-mating face panel joint and a special clip that locks both joining panels to the sub-girt.

Field calking has been largely, if not wholly, eliminated in most of the pre-assembled walls. Joints are sealed by the use of shop-installed vinyl or neoprene gaskets, which also serve to provide a thermal break between inside and outside sheets, thus improving insulation properties.

Many of the facing sheets for field-assembled systems also have gasketed or pre-calked joints, and at least one liner sheet system features a mating joint containing shop-applied calking. This system is claimed to provide a highly efficient vapor barrier and an essentially airtight seal.

Two applications of Curv-Line panels that add shadow texture to walls: Chas. Pfizer & Co., Coraville, Ga. (top); St. John Technical Institute, St. John, N.B., Canada (bottom).

BLOCK WALLS: ONE INCH PER STORY



Transverse, 8-in.-thick concrete-block walls support precast concrete floor slabs.

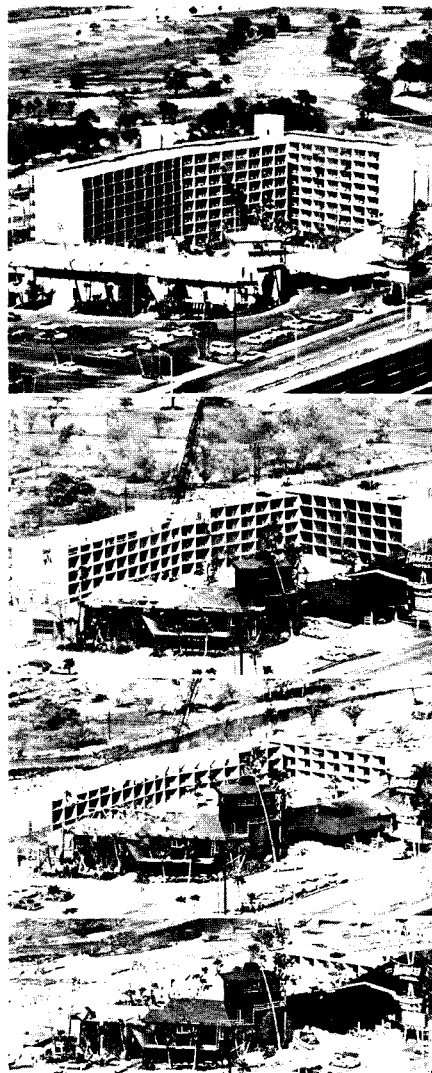
A revised building code permitted 8-in. concrete block walls to support eight stories.

By eliminating a structural frame and carrying floors on loadbearing block walls, a San Diego architect built the eight-story Hanalei Hotel for \$11.44 per sq ft. This price includes air conditioning and elevators, but excludes site work and finish hardware.

The 8-in.-wide loadbearing system provided another bonus: fast construction. The contractor completed the \$1,253,000 job in four months, which enabled the owner to open the hotel for the summer season.

The project became possible because of a major change in building codes. The 1964 Uniform Building Code, to which the hotel was built, permits higher design stresses in masonry than were previously allowed. However, the strength must be

After getting out of ground, contractor built one story each week and completely finished eight-story hotel in four months.



PHOTOS: COURTESY, HENDRIK & MOCK, ARCHITECTS

established by preliminary tests of masonry assemblies, and the work supervised by an inspector licensed by the city and retained for the project by the owner.

Doubling the Compression

The '64 code allows an engineer to design masonry with an ultimate compressive stress up to 3500 psi. This far exceeds the previous allowable stress of 1600 psi.

With this higher stress, the code requires that five preliminary tests on 16-in.-high by 16-in.-long prisms must justify the design strength. Tests are conducted 28 days after making the prisms; but after establishing a relationship between 7-day and 28-day strengths, the code accepts 7-day tests alone.

This provision aids site work because, in addition to the preliminary tests, the code requires three more sample prisms be tested for each 5000 sq ft of wall.

At the Hanalei Hotel, the structural engineer used a 3000-psi design stress on the net section of the blocks in a wall. Tests showed that the lightweight, 8" x 8" x 16" expanded shale blocks average 3825 psi on the net section.

The Structural System

The walls supporting the eight-story building rise off a 22-in.-thick concrete mat foundation. There is no basement. Transverse walls, spaced 14 ft apart, extend to within 5 ft of the rear of the L-shaped building. Beyond the ends of the walls, cantilevered floor slabs support an open access corridor for the hotel rooms.

Stub walls to brace the transverse bearing walls are located 5 ft from the front of the building. The designer concealed these stub walls in the exterior wall of the bedrooms which open onto a balcony. The transverse walls separate the balconies.

Each room is decked with two 6-in.-thick concrete floor slabs that were precast at the site. One slab extends 25 ft from a balcony to a wall separating bathroom from bedroom; the other 13½-ft slab carries the bathroom and the cantilevered corridor.

To increase the bearing capacity of the lower two stories, the engineer reinforced the walls with steel and filled all the block cavities with concrete. Above the third floor, only the cavities containing reinforcing bars were grouted. Additionally, the walls were reinforced with wire fabric every second course in these first two stories, and every third course above.

BY ROBERT H. MUTRUX

The author is an associate in the firm of Fletcher-Thompson, Inc., Architects-Engineers, Bridgeport, Conn.

It is a universal trait of human nature that everyone who has contributed a part of himself to any venture whatsoever wants his effort to be recognized. Gislebertus' unabashed "Hoc fecit" over the portals of the cathedral in Autun, the anonymous "Kilroy" peering over the parapet from Berlin to Tokyo, the Bakers' window at Chartres (and that of the prostitutes as well), the donors' plaques at Lincoln Center, and the recent trend toward self-immolation in public places are witness, at varying levels, to man's persistent longing to be acknowledged by posterity. In this respect, architecture has been especially rewarding. Throughout history, the field of physical structures has provided a bottomless reservoir for the vagaries of the human ego. From the time man first felt impelled to decorate his cave with wall-to-wall murals to the personality-saturated present, architecture has been the most pervasive status symbol yet devised.

The mortal desire for self-perpetuation and the candid self-appraisal that often accompanies it unwittingly enjoy the umbrella of divine precedent. In history's first recorded architectural criticism, God (so far as we know, His own and only judge) looked at each day's work and "Saw that it was good." And at the end of the sixth day He "... saw that it was very good ... And he rested from his labors."

The true creator today has no greater aim than to do his chosen work and see that it is good, but the nature of his ensuing repose more often than not depends upon its evaluation by his peers and the changing standards of the times. Every work starts out to be good and yet, for reasons more or less specific, most of them miss the mark, and the untutored man in the street as well as the lettered aesthete can immediately list the reasons why.

There is no shortage of Monday-morning-quarterbacks to explain, usually with no lack of enthusiasm, why this structure is out of proportion, why that plan does not work, why this solution is inadequate, or that one downright dishonest.

I have often wondered whether it would not be possible to put all this intellectual energy into reverse, and list, beforehand, all the elements needed to make a great building and to catalog the rules govern-

ing their combination. I am sure that Socrates, had he been more keenly interested in buildings for their own sake and less in politics, polemics, and wine-bibbing, could have pyramided this hypothesis to the point of anticipating an entire world free of ugliness, rid of mediocrity, and populated only with things of beauty and eternal joy. Aristotle, Goethe, Freud, Berenson, and a host of others have indeed dealt in varying depth with the subject, but their conclusions, by and large, are too abstract for the average practitioner to analyze, much less put to practical use.

Recently, however, one of the profession's phrasemakers made what may be a significant contribution. The bland statement, "It takes a great client to make

A PRIMER

a great building," may be the ray of light to herald a new age of design. This Gordian approach is based on the ingenuous assumption that the architect himself is inherently great, and that all that is needed is a marriage with his cultural equal to insure issue of lasting value. Perhaps this serene oversimplification contains a grain of truth. If, in the last analysis, the burden of greatness rests with the client, it behooves someone to indoctrinate him in the delicacy of his position and the magnitude of his responsibility. To put it more simply, he needs to be informed of the special amalgam of factors, concrete and abstract, which will result in an edifice to do justice to him and to his time, and of the special part he has to play in its realization.

It is a little like the medieval search for the philosopher's stone, but much better documented. Something akin to a formula does indeed exist, even though (like Will Rogers' scheme to dam up the Gulf Stream to defeat the Germans) cer-

tain details remain to be worked out. The basic requirements of a great creation can be enumerated and even calibrated, and it is actually possible, given a modicum of generosity on the part of the reader, to propose a comprehensive answer to the question of how to create beauty for eternity.

To begin with, it has been established, after exhaustive research and careful tabulation, that great work is the result of a combination of a maximum of six major components, and a minimum of two. Their permutations thus are not unlimited, and the challenge is shared equally by creator and patron. The first two are within the province of the architect.

The primary impact of any architectural project is usually its mass, its visual exterior. To the architect, this is the parti, to the philosopher it is the concept. This is responsible to a great extent for the first and most lasting impression, whether it be breathtaking, inspiring, overpowering, bewildering, depressing, or dull, and goes a long way toward carrying a work into history.

Those who have seen the spires of Chartres across 20 intervening kilometers of countryside, the stark remains at Paestum, or the eloquent geometry of the pyramids of Egypt and Mexico, have sensed the feeling of intimacy with timelessness long before they have parked the car or the camel. The painter Georges Braque used an expression referring to sculpture that applies to architecture as well: "... it gives form to empty space, as music gives form to silence." If the form, in its essence, provides something in the nature of a lift, if it "sends you," or, to Picasso, if "it gives you a feeling of pleasure," then it contains the seeds of greatness.

The second vital element is the detail. The cathedral, seen first in miniature, is now seen face to face, and the relation of the major to the minor masses, the exterior to the interior, and all the individual parts down to the finest molding and the most remote carving, resemble that blend of *separate yet superbly integrated* motifs and notes that form a symphony. Here is the Greek temple even after the carvings (sometimes irrelevant) have been removed and after time has eroded the (probably intrusive) surface painting, leaving only the pure music of the fluted columns and the majesty of the pediment against Homer's sky. Here the pyramids,

FOR

at close range, and the citadel of Carcassonne, and the Palais de la Défense in Paris, fall short, reminding one of Gertrude Stein's piquant statement, "When you get there, there isn't any there there." On the other hand, the Baroque church and the palace, the Alhambra, Angkor Vat, and the Town Hall in Copenhagen, all somewhat less than notable in their over-all effect, are outstanding in the realm of detailed development.

A sense of fine workmanship is a sense of history. The artist, architect, and artisan who strive for perfection are subconsciously aware of unborn generations looking over their shoulders, and their work may achieve immortality on that ground alone.

After the detail comes the legend. This is an attributed dimension, popularly referred to as the "mystique," but no less significant than the first two. Here again the temples and cathedrals score heavily, in particular Notre Dame and Beauvais. The Mayan ruins fall into this group, as do most of the English castles, the Colosseum in Rome, and the Palace of the Popes in Avignon. Stonehenge, the sculptures on Easter Island, the caves of Altamira and Lascaux, thrive on this element alone, as do the mythical city of Atlantis, Tintagel on the coast of Cornwall, and Frank Lloyd Wright's mile-high skyscraper. The best example, of course, is the court of love at Les Baux; a close second are the ruins of Machu Picchu in Peru. All express the relation of a work to its historical or mythical context, and the ghostlike echo of that relation resounding over the footsteps of the tourist is often far stronger than the mere imprint of the physical structure on a photographic negative.

Great architecture was never created in a void. It exists by, through, and for specific situations which, from the beginning to the end, are all strongly personal. It is in the area of the legend that the patron and his contemporary counterpart, the client, enter the scene. The intangible, imponderable, but strongly evident qual-

ity haunting many great works may be the imprint of the personality of the creator, his patron, or both. Everyone, even before the indoctrination by means of recent novels and movies, knows the creator of St. Peter's in Rome, and most people know the designer of St. Paul's in London, but I daresay few could name the contemporary prelate in either case. Versailles, Chenonceau, Pierrefonds, on the other hand, all bear the unmistakable imprint of their owners, as does the Cathedral of St. Basil in Moscow, and yet their architects do not enjoy their merited recognition.

The works of Le Corbusier will forever retain his personal stamp; the George Washington Bridge, and, oddly enough, most great bridges (except those of Paolo Soleri), survive in an atmosphere of anonymity.

There are two elements for which the client is solely responsible. One is the element of time—unfettered time, without the punctuation of interruptions or the finality of schedules, unmeasured, unrationed time, without threat of penalty of promise of bonus, not to be squandered on the capricious moods of the dilettante, but for the process of healthy, studied growth of an idea from conception to realization. Time, not as a metaphysical concept or a conversational abstraction, but as an actual physical commodity, seems to be dying out, like the whooping crane and the passenger pigeon, but its presence in quantity was a contributing factor in all other epochs.

Rome was not built according to a timetable, nor was Constantinople, or Florence, or Toledo. Who knows what a masterpiece of marine design Noah might have contributed had he not been faced with an irrevocable deadline.

The fifth requirement, also within the realm of the client, is money. Dull, lackluster, maligned, but always sought after, it is the single ingredient whose proportion most clearly stamps any work. Though its deletion may not visibly affect the broad spatial balance of void and solid, its absence will unalterably be reflected in the detail. Its presence and influence is noticeable throughout history from the time when all art was oriented toward royalty and the priesthood to the economy-minded, budget-ridden present. The democratic mentality that was brought up on the challenging dictum "Money doesn't care who owns it," matures to philosophical resignation with,

"Oh well, you can't buy happiness with it." But I defy anyone, king or commoner, to say that you cannot buy architecture with it.

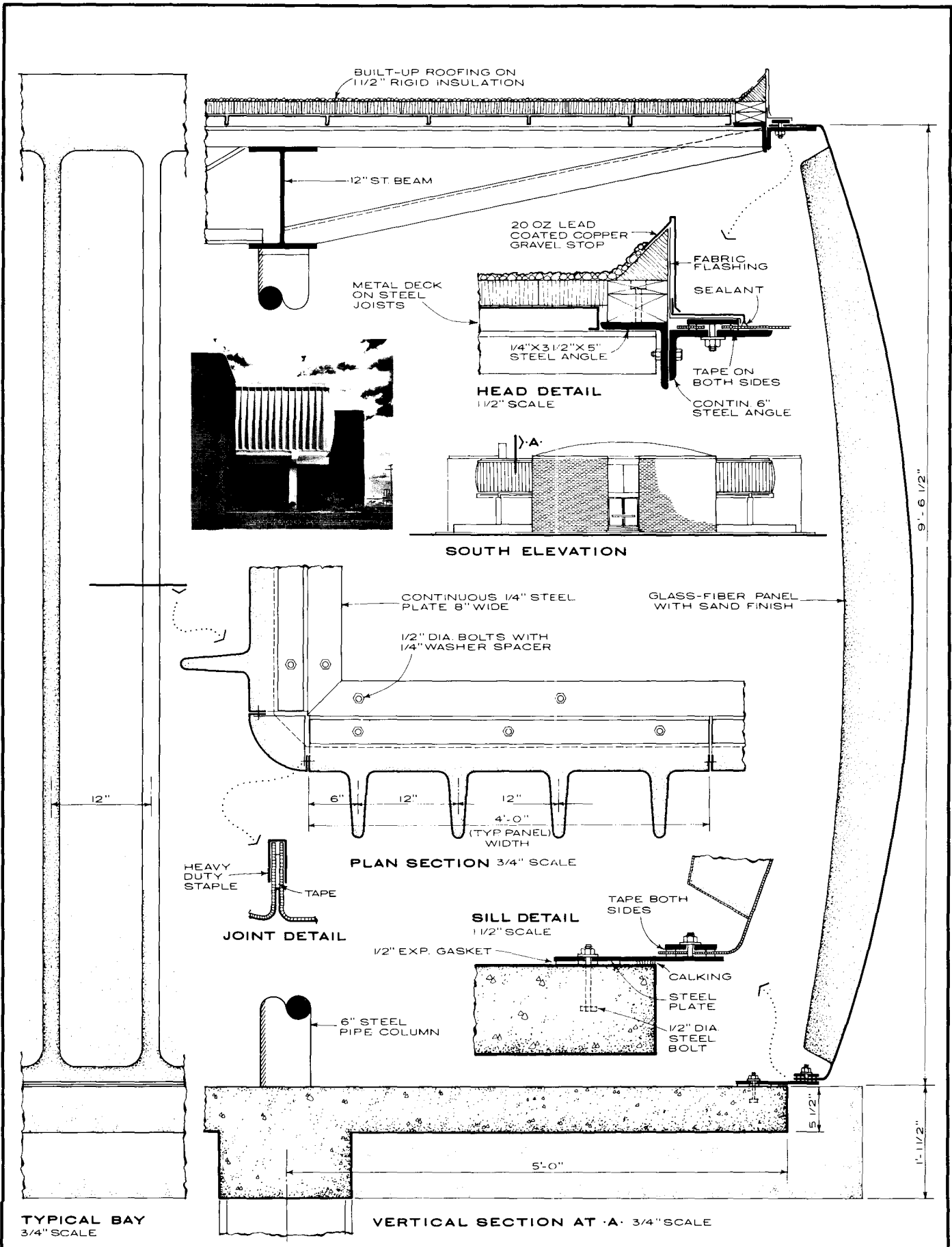
Last of all is the element of pride. This is the sin for which, it is said, man was driven from the Garden of Eden; this is the trap over whose entrance was written, "Ye shall be as Gods." And yet pride, which in our Puritan environment has always been considered more a fault than a virtue, is responsible for most of the world's great architecture. Pride, in the person of Pericles, rebuilt the Acropolis we see today, and pride also built the copy of the Parthenon in Nashville, Tennessee. It was pride in the person of the local bishop, and not the faith of the nameless peasant, that populated France with 80 magnificent cathedrals in a single century. Pride built the colonnade leading to St. Peter's, the fountains in Mexico City, and that phenomenon of all time, the quais lining the Seine. Pride—call it civic if you like—built every cultural center from New York and Hartford to Dallas and San Francisco.

And that's it. What every young, well-endowed client-cum-creator should know. Six major components, frequently less, seldom more. Now, at this point, some crass realist is bound to interrupt (like the fabled chump in the back row, who, when Gabriel blew the last trumpet, yelled "Louder") and say, "But how about function?" I will say that function exists only for the form that is its sequel. Function is the homely cocoon that gives birth to the butterfly. Beauty, by our poets' admission its own justification, often outlives *raison d'être*, and, again, the medieval cathedral is an irrefutable example.

Today, in a questionable search for "purity," we attempt to make a self-sustaining virtue of function per se; this has resulted not only in a trend of unprecedented sterility, but it reveals for posterity our poverty of imagination and our paucity of

(Continued on page 250)

CLIENTS



9'-6 1/2"

5 1/2"

1'-11 1/2"

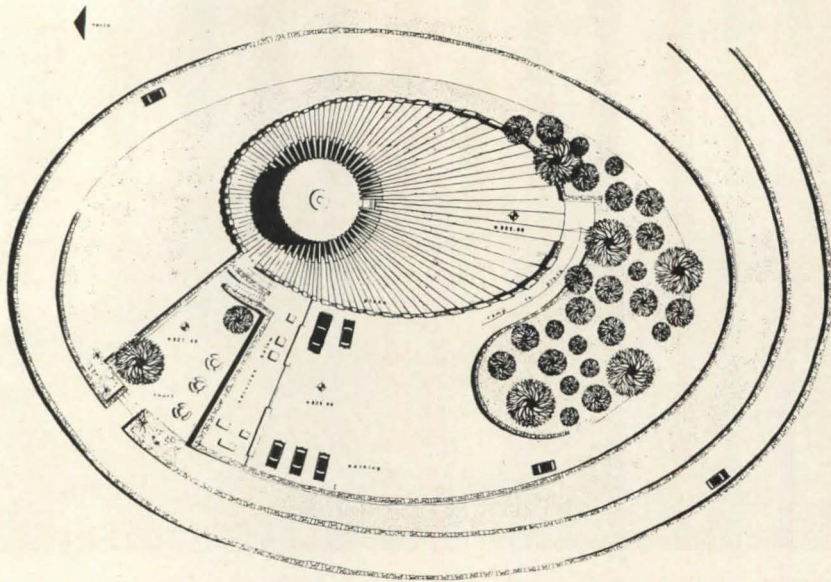
TYPICAL BAY
3/4" SCALE

VERTICAL SECTION AT A-A 3/4" SCALE

MADISON NATIONAL BANK: Madison Heights, Michigan
BEGROW & BROWN: Architects

SELECTED DETAIL
GLASS-FIBER CURTAIN WALL

Kennedy Shrine in Judean Hills



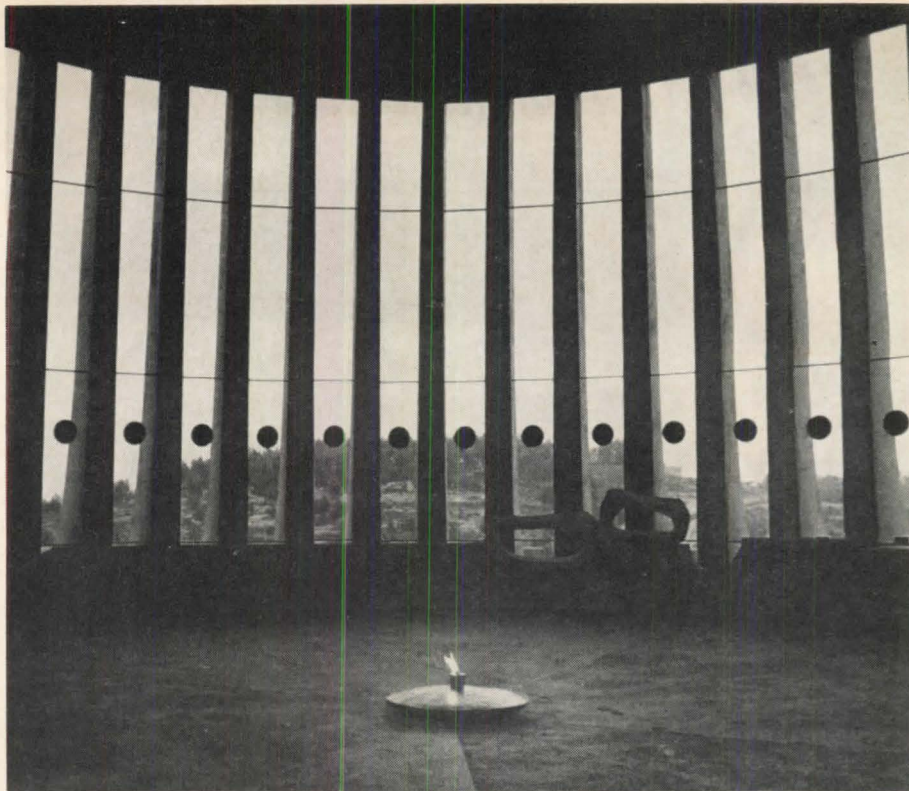
Several miles outside Jerusalem, in the hills of Judea, is the site of Betar, Simon Bar Kochba's last stronghold in his fight for liberation from the Roman legions in 132-135 AD. On the highest point of this area, refulgent with the past and present search for liberty, was recently erected Israel's memorial to John Fitzgerald Kennedy. The memorial commands far-reaching views all round, and, as if to underline the late President's hope for a world untroubled by nationalistic strife, also overlooks the nearby village of Bittir, on the other side of the Israel-Jordan border.

The scheme, which was the winner of a closed competition in Israel, is



commendable for its simplicity. A road, circling the hill, leads up to a broad plaza, from which rises the truncated crown of the shrine. David Reznik, the architect, states that the form of the building "attempts to convey the deep tragedy of a young, vibrant, and growing life being cut off before maturity. The monument is a direct outgrowth of the plaza, with each line growing continuously from the beginning of the plaza to the highest point of the monument. The form reaches upward and is cut off before it reaches its natural peak, as in the sawn-off trunk of a tree. There are 51 roots growing into the monument, each one containing one of the 'required symbols'" (of the 50 states and the District of Columbia). Within the structure, there is an eternal flame at the center of the floor, and a sculptural concrete ring at the perimeter bearing documents, photographs, and a relief of President Kennedy.

As a totality, with its hill, the Kennedy Memorial appears an impressive sculptural composition; its massive stone retaining walls and concrete structure evoke the strength of the hills. Parking for 10 cars and 10 buses has been neatly tucked into the west side of the slope, where it is least obnoxious. One wonders, however, about the scale of the monument up close. After such a series of imposing prospects from far away and from the turns in the roadway below while approaching the plaza, the experience of the building would seem—from these views, at any rate—to be somewhat anticlimactic, the building having become almost diminutive in scale in comparison to the grandeur of its aspirations and its setting. The little medallion for each state, placed in each interstice, does not help, either. The total effect is that of a very good concept, and certainly laudable intentions, which just did not get that last added impetus that transforms a good and respectful memorial into a heart-stirring architectural and emotional experience.



Photos: David Rubinger and David Harris

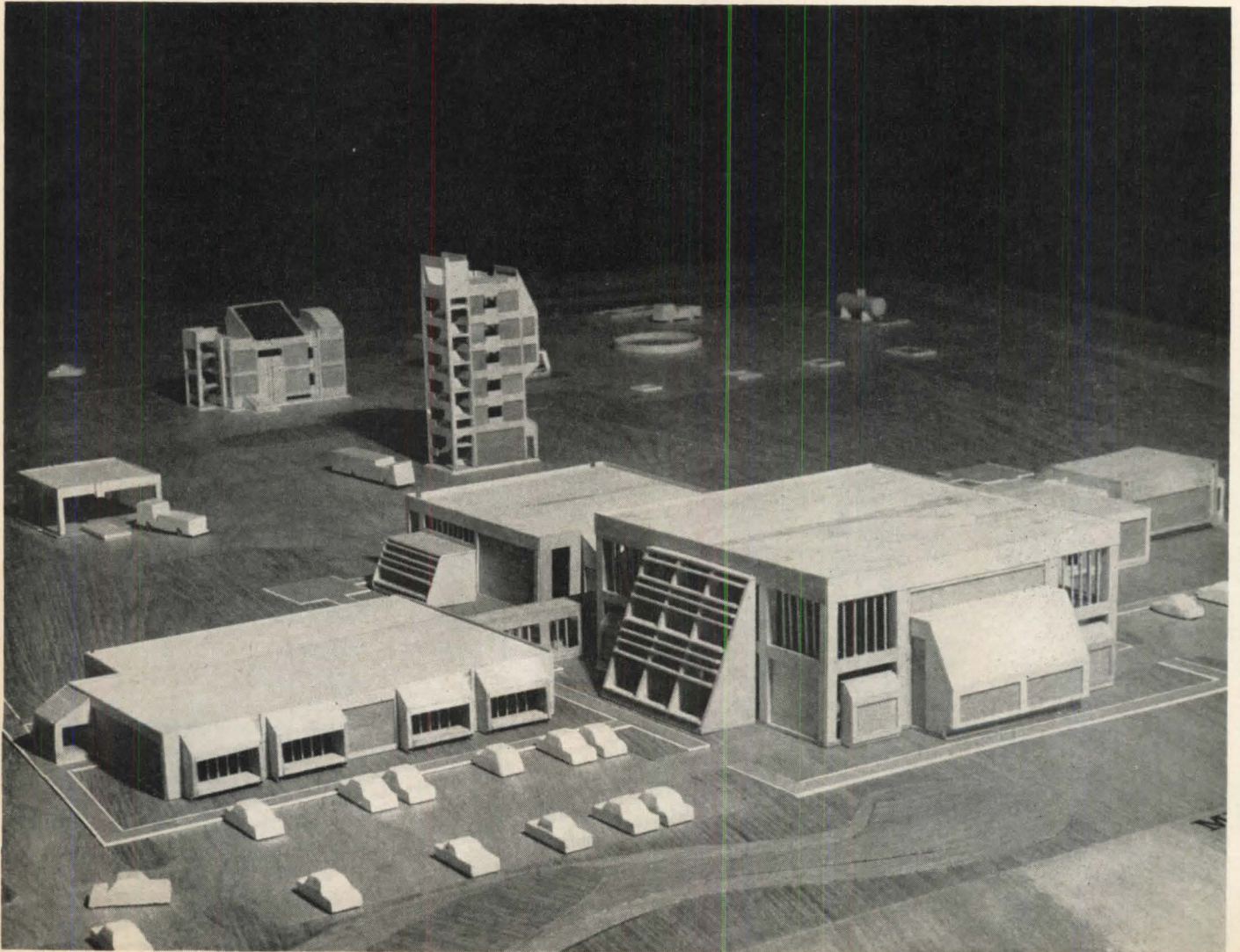
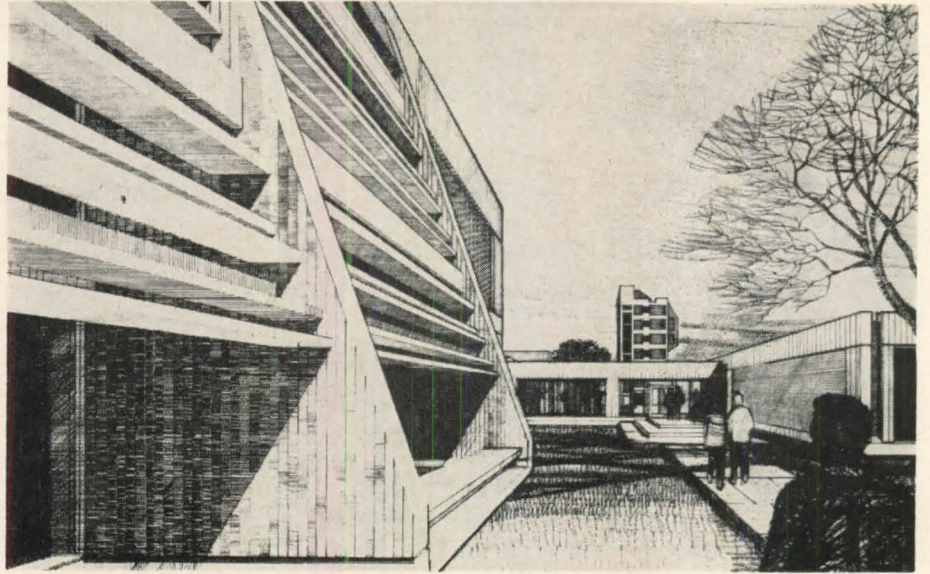


“Fantasy’s Hot Fire”

—Sir Walter Scott

A landscape that may look straight out of the TV series “Star Trek” or “Voyage to the Bottom of the Sea” is proposed as the setting for a firemen’s training academy in Houston, Texas. The eerie quality of the project is not willful on the part of the architects, Jenkins, Hoff, Oberg & Saxe of Houston, but results from measures dictated by the program requiring widely separated buildings, experimental fire pits, and vast spaces for practice driving of fire engines.

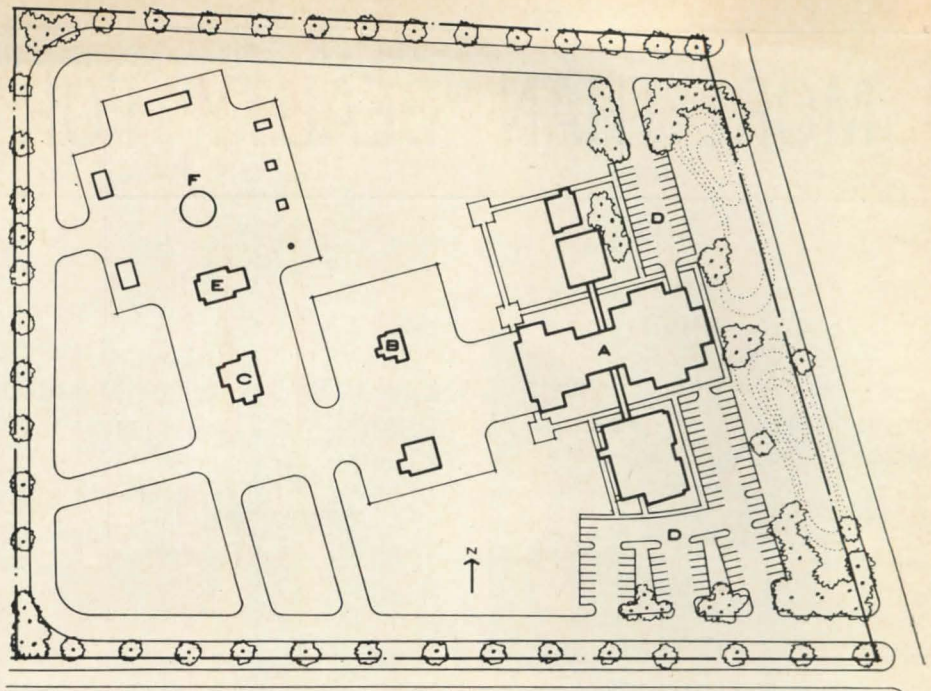
Facilities will include a main building housing classrooms, offices, lounge and kitchen, reception area, apparatus rooms, and an all-purpose



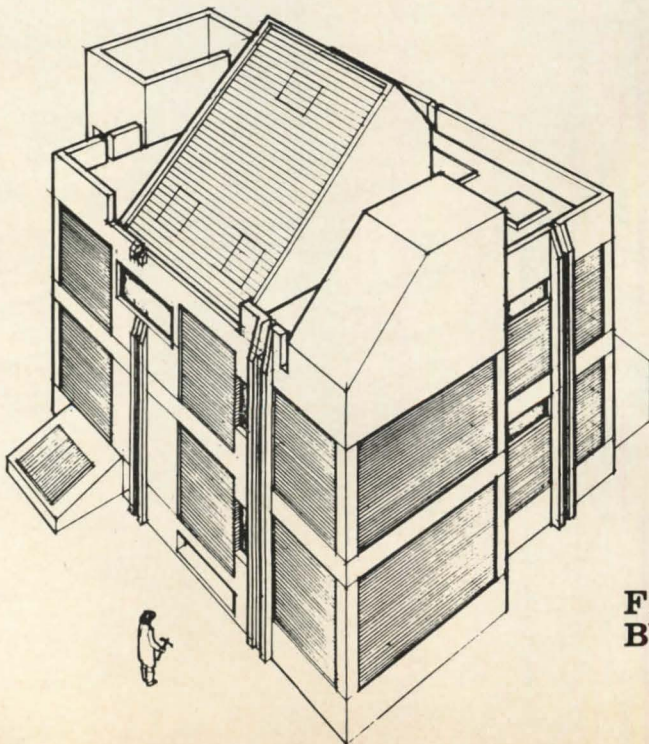
auditorium; a six-story-high drill tower; a fire problem building for simulating various conditions encountered in conflagrations; an equipment testing area; open fire-simulation pits; outdoor classrooms and fire-control buildings; a spill fire-simulation building for tests with liquid fires; and a drivers' training course.

The structures have been designed as exceptionally rugged forms, since, in the view of the architects, the "drama of service performed by this branch of the city government should be expressed in a vibrant and highly functional manner." Cast-in-place concrete slabs and columns will be used throughout, and exterior walls will be face brick and fire brick.

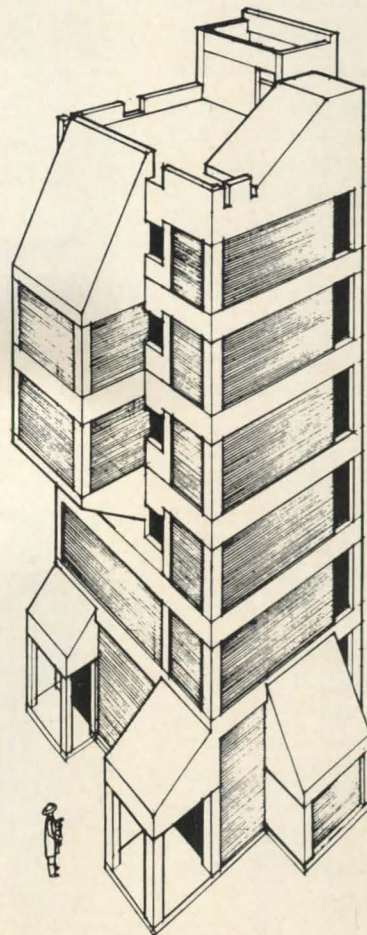
The visual star of the complex undoubtedly will be the drill tower. It will be used for hose-and-ladder practice, high-rise training, and will contain a fire escape, stairs, and ground-floor control offices. All these activities will be expressed as exterior forms, resulting in a forcefully brutal building. An Eastern architect, looking at the sketch of the tower, said recently, "If somebody came to me and said, do a drill tower, I'd probably do it just like that."



- (A) administration and classrooms;
- (B) drill tower; (C) fire building;
- (D) parking; (E) service building;
- (F) fire experiment area.



**FIRE
BUILDING**



**DRILL
TOWER**

MORE THAN "BEAUTY" FOR WASHINGTON

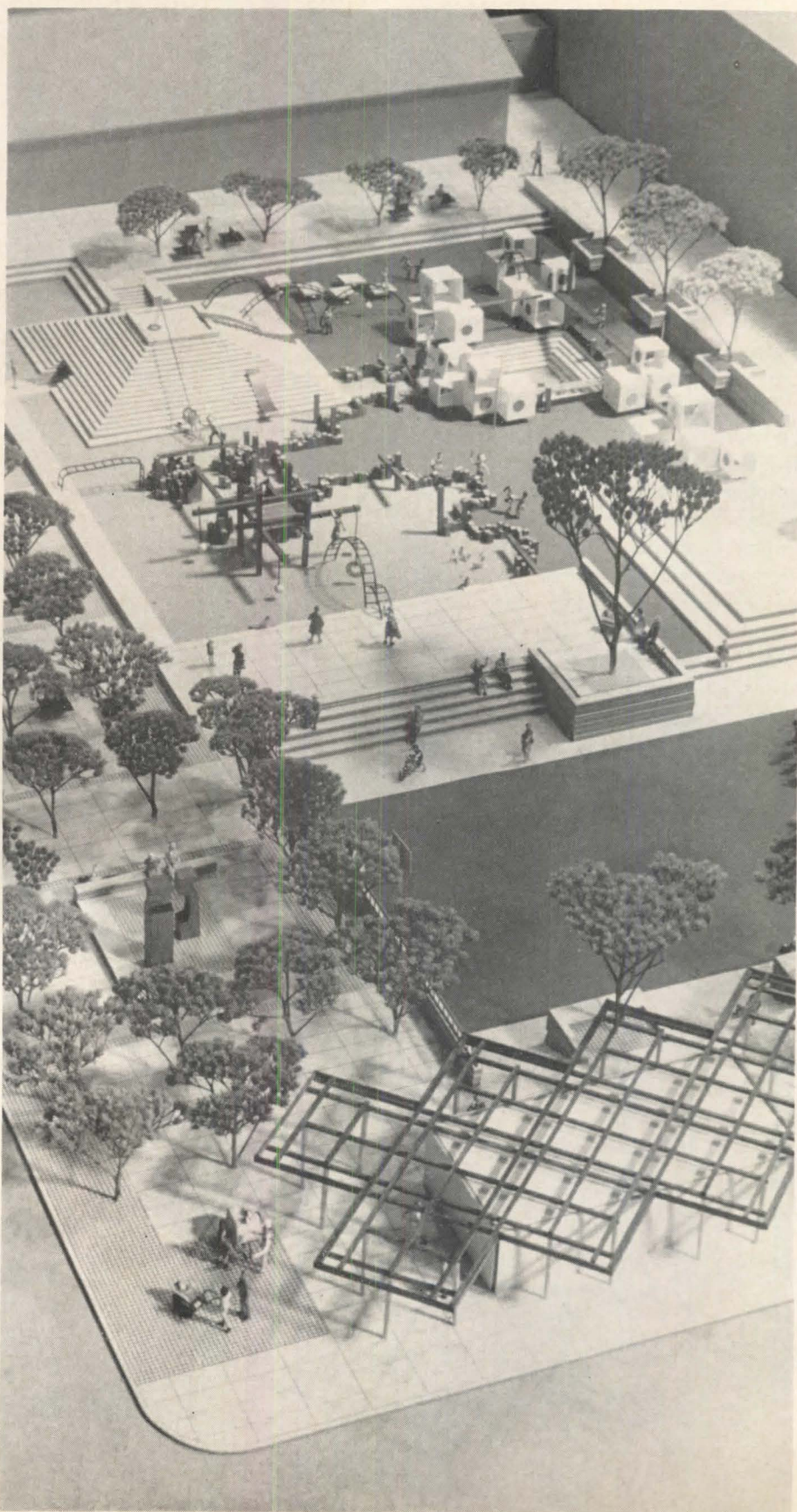


Buchanan School playground.

The definition of slum has changed somewhat over the past few years, since people have learned that a slum could be an enforced state of mind, and that rats, garbage, and junkies on every corner are mainly the desperate visual suppurations of the disease in some places. Watts is actually an area of not unpleasant modest single-family houses, but the intolerable, if invisible, conditions of municipal indifference, social unconcern, and economic blight finally erupted there in troubles that had until then seldom taken on such proportions in more obviously "ugly" areas.

The southeast area of Washington, D.C., similarly, is not as hideous as Harlem or the ghetto sections of Chicago, but there still exists the shattering hopelessness of the unspoken ghetto condition itself, one enforced by the picture of Washington prettying itself up in all other areas with middle-income developments, elaborate Federal buildings, and grand schemes for Pennsylvania Avenue and the Mall, while Congress grimly continues to refuse home rule to the District because it is more than 60 per cent Negro.

There seems to be so little that individuals can do to relieve these dispiriting conditions that many just give up and take care of their consciences by expressions of pity and regret and sending a donation to



Model photos, except as noted: David Hirsch



Capper Houses plaza.

relief organizations. Mrs. Vincent Astor is not one of these, as she proved by underwriting Carver House Plaza and Riis Plaza in the midst of two New York low-cost housing projects (p. 97, OCTOBER 1964 P/A, and pp. 170-172, JULY 1966 P/A). Now, she has taken the Washington Southeast district by the horns, and proposes the construction of two amenities that will symbolize tremendous charges of hope and confidence for the area.

With the same design confeder-

ates she used in the Carver and Riis experiences—architects Pomerance & Breines and landscape architect M. Paul Friedberg & Associates—Mrs. Astor plans the creation of an exciting school playground with after-school adult use, and a large neighborhood center and athletic field in the midst of a typically drab, low-cost housing complex. The latter project was announced last month at a reception given by Mrs. Walter C. Louchheim, Jr., Deputy Assistant Secretary of State for Com-

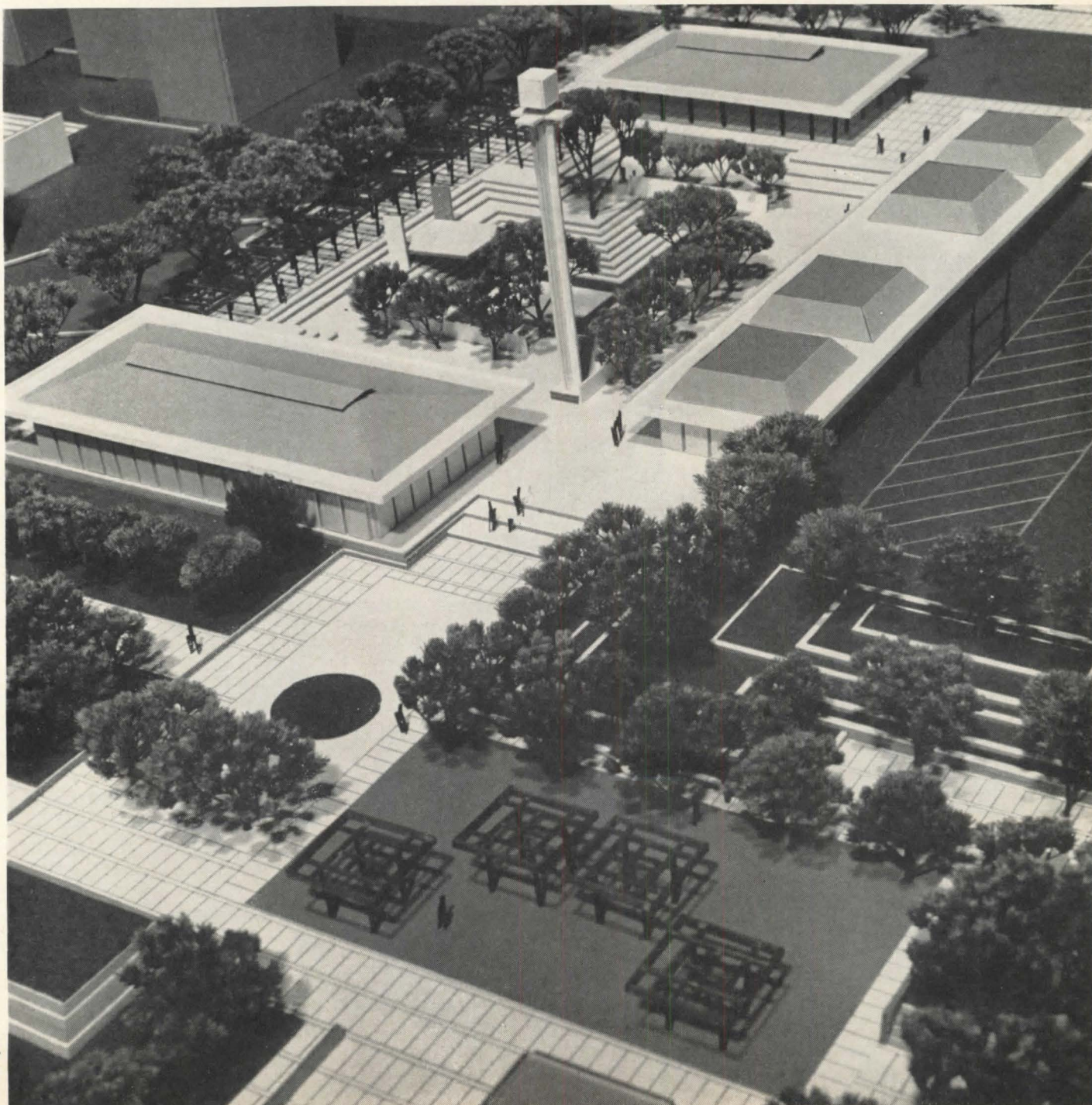
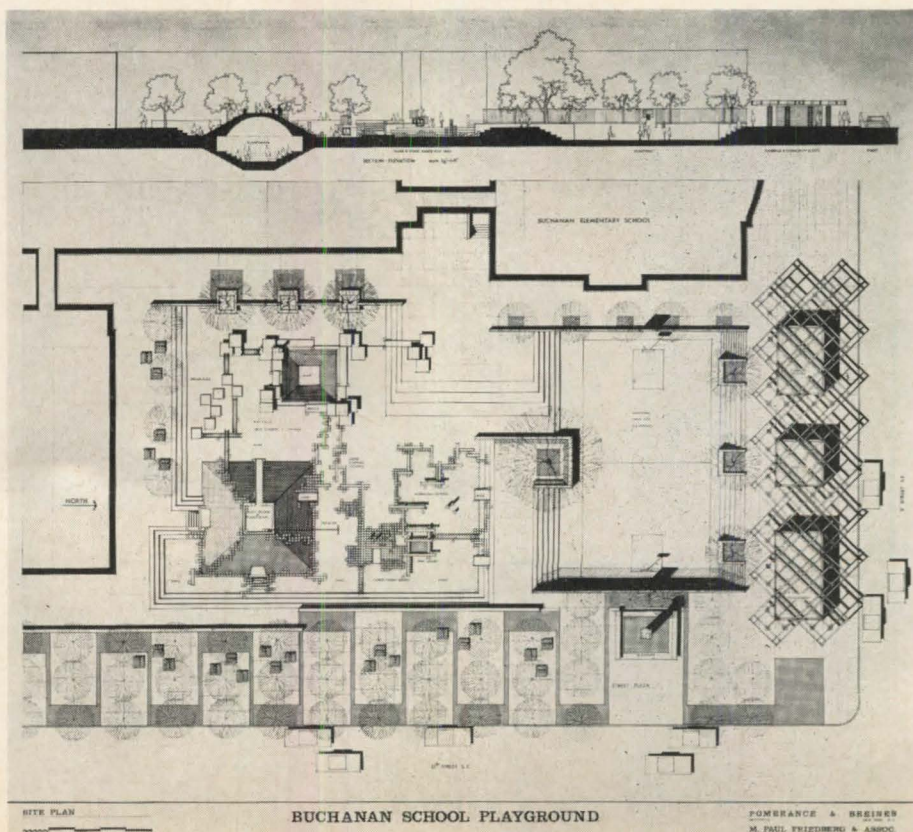


Photo: Wayne Schiffelbein

munity Advisory Services, and attended by Mrs. Lyndon Johnson.

The two projects far exceed most of the "beautify-our-cities" pronouncements that have come out of Washington in the last few years. There is structure, form, and depth to both of them, as though the designers wish actually to weave them right into the fabric of the community. The Buchanan School Playground right now is a bleak chain-link-fenced corner of the most dismal board-of-education-budget sort. It stands among small dwellings and marginal businesses across the street from a playing field attached to another school. In time, it is hoped, the street between can be closed and the two areas combined into a real community center. The new playground will have no coercive fencing. Its forms will be defined by earth levels and surfacing materials. A section will be lowered and paved for active games such as basketball, and the removed earth will be used to create mounds and pyramids for children to play on, around, and in. The open play space can also serve as a kind of amphitheater for local events and teen-age dances. In the play yard will be facilities for the children to be adventurous on: bridges, slides, stepping blocks, ladders, and a tree house. Strong, simple materials such as timbers, paving blocks, and brick will have their surfaces smoothed and edges rounded for safety. Adults will be able to sit under trees and sunbreaks, and there will be a raised adult peninsula jutting into the yard. On the E Street end of the site, structures housing restrooms, a snack stand, and maintenance offices will help maintain the continuity of the street and bound the playground from the traffic.

The Capper Plaza project is of far greater scale than the school playground—it is about 5 acres—and offers the opportunity of creating a true community center in the midst of a drab, 15-year old, 1500-family public housing project bounded on the north by a freeway and on the south by the Navy Yard. The space at the center of the project, which somehow stayed providentially open, has been used



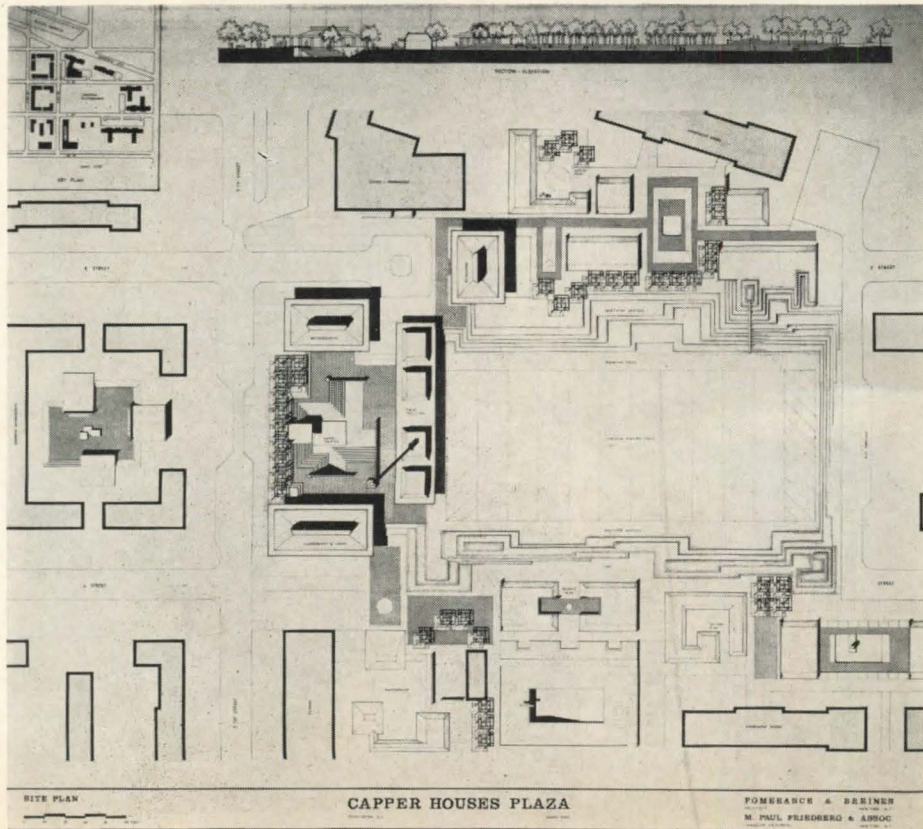
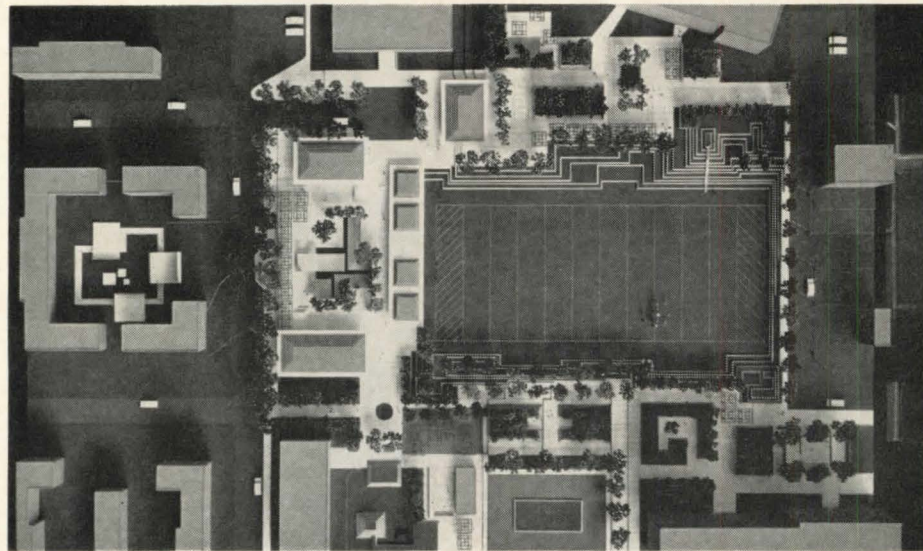


intensively by the housing tenants for baseball, football, and track. There are interneighborhood games that draw huge crowds to the field, but there are no facilities whatsoever save for a tiny "community building."

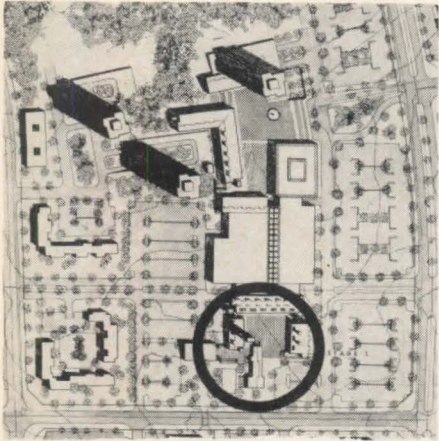
The designers and planners set about making the area the true focal point of the larger neighborhood, making the sports field a real facility for games, terracing its sides for spectators, and creating a complex of structures around a

sunken amphitheater to act as the social node of the place. It soon became evident that, even on paper, the center was acting as a magnet to draw life into the Capper area. People who had been privately thinking about buildings of various sorts in the neighborhood became interested in having them in Capper Plaza. Consequently, the center will probably have to be redesigned, much to the delight of Breines and Friedberg, to allow more activity. Right now, plans include a grocery, laundromat, café, a new games building, and structures related to the playing field (locker rooms, equipment storage, director's office). Two streets will be closed off and incorporated into the playing area. Around the enlarged field, and relating more closely to separate housing units, will be smaller play areas for children with seating for parents. An adjacent school yard will become part of the larger plan, and will gain a swimming pool, and, using portable equipment, structures for roller-skating and ice-skating. Areas formed by sunshades and trees can be used as outdoor classrooms. Next to a building containing elderly housing is a more sedentary area sheltered beneath sunbreaks. Throughout the site will be pedestrian paths for residents to stroll from one experience to another in the neighborhood. These will also be used by kids on bikes and skates.

The designers say that they hope to achieve a center that will be a gathering place for residents to shop, socialize, and watch over their children, that will serve as a recreation and sports center for all ages, and that will, most importantly, become "an identifiable 'place' which will give the immediate and surrounding community a sense of satisfaction and pride because it is useful and wholly accessible to all." The success of these laudable aims will have to be judged after completion, of course. It is emphatically the case, however, that design such as this, aimed directly at the relief of human despair, is to be more highly commended than a lot of the more monumental architecture and planning going on in the Federal center of the capital.—JTB



ANOTHER CAPITAL SATELLITE

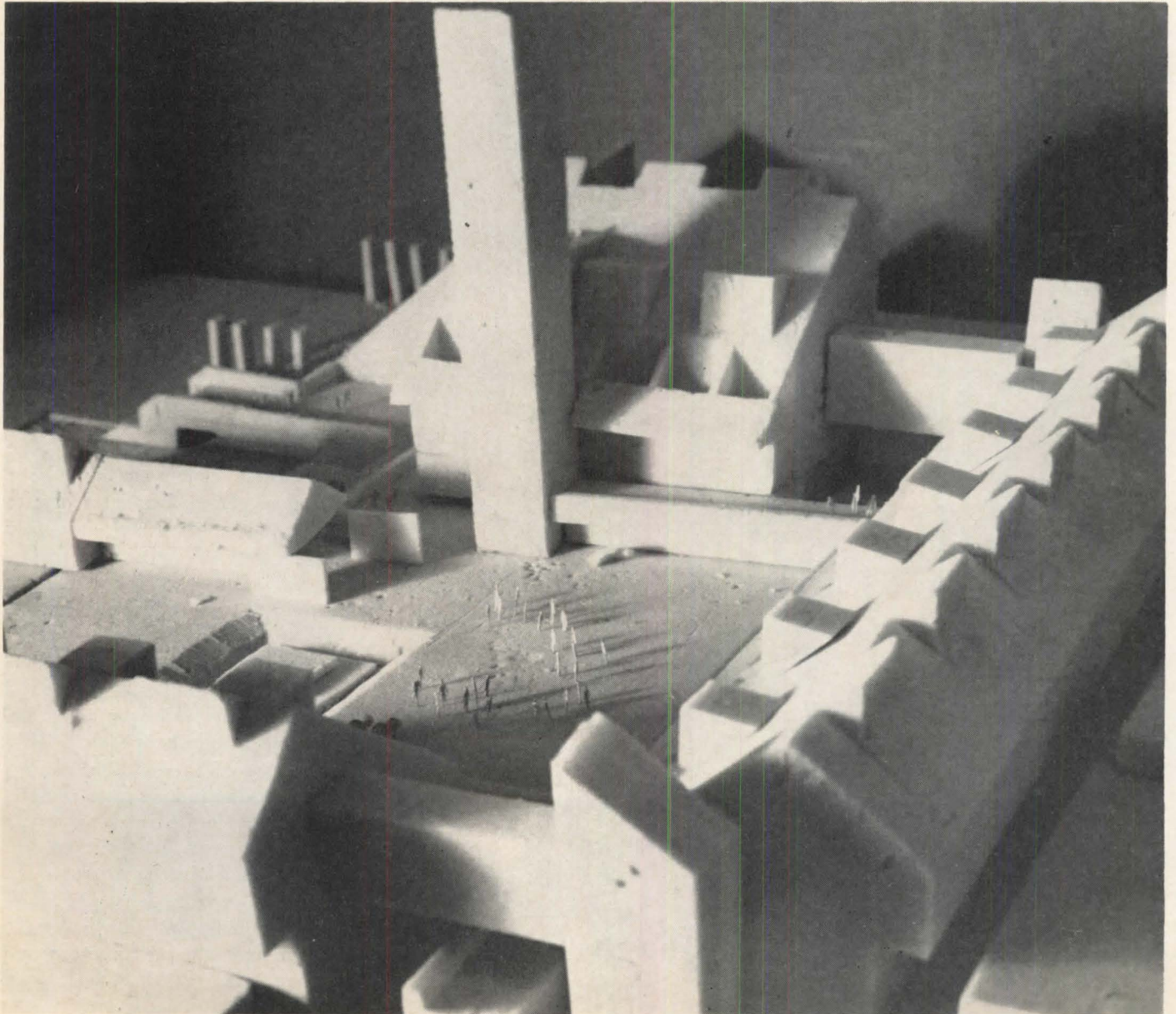


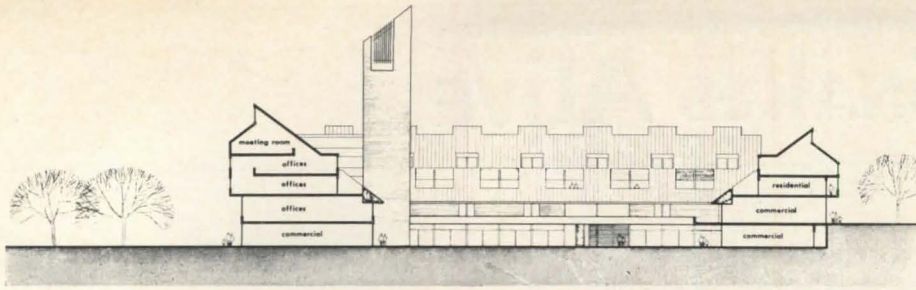
Initial site (above); model (below).

The success of Reston and the impending new town of Columbia do not mark the end of the new-town boom around Washington, D.C.; quite the contrary. One of the latest plans is for Montgomery Village, a community for 30,000 people on 2000 acres near Gaithersburg, Md., 20 miles north of the capital.

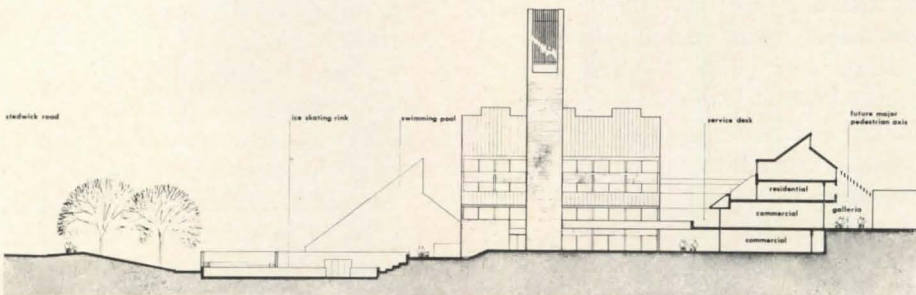
In the vein of a commendable recent trend on the part of developers to try and create communities rather than simply lay the land waste with scruffy little speculative

houses on naked two-by-four lots, Kettler Brothers of Bethesda, Md., have asked their architects—Rogers, Taliaferro, Kostriksy & Lamb of Baltimore—to give Montgomery Village a center that will be more than just a shopping area set in a sea of parking lots. The architects have designed the Village Center as the pedestrian crossroads on a ridge at the geographical center of the new community. Pedestrian circulation is separated from vehicles and will enter the center via underpasses. In

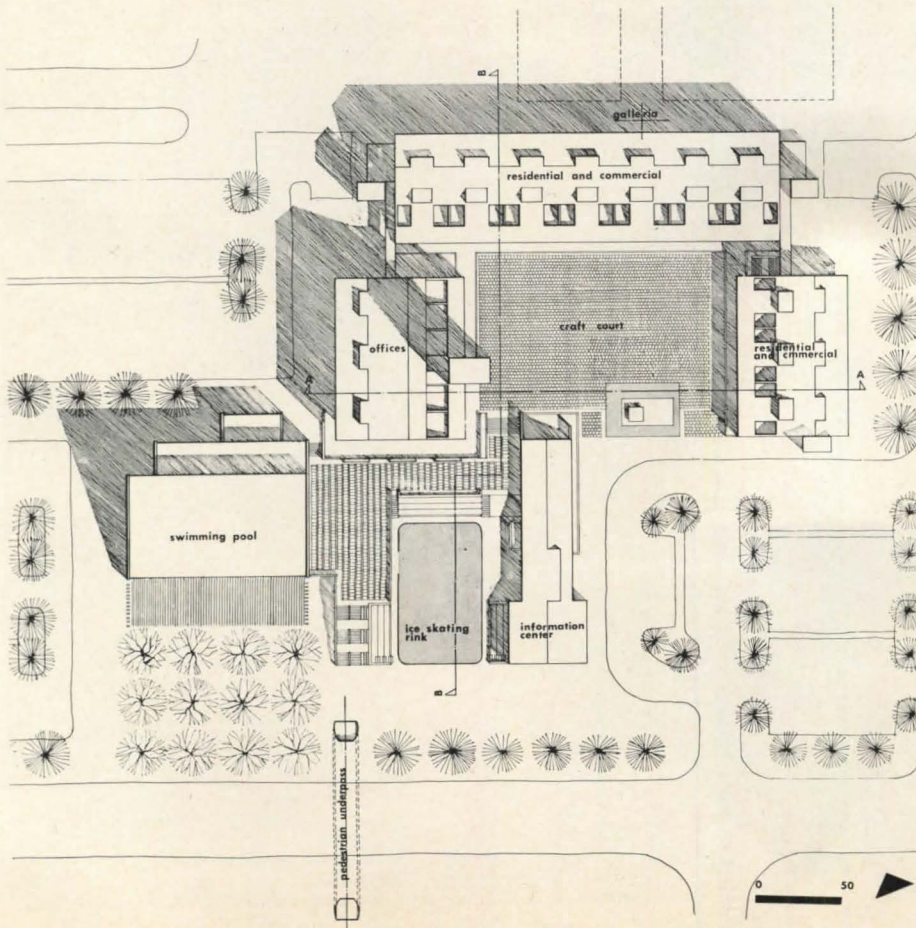




SECTION A-A



SECTION B-B



the over-all site plan, the pedestrian way will run through a recreation valley to the south, past some apartments, through the Village Center, then more apartments, and finally arrive at a golf course in a valley to the north.

The Village Center will eventually feature two main courts linked by a galleria containing shops and businesses. The first portion to be built will be the south court, to be surrounded by residential and commercial buildings, offices, an information center and observation tower, an ice-skating rink, and a swimming pool. The low buildings will be essentially frame construction; brick and concrete will be paving materials. Major exterior materials will be brick masonry and slate roofing. Apartment houses to be built in the future will be of reinforced concrete.

Of commendable note in the plan is the placing of residential quarters over commercial spaces. This is a technique that has been regarded with a shudder in recent years, but one that actually has a lot to offer in creating compact, urban spaces with 24-hour lives. One can imagine that there are many people who would prefer this kind of living: single people, newlyweds, retired people who dread the idea of living in an old-age home.

When both elements of Montgomery Village Center are completed and connected with the galleria, it will probably really be like a village, with the added advantage of some open land within walking distance. Whether the brick-and-slate, slanted roof style will prove to be a little cute will have to be decided when the first units have gone up.

SNAKES ALIVE

It might seem odd, at first glance, to place reptiles and nocturnal mammals under the same roof in a zoo building, but that is what Fred Bassetti plans to do in Seattle's Woodland Park Zoo. After looking at the sections, such a program becomes logical, for these will actually be two separate buildings joined under the roof for economy of servicing and sharing of ventilation equipment space.

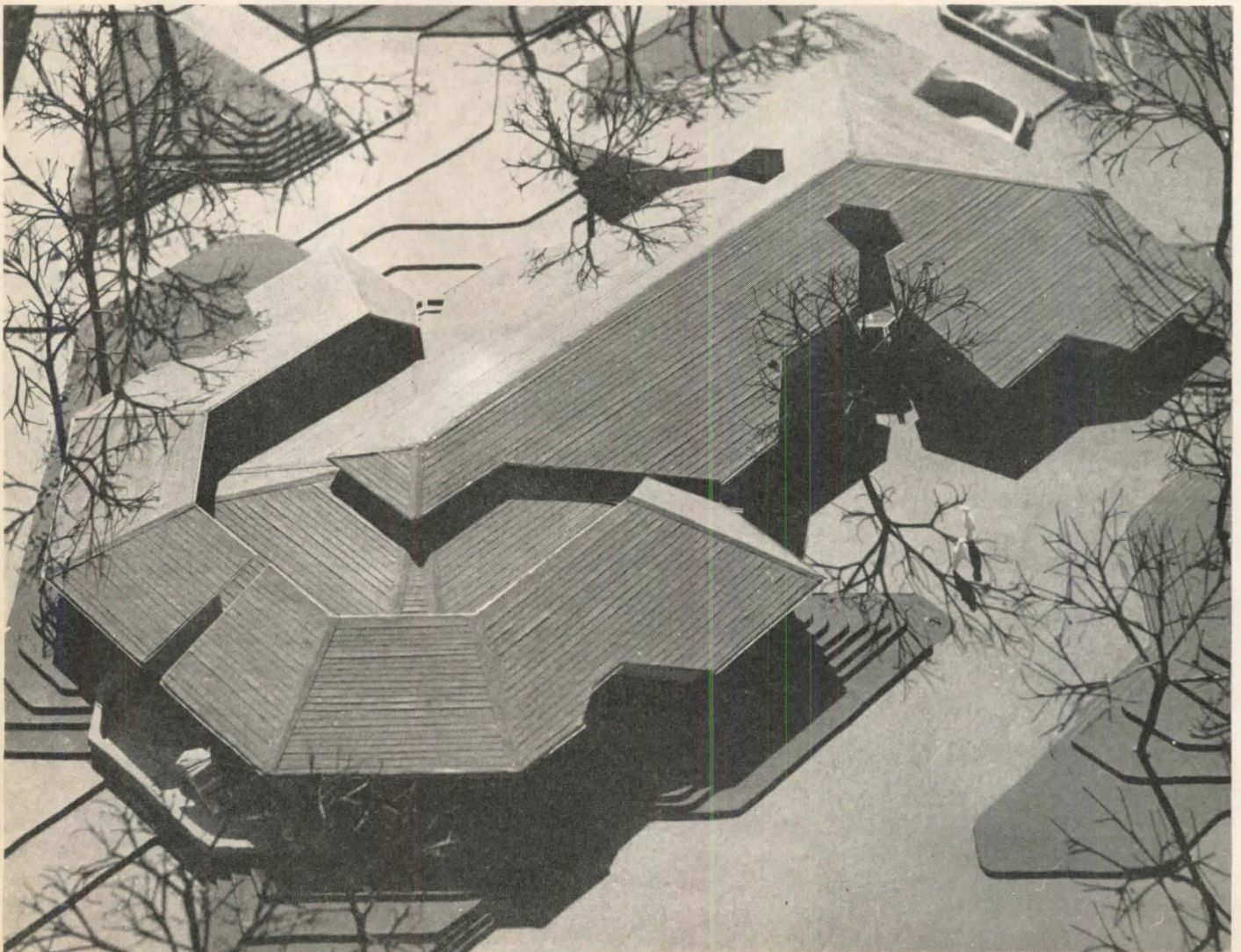
The needs of the buildings are otherwise quite different: The reptile house needs to have tropical temperature, humidity, and ultraviolet radiation maintained, and the

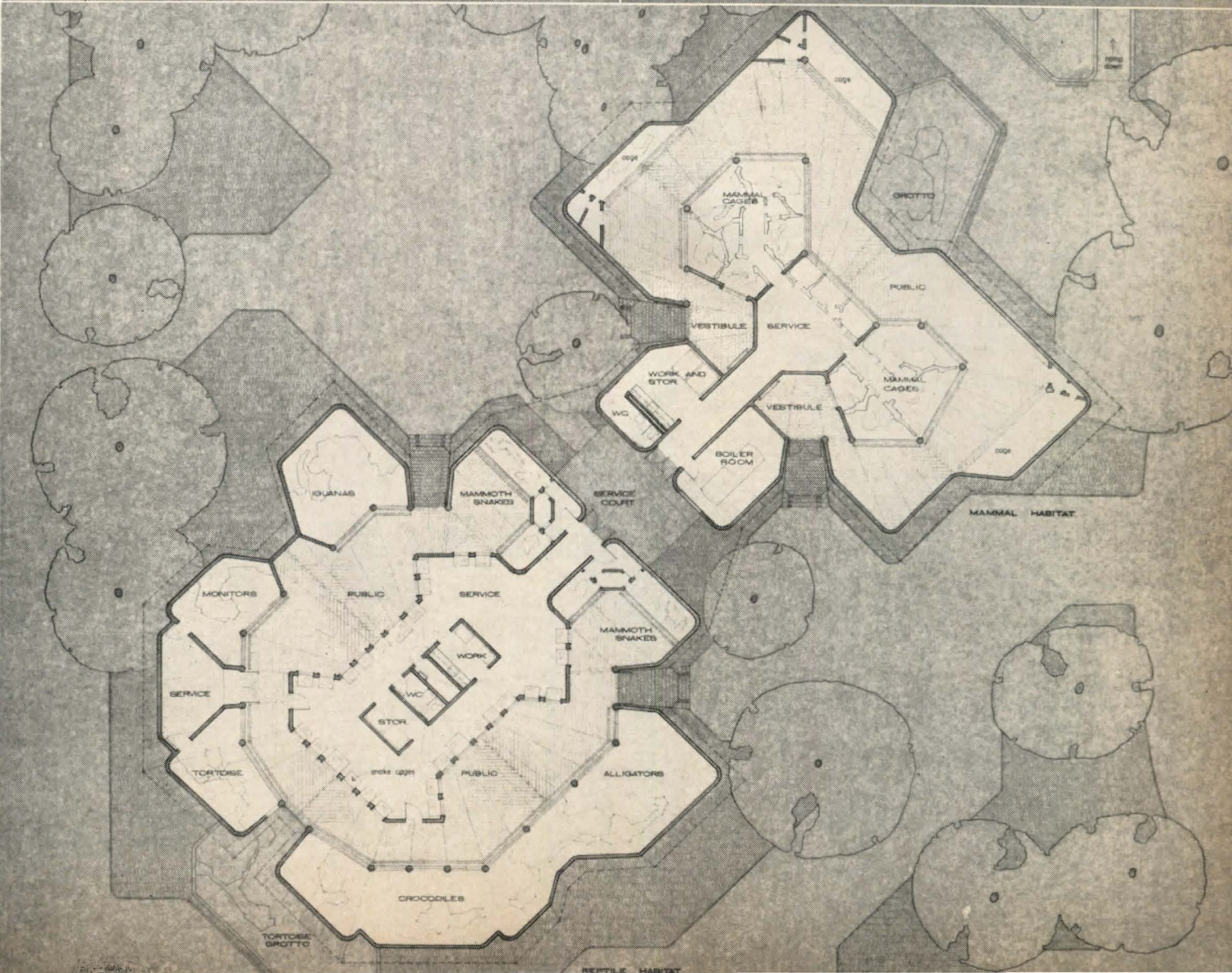
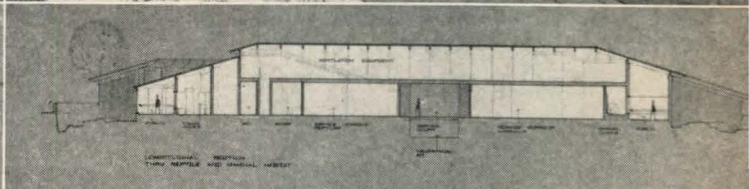
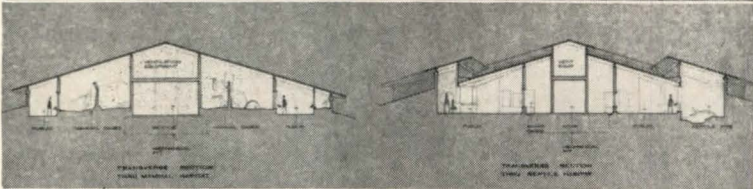
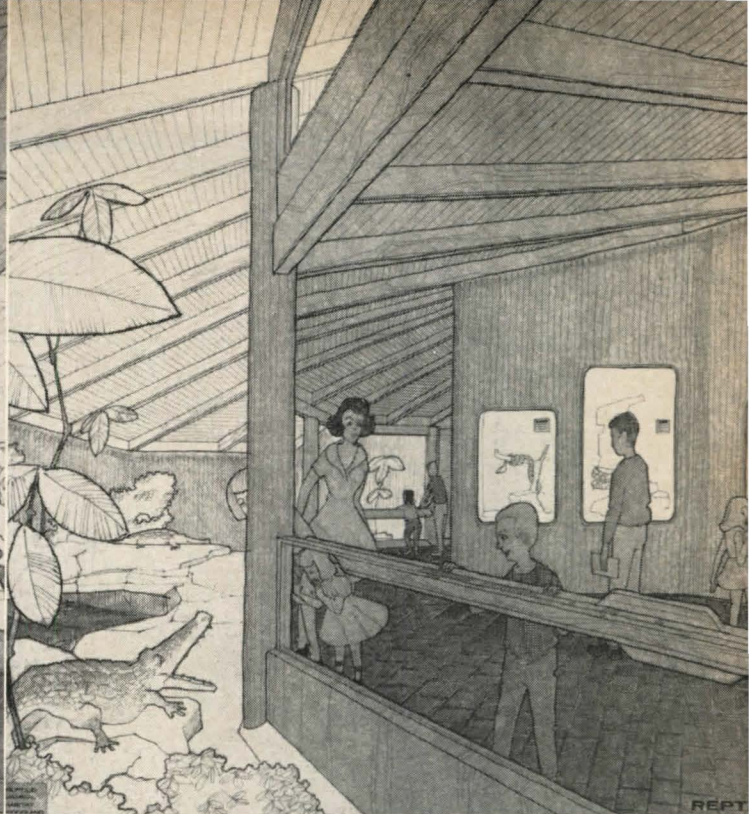
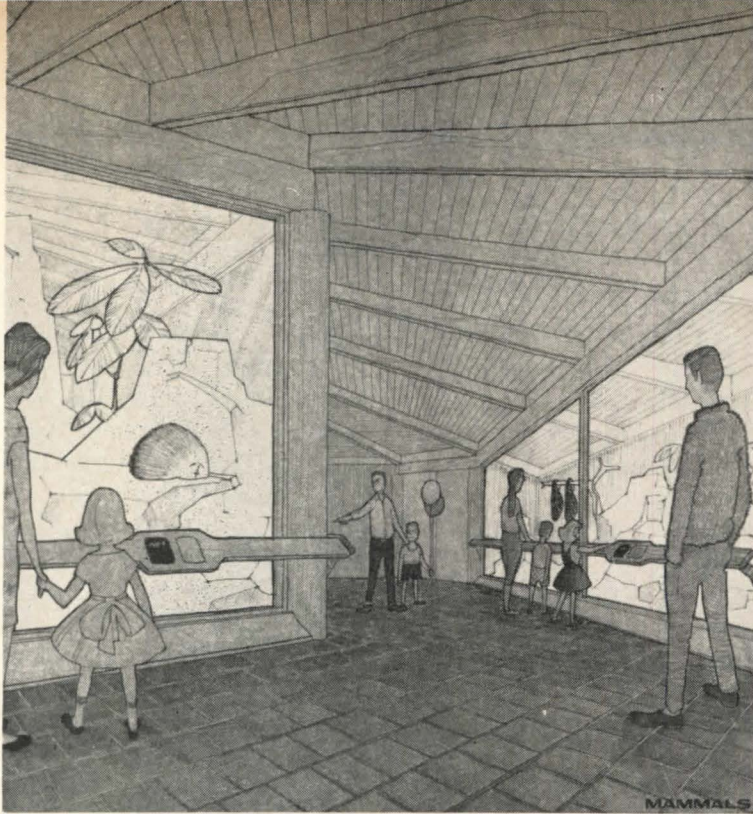
space for nocturnal mammals needs care on keeping night light levels during the day, so that the animals can be seen in action.

Bassetti says that the buildings will be "introverted, focused upon their exhibits; continuous, flowing concrete walls will form a muted background for the finely scaled creatures." The radial circulation pattern will guide viewers in the reptile house between cages for snakes and larger pens for tortoises, iguanas, crocodiles, and alligators. A clerestory roof will admit daylight into the larger cages. In the nocturnal mammal house, illumination

will be artificial, of course. Main cages will be in the center of the building, with three additional cages at the periphery. Structure will have concrete walls plus banked earth-retaining walls that act as a thermal insulator and moisture conductor. Roofs will be heavy timber construction with wood shingles, in the Northwest idiom.

The two "habitats," side by side, should provide interestingly contrasting experiences, and the act of moving in and out amongst the crocs, gators, moccasins, 'possums, and 'coons in the radial circulation pattern should prove enjoyable.





OLD GRAD COMES THROUGH

In 1959, a demonstration grant study was made of College Hill, the oldest and most historic section of Providence, Rhode Island. One of the major aims of the study was to find ways of preserving the older buildings of the community while also creating new commercial and residential structures to revitalize

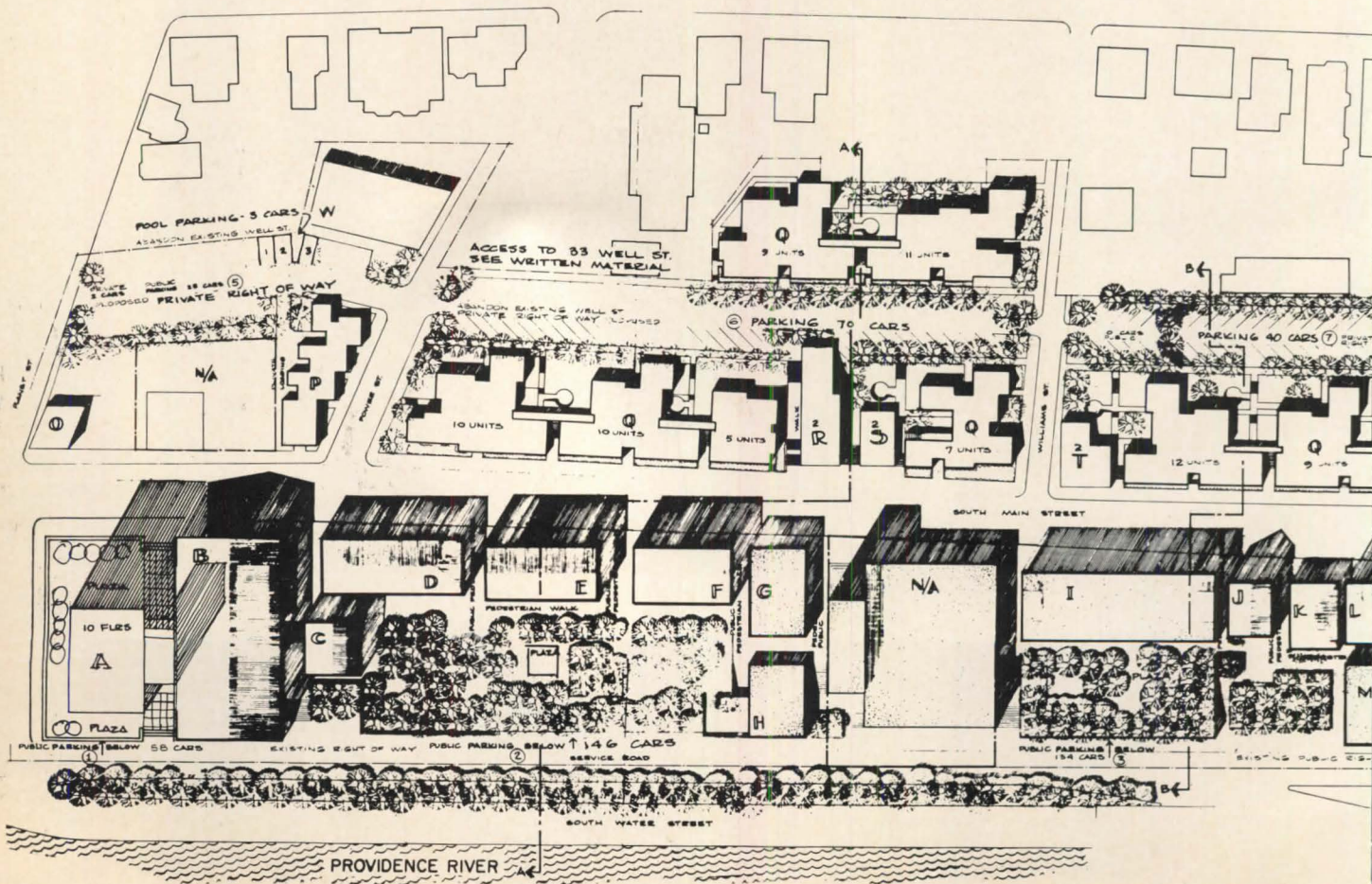


the area. Since that time, the Providence Preservation Society, a more influential force in Providence than similar institutions in other cities, has managed to rehabilitate 85 historical buildings, and parts of the over-all plan have been nibbled at.

One of the important parts of the plan was the area on the east bank of the Providence River generally known as the South Main-South Water area, after the two major streets there. In the city's great days as a shipping and whaling port, this section vibrated to the bustle of maritime trade. Today, however, it is a generally run-down residential slum whose largest commercial tenant is a wholesale plumbing supply organization.

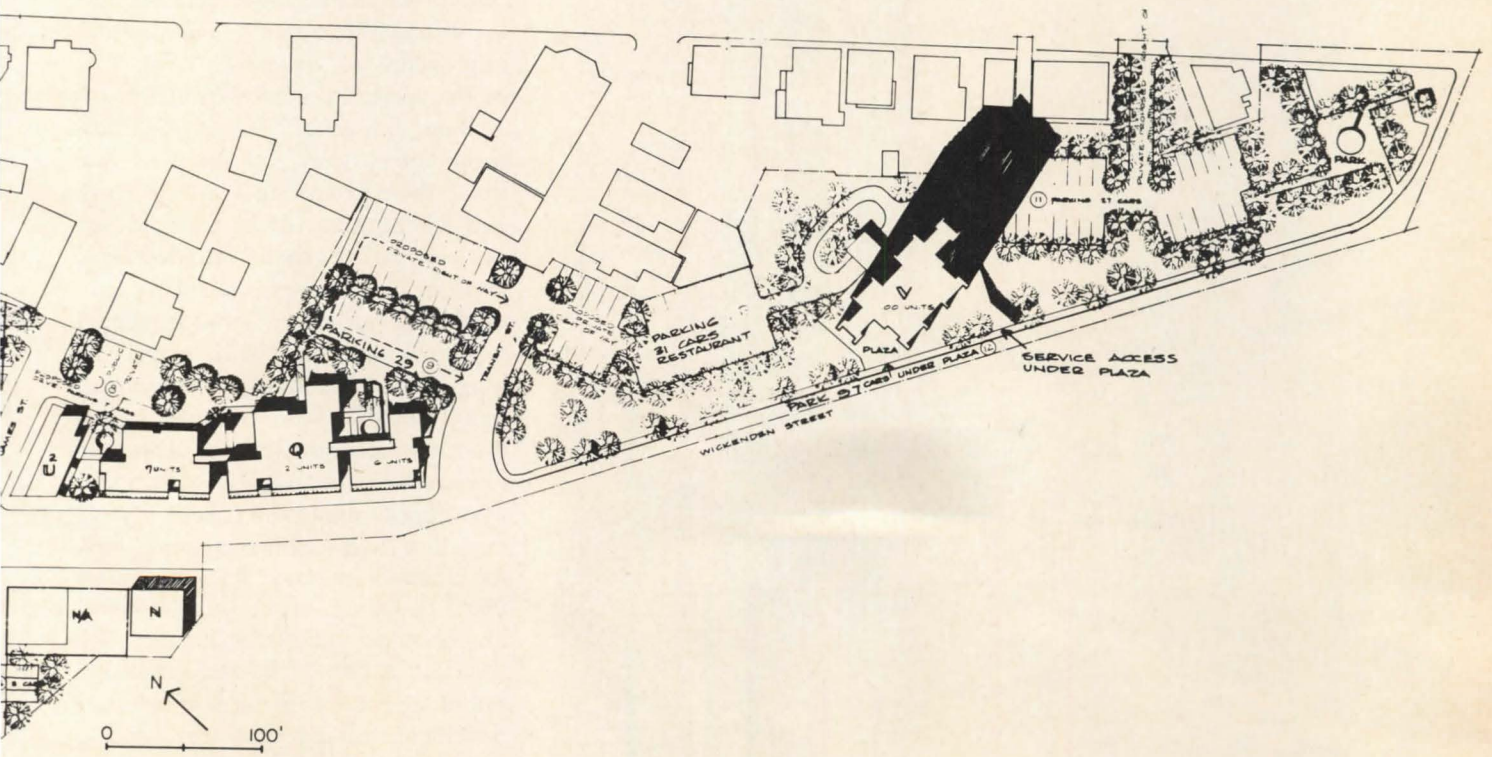
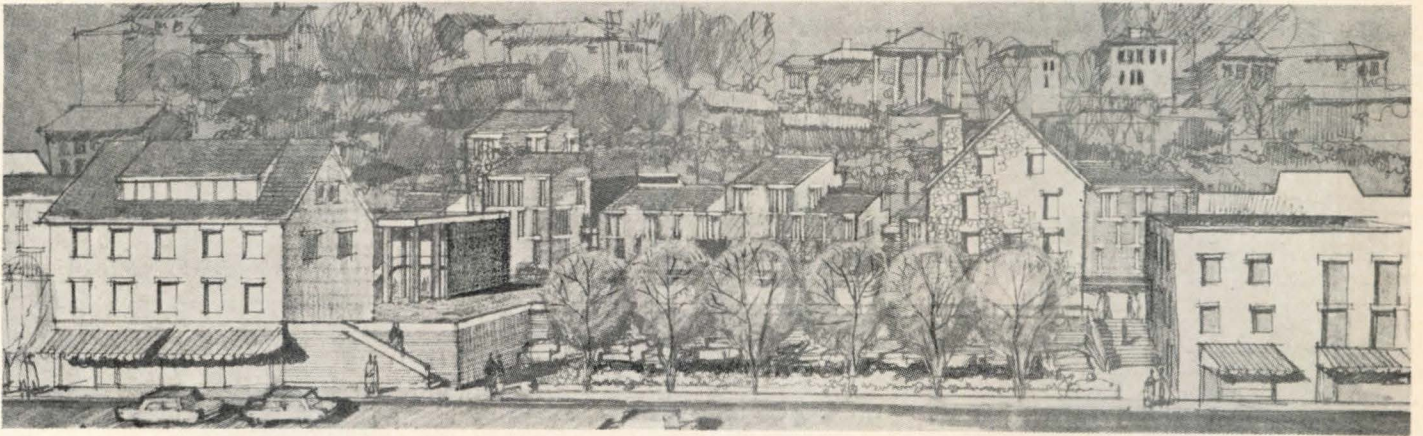
When the Preservation Society pressed its proposal to rehabilitate the good old buildings of the area

and create a forceful new business and residential neighborhood there, it found a sympathetic ear at the Providence Redevelopment Agency, which asked the Society to submit detailed plans for the project. Here entered Edward Sulzberger, a New York real estate man who is a loyal old grad (1929) of Providence's Brown University, and has always held his alma mater's home in fond regard. He liked the opportunity to discard the Robert Moses bulldozer technique for urban redevelopment, and commissioned New York architects Horace Ginsbern & Associates to come up with a viable plan for resuscitation and rebuilding. Millman & Sturges of Providence were named associate architects. Richard Coats of the Ginsbern firm saw a parallel—topographically and in the elegantly simple old buildings—be-





View from the river—before (above) and after (below).



SITE PLAN

(A) home furnishings center; (B) neighborhood shopping; (C) offices; (D) alumni club; offices, studio, and restaurant; (E) housing.

tween the slanting site and closely knit nature of Mediterranean towns.

About 20 buildings on the site will be preserved; new structures will house about 300 residential units and a commercial center for the home furnishings trade. The commercial buildings will be on the water side of South Main and will

include, in addition to the home furnishings center, neighborhood shopping facilities, offices with studios above for art students from Rhode Island School of Design, and a fine old warehouse building transformed into an alumni club with offices, studios, and a restaurant. Atop a rise at the west boundary of

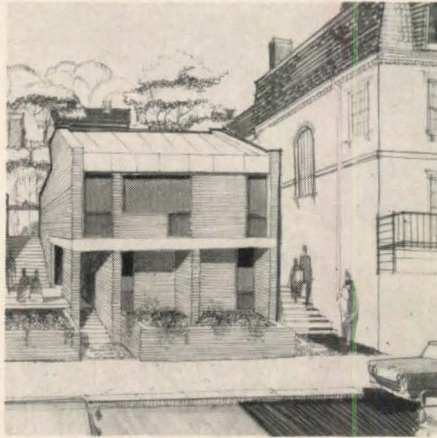
the section will be a high-rise apartment tower of 100 apartments containing a posh restaurant.

Low-rent housing units of two and three stories will be interspersed with some older buildings on the west side of South Main. Topography will be used to permit entrance into these from varying levels. Units will range from duplexes to efficiency flats. The structures will generally be directly on the street, with spaces at the rear for courts, playgrounds, and parking. Alleyways at various points will connect with these areas. There will be several parks in the redevelopment, plus a landscaped shopping mall. Parking in the commercial section will be underground, with landscaped decks above. Coats proposes that new houses be of brick with white trim, to fit easily with their Federal neighbors. The tower, as a sort of separate exclamation point at the end of the site overlooking a new expressway, will be more outspokenly contemporary, vaguely in the Chatham Towers idiom (pp. 132-39, FEBRUARY 1966 P/A).

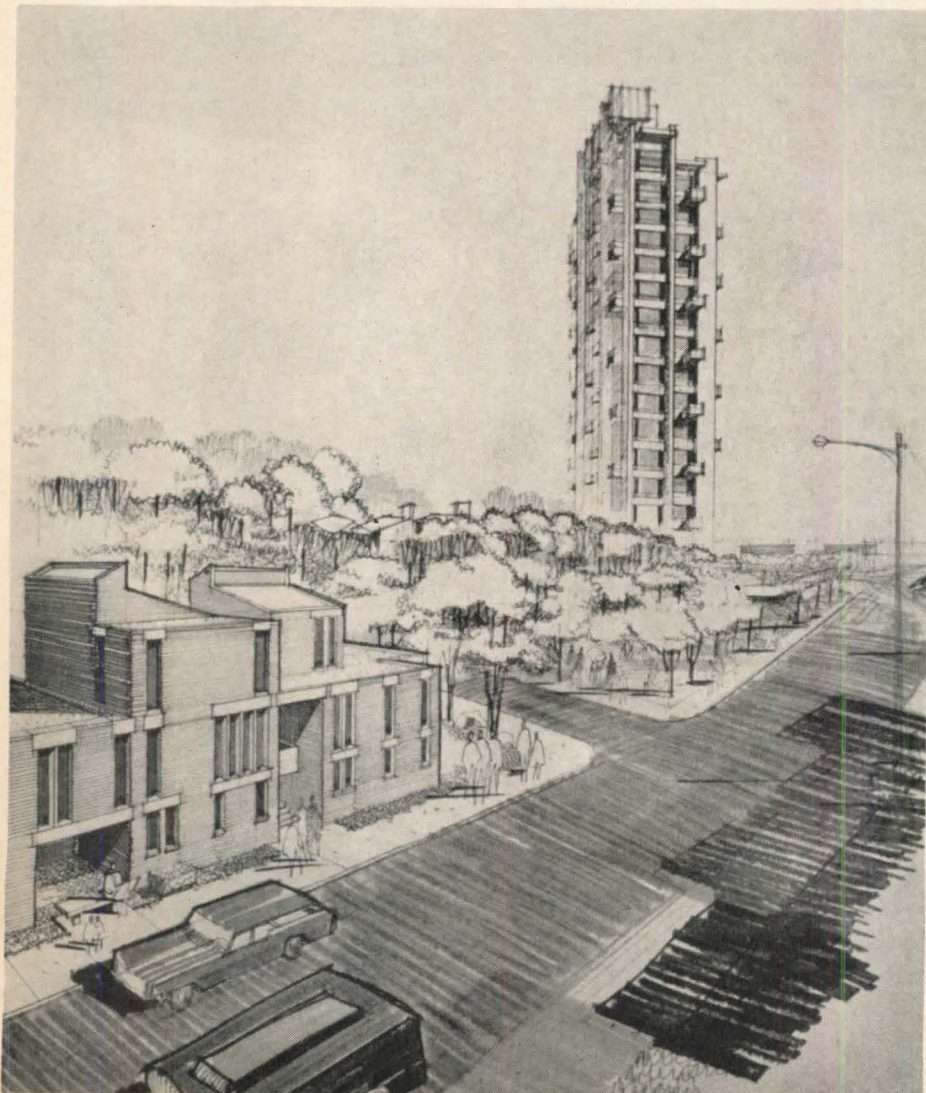
Sponsor Sulzberger considers that this kind of sympathetic rehabilitation-development has sounded the death knell for the tear-it-all-down approaches of the past. "The days of the speculative urban renewal developer are over," he says. "Most firms today work on set fees and make their profits on the long-range investment and the success of the project rather than on overnight rises in land values. . . . The criticism that urban renewal is simply replacing old slums with new is no longer valid. In most instances, urban renewal has become urban preservation and the best of the old is blended with the best of the new into a harmonious and practical package that helps revitalize not only the immediate area but the entire city." Looking around most cities, an observer might conclude that this last statement is overoptimistic, but it is good to hear a real estate developer talking that way, and if more of his colleagues take a lesson from the responsible project in Providence, we may see some improvement in the redevelopment scene in the next few years.



Residential area before . . .



. . . and after.



Tower area.



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Lockwood Greene Engineers, Inc., New York, N. Y.

On Readers' Service Card, Circle No. 322

AERATION REDUCES VENT PIPING

BY WM. J. McGUINNESS
A Swiss plumbing device under study in the U.S. could greatly reduce the cost of piping for multistory buildings.

A European plumbing device that eliminates separate vent stacks and much of the branch vent piping for fixtures, can save about 40 per cent of the soil, vent, and waste piping of a fully-vented system in a multistory building.

The device, called Sovent, aerates effluent in a plumbing stack. This enables air to pass through descending effluent, which means that the same pipe can be used to vent the system. This also means that branch vents can be eliminated, except where there are long lateral drainage runs.

Sovent was developed in Switzerland, and has been installed in numerous Swiss high-rise buildings. The first major application on this continent is underway in Montreal, where the fittings are being installed in the 12-story Habitat '67 project (see Octo-

BER 1966 P/A). In the United States, the Research Department of the School of Architecture at Pratt Institute installed Sovent in its test building in Carteret, N.J. Pratt, with a grant from the United States Department of Housing and Urban Development, is developing economical design and construction techniques for multistory apartment buildings.

Venting Effluent

In any multistory building, only a fragile barrier exists between occupied space and the polluted interior surfaces of sewage drains. This barrier is the fixture trap that retains a few inches of water in a "seal" that separates us from disease and unpleasant odors.

Air pressure within these soil pipes can force disease-laden air through the trap seal and into a room. Conversely, pressures less than atmospheric in the pipes can create a reverse pressure-difference that would allow air at room pressure to push the water from the trap seal into the piping. This siphoning action would destroy the water seal and allow polluted air to pass freely through the open trap and into the room.

The air pressures referred to are often greater than 5-in. water gage, and are caused by liquid sewage descending from upper stories. The liquid nearly fills the pipe, pressurizing the air below it and creating a subatmospheric pressure following it. This condition is compounded in multistory buildings.

The conventional method of coping with this problem has been to create air reservoirs into which gases can be pushed instead of allowing them to escape through traps. An adjunct function of this air system is to supply air to low-pressure regions in order to fill the vacuum and prevent siphonage. The reservoir com-

prises a series of vent pipes usually located parallel to drainage pipes.

Aerating Effluent

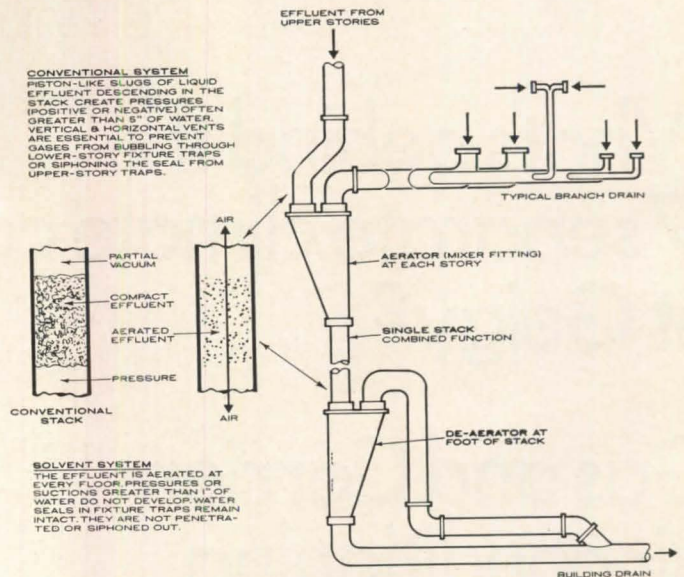
Sovent, by aerating the effluent and permitting air to pass through it, modulates pressure differences, both positive and negative, to less than 1-in. water gage. Because the trap seal always exceeds 1-in. of water pressure, the small pressure differences in the pipe cannot siphon a trap.

The aeration is accomplished in a long mixer fitting located on each floor at the junction of a branch drain and a stack. The Sovent fitting aerates the effluent from the branch line by allowing the effluent to discharge from the pipe into a larger chamber. Branch effluent can enter the Sovent at the top of the mixer (see illustration) or it can enter at the side. When this side connection is used, the manufacturer installs a baffle inside the mixer to break up the horizontal discharge.

As effluent descends, it passes through the mixing chamber at each floor. To further aerate the material, the vertical pipe is offset just above the mixer to break up the tendency for effluent to compact itself.

Ultimately, however, the effluent has to be de-aerated before entering the building drain. Therefore, at the junction of stack and drain, another type of Sovent fitting is installed that will break the fall of effluent and separate the air. The separated air enters the top of the building drain. At this point, effluent and air flow separately in the horizontal drain.

Because copper DWV (Drainage-Waste-Vent) tubing and wrought or cast fittings are suitable for this system, the Copper Development Association is promoting its use. The association is sponsoring tests in Switzerland so that it can develop capacity data suitable for presentation to U.S. code authorities.





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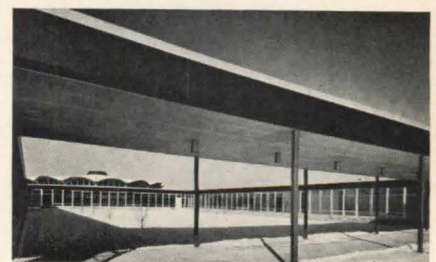
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PROTECTING CONCRETE AGAINST DEICING CHEMICALS

BY HAROLD J. ROSEN
How to protect concrete against deicing chemicals by coating it with linseed oil and mineral spirits. Rosen is Chief Specifications Writer for Skidmore, Owings & Merrill, New York City.

Concrete walks and concrete roads will deteriorate due to pitting and scaling when deicing agents are used to remove snow and ice. Although air-entrained concrete provides a reasonable degree of resistance to deicing chemicals, this result is not always obtained in practice.

The use of sodium chloride and calcium chloride for deicing roads and walks are standard procedures with public agencies and with homeowners. The resultant deterioration in concrete through the use of these deicing agents prompted almost simultaneous independent investigation of the problem by several agencies. Surprisingly enough,

each of the investigators arrived at the same relatively simple and economical solution to the problem: A coating of boiled linseed oil in a mineral spirit solution was found to reduce and minimize the scaling of concrete that occurs as a result of the attack by deicing chemicals.

Among the agencies involved in this research were the New York State Thruway Authority, Kansas State University, and Battelle Memorial Institute, which worked under contract for the Highway Research Board of the National Research Council.

The Battelle researchers evaluated a total of 110 coatings, representing a diverse spectrum of organic and inorganic materials, and conducted laboratory freeze-thaw experiments to determine their resistance to a 3 per cent solution of sodium chloride. The degree of scaling was determined visually by comparing coated and uncoated specimens.

Of the 110 coatings evaluated by Battelle, those based on linseed oil or other vegetable oils and sand-filled, coal-tar epoxy coatings performed best.

Considering both economics and performance, the best results by far were obtained with vegetable oils and particularly linseed oil solutions. In addition, this type of coating least affects the appearance of concrete. Some discoloration may appear initially. However, most discoloration will bleach out within a matter of weeks, although some may require an entire season.

For new concrete, the coating may be applied any time after the concrete has cured for a period of 14 days. If the coating is applied prior to this time, the finish may be marred and appear unsightly. For concrete that has been exposed to deicing salts, it is

recommended that loose scale be brushed away and the surface of the concrete be scrubbed and flushed with clean water to remove as much of the absorbed salts as possible. The washed concrete should then be allowed to dry for a day, prior to application of

the coating. An additional application should further be provided every three to four years to assure protection.

The following specifications may be used for the materials and application procedures in specifying linseed oil protective coatings for concrete.

Materials:

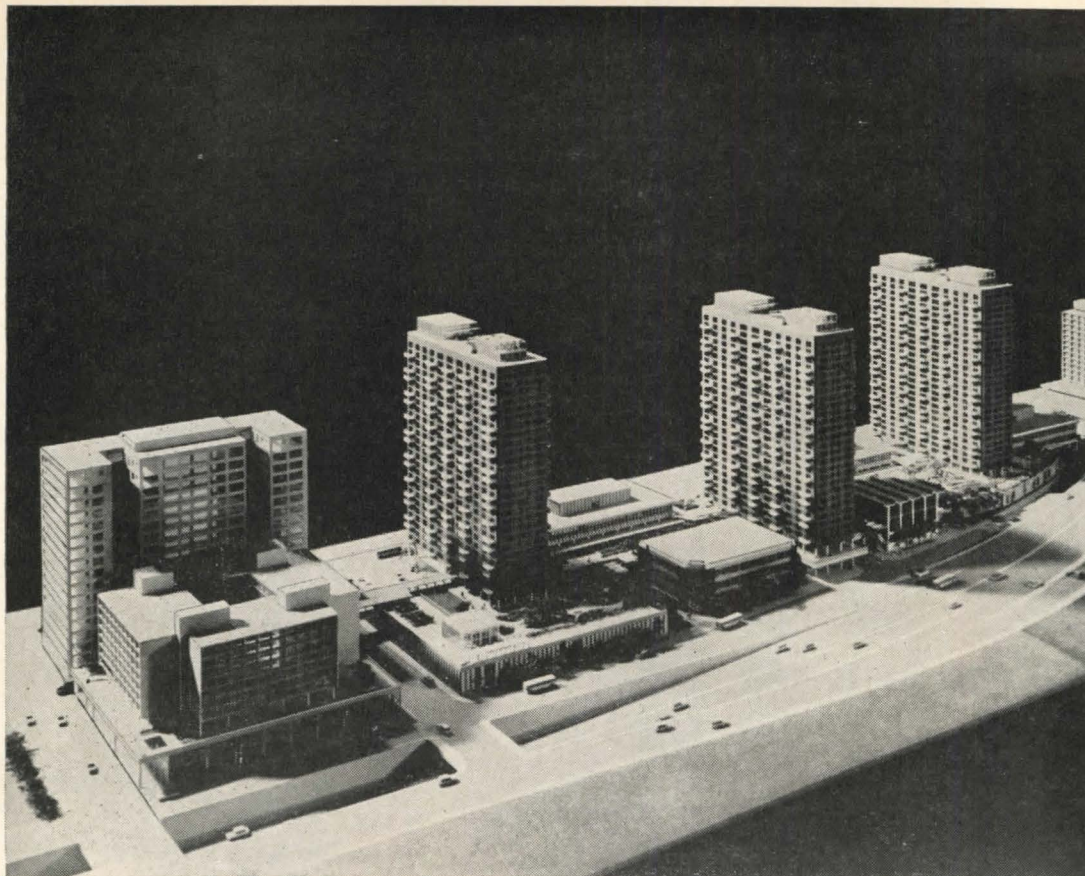
- (a) *Protective Coating*: 50 per cent boiled linseed oil and 50 per cent mineral spirits furnished as a blended mixture.
- (b) *Boiled Linseed Oil*: A.S.T.M. Spec. D-260, Type I, modified as follows:

	Min.	Max.	Test
Viscosity (Gardner Holdt)	A		A.S.T.M. D 1545
Color (Gardner)		13	A.S.T.M. D 1544
Acid Value	4	6	A.S.T.M. D 555

- (c) *Mineral Spirits*: A.S.T.M. Spec. D 235, modified as follows:
- | | Min. | Max. | Test |
|---------------|------|------|----------------|
| Aniline Point | 110F | 138F | A.S.T.M. D 611 |
| End Point | | 410F | A.S.T.M. D 86 |

Application:

- (a) *Weather Conditions*: Do not apply in temperatures below 50F or above 100F, when relative humidity exceeds 85 per cent, or when rain is predicted within 24 hours.
- (b) *Safety Precautions*: Protect traffic and workmen against fire hazards in the presence of flammable, volatile mineral spirits. Protect adjacent lawns and plantings by use of plastic sheeting.
- (c) *Surface Conditions*: Concrete surfaces shall be dry and cleaned of dirt, debris, oil, and grease, or other foreign matter that would inhibit penetration. Do not apply to surfaces less than 14 days old.
- (d) *Equipment*: Apply by approved mechanical pressure spray equipment, by portable hand-spray equipment, by brushing or rolling, or by a combination of these methods to insure complete, even coverage. Spray equipment nozzles shall be not more than 18 in. from surface being treated.
- (e) *Rate of Application*:
 - (1) *First Coat*: 40 sq yds per gal or 0.025 gal per sq yd.
 - (2) *Second Coat*: 67 sq yds per gal or 0.015 gal per sq yd.
- (f) *First Coat*: Permit first coat to dry until penetration is complete and tackiness has disappeared, but not less than 24 hours.
- (g) *Second Coat*: Apply second coat immediately after first coat has dried, as specified above.
- (h) *Protection*: Do not permit traffic on coatings until tackiness has disappeared, and not sooner than 24 hours after application of second coat.



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Mansion House Center

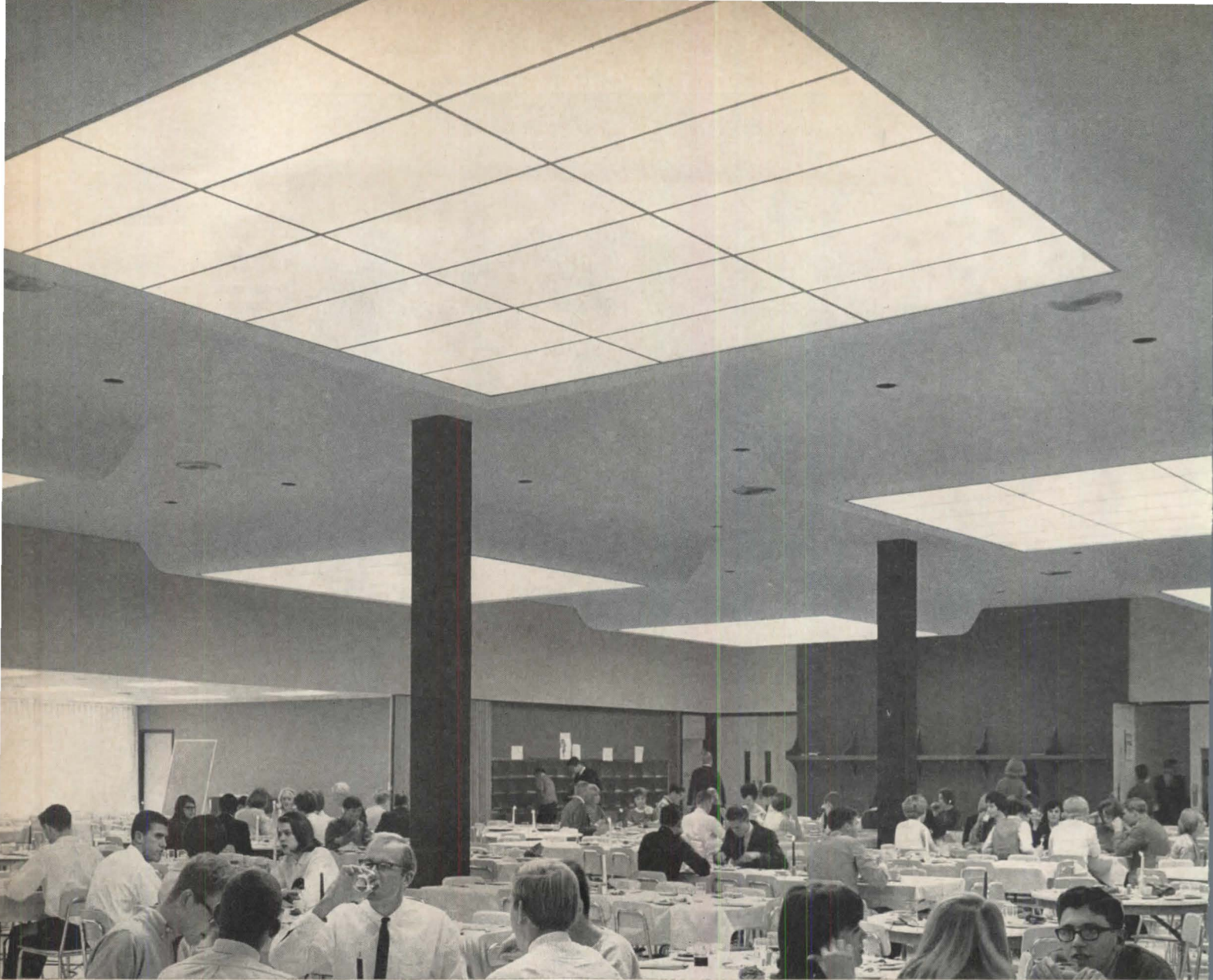
—a New 52 million dollar Apartment Community
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■ In the shadow of the Gateway Arch, St. Louis' newest landmark—and on the site of the historic Mansion House, one of the city's oldest landmarks—stands the elegant new Mansion House Center representing a truly spectacular and unique venture in urban living. Rarely have modern design, materials and technology combined to produce an apartment community with such impressive services, planned conveniences and interesting facilities. The three 28-story apartment buildings, sheathed in bronzed aluminum, are the tallest of their kind in the city. In addition, three adjacent commercial buildings provide Mansion House Center with offices, retail stores, restaurants and social clubs. On the beautiful six-acre promenade are an interdenominational chapel, lushly landscaped lawns and gardens, reflection pools, illuminated fountains, and statuary by internationally known sculptors.

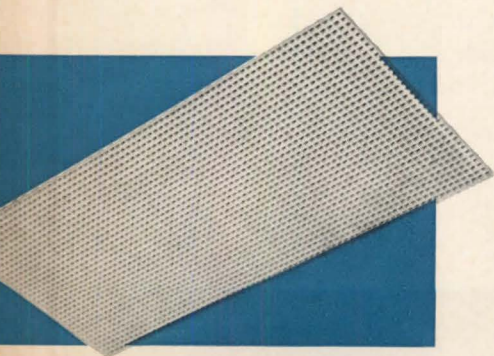
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Associate Architects: James M. Hunter
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Electrical Consultants: Swanson-Rink
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Lighting: Silvray-Litecraft
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THE ARCHITECT'S LIABILITY AND THE CONTRACTOR: PART 2

BY BERNARD TOMSON
AND NORMAN COPLAN

In the second of several articles, P/A's legal team discusses the findings of the Appellate Court of Illinois in a recent case in which architects were sued for injuries sustained by the contractor's workmen.

In last month's column, we discussed the Illinois case of *Miller v. DeWitt*, in which a contractor's employees had been injured on a project because of inadequate shoring, and who as a result instituted action against the architects, contending that the latter had a duty in the exercise of their professional function to take reasonable steps to insure the safety of workmen on the project. It was the contention of the plaintiffs that it was the duty of the architects to "inspect, supervise, and to stop the work if it endangered life or property," and that the architects should be liable, even though the injuries in question were sustained in the first instance because of the manner in which the contractor performed his work.

The architects, on the other hand, contended that they were not responsible for the methods utilized by the contractor in executing the work,

nor for the safety of his employees; and that the architects' primary responsibility in respect to supervision is to insure that the completed project conforms to the plans and specifications. They further contended that, if liability were charged to them, they were entitled to reimbursement from the contractor who performed the work, since the latter would be the primary or active responsible party and the architects' role was only passive.

The contractor, who could not be sued directly by the plaintiffs since such suit was barred by the Workmen's Compensation Law of Illinois, contended that the cross-suit by the architects should be dismissed, since the claim of the plaintiffs against the architects of inadequate supervision constituted an act of active and not passive negligence. The contractor further contended that the Workmen's Compensation Law, which barred direct suits by employees against their employer, also barred the cross-complaint of the architects, since a recovery by them against the contractor would accomplish by indirection what is barred directly under such law.

The Appellate Court of Illinois described the potential liability of an architect as follows:

"The architects may be liable for negligence in failing to exercise the ordinary skill of their profession, which results in the erection of an unsafe structure whereby anyone lawfully on the premises is injured. Their possible liability for negligence resulting in personal injuries may be based upon their supervisory activities or upon defects in the plans or both."

The Court ruled that an architect can be liable to persons with whom he has no

contractual relationship, including employees of a contractor, stating:

"Their possible liability is not limited to the owner who employed them. Privilege of contract is not a prerequisite to liability. They were under a duty to exercise ordinary, reasonable care, technical skill, and ability and diligence, as are ordinarily required of architects, in the course of their plans, inspections, and supervision during construction for the protection of any person who foreseeably and with reasonable certainty might be injured by their failure to do so, and whether or not they so exercised such is a question to be determined by the jury."

In rejecting the position of the architects that the duty of supervision was limited to assuring that the completed project conformed to plans and specifications, the Court ruled:

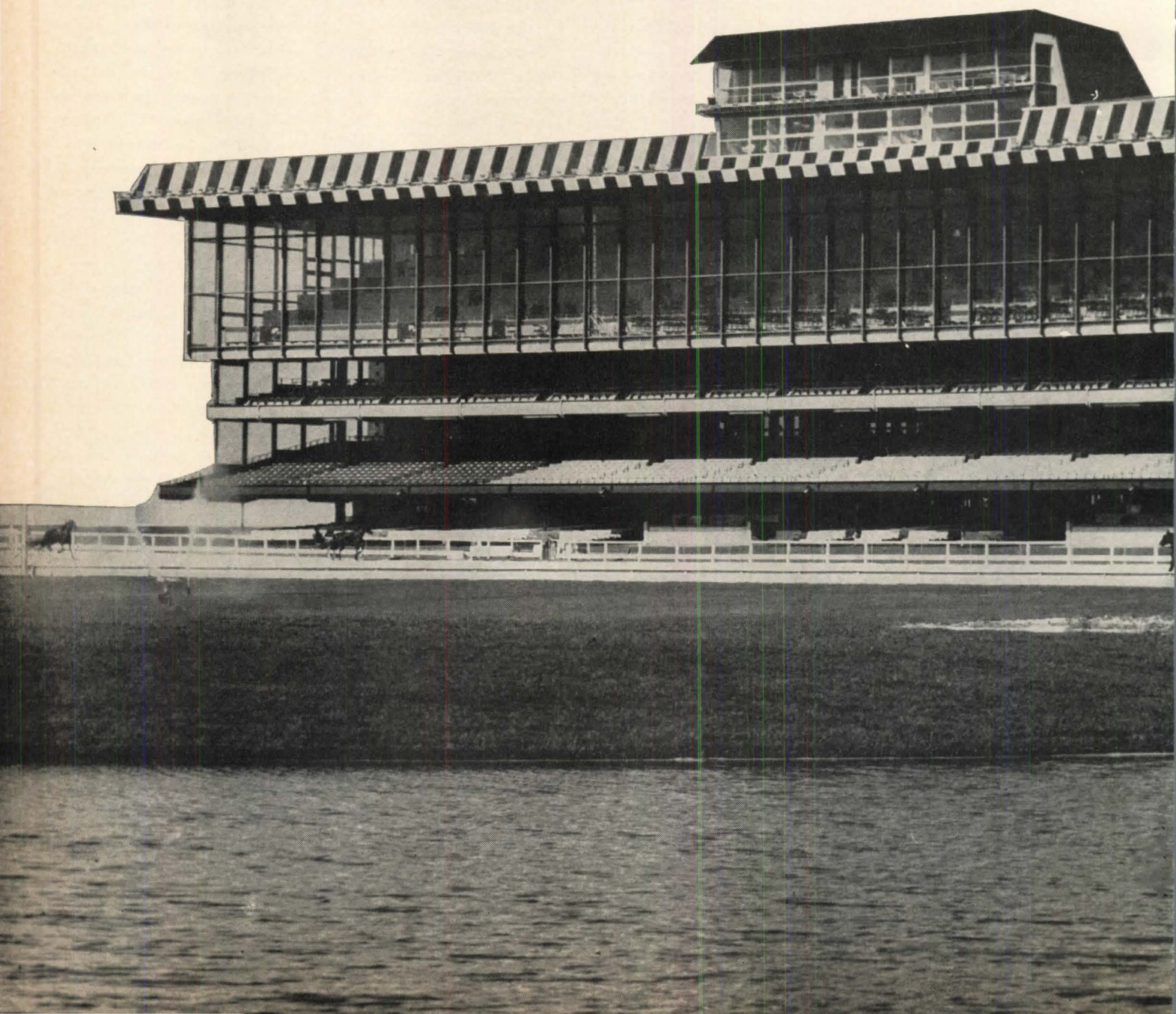
"The defendant's architects urge that under a contract to 'supervise the work' of construction, an architect undertakes only a duty to see that a building is constructed, which, when completed, meets the plans and specifications and is the building for which the owner contracted, and that he has no rights or duties with regard to the manner or means or techniques of construction adopted by the contractor to produce that end result. One of the defendant's architects' duties here undoubtedly was as they say, but that was by no means their only duty. Under these contracts and associated documents they had many other powers, authorities, responsibilities, and duties. Some of their rights and correlative duties did re-

late to some of what the defendant's architects possibly refer to as manners or means or techniques of construction of the contractor. But it would be a useless exercise in semantics and speculation to endeavor to examine or define or classify (which the architects here do not) what is meant by manners or means or techniques of construction of the contractor and as to which ones the architects had duties and as to which ones they had no duties. Under these contracts and documents and under these facts and circumstances they had substantial relevant and applicable duties to persons in the position of these plaintiffs as we've set forth, whether those be considered to relate, in part, to what are possibly denominated to be manners or means or techniques of construction, or to something else."

The Appellate Court of Illinois concluded that the architects had the duty to stop the work if the contractor's performance jeopardized the safety of his workmen, and that the jury was justified in concluding that the architects in the proper exercise of their professional functions should have known that the contractor's employees were subject to jeopardy. The Court further ruled that the dismissal of the architects' cross-complaint against the contractor was proper, and that the jury could find that the failure of the architects to stop the work was active negligence, precluding recovery against a negligent contractor.

In next month's column, we will discuss the decision of the Supreme Court of Illinois, which affirmed in part and reversed in part the determination of the Appellate Court.

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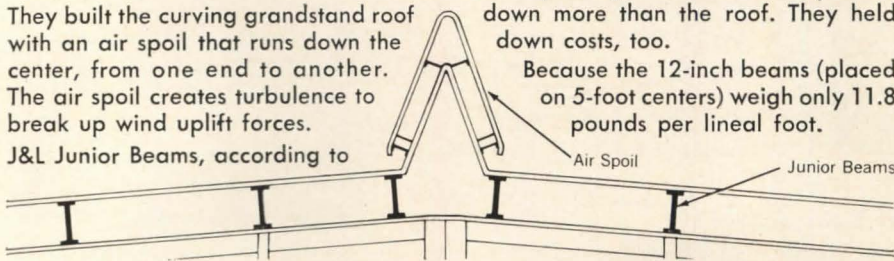
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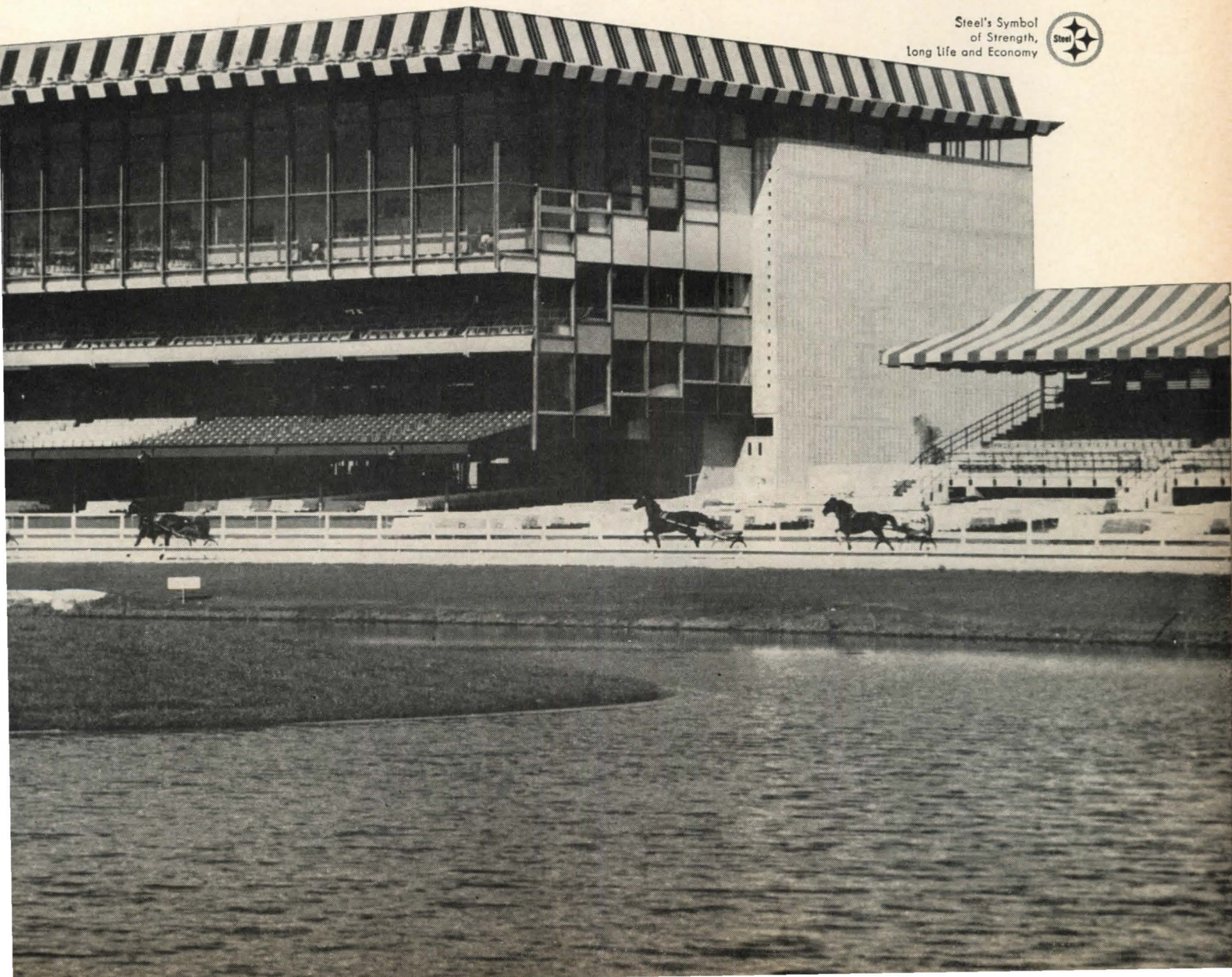
• Architect: Robert E. Hansen, A.I.A. • Consulting Engineers: Walter C. Harry Associates • Steel Fabricators: Peden Steel Company • General Contractor: Porcher Construction Company • Completed: 1965 • Owners: South Florida Harness Raceways, Inc. Wm. A. Weir, Construction Coordinator, Pompano Beach, Fla.



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which reached its high point at the turn of the century. Robert Schmutzler uncovers its origins in William Blake, and traces early art nouveau through Rossetti and the Japanese influence to its zenith in Europe and America.

The active hostility shown to art nouveau in the last 50

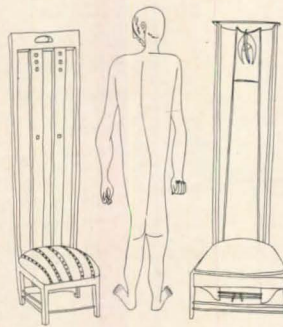


years, and its small repute, is reflected in part in the minimal attention it receives in most architectural texts. This reticence on the part of architectural historians is perhaps understandable. They doubtlessly find it difficult to take seriously a movement spawned by poets, painters, and illustrators whose beginnings were



decidedly not architectural. Yet the insistence of the art

nouveau architects on total design, their concern with interior planning, and their search for decoration uncontaminated by the regurgitations of revivalism is surprisingly consistent with the concern of those contemporary designers who see design as integral to



architecture. This is what makes this book important, rather than the commercial exploitation by art dealers and galleries of art nouveau as a collection of prettified objects isolated from their setting.

Art nouveau has been characterized as essentially an



anti-movement. Schmutzler's book strongly contradicts this. He proves that the roots of art nouveau go back to the 18th Century. His work documents with a profusion of fact and illustration the validity of the author's premise that this was not a hybrid offshoot grafted to the mainstream of artistic development.

Within an art form that includes Jan Toorop's poster for

salad oil, Berlang's Amsterdam Stock Exchange, Tiffany vases, Gaudí buildings, and structural decoration by Viollet-le-Duc, it is understandable that an occasional generaliza-



tion by the author may be found questionable by this reader. But these infrequent flaws do not prevent Schmutzler from attaining a synthesis of the tendencies that made the phenomenon of art nouveau less a phenomenon and more the logical outgrowth of a design search spanning considerable time.

The beauties of art nouveau's surrealistic contradictions offer boundless fascination. The meanings of a hand-blown, organically formed glass vase decorated with peacock feathers; or soulful, spiritual, erotic Victorian nudes; or tigers and a damsel bursting out of a clump of lilies have the logic found only in dreams. Within



the complete environment of architecture, however, the surrealistic climate is the more remarkable. Here, the art-

Continued on page 202

ART NOUVEAU

NEW

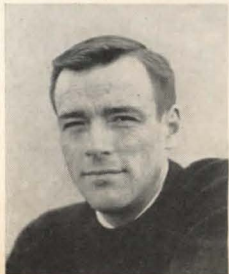


BY FOREST WILSON

ART NOUVEAU. By Robert Schmutzler. Harry N. Abrams, Inc., 6 W. 57th St., New York, N.Y., 1965. 322 pp. illus., \$25. The reviewer, an Associate Editor of P/A, did the accompanying drawings.



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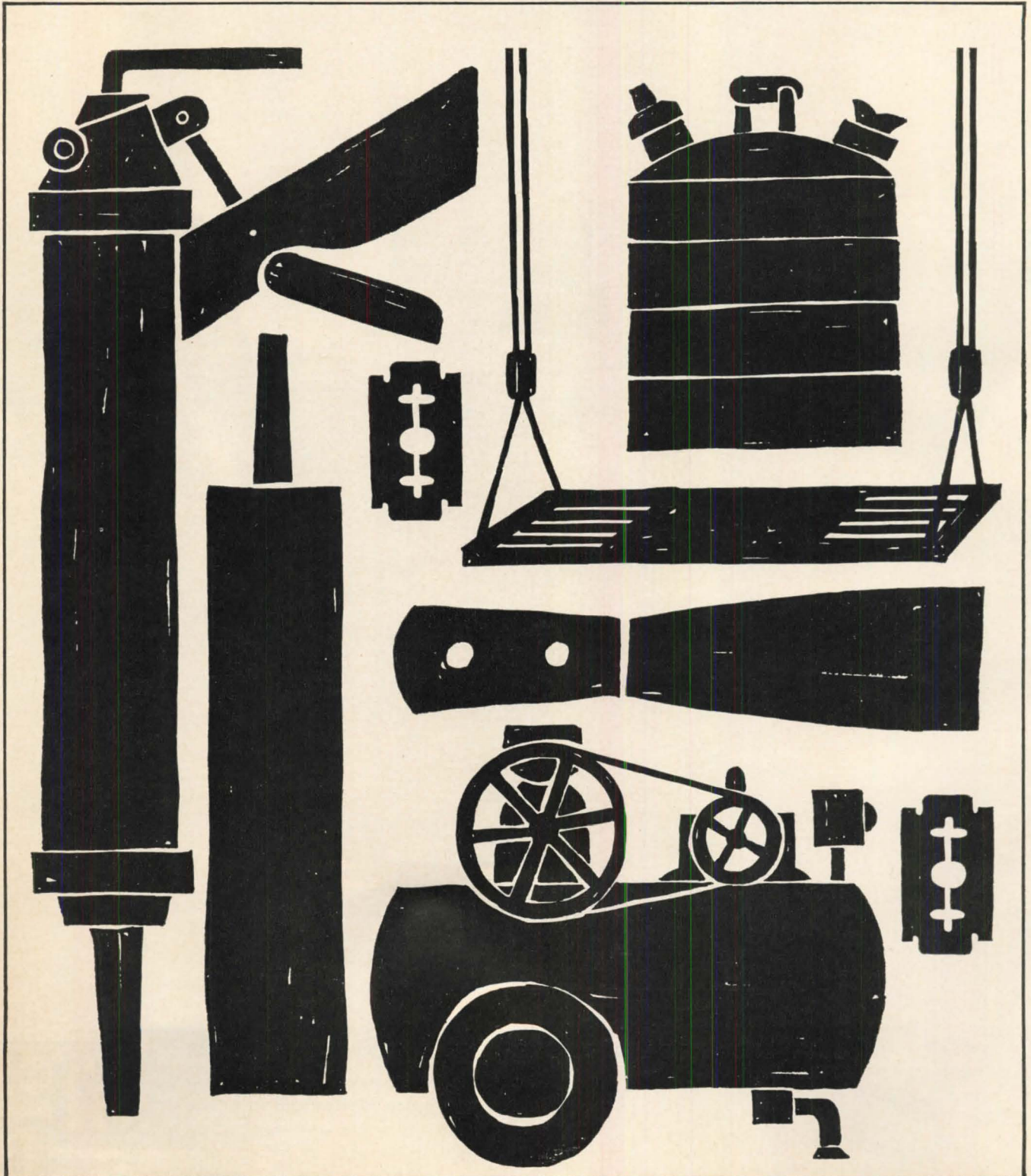
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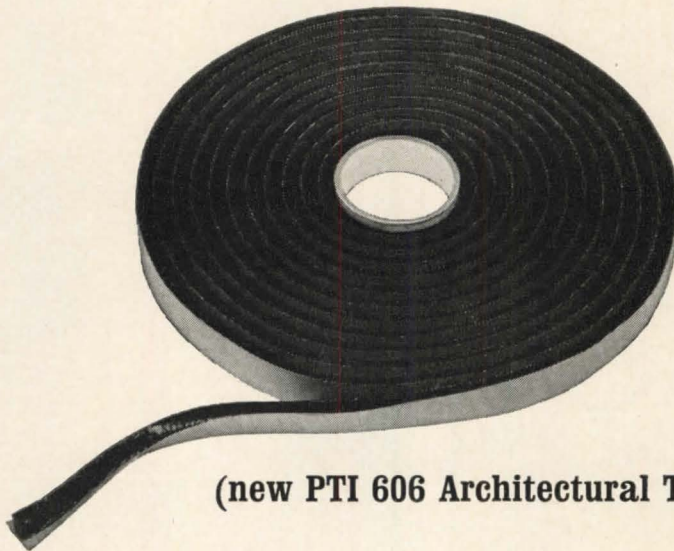
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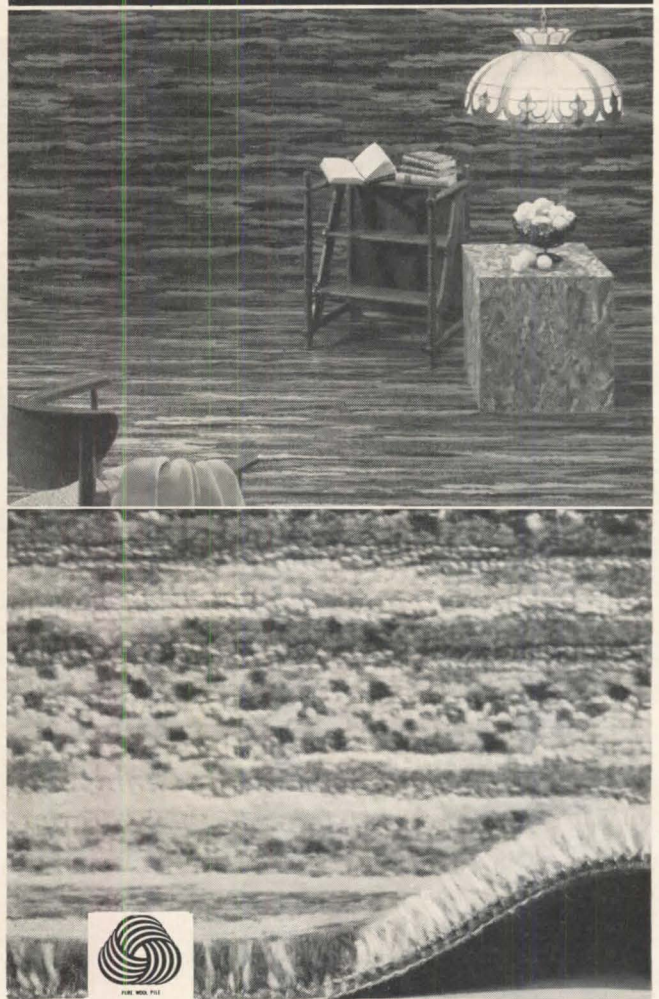
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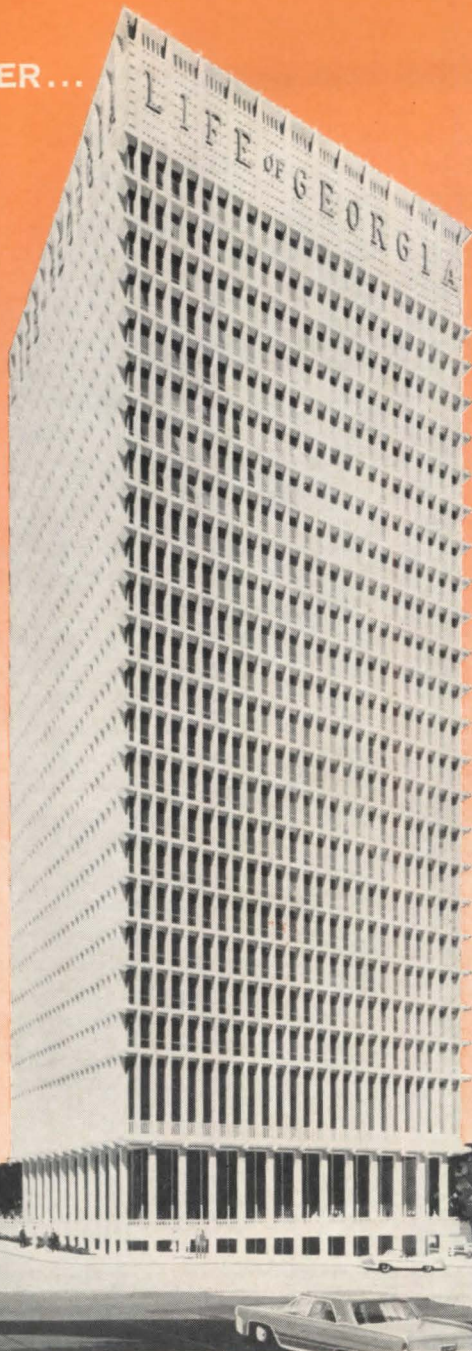
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Continued from page 196

nouveau architect's insistence on total design gave overpowering consistency to his fantasy.

It is therefore useless to seek logic in art nouveau. The flowing, sinuous organic line was most successfully realized in inorganic form. Gaudí, in his striving for architectural form, created form for form's sake, which, by definition, is sculpture rather than architecture. Yet, in his creation of forms unassociated with architecture, he often employed the soundest structural reasoning; there can

be little argument with the logic of moving columns from the vertical to take the side thrust of an arch, or the creation of a serpentine eave by simply successively tilting the rafters over the ridge. Victor Horta, who was given credit for designing the first art nouveau building with the most sensible of ground plans (according to Siegfried Giedion) was not above creating an insect-shaped inkwell. From the vantage point of over half a century, some of these concepts seem incongruous, but then logic has seldom been the controlling

vice of artists. I need but mention today's Campbell Soup cans and Brillo boxes.

Of course, the incongruities of the style are only too obvious, and the author has not dwelt upon them. In retrospect, however, they seem no more outlandish than the modernism that followed in the 30's. Unquestionably, in unimaginative hands art nouveau could be unequivocally bizarre, but the possibility of its awfulness approaches virtue when contrasted with much of contemporary building—designed by codes, calculated by machines, aesthetically gaged to the arbitrary convenience of machine extrusions—which, in their mediocrity, lack even the possibility of being bad. Now that we have seen what the uncontrolled machine is capable of, it is possible to appreciate once again the nostalgia for nature that was the mainspring of men like Sullivan in their creation of ornament.

The reaction of most observers to art nouveau is unequivocal, for it is not a style that can be taken or left alone. It would seem, therefore, that this style, which at times attains surrealist madness and at others fine architecture, is a valid record of our architectural past and is at least important enough to examine for our architectural future. In this reviewer's opinion, this fact alone would give sufficient importance to Schmutzler's book.

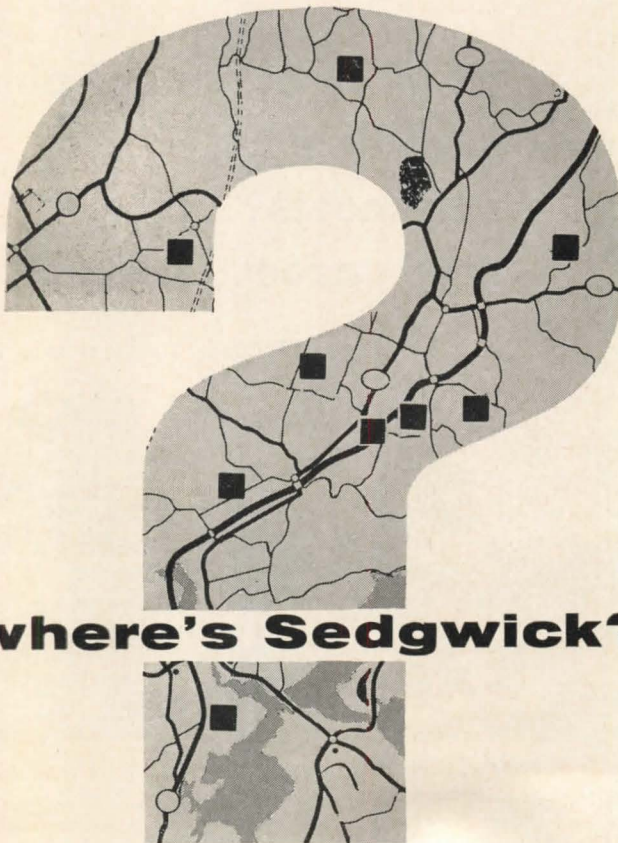
Scrupulously Documented Survey

BY PETER COLLINS

THE SEARCH FOR ENVIRONMENT: THE GARDEN CITY BEFORE AND AFTER. By Walter L. Creese. Yale University Press, New Haven, Conn., 1966. 360 pp., illus., \$15. The reviewer is Professor of Architecture at McGill University, Montreal, Canada.

When Walter Creese first began his research on the antecedents and influences of planned English urban environments since 1850, orthodox town planners still based their theories on a doctrine equating "slums" with housing densities greater than 12 families to the acre. This was so whether the panacea visualized was conceived as scattered villas or widely spaced, tall apartment blocks. But the delayed publication of the results of Dean Creese's research has coincided with a revulsion against this doctrine among the most influential academic theorists and practitioners. Thus, his scrupulously documented survey allows us to study and assess his critical appraisals with far greater objectivity than

Continued on page 204



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CEILING SYSTEMS BY
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Continued from page 202

would have been possible a decade ago.

Whether or not the present eclipse of the "Garden City" ideal (in favor, for example, of prototypes based on Greek fishing villages) is merely a fashionable reaction or based on more solid causes, the reader can best decide when he has read Dean Creese's final chapter. But it seems worth noting that, whereas today's authoritative town planners usually have a deep and extensive scholastic background commensurate with the complexity of the problems they face, the most

salient quality of the leading figures in this book is their patent lack of formal education. Ebenezer Howard (according to Lloyd Rodwin) "quit his studies at the age of fifteen, and during the next six years drifted through a series of odd jobs, taught himself shorthand, and served as secretary to a noted evangelist" before he emigrated to the United States and unsuccessfully took up farming in Nebraska. Raymond Unwin (the principal hero of Dean Creese's book) began work as an apprentice engineer and drifted into architecture in a manner the

author leaves largely unexplained. Barry Parker (Unwin's partner, cousin, and brother-in-law) admittedly began his career as an articulated pupil to a country architect; but Dean Creese refers specifically to "his humble start as an apprentice decorator" (p. 255), and remarks that both Unwin and Parker were "self-educated in the literal sense, and partially lacked the inner restraint upon which more formally trained minds can often draw" (p. 243). In fact, all they seem to have had in common was, at best, a fervent faith in the romantic mediaevalism of Ruskinian sociology, and, at worst, the subconscious belief that the best environmental patterns inevitably bear a generic resemblance to William Morris's wall-paper designs.

In general, then, Dean Creese's basic interpretation of English developments in domestic architecture seems to corroborate the main thesis outlined in Professor Pevsner's *Pioneers of the Modern Movement*. Similarly, its detailed organization displays the same inherent inconsequence, which may of course accurately reflect one of the fundamental defects of British mentality, but may also indicate a Hegelian flaw in the author's organization of his text. For example, Chapters 2 and 5 deal with the model villages built by industrial philanthropists to house laborers who worked in their new factories. Chapters 4, 10, and 11 deal with garden suburbs either built for, or eventually occupied exclusively by, middle-class "commuters." Both may well have exerted a powerful influence on Howard's concept of the "Garden City"; but there is in fact little fundamental connection between the three concepts, and Dean Creese might have been more consistent if he had either elaborated trenchantly upon the nature of the discrepancy, or included detailed comparative analyses of, say, continental garden suburbs such as Le Vésinet, begun near Paris in the 1860's (which he entirely omits).

However, the sympathetic reader will not regard this inconsequence as a blemish, but rather as an additional stimulus toward pondering the significance of Dean Creese's immensely rewarding study. For the author's unassuming scholarship has brought to light a wealth of hitherto obscure literary and photographic information on a topic often treated too superficially on our overweighted shelves of Mumfordiana, whilst his shrewd and humane commentary has transformed what, in less able and distinguished hands, might have been little more than a *catalogue raisonné* of apt quotations and esoteric facts.

Continued on page 214

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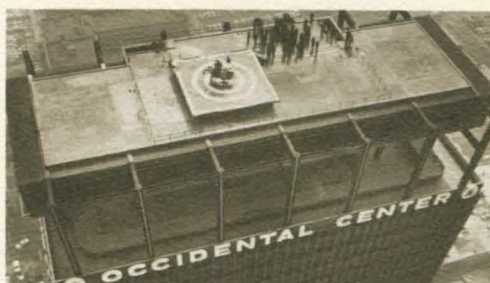
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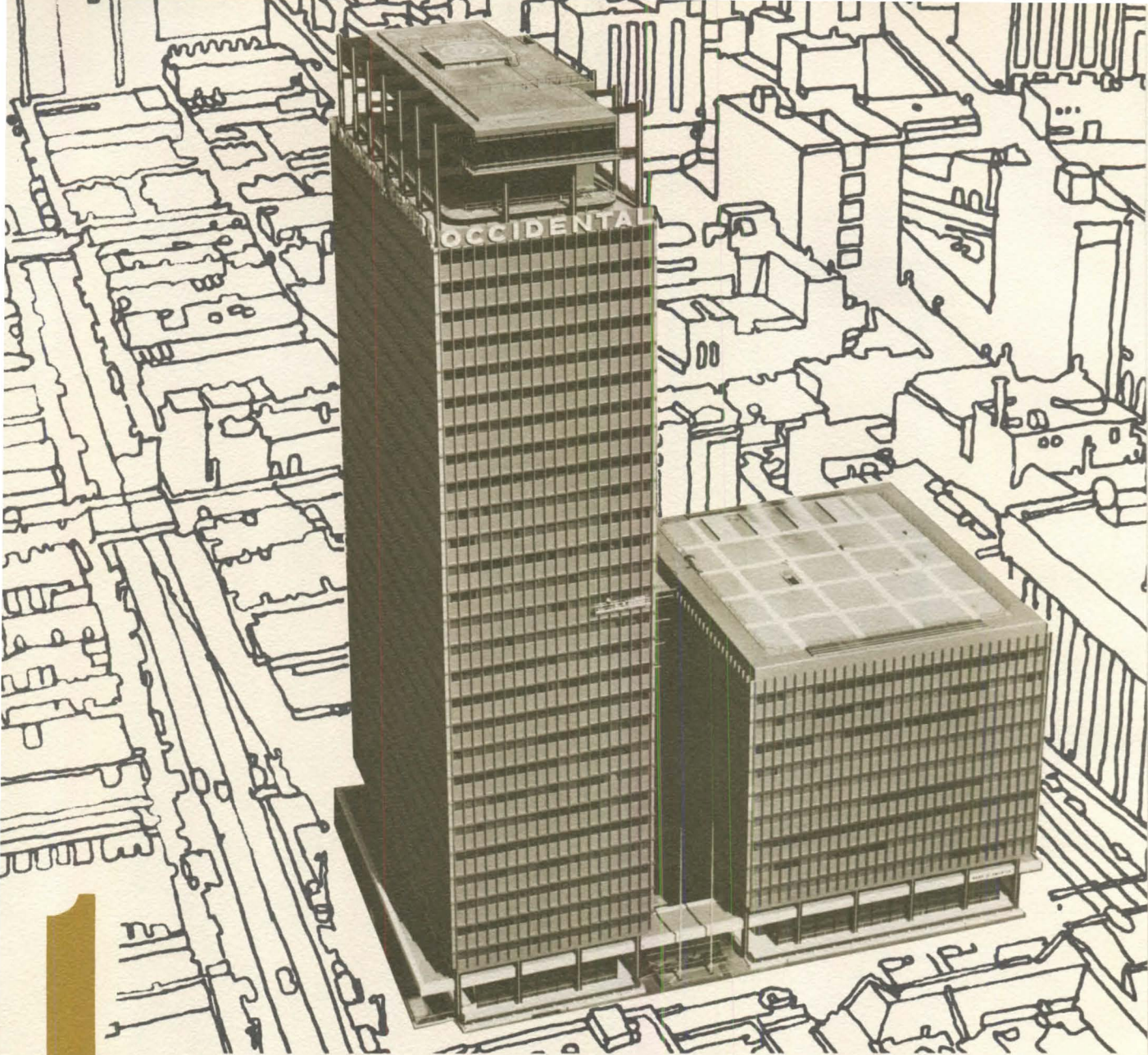


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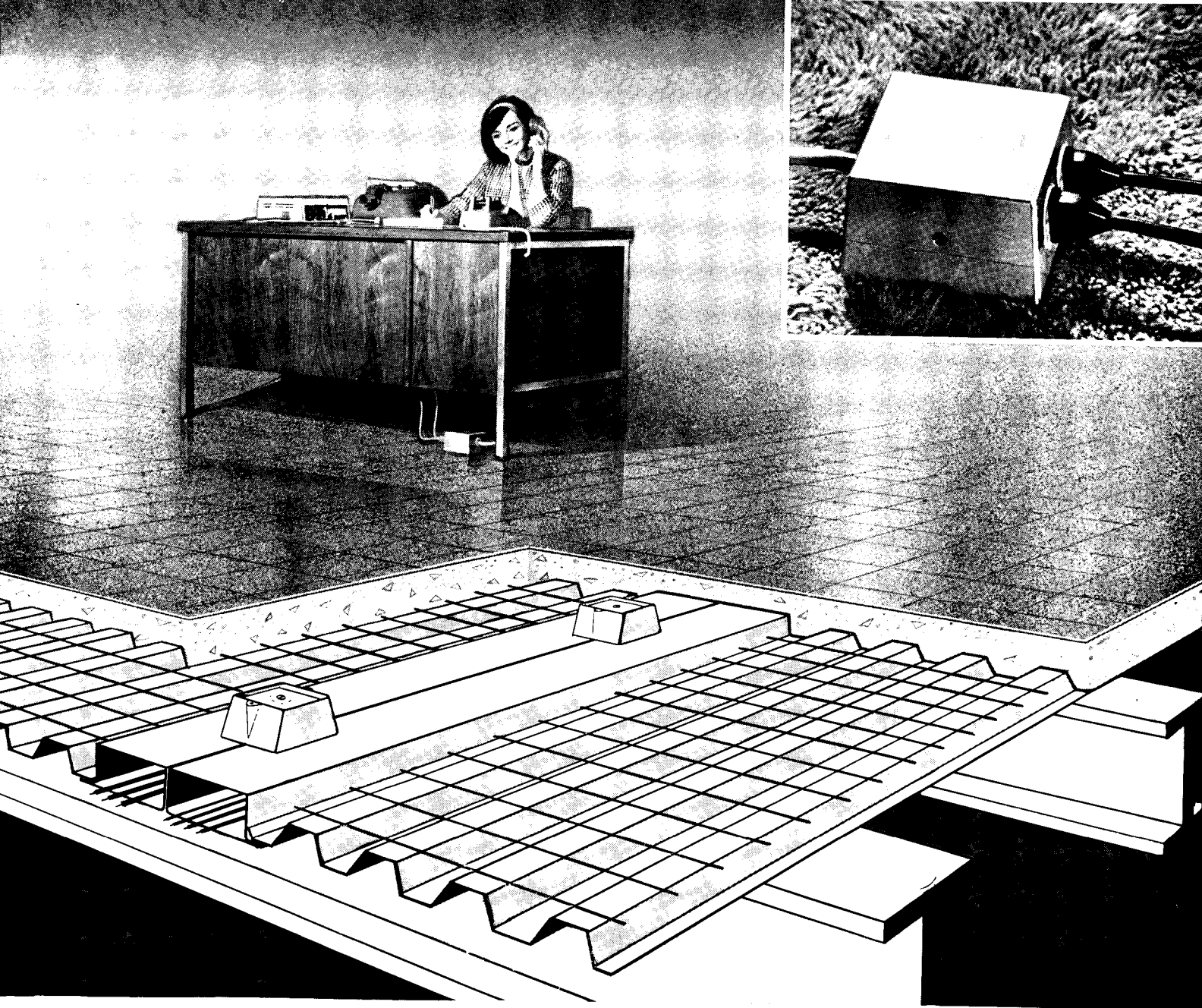
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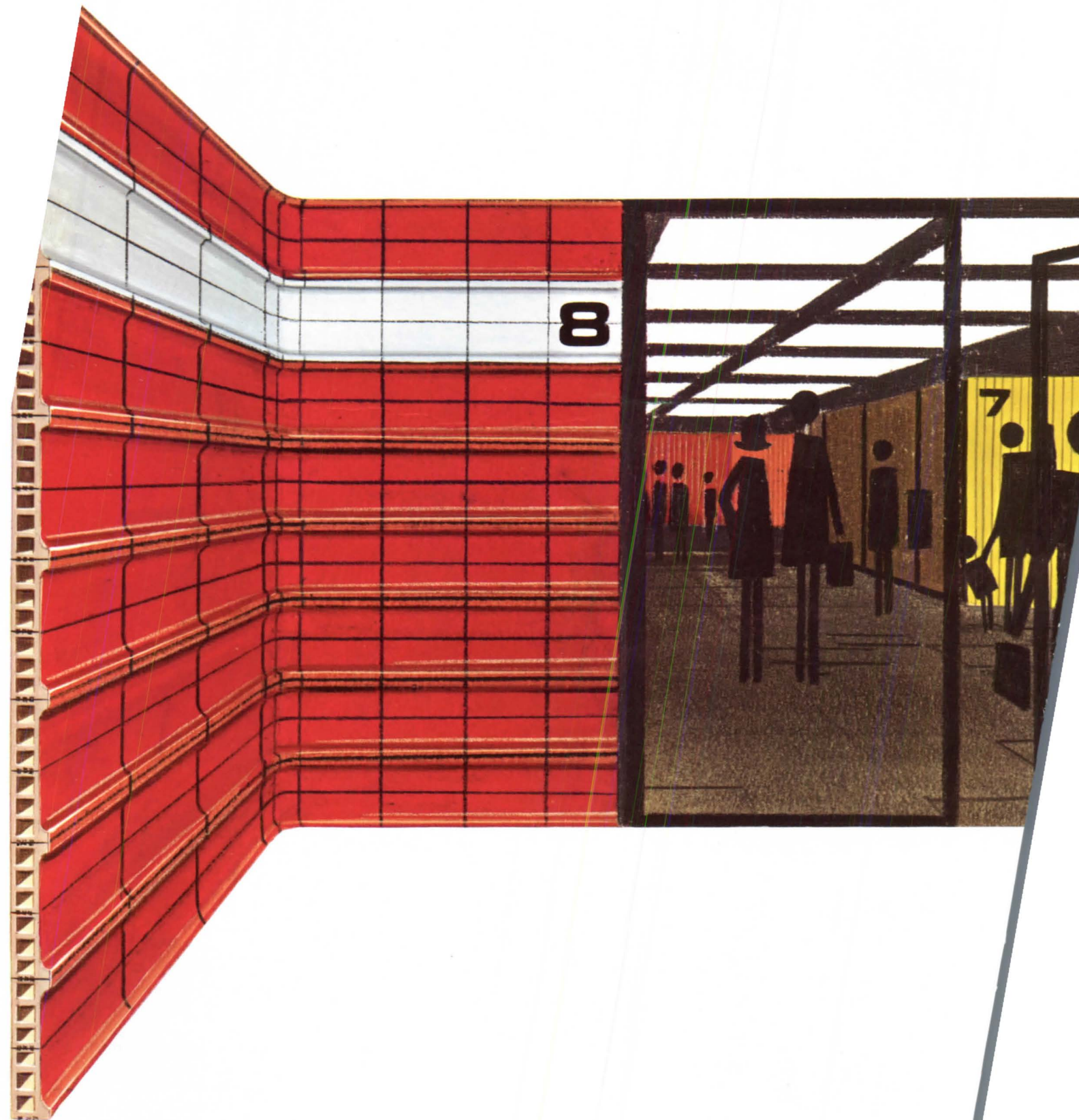
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A Hit and a Miss

BY ROBERT B. RILEY

CLASSICAL GREECE. *Great Ages of Man series.* By C. M. Bowra and the Editors of Time-Life Books. Time, Inc., Time-Life Bldg., Rockefeller Center, New York, N.Y., 1965. 192 pp., illus., \$1.95.

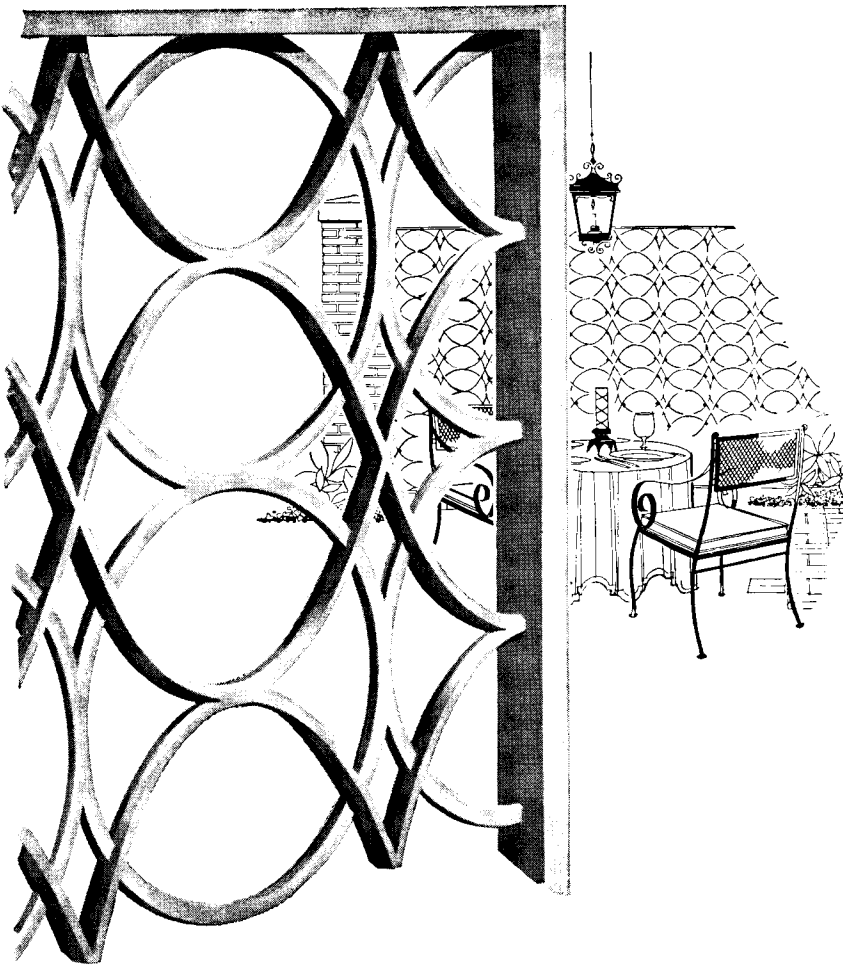
THE HORIZON BOOK OF ANCIENT GREECE. By the Editors of Horizon Magazine. William H. Hale, Editor in Charge. American Heritage Publishing Co., Inc., 551 Fifth Ave., New York, N.Y., 1965. 415 pp., illus., \$18.95. The reviewer is an architect practicing in Albuquerque, New Mexico.

Judging from current book lists, the publication of scientific and cultural popularizations must be a profitable undertaking. A good many of the efforts, of course, are poorly written, condescending, and without purpose. But in a time of expanding knowledge and increasing specialization, carefully done popularizations are badly needed. At their best, they not only increase one's knowledge of the world as it has been, is, and may someday be, but sometimes goad one into thinking a little more about his own relation to those worlds. Ideally, a popularization should do two things: It should present not only a catalogue of well-accepted facts and theories, but a full measure of scholarship; not just truisms but controversies and unsolved problems; not just what is known, but what is being searched for. Secondly, it should try to communicate a sense of drama and excitement—in short, to use an unfashionable Victorian word, the *romance* of the subject.

On these counts, the Time-Life book is a sorry effort. It is a cleaned-up, tidily-wrapped, written-down classroom history. If it is written for the schoolboy, or for the parent with little education or curiosity, it lacks the element most needed to reach such readers—a sense of adventure or excitement. It is an ugly book, the format cluttered and muddy, the pictures poor. (Is it just nostalgia, or were the Life pictures of my teens really that wonderful?) It is a boring, overly elementary textbook, hardly what one would expect from Bowra.

The Horizon volume is a much better book, even a good one—almost everything a popularization should be. It not only shows a high level of scholarship, but continuously tries to relate the history of ancient Greece to the eternal dark and light sides of human life. It is neither cleaned up nor watered down.

Continued on page 222



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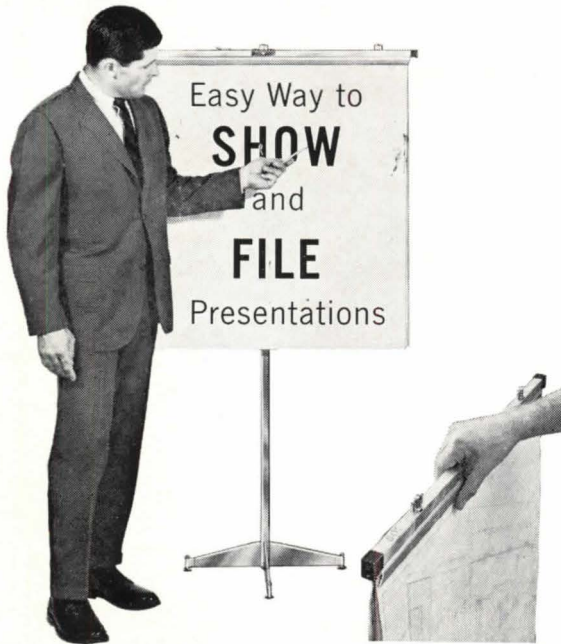


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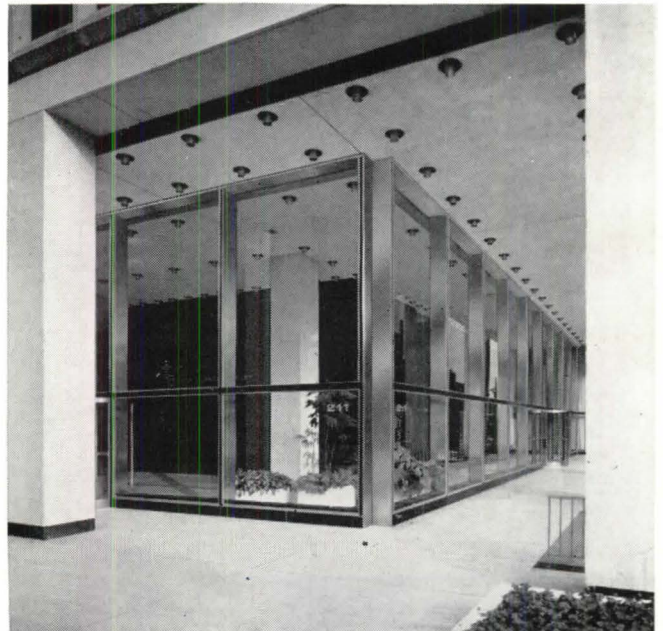
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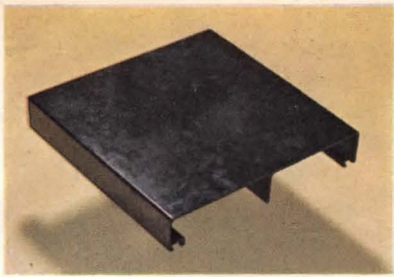


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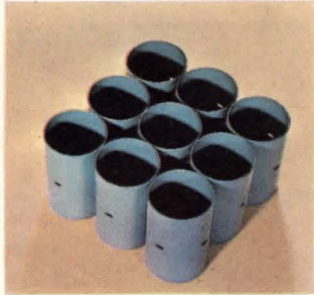
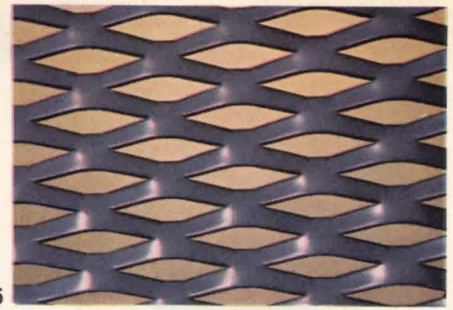
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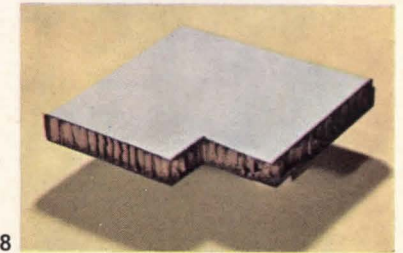
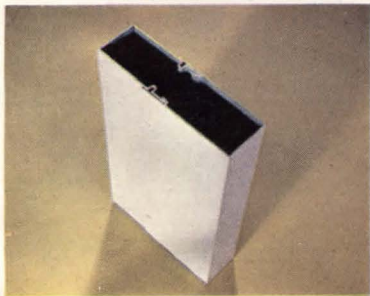
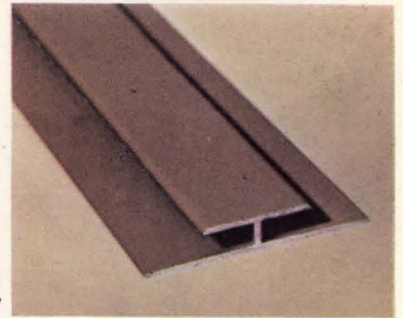
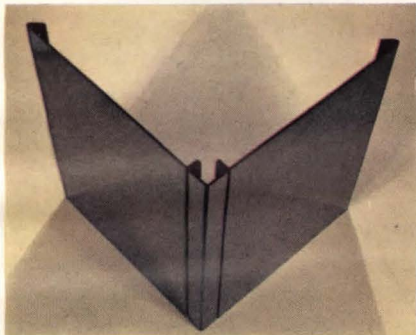
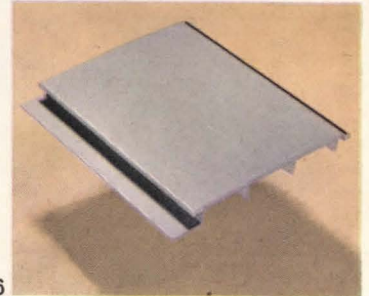
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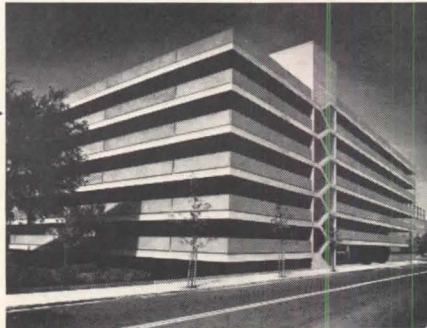
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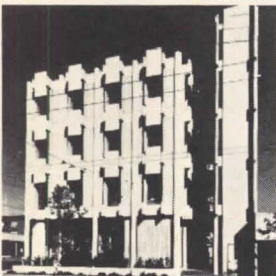
P. C. I. Award Winner 1964
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Engineers: Lev Zetlin & Associates



Theme Structure, 1967 World Exhibition
Habitat '67, Montreal

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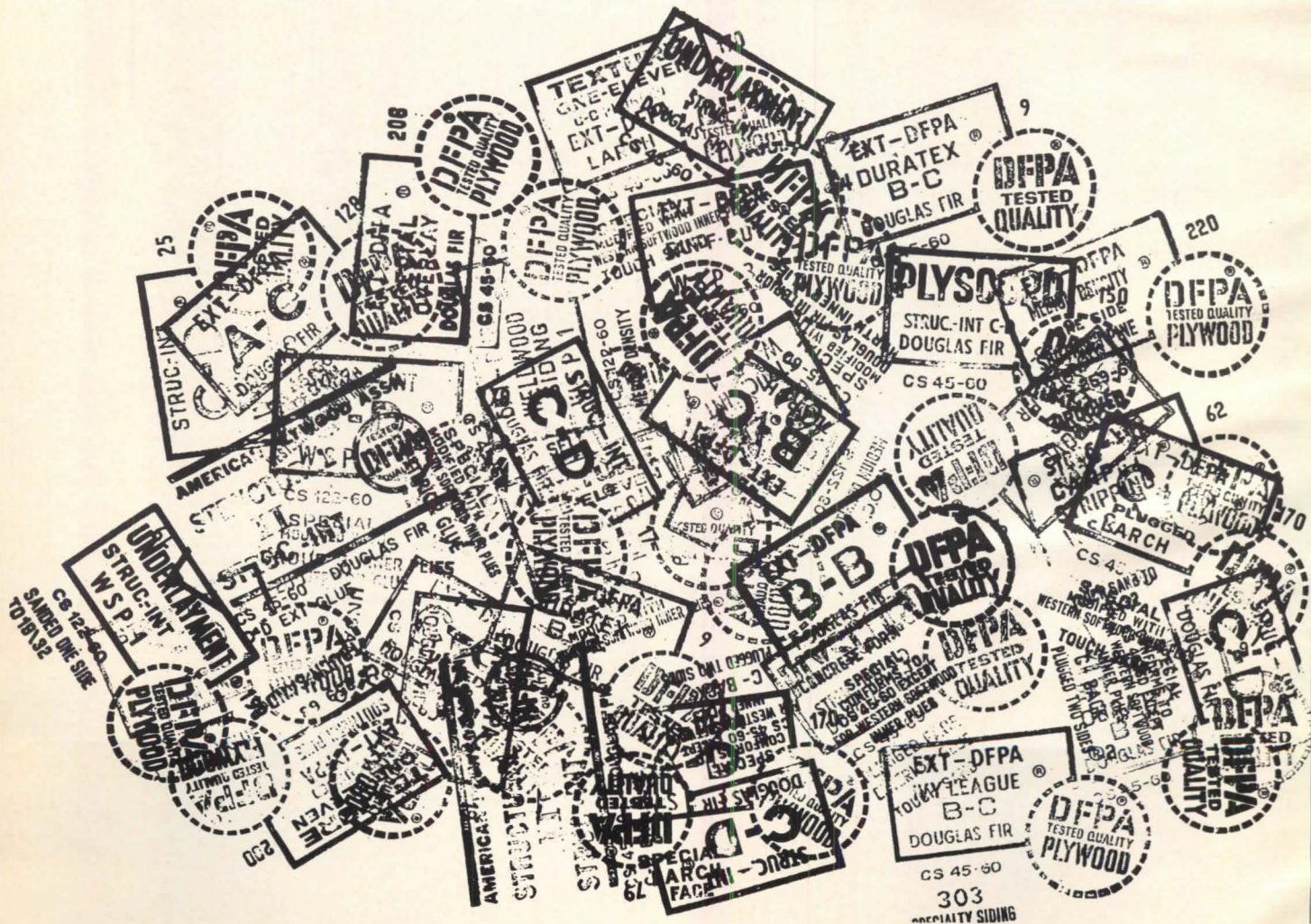
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Continued from page 214

The follies of the Greek experience are here, together with the triumphs, the pettiness, the viciousness—and the heroism. The author, not content to merely catalogue events, tries to convey a sense of the power and emotional content of Greek life and thought; he succeeds remarkably well. Both books scatter brief excerpts from Greek writing through the text, but the

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and exaggerating the emotional essence of landscapes, vases, and statues. One finishes it not only knowing more about classical Greece but feeling something as well.

Doxiadis Revisited

BY EDWARD K. CARPENTER

BETWEEN DYSTOPIA AND UTOPIA. By Constantinos A. Doxiadis. The Trinity College Press, Hartford, Conn., 1966. 92 pp., \$3.95.

URBAN RENEWAL AND THE FUTURE OF THE AMERICAN CITY. By Constantinos A. Doxiadis. Public Administration Service, 1313 East 60th St., Chicago, Ill., 1966. 174 pp. The reviewer is an Associate Editor of P/A.

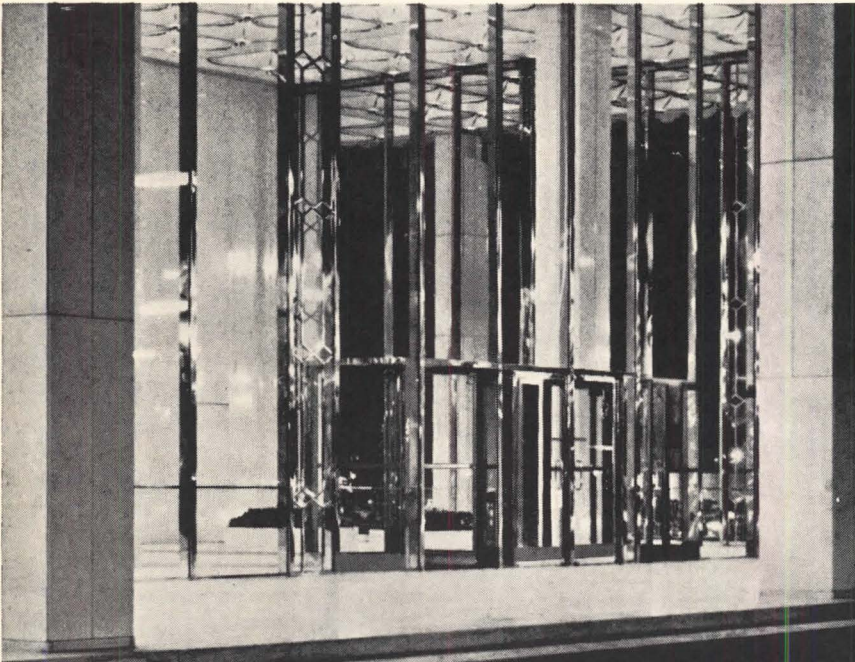
In two books published this year, Constantinos A. Doxiadis, the Greek city planner, issues basically the same warning: Man must not plan cities for a world whose population is 2 billion; he must plan for a world 10 to 15 times that size. "In a century from now," he writes, "the total population will be of the order of 20 to 30 billion, the urban population about 20 times larger than at present, the economic forces, the machines, and the area of human settlements almost terrifying."

Indeed, Doxiadis thinks man is, in a way, already terrified, for his response to this evident boom in both population and urbanization has been to do nothing. Doxiadis' books are by way of a plea—almost an order—to apply sense to chaos. As he points out:

"It is interesting for us to see how man has reacted to these dangers and warnings in building his cities during the early 20th Century when the crisis became, to some at least, apparent. The first remark that we can make is that during this period of the greatest population increase in human history man has lost the ability to build new cities. His only and really world-wide response is to create garden-cities, which are only very small cells in relation to the actual dimension of his settlements. Confronted with a new task, man shrinks into the dimensions of the past."

Between Dystopia and Utopia is a series of three lectures, illustrated with diagrams, that Doxiadis gave in March 1966 at Trinity College in Hartford, Connecticut, when he was Lecturer-in-Residence there. For a college audience, the lectures provide exactly the right blend of scholarship and intellectual gymnastics that will excite and instruct. It is probably true, as Trinity President Albert C. Jacobs points out in his introduction, that "No one who heard him relate his doctrine of *Ekistics* to the

Continued on page 236



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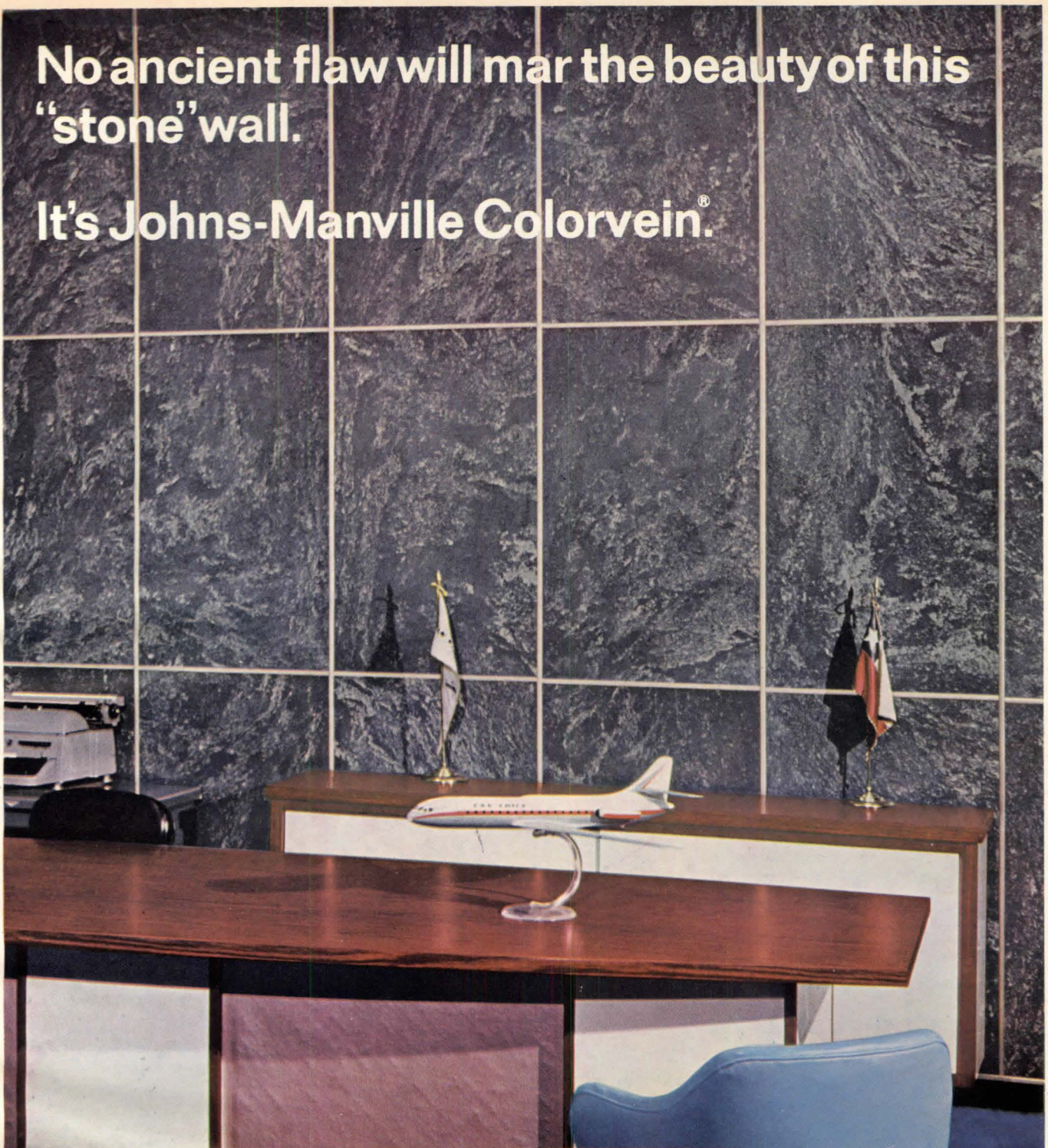
Photo shows: Michigan Consolidated Gas Co., Detroit, Michigan

Associate Architects: Minoru Yamasaki — Smith, Hinchman and Grylls

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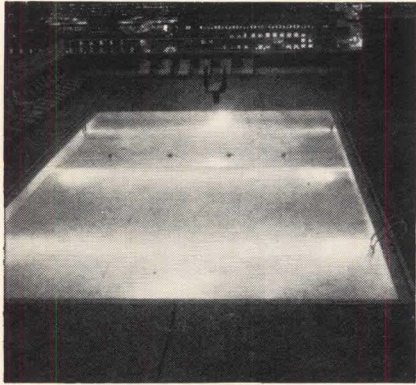
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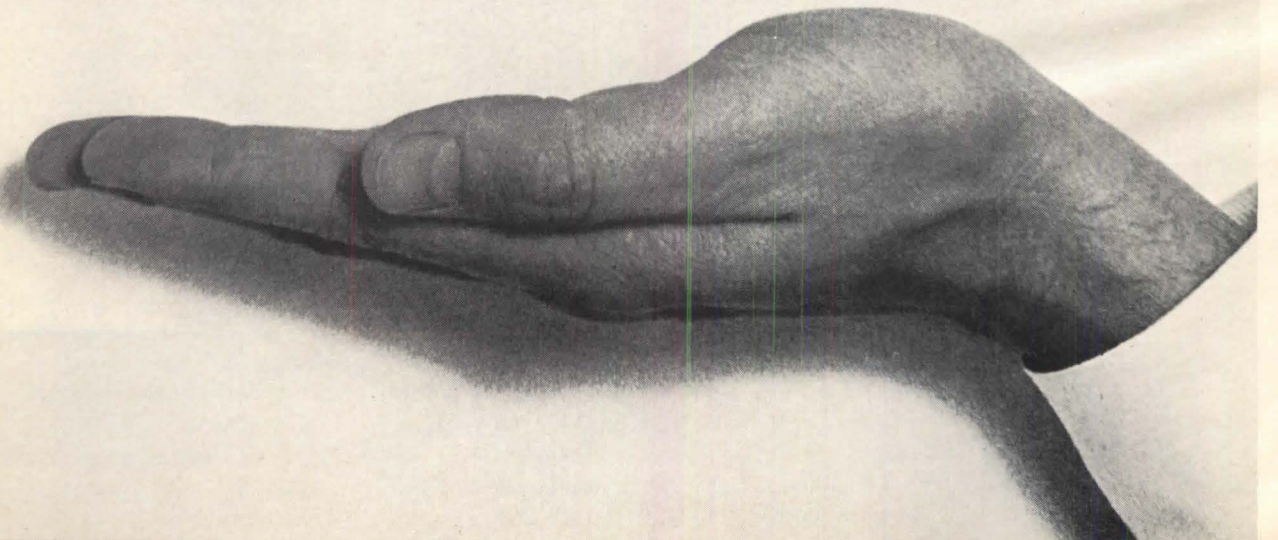
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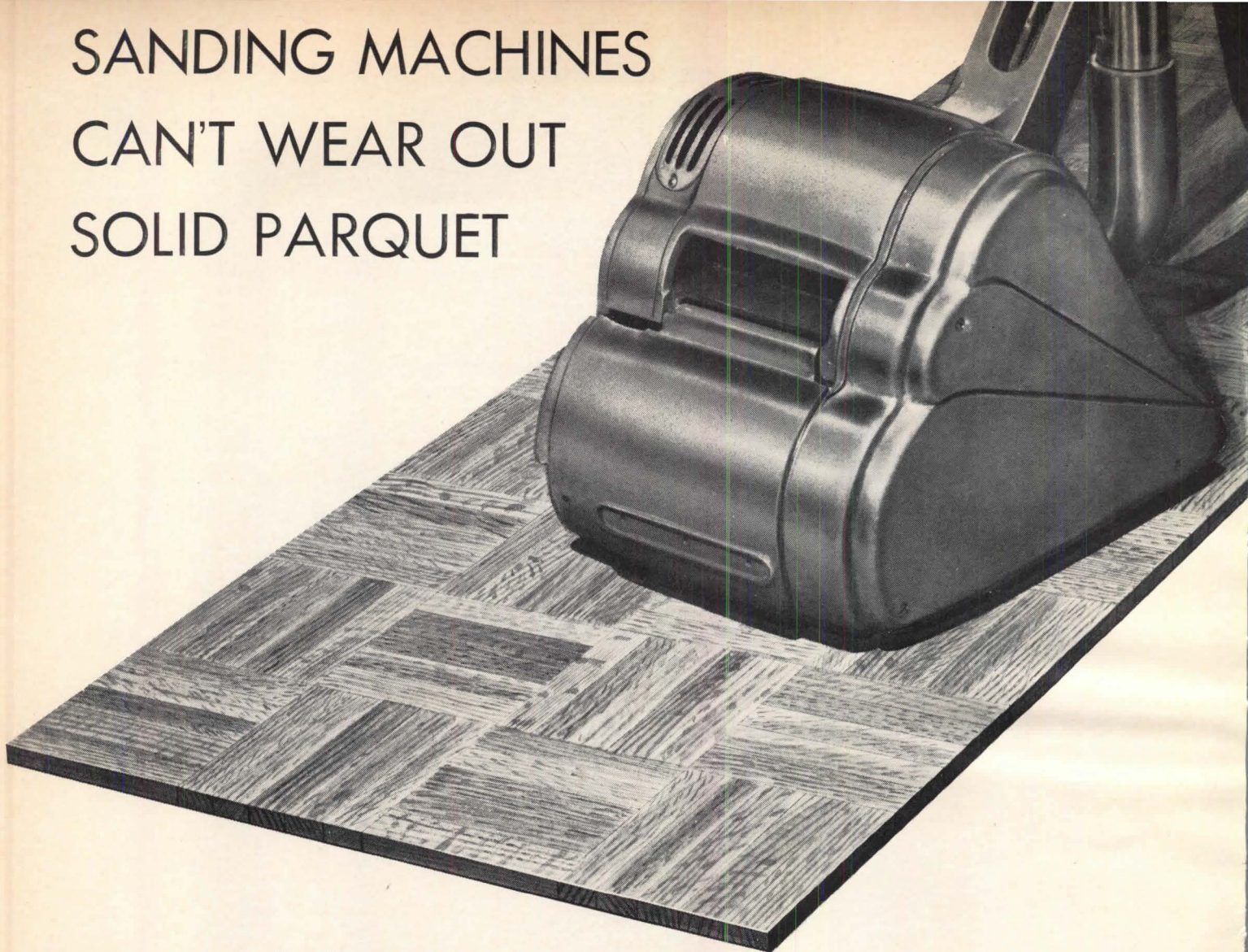
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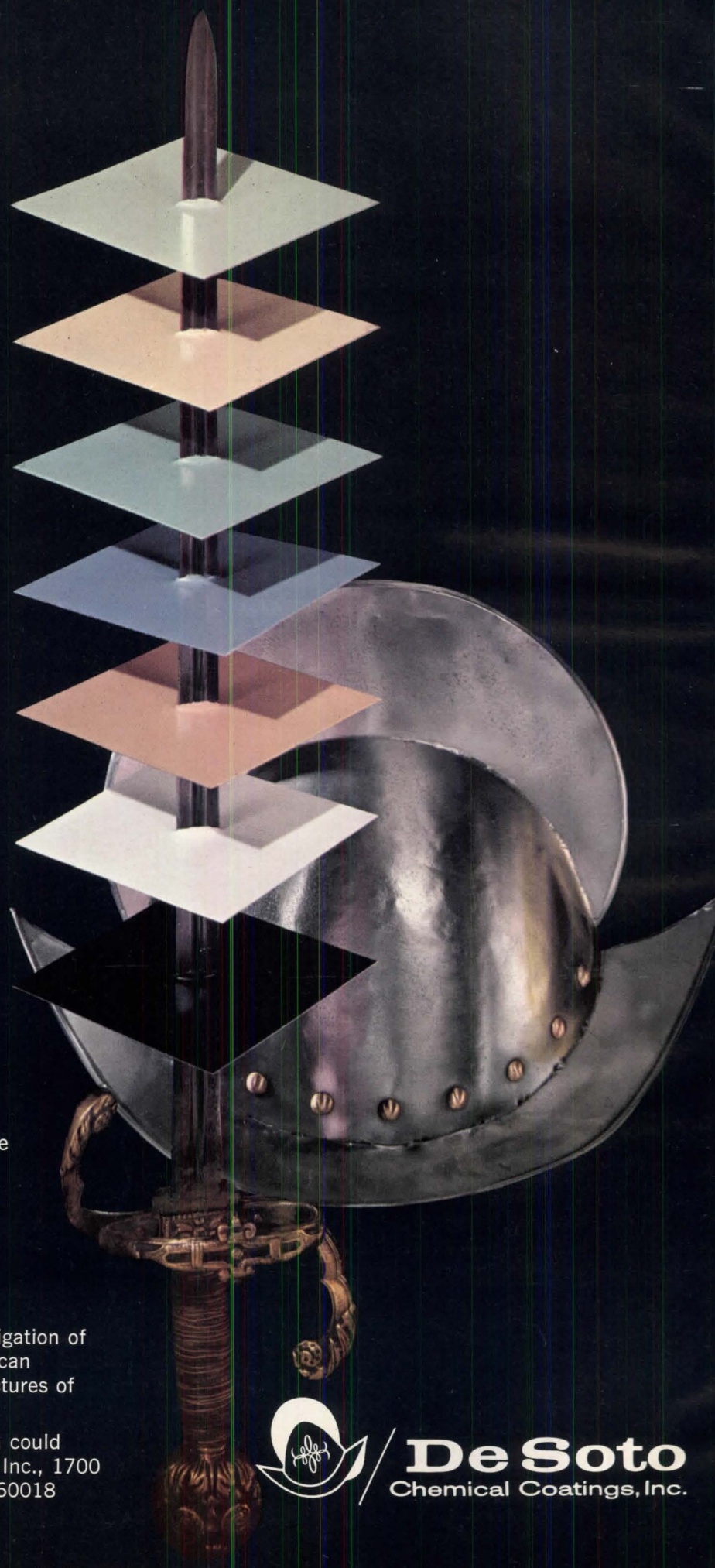
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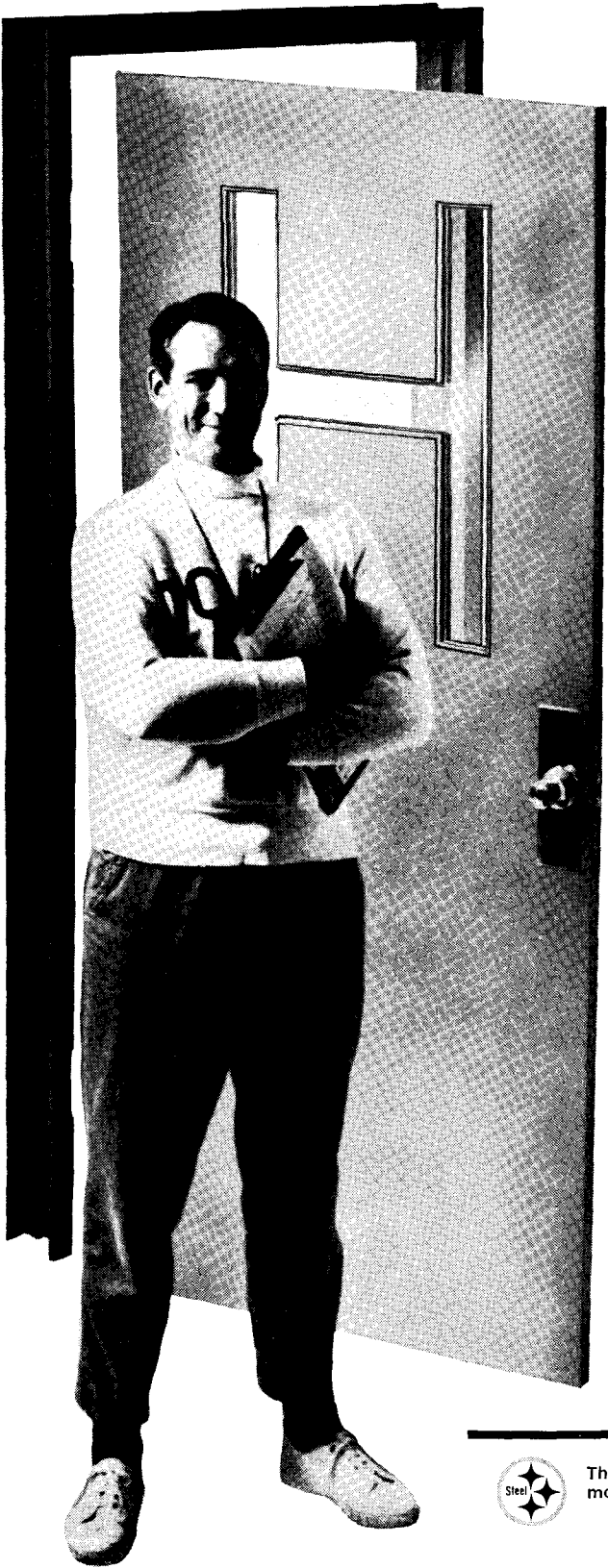
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Hums and whirs. And
just plain yak.

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done about it.

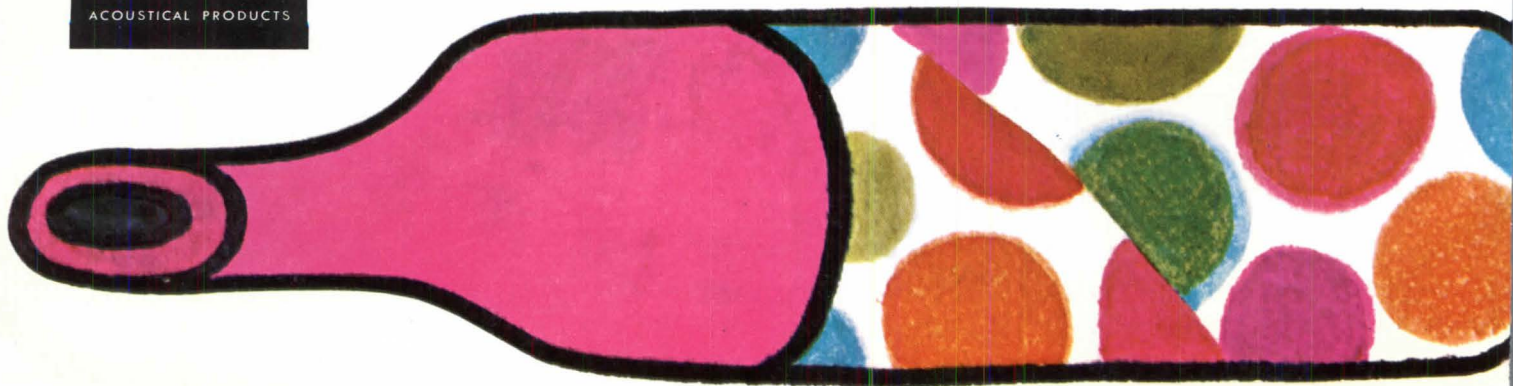
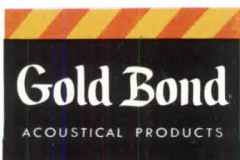
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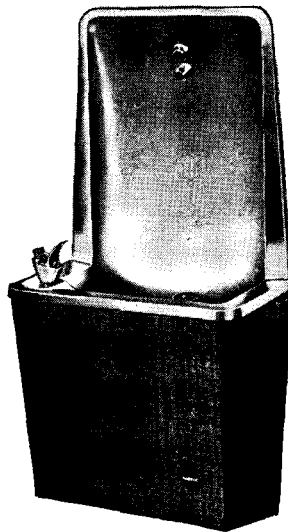
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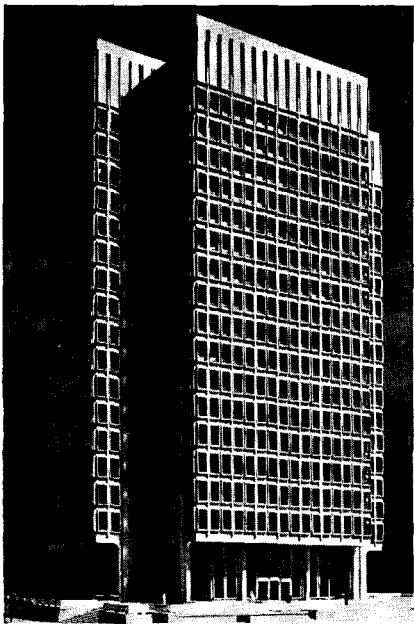




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Continued from page 222

urban problems existing today will ever again view the city with complacency."

The other book is a report written for a more professional audience, and, although it carries much the same message, it raises more questions than it answers. In September 1960, the National Association of Housing and Redevelopment Officials asked Doxiadis to review urban renewal in the United States and to develop a set of principles and criteria "by which renewal agencies can appraise their progress and formulate programs for the future." The report was submitted in 1961; *Urban Renewal and the Future of the American City* is an abridged version of that report.

In reviewing, or even in reading, anything prepared by Doxiadis, it is necessary to cut through the neat stack of freshly minted words with which he attacks any subject. This is really not very difficult, and he eases the task by providing short glossaries. But it is disconcerting, and the initial effect is to becloud rather than clarify an issue. His urge to coin words seems to stem partly from the realization that he is pointing the way across uncharted ground and that, as the first guide, he has license to identify the landmarks. Also, it seems to stem from his Greek heritage, for all his words—ekistics, entopia, Ecumenopolis, for example—have Greek roots. It is as if an Egyptian, coming from a land of ancient architectural heritage, were to feel obliged to establish the architectural styles of the future.

What Doxiadis sees in the U.S.'s urban renewal program, as it was four years ago, is not encouraging. He likens it to heart surgery in a case where the best cure might be a carefully planned diet, and notes that it has "resulted in disappointment for most people."

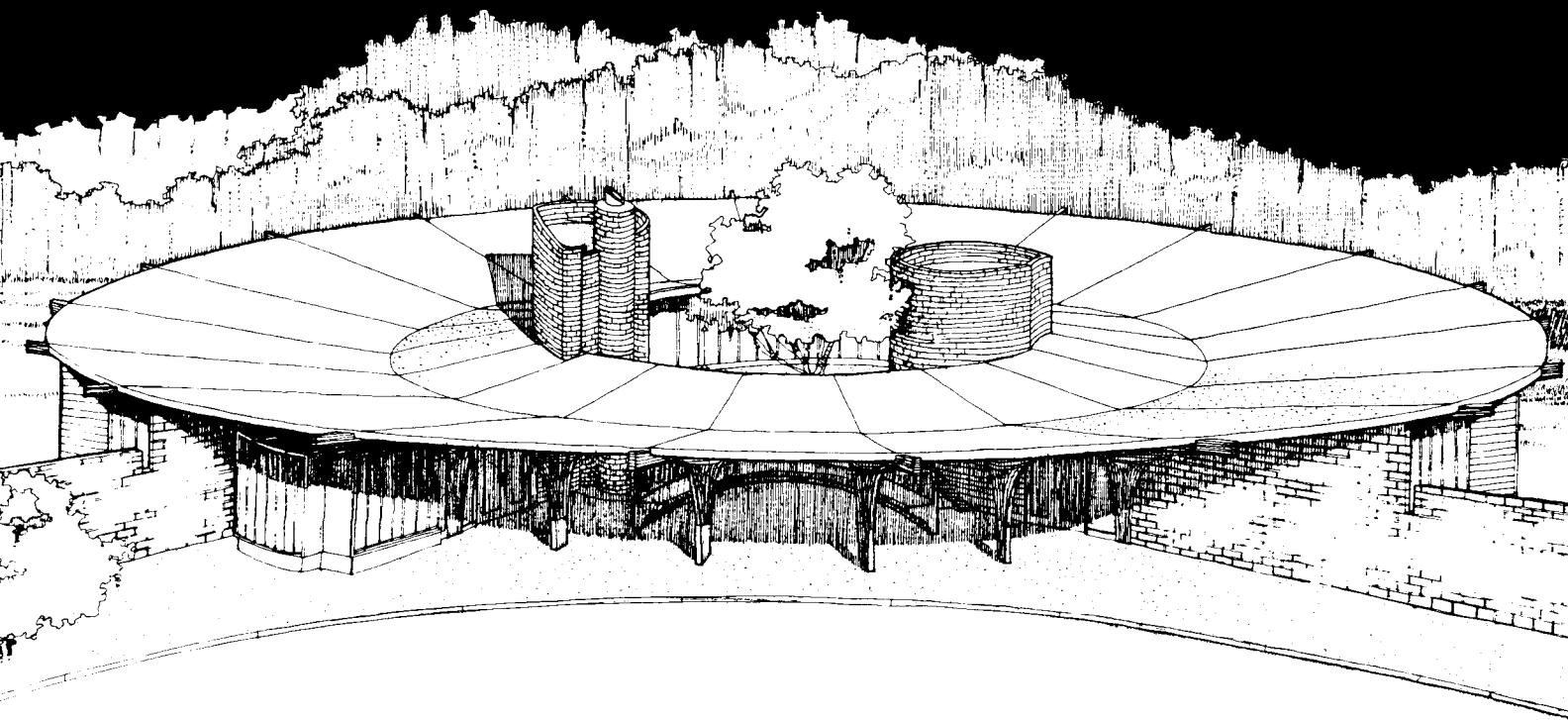
He is concerned, for one thing, with the disappearance of park land. "Recent estimates are that because of the interstate highway program alone, 2 million acres of parks will be covered by concrete." And he points to other factors leading to the extinction of parks—such as public buildings, schools, and post offices that are being erected on park land. "We can ask ourselves what we mean by urban renewal when we deprive a city of such elements as parks and gardens, and the beautiful buildings of the past, all of which made it worth living in."

This is not to say that Doxiadis deplores all urban renewal, for he does not. He thinks, rather, that it is a misguided—or non-guided approach. With the vast

Continued on page 244

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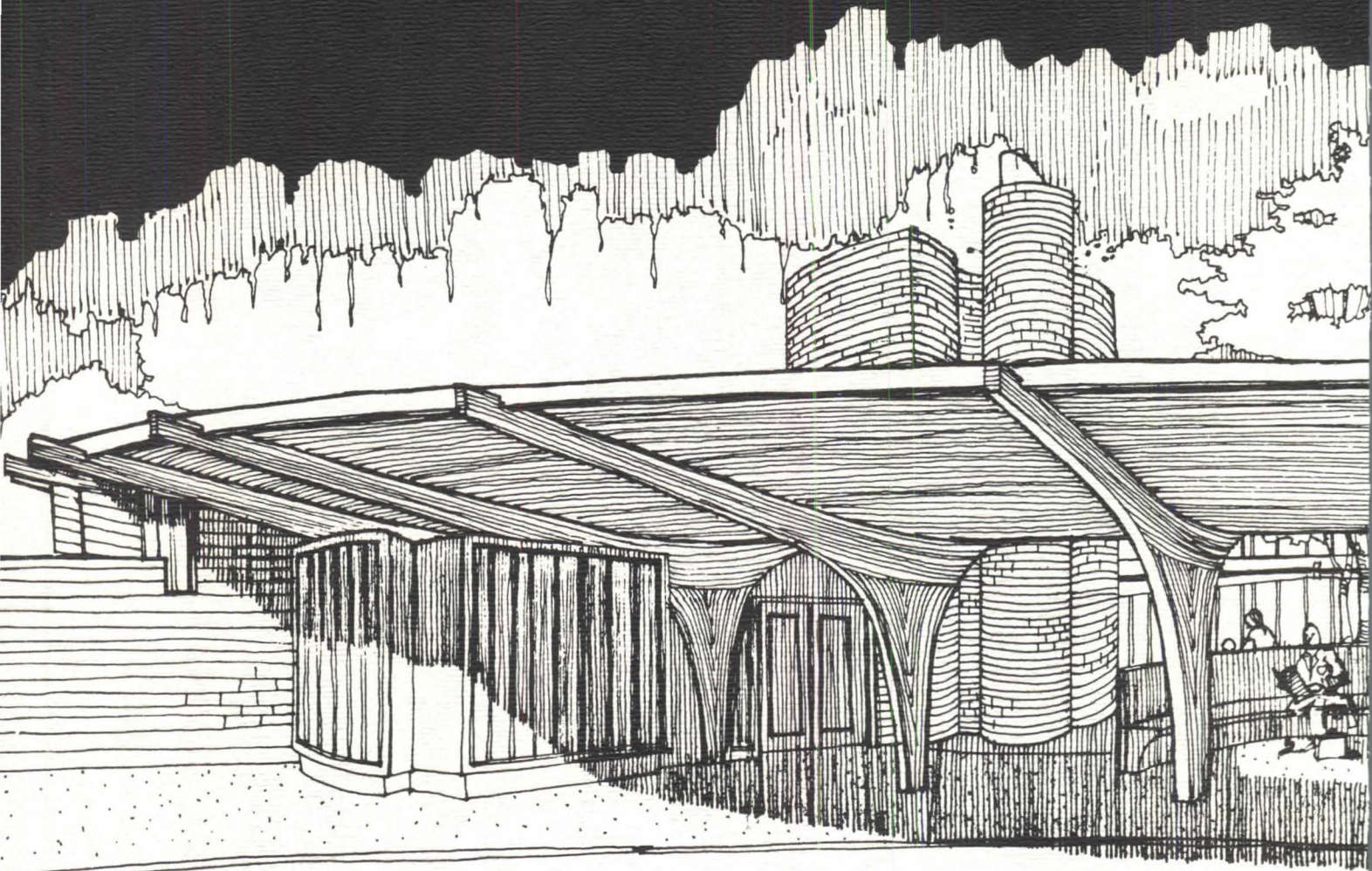
JOSEPH
SALERNO
EXPLORES
THE
FUNCTIONAL
USE OF
WOOD
IN A
CHILD
GUIDANCE
CENTER



One of a series of design innovations commissioned by Weyerhaeuser Compa



Weyerhaeuser Company has commissioned a number of leading architects to create design innovations which highlight the potential of wood in public and commercial buildings. This original design by Joseph Salerno of Westport, Connecticut, is the seventh in the series.



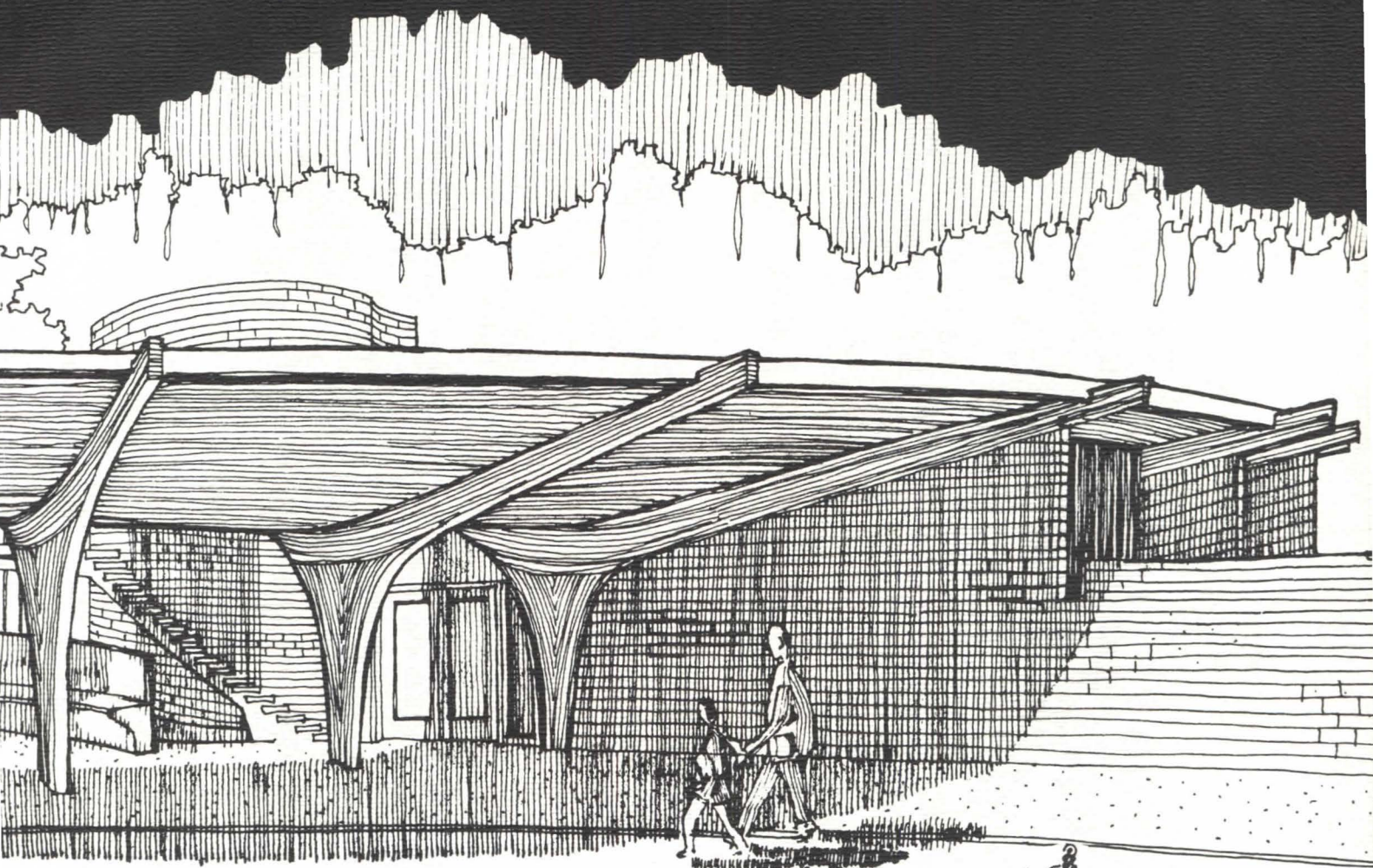
“...THE BUILDING
BLENDS NATURALLY
WITH ITS ORGANIC
ENVIRONMENT.”

“This design is based on the principle that positive human relationships develop best in warm, inviting surroundings. Wood has helped to create such an atmosphere for this Child Guidance Center. The natural qualities of warmth and responsiveness in the wood itself provide an ideal background for the counselors.

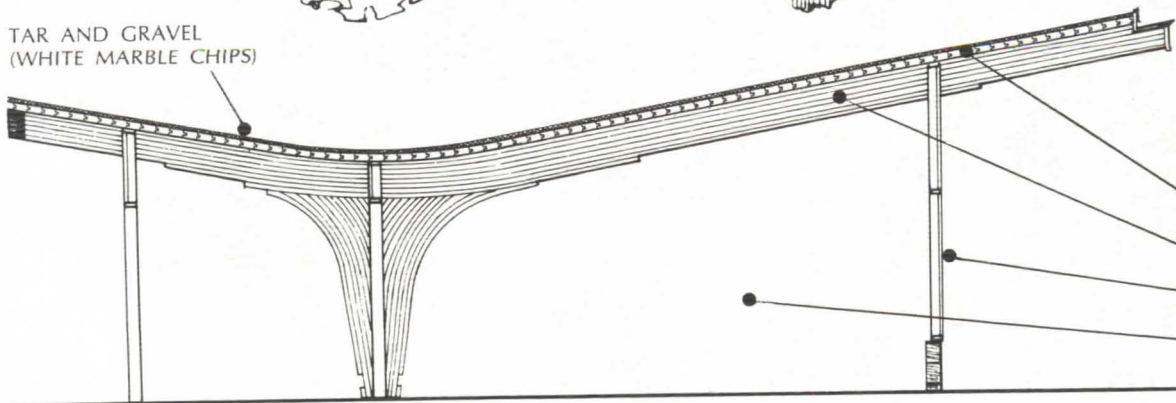
“The appearance of the building is far from institutional. It is intended for a level, wooded site where the building blends naturally with its organic environment. The structure is simple: a series of laminated wood beams set in a pattern of radial repetition. They emanate from two block towers which house the plumbing and heating facilities. The slightly raised beams symbolize uplifted arms of welcome and form an inviting entryway. This leads naturally to the reception area, and to the pleasant sunlit garden in the center. Each window wall looks out on quiet, pastoral exterior scenes.

“Wood has added a new dimension to this institutional building. It has made the structure both beautiful and functional, offering the privacy and security so vital to the success of the child counselor.”

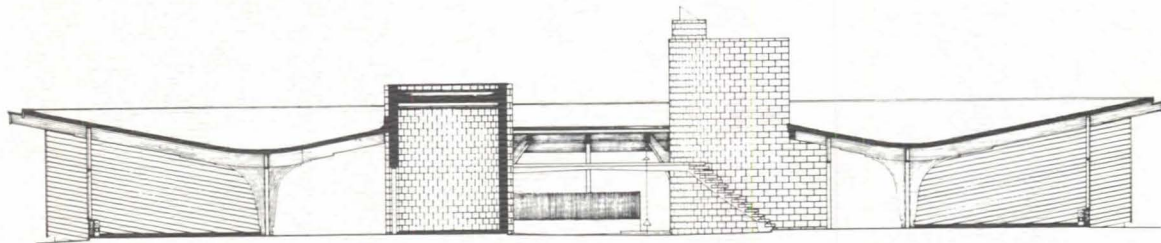
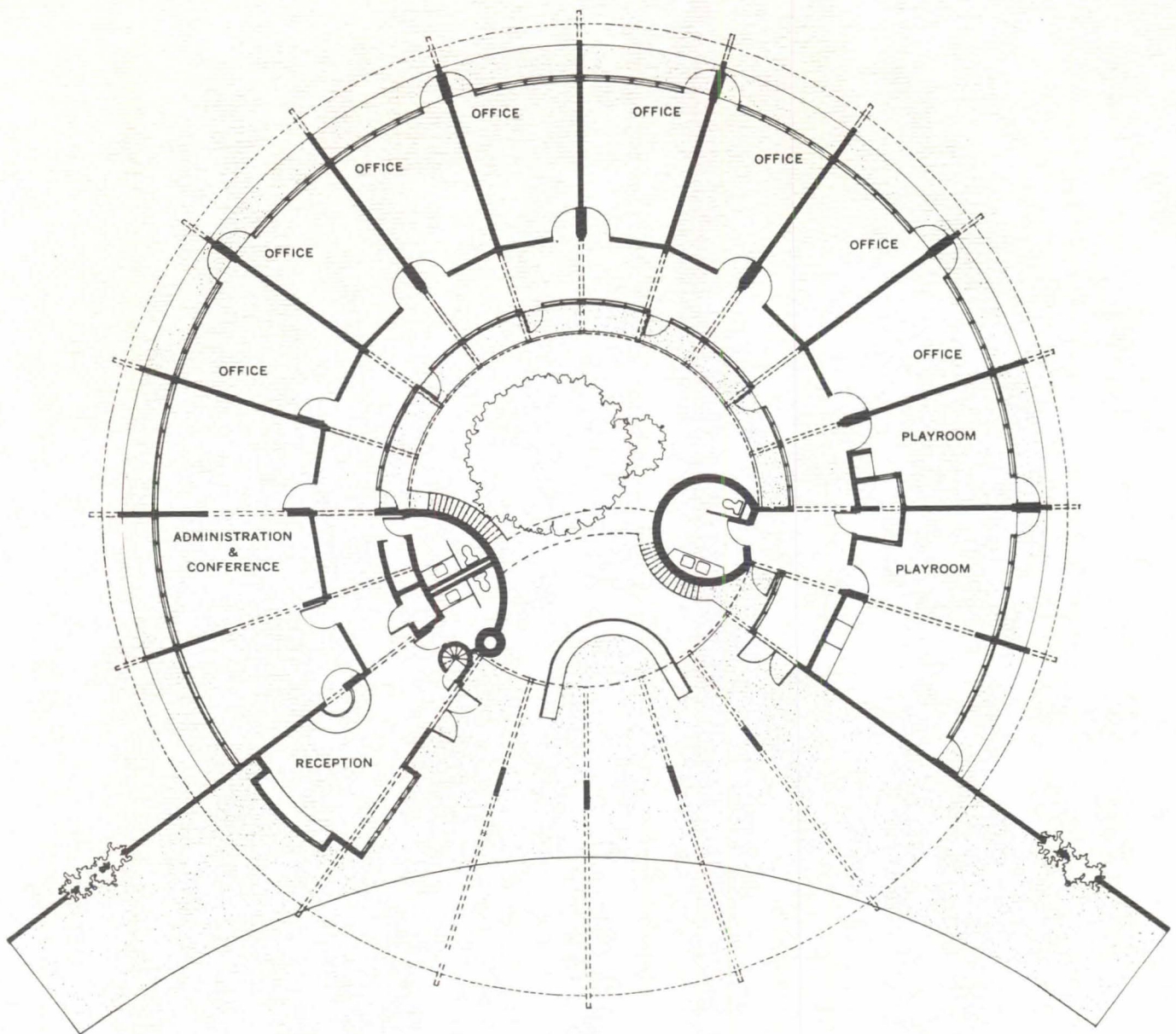
Joseph Salerno



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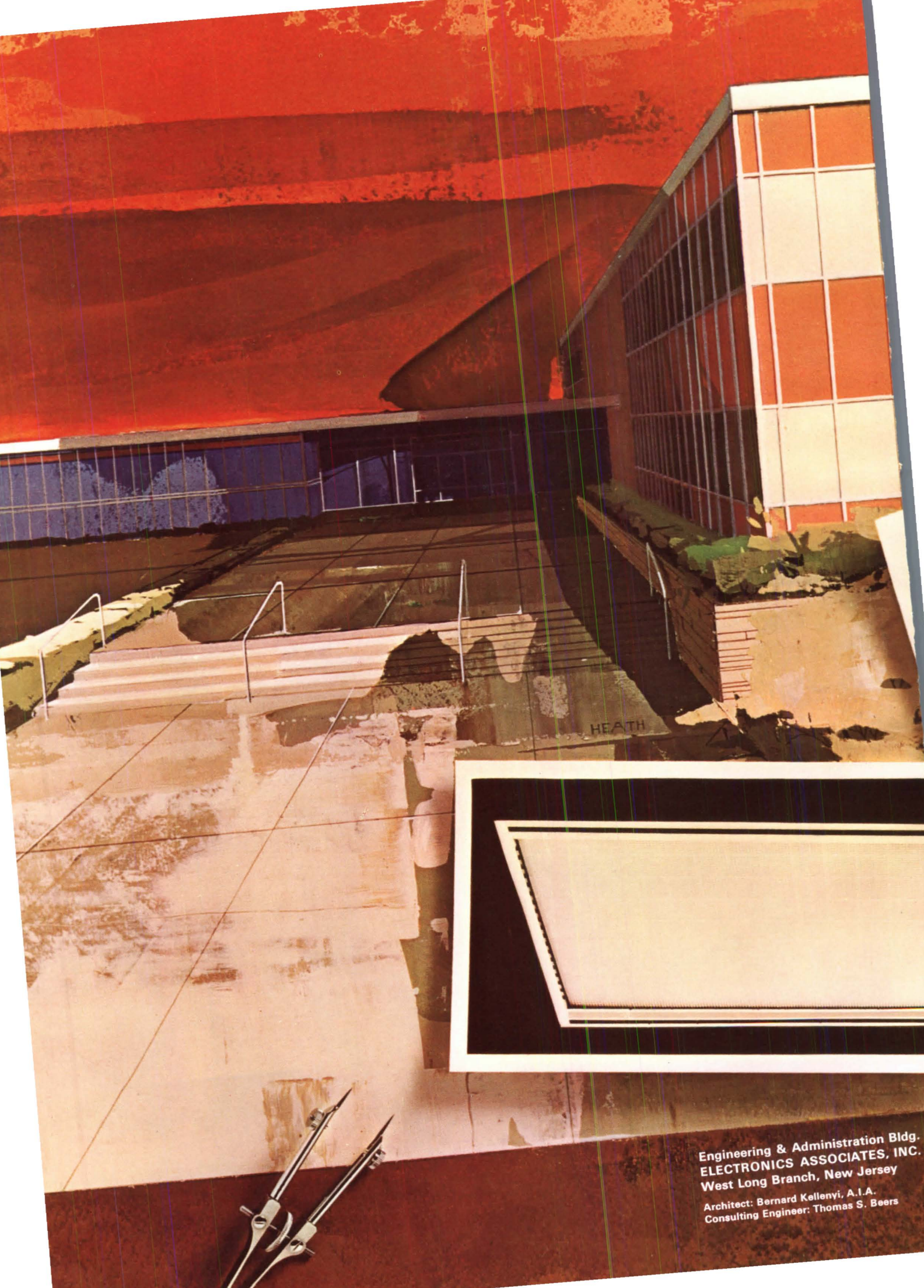
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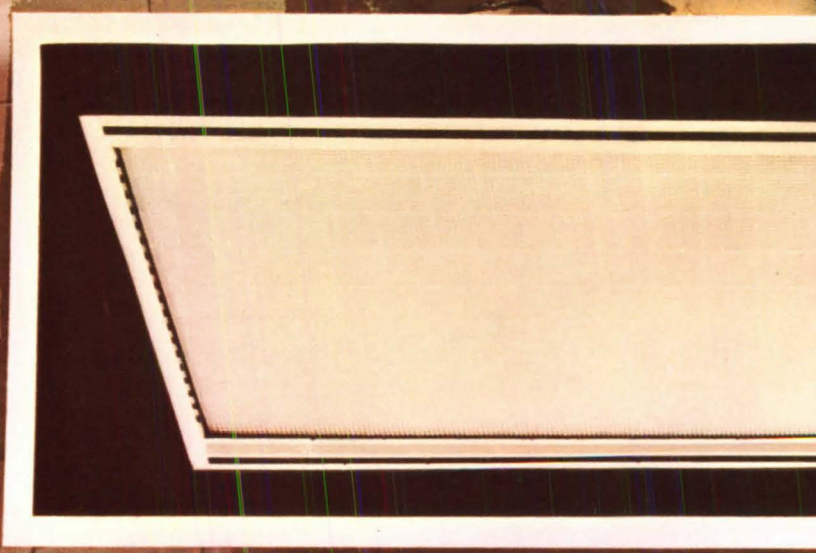
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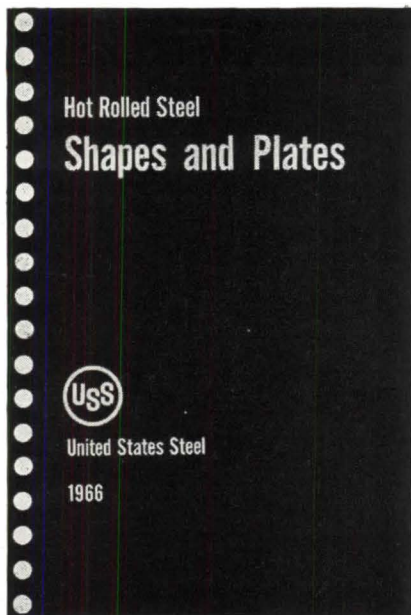


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Continued from page 236

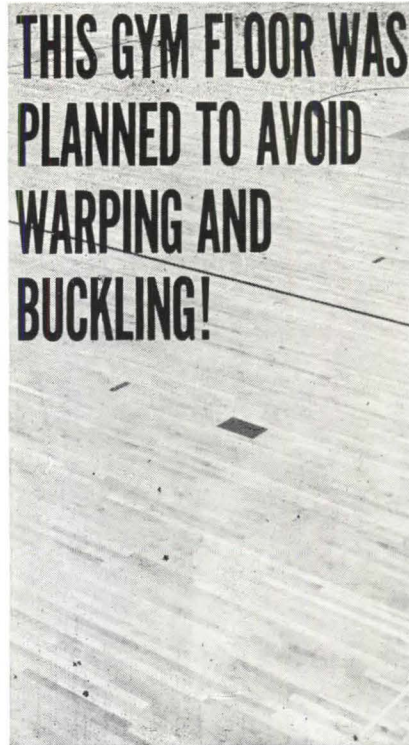
population expansion, the need is not so much for renewal of existing urban centers, he argues, as for planning new centers to relieve the pressure strangling the existing ones. He believes that regional and metropolitan planning should come first. In a constantly expanding society—one of dynamic growth, as he calls it—he would anticipate results, and conceive, plan, and build accordingly. But, together with this plan, he would include areas of “static value that do not need to be and cannot be influenced by growth.”

Doxiadis would create urban backwaters, areas that would be passed by time and the interurban transit system whose only escape from stagnation would be eventual urban renewal. All mankind, he believes, should live in such static cells. As he has written:

“It is within such static cells that we can save man from the city that will crush him; it is within them that the community can have complete freedom for its expressions and man for his life. Someday, if people should bring their cars into the human part of such a community, we will laugh at them, as we do now at people who have entered a drawing room wearing their muddy boots.”

Eventually, within 100 years, Doxiadis believes that the expansion of urban settlements will decrease. He suggests there will then be no more movement from rural settlements to urban ones, and the population growth, for reasons he does not make clear, will level off. We will be left with a landscape composed mostly of urban areas with pockets of rural countryside. At this point, the world population will be about 30 to 50 billion, and the U.S. population will exceed 1 billion. All communities will be static, and *then* urban renewal will become the only means of amelioration. One can hardly quarrel with Doxiadis’ concern with long-range planning, although the premises on which it is based are not at all certain. Doxiadis is quick to point out that his data may not be entirely correct, but that we cannot wait around to have it all conclusively proved.

Unfortunately, the type of planning Doxiadis suggests may make it easier for mankind to overrun the countryside—a process many are fighting even today, as in the way highway planning has made it easier for cars to overrun cities. Any implementation of Doxiadis’ dreams should be undertaken with very great care indeed.



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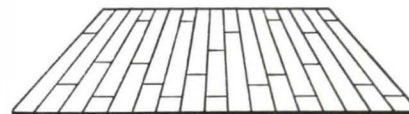
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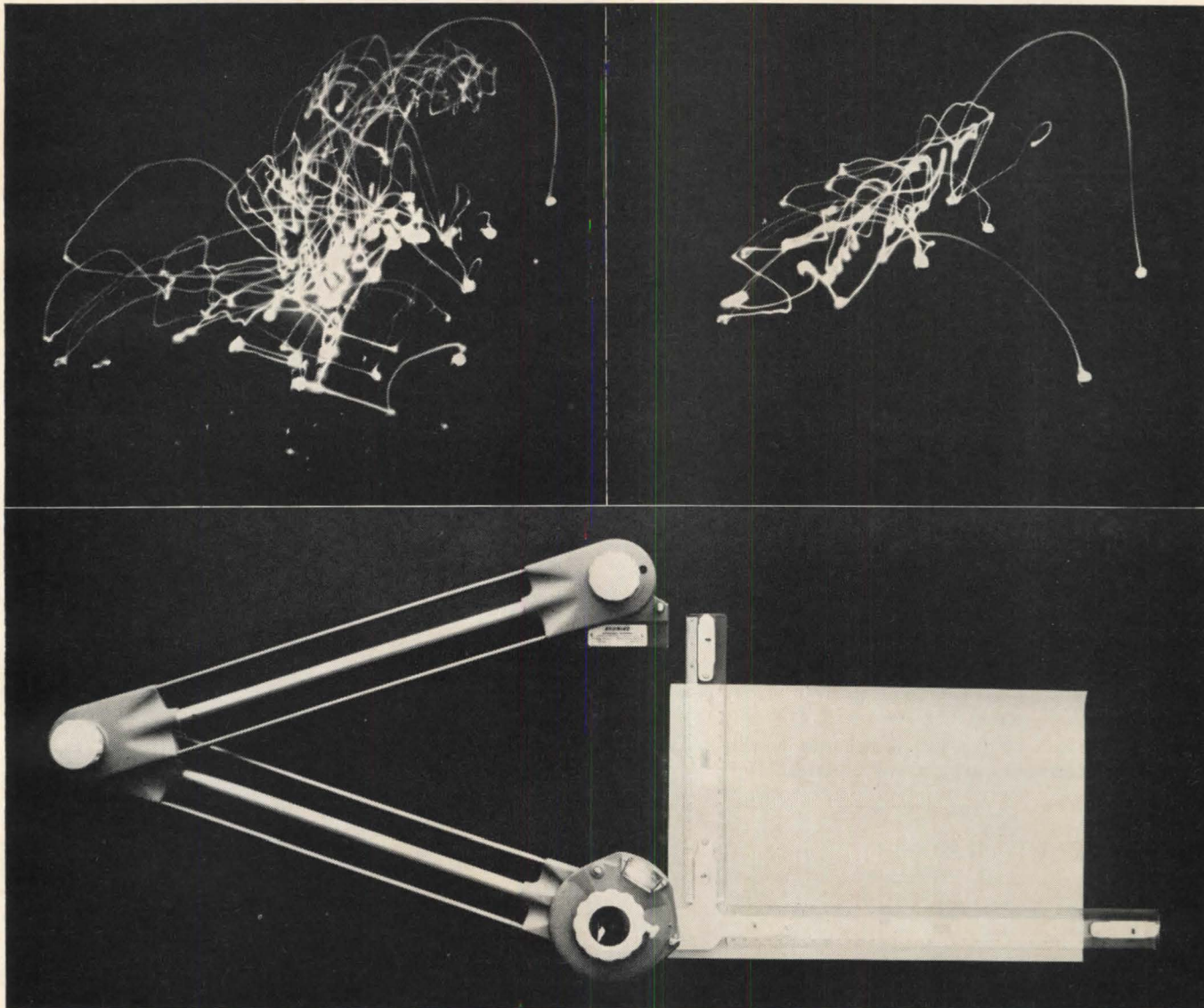
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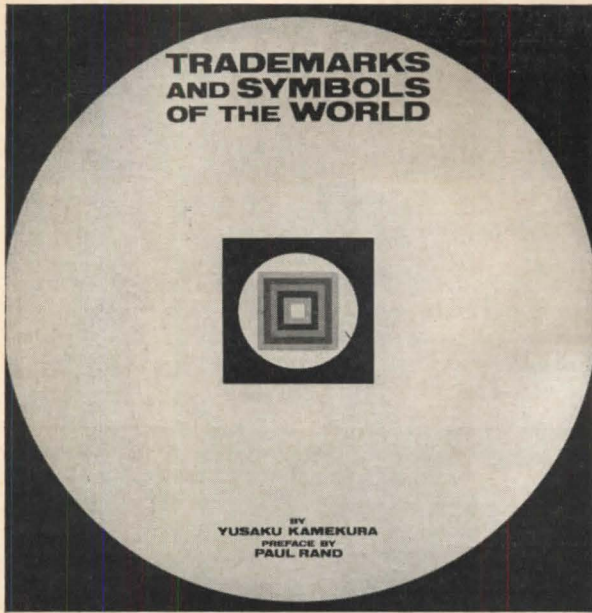
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by Yusaku Kamekura, Preface by Paul Rand

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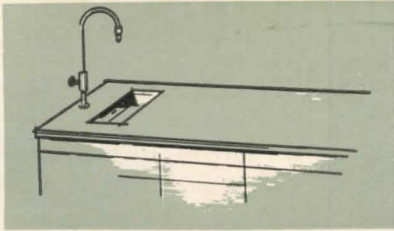
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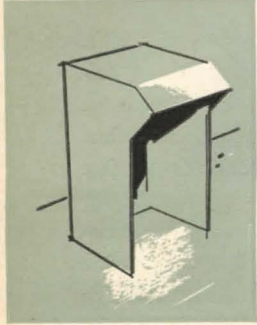
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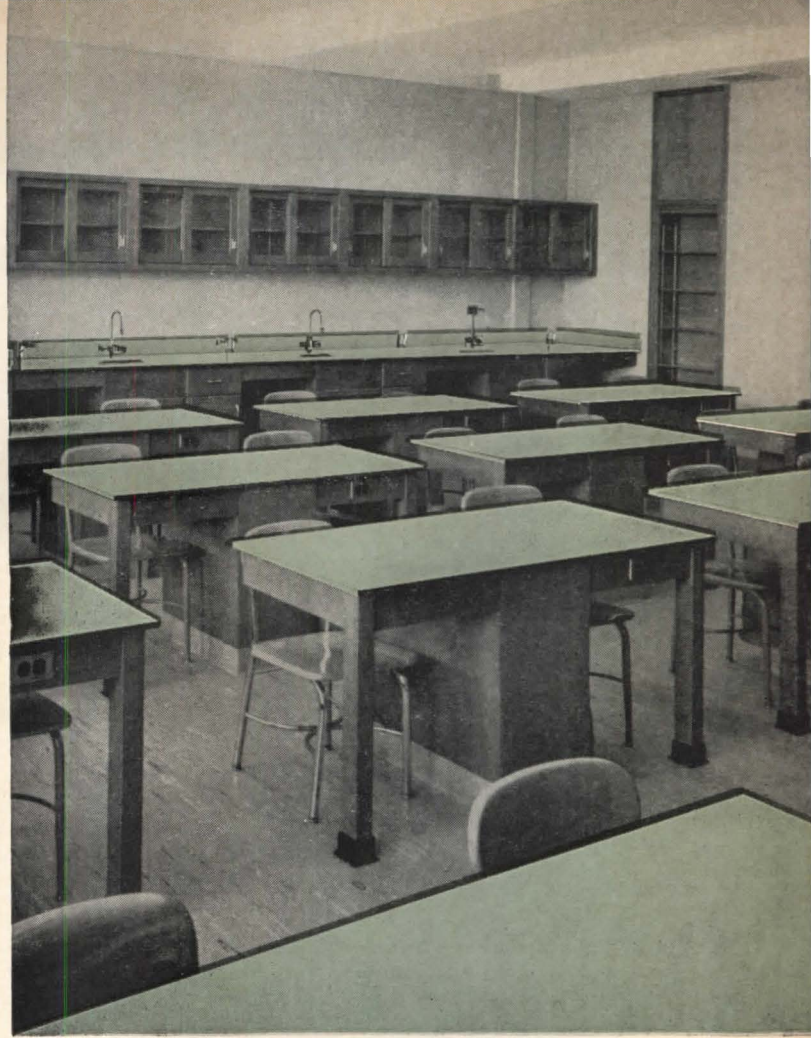
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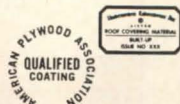


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"A Primer for Clients": Contd. from p. 169
ideals. All this takes place in the face of a most damning contradiction. In the specialized field of airline terminals, each separate airline performs the identical task of accommodating an unbelievable tangle of airplane, bus, automobile, and pedestrian traffic under one roof, as well as providing food, sanitation, and baggage-handling on the side. And yet the shelters resulting from an identical program happily yield totally different images.

The voice in the rear may persist with, "What about genius? What about talent?" Here, too, there is an answer, at least for the client's primary edification. Genius, like grace, is the single factor that cannot be legislated or predicted in the field of creative work. History dispenses genius only sparingly, and with a timing and a pattern all its own. Talent, on the other hand, is a constant source of energy, like electricity, waiting only to be tapped. It is the catalyst that combines all the factors listed above, and its application is the purview of the architect. But it is the client's job to find out where to tap, and when and how, and just how hard.

One day, the apocalyptic triumvirate — the ideal Architect, Builder, and the Client — will meet and "design" (that elusive, mercurial product, unqualified by any limiting adjective other than "great") will be the result. Hopefully, this historic confrontation will be televised. Meanwhile, there is nothing lost in rehearsing the script individually, and, of course, working out some of those unsolved details.

NOTICES

New Firms

ARCHITECTURAL FURNITURE SERVICE, 510 Sylvan Ave., Route 9W, Englewood Cliffs, N.J. 07639.

HOWARD BARNSTONE & EUGENE AUBRY, Architects, 1914 West Capitol, Houston, Tex.

EDWARD M. BURKE, 5131 South Mead St., Seattle, Wash. 98118.

THE CONSULTING ENGINEERS GROUP INC., 1717 Glenview Rd., Glenview, Ill.

Elections, Appointments

DEETER-RITCHEY-SIPPEL, Architects, Pittsburgh, Pa., have appointed JAMES F. DOWDEN, JR., chief project manager, JAMES C. ARMSTRONG, JR., chief of pro-

Continued on page 256

Multiply Billy Edwards by 48,800,000



to measure

the challenge of school construction

Figures on school enrollment are only part of the picture.* Education today is a living, changing thing. The idea is to equip Billy Edwards for *his own future*—not for his parents' past.

Doing this job calls for new concepts in school design—concepts made possible with *prestressed concrete*. Teaching space must be quickly changeable in size and shape. A gymnasium this evening may be four lecture halls tomorrow morning. The *most adaptable* schoolhouse is the *best schoolhouse* since education

must meet changing needs and accommodate sophisticated teaching aids *with multi-purpose space*.

Now, school planners bring wide-open spaces *inside* as the long-span muscle of prestressed concrete invites them to forget about space-wasting columns. At the same time, this truly 20th century material points the way to impressive economies in speedily erected, fire-safe, quality schools.

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Davis, California
Architect:
Gardner A. Dailey, FAIA, & Associates
Engineer:
T. Y. Lin, Kulka, Yang & Associate



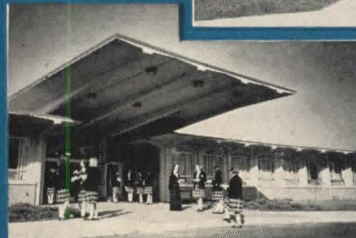
AMBASSADOR COLLEGE
Pasadena, California
Architect: Peter J. Holdstock
Engineer: Johnson & Nielsen



HENRICO HIGH SCHOOL
Richmond, Virginia
Architect:
J. Henley Walker, Jr. AIA



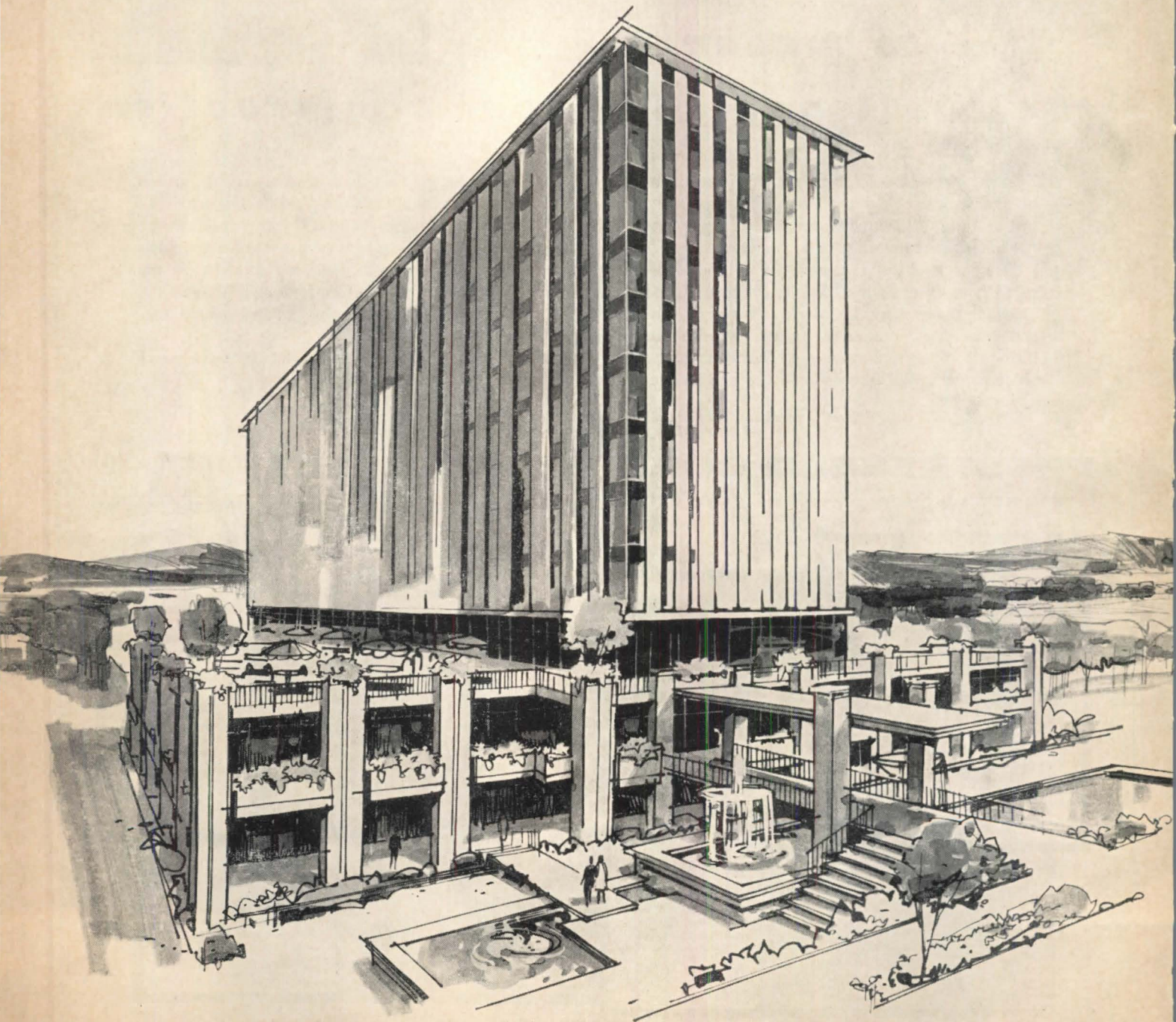
PARSONS RURAL ELEMENTARY SCHOOL
near Salina, Kansas
Architect & Engineer:
Anderson—Johnson AIA



ACADEMY OF THE HOLY ANGELS
Demarest, New Jersey
Architect & Engineer:
J. G. Phelan and Associates

* Public and private school enrollment, first twelve grades, 1965—1966 school year, is 48,800,000. Enrollment will increase 400,000 annually through 1975.—U.S. Office of Education.

Garrett Gas turbines deliver low cost electricity, cooling and heating to these two California buildings.



One of these high-rise buildings is in El Segundo, Cal., the other in Pasadena. Aside from being architectural look-alikes, the structures have Gas Total Energy in common.

Three Garrett AiResearch Gas Turbine-generator sets provide all the electricity needed. And turbine exhaust heat is captured and used for air conditioning, heating and hot water.

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Engineer to tell you more about it. Or write:

The Garrett Corp., AiResearch Manufacturing Div.,
180 N. Aviation Blvd., El Segundo, Cal.

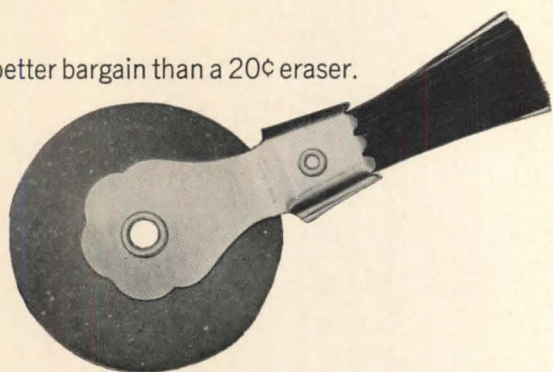
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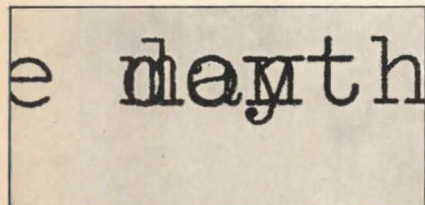


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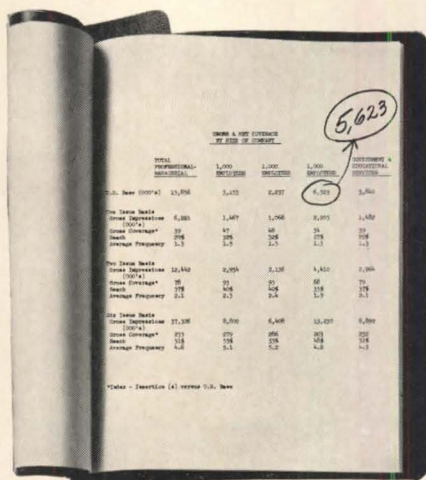
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IBM



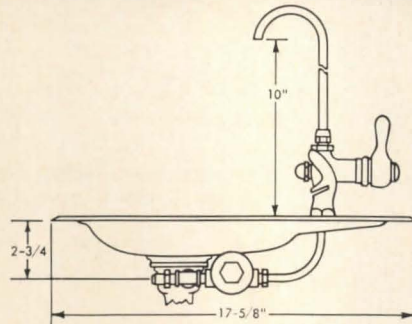
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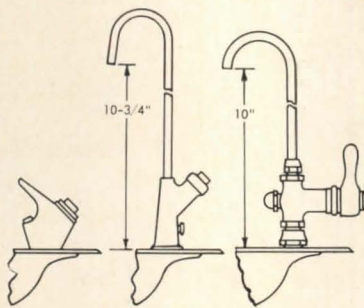
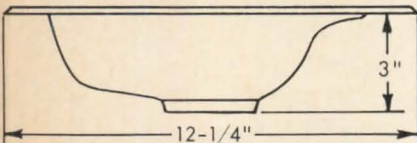


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Continued from page 250

duction, and SAMUEL E. ZIONTS senior architect.

A. EPSTEIN AND SONS, INC., Engineers and Architects, Chicago, Ill., have named ARNOLD M. COLANTONIO director of mechanical design and development.

HARLEY, ELLINGTON, COWIN & STIRTON, INC., Architects and Engineers, Detroit, Mich., have named THOMAS A. HARKANYI administrative designer.

I.S.D. INCORPORATED, New York-Chicago, has appointed NANCY KLUMB senior project manager in its New York office.

LINESCH & REYNOLDS, Environmental Planners, Long Beach, Calif., have appointed EARL A. FREELS and RALPH W. SHERMAN to their staff.

New Partners, Associates

The firm of CAUDILL ROWLETT SCOTT, Architects, Planners, Engineers, Houston, Tex., has named 11 new associates: GARTH CARROLL, TRUITT B. GARRISON, JOSEPH W. GRIFFIN, G. NORMAN HOOVER, ROBERT W. KIRKHAM, ROBERT F. MATTOX, JOHN ALMONT PIERCE, RICHARD R. SEINFELD, MALCOLM T. TENGLER, DONALD TRAVIS WILSON, VICTOR LASPRGATO.

FRED S. DUBIN ASSOCIATES, Consulting Engineers, West Hartford, Conn., announce the admission to partnership of SELWYN BLOOME and NORMAN D. KURTZ.

CHARLES LUCKMAN ASSOCIATES, INC., Planners, Architects, New York, N.Y., announce that ANDREW R. EWING, JR., has joined the firm's business planning department.

MARSHALL & BROWN, Architects and Engineers, Kansas City, Mo., have appointed EDWIN W. KORFF a partner in the firm.

Name Changes

DIEHL, STEIN, MILLER, Architects, Princeton, N.J., upon the admission of FRANK E. MILLER; formerly DIEHL & STEIN.

Corrections

WALKER & MCGOUGH, Architects, are located at North 120 Wall St., Spokane, Wash., and at 637 White-Henry-Stuart Bldg., Seattle, Wash. (not at Virginia Beach, Va.).

LINN SMITH, DEMIENE, KASPRZAK, ADAMS, INC. have their office at 894 South Adams Rd., Birmingham, Mich. 48011 (not in Alabama).

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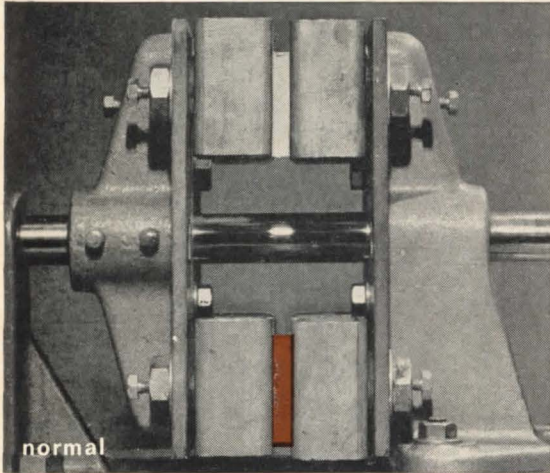
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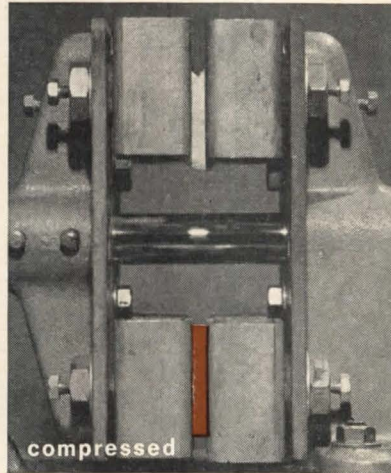
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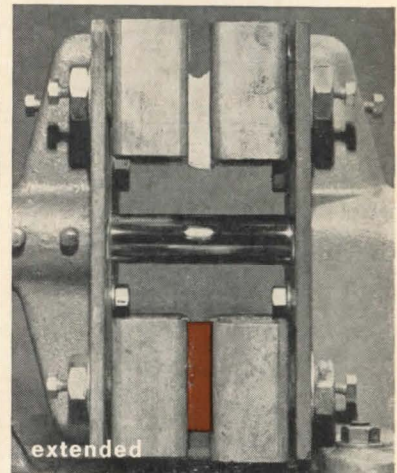
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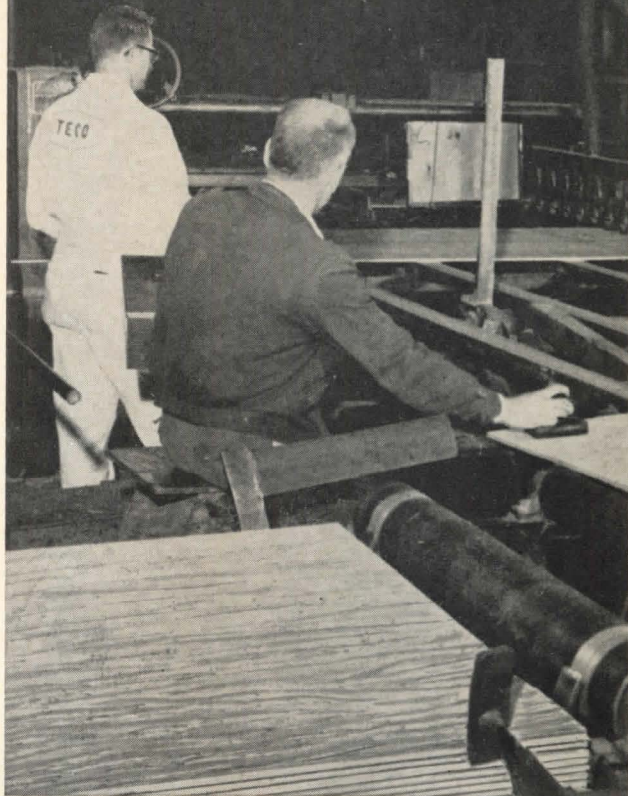
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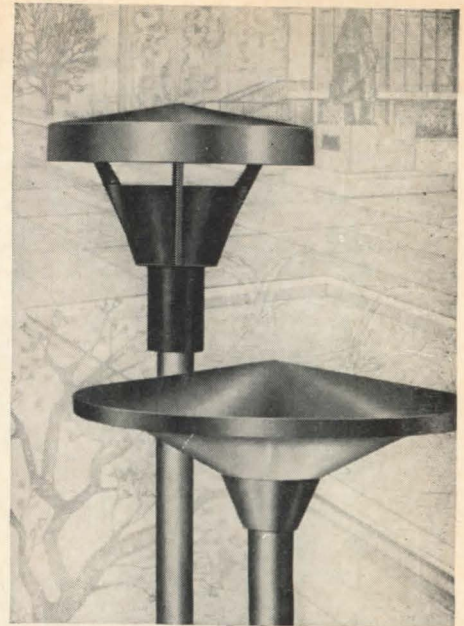
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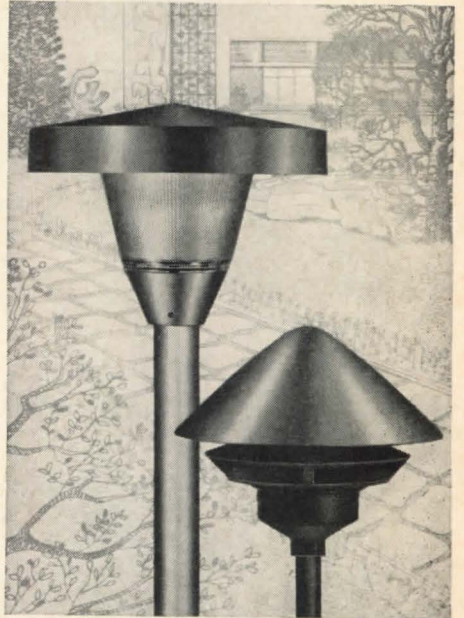
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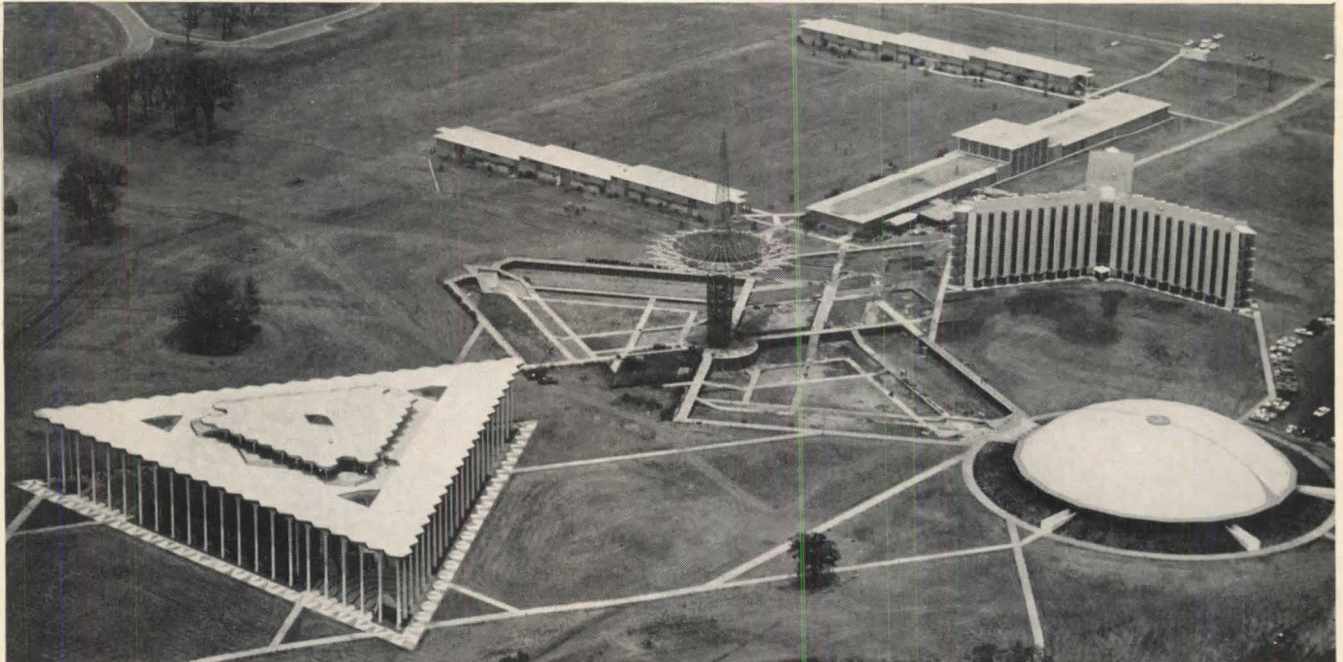
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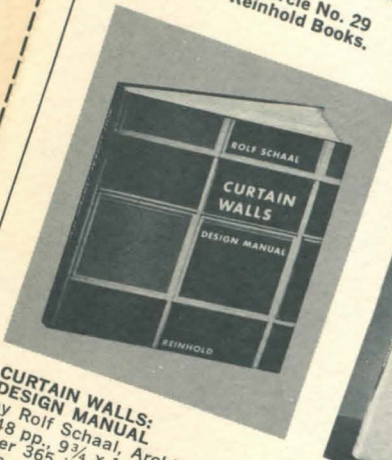


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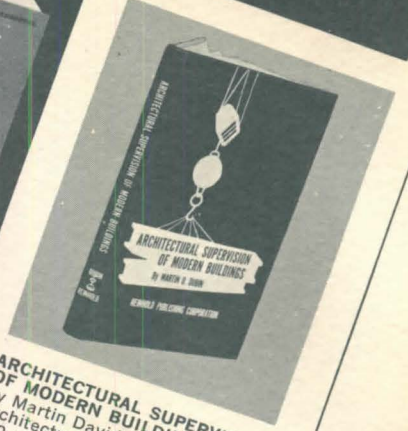
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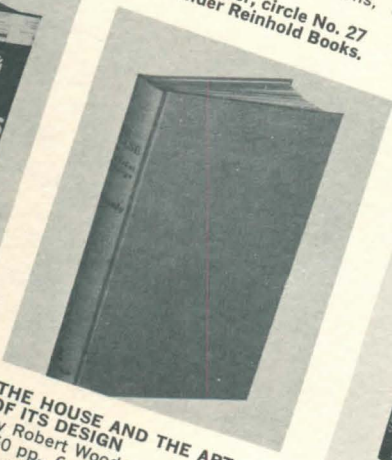
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