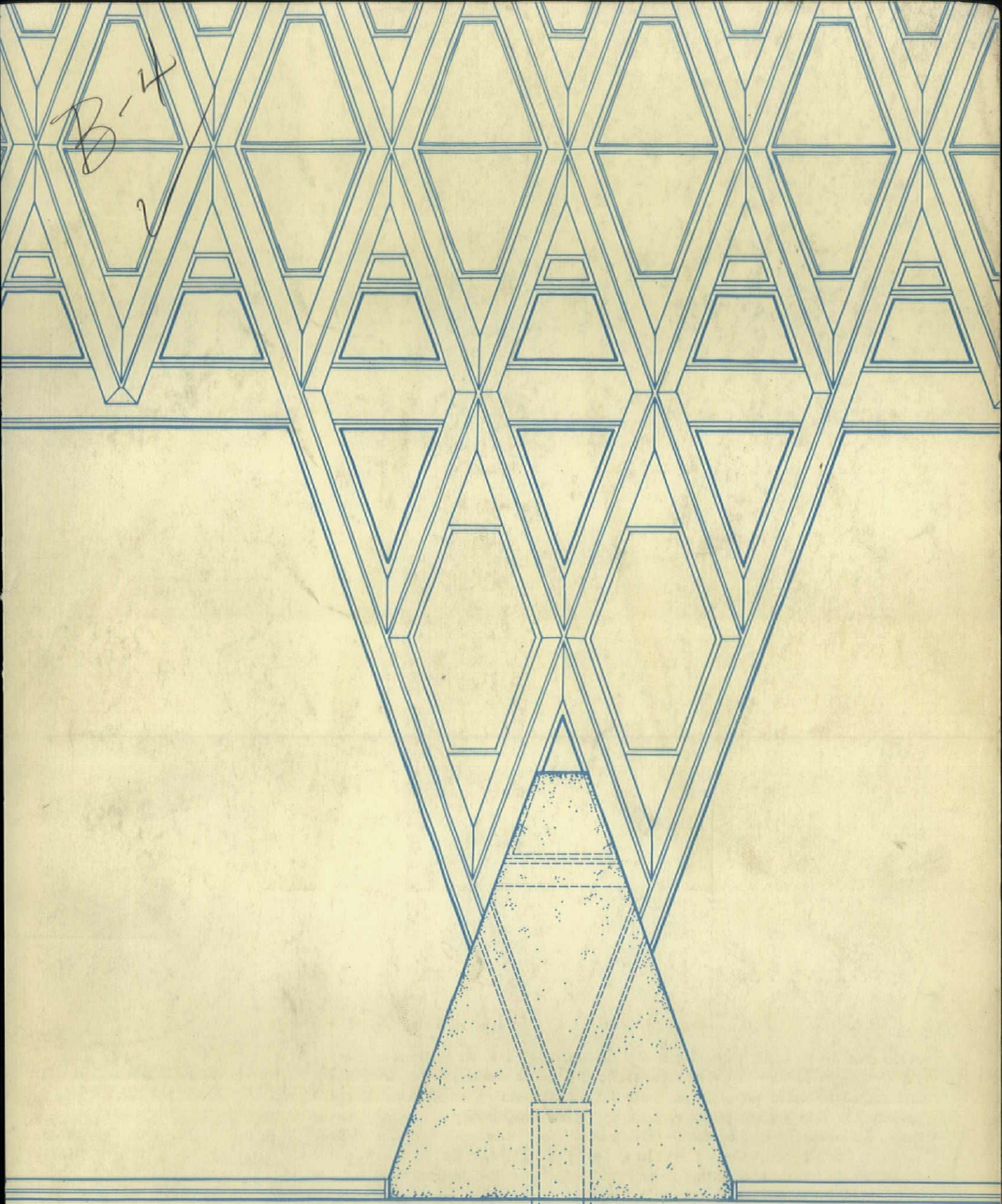
PA-1962-09



Colors: V-421 Antique Lace, V-426 Castilian Gray with black feature strip

Vina-Lux® PREMIERE *Series*

elegant floor beauty that won't "walk off"

. . . because the travertine patterning is distributed through the full thickness of the tile. Premiere Series in Vina-Lux vinyl asbestos tile is a unique combination of subtle styling and rugged resistance to maximum traffic loads . . . delivers so much more value and performance than surface patterns . . . yet costs no more. Specify Vina-Lux Premiere Series, for installation over concrete — above, on or below grade, or over wood or plywood subfloors. Consult Sweet's Catalog — or let us send you samples, color charts and detailed architectural specifications. Azrock Floor Products Division, Uvalde Rock Asphalt Company, 525A Frost Building, San Antonio, Texas.

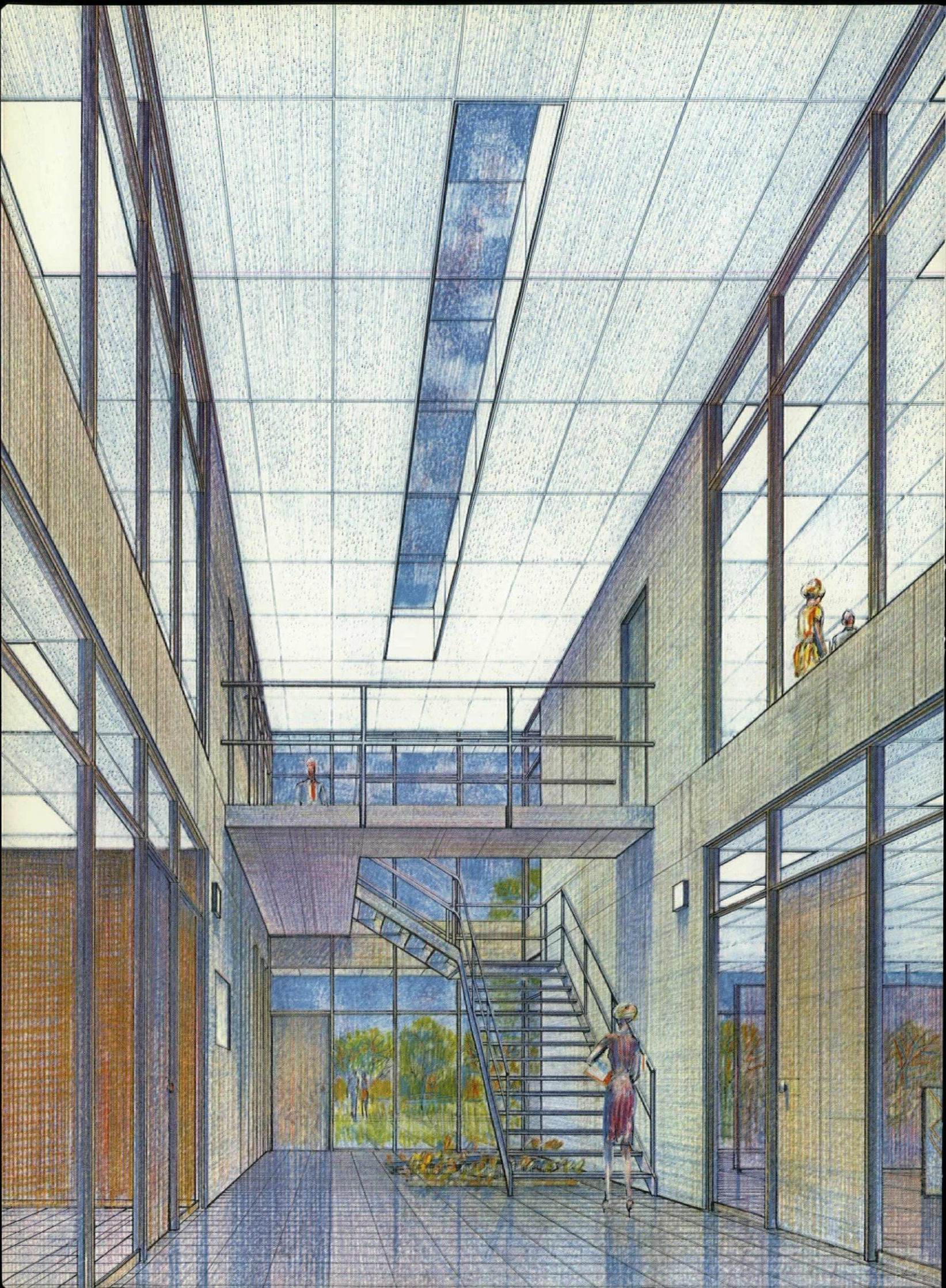
Magnified view shows pattern distribution through **full** thickness of tile. Available in 1/8" 3/32", 1/16" gauges.

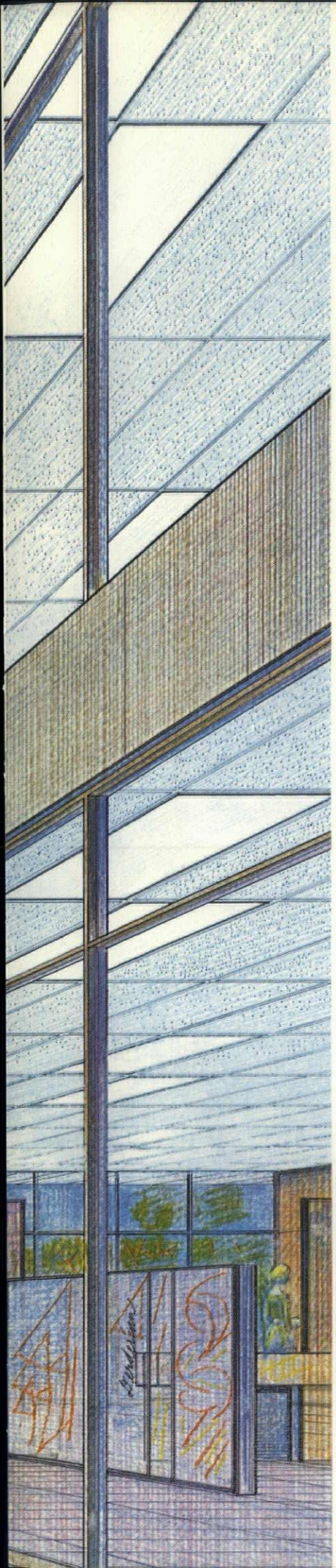
another fine floor by AZROCK®

For more information, turn to Reader Service card, circle No. 328

SACRAMENTO, CALIFORNIA

A NEW AND VERSATILE CEILING FOR TODAY'S AIR-CONDITIONED, FLEXIBLE-LAYOUT OFFICES





SACRAMENTO: ARMSTRONG VENTILATING FIRE GUARD CEILINGS DIFFUSE AIR, BLOCK FIRE, ABSORB SOUND -WITH LAY-IN UNIT FLEXIBILITY

These ceilings give this California office building complete flexibility of room layout—and do three other important jobs. Ventilating Fire Guard has eliminated almost all supply ductwork by using the plenum to feed conditioned air to the perforated ceiling, which diffuses it to the room below. And scientific plenum-engineering, based on Armstrong's exclusive calculations for Ventilating Ceilings, solved all problems of proper air distribution before the ceiling went up. The Ventilating Fire Guard Ceiling easily meets local fire code requirements for one-hour fire protection of steel joists. The ceiling provides excellent acoustical control, too. And because these Ventilating Fire Guard Ceilings are of large, movable lay-in units, arrangement of office spaces to suit tenants is highly flexible: lighting fixtures are easily rearranged; partitions go anywhere; the Ventilating and Fire Guard functions are unaffected. Moreover, these Ventilating Fire Guard Ceilings cost about $8,000 less than the combination of a duct-and-diffuser system and intermediate fire protection of steel joists.

Driver and Hunt Office Building, Sacramento, Calif. ARCHITECTS: Rickey & Brooks, Sacramento, under the direction of Benedict Adams, Architect, Associate. MECHANICAL ENGINEER: Leonard Stecher, Sacramento. GENERAL CONTRACTOR: Guth & Schmidt, Sacramento. ACOUSTICAL CONTRACTOR: L. D. Reeder Company, Sacramento.

TECHNICAL INFORMATION: Armstrong Ventilating Ceilings have been thoroughly lab- and job-tested to assure proper performance; are available in five materials (both tile and lay-in units), including Fire Guard, with three different patterns; and are compatible with all conventional supply-air systems. They offer considerable savings by cutting supply ductwork and eliminating conventional diffusers. Ventilating Fire Guard offers up to four-hour-rated fire protection; saves up to 30¢ per sq. ft. by eliminating intermediate fire protection, up to two months' construction time through dry installation; often earns lower insurance rates. Special plenum-engineering data is available, giving all factors and formulae for the correct design of this ventilating system, ensuring that it delivers the required cfm of conditioned air in the manner and quantity designated by the ventilating engineer; contact your Armstrong Acoustical Contractor or Armstrong District Office. For general information, write Armstrong, 4209 Watson St., Lancaster, Pa.

Armstrong ACOUSTICAL CEILINGS

First in fire-retardant acoustical ceilings

RENDERINGS BY ARA DERDERIAN

Tests prove this easier way to tie composite walls

IS BETTER TOO—MUCH BETTER!

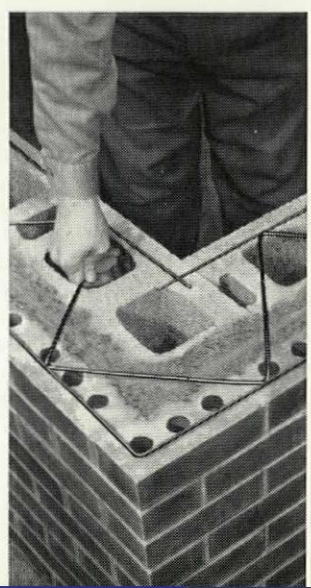
Impartial tests, we mean, conducted at a university-affiliated research laboratory. Test techniques were adaptions of standard masonry construction. Conclusions: In comparison with header-tied walls, the Dur-o-wal tie not only makes for easier construction and lower cost—but also provides increased compressive strength, marked improvement in resistance to moisture penetration, comparable transverse strength, comparable mortar bond. Write to nearest address below for new comprehensive Dur-o-wal data file and research reports.

DUR-O-WAL®

The Original Masonry Wall Reinforcement with the Truss Design

DUR-O-WAL MANUFACTURING PLANTS

- Cedar Rapids, Iowa, P.O. Box 150
- Baltimore, Md., 4500 E. Lombard St.
- Birmingham, Ala., P.O. Box 5446
- Syracuse, N.Y., P.O. Box 628
- Toledo, Ohio, 1678 Norwood Ave.
- Pueblo, Colo., 29th and Court St.
- Phoenix, Ariz., P.O. Box 49
- Aurora, Ill., 260 S. Highland Ave.
- Seattle, Wash., 3310 Wallingford Ave.
- Minneapolis, Minn., 2653 37th Ave. So.
- Hamilton, Ont., Canada, 789 Woodward Ave.



Strength with flexibility—the two basic factors for a repair-free composite wall are assured by Dur-o-wal. Around corners, that is, as well as in the straight stretches. Positive, continuous reinforcement of corners is easy when formed on the job —even easier with prefabricated Dur-o-wal corners such as shown in this picture.

THIS MONTH IN P/A

The World's Largest Architectural Circulation

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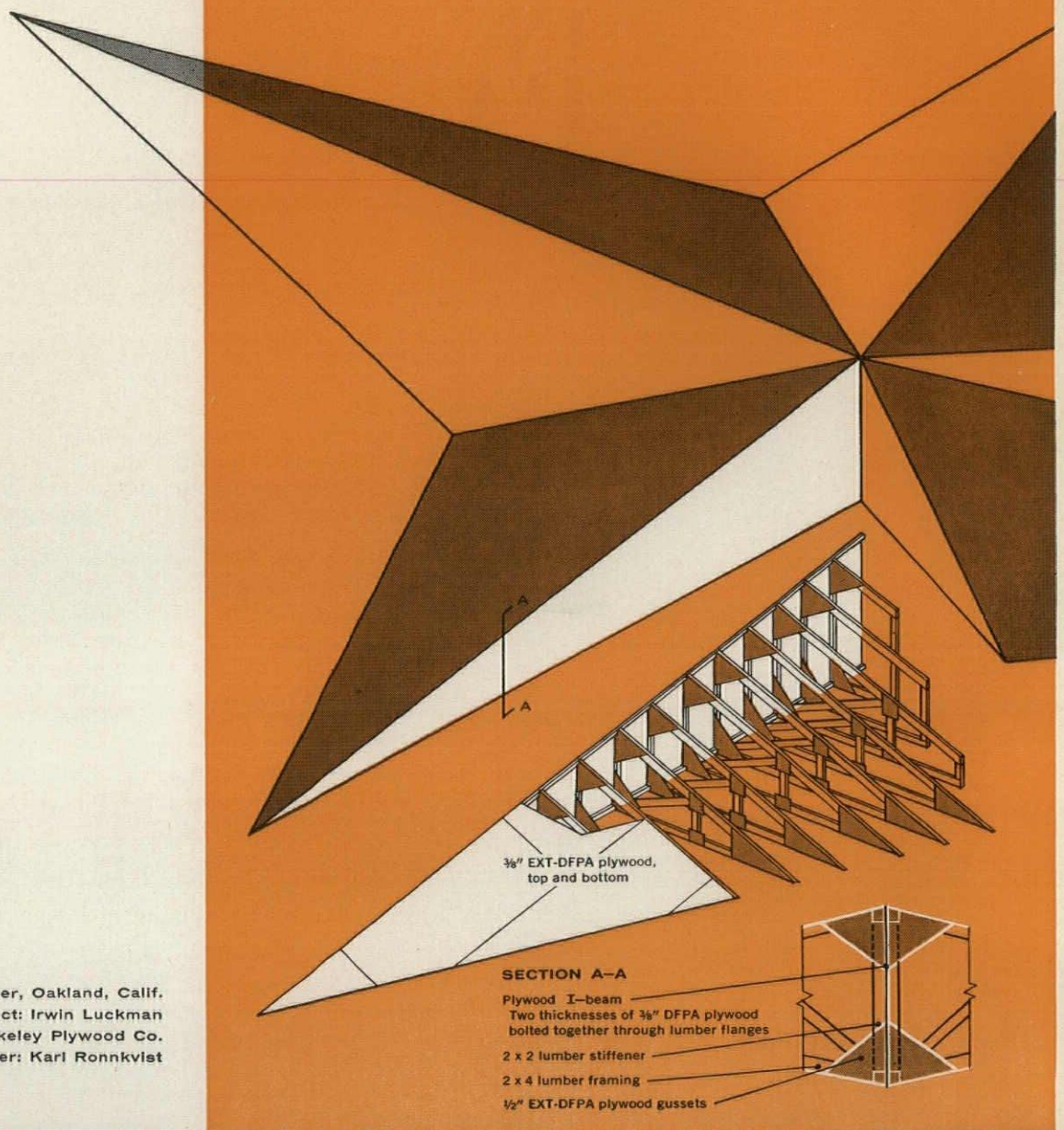
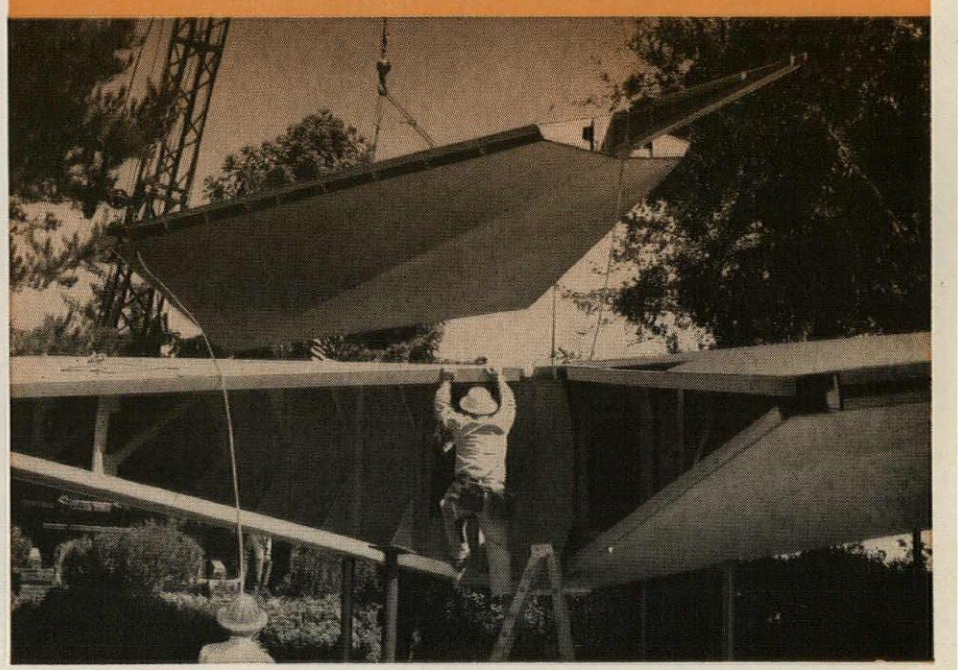
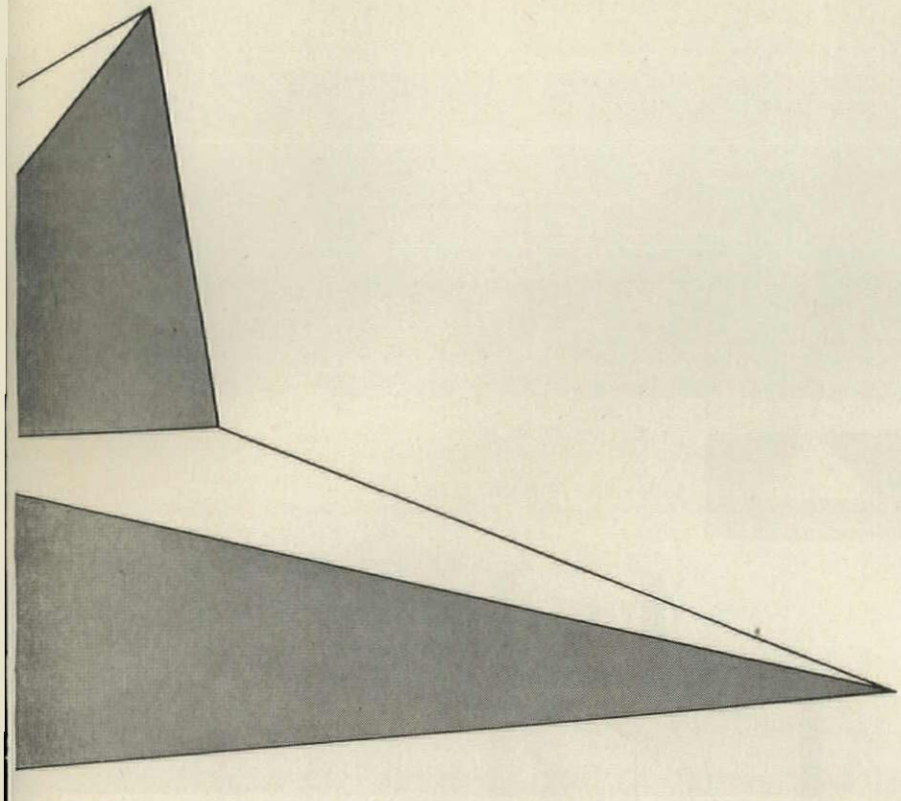


Arroyo Viejo Children's Theater, Oakland, Calif.
Architect: Irwin Luckman
Fabricator: Berkeley Plywood Co.
Builder: Karl Ronnkvist





the most exciting ideas take shape in fir plywood

THIS INGENIOUS STAR-SHAPED ROOF demonstrates the remarkable structural forms that can be achieved with plywood. Deceptively simple, the design bears more resemblance to airplane wings than a conventional roof, with interacting plywood and lightweight lumber members forming skeleton and structural skin.

Four plywood I-beams radiate from the center to form the spines of the 22 x 38-foot wings. Trusses cantilever off both sides of the beams and plywood skins form a rigid diaphragm that provides structural integrity for the entire assembly. The roof is supported by only eight steel columns. Components were temporarily bolted together by the fabricator to check tolerances, then trucked to the site for installation.

For further information on plywood and other new plywood structural systems, including folded plates, space planes, Delta structures, components, etc., write (USA only) Douglas Fir Plywood Association, Tacoma 2, Washington.

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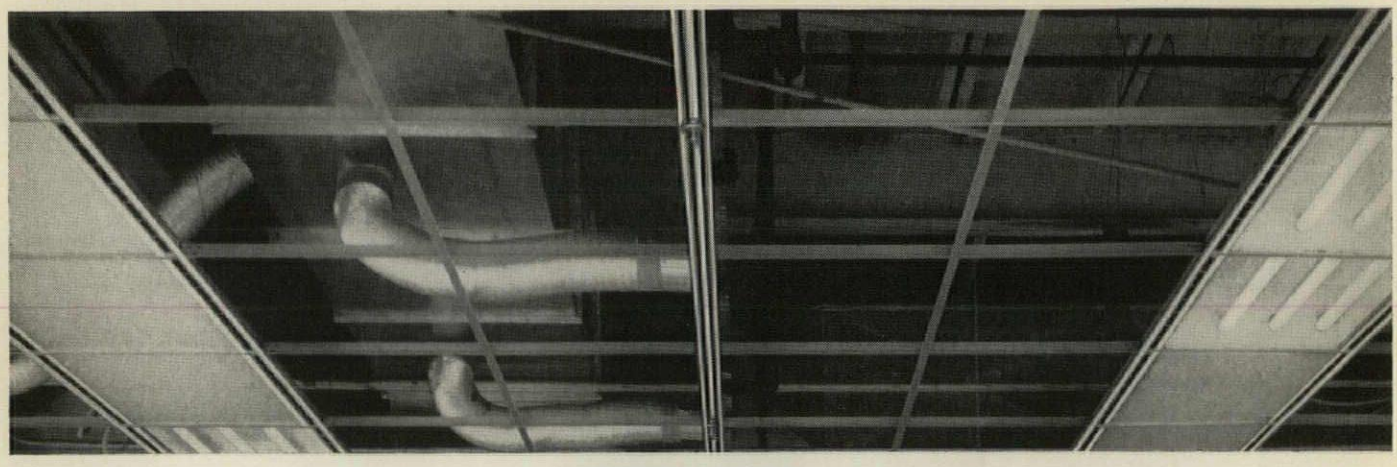
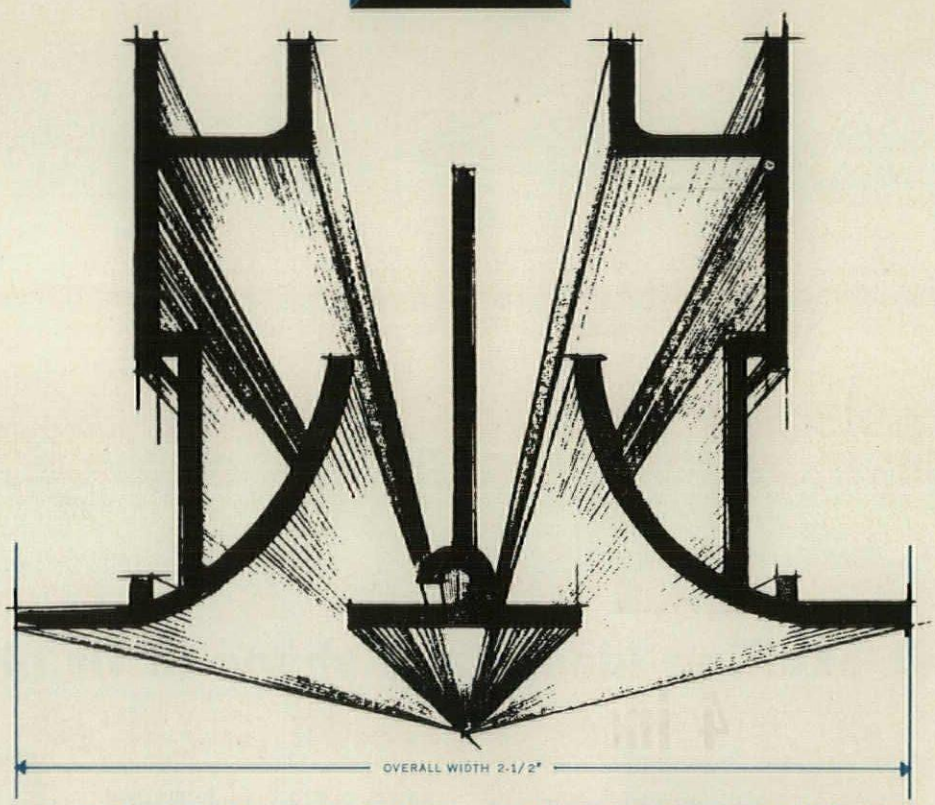


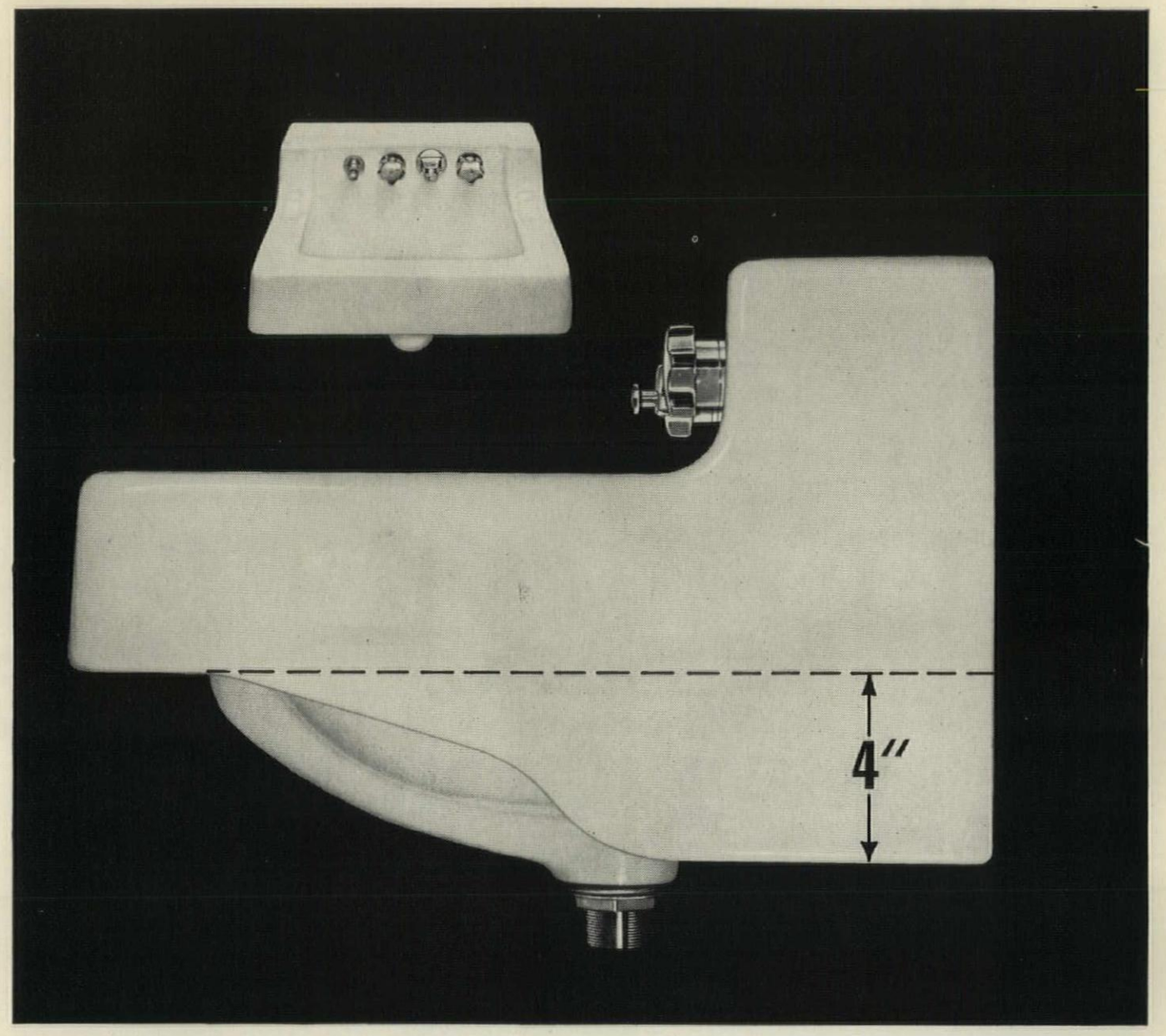
LINEARITY UNLIMITED



ANEMOSTAT AIRMODULE™

Support your ceilings in style with this new modular diffuser.

First, this modern modular unit *works* — and works with proved Anemostat efficiency. It distributes air horizontally — 60 draft-free cfm per linear foot. And it helps support the ceiling. Study its cross section: those angular side channels hold ceiling panels in a dozen different ways — an *Airmodule* unit can be combined with almost any ceiling system. Its flat underside blends smoothly with the ceiling architecture. Special linking devices enable you to combine active and inactive units for uninterrupted linearity. Centered in the photograph is a row of Anemostat®*Airmodule* units flanked by inverted T-bar structural members and CLD lighting troffer diffusers. And note the sprinkler heads: you see air, light, ceiling support and fire protection systems — all superbly integrated. (This is an actual installation shown before ceiling panels were installed.) And that's only one way to do it. You'll have your own *Airmodule* ideas. There's a new Anemostat bulletin ready — with performance data, installation information, and dimensions. For your copy, call your Anemostat representative or write for Bulletin AM-862 to: Anemostat Corporation of America, Scranton, Pa. (A Subsidiary of Dynamics Corporation of America).



Why the 4 inch extension in the back ?

Not for appearance. Most people never notice. But those extra four inches of wall bearing surface (plus two anchor screws) give rock-like solidity to the Kohler Juneau Lavatory.

The extra four inches eliminates the need for an expensive carrier installation (saves time and money) and keeps the Juneau straight and true for the life of the building. That kind of installation is mighty complimentary to an architect's (or builder's) good name and reputation.

Just another sensible feature of the vitreous china Juneau lavatory...and a reflection of the Kohler habit of putting time and effort into designing plumbing that makes good sense (that includes a superb line of All-Brass fittings).

The Kohler Juneau is vitreous china, available in white and Kohler colors. For more information, write Kohler Co., Kohler, Wisconsin.

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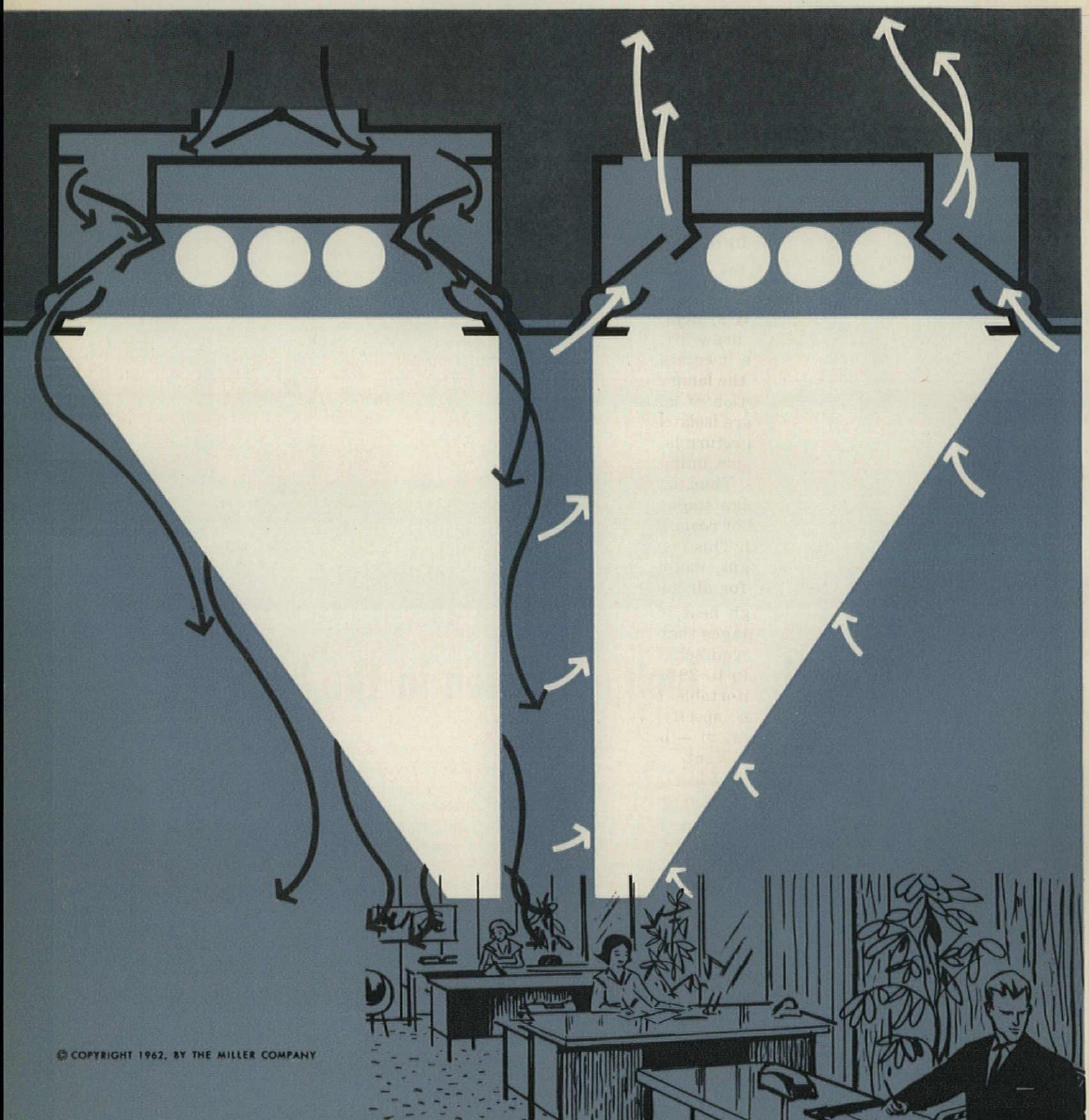
Kohler Co., Established 1873 • Kohler, Wis.

ENAMELED IRON AND VITREOUS CHINA PLUMBING FIXTURES • ALL-BRASS FITTINGS • ELECTRIC PLANTS • AIR-COOLED ENGINES • PRECISION CONTROLS

ONLY miller MULTI-VENT® COMBINES LIGHT AND AIR



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TO GIVE YOU THESE EXCLUSIVE ADVANTAGES

Cleaner, more attractive looking ceilings and greater design flexibility to meet changing space requirements are two of the advantages to be gained when air diffusers are integrated with the lighting and acoustical module. In addition, a combination system **should** be less costly than separate systems. Also, it **should** limit the amount of lighting heat load that would normally enter the comfort zone. However, not **all** "combination" systems work together to accomplish these aims. **Multi-Vent is the only true combination light and air system.**

And, only **Miller** Multi-Vent troffers are so engineered that each function augments the other to provide these **exclusive advantages:**

- **cost savings through heat pick-up**
- **lowest total cost**
- **up to 29% higher light output**
- **most comfortable air diffusion**

Take heat pick-up – the removal of fixture heat. Miller Multi-Vent is the **only** system whose return air outlets are designed to draw off at least 50% of the lamp wattage before it enters the occupied space. **Return air passes by the lamp compartments** and picks up a greater portion of lamp heat than with troffers where lamps are isolated from return air flow. And, when **plenum** return is used, air flow passes over supply and return units and picks up 11% of the ballast wattage. Thus, major cost savings are possible at the design stage. With less air volume required for control of room heat – less air handling capacity is needed. This means less ductwork, fewer and smaller fans, motors and filters and fewer troffers needed for air supply.

But greater savings through heat pick-up is just one of four exclusive advantages that you get with Miller Multi-Vent. See for yourself how you also get the lowest **total** cost, up to 29% higher light output and the most comfortable air diffusion. Before you design, engineer, specify, purchase or install **any** light and air system – be sure to get the full story on Miller Multi-Vent.

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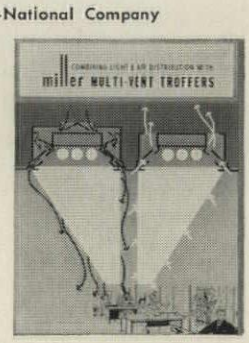
LIGHTING BY miller SINCE 1844

For **complete** information, write for the new and fully illustrated 30-page Miller Multi-Vent Manual.



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IN DESIGNING ONE-STORY BUILDINGS

You Can Help the Occupant Move in Much Sooner

All that is needed in installing Atmos-Pak roof-mounted heating and/or cooling systems is to make three quick on-site connections. Atmos-Pak can be delivered and in complete operation the same day.

Atmos-Pak is a roof-mounted, low-silhouette, pre-fabricated heating and/or cooling system specifically engineered for large one-story buildings. It has innumerable advantages for shopping centers, supermarkets, discount houses, bowling alleys, schools, post offices, churches, and industrial buildings. The only interior fitting is an inconspicuous, although good-looking, diffuser, integral with the unit. The one-piece apparatus can be delivered and in operation the same day. Optional colors and housing designs.

Dispensing with boiler and apparatus rooms, Atmos-Pak saves space. Pre-fabrications reduces on-site installation to three quick connections. The supply and return air distribution chambers do away with ductwork. Air-cooling makes water-towers, evaporative condensers, miles of pipe, and other appurtenances unnecessary.

The 50 standard Atmos-Pak models range in individual cooling capacity from 5 to 35 tons. As many units as are needed to add up to the total requirements, are installed. Heating capacity provided as required.

Specify Atmos-Pak for the assurance of problem-free comfort. Write for additional information.

ATMOS-PAK, INC., 88 North Highland Avenue, Ossining, N. Y. Pioneer, Designer, and Manufacturer of Roof-Mounted Heating and/or Cooling Systems.

There's always room on top for the original low silhouette

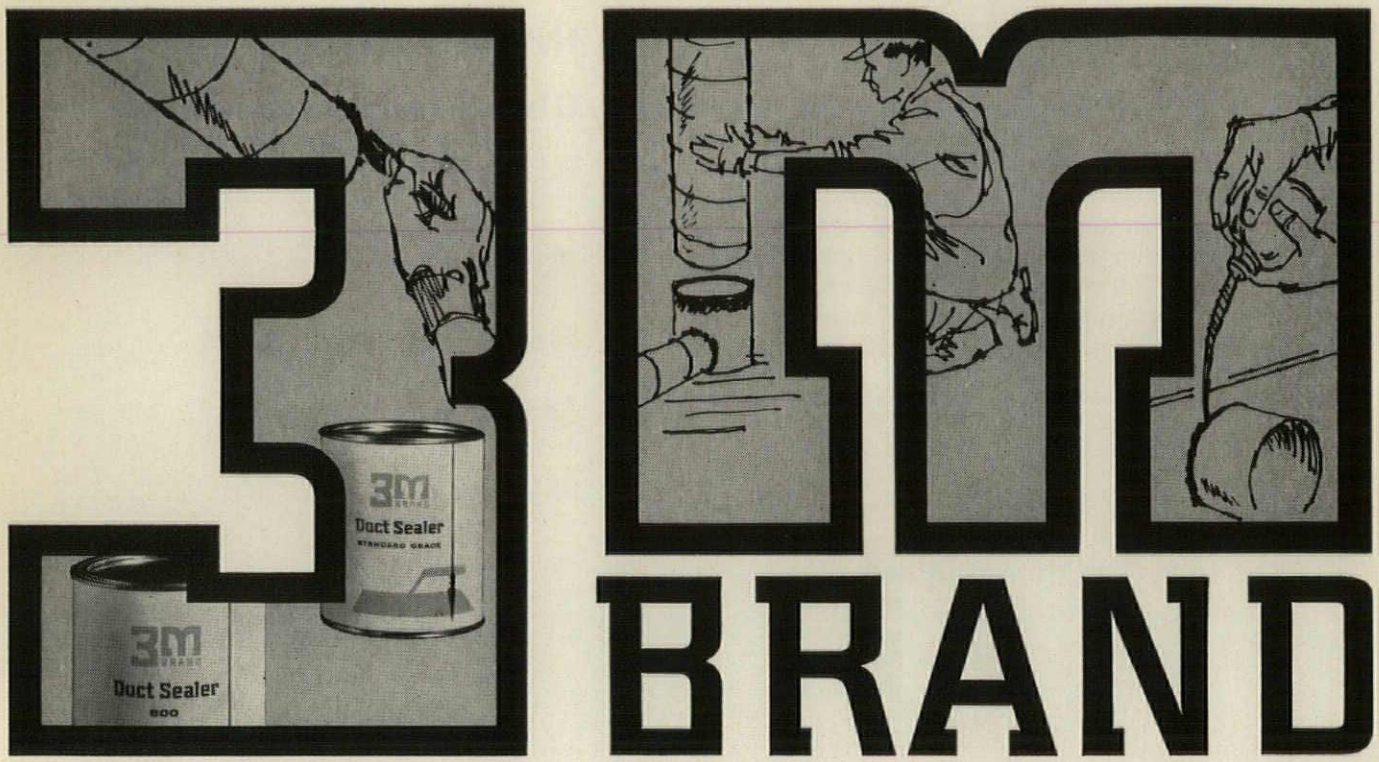
the atmos-pak ®
Patent No. 2886955

ATMOS-PAK, Inc.
88 North Highland Avenue
Ossining, N.Y.

Pioneer, Designer, and Manufacturer of Roof-Mounted Heating and/or Cooling Systems

For more information, turn to Reader Service card, circle No. 327

From today's first family of construction adhesives . . .



Duct Sealers for all velocity and temperature "specs"!

Whether velocity is high, low or medium, there's a 3M Brand Duct Sealer that provides firm, flexible seals, meets pressure and other requirements for any heating and air conditioning system you're called on to install. Choice of two grades . . .

3M BRAND DUCT SEALER 800 PREMIUM GRADE makes lasting, trouble-free seals for high velocity systems—resists water, oil, fuel. Films of ⅛" thickness withstand bending over a 6" mandrel at –65°F, hold fast around joints at 200°F operating temperatures or at intermittent heats up to 250°F!

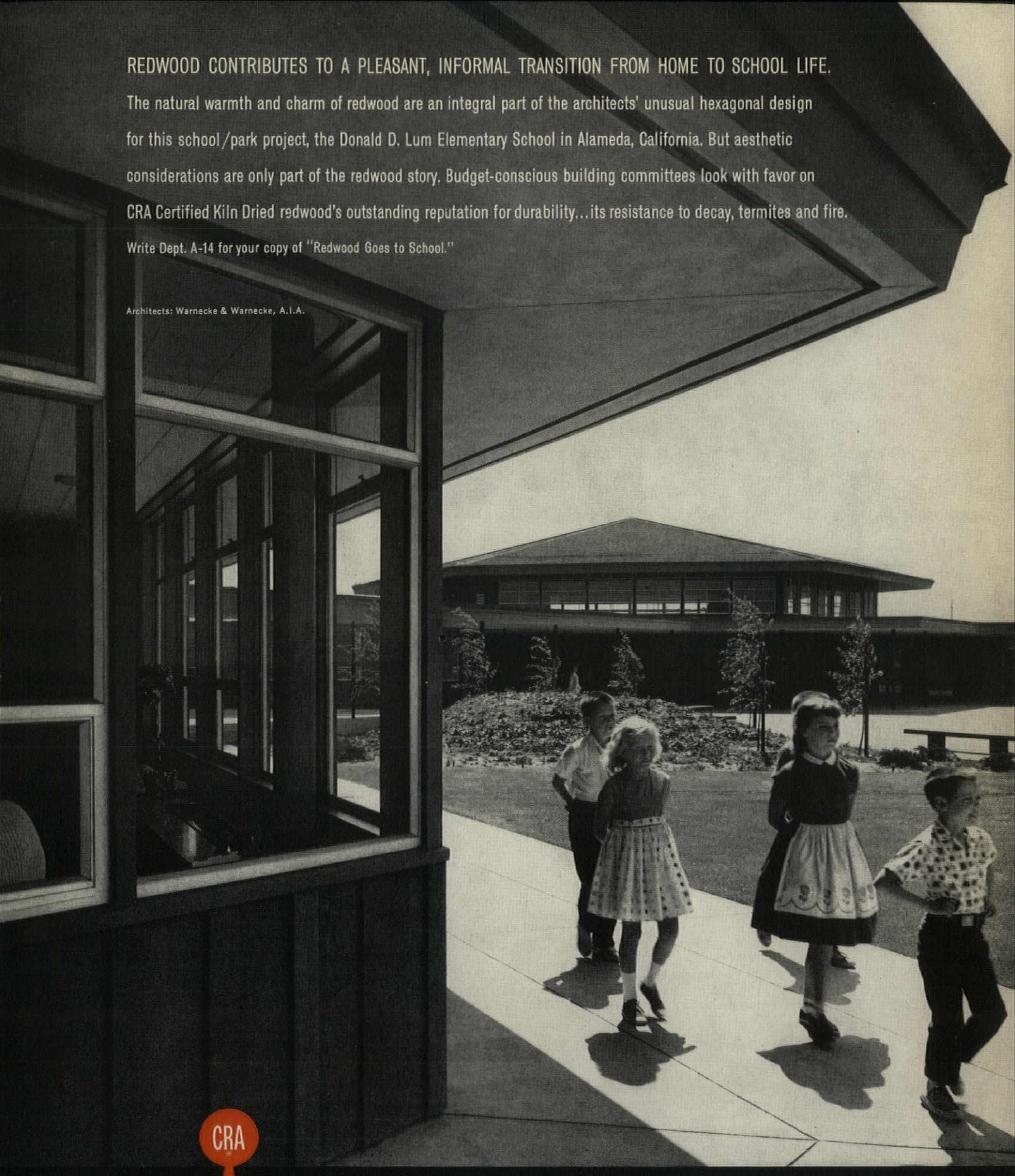
3M BRAND DUCT SEALER STANDARD GRADE assures tough, flexible, trouble-free seals on medium to high velocity systems—meets critical established standards at an economical price. Excellent oil and water resistance. Films of ⅛" remain flexible, even at –20°F—withstand continuous heat exposure to 200°F!

Both duct sealers may be applied with brush, caulking gun or pressure extrusion equipment. Surface skins over in 5 to 10 minutes, becomes tack-free in an hour, achieves full set in 1 to 3 days.

3M also provides adhesives for every insulation bonding need. And the complete family of 3M construction adhesives also includes products that bond ceramic, rubber and vinyl tile, wood flooring, decorative plastic laminates, gypsum drywall, other materials, as well as products that seal curtainwall, other exterior joints. For details, see Sweet's Catalog, your 3M distributor, or write AC&S Division, Dept. SBC-92, 3M Company, St. Paul 1, Minn.

Adhesives, Coatings and Sealers Division 3M COMPANY

For more information, turn to Reader Service card, circle No. 372



REDWOOD CONTRIBUTES TO A PLEASANT, INFORMAL TRANSITION FROM HOME TO SCHOOL LIFE.

The natural warmth and charm of redwood are an integral part of the architects' unusual hexagonal design for this school/park project, the Donald D. Lum Elementary School in Alameda, California. But aesthetic considerations are only part of the redwood story. Budget-conscious building committees look with favor on CRA Certified Kiln Dried redwood's outstanding reputation for durability...its resistance to decay, termites and fire.

Write Dept. A-14 for your copy of "Redwood Goes to School."

Architects: Warnecke & Warnecke, A.I.A.

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Concrete performance report:

AMERICAN BAPTIST CONVENTION

Vincent G. Kling expresses unity and permanence in the American Baptist National Offices at Valley Forge. POZZOLITH controlled-performance concrete used for all jobsite concreting.

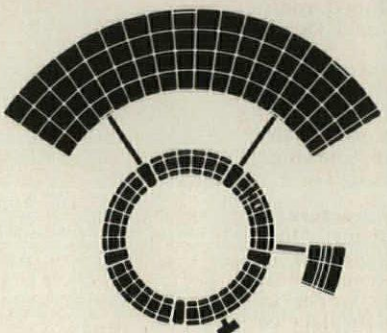
Special concrete considerations—Columns, beams and trusses cast in place are POZZOLITH concrete, 4000 psi and 5″ slump. Heavy steel reinforcement in these members dictated a highly workable mix. Use of POZZOLITH resulted in a mix that consistently met placing requirements, combined with low water content and uniform setting characteristics. Specified strengths were exceeded without exception.

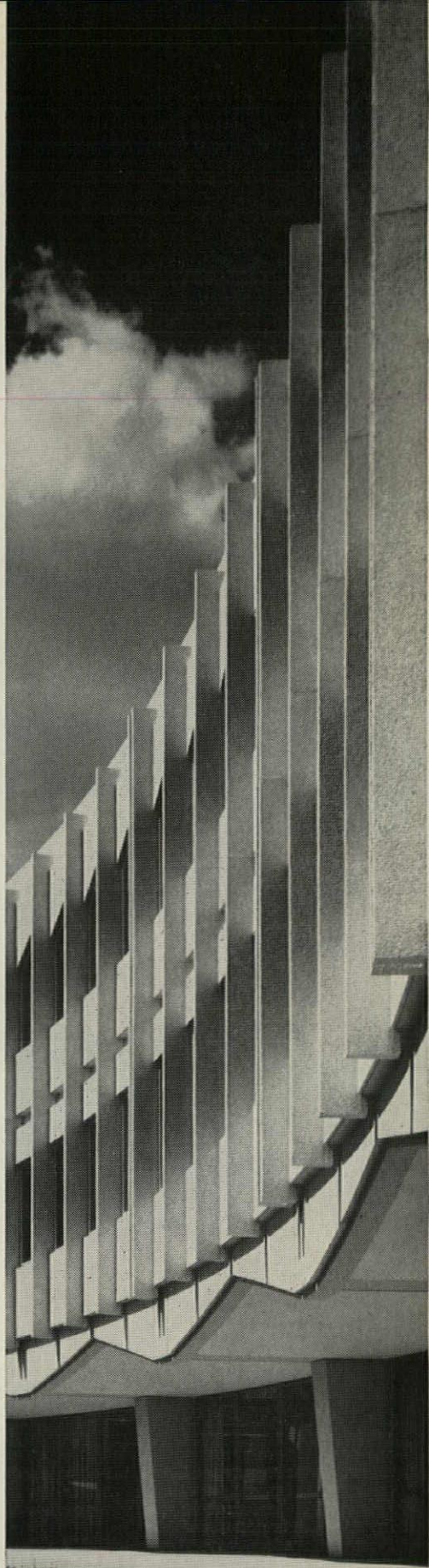
All floors and decks are POZZOLITH concrete, 3000 psi and 4″ slump. This mix was designed as follows: cement, 480 lbs; sand, 1400 lbs; ¾″ stone, 1880 lbs; POZZOLITH, 1.02 lbs; water, 34 gals.

The 3000 psi concrete was subjected to 726 tests of 6 to 8 cylinders each, from July, 1960 through June, 1961. All 726 tests exceeded strength requirements. The average 28-day strength was 3874 psi, and coefficient of variation was 9.24%—in the "excellent" range.

"Probably the best-controlled concrete I've ever seen"—Discussing concrete performance on this project, the project supervisor for Turner Construction stated, "Probably the best-controlled concrete—from the standpoint of slump and everything else—I've ever seen. Honeycomb on this job was unknown. We just didn't have it."

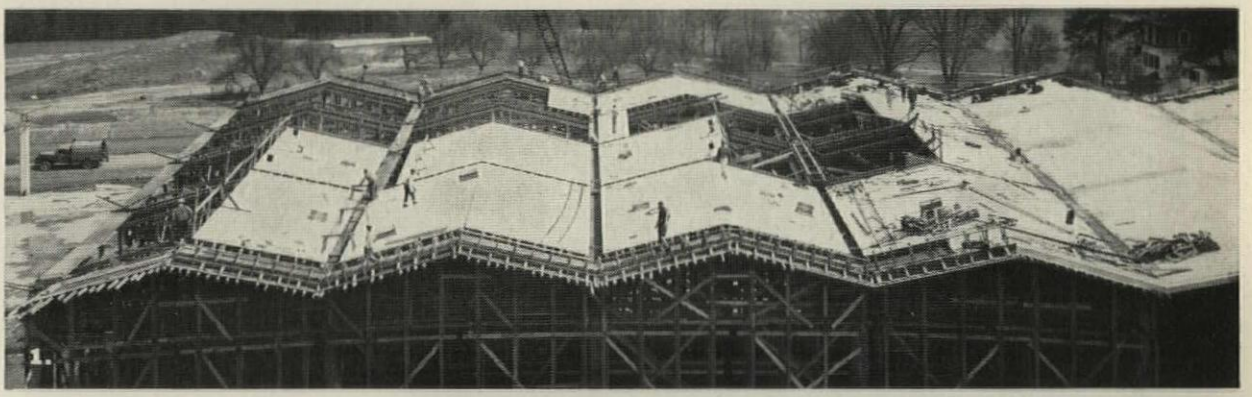
For your next project, call in the Master Builders Field Man near you. Without obligation he will demonstrate how concrete made with POZZOLITH produces a superior building material—superior in performance, in quality and in economy to plain concrete or concrete produced with any other admixture. For helpful data, write Master Builders or refer to the Sweet's Catalog File. *The Master Builders Company • Cleveland 18, Ohio • a construction materials division of* **MARTIN MARIETTA**.





Office building, 238′ ID and 344′ OD, provides 137,000 square feet in five three-story sections separated by five four-story cores. Offices are in the sections; cores contain stairways, elevators, rest rooms, lounges. Fourth-floor penthouses are mechanical and electrical rooms. ■ Sections are faced with precast panels and mullions of exposed quartz aggregate combined with white Portland cement. Cores are faced with cast split brick.

National Offices, American Baptist Convention, Valley Forge, Pa., comprising circular office building, cafeteria building, graphic arts building and connecting links. Architect: Vincent G. Kling, F.A.I.A. • Structural Engineers: McCormick-Taylor Associates • General Contractor: Turner Construction Co. • Ready-Mix Concrete: Highway Concrete Co. • Concrete Testing: Ambric Testing & Research Co.



1.

2.

3.

1. Graphic Arts Building—Four rows of reinforced concrete columns extend 18′ above floor, support 3′ deep reinforced concrete girders that reduce to depth of 2′ at ridge of 3″ on 12″ sloped roof. Columns are on 39′ centers along radial lines, vary from 31′ to 48′ along column arc lines.

Precast twin tee roof planks 39′ long and varying 31″ to 48″ in end-to-end width were framed into reinforced concrete hip girders. After planks were set and top reinforcement placed in girders, concreting or girders was completed—making planks and girders a rigid, monolithic structure.

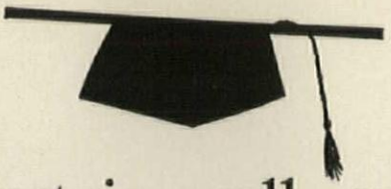
2. Office Building superstructure is reinforced concrete on soil bearing spread footings. On ground floor, two rows of tapered, splayed columns support girders which cantilever 7′ beyond column lines and carry four rows of columns supporting upper two floors. Floor slabs and roof deck are cast-in-place concrete.

3. Graphic Arts Building, 900′ long on outer diameter, houses complete printing facilities, central services, mailing room, boiler room, maintenance shop. Building is on soil bearing spread footings, has slab-on-ground area of about 113,000 square feet.

MASTER BUILDERS
POZZOLITH®

POZZOLITH® is The Master Builders Co. ingredient for concrete which provides maximum water reduction, controls rate of hardening and increases durability.

For more information, turn to Reader Service card, circle No. 422



Fastening curtain wall and window framing to steel, metal lath to concrete block? 2 x 4's to concrete, conduit or pipe to overhead concrete, flexible framing to concrete? Steel angle to steel, metal door bucks to concrete, duct straps to concrete?

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The Connecticut Bank & Trust Company, Hartford, Conn.
Architects: Robert Allan Jacobs–Carson, Lundin & Shaw
General Contractor: F. H. McGraw & Company

General Bronze was awarded single responsibility for engineering, fabricating, glazing and erecting this distinctive curtain wall.

Alumilite-finished natural aluminum is used for mullions, fascia and copings . . . dark gray aluminum for mullion inserts, louvers and most horizontal members. Spandrels are gray porcelainized insulated panels, faced with gray plate glass.

The design and fabrication of the window system were especially critical–because of the weight and wind loading of the large-area glazing . . . the advanced gasketing . . . the inclusion of such features as window cleaning guides . . . and the importance of the mullion detailing to the over-all aesthetic effect.

Close coordination between General Bronze and the architects was essential to the success of this installation. Sample sections of the curtain wall, for both the base and tower systems, were subjected by GB to rigorous wind and weather tests.

Another of today's finest curtain walls– by GB GENERAL BRONZE CORPORATION

GENERAL BRONZE

General Bronze offers you today's most advanced engineering services in the design of aluminum, bronze or stainless steel curtain walls. With close to a half-century's experience in architectural metalwork and fenestration, GB is uniquely equipped to help you realize the benefits and avoid the pitfalls of this highly specialized field.

For additional information, consult your Sweet's files . . . call in the General Bronze representative nearest you . . . or write to: General Bronze Corporation, Garden City, N. Y. • Sales Office: 100 Park Avenue, New York, N. Y.

PERMATITE DIVISION—Custom-built Windows, Curtain Walls, Architectural Metal Work and Revolving Doors. ALWINTITE DIVISION—Stock-size Aluminum Windows and Doors. BRACH MFG. CO. DIVISION—Radio, Television and Electronic Equipment. STEEL WELDMENTS, INC. DIVISION—Custom Fabrication in Steel and Iron.

For more information, turn to Reader Service card, circle No. 345

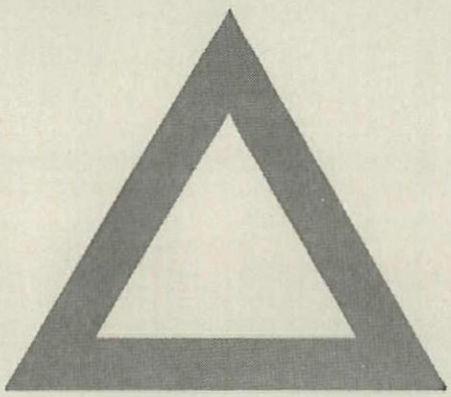
BARRETT
BUILDING MATERIALS

Allied Chemical

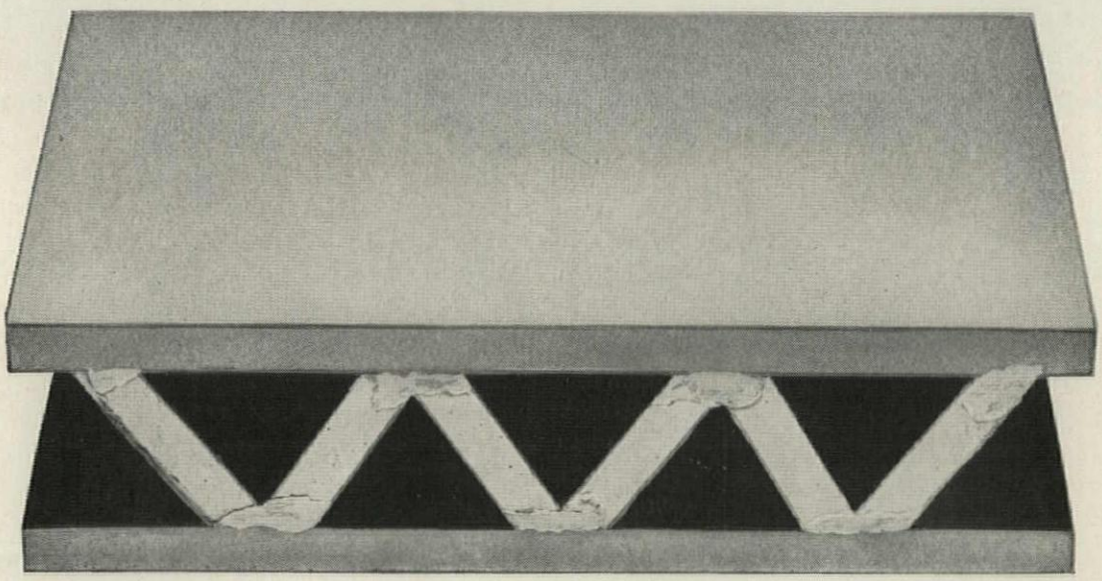
NEWS FOR ARCHITECTS

NEW BARRETT DELTA STUD* GYPSUM PARTITION

Here is a completely new, non-load bearing partition system for the erection of partition walls at one-half the usual cost of comparable masonry partitions. By incorporating a basic construction principle, the triangle, Barrett Delta Stud Gypsum Partition System provides excellent rigidity and strength! Other methods can only achieve similar results with substantially more material. Barrett's all gypsum construction simplifies installation. Costs are cut and on-job delays are eliminated because all materials . . . and accessories . . . are supplied and shipped by Barrett. Easy to install,



1. THE TRIANGLE DELTA PRINCIPLE IN A STUD GIVES EXCEPTIONAL STRENGTH AT LOW COST!



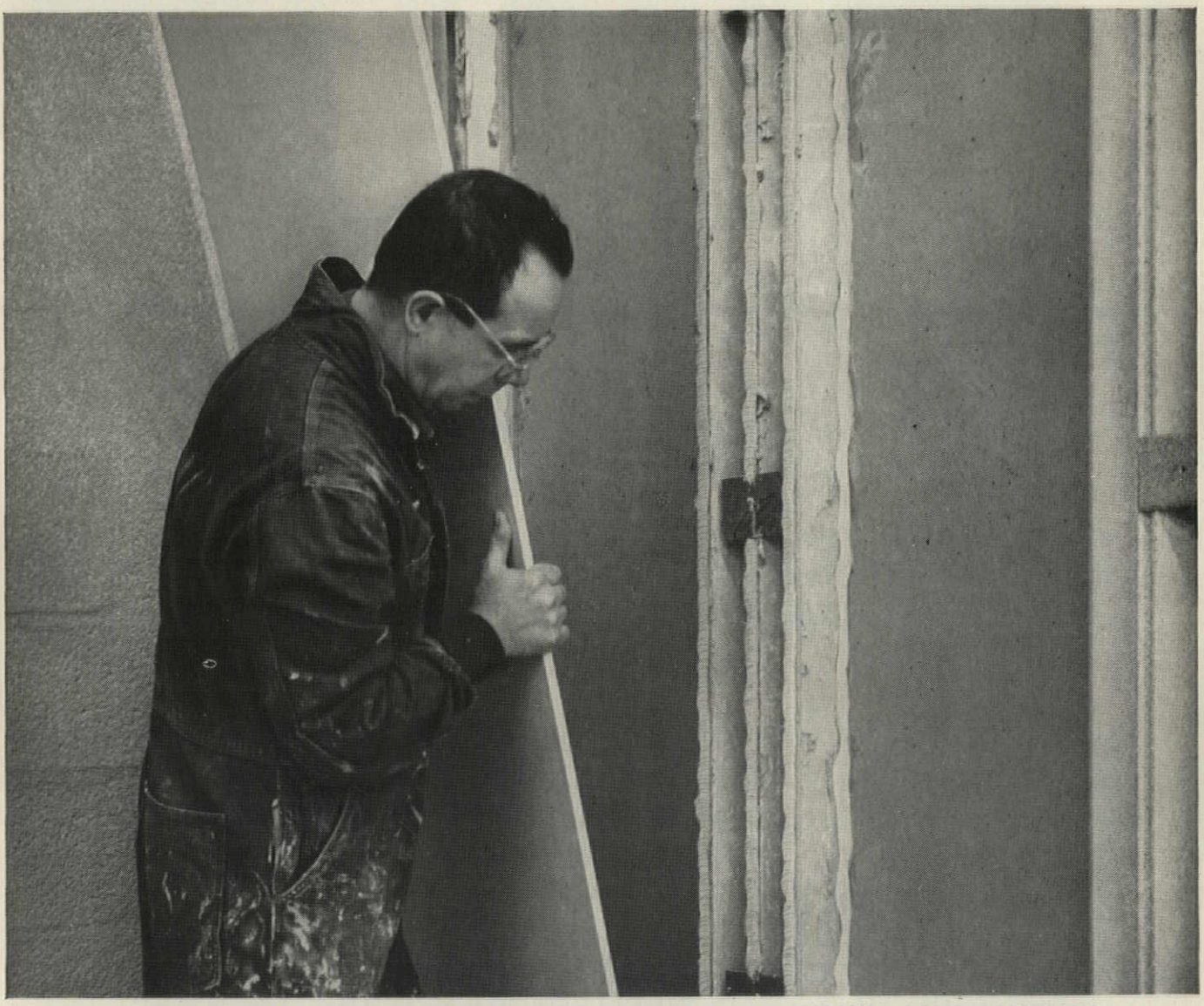
2. THE MOST VERSATILE ALL-GYPSUM STUD PARTITION FOR A LIGHT-WEIGHT HOLLOW WALL!

SYSTEM GIVES YOU THREE BENEFITS!

the Delta Stud Partition System is completely adaptable to accommodate required fire ratings up to two hours, sound transmission classes up to 40 with wall thicknesses from 3″ to 4½″. In addition to the Delta Stud Gypsum Partition System, Barrett also has standard partitions . . . semi-solid, solid, and double solid. For complete information, write to: Barrett Division, Allied Chemical Corporation, 40 Rector Street, New York 6, New York.

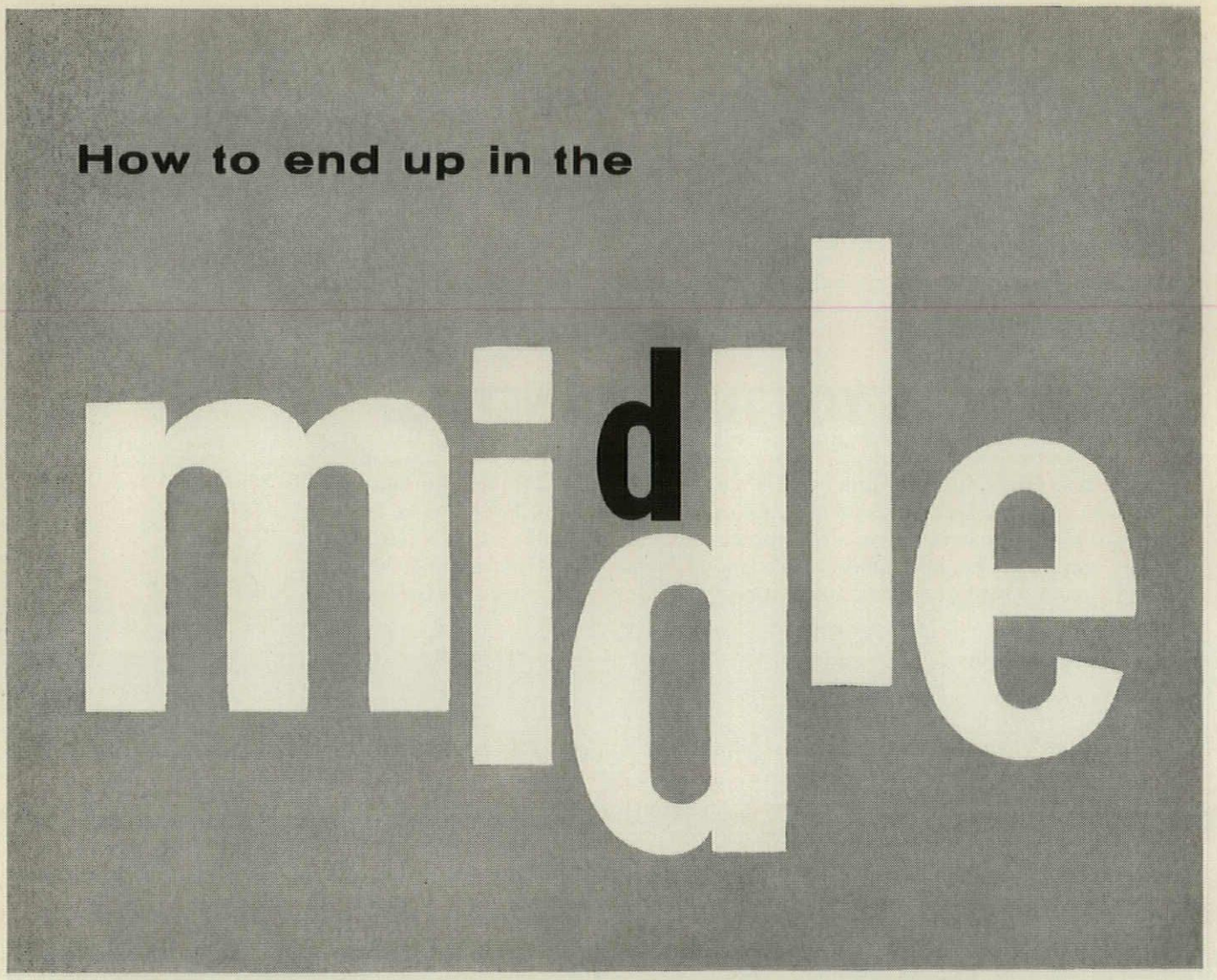
Allied Chemical

*Delta Stud is a Trade Mark of Allied Chemical Corporation.



3. THE INSTALLATION IS SIMPLE WITH BASICALLY ALL-GYPSUM CONSTRUCTION!

For more information, turn to Reader Service card, circle No. 403



It is certainly possible to design an air conditioning system by specifying a variety of major components made by different manufacturers.

You may even save the owners a few dollars—with refrigeration equipment from one source, cooling and heating coils from another and fans from somewhere else.

But each added source of supply multiplies the owners' problems when they try to fix responsibility for performance. There they are—right in the middle.

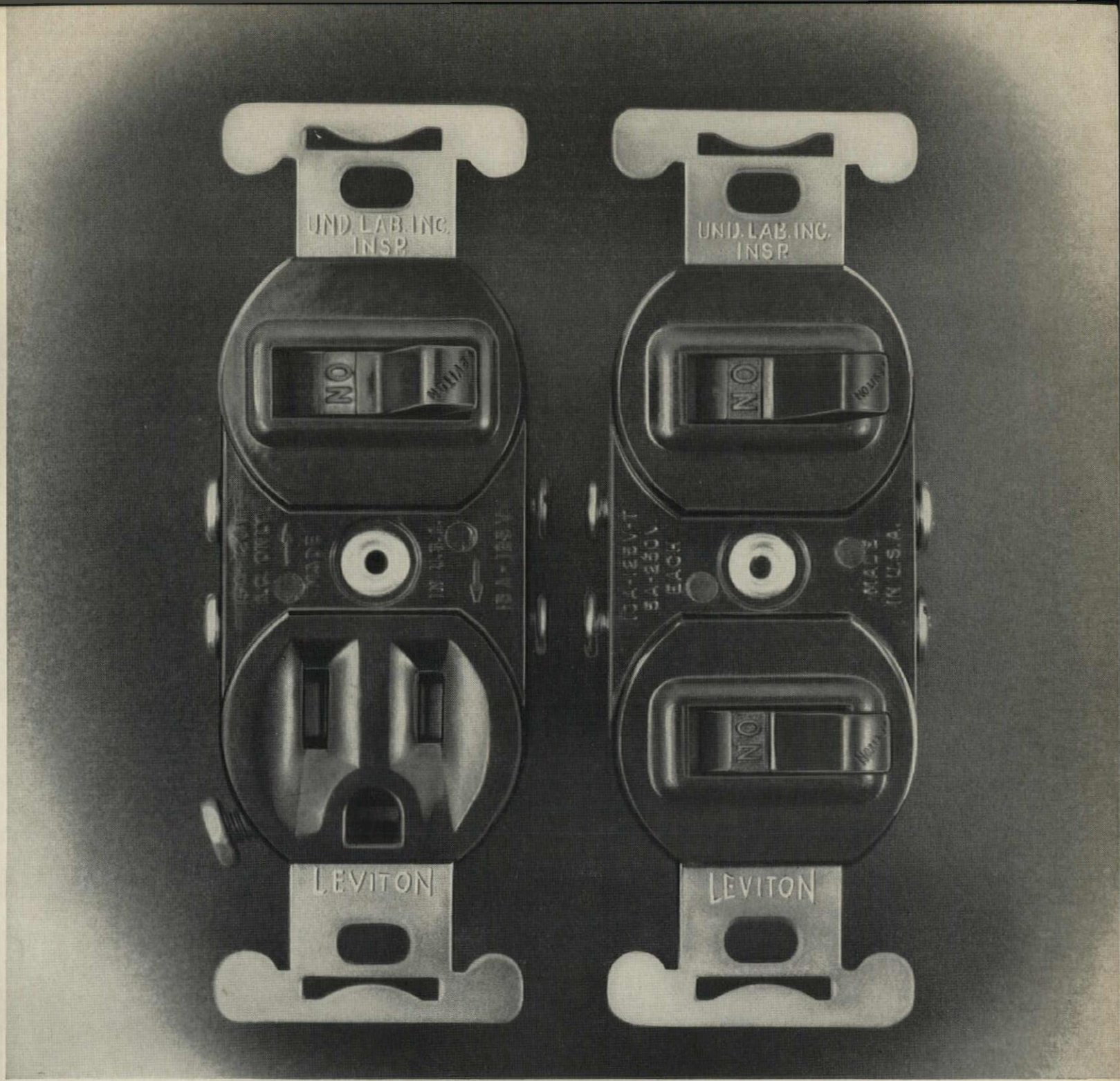
Whom will they call if mechanical trouble develops? Which component needs attention? Where will they turn for service?

The answers come easily when you specify equipment from one responsible supplier of major components—able to keep the equipment in first-class operating condition.

Although not the only air conditioning manufacturer offering a broad line of components, Carrier is best prepared to serve the owner should trouble come. For our company and our dealers maintain the largest and best-trained service organization in the business—over 11,000 men strong.

Carrier Air Conditioning Company

For more information, circle No. 374 ➤



TIME TESTED

Forty years ago we introduced the first line of combination devices. Forty years later these tested, proven, universally accepted products are being specified in major installations across the country. There must be a reason. Maybe it's the scope of the line... more combinations to choose from than any other source—(the most complete line of AC Quiet Switches in the industry is included). Maybe it's the quality... sales in millions, returns and complaints practically nil. Maybe it's our research... a never-ending quest for newer, better ways to meet your every requirement. Whatever the reason (and we strongly suspect it's a combination of all three) Leviton Combination Devices bring you the assurance of quality and performance. ■ Our completely new illustrated brochure on the entire line belongs in your files. May we suggest you write to Dept. PA2 today? **Leviton Manufacturing Co., Inc., Brooklyn 22, New York.**

LEVITON®

THE MAXIMUM PERFORMANCE PRODUCT

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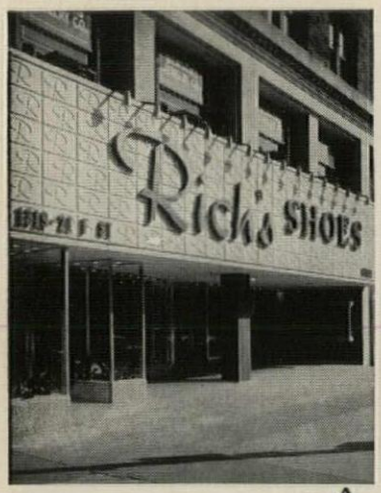

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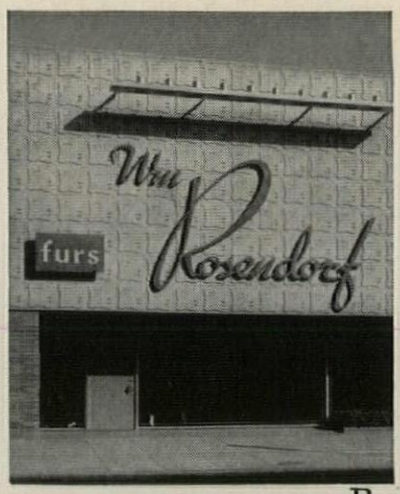

B

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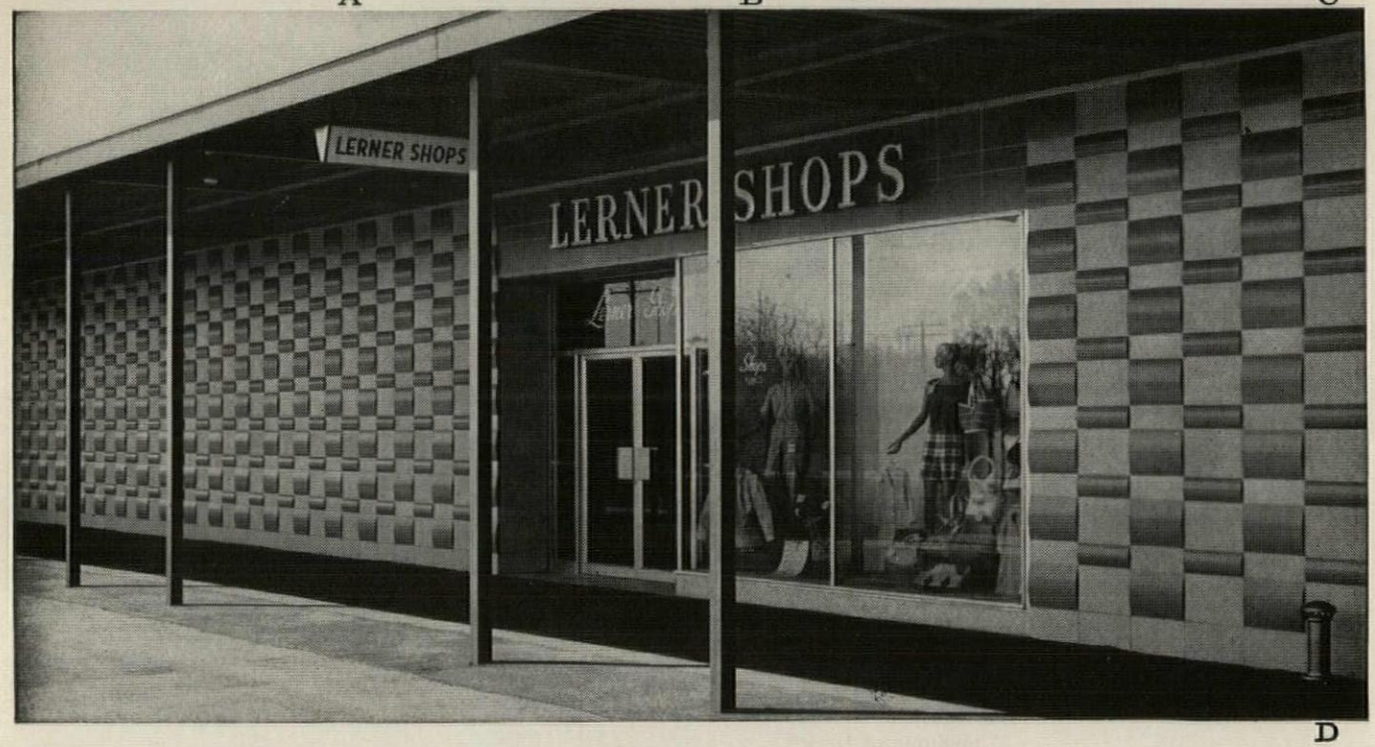

D

Here in CERAMIC VENEER is store front originality!

A RICH'S STORE, Washington, D.C. Berla & Abel—Architects; M. Cladny Construction Co., Inc.—Builder. Colorful individuality is created by sculptured Ceramic Veneer units 14 1/16" x 23 3/16" in matte gray glaze.

B WM. ROSENDORF STORE, Washington, D.C. Berla & Abel—Architects; Tuckman and Rinis—Builders. Decorative facade is sculptured Ceramic Veneer in an attractive light gray.

C STEINBERG'S STORE No. 95, St. Martin, Quebec, Canada. F. A. Dawson—Architect. Ceramic Veneer grille design FS-G, 11¾" x 11¾" is set in a random pattern to create this distinctive solar screen.

D LERNER SHOP, Monmouth Shopping Center, Eatontown, N. J. Kahn & Jacobs—Architects; Jos. L. Muscarelle, Inc.—Builder. Ceramic Veneer in medium solid blue curved units and light mottled blue flat surfaces make an interesting, harmonious combination.

Colorful, individual, sales-wise . . . and these attractive store fronts will never look drab or dirty. Big city grit and grime are resisted by the fire-hardened surface of Ceramic Veneer. When fully exposed to the elements, it is self-washing; otherwise it requires only soap and water washings for retention of its original color and beauty. Besides minimum maintenance, Ceramic Veneer provides the advantages of quality at low cost, permanence and unrivaled versatility. You can specify virtually any color under the sun, choose any desired texture, and specify units large or small—plain surfaces, grilles or sculpture. Whatever your plans — for store fronts or entire shopping centers, Federal Seaboard craftsmen will custom-make Ceramic Veneer to your precise specifications. Detailed information on Ceramic Veneer will be sent on request; also data on ⅜" CV Durathin and CV Durathin Sandwich Panel. Write today.

F S T C

FEDERAL SEABOARD TERRA COTTA CORPORATION

10 East 40th Street, New York 16, N. Y. • Plant at Perth Amboy, N. J.

QUESTIONS AND ANSWERS ABOUT RIGID PVC PANELS

Kaykor PRODUCTS CORPORATION
Yardville, New Jersey

The newness of a product such as polyvinyl chloride (PVC) generates much interest and enthusiasm as well as some confusion and contradictory information. The following should be beneficial in extending the knowledge of how rigid polyvinyl chloride can best serve you:

Q. ARE PVC PANELS BRITTLE AT LOW TEMPERATURES?

A. There are 2 types of PVC panels. Type I-PVC panels are designed primarily for applications requiring high levels of corrosion-resistance and have an extremely low impact resistance. Type I will become brittle at low temperatures but these are not considered PVC building panels. Type II-PVC panels are compounded specifically for high impact strength; and in tests made in accordance with the General Motors Falling Ball Test (31-5), it was proved Type II-PVC panels could exceed temperatures of 25° F. below zero before cracking.

Q. WILL PVC PANELS SAG AT HIGH TEMPERATURES?

A. PVC is a thermoplastic not a thermosetting material and has a certain memory factor. The memory factor is the desire to return to the last shape it had at the highest temperature before the panel was formed into the final shape. The desire to return to the last shape will not come about until a level of approximately 140° F. If 140° F. is too low a temperature, PVC should not be recommended. However, where 140° F. is above normal temperature levels, properly supported PVC can be used with assurances of safety and permanence.

Q. DO PVC PANELS HAVE POOR COLOR STABILITY?

A. Color stability of PVC panels is remarkably good, but depends on the compounding and manufacturing know-how of the panel manufacturer. This is the key to good color stability.

Q. ARE TOXIC FUMES GIVEN OFF BY PVC IN A FIRE?

A. PVC is a fire retardent material. The fumes given off in a fire may be considered to be toxic under certain conditions as will other fire retardent plastic materials which use chlorine as a fire retardent agent. If the area has no ventilation the relatively small amount of hydrochloric fumes would after a while become toxic.

Q. DOES PVC EXPAND AND CONTRACT TOO MUCH?

A. PVC has a coefficient of linear expansion of 2.8x10-5 in./in./° F. The application has to be properly designed to take this coefficient into account.

Q. IS PVC TOO NEW TO HAVE PROVEN ITSELF?

A. Vinyls are one of the oldest plastics known. The use of PVC paneling goes back to 1930 when vinyls were born in Europe. The use of rigid vinyls as building materials in Europe goes back more than 10 years with eminent success wherever it has been installed properly in suitable applications.

Q. HOW VERSATILE A PRODUCT IS PVC?

A. PVC flat panels .060" thick can be bent around a 2" pipe to form a jacket! PVC can be cold-formed into a 90° bend at room temperature under normal hand pressure without cracking or crazing the surface. It can be vacuum formed, blow molded and even joined to itself. In addition to length corrugated, cross corrugated and flat panels, PVC can also be sculptured and decorated in a multitude of patterns from wood grains to marbleized effects. Rigid vinyls can also be made in a variety of thicknesses, shapes (or configurations) as well as light transmission densities, ranging from opaque to translucent to transparent.

We have pointed out some of the properties features and benefits of PVC. Your investigation into this versatile, well balanced, almost revolutionary material, will prove that PVC has much to offer with a myriad of uses.

We will be happy to answer any questions. You have only to call or write to us and we will supply all necessary information.

Kaykor PRODUCTS CORPORATION

Compounder and Manufacturer of Rigid Vinyl for domestic industry for more than 10 years.

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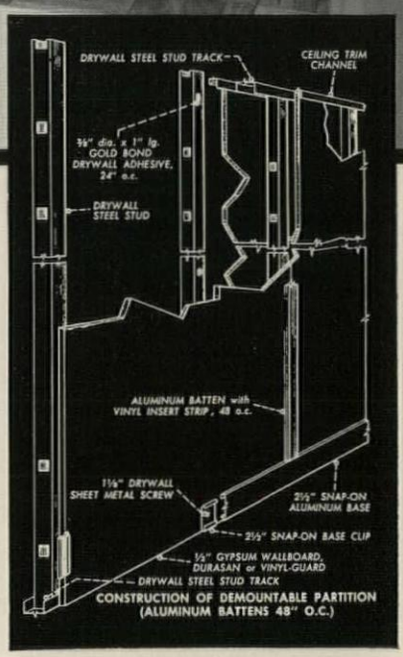
Contempo-Wall

THE SIMPLIFIED DEMOUNTABLE PARTITION SYSTEM THAT LOOKS LIKE A PERMANENT WALL



This partition was erected in just a few hours. It can be dismantled just as fast. But you'd never know it to look at it. Because stain-and-scuff-resistant, vinyl-coated Gold Bond DURASAN® Decorative Wall Panels—plus Gold Bond's unique finishing accessories—make it look like a permanent part of the decor.

Steel studs and channel framing form the basic structure. Utilities can be run through the holes provided in the studs. Satin-finish, anodized-aluminum battens, trim channel and base secure the wallboard edges. Screw heads in the battens are hidden by removable vinyl inserts. If demounted, all parts can be re-used in another location.

Ask your Gold Bond® Representative about the new *Contempo-Wall* system. He has technical information to give you. Or write to Dept. PA-92, National Gypsum Company, Buffalo 13, New York.

Gold Bond
CONTEMPO-WALL

HOLOPHANE Research Produces PRISMALUME One-Piece Lenses

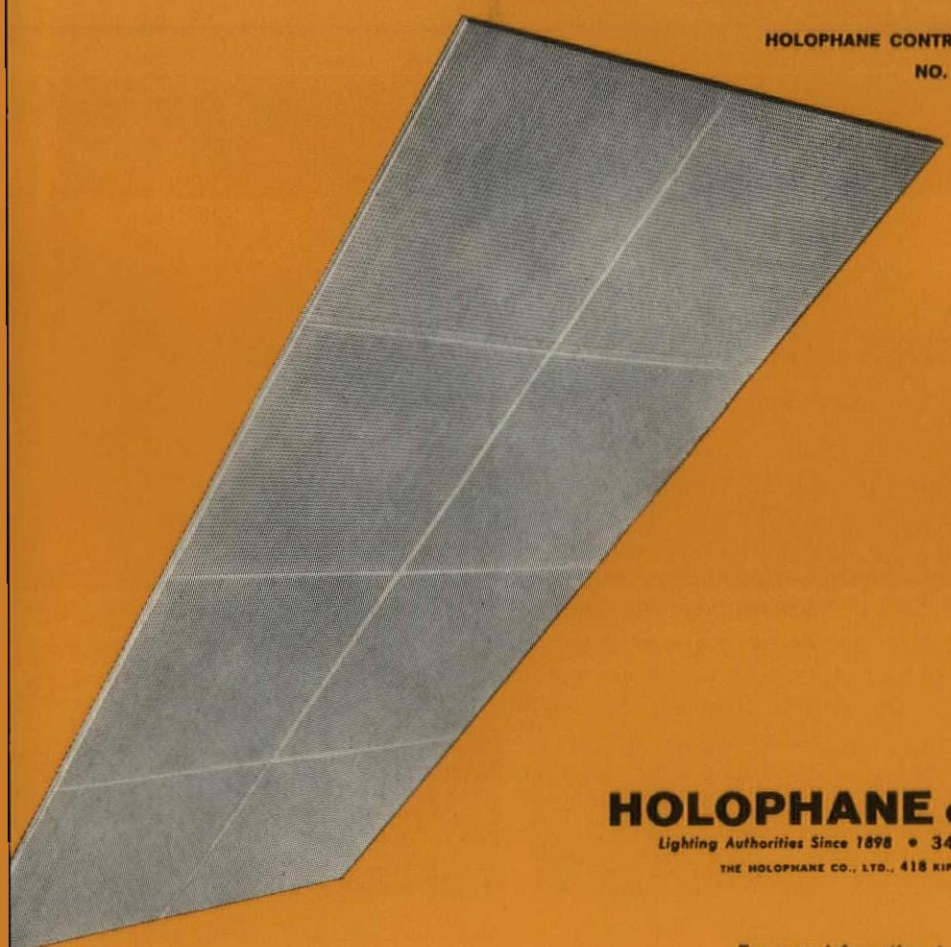
(ACRYLIC PLASTIC)

In the fluorescent lighting field acrylic plastic has established its merit as the **one** tested-and-proven raw material for quality lenses... Methyl methacrylate (acrylic plastic) was the logical choice of Holophane engineers in developing PRISMALUME® and the production of one-piece, injection-molded CONTROLENS®.. Here are the characteristics that made the fabrication of these lenses possible: unusual weight-lightness, fine color stability, high light-transmission ratio and great impact resistance. Moreover, use of this plastic assures installation and maintenance economies. Above all, it permits prismatic designs of advanced efficiency and performance, heretofore unachievable...

Below—one of the largest one-piece plastic lenses made... **Favored by architects and designers**... They like this CONTROLENS for its sophisticated, crisp-lined **simplicity**—no cluttered ceilings... They're delighted with its **versatility**—can be sized to fit any ceiling area... They recommend its precise **prismatic control**—for highest utilization of light with maximum **lamp concealment.**

Made in two standard types: **No. 6250** (2′ x 4′ shown) and **No. 6150** (1′ x 4′). Write for complete engineering data.

HOLOPHANE CONTROLENS NO. 6250



HOLOPHANE COMPANY Inc.

Lighting Authorities Since 1898 • 342 Madison Ave., New York 17, N.Y.

THE HOLOPHANE CO., LTD., 418 KIPLING AVE. SO., TORONTO 18, ONT.

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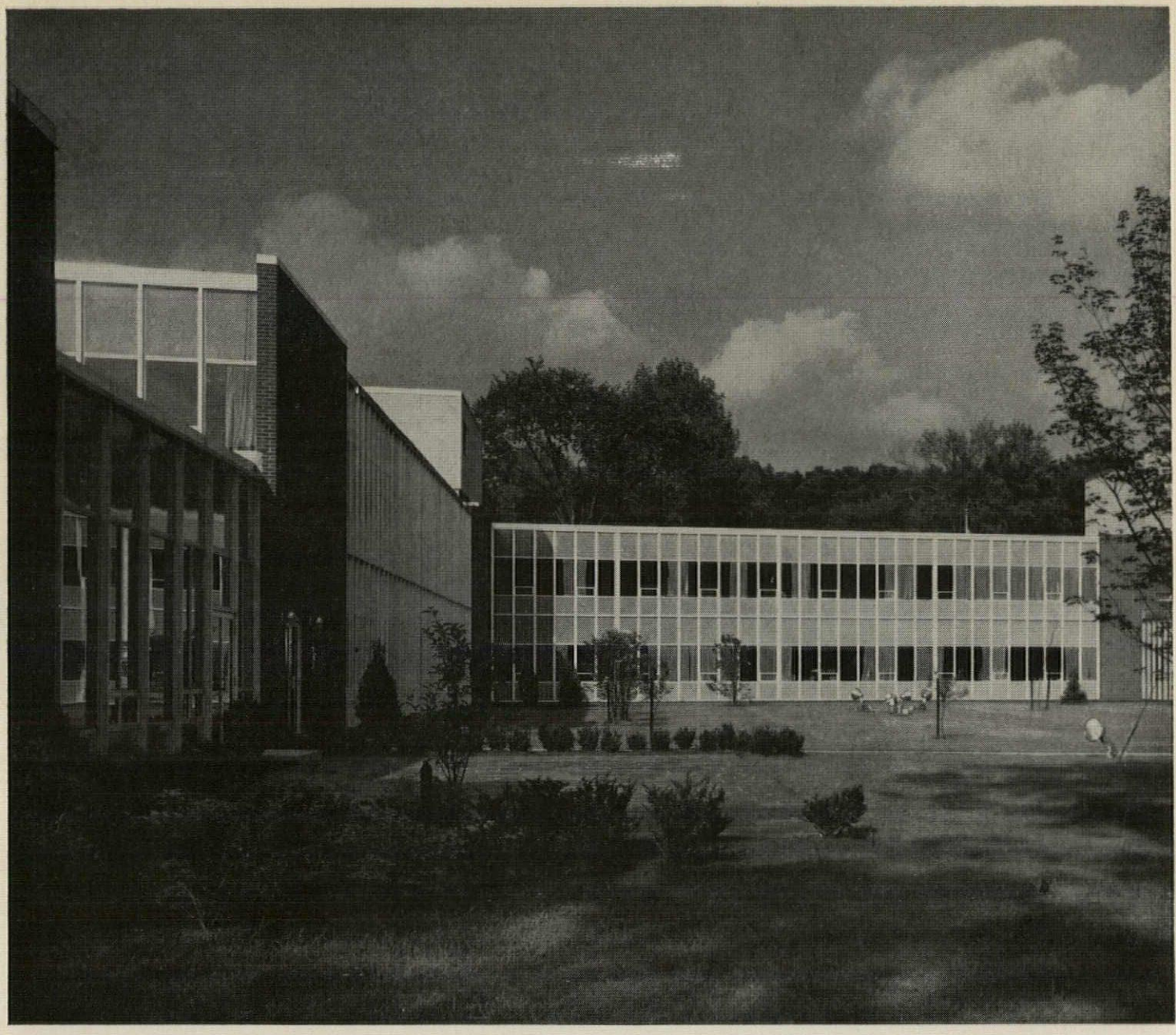
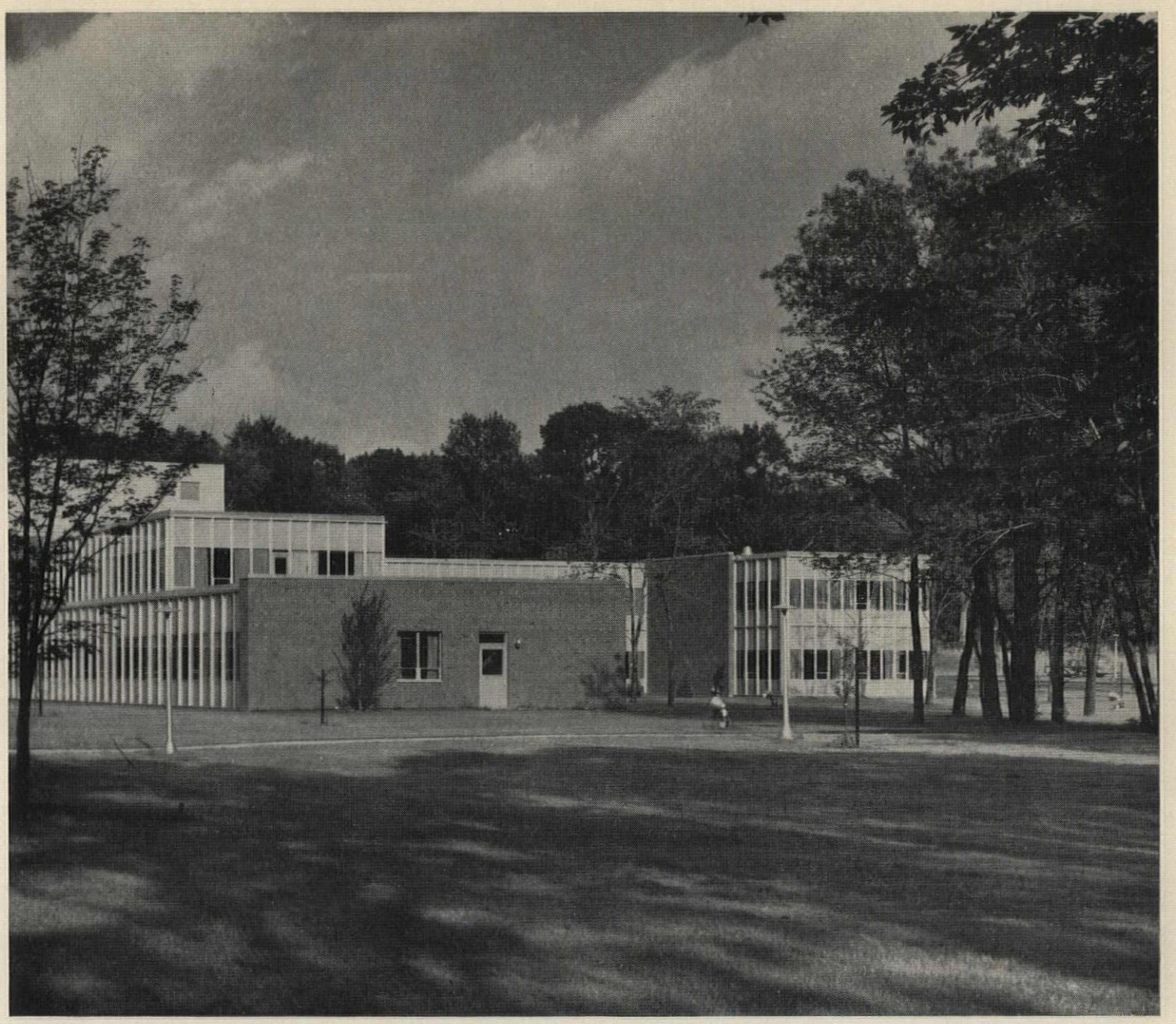


New Sylvania buildings richly reflect Lupton's

Sylvania's new headquarters provide another shining example of how LUPTON handles the complete job, from architect's design to final installation. Make your creative demands as exacting as you like . . . LUPTON single-source responsibility makes certain that your most imaginative uses of aluminum curtain wall systems are fully realized.

Our units allow full scope for projects of any size . . . for unlimited versatility of function . . . for uninhibited architectural expression, planning, and form. Now you can specify—and get—virtually any combination of colors, finishes, and textures. And when it comes to skilled assistance from project engineers, LUPTON's staff can advise on or coordinate the manufacturing processes your design requires. After that, our curtain wall craftsmen see to it that your concepts are followed to a T. For final expert touches, LUPTON field supervisors assure speedy, efficient installation, always with an eye to maximum savings.

You have the assurance, too, of LUPTON financial



Sylvania Electric Company's new headquarters and engineering buildings, Waltham, Mass., feature 2666 Lupton curtain wall units. Light blue matte finish porcelain enamel panels are laminated to urethane foam cores. Architect: Cabot, Cabot & Forbes Co., Boston, Mass. Associate architect: Paul Van West, Williamsport, Pa. Contractor: Gilbane Building Co., Providence, R. I. Photo by Cortlandt V. D. Hubbard.

undivided responsibility on curtain wall projects

responsibility. Ours is a solidly established company that backs up all jobs with a reputation for reliability of 25 years' standing.

In short, you can confidently rely on LUPTON total services and ability to turn your ideas into fully achieved realities. Why not investigate every advantage we can offer for your present or future projects? See Sweet's Architectural File (sections 3 and 17) for the Michael Flynn Aluminum Curtain Wall and Window catalogs. A call to the nearest LUPTON representative (see Yellow Pages under "Windows—Metal") will bring fast action without obligation.

LUPTON®

MICHAEL FLYNN MANUFACTURING CO.

Main Office and Plant: 700 East Godfrey Avenue, Philadelphia 24, Pa. West Coast Office and Plant: City of Industry (Los Angeles County), California. SALES OFFICES: San Leandro, California; Chicago, Illinois; New York City; Cleveland, Ohio; Dallas, Texas. Representatives in other principal cities.

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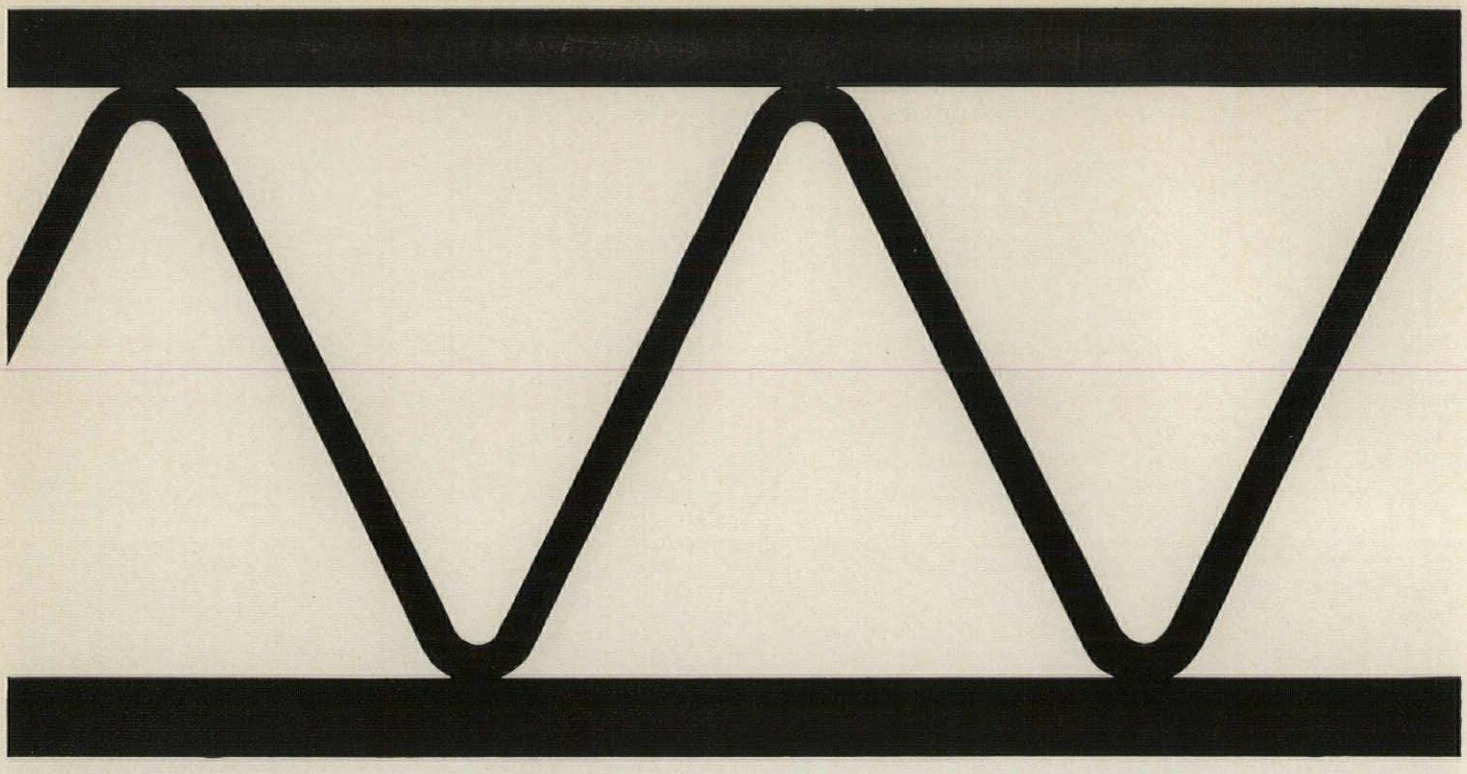
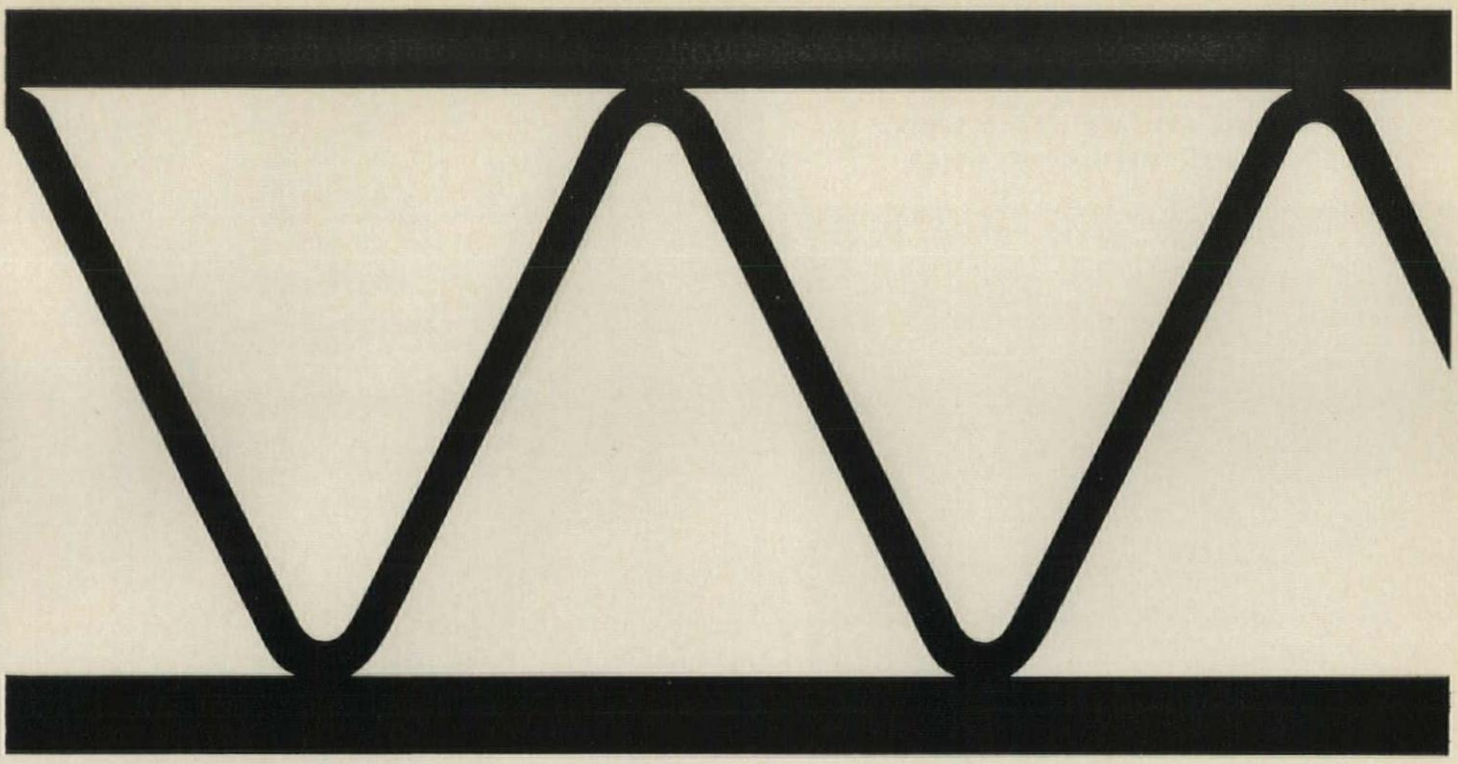


Choose from Sheffield's complete line of shortspan and longspan open web steel joists



Available in lengths from 8 to 144 feet, in depths from 8 to 72 inches. Completely standardized and designed in accordance with SJI specifications.

You can count on the fact that Sheffield joists are top quality and are built to the most exacting tolerances.

Sheffield joist manufacturing facilities are among the most modern in the world. Electronically-controlled equipment—including chord forming machines and huge benders—are completely automated.

Quality Controlled From Furnace to Finished Product. Sheffield produces all the steel used in Sheffield joists. All joist steels are made in accordance with ASTM specifications and identified by heats.

Resistance welding machines are regularly checked during operation by destruction testing of sample welds. As joists are being produced, proof load tests are continuously performed on the welds. In the resistance welding of cold formed material, all welds are post-heated and annealed to insure soundness and ductility.

Full Line Gives Design Freedom, Cuts Construction Costs. Both Shortspan and Longspan joists can be used in the construction of any floor or roof.

Shortspan Joists range in depth from 8″ to 24″ — in spans up to 48′. Longspan Joists range from 18″ to 72″ in depth — and in spans up to 144′.

Longspan Joists are ideally suited for the design and construction of auditoriums, garages, gymnasiums, bowling alleys, supermarkets, warehouses—and in any structure requiring extra long clear-span space.

Open Web Steel Joists Are Increasing Rapidly In Use. They provide economical, rigid, fire-resistant and durable floors and roofs. They are adaptable to a wide range of loading conditions, and they reach the job site tagged and ready for immediate placing.

Other advantages of open web steel joists: They provide a working platform so other trades can go to work immediately. They provide for easy passage and concealment of pipes and conduits within the depth of the floor. They can be placed in any weather. Their high strength-to-weight ratio permits the use of the lighter framings and footings—which means important savings in building costs.

Find Out More. Send for new Sheffield Open Web Steel Joist booklet. Just write to **Sheffield Division, Armco Steel Corporation, 2100 Manchester Avenue, Kansas City 26, Missouri.**

ARMCO Sheffield Division

Lighting News

AT THE **ACADEMY OF MUSIC OF PHILADELPHIA**

...another installation by **KLIEGL**

Fifty years after installing its original Kliegl system, the Academy of Music has again called on Kliegl for the latest in switchboard design. Its SCR® Dimmer Board, specified by W. A. MacAvoy, Jr., lighting consultant, is a new, years-ahead system employing 72 6KW dimmers with all fingertip controls compacted into a 38-inch width for convenient, flexible operation.

No matter how different or difficult your lighting problem, *Kliegl can provide your solution!* Kliegl recommendations are backed by more than a half-century of experience in optics design and lighting application. They are based on thousands of installations developed for hundreds of architects, designers and engineers. Take a tip from the lighting leaders — for your smallest-to-largest projects, call on your Kliegl representative. Or, write us directly. You stand to gain *more* in time, money, satisfaction.

Kliegl SCR Dimmer — the most modern, method yet devised to obtain **completely stepless** control of light intensity.

Our lighting advisors will be pleased to assist in the planning of any installation, using standard or special units to meet your requirements. Full details on request.

lighting

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321 W. 50th ST., NEW YORK 19, N. Y.

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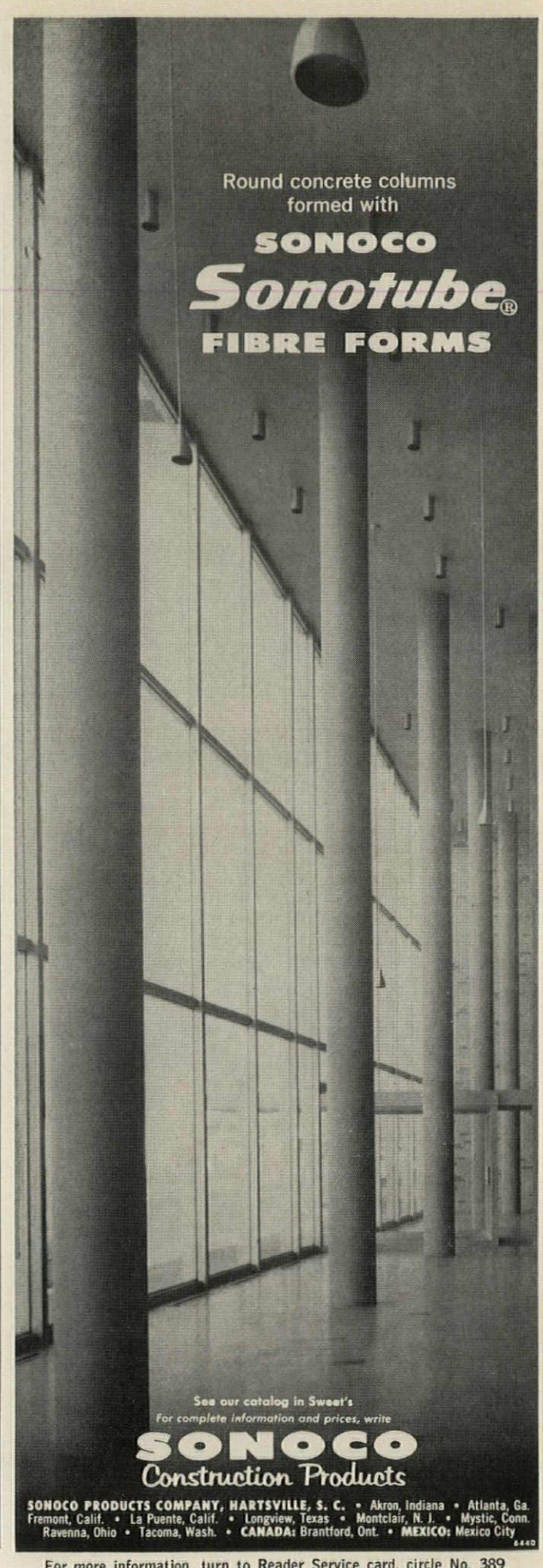

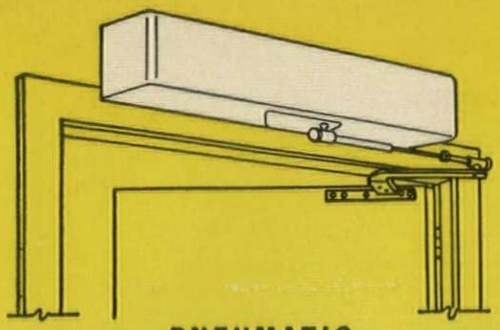

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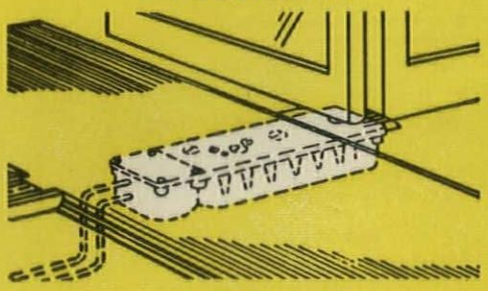


HYDRAULIC

ELECTRIC

NOW CHOOSE FROM 3 STANLEY MAGIC-DOOR OPERATORS

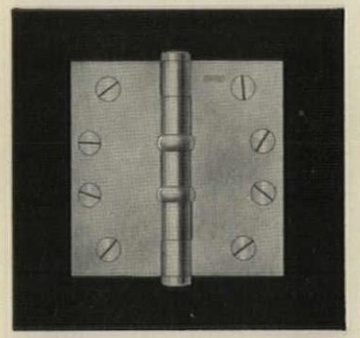
In selecting the right automatic door operator for your needs, it's important to remember that all doors and all operating conditions are not the same; each installation requires proper selection and application of power and control. That's why Stanley manufactures not just one but three distinct types of operators: MAGIC-DOOR Hydraulic and Pneumatic Operators with the power and control features needed to handle the heaviest doors under the most severe operating conditions . . . and now the new MAGIC-DOOR Electric Operator that teams Stanley quality with exceptional economy. When you choose from the complete Stanley line, you can always be sure of the finest for any application!

SEND FOR YOUR FREE COPY OF FOLDER M67B giving specifications on all Stanley MAGIC-DOOR Operators and details on a variety of commercial, industrial, retail and institutional applications.

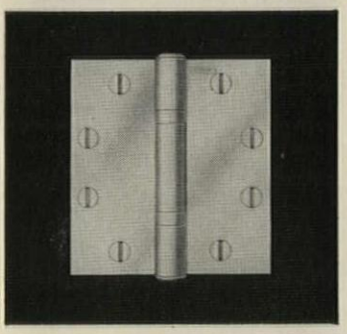
STANLEY

REG. U.S. PAT. OFF.

You count on STANLEY® for progress in hinge design... and get it!

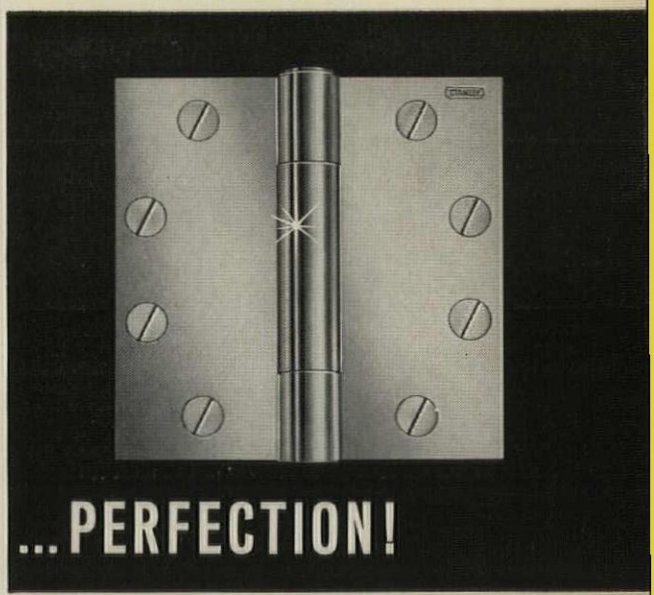


from the functional efficiency of ball bearing hinges



to the teaming of this operational efficiency with sleek slimness in the much-in-demand BB 600 Hinge

and NOW



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Visit our booth at the AMERICAN HOSPITAL SHOW Chicago, Ill., Sept., 17-20 Booth No. 806

sealed-in ball bearings, streamlined handsomeness and famous Stanley durability in the

BB 1600* Series Hinge

For fully descriptive literature, write today to Stanley Hardware, Division of the Stanley Works, Dept. A, 78 Lake Street, New Britain, Connecticut.

*Patent Pending

AMERICA BUILDS BETTER AND LIVES BETTER WITH STANLEY

This famous trademark distinguishes over 20,000 quality products of The Stanley Works, New Britain, Conn.—hand tools • power tools • builders hardware • industrial hardware • drapery hardware • automatic door controls • aluminum windows • stampings • springs • coatings • strip steel • steel strapping — made in 24 plants in the United States, Canada, England, Germany and Italy.

CANADIAN PLANTS: HAMILTON, ONTARIO, AND ROXTON POND, P.Q.

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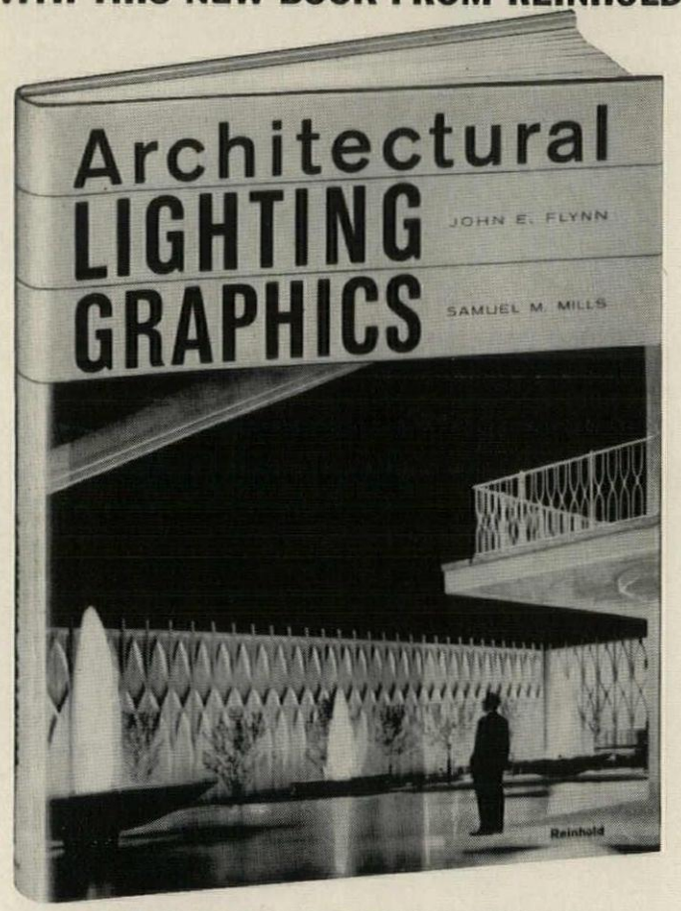
BE UP-TO-DATE ON LIGHTING TECHNIQUES

WITH THIS NEW BOOK FROM REINHOLD



ARCHITECTURAL LIGHTING GRAPHICS
An authoritative compilation of current data

by **JOHN E. FLYNN,** Architect, General Electric Co., Nela Park, Cleveland, Ohio, Member Illuminating Engineering Society; and **SAMUEL M. MILLS,** Architect, Designer and Lighting Consultant. Advanced techniques . . . latest trends . . , complete analysis of contemporary illumination as it affects design and building . . . plus 124 data sheets on the mechanics of lighting!

LARGE FORMAT (8½ x 11), **EXTENSIVE** (224 pages) **A GRAPHIC APPROACH** (150 illustrations, including 9 full-page photographs in dramatic color), PLUS: **124 DATA SHEETS** on lighting materials and equipment types (containing more than 1500 sketches, drawings, and diagrams). $16.50

Complete coverage on the use of color in lighting: the color of light, filters, color of white light, color mixtures and accents.

SUMMARY OF CONTENTS

SECTION I — LIGHT IN ARCHITECTURE

PART I: THE DESIGN MEDIUM
LIGHTING SYSTEMS IN THE ARCHITECTURAL ENVIRONMENT — Direction and Distribution of Light — Surfaces as Luminous Elements — Lighting Design as an Architectural Expression.

PART II: THE FUNCTIONAL FRAMEWORK
QUANTITATIVE ILLUMINATION — Visibility — Recommended Light Levels — Illumination of the Work Surface.

PART III: THE PSYCHOLOGICAL AND AESTHETIC FRAMEWORK
INFLUENCE OF LIGHT ON SPACE AND FORM — Light and Space — Light and Shadow — Color of Light.

PART IV: QUALITY AND COMFORT
THE LIMITS OF BRIGHTNESS — Visual Comfort — Adaption and the Working Environment — Direct and Reflected Glare — Sparkle.

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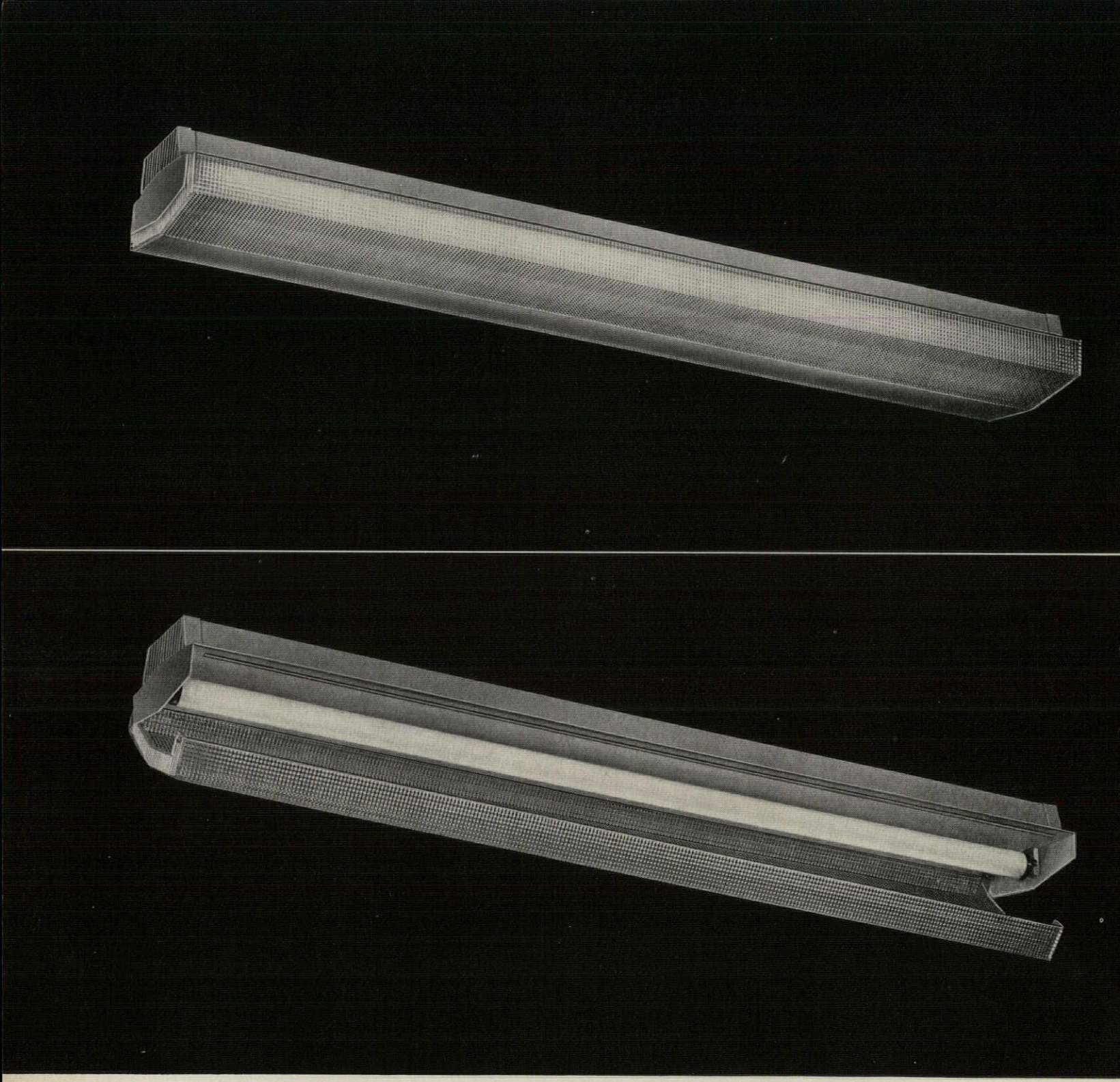

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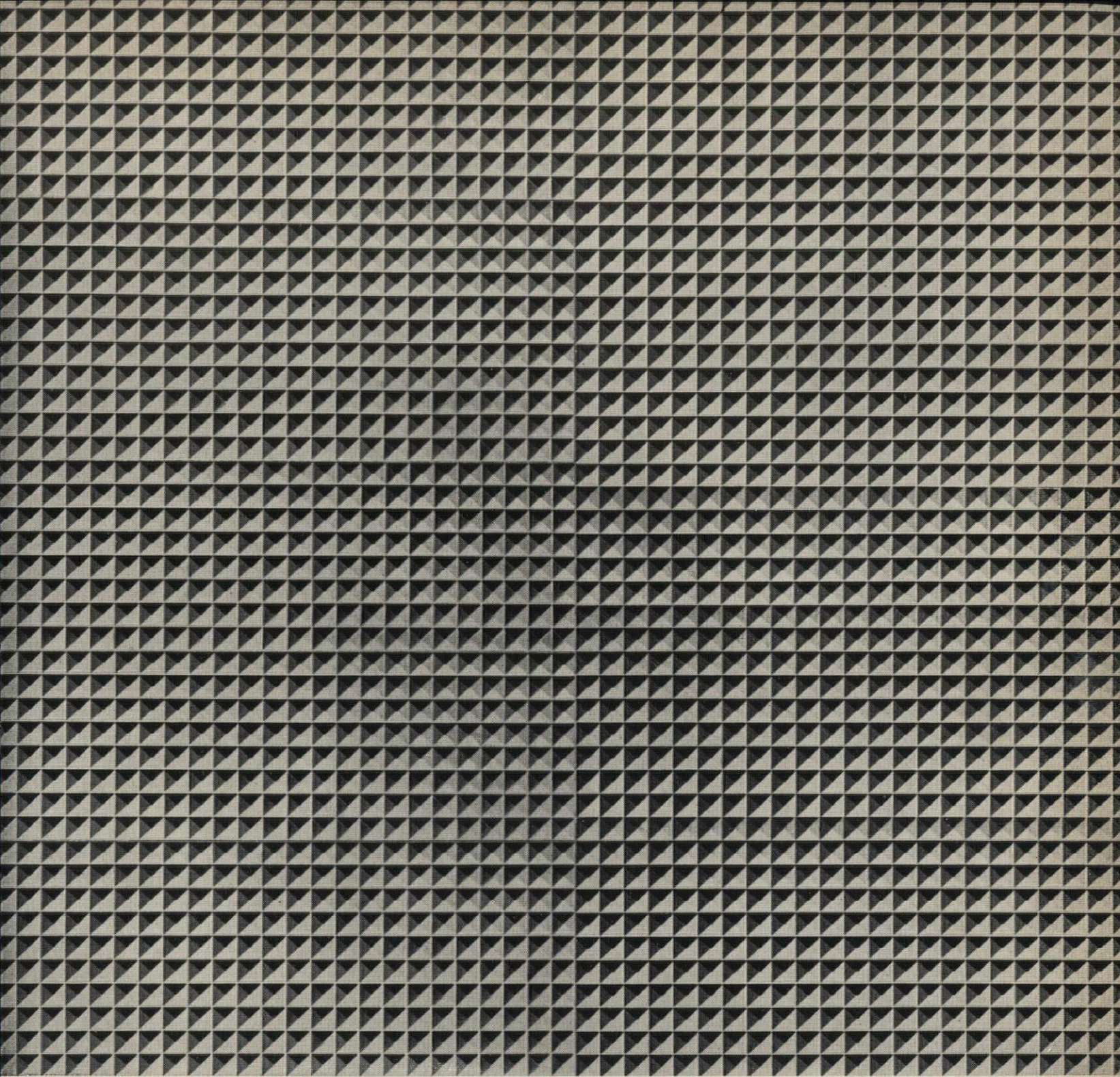

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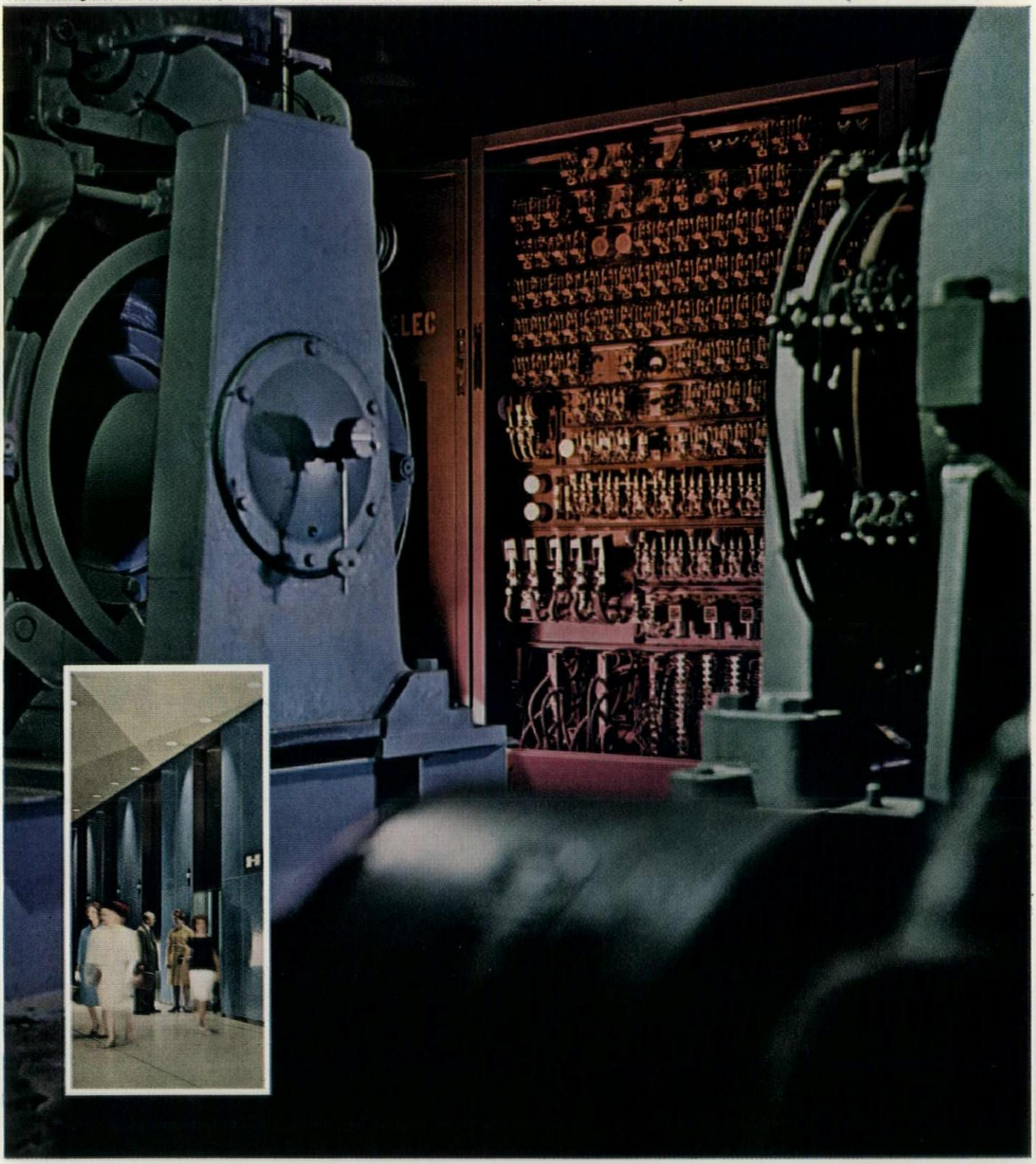

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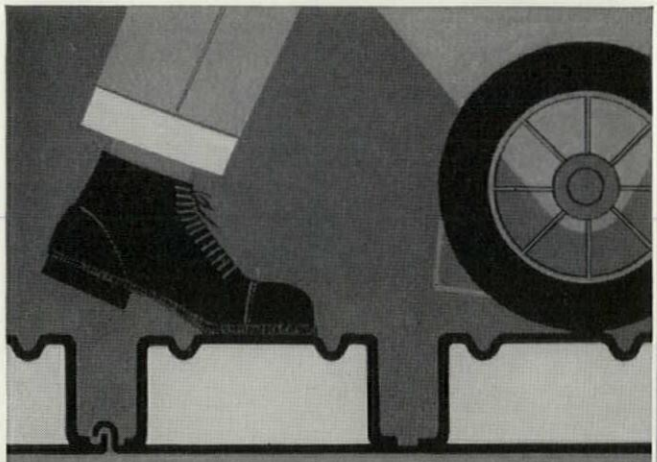

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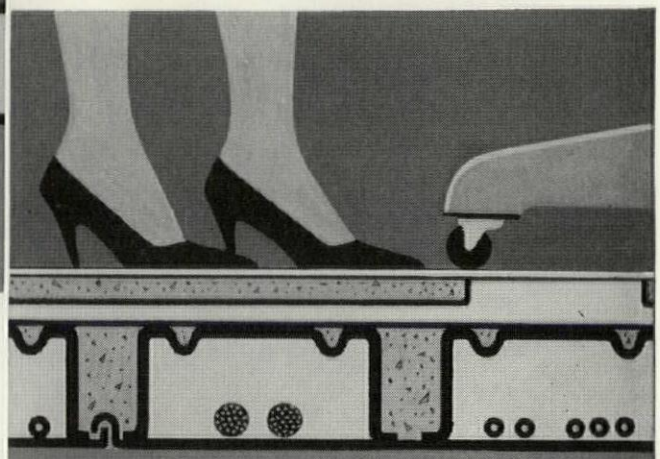
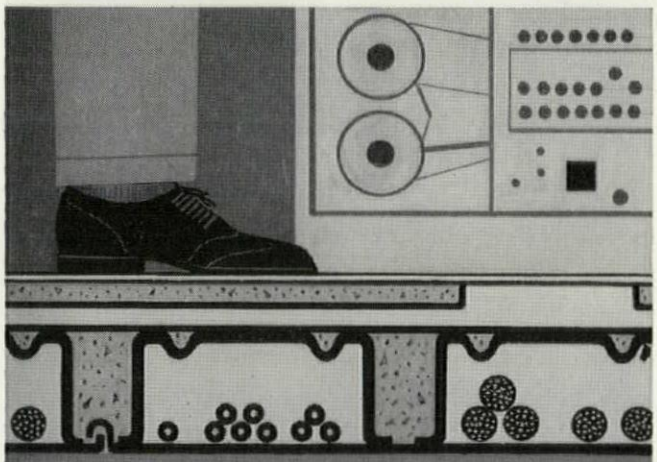
for other trades—plumbing, electrical, etc.



office space later...
electrical or communications outlets wherever needed



computer space still later...
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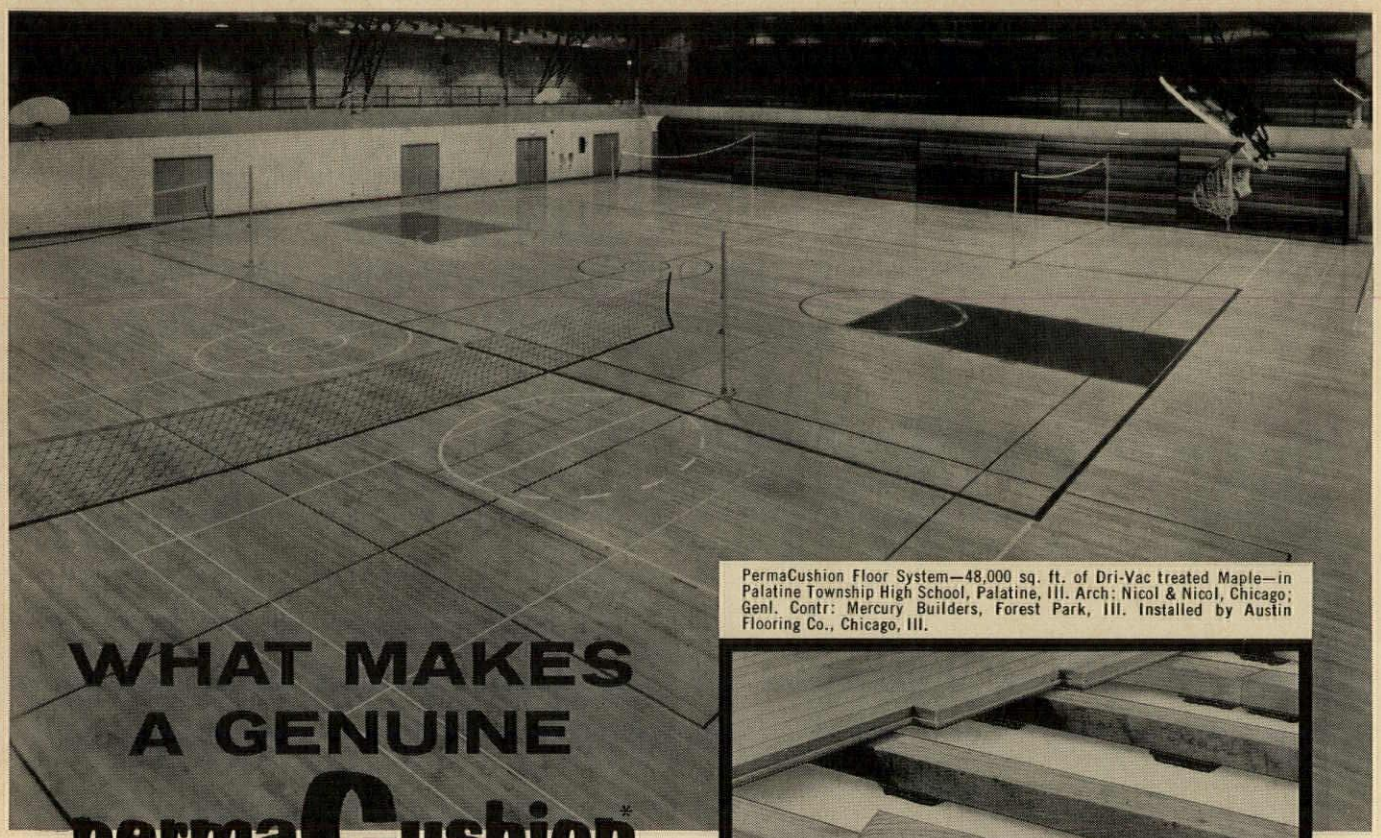
NEWS REPORT

Architecture's Monthly News Digest of Buildings and Projects, Personalities, New Products

Photo: Courtesy Long Island "Newsday."

Architects, artists, writers and others demonstrate against the threatened destruction of Penn Station.



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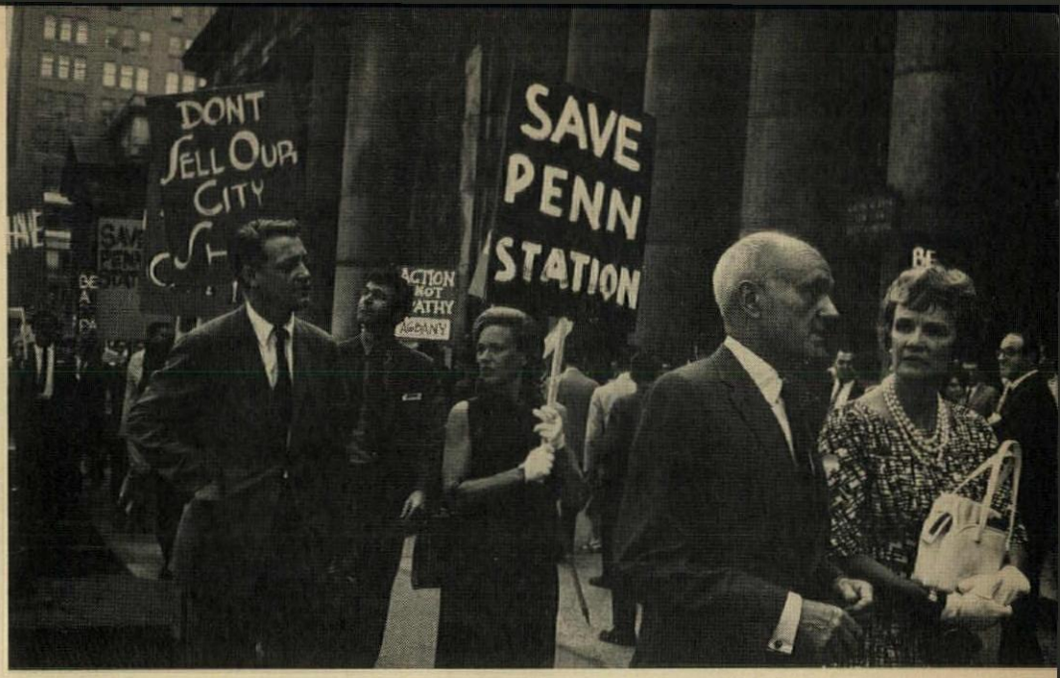
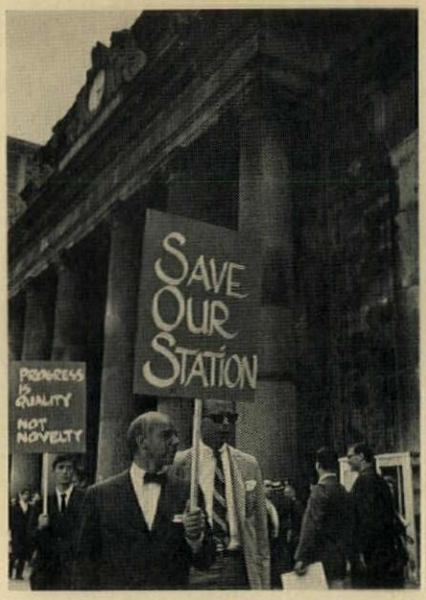


Franzen, Samton, Saarinen, Johnson, MuModArt Trustee Parkinson.



John MacL. Johansen and friend picket.

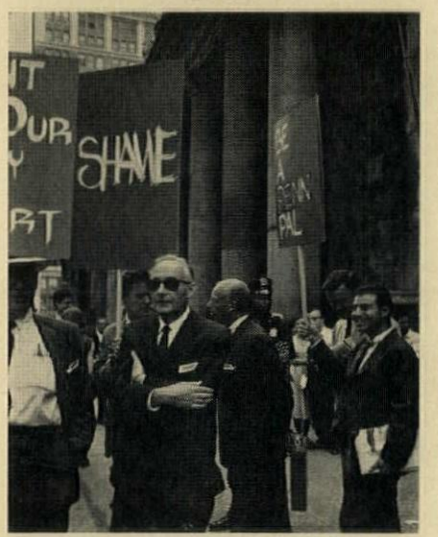
Penn Station Ruin Protested

NEW YORK, N.Y. Carrying well-lettered signs proclaiming "Be a Penn Pal," "Progress Is Quality, Not Novelty," "Don't Poison Penn," and, more succinctly, "Grr" and "Shame," more than 250 architects, writers, and artists bore down on Pennsylvania Station last month to protest its threatened destruction to make room for an immense complex of buildings including the new Madison Square Garden [p. 63 ff., SEPTEMBER 1961 P/A].

Organized by the newly formed Action Group for Better Architecture in New York, the protestors demonstrated peacefully for almost two hours at the height of the evening rush with such notables as Aline B. Saarinen, Philip Johnson, Paul Rudolph, and John MacL. Johansen in the vanguard.

At a press meeting preceding the rally, Johnson decried the demolition of the McKim, Mead & White monument as unfair to the people of New York, who "deserve these bits of grandeur in their lives." Mrs. Saarinen noted that this is one of the few buildings having spaces grand enough to lift man's spirits and give him a heightened sense of well-being. Other press-conference speakers were Johansen, B. Sumner Gruzen, civic leader Raymond Rubinow, P/A Editor Thomas H. Creighton, and *Architectural Forum* Managing Editor Peter Blake. The meeting was moderated by AGBANY Chairman Norval White. Press coverage of the meeting and rally — the whole point of the activity according to White—was phenomenal.

AGBANY now plans to meet with Mayor Robert F. Wagner to urge him to ask his new Landmarks Preservation Commission to report on the possibilities and advisability of saving the station.



Weinberg, Wisniewski, Creighton, Johansen.

Victoria Lindgren and parents protest.

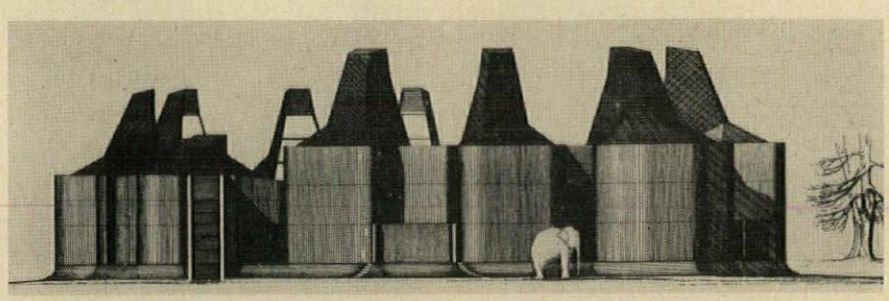
Photos: David Hirsch

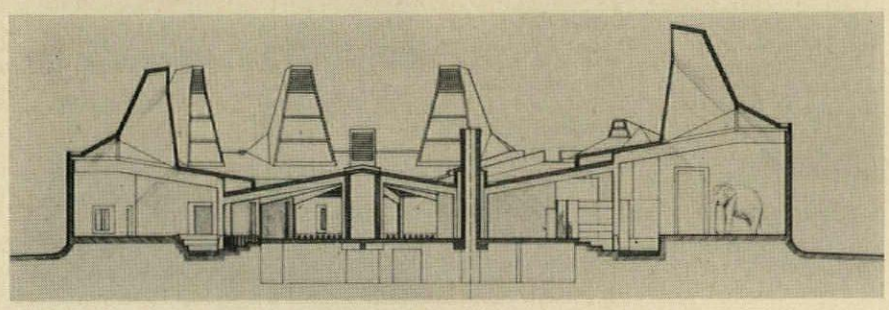
Mrs. Saarinen is interviewed for television by CBS.

Palace for Pachyderms at the London Zoo

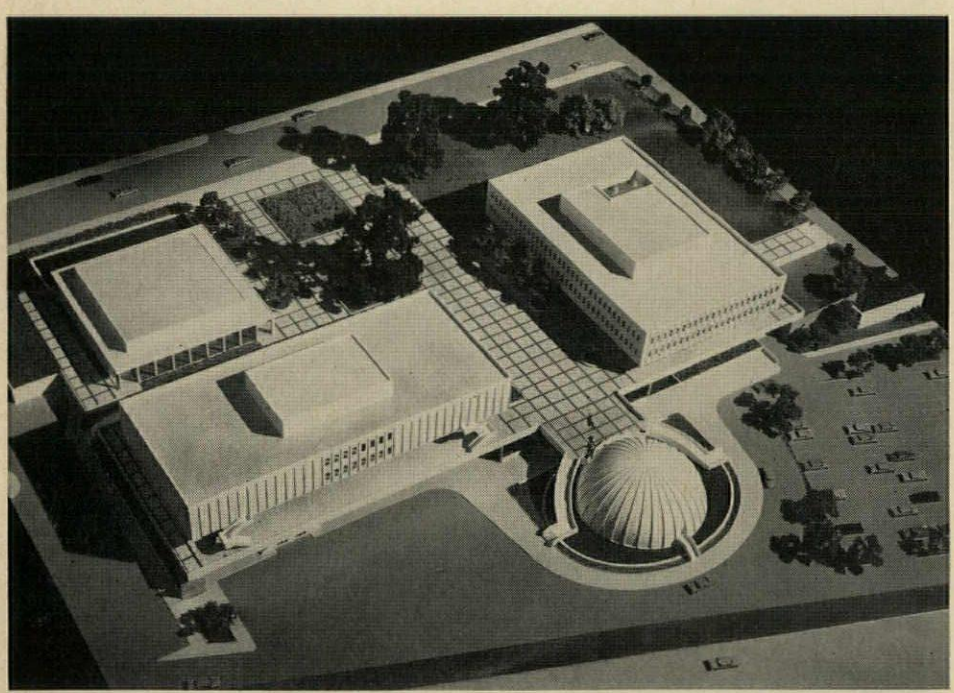
LONDON, ENGLAND Massing of forms in the proposed elephant house for the London Zoo is said by the architect, Sir Hugh Casson, Neville Conder & Partners, to be a visual evocation of a group of behemoths around a jungle watering hole. Four elephants and four rhinoceroses will occupy paired pens, each contiguous to sick-bay pens and moated external paddocks. There will be a large pool in public view.

Central, S-shaped public viewing space of the interior will be lower and darker than the animal areas. This arrangement, plus the use of cyclorama walls and special lighting, will increase the impressiveness and drama of the great beasts. Bays will be provided opposite each pen for closer viewing. Walls will be reinforced concrete, exposed everywhere except in the pens, where they will be lined with tiles; roof will be copper.





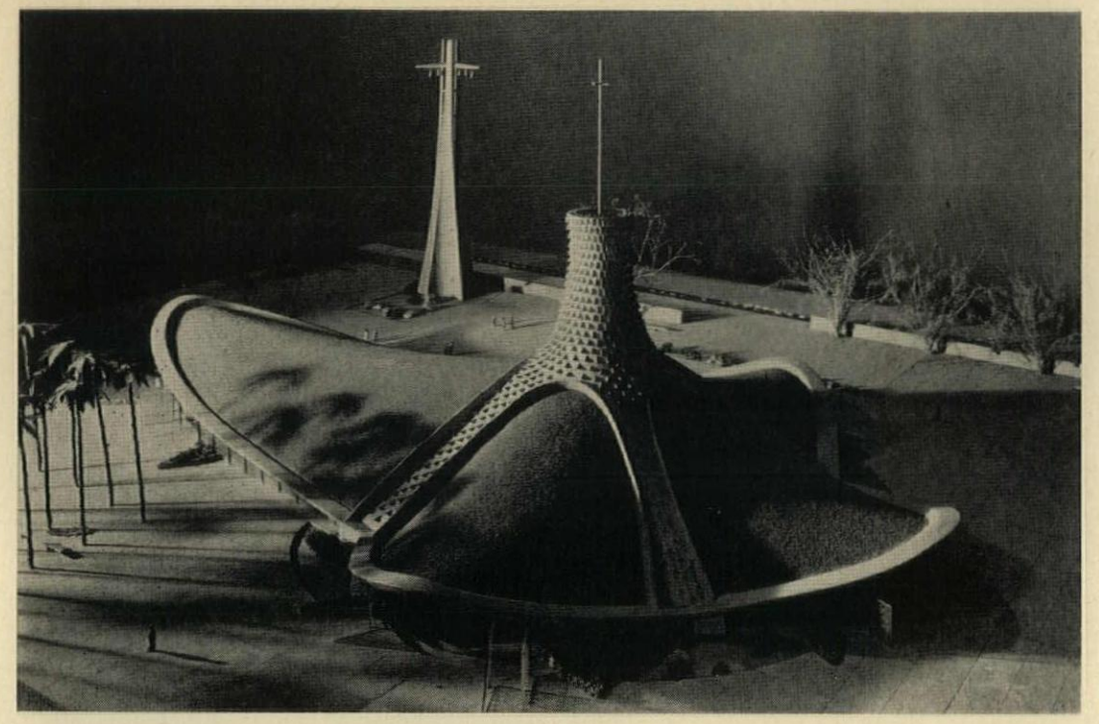
CULTURAL CENTER WILL CELEBRATE NEW JERSEY'S TERCENTENARY



TRENTON, N.J. Latest elements in the New Jersey State Capitol Development Program are those belonging to the proposed Cultural Center, to open in 1964. The center, which is at the opposite end of the governmental complex from the Health and Agriculture buildings (p. 59, JANUARY 1962 P/A), will consist of four elements: a library, a museum, an auditorium, and a planetarium. The group of buildings, by Frank Grad & Sons of Newark, will overlook the Delaware River.

The library, linked to the State House annex by a passageway, will contain mainly stacks and other storage for books and historic and governmental documents. First floor of the museum will house temporary displays, and the second floor will contain the permanent exhibits. The 400-seat auditorium will be used for performing arts, briefing for visiting groups, and meeting place for the State Department of Education. The planetarium's 46-ft-diameter chamber will seat 200 children or 170 adults.

The museum will be of reinforced concrete to the second floor and structural steel frame above; the library will be of reinforced concrete; the auditorium, structural steel frame; and the planetarium, a reinforced concrete shell. Library, museum and auditorium will have exterior finishes of marble facing on masonry walls and gray-tinted polished plate glass areas divided by aluminum mullions.



New Vernacular for Venezuela

BARQUISIMETO, VENEZUELA. Thoroughly contemporary in form and structure, the proposed Roman Catholic cathedral for this expanding Venezuelan town is nevertheless strongly rooted in traditional concepts.

The church itself is prominently located in the center of an enclosed plaza. Three small altars cluster around a main altar to give the church its symbolic cross form. (There is also an altar to celebrate mass *al fresco* at the entrance to the main aisle.) As symbolic welcome to the faithful from all places, the four aisles face the compass points. The crossing of the four elements of the crucifix is accentuated by a circular form funneling upward and diffusing light downward.

As a visual backdrop to the dominance of the cathedral, the parish house and bishop's "palace" are combined into a separate unit of rectangular shape. (A cylindrical element interrupting the vertical rhythm contains chapel, throne room, and reception area.) This secondary building forms one enclosure to the plaza; walls and dense vegetation on the other three sides of the courtyard make a completely sheltered enclave. To preserve the total unity of the plaza, the sacristy (used as direct communication between bishop's palace and church) is below street level.

The four shells of the cathedral are to be suspended between the almost horizontal arches that cantilever out of the base and form the outline of the building, and the almost vertical parabolic arches that form part of the central nucleus. Structure will be composed of steel cable net with a grid of 5′-6″ x 5′-6″, in which prefabricated 3″ slabs of light-weight concrete are placed. The joints are filled with concrete to form the final rigid shell.

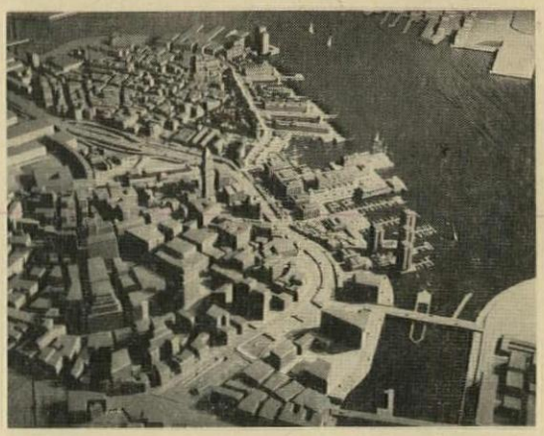
Architects for the complex are Jan Bercam and Alfredo Jahn, of Caracas.

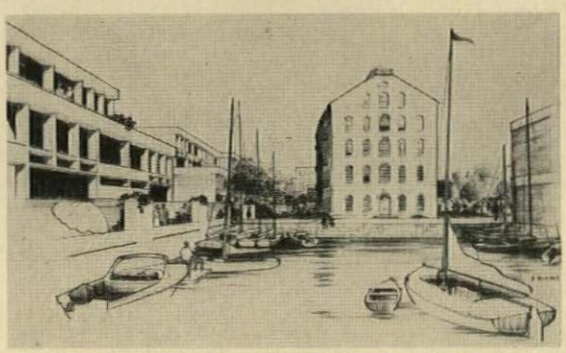
Renewal Proposed for Boston Waterfront Area

BOSTON, MASS. Working with planning and architectural proposals by Kevin Lynch and John R. Myer, the Greater Boston Chamber of Commerce has produced a renewal plan for Boston's downtown market and waterfront section. The plan was instigated at the request of Mayor John F. Collins.

In order to achieve one of the major aims of the plan—to open the city to the sea again—Lynch and Myer had to contend with the Fitzgerald Expressway, which slashes its way brutally across this section of Boston. They suggest trying to make it "invisible" through replanning, better lighting, and intelligent demolition (the latter, unfortunately, does not apply to the offending traffic artery).

The Long Wharf would be enhanced with marine and motor hotels and an aquarium. Tower apartments would rise at either end of the area, and commercial buildings of all sorts would be both introduced and rehabilitated. Town houses and garden apartments would enjoy superb sites both near and on the docks overlooking Boston Inner Harbor (*right*).





RUBEROID COMPETITION WINNERS ANNOUNCED

NEW YORK, N.Y. Winners of its Fourth Annual Architects' Competition have been announced by The Ruberoid Company. Jury for the program, which had as its subject "Improved Human Environment through Urban Renewal," was (*right, l. to r.*) urban renewalist James J. Hurley, Vernon DeMars, U.S. Urban Renewal Commissioner William L. Slayton, Professional Advisor B. Sumner Gruzen, Ralph Rapson, and Philadelphia City Planning Commission Executive Director Edmund N. Bacon. For the first time, the jury divided the top money of the $25,000 competition equally between three submissions by architect-educators. There were also three student prizes.

Of the scheme (*across page*) by Stephen N. Abend of Washington University (1), the jury said, "The clear separation between the rigid discipline of the urban core and the fairly free treatment of the residential areas is important." The plan features a highly concentrated urban center marked by what the jury called a "very clear, sharp, big circulation pattern."

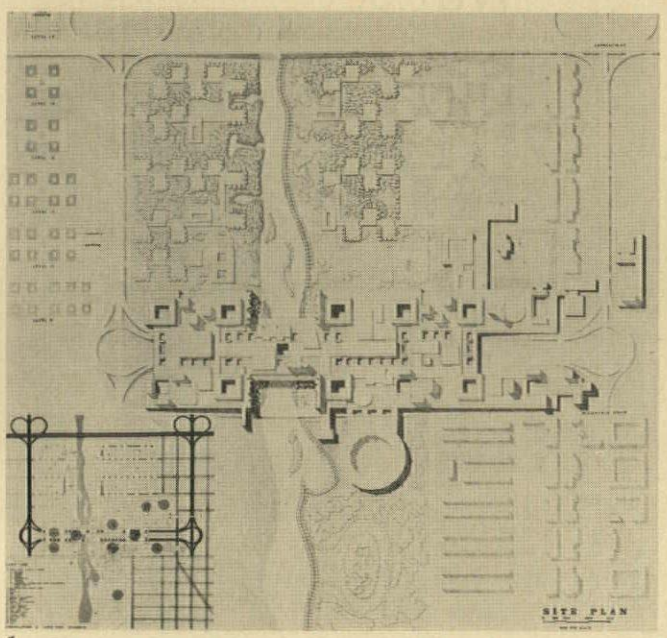
The design by Ralph L. Knowles of Auburn University (2) drew this comment: "The clear differentiation between what is nature in the park and what is related to man in the structure is an outstanding characteristic of the design." This differentiation was achieved by expert handling of the irregular topography of the river edge and the rigid forms of the buildings.

The third top winner, by Stuart K. Neumann and Donald L. Williams of the University of Illinois (3), found favor because "Its grouping of communities and intermixture within each community of a considerable variety in living types from apartment houses to row houses is striking." The idea of clusters of high- and low-rise housing with open space in between also won jury commendation, with the comment that it ". . . has great potential with many significant ideas."

The first student winner, by Edward Z. Jacobson and Kenneth Schwarz of Carnegie Institute of Technology (4), was lauded as having "a richness of urban spaces and a human urban quality." To quote the jury: "The design demonstrates considerable maturity at the student level in terms of solving in a very practical way a very difficult urban problem."

North Dakota State University's Michael Marczuk won the second student prize with a solution (5) whose towers the jury thought had "a great richness of texture," which would be "very sculptural and would look interesting in the landscape."

"The design indicates a rich and potentially exciting environment," was the comment on the third student winner (6), by Eugene J. Mackey and Daniel E. Green of Washington University. The jury particularly praised the housing row overlooking the river valley, and the textural change between the formal city rows and the less formal structures along the edge of the river.



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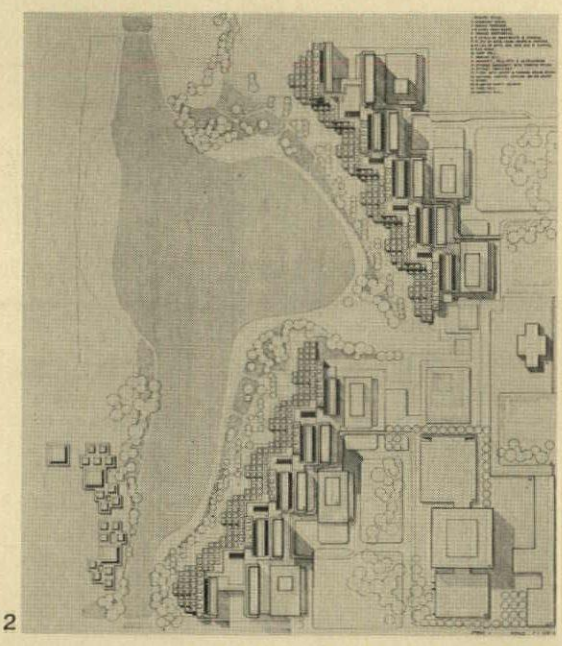

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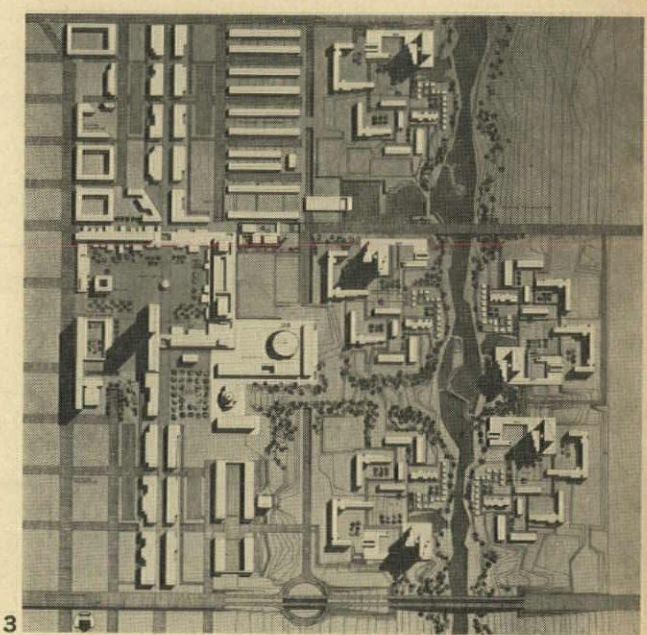

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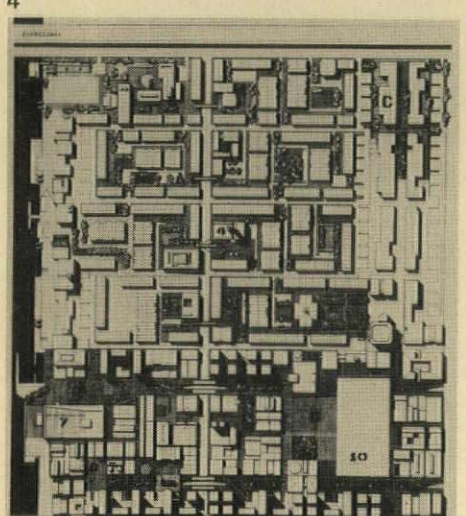

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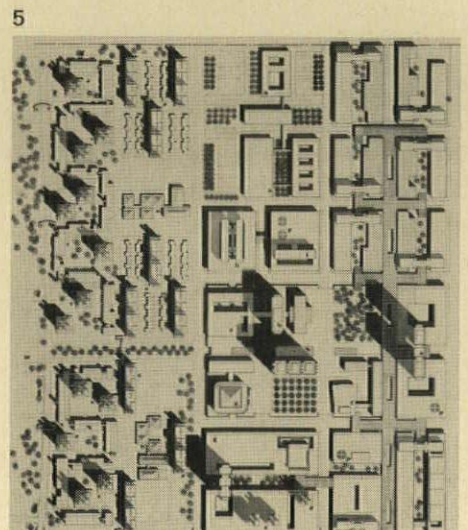

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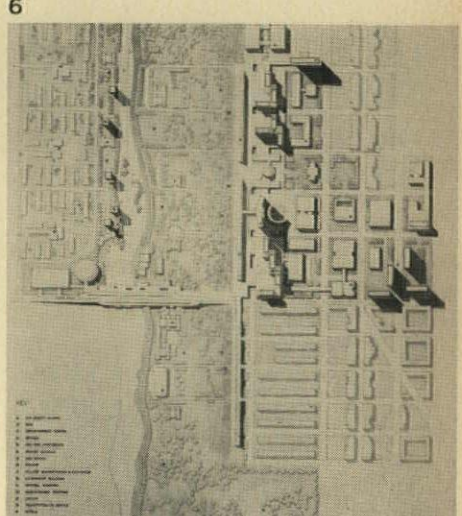


Job Possibility

P/A received the following word in July: "The City of Madison, Wisconsin, is planning the construction of a multiple-purpose auditorium to be constructed in the City of Madison, Wisconsin, at an estimated cost of from $3½ to $4½ million. The Auditorium Committee will hear architects and make a selection in the very near future." Mayor of Madison is Henry E. Reynolds.

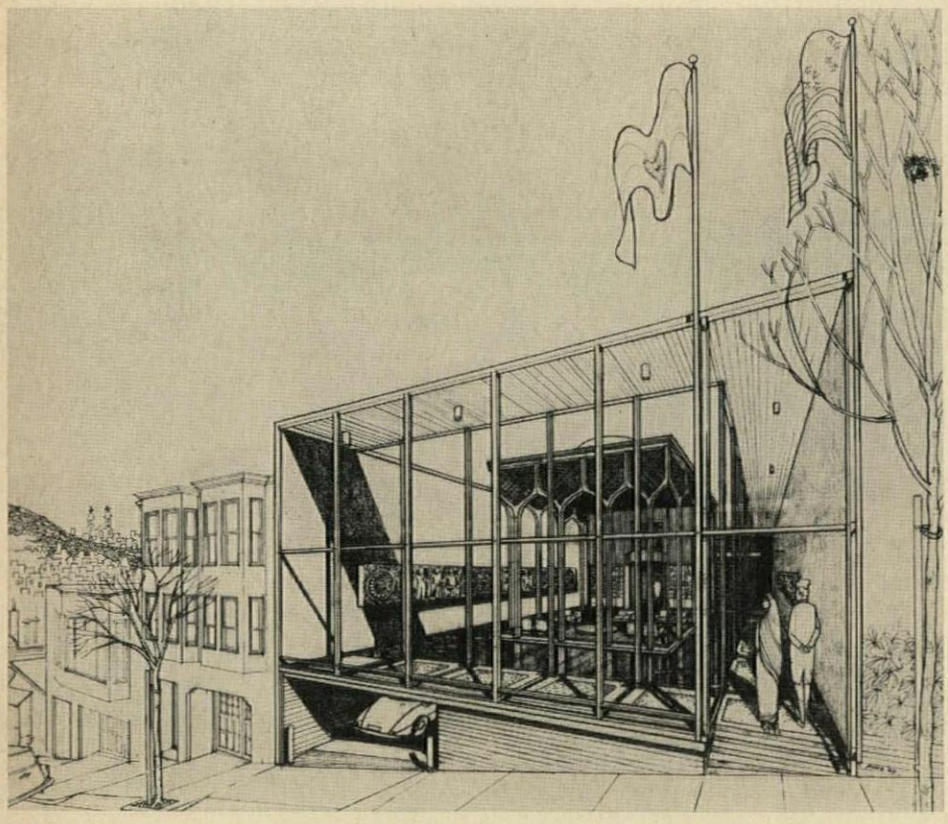
Thin Shell Speakers

Speakers have been announced for the World Conference on Shell Structures to take place in San Francisco, October 1-4. Those of architectural note will be Oscar Niemeyer of Brazil, Felix Candela of Mexico, Frei Otto of Germany, Joseph Allen Stein of India, and acoustical consultant Robert B. Newman of Massachusetts. Engineers from the U.S., U.S.S.R., The Netherlands, Germany, Poland, and England will also speak. The conference is under the joint sponsorship of the University of California, Berkeley; the Building Research Advisory Board of the National Academy of Sciences-National Research Council; and the International Association for Shell Structures.

Another New York Hostelry

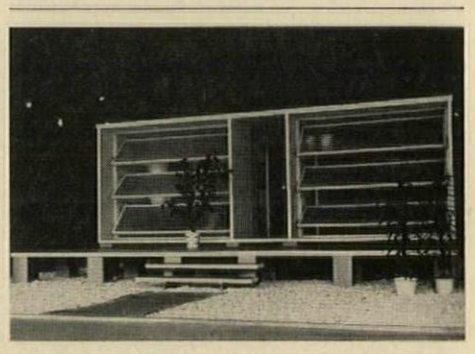
The Sheraton Motor Inn, overlooking the Hudson River piers in New York, opened recently, revealing Morris Lapidus (Morris Lapidus, Harle & Liebman) in a strangely subdued mood. In addition to guest rooms with windows canted to take advantage of the river views, the new *albergo* has a rooftop swimming pool ("Surfside 20"), an olde-English cocktail lounge ("Sign of the Dolphin Pub"), a coffeehouse in the form of a French country inn, and two ballrooms ("Riverview East" and "Riverview West"). Despite the ebullience of nomenclature, the Sheraton

compares with Lapidus's previous creation, The Summit, like a Weimaraner with a French poodle.



Indian Architecture for Golden Gate

Campbell & Wong have evoked the architecture of the Far East in the design of the proposed India Memorial Center in San Francisco. The center, which will be dedicated to the exposition of Indian life and culture, will contain a library and an assembly room, and, on the upper floor, two two-bedroom apartments. The library, being the most important element of the project, will be featured as a peninsular structure floating in a large reflecting pool. Indian design will be recalled in contemporary terms by the use of repetitive columns and arched openings, plus a domed skylight over the library's main space. Local materials will be used.



Gonna Buy a Paper House That I Can Call My Own

A vacation house employing a panel made of paper with a honeycomb core and fibreboard skins has been designed by Architect Peter Samton and Engineer Harold L. Humes, Jr., for Parametrics Research and Development Company, Inc. of New York. The panels are joined by a concealed steel spline system which eliminates the need for oversize panels and the necessity of a crane on the job site. The fact that the "Weekender" model can be assembled by two people in one day leads Parametrics to the belief that it is ideal for housing in newly developing nations where there is a need for low-cost residences. The house has been shown in U.S. exhibits at international trade fairs in Morocco and Indonesia.

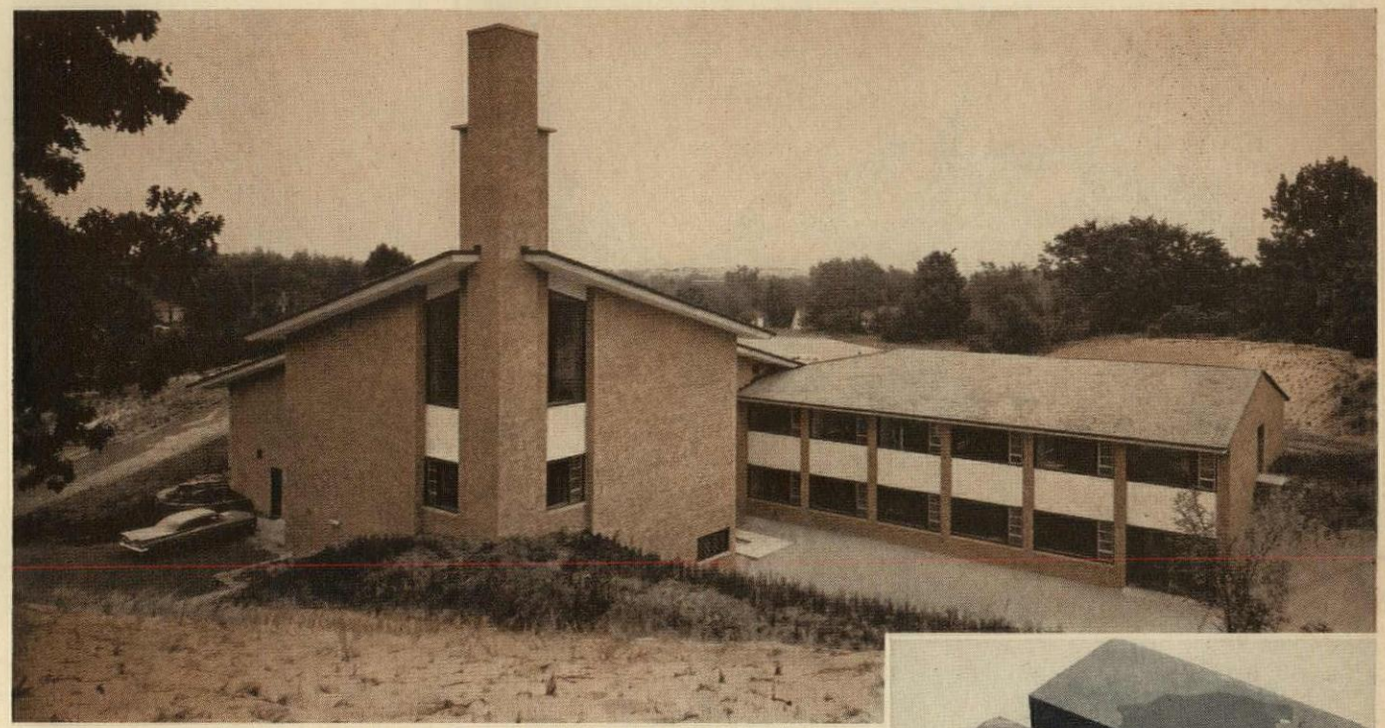
Aluminum Research Center

Ground was broken near Pittsburgh last month for the Alcoa Technical Center, a campus-plan facility for research and development in "light metals," namely aluminum. The proj-

Continued on page 72

BUILDING PRODUCTS NEWS from Dow Corning

The enduring beauty of brick



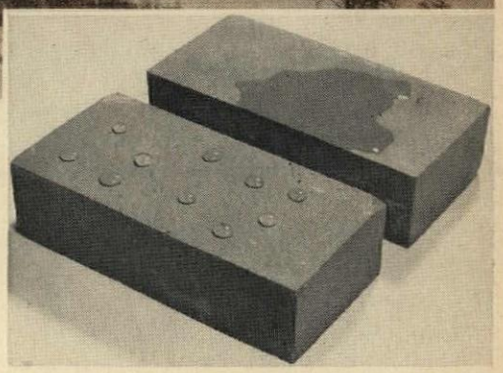
First Methodist Church of The Dunes, Grand Haven, Mich. Architect: Alden B Dow Inc

Silaneal® preserves it against efflorescence, dirt staining

The mellow charm of the brick specified for this distinguished new church won't be marred by unsightly discoloration from dirt, rain or efflorescence. The architect's assurance: this brick was factory-treated with Silaneal, the sodium siliconate treatment that so effectively helps brick repel water.

Silaneal Preserves Your Concept Light and pastel shades of brick are being specified more than ever before. Many such brick, however, have high suction rates and offer little resistance to water penetration. And water discolors brick by carrying dirt *into* the brick, causing its color to dull and darken; and by leaching water-soluble salts *out* of brick, causing ugly efflorescence. But Silaneal treatment slows and *controls* the absorption rate of even highest suction brick . . . dirt is kept outside, where it's rain-washed away, and efflorescence caused by leaching is minimized.

Walls Go Up Easier, Stay Stronger Brick treated with Silaneal don't require time-consuming soaking at the job site; water absorption rate is *already* controlled. This also permits proper mortar hydration; the fresh mortar dries more slowly, without leaving hairline shrinkage cracks at the brick-mortar interface. Transverse pressure tests—and tests simulating wind-driven rain—have demonstrated repeatedly that wall sections built of Silaneal-treated high suction brick prove stronger and resist leakage better than similar, but untreated, brick.



Note revealing contrast in water penetration of these two high suction rate brick. Water dropped on Silaneal-treated brick, at left, beads up without penetration. Same amount of water has spread rapidly across untreated brick, will be totally absorbed within seconds.

To Get More Information Wouldn't it be wise to have on hand more detailed information about brick-improving Silaneal treatment? Just write Dow Corning, Dept. 8709, for further data including a list of brick manufacturers who supply Silaneal-treated brick.

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SOUND and the CONTROL OF SOUND

in relation to Classroom Folding Walls

Acoustical environment, while an age old problem, is receiving more consideration today than ever before. The ability to concentrate without the distracting influence of too much noise or the disconcerting effect of little or no background noise is essential if students are going to learn and remember.

Sound control in relation to Classroom Folding Walls is basically centered on the reduction of sound transmission to or from adjoining rooms. However, many of the techniques used to provide a proper acoustical environment within a room will also help to control the transmission of sound to adjoining rooms. The illustrations and text on the next page will explain this in greater detail.

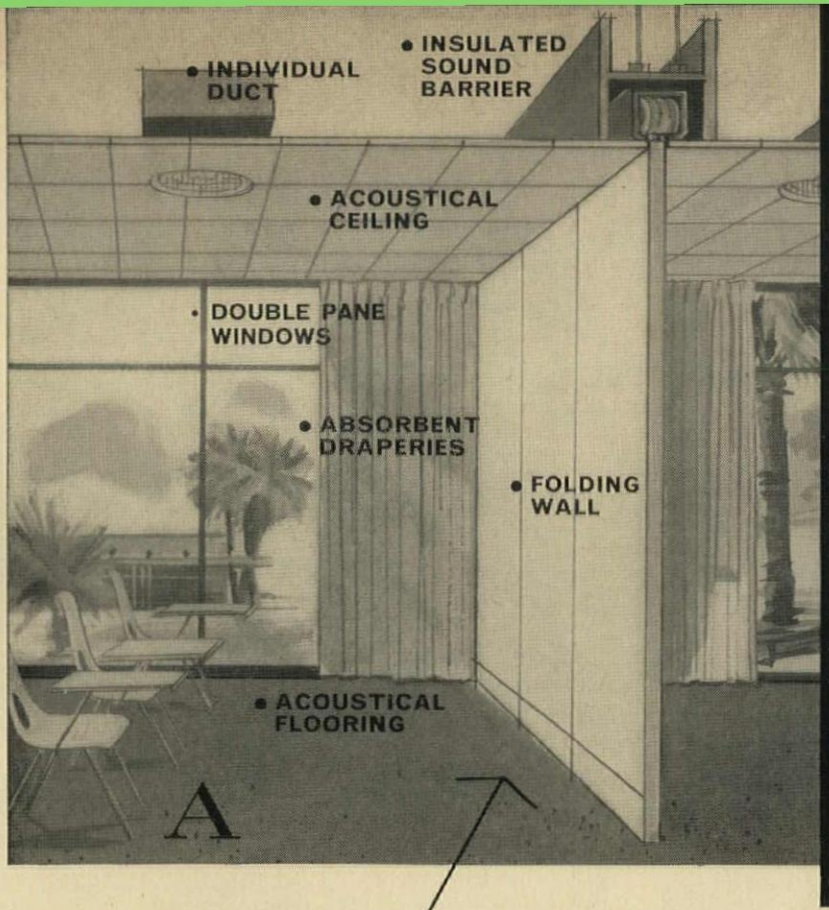
Unfortunately, many manufacturers have advertised that their standard curtain, accordion or metal segment type partition will provide such and such decibel transmission loss. This is misleading because a stated decibel loss can only be credited to a laboratory test or a specific installation. The same folding wall will not provide an identical decibel loss in two installations where the surrounding construction is different. Furthermore, the decibel loss rating of a specific wall tested under laboratory conditions will vary greatly with decibel loss rating taken after the same wall is actually installed. The reason is obvious; in the laboratory only the specific panel or wall is tested, while in an actual installation the surrounding construction and the perimeter seals will affect the decibel loss rating . . . any sound leaks occurring at these points will lower the rating of the entire folding wall. It is imperative that sound leaks are eliminated in the installation. This is the reason for the mechanically actuated device that exerts pressure at the perimeter and panel joints of R-W Classroom Folding Walls. Experience has proven the effectiveness of this type of positive seal over the no-pressure, sweep-seals provided on curtain, accordion and metal segment type partitions.

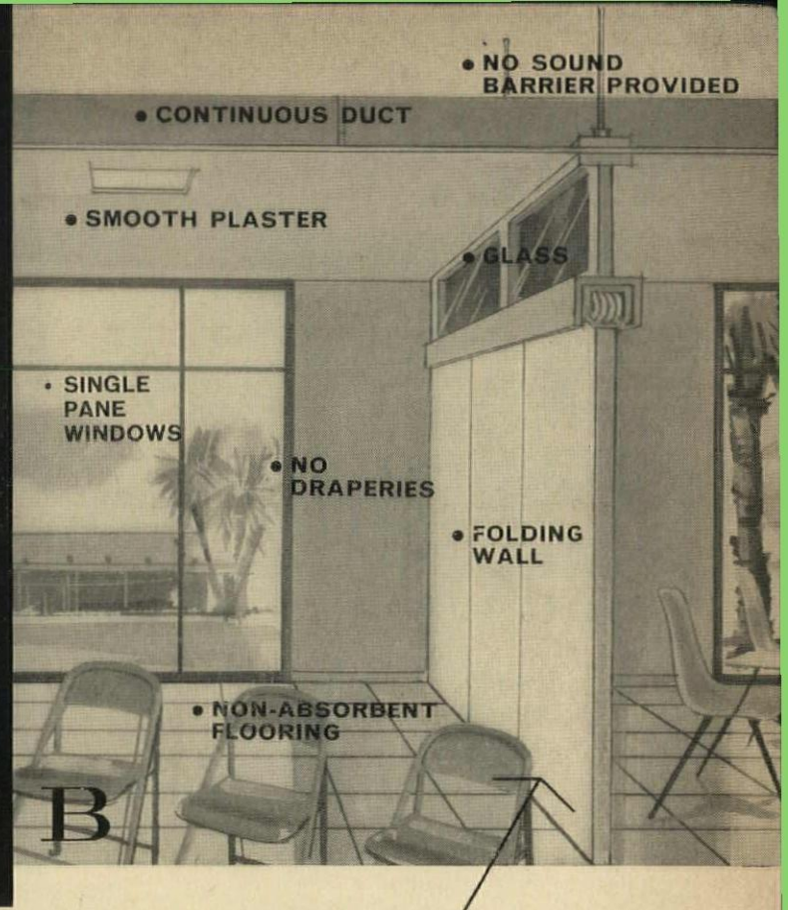
R-W Folding Walls are custom-engineered to provide the sound-retarding quality desired and compatible with the surrounding construction. While the importance of the surrounding construction is covered on the next page, there is also an economical reason for custom-engineered sound-retarding qualities. If the permanent construction separating classrooms provides a 30 db transmission loss it would then be wasteful to pay the cost of having a 50 db sound transmission loss built into the folding wall. While the panels would show a 50 db loss under laboratory test conditions, the transmission loss rating of the same wall installed would drop to approximately 30 db due to the surrounding construction.

In most cases, a single R-W Folding Wall will fulfill your normal or average sound-retarding requirements. Where unusual sound-retarding problems are encountered the most practical way to solve them is through the use of a double-wall installation with an air space between the walls. This type of installation will normally permit simultaneous activities of a noisy nature in the adjoining areas without cross sound interference.

In summation: regardless of whether the design calls for a sound-transmission reduction of 30, 40, 47, or more decibels, this can be achieved with custom-engineered R-W Folding Walls . . . and each is constructed to offer sound retarding qualities compatible with the surrounding construction *when installed.* R-W Folding Walls, backed by over 80 years of design experience and manufacturing know-how, are recognized by satisfied users as the folding wall that provides the ultimate in quality construction; functional flexibility, practical sound retarding qualities and dependable service.

Mr. Architect . . . this message is reprinted from a new R-W Classroom Folding Wall Brochure. A brochure that was prepared for distribution to school administrators in an effort to clarify some of the problems of controlling sound. We believe it will help them better understand the problems that you are faced with when providing flexible classrooms with folding walls. Copies of this brochure, No. A-604, are available to you for use in explaining these problems to a specific client.





this folding wall installed here / *would function differently here*

Drawing A illustrates the use of almost every practical technique that will provide a proper acoustical environment and help to eliminate sound transmission to the adjoining area. Drawing B illustrates a "live room" . . . little has been done to control sound within the room nor retard the transmission of sound originating within the room to the adjoining areas.

Notice the construction at the point where the folding wall joins the ceiling . . . in room A the sound is absorbed and retarded, while in room B it merely passes over the walls into the next room.

The heating and air conditioning ducts in A enter each room individually, while in drawing B the ducts run continuously from room to room . . . this arrangement not only carries the sound from room to room but in some cases magnifies the sound.

Note the ceilings—acoustical tile in A, smooth plaster in B. The floor in A is covered with acoustical flooring, while B has smooth, hard tile. Draperies were used in A and not in B. These important techniques used in A not only dampen and absorb the sound originating in the room to provide a proper acoustical environment but also help to retard the transmission of sound into the adjacent room.

In drawing B the folding wall has been topped with glass . . . while this provides a feeling of spaciousness that is visually pleasant, glass is not a good sound barrier. If glass must be used, then two thicknesses of glass with an adequate air space between should be installed.

While the above drawings depict two extremes in design and construction, they should quickly illustrate why the same folding wall would provide an entirely different decibel transmission loss in room A than it would in room B. For effective control of sound, the room should be properly prepared and the folding wall should be compatible to the surrounding construction—*this is best accomplished through the use of custom-engineered R-W Classroom Folding Walls.*

R-W CLASSROOM FOLDING WALLS MEET MODERN DESIGN CONCEPTS

photos: left to right;

- *The Chicago Teachers College, Chicago, Ill.*
  Architects: Perkins and Will, Chicago.
- *Our Lady of Good Counsel School, Chicago, Ill.*
  Architects: Kefer and Cronin, A.I.A., Chicago.
- *Deerfield High School, Deerfield, Ill.*
  Architects: Loebl, Schlossman and Bennett, Chicago.
- *United Airlines Training School, O'Hare International Airport.*
  Architects: Skidmore, Owings and Merrill, Chicago.

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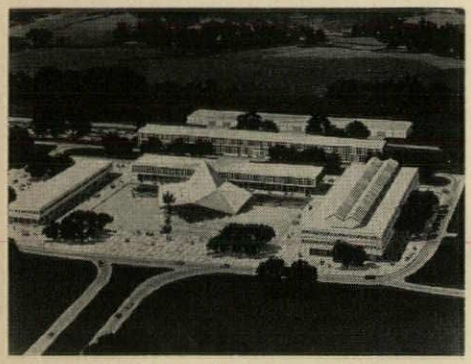
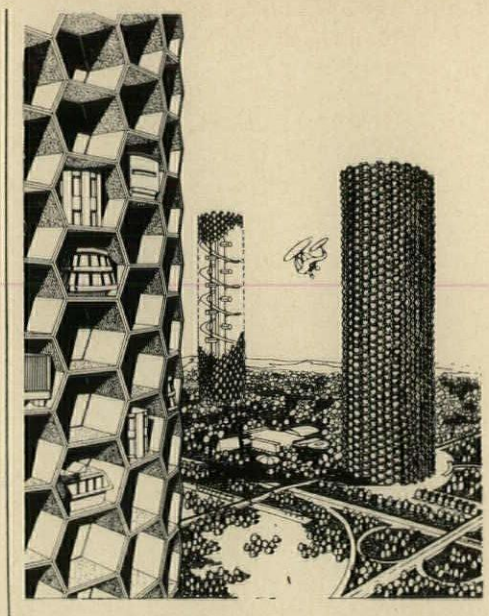
Continued from page 68

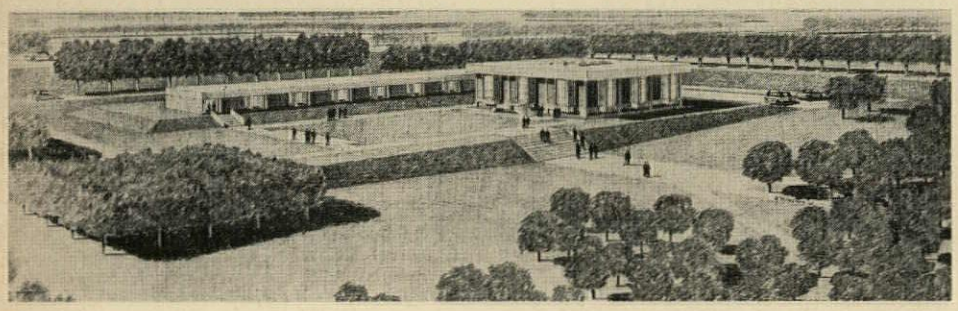


ect, designed by Harrison & Abramovitz, will have as its centerpiece a 160,000 sq ft reflecting pool in which an exhibit building will stand. All of the low-rise buildings will, of course, use aluminum prominently for both exterior and interior purposes. The first unit to rise will be the headquarters for Alcoa's Process Development Laboratories.

Houses in Honeycombs Seen in Future

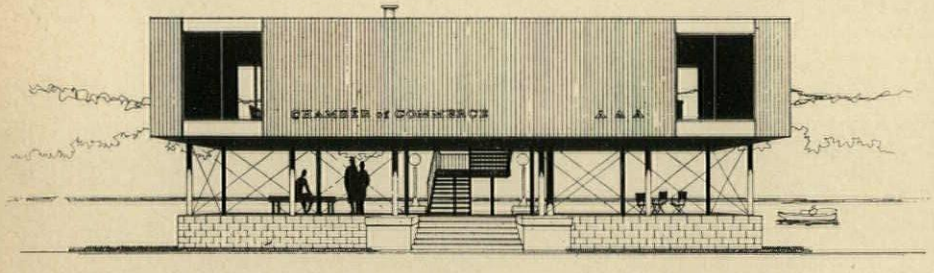
The firm of Samuel Paul & Seymour Jarmul, doing a little crystal gazing, has come up with its idea of the housing of the future. According to Paul & Jarmul, the trend will be towards highly concentrated, high-rise living. A possibility to accommodate this up-in-the-air population might be 40-story, central core structures in a "honeycomb" form; individual, custom-designed residences to be inserted into the honeycombs. This would make for a highly mobile population, according to the architects, the units being suitable for removal and shipping to other areas.





Seminary for the Twin Cities

First units of a master plan for the United Theological Seminary of the Twin Cities are rising outside Minneapolis. Designed by The Cerny Associates, Inc., the first elements include a classroom building and library (*shown*) and 10 faculty residences. Buildings to come include the chapel, to be focal point of the composition, administration building, commons building, faculty and student housing, and a lay retreat center. Main buildings will be at the high point of the site on a shaped earth platform. Study and contemplation alcoves in the library and classroom building will be expressed on the exterior of those buildings, becoming an integral part of their design. Seminary expects current 60-student body to grow to 200.

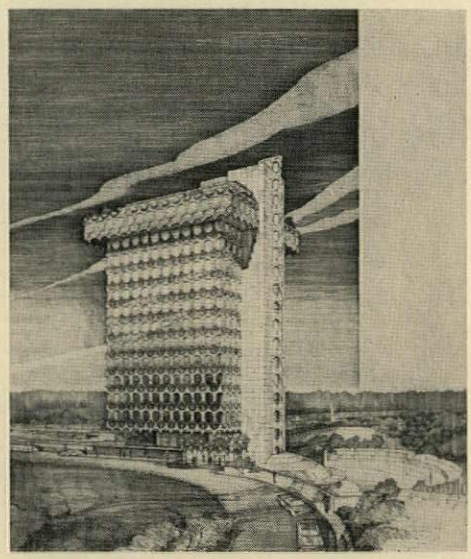


Dual-Purpose Building in Minnesota Park

A raised structure to house both the Chamber of Commerce and the local Automobile Association of America offices will be built in the main downtown park of Stillwater, Minnesota. Designed by the Minneapolis firm of Hammel & Green, the building will be built above the existing foundations of an old pavilion. Since the waterfront site is prone to flooding, the building will be raised above the foundations on steel pipe columns. This will also provide a lower level terrace for resting and viewing the river activities. Structure will be wood frame construction with tongue and groove vertical siding on the exterior and wood and plaster inside.

High-Rise from Taliesin

Taliesin Associated Architects have designed the home office building for The Lincoln Income Life Insurance Company which is scheduled to rise in its own park-like surroundings in Louisville, Kentucky. The structure will have a supporting central core of reinforced concrete which will contain stair towers, elevators, and mechanical and electrical equipment. Under the top restaurant and terrace level, cantilever trusses will extend on three sides to support vertical steel tension members from which the lower floors will be suspended. The exterior grill pattern will be incorporated with the ver-



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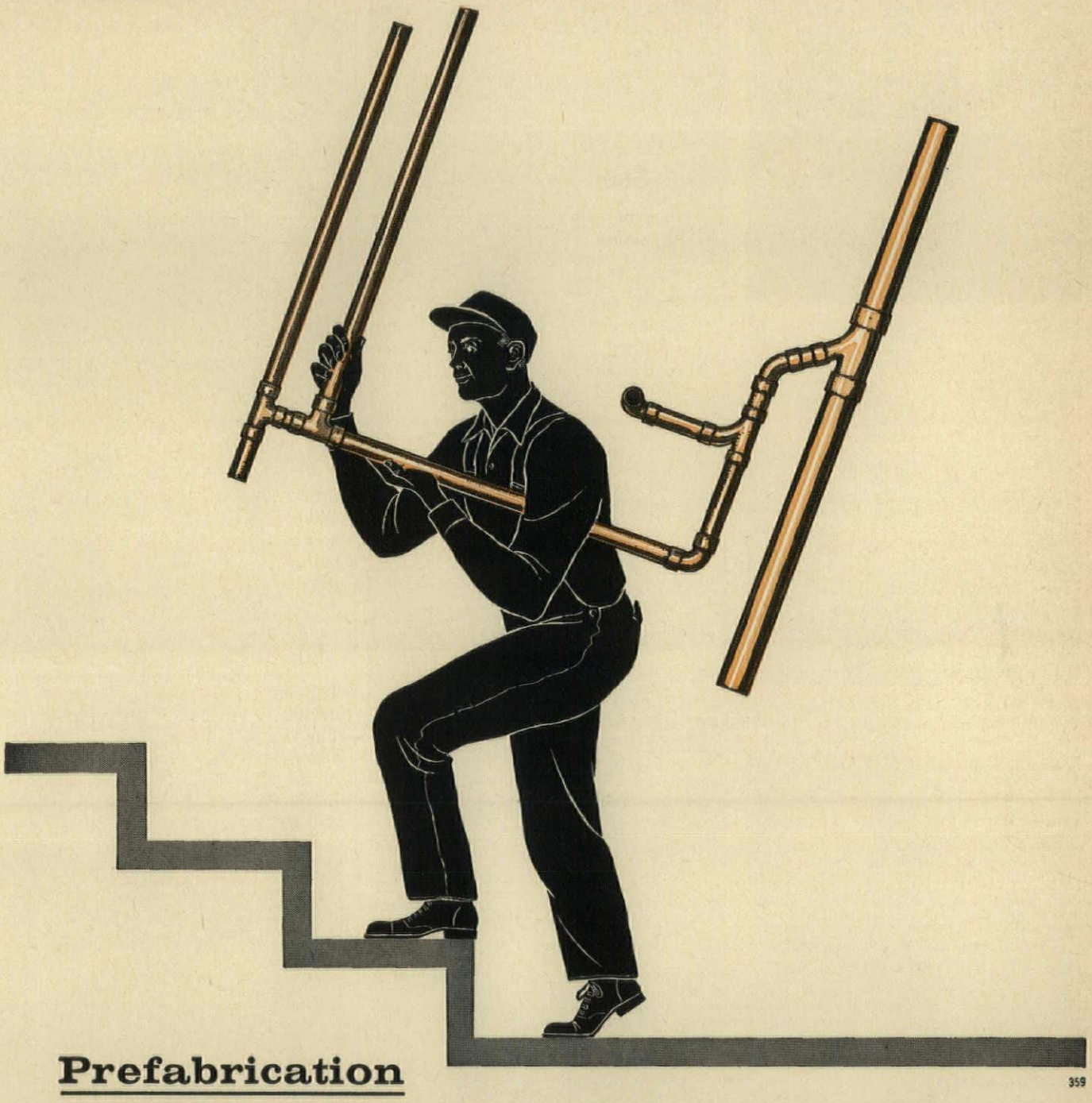

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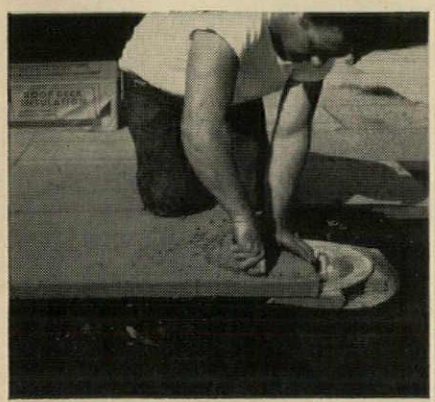

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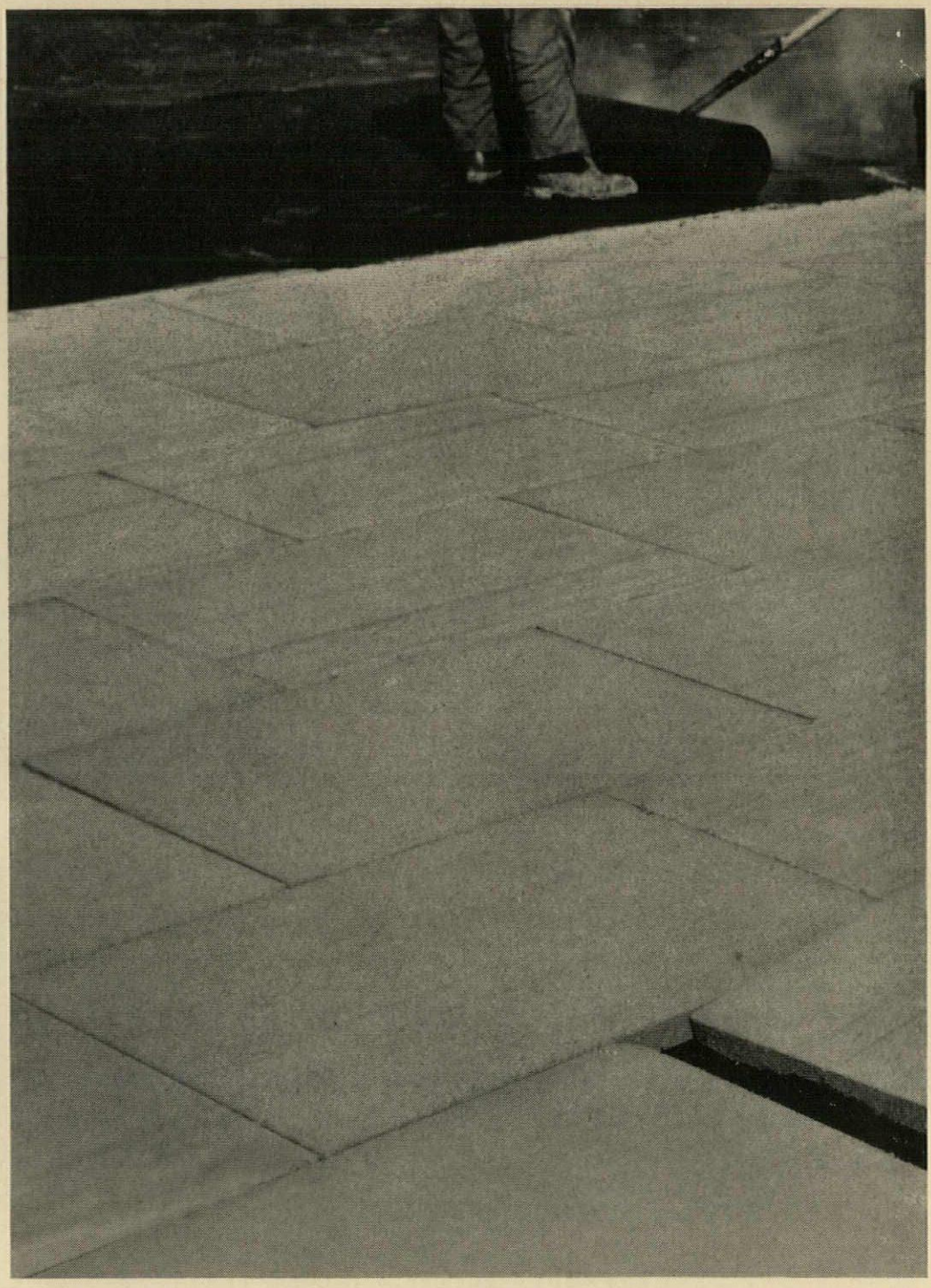

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JOHNS-MANVILLE JM PRODUCTS

Continued from page 72

tical tension members. Insulated sandwich wall panels, partly transparent and partly translucent, will occur behind the solar grill. The architect plans elaborate landscaping to surround the free-standing structure.

Twenty-third "SOM"

When asked to submit a paper on Mies van der Rohe, University of California architectural student Robert Higginbotham submitted the psalm below and received a high grade.

"Mies is my shepherd; I shall not want.
"He maketh me to lie down in glass boxes;
"He leadeth me beside the sterile buildings.
"He restoreth my soul; He leadeth me through universal spaces for his name's sake.
"Yea, though I walk through the valley of the shadow of Wright, I will fear no evil; for thou art with me; thy marble and thy bronze they comfort me;
"Thou preparest a table before me in the presence of everybody; Thou anointest my head with modules; my detail runneth over.
"Surely Johnson and Bunshaft shall follow me all the days of my life: and I will dwell in the house of Seagram forever."

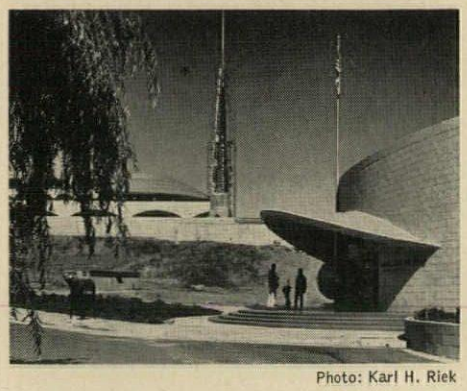


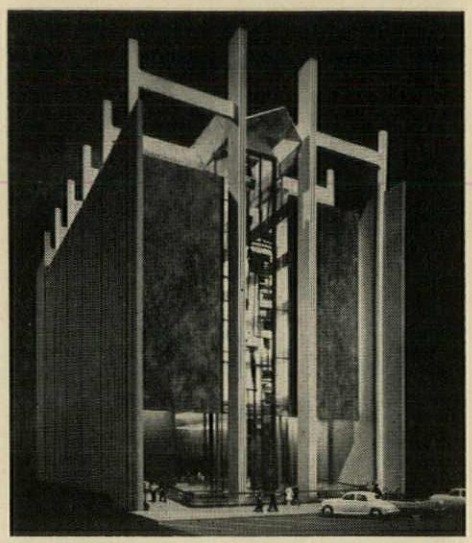
Photo: Karl H. Riek

Wright Post Office

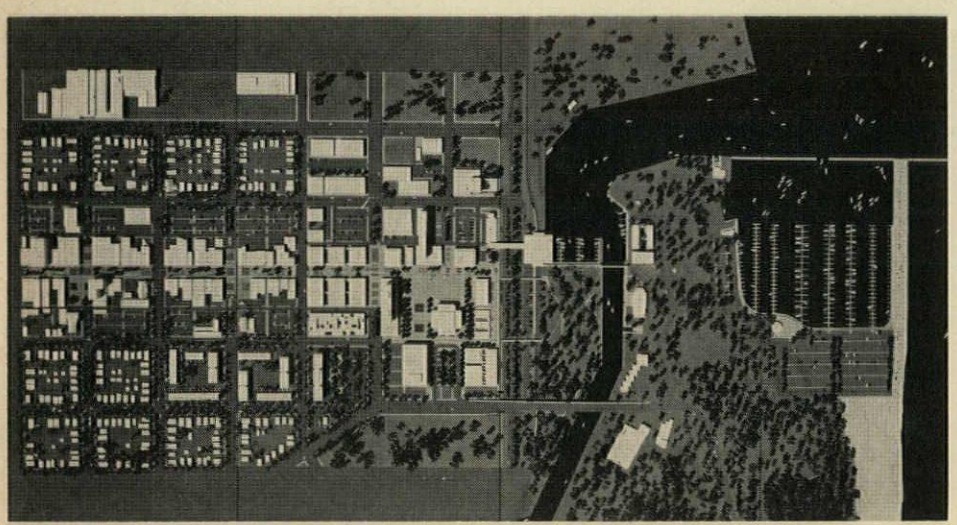
Frank Lloyd Wright's Marin County (California) Civic Center, now approaching first-stage completion, has been joined by a circular United States Post Office. The new structure sports a duck-billed marquee and a large-scale world globe at the entrance.

Building in Tension

Offices of the Prudential Federal Savings and Loan Association in Salt Lake City, designed by William L. Pereira & Associates, will be suspended by tension rods from a gigantic steel frame faced in precast stone. Above street level, all floors of the five-story building will have a U-shaped plan around a roof-high, skylighted atrium. Executive offices will look out over the atrium through glass walls, and there will be footbridges across it on all floors. The ground floor will contain all public spaces. A 120-ft-high sculptured bronze

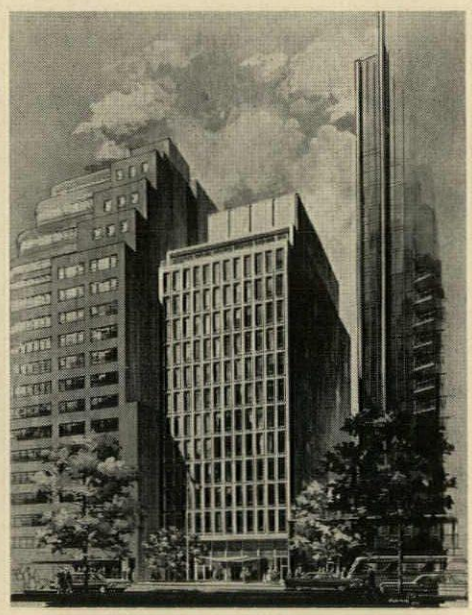


screen by Tom Van Sant will dominate the façade. The building will be entered over a sunken garden and reflecting pool situated below street level.



Notre Dame Suggests City Redevelopment

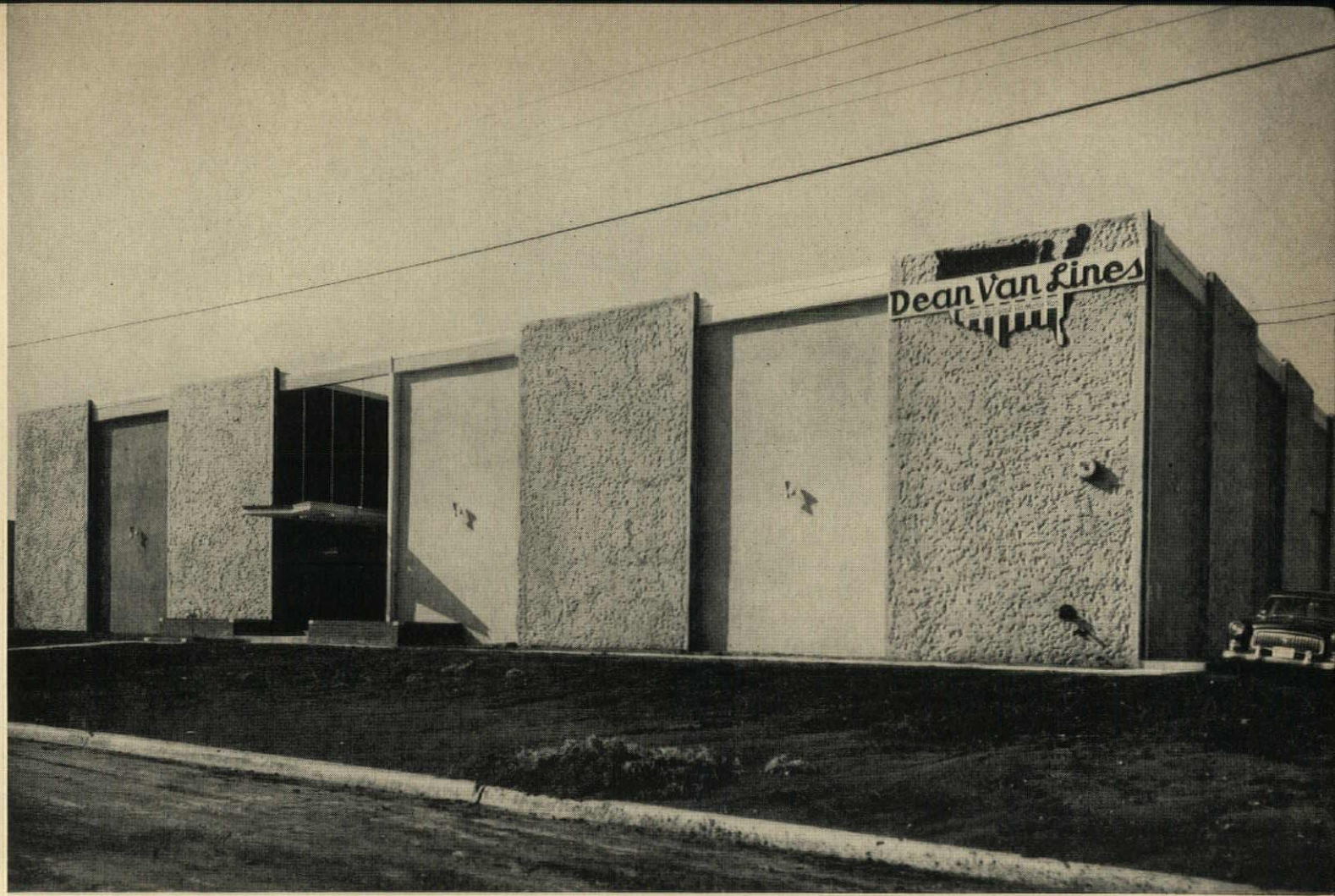
Last summer, the graduating class of the Department of Architecture at Notre Dame University took on the problem of planning the central business district of Michigan City, Ind., up to 1980. Working with various surveys and research reports that have been made over the past few years, plus intensive research in the field, the students came up with a plan suggesting a new city hall, civic center, more office buildings, a commercial center and motel, a railroad terminal combining and enlarging the facilities of the New York Central and South Shore railroads, and a new College Center. The plan also suggested the enlargement of Michigan City's yacht basin.



Expanded Lighthouse in New York

"The Lighthouse" is the name of the headquarters of the New York Association for the Blind, an organization devoted to the rehabilitation of non-sighted people. Recently, it announced a large-scale expansion for its mid-Manhattan facilities, designed by Kahn & Jacobs. The new 14-story structure will be set back 16 ft from the street to create a plaza. Exterior materials have been tentatively named as cast stone panels framing gray plate glass win-

Continued on page 78



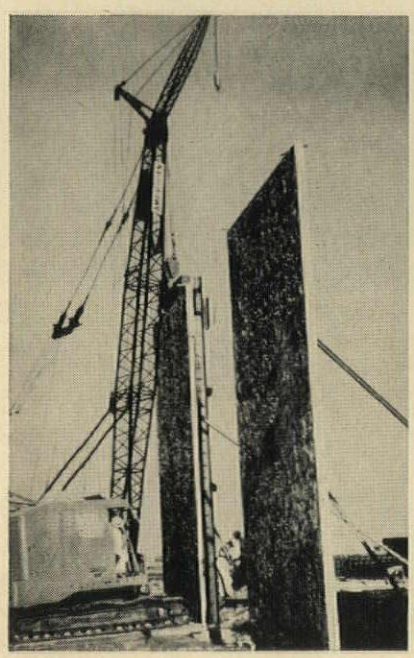
How they're using tilt-up

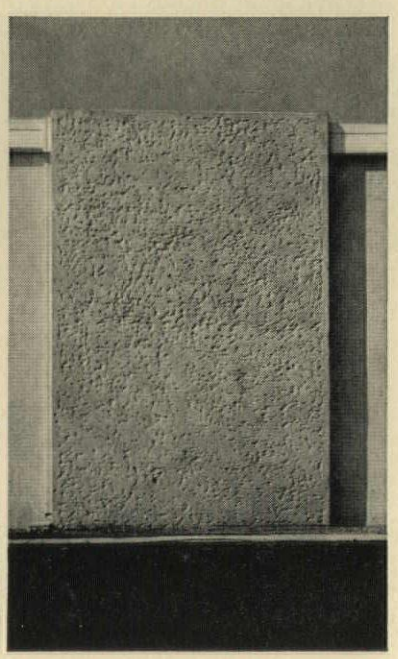
for savings and distinction

The new storage warehouse of Dean Van Lines in Dallas shows how the economies of tilt-up can be combined with handsome styling. One other business-like touch —the use of uniform, high-quality Lone Star Portland Cement—gets this structure off to a solid start in its profit-making career.

Wall panels were fabricated in two designs. The larger panels were cast over polyethylene-covered sprinklings of crushed rock to give them an interestingly variegated surface. These were left in their natural cement color. The recessed panels were cast with a smooth surface texture, and each painted in one of three colors. The result—a pleasing departure from the conventional warehouse format, and a well-deserved award for design excellence at the 1961 Convention of the American Registered Architects.

LONE STAR CEMENT CORPORATION, NEW YORK 17, N.Y.





DEAN VAN LINES WAREHOUSE
Owner: HAUGHTON, HINES & TEMPLETON INVESTMENT BUILDERS
Architect: JOHN PRESTON TRAVIS III
Structural Engineer: CHARLES PERRY
General Contractor: TEMPO CONSTRUCTION COMPANY
Subcontractor for Tilt-Up Panels: CONCHO CONSTRUCTION CO.
Lone Star Cement Concrete Furnished By: DALLAS CONCRETE CO.
(All of Dallas)

Walls of Dean Van Lines' 20,250-sq-ft warehouse consist of 6 in. thick x 30 ft high tilt-up panels cast on the slab floor of the building.

LONE STAR PORTLAND CEMENT

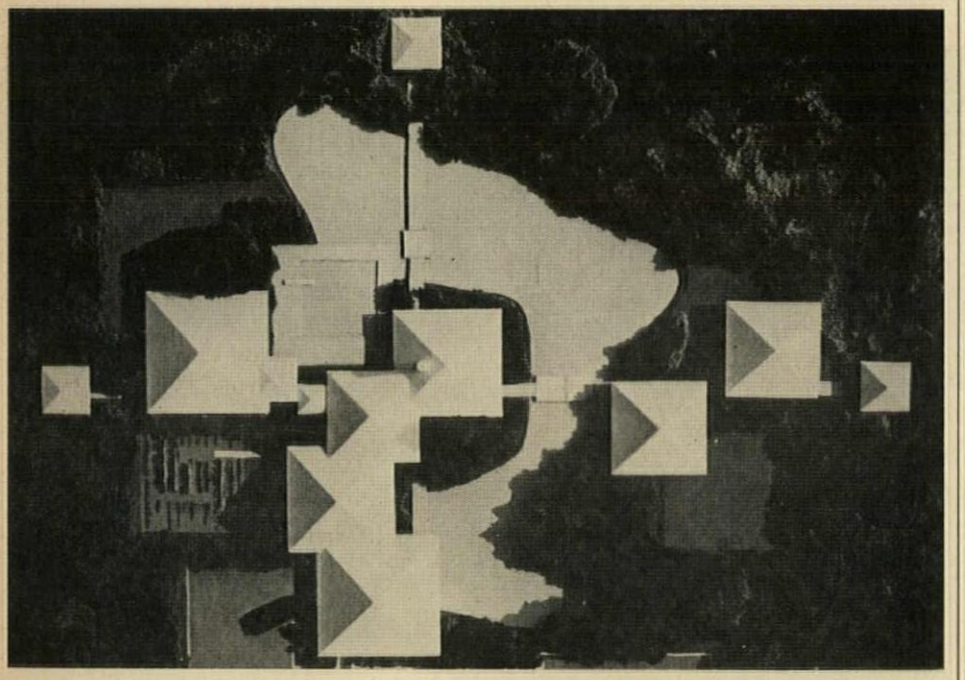
Continued from page 76
dows. In order to provide additional space, the north façade will be hung from a 14th floor truss to cantilever over the sixth floor of an existing Lighthouse building about 16 ft. A larger swimming pool, bowling alleys, and more extensive recreational and training facilities will be provided in the new building.

School Days

Robert H. Dietz is new Dean of the College of Architecture and Urban Planning at the University of Washington. . . . University of Colorado now has a separate School of Architecture with DeVon M. Carlson as its dean. . . . Taking Samuel Hurst's place as dean of architecture and the arts at Auburn University is William Arthur Speer. . . . University of Oregon has a new Dean of the School of Architecture and Allied Arts in Dr. Walter L. Creese. . . . NAAB has approved a department of architecture at Kent State University: its head will be Joseph F. Morbito. . . . Acting head of the department of architecture at Pennsylvania State University is Philip F. Hallock. . . . Columbia University School of Architecture's 1962 urban development problem—this one in Worcester, Mass.—will be directed by J. Stanley Sharp. . . . Eduard Franz Sekler has been promoted to professor in the Harvard Graduate School of Design.

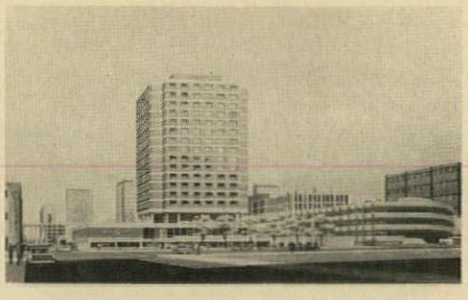
Copper & Brass Winner

Thomas Nixon & Lincoln Jones of Boulder, Colo., won the 1962 Copper and Brass Architectural Achievement Award for the Fremont County Court House, Canon City, Colo. The Copper and Brass Research Association awarded a bronze plaque and a check for $500 to the firm for its use of sheet copper over concrete on the upper story and façade of the inner courtyard of the building.



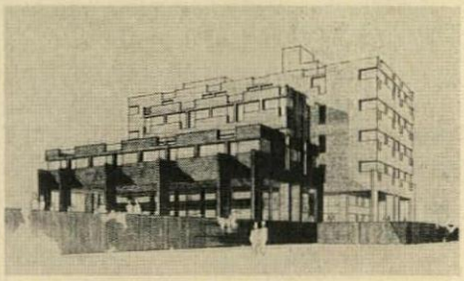
Ramada "Village" for Helen Hayes's Haven

A proposed house for Helen Hayes in the pine and palmetto country near Palm Beach, Florida, will actually be a small community of pitched roof buildings utilizing the "ramada" form of local palm-thatched beach huts and garden pavilions. Privacy for the actress being a prime aim of Malcolm B. Well's design, the units will be broken up into separate structures for kitchen and dining, living, two guest houses, and the owner's private quarters. A free-form fresh-water pond will flow through the property, crossed by bridges connecting the various buildings. There will be a large swimming pool overlooked by living room, dining room, and owner's bedroom.



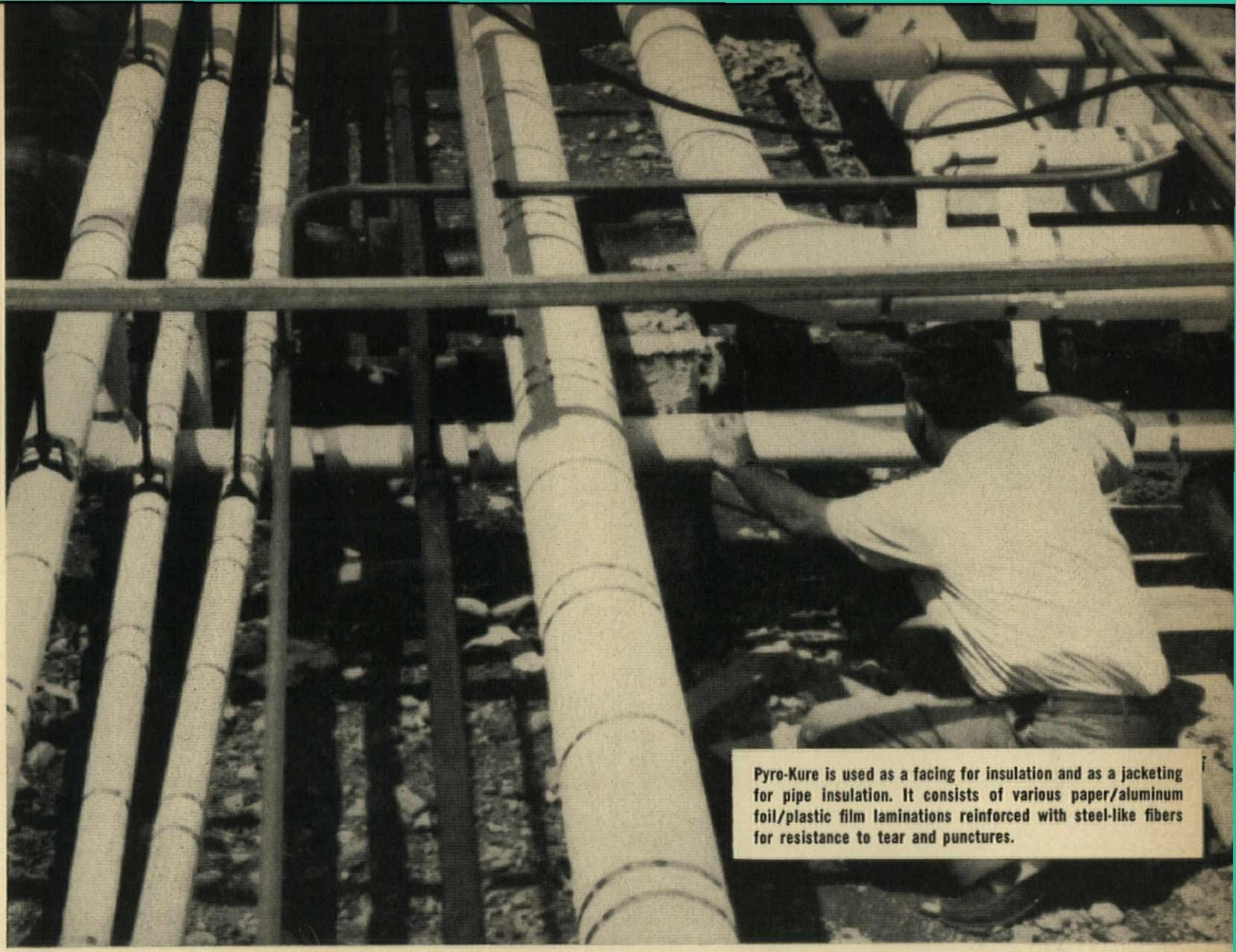
Minneapolis Renewal Area Gets Hotel

The Cerny Associates, Inc., have designed a hotel for the Sheraton chain to rise in the downtown redevelopment area of Minneapolis (p. 67 NOVEMBER 1960 P/A). The 332 room hotel has been designed around a service core, with individual rooms, according to the architects, "expressed in the exterior treatment of the tower façade." A parking structure for 300 cars is an integral part of the scheme. Public areas occur in the two-story structure below the tower. Frame is reinforced concrete with a shear wall in the tower structure. Exterior is face brick with limestone spandrels. Opening is scheduled for early 1963.



Koppers Coppers

Design by Jared I. Edwards of Yale was one of seven student winners in the recent fifth annual Student Design Competition sponsored by the Tar Products Division of Koppers Company, Inc. Edwards designed a 110-bed general hospital for Fairfield, Conn., featuring progressive patient care and hospital-centered group practice of medicine. Other winners of the $1000 scholarships were Julian David Weiss, Pennsylvania State University; Charles L. McMurray, North Carolina State College; Richard L. Gostomski, University of Michigan; Richard P. La Croix, Syracuse University; Ilmar Reinvald, University of Illinois; and Leroy B. Riddle, Jr., University of California, Berkeley.



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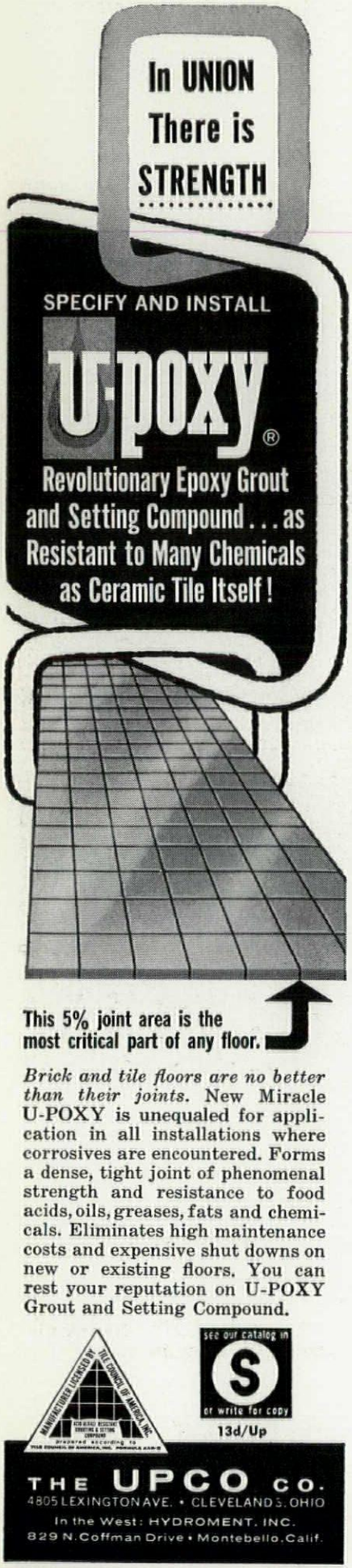


For more information, circle No. 399

Civil Service Professionals, Unions

By E. E. Halmos, Jr.

The probability of strong moves to unionize Civil Service employees, as a result of recent Presidential directives, is beginning to worry some Washington observers.

These moves are based on Executive Order 10988, issued by the President in mid-January but not implemented by specific directives from agency and department heads until a few weeks ago.

The Executive Order recognizes the right of Federal employees to organize into unions, hold elections, and take part in union activities; and it directs agency heads to deal with these unions. Recognized unions will not be given the right to strike or to bargain on pay scales if these are set by Congress.

To see where the pressure to unionize will come from, it is necessary to read this Executive Order carefully. The pressure will be indirect but powerful, because it may become a matter of self-preservation to professionals in the Civil Service to join.

As a matter of fact, the President and the various agency heads have been very careful to point out specifically that the right of a Government worker to join a union carries with it, equally, a right not to join, since *any* Government employee, whether or not he joins a union, derives all his rights from Civil Service and other regulations.

However, some of the implications of the directives have to be considered. Professionals comprise only a tiny minority of the workers who staff Government agencies, so they may find themselves in a disadvantageous situation.

Since department or agency employees would elect a union group to represent them by majority vote, professionals in the Civil Service may well find a group of clerks and typists negotiating conditions of work that directly affect the Government professionals.

There are still a lot of details to be worked out, such as what should constitute a proper bargaining group and who should be included. But the probability that professionals will have to join such unions to protect their own interests is now being freely discussed in many agencies.

Anti-Architects in House

Architects got a solid slap in the face —at least by implication—when the House finally got around to considering the appropriations for the Veterans Administration, which are a part of the $12.6 billion omnibus Independent Agencies bill.

Said a House committee report, discussing a VA hospital to be built at Gainesville, Florida:

"The Veterans Administration has received no contractor estimates on the 1963 projects, and the costs ought to be reduced 10 to 12 per cent . . . and still provide good, functional facilities that observe sound space efficiency criteria and omit unnecessary frills and decorations. . . .

"Under no circumstances should local architects be permitted to build monuments to themselves."

Money, Money, Money

Having unwound one nearly ridiculous impasse (a battle between House and Senate over where conference meetings would be held, and who would chair them), Congress finally began to move essential money bills early in August.

In quick succession, the House cracked through OK's on $1.5 billion's worth of military construction; a $3.8 billion appropriation for the National Aeronautics and Space Administration (including approximately $700 million for construction); $5.3 billion for Labor and Health-Education-Welfare (including funds for hospital construction); and money for the General Services Administration, the Federal Aviation Agency, the Housing and Home Finance Agency, and others.

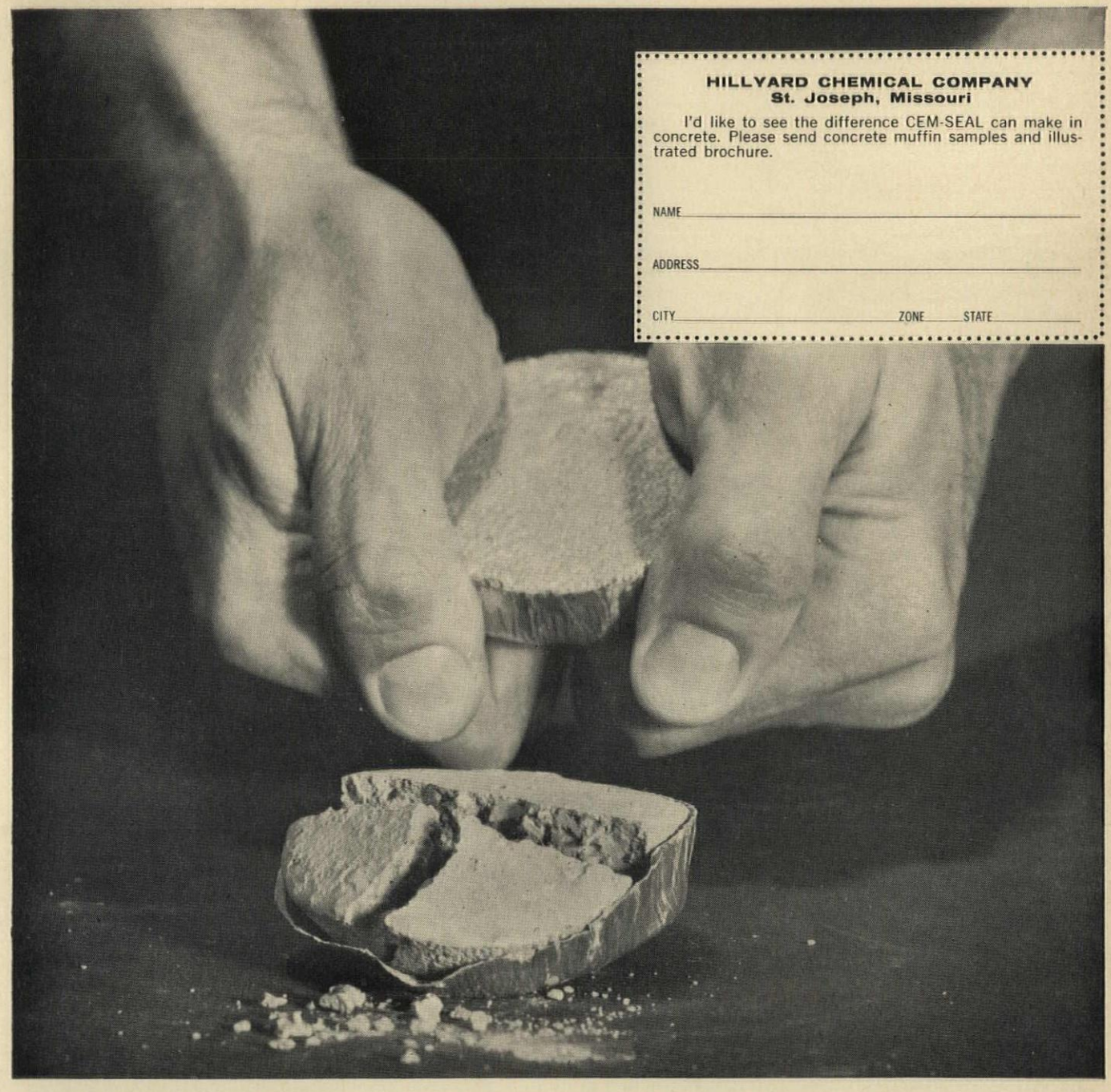
Still awaiting action were the big construction appropriations included in the annual omnibus public-works bill (Bureau of Reclamation, Army Civil Works).

As has been mentioned previously, there has never been any doubt that these bills would be passed in about the amounts proposed, even though Congress seems to have gone out of its way to be dilatory, and, as noted, capricious, this session.

FINANCIAL

The really big news for architects, as well as for members of the construction industry, lay in the financial and business areas.

Developments here centered around two principal points:



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1. The revision of the long-standing depreciation rules by the Treasury Department's Internal Revenue Service.

2. Insistence of Government statisticians that the construction industry would hit the predicted record level of $60 billion or more during 1962, despite general business setbacks.

The depreciation rules were contained in "Revenue Procedures 62-21," and their effect, so far as architects are concerned, will be twofold.

In the first place, they permit contractors to "write off" their equipment at a considerably faster pace, thus achieving substantial savings in tax payments. (Architects, in their roles as businessmen, are also affected and can take advantage, of course, of the shorter "useful life" prescribed for office equipment and other tools of their trade.)

In the second place, application of similarly shortened "lives" to industrial machinery, buildings, and other equipment may be a considerable stimulus to private industry to invest in new structures.

What Treasury did was to revise a list, in use since 1942, that sets up acceptable periods of time in which businessmen may depreciate their assets. The list, which formerly contained more than 5000 headings, was cut to 75, and the prescribed "lives" were substantially reduced.

Under previous rules, for example, a piece of machinery valued at $10,000 and having a "life" of 10 years, could be depreciated at the rate of $1000 per year, which was deducted from taxable income. Under the new rules, which may set a "life" of 5 years, the same machinery could be depreciated at $2000 a year—with a resultant saving in tax payments.

As to the business picture for the construction industry, the Department of Commerce stuck by its guns at midyear, predicting a $60 billion gross—which would be a record.

Commerce said that this gross would be achieved because of some unexpected shifts in specific areas: Private building will be less than predicted, for instance, but since housing has made a surprising showing, it should balance the drop. (In June, housing starts were running at a seasonally adjusted rate of 1,389,000 units, compared to 1,361,000 at the same point last year.)

The prediction seemed to be strongly bolstered by Commerce's reports for June, which showed that the value of new construction put in place brought the entire construction industry up to a seasonally adjusted annual rate of $63 billion, the highest ever recorded.

There were still cautionary signs, however:

Federal Housing Administration reported that prices for secondary market sales of FHA-insured new home mortgages were up slightly, but that over-all conditions still indicated a tight money market.

FHA also reported that the vacancy rate in its rental units maintained the same level in 1962 surveys as for a comparable period in 1961—5.5 per cent, to be exact. That rate is the highest reported since 1951, and compares with the low figure of 2.4 per cent in 1957.

Economists consider these vacancy rates as a prime indicator of the overall demand for new housing. On the basis of the continuing high rental vacancy, many are looking for a slowdown in the rate of housing construction.

Industrial building has shown some tendency to pick up over the past month or so. Whether the new depreciation rules will help this situation won't be clear for some months.

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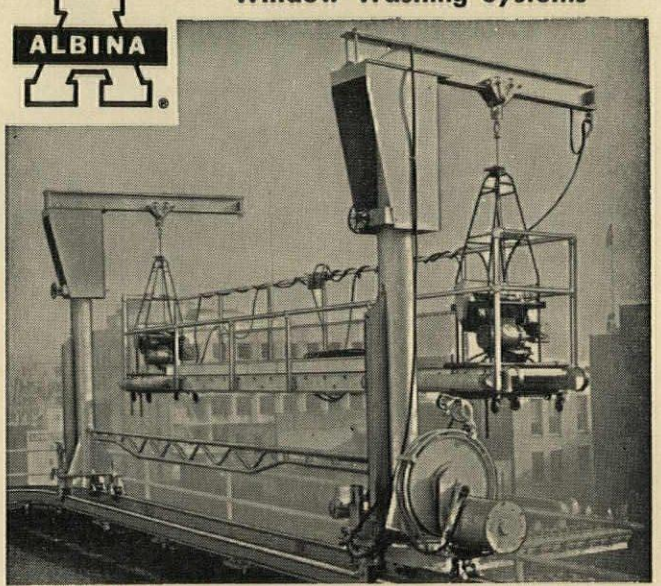

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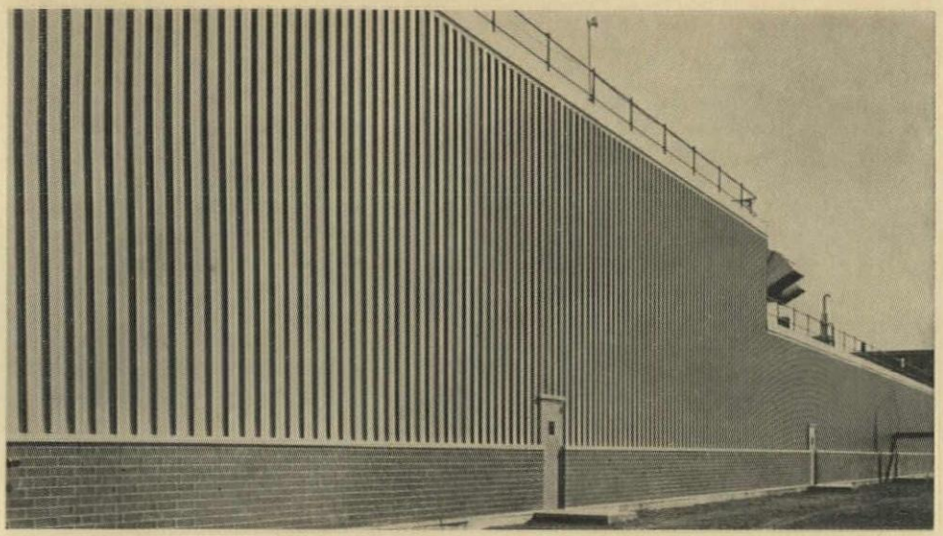

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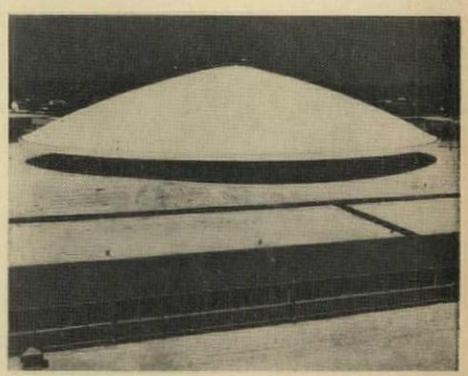
Not a conventional liquid-form finish, Tedlar is a finished film in itself, which is laminated to the material in question in the manufacturer's own plant.

In extensive field and laboratory tests on residential and industrial buildings in a number of climatically-different states (Tedlar successfully survived five years exposure to sun and weather in Florida, for instance), it has indicated having at least three to four times the resistance to sunlight and weathering, four to eight times the abrasion-resistance, and from 25 to 50 per cent higher chip-resistance than lacquer and enamel finishes. Tests were conducted on a variety of materials, including steel, aluminum, mineral boards, plywood, and hardboard.

The film, which is available in standard lengths and widths, and in white and three color shades, is now being used for a number of products in production or under development. Butler Manufacturing Company, Johns Manville, and U.S. Rubber are making curtain-wall panels; U.S. Plywood, Stran-Steel Division of National Steel Corporation, and Alsco Inc., are using it for siding; and Ruberoid Company is making roofing (*story below*). In addition, Minnesota Mining and Manufacturing Company and Pre-Finish Metals, Inc., are making specialized strips and tapes for the construction field. E.I. Du Pont de Nemours & Co., Film Div., Nemours Building, Wilmington, Del.

On Free Data Card, Circle **100**



New Built-Up Roofing System Utilizes "Tedlar"

NEW YORK, N.Y. A prefabricated one-ply roofing system has been announced that efficiently weatherproofs roofs of any design or contour. "T/NA 200" combines Du Pont's "Tedlar" polyvinyl fluoride film (*story above*) and Ruberoid asbestos with an elastomeric binder. In production, asbestos fiber is formed into tough asbestos felt to which Tedlar is laminated with the elastomer, producing a roofing system with a predicted life-expectancy of 30 years or more.

In contrast to conventional built-up roofing materials, which require multiple plies, T/NA 200 is an integrated one-ply system to be used on any nailable or non-nailable flat or steep roof deck. This means that it is appropriate for any of the most "sensuous" roof forms (some of which are shown above). T/NA 200 is currently available in white, which gives high reflectivity, resulting in lower loads on air conditioning; ultimately, other colors will be introduced. The smoothness of its surface makes for low maintenance, tree-droppings and wind-driven dirt being washed off by rain. The significantly reduced weight of the one-ply system, of course, adds immeasurably to the flexibility of the roofing. (For another Ruberoid story, see p. 66.) The Ruberoid Co., 733 Third Ave., New York 17, N. Y.

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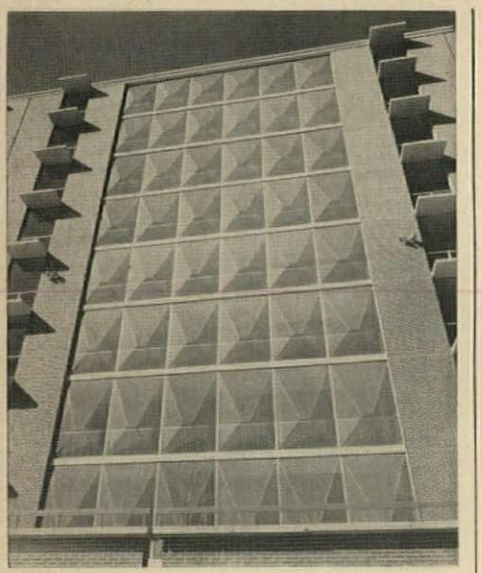

Fiberglas Screening As Architectural Treatment

First use of "Fiberglas" screening as an architectural treatment in high-rise apartment buildings has been made by Heery & Heery, Atlanta architects, with giant screens of fiberous glass enclosing terraces in two new Atlanta apartment houses. In addition to providing comfortable outdoor living for each apartment, the screening has a number of other advantages. It absorbs noise originating outside the apartments, and greatly reduces reverberations from within. Color-coated in vinyl, it gives considerable visual privacy. Since the screening is exceptionally strong, protective metal bars were not needed; the screening was installed in extruded aluminum frames in four separate facets to give a three-dimensional effect. The screens need no maintenance, will not rust or corrode, have inherent dimensional stability, and are fire-resistant. Owens-Corning Fiberglas Corp., 717 Fifth Ave., New York 22, N. Y.

On Free Data Card, Circle **102**

Tough Soil Stabilizer

A soil-stabilizing polyethylene-urethane copolymer has been introduced that provides a surface that is amazingly strong (it has more than three times the impact-resistance of the same thickness of concrete), durable (it is not affected by extremes of temperatures), and resistant (it is impervious to most acids, alcohol, chemicals, detergents, and boiling liquids). The unfortunately-named "Patio Builder" (its uses transcend that do-it-yourself appelation) has been used on shopping-center parking lots; as flooring for hot-water and cold-beer storage tanks in a Brooklyn brewery; to coat a section of concrete retaining wall on the Thames in London; and as a building material for low-cost housing in Africa. Delka Research Corp., 275-281 Goffle Rd., Hawthorne, N. J.

On Free Data Card, Circle **103**

Suspended Glazing

A revolutionary glazing method developed in Germany is now available in the U.S. With "Suspended Glazing," vertical joints are almost invisible, and glass is distortion-free because it is in perfect plane due to its own weight. There are improvements in safety, too. Under ordinary glazing methods, when a light of glass is broken, the remaining glass in the frame falls with a "guillotine" effect; but when glass is suspended from above, it remains safely in place. Furthermore, the possibility of breakage is greatly reduced because the suspended glass is less subject to damage caused by movement of the building. Lights weighing over 1100 lb have been successfully installed with the suspended method. Glazing Div., F. H. Sparks Co., Inc., 49 W. 45 St., New York 36, N. Y.

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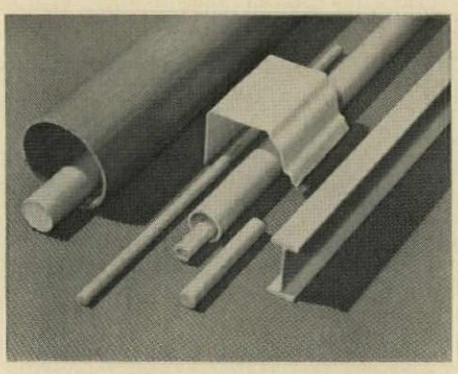


New Reinforced Plastic Material

A new fiberglass-reinforced plastic material called 'eXtren," which is formed continuously and automatically with precise control over resin and reinforcing elements, can be formed in any shape that can be visualized as an extrusion. In the past 18 months, production runs have been made of sheets corrugated panels, pipes, tubes, I-beams, channels, angles, solid rods, and guttering and siding. Currently, sheets are being produced up to 52" wide and shapes in cross-sections up to 14". New machinery is expected to increase these dimensions; virtually any length is possible. Sheets as thin as .010" have been produced, and there is said to be no upper limit on thickness. The precise introduction of other materials is posible during the production process. For instance, structural shapes can be reinforced with metal; sheets can be formed with insulating backing; or acoustical or insulating sandwich panels may be formed. Much of current production is for defense and space-exploration purposes, but continual investigations of the possiblities of eXtren indicate an early and large-scale entry into architect-designed projects in the construction field. Universal Moulded Fiber Glass Corp., Bristol, Va.

On Free Data Card, Circle **105**

1"-Thin Floor Topping

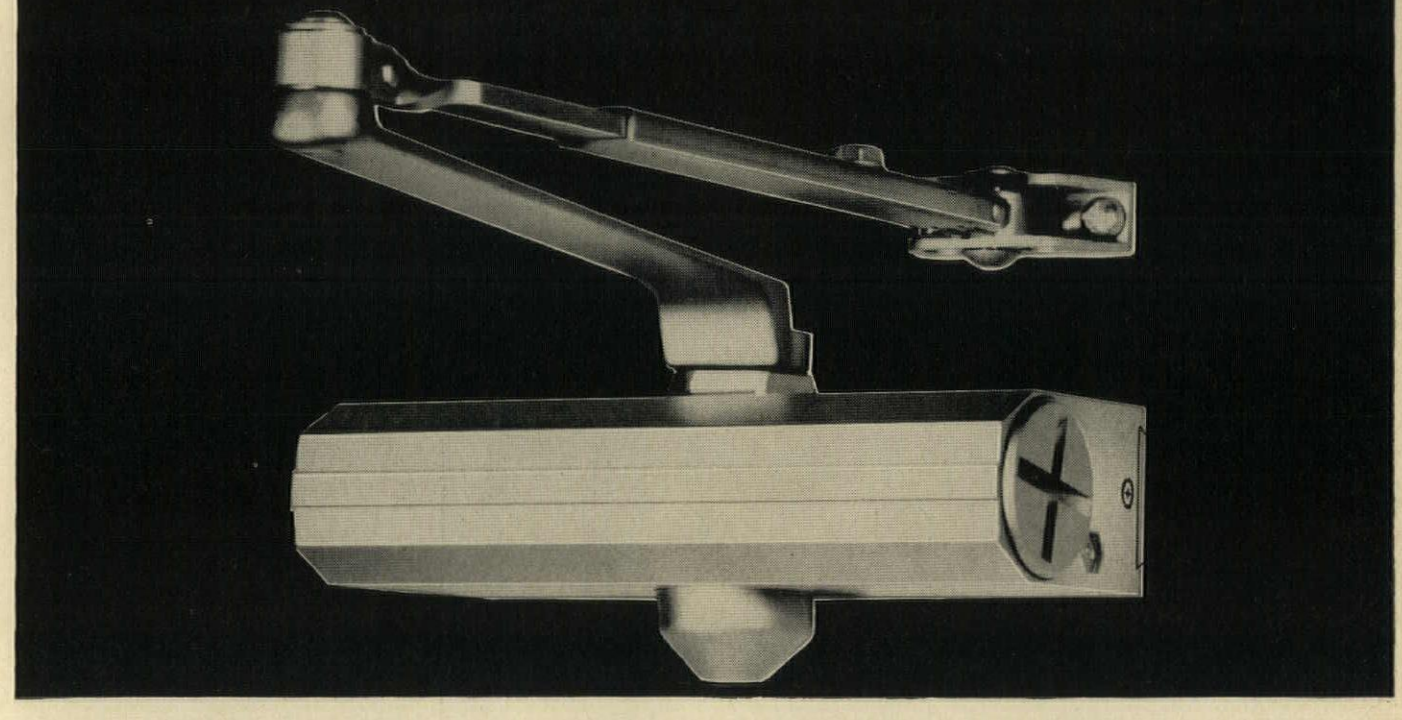
"Permakast" synthetic anhydrite cement makes an economical concrete topping that needs no reinforcement and can be as thin as 1" over old wood or concrete floors, new and old. A structurally sound floor needs little more preparation than a good sweeping before it is covered with the separating membrane. The Permakast slab, which is said to "float" because it is separated from the subfloor and walls, is protected from cracking and curling caused by movement of the structural members. Shrinkage is only .001%, or one-twentieth that of regular concrete. Originally developed in West Germany ten years ago, Permakast has been tested in the U.S. for the past two years. Perma Products Dept., Mining & Mineral Products Div., Great Lakes Carbon Corp., 18 E. 48 St., New York 17, N.Y.

On Free Data Card, Circle **106**

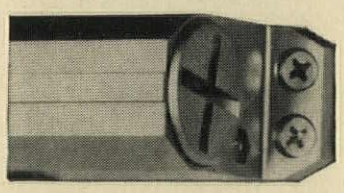
Insulated Panel for Pre-Engineered Buildings

New "Parthane" insulated panel is completely prefabricated and cut to length at the factory, eliminating the high costs normally associated with field insulation of metal buildings. Panel consits of an adhesive-bonded sandwich of two metal sheets that

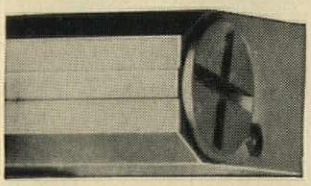
MODERN STYLING



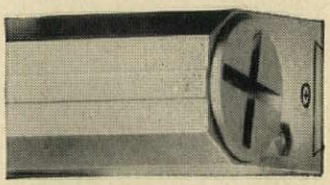
CHOICE OF MOUNTING



Series 1600—Exposed Mounting



Series 1630—Back Mounting



Series 1650—Invisible Mounting

NORTON® Tri-Style DOOR CLOSERS

Norton Tri-Style closers offer you the ultimate in clean, modern styling, designed to complement your architectural decor. You have maximum freedom in your selection of door and frame styles.

You have a choice of three distinct mounting methods: invisible mounting; back mounting; standard mounting. You may select the method of mounting best suited to your architectural design and installation requirements.

Norton Tri-Style door closers have the widest possible application versatility. Tri-Style closers are non-handed and feature universal parallel or regular arm. The Norton exclusive adjusta-power shoe permits an on-the-spot power adjustment of 15%.

A wider choice of closer sizes assures perfect door control. A complete selection of accessories permits you to make applications in all locations.

For complete information and specifications, write for Manual T5

1038

NORTON® DOOR CLOSERS

for Complete Architectural Compatibility 372 Meyer Road, Bensenville, Illinois

For more information, turn to Reader Service card, circle No. 421

serve as inner and outer surfaces, with a 1″ layer of urethane foam. Since there is foam-to-foam contact between adjacent panels, the U value is lower than in conventional curtain-wall panels (where insulation is enclosed within a metal frame, and metal-to-metal contact reduces insulating properties). Permanently colored panels are available in ribbed sections 24″ wide and in continuous lengths up to 22′. Cost of erected wall is approximately $1.20/sq ft, 30 to 50% less than present curtain-wall systems. Parkersburg Building Div., Parkersburg-Aetna Corp., Parkersburg, W. Va.

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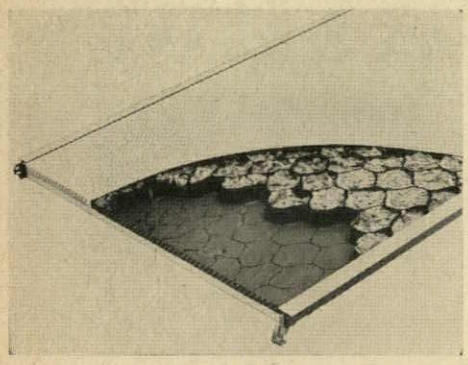


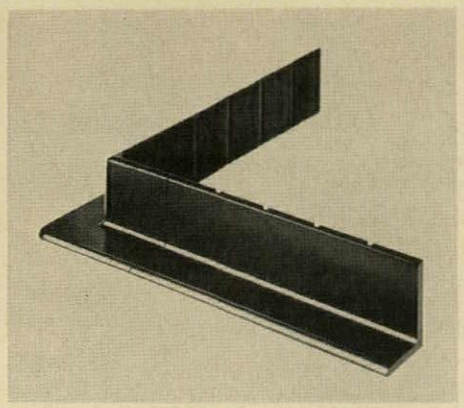
Plane-Wing Construction for Acoustical Panels

Acoustical ceilings utilizing construction principles similar to aircraft wings consist of a perforated steel face and unperforated steel back adhered to a center core of kraft honeycomb filled with glass fiber. The visible face is finished with an electrostatically sprayed, silicone-acrylic-asbestos baked enamel. Panels are 1″ thick, and available in a variety of sizes. "Hansocore," as system is known, allows flexibility of partition placement, and is easily removable for access to the plenum. Elof Hansson, Inc., Acoustical Division, 711 Third Ave., New York 17, N. Y.

On Free Data Card, Circle **108**

Hardwood Floors Made Breathtaking

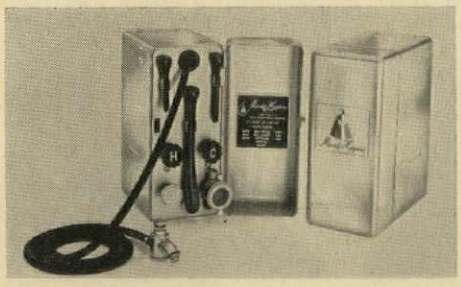
Proper underfloor air circulation is necessary in installations where high humidity can create expansion problems in "cushion-type" or "floating-type" hardwood floors. A new heavy-duty, molded rubber cove base featuring air vents allows these floors to "breathe." Vertical grooves in the back of each section of "Ventcove" allow air to circulate freely under floors. Product has a 3″ toe that completely covers perimeter expansion voids. Its all-rubber construction requires no painting, will not chip or rust. It is available in three colors. Special Products Div., Johnson Rubber Co., 222 Vine St., Middlefield, Ohio.



On Free Data Card, Circle **109**

New Device Replaces Bidet

New bathroom appliance not much larger than a tissue dispenser is designed to replace both the douche and the bidet. "Minute Hygiene" taps water directly from the bathroom supply, with hot and cold regulated by dials on the face of the appliance and by a finger-tip control at the end of the retractable 6′ hose. Accessories include a vaginal nozzle, two rectal nozzles, and a dispenser for medication or shampoo. Minute Hygiene may be installed in any convenient or unobtrusive location; it is presently being specified for residences, luxury apartments, and hotel rooms (where disposable nozzles are provided). Minute Hygiene Corp., 50 Broad St., New York 4, N.Y.



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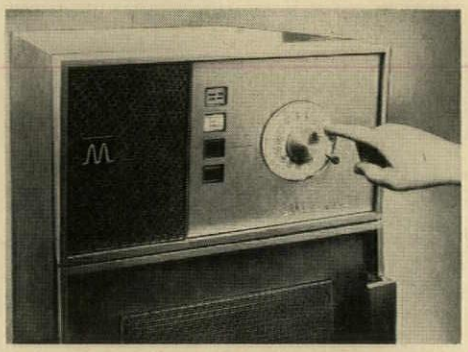

80-Second Oven

An oven that heats precooked, frozen, or refrigerated food to piping hot in a matter of seconds has been developed. The electronic oven, said to be the most powerful on the market, heats a steak in 80 seconds, a casserole in 60 seconds, a hamburger in 15 seconds. After placing food in the unit and closing oven door, operator dials a number (depending upon the type of food). When heating is completed, a panel light tells operator to remove food. Outside dimensions of the microwave oven are 26″ high x 20″ wide x 27″ deep. Micro-Dine Corp., 6425 Oxford St., Minneapolis 26, Minn.

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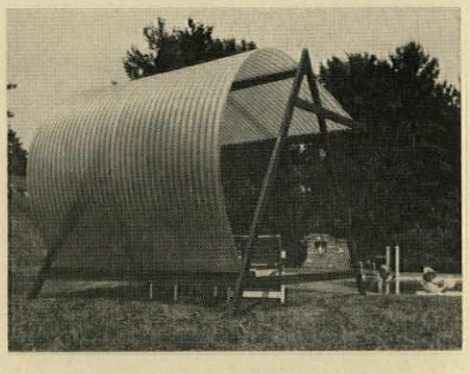


More Vinyl Panels

Monsanto Chemical Company and Butler Manufacturing Company announce joint marketing plans for a new line of vinyl building panels produced by Monsanto. The self-extinguishing translucent panels are available in corrugated, ribbed, or flat form, in several colors. They are 50½″ wide; standard lengths are 8′, 12′, and 16′, but can be almost any length. Monsanto Chemical Co., 445 Park Ave., New York 22, N. Y.

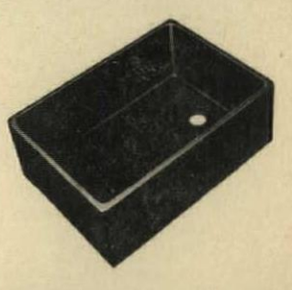
On Free Data Card, Circle **112**

DURCON® LABORATORY SINKS resist the corrosive effects of hot stuff . . . hot or cold! Hot solutions don't affect these handsome black sinks. They don't discolor or stain when handling acids, alkalis, salts, solvents and other laboratory reagents in the toughest kind of service.

Durcon sinks stand up to hard knocks without cracking or spalling. Our tests prove they resist the impacts of a 3-lb. steel ball dropped from heights of 6 to 9 feet . . . far greater abuse than ever encountered in lab service. One-piece construction eliminates troublesome joints and seams that trap liquids and cause seepage. Smooth coved corners and dished bottoms assure complete drainage, easy cleanup. And these sinks are virtually impermeable to liquids.

With all their outstanding features, Durcon sinks cost less than stone and porcelain sinks. And original cost is just the start. Still more savings . . . in freight and installation . . . result because Durcon sinks weigh 60% less than old-style sinks. One man can put a Durcon sink in place without mechanical aids. And save space, too! With a wall thickness half that of stone and porcelain sinks, Durcon sinks fit easily into cramped quarters.

Get all the facts on Durcon Lab Sinks. Call your Laboratory Furniture Manufacturer, or write us for Bulletin PF/5d.



DURCON LAB SINKS give you a complete selection—Table Sinks, End Sinks, Drainboard Sink Units, Double Compartment Sinks, Cylindrical Sinks, Cup Sinks and Troughs . . . in a wide range of sizes.

THE DURIRON COMPANY, INC., DAYTON, OHIO

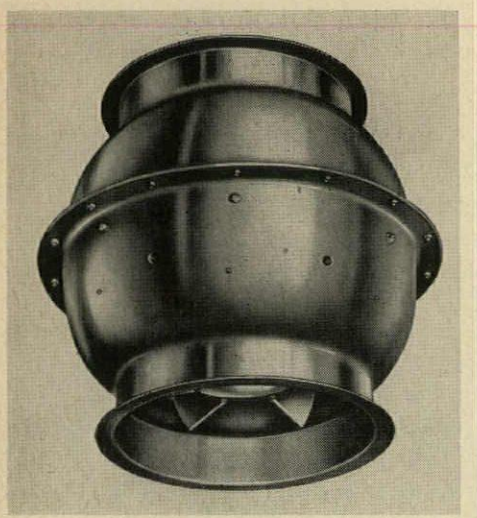
Represented exclusively in Canada by: SHAWINIGAN CHEMICALS LIMITED, Montreal, Que.; Weston, Ont.; Vancouver, B. C.

DURCO

AIR/TEMPERATURE

Eliminate Fan Rooms

Catalog 62A, 28 pages, details Loren Cook's complete line of power and gravity ventilators, fans, and louvers. Full information includes engineering and performance data, sound levels,



dimensions, applications. Of special interest is data on new "Centri-Vane" fan, which fits directly into air-moving duct systems and mounts at any angle, in any location. These units save valuable floor space by making large fan rooms unnecessary. The Loren Cook Co., 227 Depot, Berea, Ohio.

On Free Data Card, Circle **200**

Multipattern Diffusers

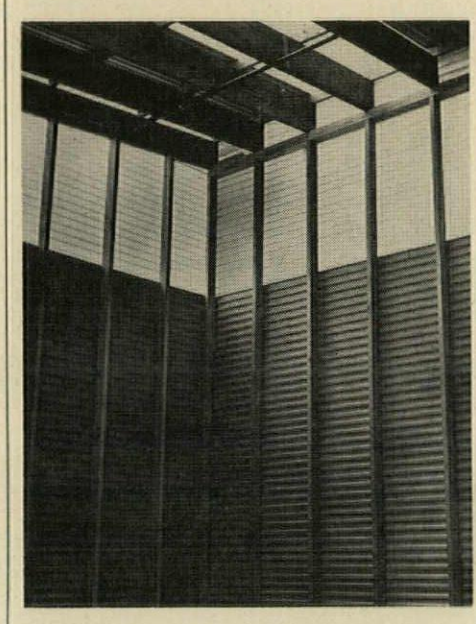
"Kno-Draft Series KS" air diffusers are presented in a comprehensive 24-page catalog. The diffusers are available in 15 different air-distribution patterns and in a variety of mounting arrangements to satisfy any airflow or structural requirement. Among the installation possibilities are flush-mounted units for standard installations, surface-mounted units for drop-collar installations, and snap-in or drop-in mounted units for tile ceilings. Complete engineering and specifying data are provided. Dept. PKS, Connor Engineering Corp., Shelton Rock Rd., Danbury, Conn.

On Free Data Card, Circle **201**

CONSTRUCTION

Vinyl Panels Rated Noncombustible

Barrett vinyl building panels became the first plastic structural building material to achieve a classification of "noncombustible" when they were re-

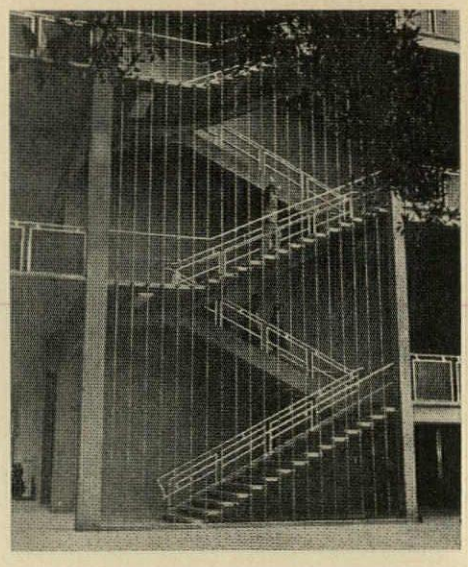


cently awarded a UL Fire Hazard Classification with flame-spread rating of 25. This new development will permit 100% use of the material for roofing and siding in commercial and industrial applications, whereas other plastic materials in similar construction have been restricted to 10-25% of the surface area. Bulletin, 4 pages, describes properties and advantages of Barrett vinyl panels, suggesting additional uses such as skylighting, partitions, canopies, etc. Barrett Div., Allied Chemical Corp., 40 Rector St., New York 6, N.Y.

On Free Data Card, Circle **202**

Prestressed Concrete

Manual on prestressed concrete, 60 pages, gives spans and loadings of 35 different pretensioned-concrete members in common use in the U. S. Sections include 4'-, 5'-, and 8'-wide double tees; three different channels; tee joists, keystone joists, giant tees for spans up to 110'; piling; tensile components; hollow-core plank; and solid plank. Specifications and connec-



tion details are included. Write (enclosing $4.75) to: Leap Associates, Inc., Consultants in Prestressed Concrete, Box 1053, Lakeland, Fla.

Steel in Schools

Modern Steel-Framed Schools, 40 pages, is a handsome review of the economic advantages of steel for school construction. Ten outstanding steel-framed schools are shown and discussed. Cost and construction data, plans, and details are included to provide a comprehensive picture of the structural and architectural features of each building. Discussing comparative costs of structural materials, the booklet states that difference in first cost is usually negligible and that other factors—such as differences in quality, durability, design flexibility, fire-resistance, speed of construction, aesthetic appearance, and ease of future alterations—must also be evaluated if true economy is to be achieved. American Institute of Steel Construction, Inc., 101 Park Ave., New York 17, N. Y.

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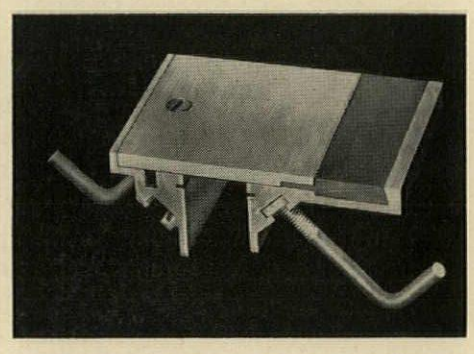
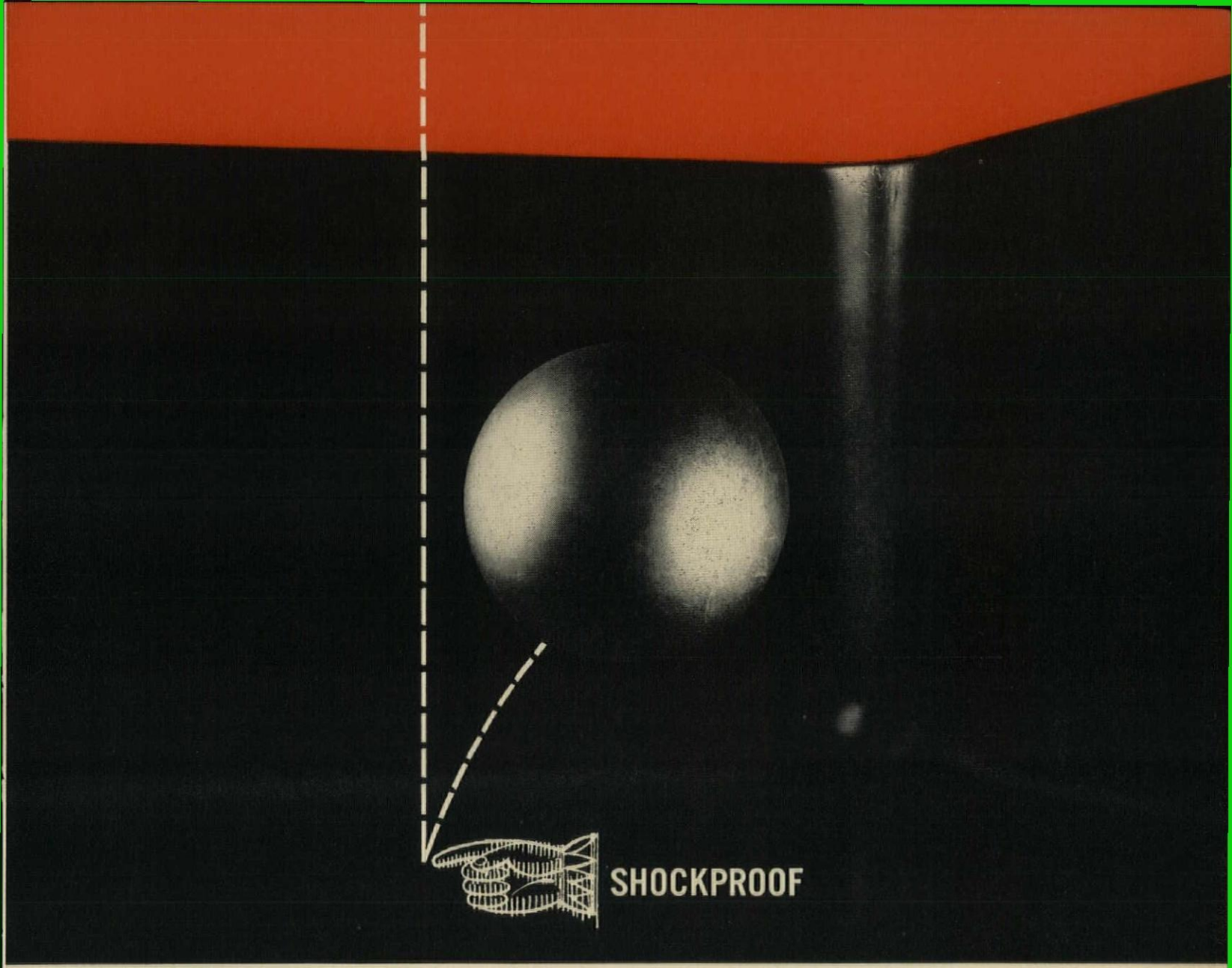


Expansion-Joint Covers

"E-L" expansion-joint covers of extruded aluminum are presented in new

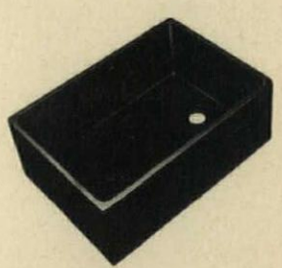


DURCON® LABORATORY SINKS can take it. As shown above, our quality control engineers drop a 3-lb. steel ball into Durcon sinks from heights of 6 to 9 feet. These tests prove Durcon resists impact blows far greater than those encountered in normal lab service.

Made of a modified epoxy resin, Durcon sinks stubbornly resist the corrosive effects of most chemicals—organic and inorganic acids, alkalis, salts **and** solvents. Hot solutions don't warp them. Nor do they support combustion. They're molded in one piece for extra strength. (No joints to cause leaks or trap liquids.) Smooth coved corners and dished bottoms assure complete drainage. And Durcon sinks are virtually impermeable to moisture for life.

These sinks are easy to install. They weigh about 60% less than stone sinks of comparable size . . . one man can put them in place without mechanical aids. Wall thickness is just half that of old-style sinks permitting installation of larger capacity sinks in cramped quarters.

Get the complete facts on Durcon Lab Sinks. They actually cost less than stone or porcelain sinks. Contact your nearest Laboratory Furniture Manufacturer, or write us for Bulletin PF/5d.



DURCON LAB SINKS give you a complete selection—Table Sinks, End Sinks, Drainboard Sink Units, Double Compartment Sinks, Cylindrical Sinks, Cup Sinks and Troughs . . . in a wide range of sizes.

THE DURIRON COMPANY, INC., DAYTON, OHIO

Represented exclusively in Canada by: SHAWINIGAN CHEMICALS LIMITED, Montreal, Que.; Weston, Ont.; Vancouver, B. C.

DURCO

8-page catalog. A range of styles answers the special requirements for floors, ceilings, and interior and exterior walls. Four different patterned plates, in addition to plain plate, are available; finishes include mill or satin finish, plus a variety of color finishes to harmonize with tile or terrazzo. Extruded Louver Corp., Foot of Center St., Williamsport, Pa.

On Free Data Card, Circle **204**

DOORS/WINDOWS

Steel Door Data

Fact File gives information on steel doors for any application—residential, commercial, industrial, and monumental. Each of the nine members of the Steel Door Institute is represented by a product folder. These are: American Welding & Manufacturing Co.; Ceco Steel Products Corp.; Dusing & Hunt, Inc.; Fenestra, Inc.; Kewanee Manufacturing Co.; The Steelcraft Manufacturing Co.; Truscon Division, Republic Steel Corp.; United Steel Fabricators, Inc.; and Virginia Metal Products, Inc. Also included are two Department of Commerce voluntary standards of the trade, and a proposed American Standard *Nomenclature for Steel Doors and Steel Door Frames.* Steel Door Institute, 2130 Keith Building, Cleveland 15, Ohio.

On Free Data Card, Circle **205**

Glass Tinting Reduces Heat, Glare

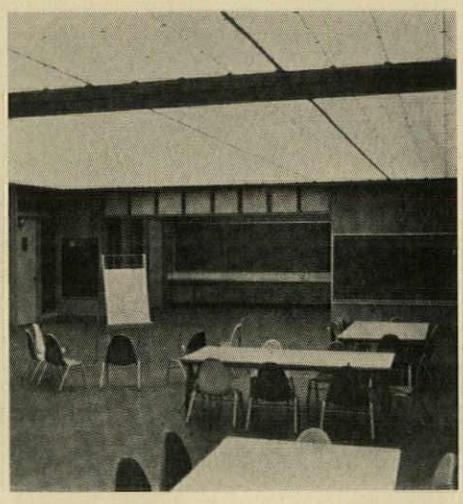
Folder, 4 pages, documents the reduction of heat, fading, and glare caused by the sun's rays when windows are tinted with Du Pont's "Sun-X." Diagrams indicate how light and heat transmittances are affected by the various glass-tinting formulas. Calculations for heat transfer are based on information developed from ASHRAE test data. Sun-X Glass Tinting International, Inc., P.O. Box 6565, Houston 5, Texas.

On Free Data Card, Circle **206**

ELECTRICAL EQUIPMENT

School Lighting

New 16-page technical publication, entitled *School Lighting,* has been issued by GE's Large Lamp Department. All aspects of school lighting are covered —need, benefits, economics, techniques, quantity, quality, and lamps. Special sections are devoted to the lighting of such areas as classrooms,



auditoriums, libraries, indoor and outdoor sports areas, and corridors. Also presented are solutions to specific problems such as lighting for TV viewing, audio-visual activities, and nighttime protection of people and property. Inquiry Bureau, Dept. TP-102, General Electric Co., Nela Park, Cleveland 12, Ohio.

On Free Data Card, Circle **207**

IES Report on Church Lighting

Church Lighting, prepared by a technical committee of the IES, is a comprehensive 34-page report on all aspects of the subject. Unique among IES publications, this is the first that is devoted to illumination for atmosphere and mood as well as seeing. The report discusses various spaces of church and synagogue—worship area, altar, vestibule, parish hall, classroom, clergyman's study, stained-glass windows, outdoor areas. Attention is given to lighting systems, illumination levels,

particular religious requirements (the Ark and Torah, the Stations of the Cross, the baptismal font), and specific lighting designs. Representative interiors illustrate the text. Write (enclosing $1.50) to: Publications Office, Illuminating Engineering Society, 345 E. 47 St., New York 17, N.Y.

INSULATION

Acoustical Ceiling Also Distributes Air

A complete package of information on the new Armstrong "Ventilating Acoustical Ceiling" has been compiled for architects and engineers. Basic operation of the ceiling system is fully explained—small perforations extend through the acoustical material, providing a means through which air is introduced into a room. A major bene-

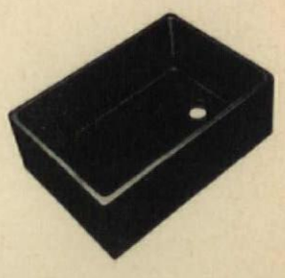
Continued on page 100

DURCON® LABORATORY SINKS are made in one piece. No joints, no seams to trap liquids. No joints, no seams to pull apart and cause troublesome seepage.

And are these sinks tough! In tests, they've withstood the battering impacts of a 3-lb. steel ball dropped from heights of 6 to 9 feet. Laboratory chemicals—acids, alkalis, salts, solvents and other commonly-used reagents—can't stain or discolor them . . . even at hot temperatures. Smooth coved corners and dished bottoms speed all liquids straight to the drain . . . make cleanup easy and thorough. And, being virtually impermeable to moisture absorption, Durcon sinks stay germfree.

With all their advantages, Durcon sinks cost less than stone or porcelain sinks. Their weight advantage—60% less than old-style sinks—adds more savings in freight and installation costs. One man can easily install a Durcon sink without mechanical aids. And, because Durcon sinks have a wall thickness just half that of stone or porcelain sinks, they don't need as much space as others of the same capacity . . . easily fit in cramped quarters.

Get all the facts on Durcon Lab Sinks. Call your Laboratory Furniture Manufacturer, or write us for Bulletin PF/5d.



DURCON LAB SINKS give you a complete selection—Table Sinks, End Sinks, Drainboard Sink Units, Double Compartment Sinks, Cylindrical Sinks, Cup Sinks and Troughs . . . in a wide range of sizes.

THE DURIRON COMPANY, INC., DAYTON, OHIO

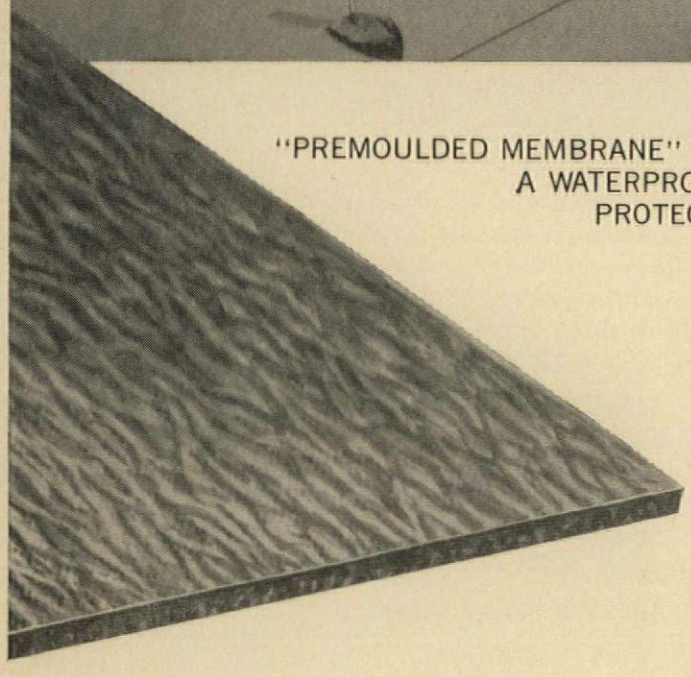
Represented exclusively in Canada by: SHAWINIGAN CHEMICALS LIMITED, Montreal, Que.; Weston, Ont.; Vancouver, B. C.

DURCO

For more information, turn to Reader Service card, circle No. 340

NOW THE BEST IS EVEN BETTER!

NEW . . .



"PREMOULDED MEMBRANE" VAPOR SEAL WITH PLASMATIC CORE PROVIDES A WATERPROOF, VAPORPROOF SHIELD THAT PERMANENTLY PROTECTS THE STRUCTURE FROM VAPOR MIGRATION AND CASUAL SEEPAGE.

PREMOULDED MEMBRANE Vapor Seal provides an inviolate shield that completely isolates the structure from the site. It is supplied in easy-to-handle 48″ x 8′ sheets and rolls 48″ wide and 50′ in length, that may be installed quickly and easily directly over the tamped grade and does not require gravel fill or a costly "bed of sand." Sheets are merely placed in position and the joints are sealed . . . provides a permanent, monolithic vapor seal without voids or open seams.

Properly installed, PREMOULDED MEMBRANE Vapor Seal completely and permanently blocks every possible-entrance through which moisture could enter the structure . . . including all utility entrances. This *complete* shield is extremely important . . . for a vapor seal, just like a roof, is practically useless if even one or two voids exist.

*WVT only 0.0048**

IMPROVED

SEALTIGHT® Premoulded Membrane TRADEMARK

VAPOR SEAL with PLASMATIC CORE TRADEMARK

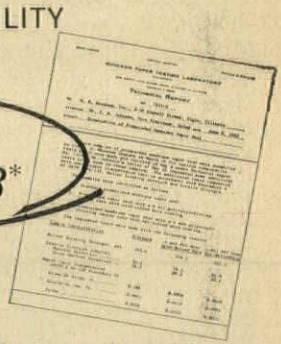
PREMOULDED MEMBRANE, the original *True* Vapor Seal, has now been made even better. The key to this improvement is the PLASMATIC Core that consists of a Polyvinylchloride sheeting suspended mid point in the bituminous core. The entire PLASMATIC Core is then sealed under heat and pressure between two dry liners of asphalt impregnated kraft or felt to which is bonded an independent weather coating during manufacturing process.

PREMOULDED MEMBRANE Vapor Seal now provides a water vapor transmission rating of only 0.0048 in a new lighter-weight, easier-to-handle material. Flexibility of the new improved PREMOULDED MEMBRANE Vapor Seal now permits fabrication in 48″ by 8′ sheets or rolls 48″ wide by 50′ in length.

The effective function of a structure and almost all of the products used within is dependent on the positive elimination of moisture migration into the structure . . . insist on the *best* vapor seal available . . . PREMOULDED MEMBRANE Vapor Seal with PLASMATIC CORE. Ideal for both vertical and horizontal application in all types of construction including slab-on-grade, basement and crawl space.

PROVIDES THE EFFICIENCY AND DURABILITY OF ASPHALT WITH ADDITIONAL FLEXIBILITY AND STRENGTH

*New low WVT 0.0048**



**. . . grains/per square foot/per hour as measured in accordance with ASTM designation E96-53T, Procedure A. Tests conducted by the Chicago Paper Testing Company, Chicago, Illinois . . . copies available on request.*

The New PREMOULDED MEMBRANE Vapor Seal was also tested for both tensile and bursting strength. Tests proved that the new PREMOULDED MEMBRANE Vapor Seal not only offers greater strength but also provides an additional ability to withstand elongation. After the tests were conducted to the extreme point necessary to rupture the outer liners of the samples the PLASMATIC Core continued to elongate 50 to 75% more than the original length of the test specimens.

for complete information request your free copy of the new Catalog No. 753.

SEALTIGHT®
PRODUCTS FOR BETTER CONCRETE CONSTRUCTION

W.R. MEADOWS, INC.
9 KIMBALL STREET
ELGIN, ILLINOIS

Continued from page 94

fit is the reduction of air-conditioning costs through the elimination of air diffusers and a large amount of supply duct work. Case histories of actual installations illustrate other advantages of the system—uncluttered ceiling design, no ceiling maintenance problems, savings in remodeling time and expense, efficient and uniform air distribution. Dept. IS, Armstrong Cork Co., Lancaster, Pa.

On Free Data Card, Circle **208**

SPECIAL EQUIPMENT

Chalkboard Samples

Comprehensive sample kit of its major chalkboard and bulletin-board products is available from New York Silicate Book Slate Company. In the 2"-thick book, samples are mounted in such a way as to permit viewing of surface, sides, and backing. Color swatches and specifications are included, as are chalk and eraser. Write to: New York Silicate Book Slate Co., Inc., 600 Old Country Rd., Garden City, N. Y.

Elevators, Escalators

New catalog on vertical transportation equipment is available. The 24-page booklet describes passenger elevators of all types—from high-speed, completely automatic and electronically controlled systems for large buildings to compact elevators for private residence. Five types of freight elevators are covered. Elevator cars and entrances, escalators, and dumbwaiters are also included in the extensive coverage. Otis Elevator Co., 260 11th Ave., New York 7, N. Y.

On Free Data Card, Circle **209**

Science Lab Furniture

New 212-page catalog, *Wood Laboratory Equipment for College and University Science Buildings,* is available. Illustrated and described are Kewaunee's student tables for major science subjects, storage and display cases, instructor's demonstration tables, shop equipment, additional equipment for science laboratories, fume hoods, and service and electrical fixtures. Write to: Kewaunee Manufacturing Co., 3009 W. Front St., Statesville, N. C.

PROGRESSIVE ARCHITECTURE
NEWS REPORT

REINHOLD PUBLISHING CORPORATION
430 PARK AVENUE NEW YORK 22, N.Y.
Publisher.....D. Bradford Wilkin
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H&K
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(Send for Grille Catalog)

H&K
Perforated Decorative MATERIALS
(Send for Catalog 75)

Illustrations shown in reduced size

Harrington & King has been serving architects for 75 years with a wide selection of classic and modern designs in grilles and decorative materials.

H & K grilles are furnished in accordance with your specifications . . . in practically any type and gauge of metal . . . and in the finish desired. Perforations are clean and burr-free, margins are in alignment, and each grille is leveled and inspected before shipment.

H & K decorative patterns, from a vast selection of existing dies, are serving architects in many new and unusual ways. If your plans call for perforated materials, depend on H & K!

FIND NEAREST H & K AGENT IN THE 'Yellow Pages'

Listed Under "Grilles"

THE Harrington & King PERFORATING CO. INC.

Chicago Office and Warehouse
5675 Fillmore St., Chicago 44, Ill.

New York Office and Warehouse
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For more information, turn to Reader Service card, circle No. 351

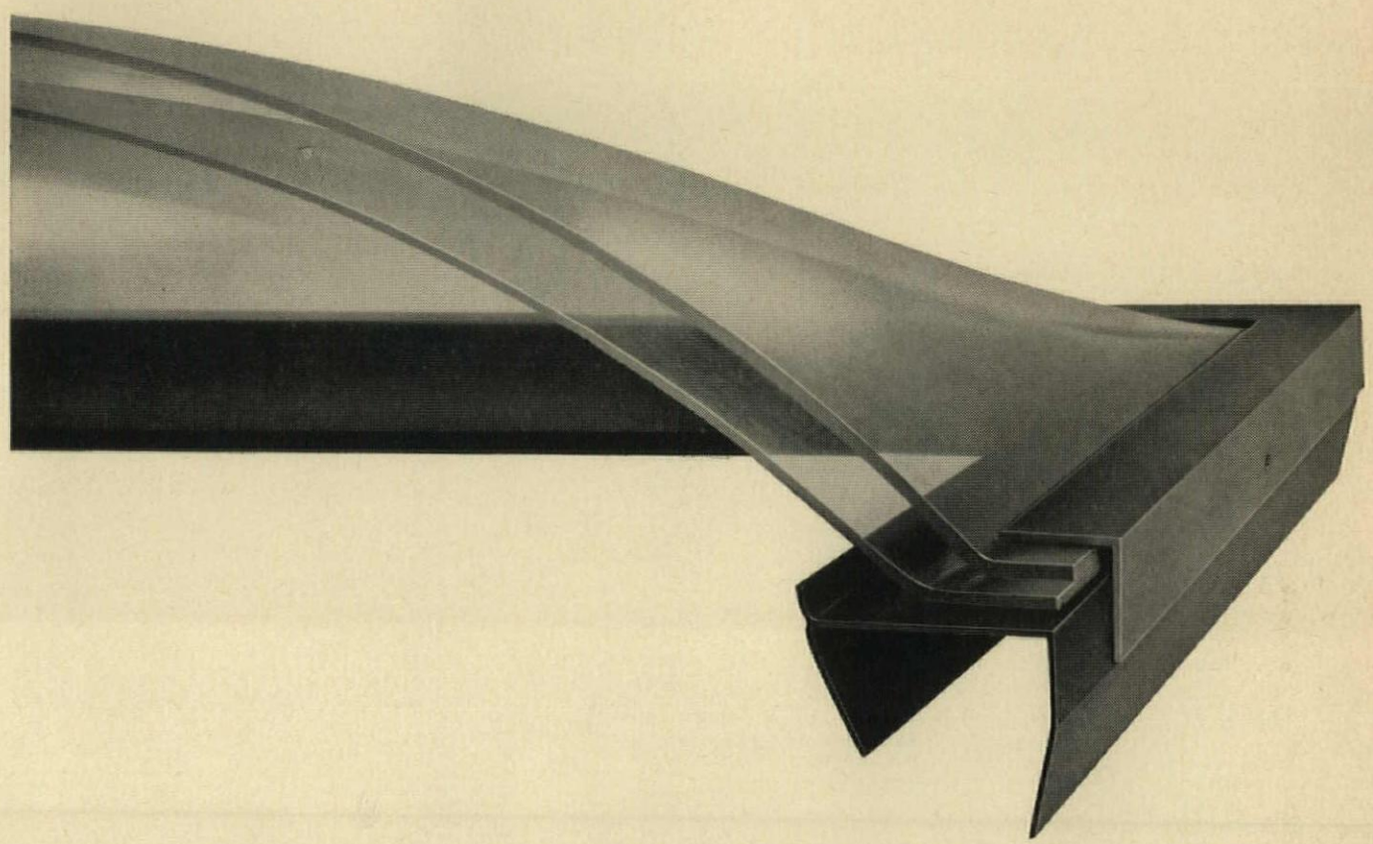
Planning a school? Get this free
Language Laboratory Planning Kit

Complete details on space requirements for language booths, teacher's console, language lab office and tape preparation room, illumination, acoustics, wiring requirements. Kit includes specifications of "Monitor" language lab equipment and furniture—used in hundreds of schools in the U.S. and more than 65 nations around the world. Write to

ELECTRONIC TEACHING LABORATORIES
5034 Wisconsin Avenue, N.W. • Washington 16, D.C.
"Language Laboratory Standard of the World"

For more information, turn to Reader Service card, circle No. 408

NEW FROM JOHNS-MANVILLE



Corrulux® Double-Domes for better daylighting

ALL-ACRYLIC DOMES ARE PREFABRICATED AND FACTORY-SEALED . . . SPECIAL FRAME DESIGN ALLOWS UP TO 12% MORE DAYLIGHTING AREA

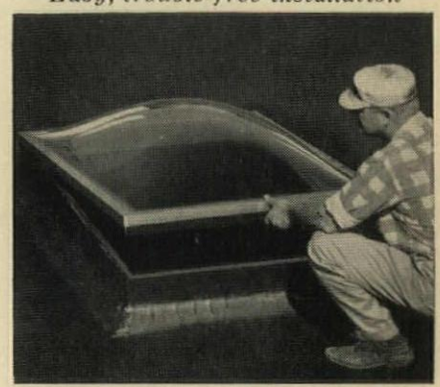
Now—a new unit with a special frame design that affords as much as 10-12% more daylighting area! J-M Corrulux Double-Domes are available in clear acrylic or in 3 shades of white for various light transmission values and insulation requirements. They are particularly suited to the low-pitched roofs favored for modern school, supermarket and factory buildings . . . and also have special residential applications.

On-site assembly is no longer a problem. The new PVC (polyvinyl chloride) frame is rigid and durable, yet flexible enough to adjust to curb openings that frequently deviate from specified dimensions. Therefore, each unit can be installed factory-sealed.

In service, weathering and age leave PVC functionally intact. The domes proper are of time-tested acrylic plastic that has proved itself in every climate zone for many years.

For more information about these adaptable new daylighting units, write for Brochure CXI-9A. Address Johns-Manville, Box 158, Dept. PA9, New York 16, N. Y. In Canada: Port Credit, Ont. Cable: Johnmanvil.

Easy, trouble-free installation



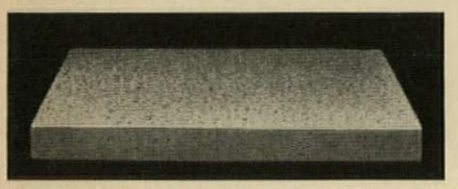
Available in a curb type, as shown above, or in a flush type

JOHNS-MANVILLE

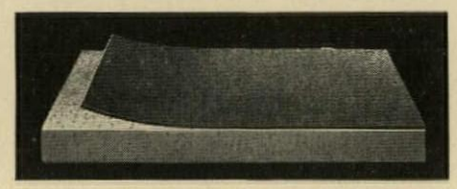
For more information, turn to Reader Service card, circle No. 359

"Roofmate FR makes this the best roof you've ever worked on"

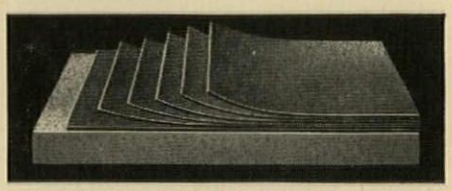
Here are the simple steps to a better built-up roof using Roofmate FR and coated base sheet



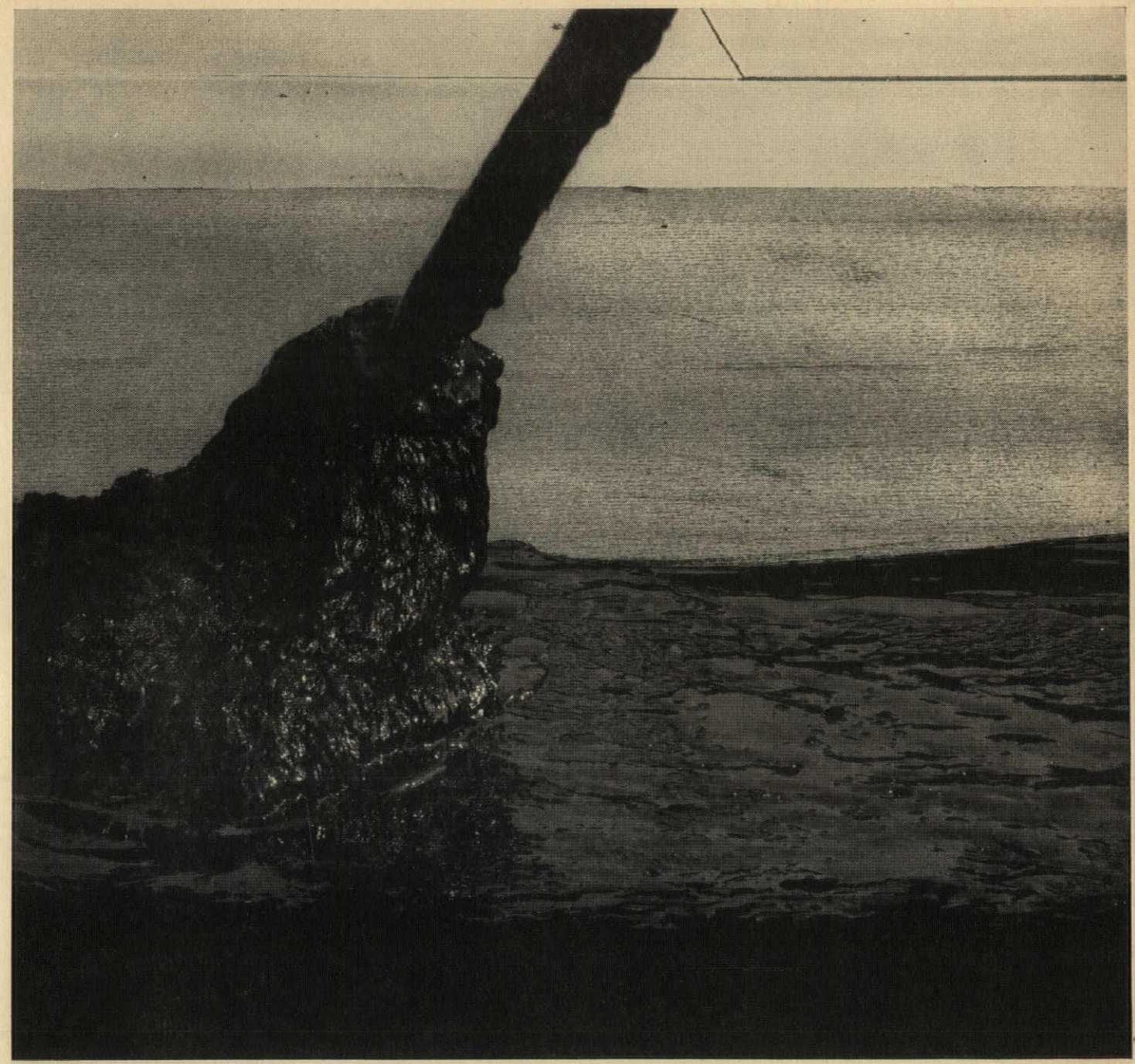
1. Roofmate FR is laid on concrete, gypsum, wood or metal structural deck over strip-mopped coat of hot asphalt.



2. It is covered with an approved coated base sheet. Next layer of hot asphalt bonds base sheet to Roofmate FR.



3. Roof is completed by building up standard roofing felts in conventional manner, either by hand or by machine.



"What a build-up!"

Matter of fact, this *is* the best insulated roof yet—right down where it counts! Based on Roofmate® FR roofing insulation, a new system builds up this superior roof *faster*.

Roofmate FR flame-retardant polystyrene foam board has a high-density skin, good impact resistance and compressive strength. It can even span the flutes in a metal deck. Closed-celled and nonabsorbent, Roofmate FR is unaffected by water. So it has permanently high insulating value.

When you specify Roofmate FR, the roofer still works with conventional materials (see steps at left). Using coated base sheets eliminates the disadvantages of unprotected moisture-absorbent felts for the first ply and prevents wrinkling at the insulation joints. Roofmate FR is used as the vapor barrier. These roofs are bondable, of course.

Extremely lightweight Roofmate FR saves preparation time and trouble, too. It comes in thicknesses for most roofing applications. To get more data and specifications, write us in Midland, c/o Plastics Sales Dept. 1302EB9.

THE DOW CHEMICAL COMPANY DOW Midland, Michigan

For more information, turn to Reader Service card, circle No. 337

specify.. Cabot's

Enhance the beauty of REDWOOD

inside . . .

House in Los Altos, Calif.
Architect: Bolton, White and Jack Herman, San Francisco
Paneling and woodwork finished with Cabot's Stain Wax.

outside . . .

Redwood siding and trim stained with Cabot's Creosote Stain.

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REDWOOD

Architects and builders know that Cabot produces the ideal finishes for Redwood. • Easy to apply and economical • Accent the texture and grain

For exteriors:

Your choice of finishes — clear, natural, gloss, driftwood or stains in 35 distinctive colors.

For interiors:

Stain, wax and seal in one easy operation with Cabot's Stain Wax

SAMUEL CABOT INC. 928 S. Terminal Trust Bldg., Boston 10, Mass.

Please send your "Redwood Staining" Brochure

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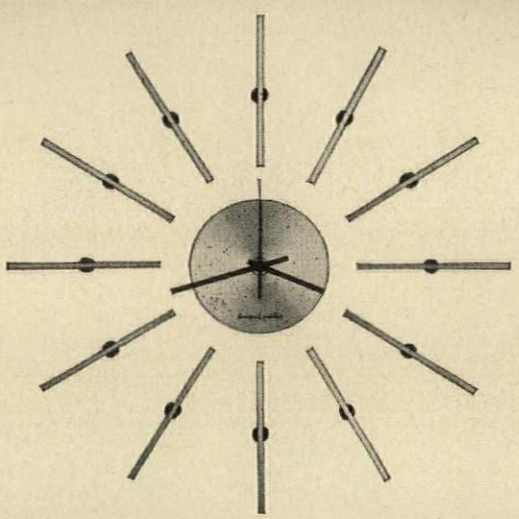
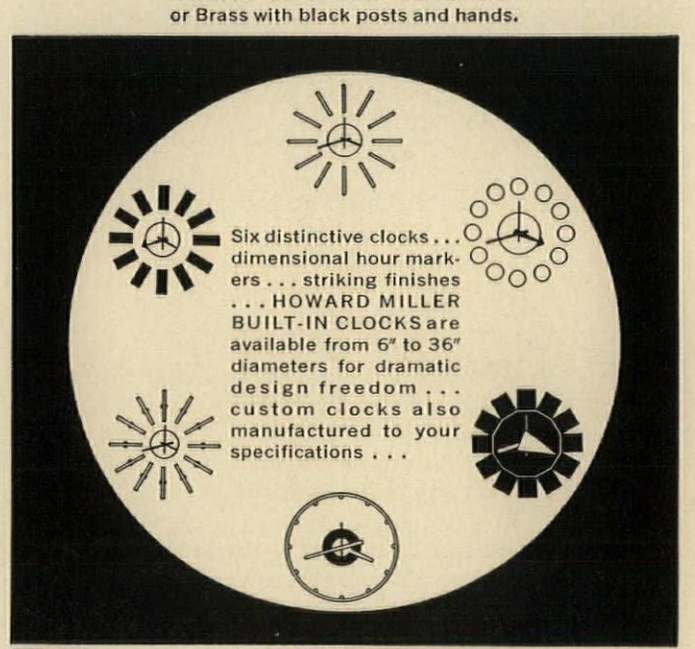
BUILT-IN CLOCKS
BY
HOWARD MILLER
DESIGNED BY
GEORGE NELSON



No. 6774 18" or 26½" dia. Chrome or Brass with black posts and hands.



for your catalog write:

HOWARD MILLER CLOCK COMPANY
BUILT-IN DIVISION / ZEELAND, MICHIGAN

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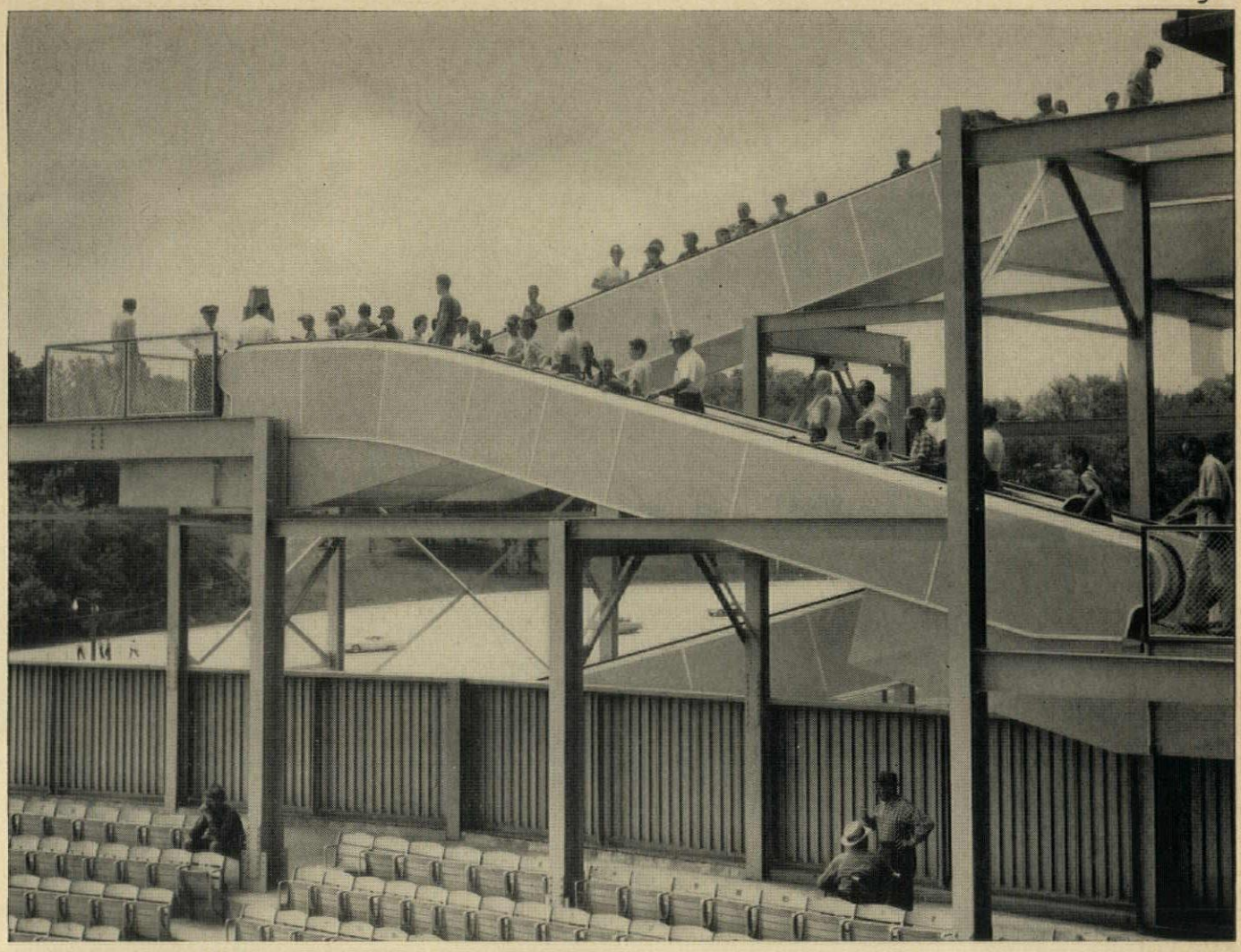

SPEEDRAMP PASSENGER CONVEYOR SYSTEMS

save sport fan's energy for the game!

The heart taxing climb from ground level to mezzanine and upper deck seating and back again has been eliminated for baseball fans at County Stadium, Home of the Milwaukee Braves, Milwaukee, Wisconsin. Four SPEEDRAMP Passenger Conveyors carry sports fans including elderly persons and those with slight heart conditions conveniently, effortlessly, rapidly and efficiently over the 50 foot climb from ground level to mezzanine and upper deck. The 42-inch wide SPEEDRAMP "Moving Sidewalks" transport 7,200 persons per hour between levels.

This is another example of SPEEDRAMP and SPEEDWALK Passenger Conveyor Systems solving pedestrian "walking" problems. Investigate the advantages of efficiency, speed, safety, convenience, minimum maintenance and showcase beauty inherent in Stephens-Adamson "Moving Sidewalks," as the ideal solution to your pedestrian traffic movement problems. Contact Stephens-Adamson today . . . the leader in the field of passenger conveyor systems.

WRITE TODAY FOR BULLETIN 1060

S-A
ENGINEERED BULK HANDLING SYSTEMS
MATERIALS HANDLING PRODUCTS
SPEEDWALK PASSENGER CONVEYORS
SEALMASTER® BALL BEARING UNITS
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PLANTS LOCATED IN: LOS ANGELES, CALIF. • CLARKSDALE, MISS.
BELLEVILLE, ONT. • MEXICO, D.F.

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DUKANE

DEPTH OF SERVICE

on-the-spot sound and communication system consultation, installation supervision and follow-up service!

Since 1922, DUKANE has built a coveted reputation for electronic excellence, beauty, dependability and long life in sound and communication systems. DUKANE Depth of Line and Depth of Experience is backed by Sales Engineering Distributor Depth of Service.

A call to your local DUKANE Distributor starts the ball rolling. After a consultation with you regarding your sound and communication system needs, the DUKANE Distributor will make his recommendations to provide the most efficient system consistent with requirements and budget.

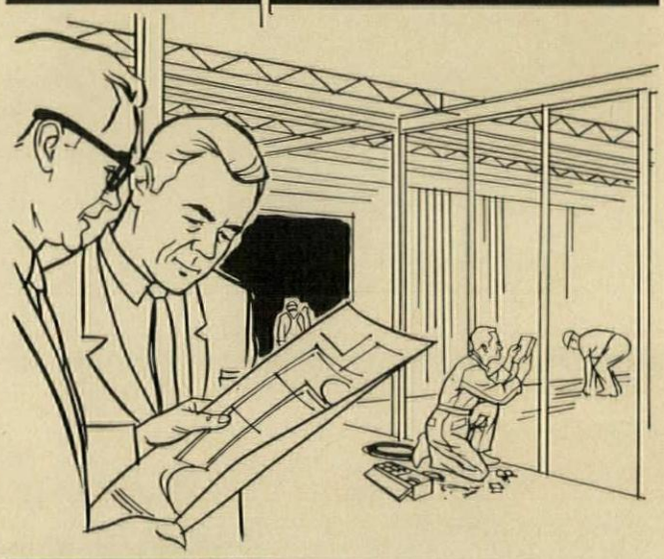
After specification, he follows and supervises the sound and communication system installation to completion. His training assures you proper installation for complete satisfaction.

Keeping the system operating to your customer's or client's complete satisfaction over the years is a responsibility your DUKANE Distributor assumes in a service contract. He also sees that customer personnel are efficiently schooled in operation and usage of the system.

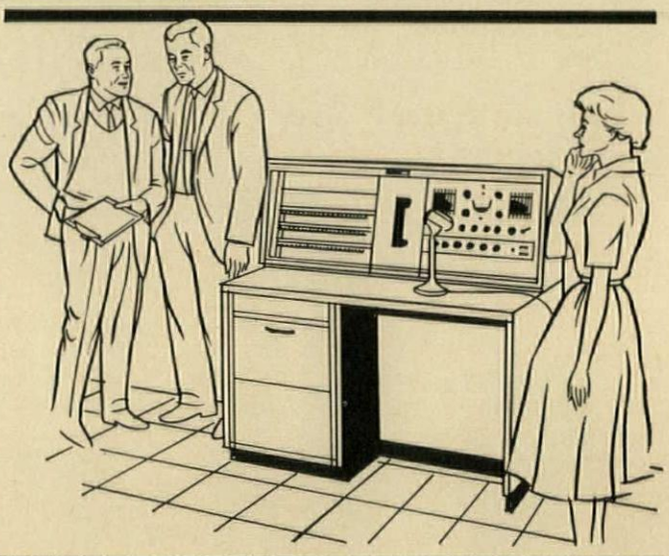
The proof of his experience is the countless number of DUKANE Sound and Communication System installations which are turning profitable and high efficiency records in hospitals, schools, business, industry, churches, sports and recreation areas, hotels, motels, etc. 300 DUKANE Sales Engineering Distributors nationwide assure "phone call" nearness for consultation and service.

CONSULTATION SERVICE

INSTALLATION SUPERVISION



FOLLOW-UP SERVICE



WRITE TODAY FOR FULL DETAILS ON DUKANE DEPTH OF LINE IN SOUND AND COMMUNICATION SYSTEMS

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CITY_____ STATE_____

DUKANE CORPORATION
COMMUNICATIONS SYSTEMS DIVISION
DEPT. PA-92 / ST. CHARLES, ILLINOIS

For more information, turn to Reader Service card, circle No. 339

Lead . . . the toughest sound barrier of them all

In sound studio and machine shop alike, the problem of sound and sound attenuation is getting increasing attention. Personnel fatigue and higher accident rates have been positively correlated to high noise levels. Today the application of lead as a noise attenuator deserves the investigation of all concerned with worker productivity and company profits.

Often, noise is effectively damped, isolated, by literal curtains of lead—flexible, roll-up partitions impregnated with lead in powdered form.

In other applications, sheets, coatings, or castings of lead have tamed down clatter and roar to a decorous hush. Lead pads under heavy machines soak up vibration at its very source.

In whatever form it's used, lead has proved more effective in reducing sound transmission than any other building material commonly used today. Surprisingly—but logical on reflection—this means that lead is *lighter*, packs more sound-proofing talent pound-for-pound, is much more economical of space.

If you have a sound-control problem—any kind—by all means look into lead. For facts, figures, and technical help, write Lead Industries Association, Inc., Dept. N-9, 292 Madison Avenue, New York 17, New York.

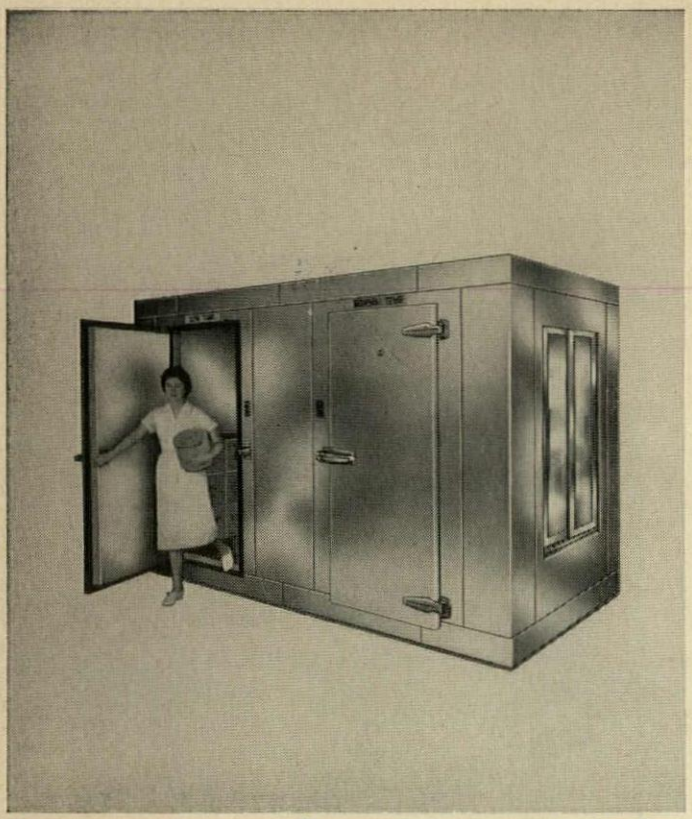
3288

LEAD INDUSTRIES ASSOCIATION, INC.

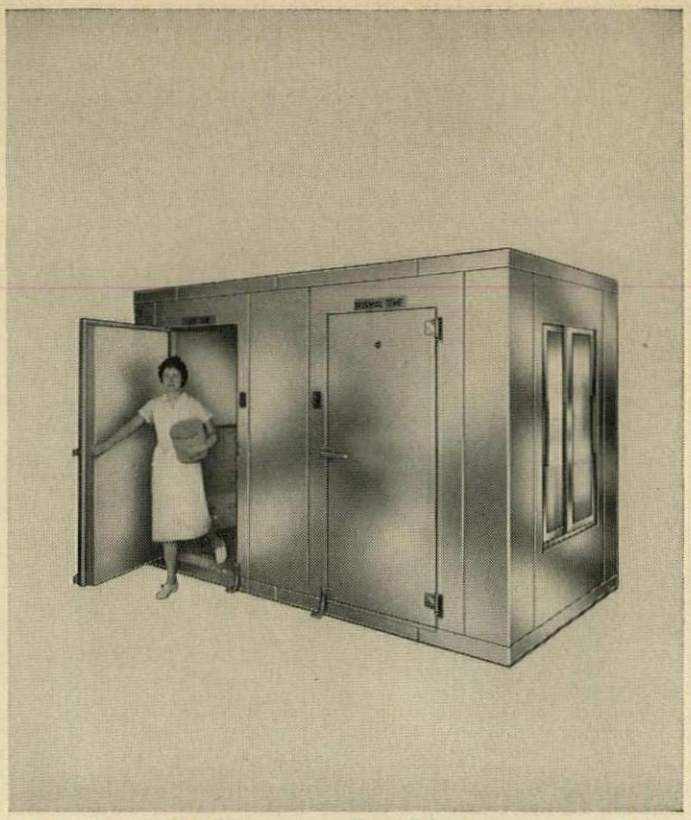
292 Madison Avenue, New York 17, New York

Look Ahead with Lead

For more information, turn to Reader Service card, circle No. 363



This was the world's most advanced design.



Until we made this one.

Bally Walk-in Coolers and Freezers are now made with science's new wonder insulation . . . Rigid Urethane "foamed-in-place"

The tremendous advantages of this new insulation represent a major design advancement . . . one that obsoletes all conventional insulated Walk-Ins, both prefabricated and built-ins. ◆ With 97% closed cells it cannot absorb moisture . . . maintains forever peak efficiency, indoors or outdoors ◆ Has double the insulating value . . . Bally 4" urethane equals 8½" of conventional insulation. Standard models ideal for use as minus 30° freezers ◆ Urethane, poured as a liquid, foams in place and while rigidizing binds tenaciously to the metal for great strength. Eliminates need for structural members. Replaces that space with highly efficient insulation ◆ Lightweight urethane and new construction reduce weight to one-third for tremendous freight savings . . . make erection fast and easy ◆ Foamed door is extremely lightweight, to open and close with little effort. Unique magnetic gasket provides positive continuous seal ◆Thinner walls increase usable inside space ◆ Fire-retardant.

Your choice of Aluminum or Galvanized as standard finishes. Sections have Bally's patented Speed-Lok for quick and accurate assembly. Easy to add sections to increase size . . . equally easy to disassemble for relocation. Hermetically sealed refrigeration systems eliminate installation problems . . . drastically reduce service costs.

Write for Free Architect's Fact File, complete with new Specification Guide, descriptive literature and technical booklet.

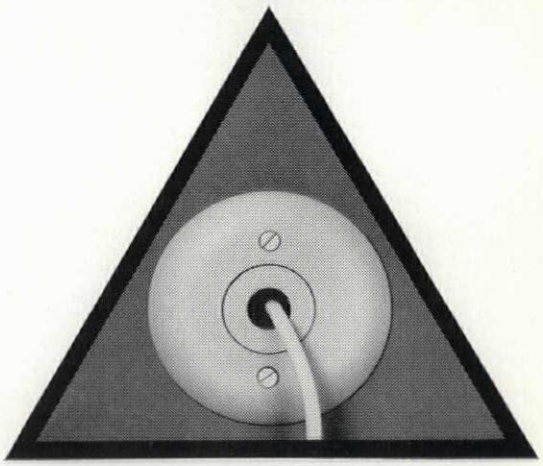
Bally Case and Cooler, Inc. Bally, Pennsylvania

For more information, turn to Reader Service card, circle No. 329

For more information, circle No. 332➤

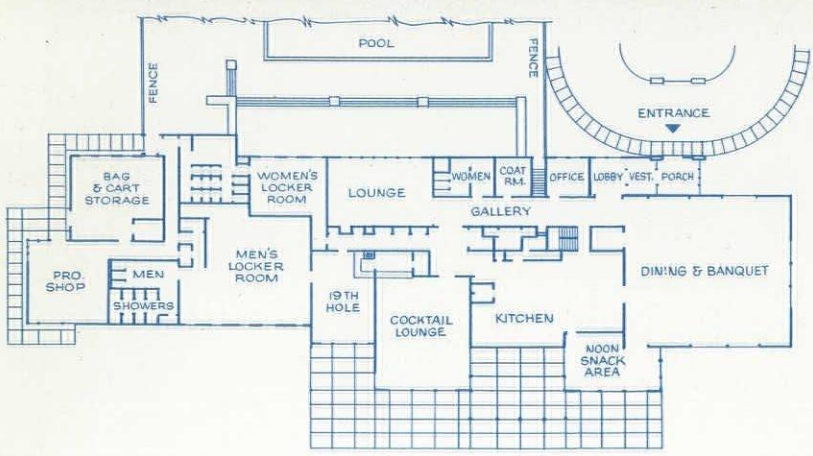
The PRINCESS phone, stylish and compact, adds a charming note of luxury and convenience in this dressing room. For help in telephone-planning your homes, call your local Bell Telephone Business Office and ask for a Communications Consultant. See Sweet's Light Construction File, 11c/Be, for other residential telephone installation ideas.

PROVIDE *for telephone convenience and homes become more livable, more salable. Built-in telephone outlets with concealed wiring protect interior beauty, offer flexible telephone service for a family's present and future needs.*



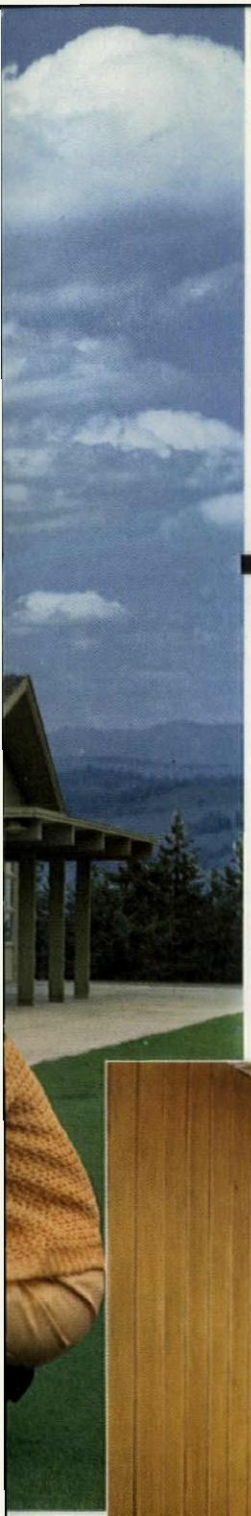
Bell Telephone System

For more information, turn to Reader Service card, circle No. 325



WEST COAST DOUGLAS FIR
WEST COAST HEMLOCK
WESTERN RED CEDAR
SITKA SPRUCE
WHITE FIR

ARCHITECTS: William J. Bain & Harrison Overturf, A. I. A.
F. M. Smith, Jr., Associate Architect



MODERN DESIGN Uses WEST COAST LUMBER

An interesting wall pattern is developed with the vertical application of ¾" x 10" West Coast Hemlock bevel siding in the club's cocktail lounge.

A variety of sizes and grades of Coast region West Coast Lumber was used to create a harmoniously rustic atmosphere for this Everett, Washington golf and country club.

Constructed in two stages to meet the club's financial capabilities, the completed clubhouse offers facilities for the membership's family enjoyment of golf and swimming, then serves equally well as a social center for both formal and informal gatherings.

Paneling in the social rooms are of West Coast Hemlock and Western Red Cedar, applied to a hemlock framework. Interesting grain patterns and the natural, beautiful colors of these species provide a warm welcome. Equally important, the ease of upkeep saves time and eliminates the need for redecorating for years to come.

Your design objective is reached easily and simply through the use of a variety of sizes and grades available in Coast region West Coast Lumber. Ask your retail lumber dealer. He is your dependable source for planning information and supply.

Technical West Coast Lumber Information:
Joists: 2" x 10", 2" x 12" West Coast Hemlock.
Wall Framing: 2" x 4" West Coast Hemlock.
Beams: 7" x 17⅞", 7" x 21½", 9" x 17⅞", 11" x 17⅞", 9" x 19½", 5¼" x 13" glue laminated West Coast Douglas Fir.
Roof Trusses: 64' and 60' widths made of 2"x12", 2"x8" West Coast Douglas Fir.
Roof Decking: 3" x 6" tongue and groove, end matched West Coast Douglas Fir. 4" x 6" tongue and groove Western Red Cedar exposed in dining room.
Panelings: 1"x6" Western Red Cedar, ¾"x10" West Coast Hemlock bevel siding.
Siding: Western Red Cedar ¾" x 10" bevel siding, 1" x 10" boards, 1" x 10" boards with 1" x 3" battens and 1" x 10" reverse board and batten.
Fencing: 1" x 3" Western Red Cedar spaced 1" applied to 2" x 4" West Coast Douglas Fir rails and 4" x 6" posts around swimming pool.
Millwork: Fir and Hemlock.
Lockers: West Coast Hemlock.
Exterior Finish: Penetrating stain.
Building Area: 86'-8" x 272'-4" (16,570 sq. ft.). Basement: 9,455 sq. ft. Terrace: 8,000 sq. ft. Swimming pool: 30' x 75'.

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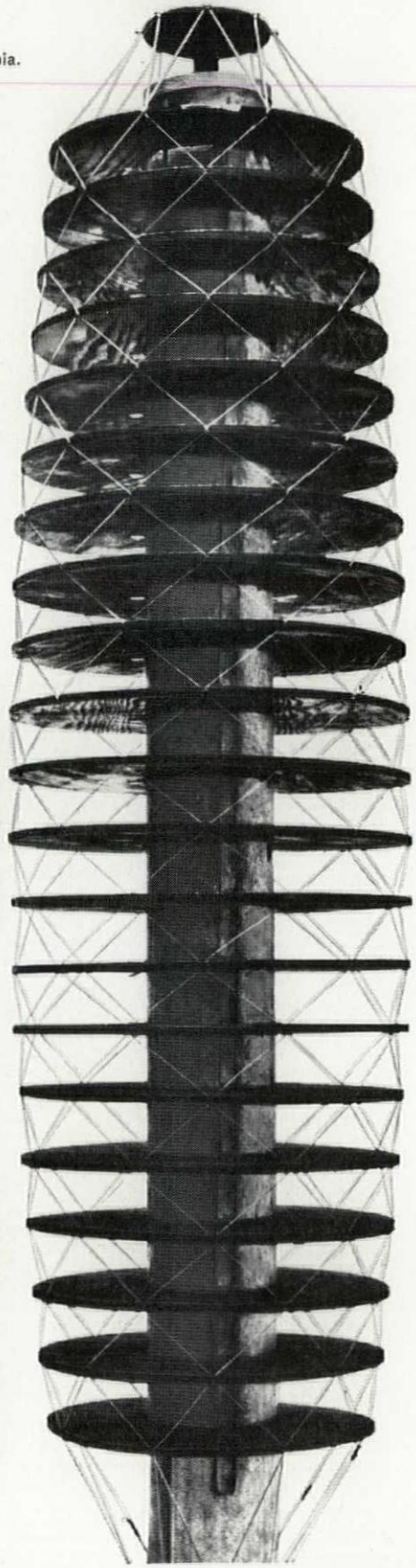

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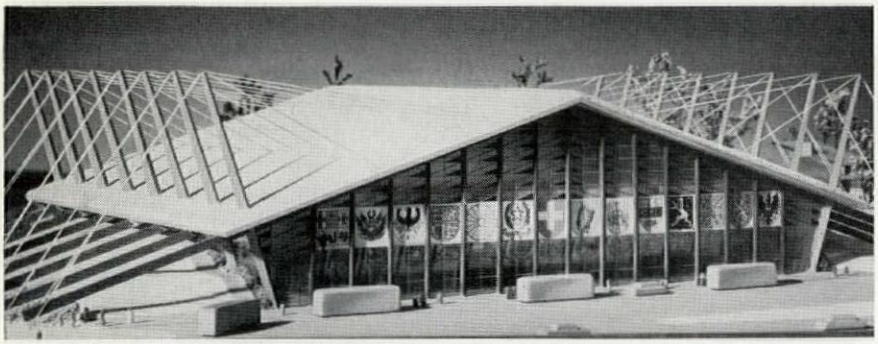
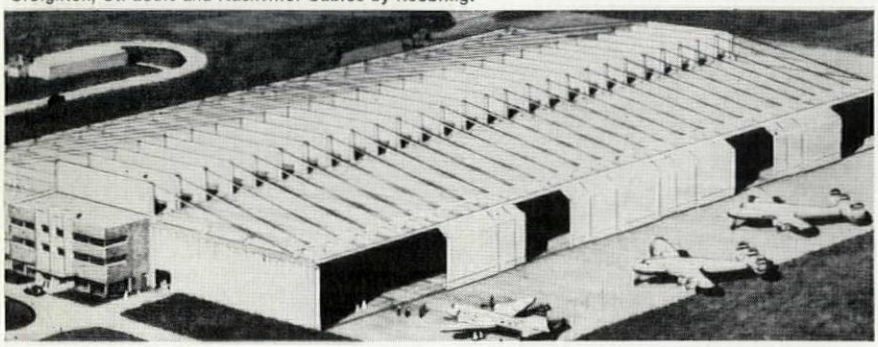


Winter Olympics Ice Arena, Squaw Valley, California. Architects: Carlett & Spackman, A.I.A., Kitchen & Hunt, A.I.A. Structural Engineer: H. J. Brunnier. General Contractor: Diversified Builders. Steel Subcontractor: Pittsburgh-Des Moines Steel Company. Cables by Roebling.

TWA Hangar—Mid-Continent International Airport, Kansas City, Mo. Designed by Burns & McDonnell, Kansas City. Consulting Engineers: Ammann & Whitney, New York City. Contractors: MacDonald-Creighton, St. Louis and Nashville. Cables by Roebling.



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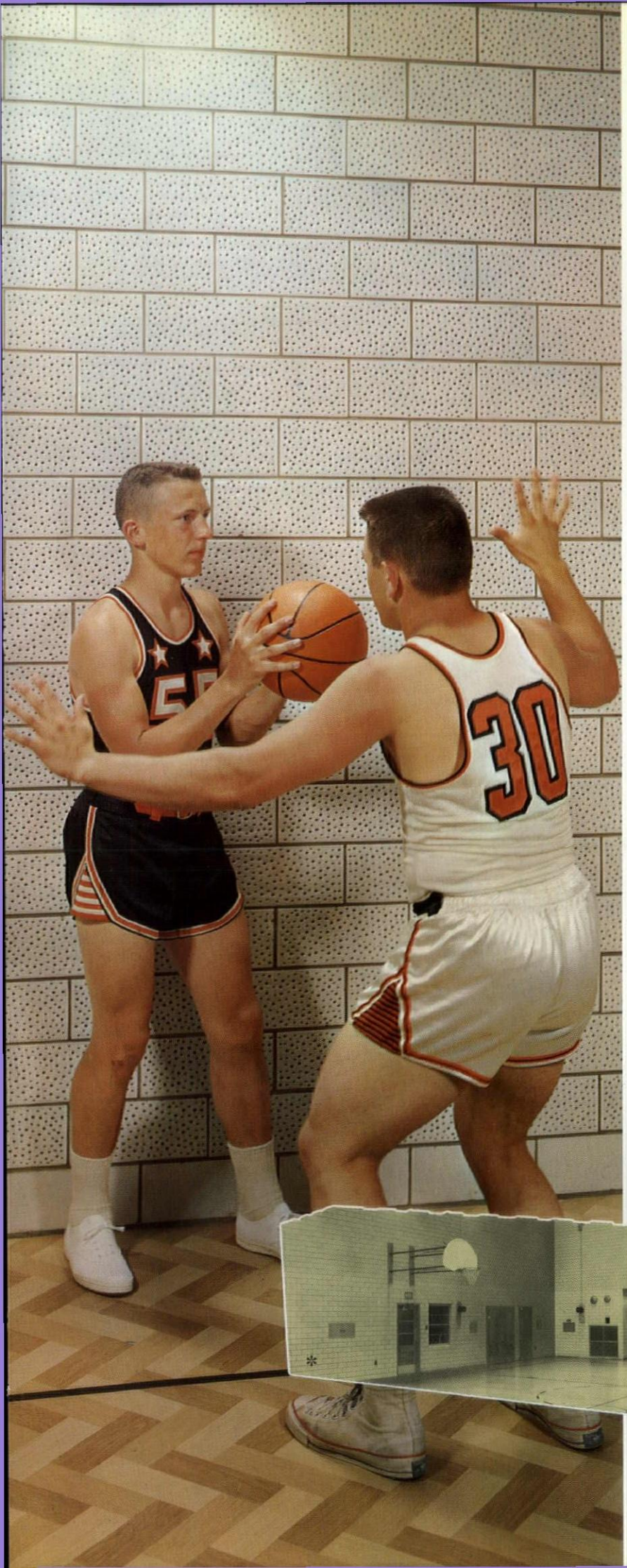

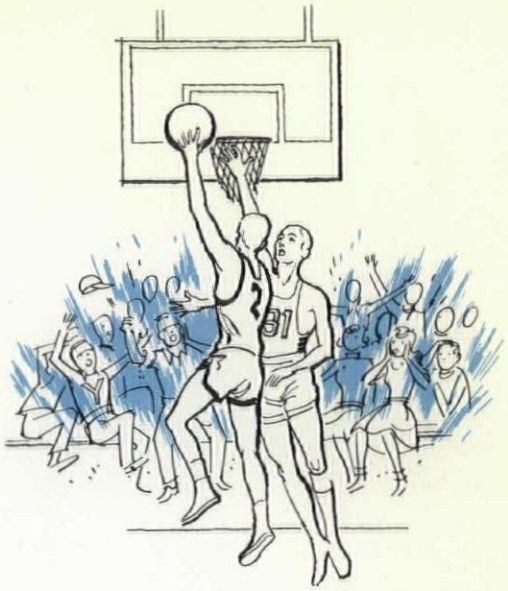

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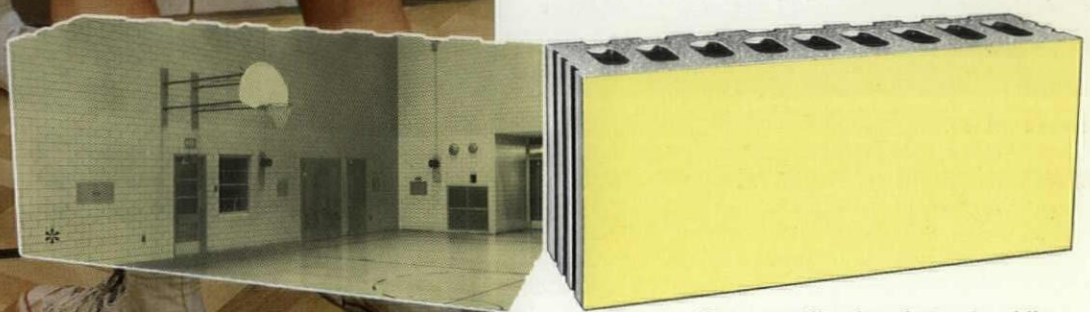

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* Harry E. Davis Jr. High School, Cleveland, Ohio
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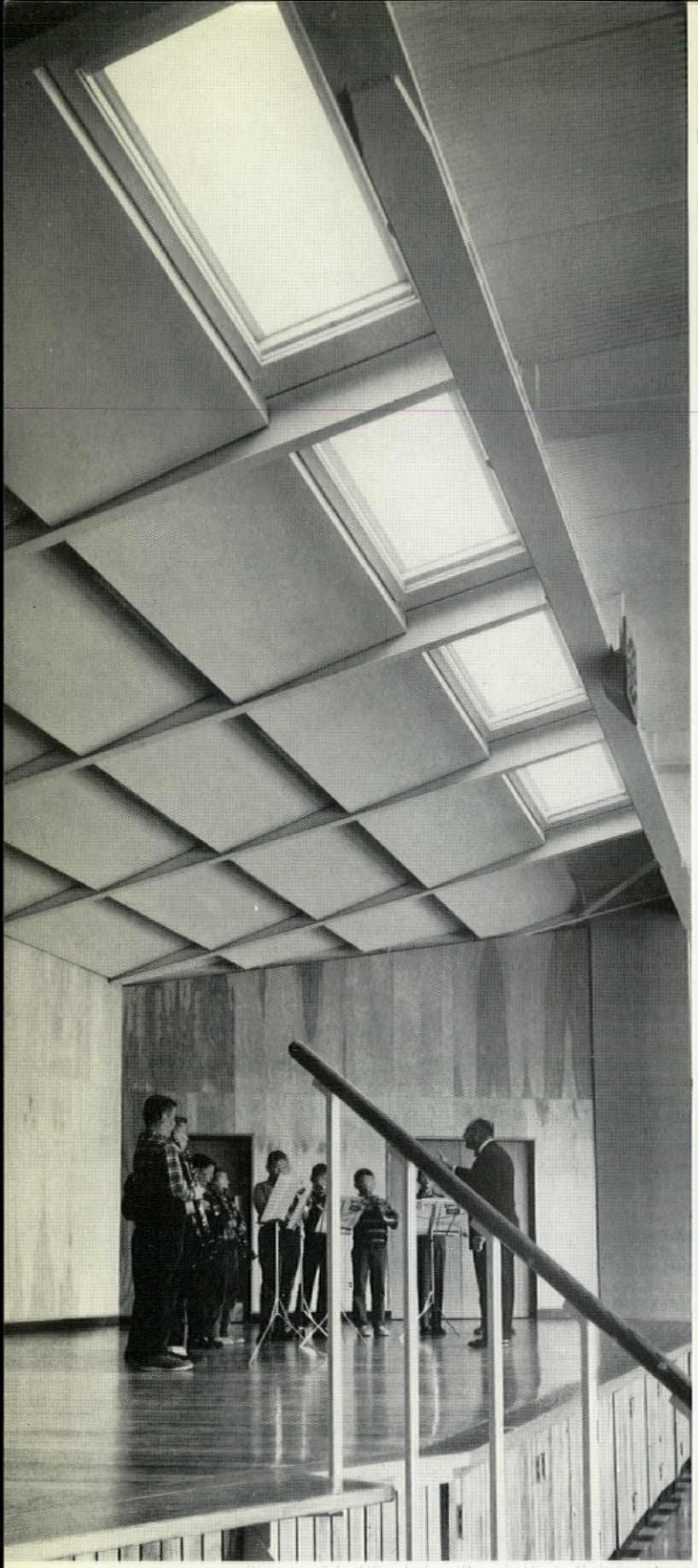

Hemenway School, Framingham, Mass. Architects: M. A. Dyer Assoc.

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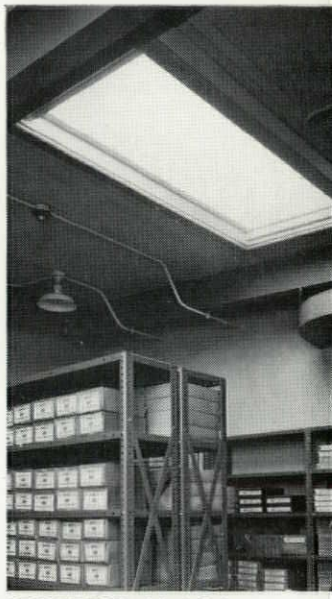

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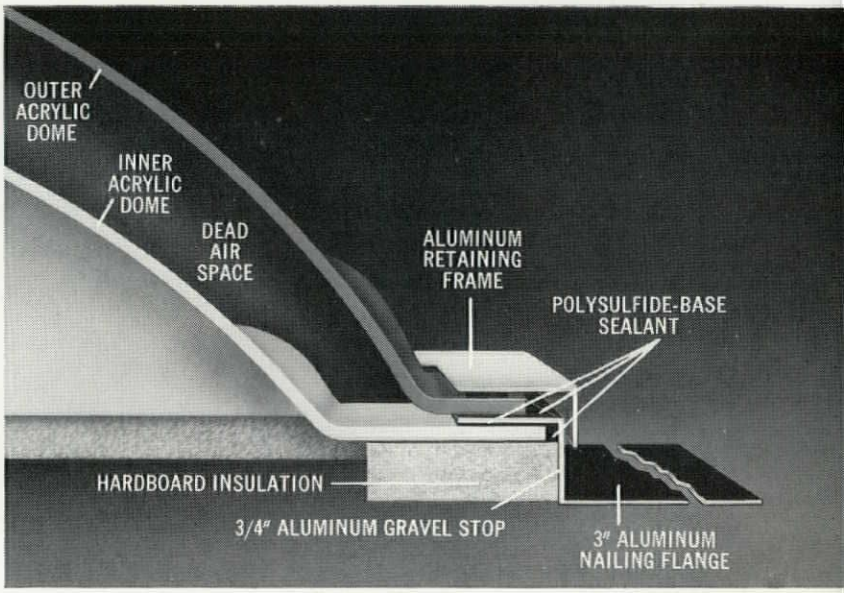

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FOREGROUND FIREHOUSE

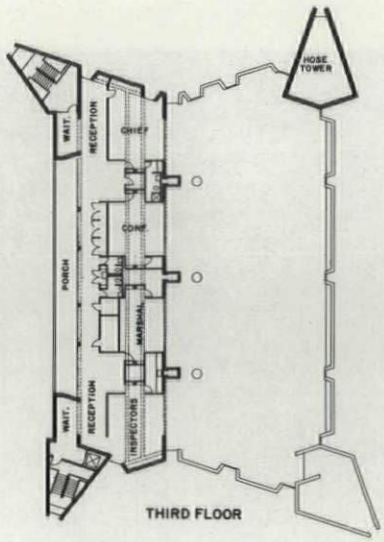
FIRE HEADQUARTERS • NEW HAVEN, CONNECTICUT • EARL P. CARLIN, ARCHITECT • PETER MILLARD, DESIGN ASSOCIATE • PAUL E. POZZI, ASSOCIATE

"I don't feel that a firehouse is, or should be, 'foreground' architecture," said Dean Charles Colbert, chairman of the eighth P/A Design Awards Program jury. "One essentially inconsequential function," he continued, "has been developed far beyond its purposeful use by the community. This man has an idea; he has something to say, but doesn't have the medium to say it with. I think it's capricious and preconceived disorder trying to achieve some form of plastic statement at the expense of the community good. I think it's inappropriate; I think it's a tour de force; I think it refutes the industrial process that architecture has attempted to become part of."

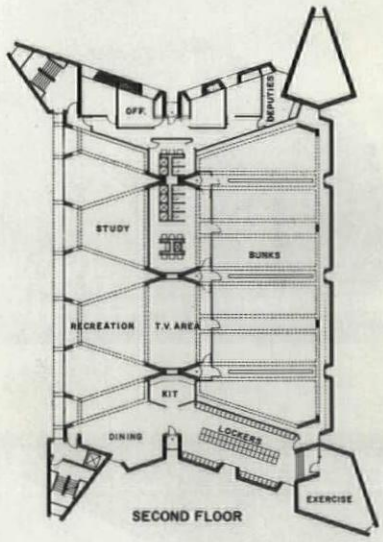
Other members of the jury disagreed with Colbert's strong words, saw no reason why a firehouse should not be a "foreground" building, and thought that the design was "a serious piece of architecture." The project was finally given an Award, with the one dissenting vote of Dean Colbert. Now that the building has been completed, its dramatic concrete forms can be viewed against the New Haven sky.

According to the architect, the design was strongly influenced by the program and the site. The city administration, anxious that this building should symbolize the New Haven urban renewal efforts, requested that it serve as a "gateway" to one of the major redevelopment areas, the Wooster Square Neighborhood; the "foreground" character of the building was, therefore, built into the program. Other major influences were: the odd shape of the site, which is located at the corner of two thoroughfares intersecting at an angle; the need for retaining on the site an existing fire station until the new one was built; and the turning radii for egress and ingress of fire-fighting equipment.

The building was placed close to the intersection, with the main walls at an angle to the street lines; the four corner towers were then used as powerful elements that unify the composition, relate



THIRD FLOOR



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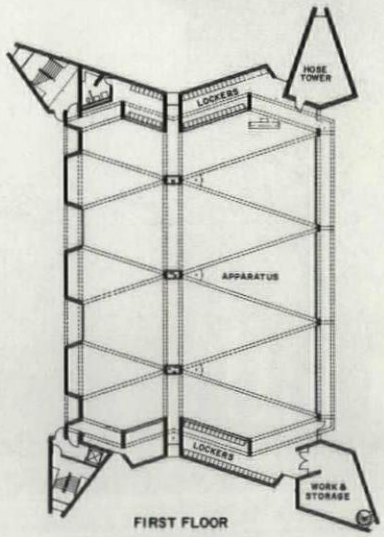

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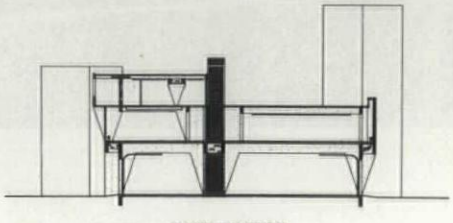
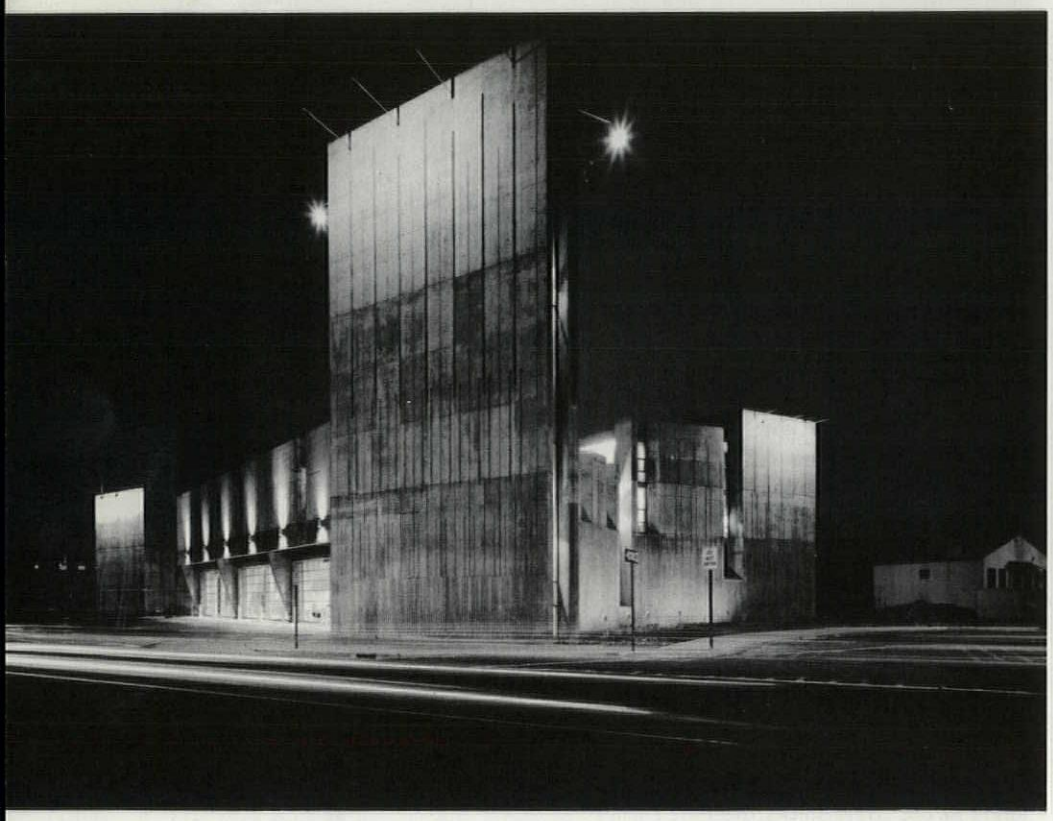

CROSS SECTION



the main mass to the streets, provide vertical accents to the building, and serve as focal points to the vistas of adjoining streets.

The reinforced-concrete structural system (bearing walls, girders, beams, and slabs) is visible throughout the building, giving it a rugged and forceful character. This feeling is augmented by the boldly exposed mechanical and electrical lines.

Since ease of maintenance was one of the requirements, the materials were selected for minimum upkeep: partitions are of light-brown pressed brick; floors are steel float-finished concrete on the stairs and first floor, and terrazzo on second and third floors; door and window frames are aluminum; wood doors are faced with white plastic laminate; wood trim and cabinet work is of natural finish, solid red oak; and acoustical suspended ceilings on the upper floors are of corrugated aluminum panels in aluminum frames with glass-fiber blankets.

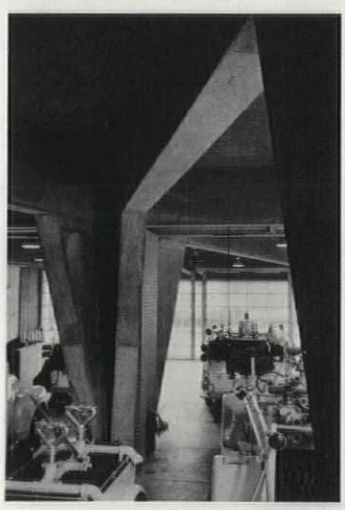
For similar reasons, the landscaping is simple and nearly maintenance free. Almost all surfaces are black-topped, relief being provided by concrete curbs, walks, and walls, and by small areas planted with ivy ground-cover.

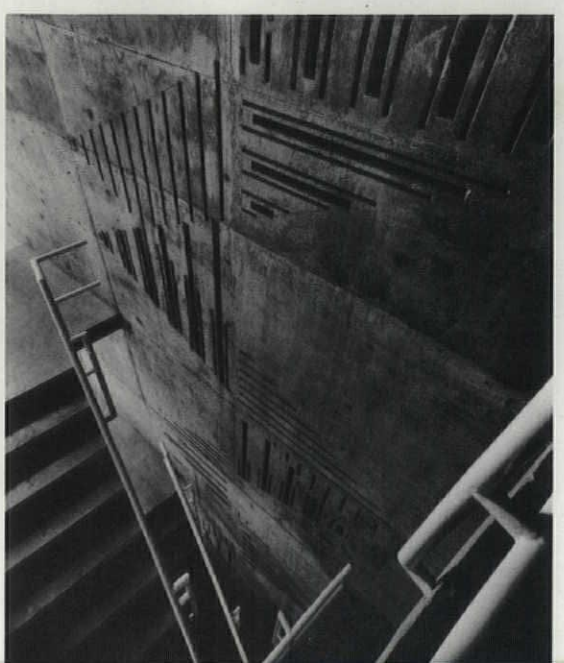
The owners' reaction is on the whole favorable: the building works well in terms of movement of personnel and equipment, and the firemen assigned to live there are pleased with it. The mayor of New Haven commented: "This building represents an important break from the traditionally dull approach to municipal architecture: it is not only functional, but also a unique and exciting addition to New Haven's skyline, and a dramatic entranceway to one of our major redevelopment projects."

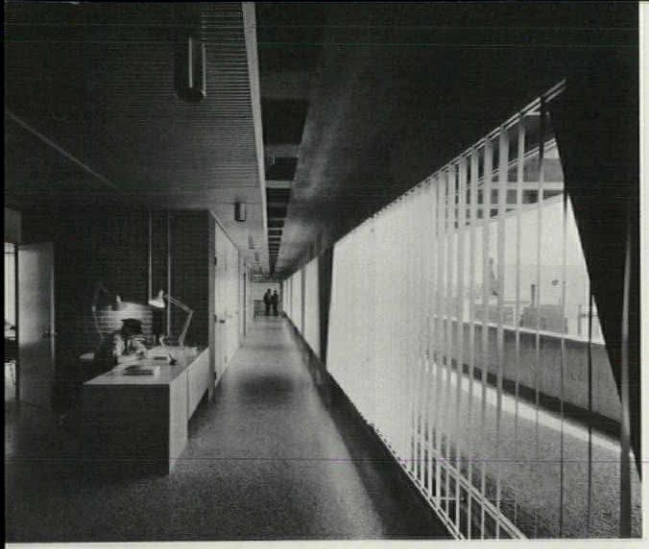
The architect himself, pleased with the building but disappointed with the quality of the concrete work, especially variations of colors from pour to pour, comments: "Although specifications were written with extreme care, perhaps results could be improved if a guarantee were required that all cement come not just from the same manufacturer, but also from the same plant and the same equipment."

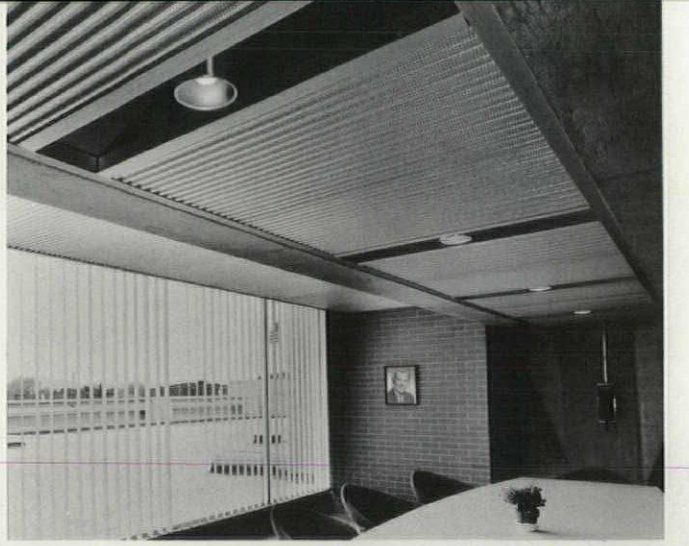
Total cost, including sitework, was $721,101 ($22.20 per sq ft; $1.54 per cu ft). For further information on this building, readers should refer to pages 150–156, JANUARY 1961 P/A, and pages 132–135, JULY 1961 P/A.

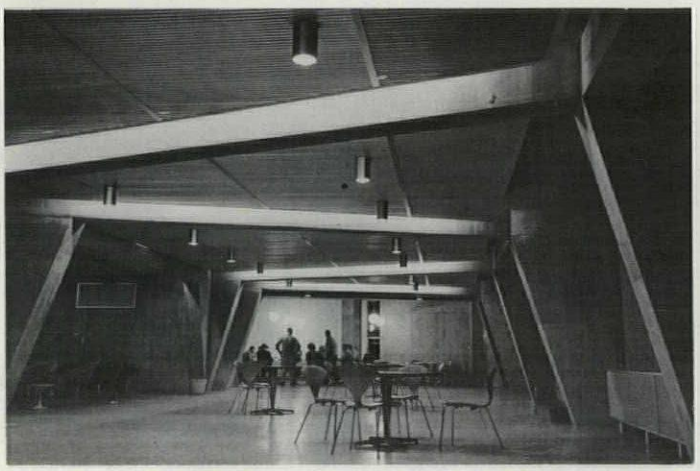
Instead of basement drying racks, a hose drying tower (above) *was used to introduce a strong vertical element to the building mass* (facing page). *Concrete structure is exposed in the apparatus room* (right and below), *staircases* (bottom), *and all other parts of the building.*

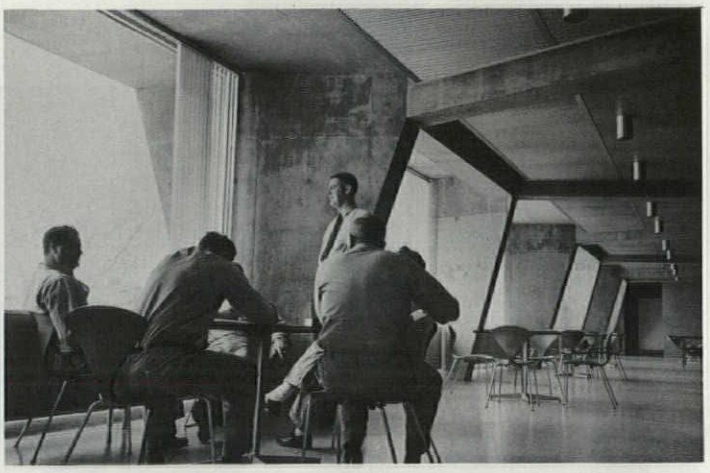




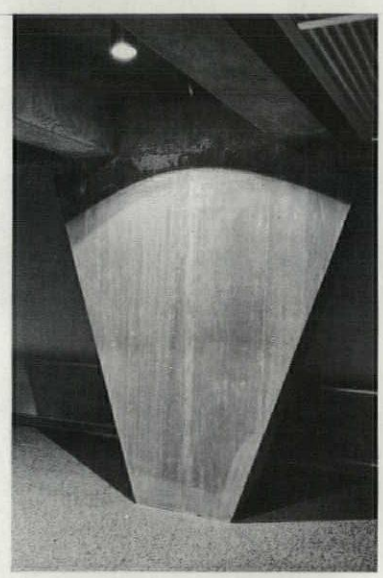


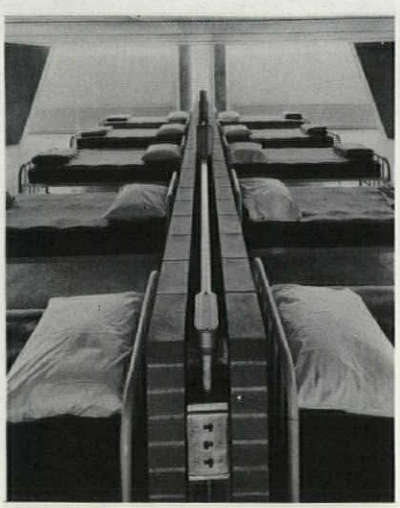


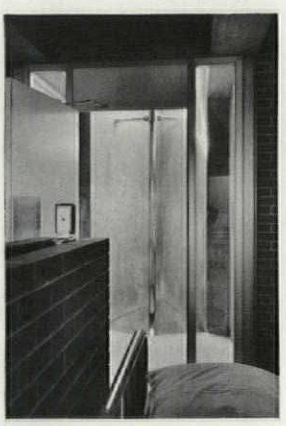


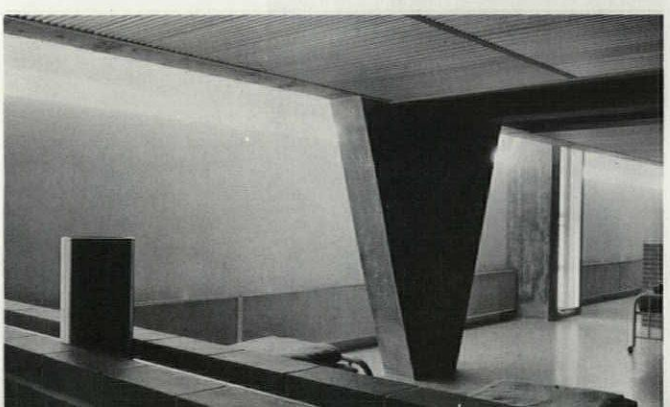


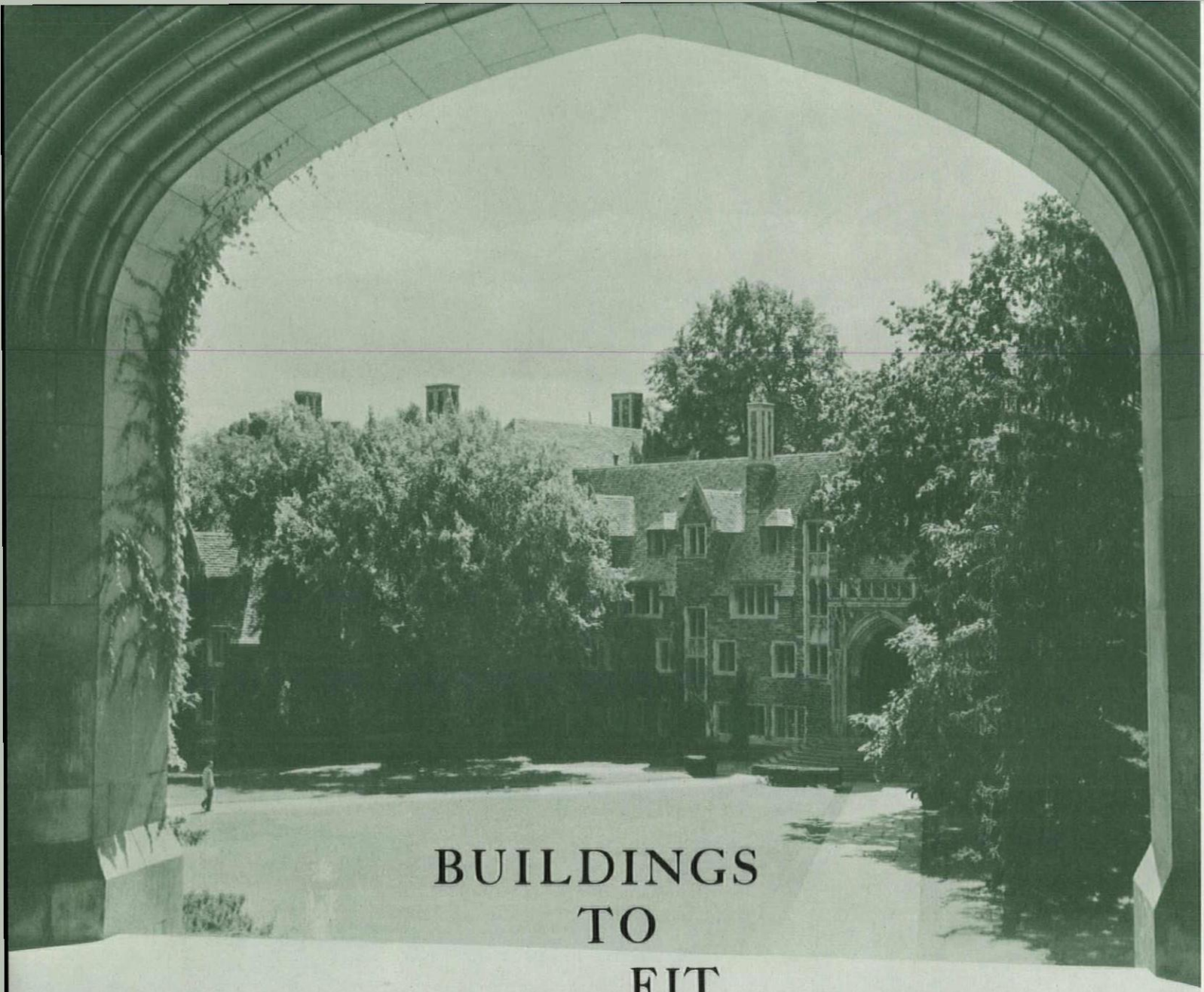
Offices (top), *recreation areas* (above), *and sleeping quarters* (below) *are on second and third floors. Suspended acoustical ceilings are of glass fiber blankets over corrugated aluminum panels in aluminum frames. Exterior walls are finished with sprayed white vinyl coating over foamed polystyrene. Partitions are of light-brown pressed brick. Floors are terrazzo. Strong colors in the furniture contrasts with white and neutral colors of the building's interior. Access from living areas to the apparatus room is either by stairs or by brass poles* (facing page), *whose shiny surfaces contrast sharply with the rough concrete walls. Such juxtapositions of textures were used extensively throughout the building.*











BUILDINGS TO FIT THE CAMPUS

The college campus is one of the few areas where we can hope to establish meaningful relationships between large groups of buildings. It provides an exceptional opportunity to build an integrated environment for a single client who places great importance on aesthetic values.

On rare occasion, as at Foothill College, the architect may be given the opportunity to design an entire campus at a single stroke. Far more often, he is asked to fit one more building into an existing composition.

The needs and policies that shape the campus inevitably change. Even where a single mind has established a powerful over-all theme, as at M.I.T. or the University of Virginia, other architects are called upon to add unforeseen elements; and even the most revered traditions of style cannot be maintained forever. Every campus ultimately becomes an assemblage of diverse buildings.

The three projects discussed here are solutions to three distinctly different campus problems. In the first case, an established architectural approach, which has been stubbornly adhered to despite changing requirements, cannot be ignored even today. In the second, an enlightened client has sought the best contemporary architecture, but has not obtained adequate consistency among buildings. In the third, a new campus was to be created from scratch by a group of architects who had no control over planning and no formal design co-ordination.

All three solutions show the architect's awareness of the part his project must play in a larger composition.

PRINCETON UNIVERSITY QUADRANGLE • PRINCETON, NEW JERSEY • SHERWOOD, MILLS & SMITH, ARCHITECTS

PRINCETON

As Princeton expanded beyond its nucleus of Georgian buildings, it followed the prevailing architectural modes of the 19th Century, including Greek Revival and Richardson Romanesque. By the beginning of this century, however, the Collegiate Gothic style had been firmly adopted.

The campus evolved in a pattern of quadrangles, following the slight irregularities of the terrain. Walks either penetrate the buildings or pass through narrow breaches between them. The charm of the resulting spatial sequences accounts for the university's reluctance to break with these precedents.

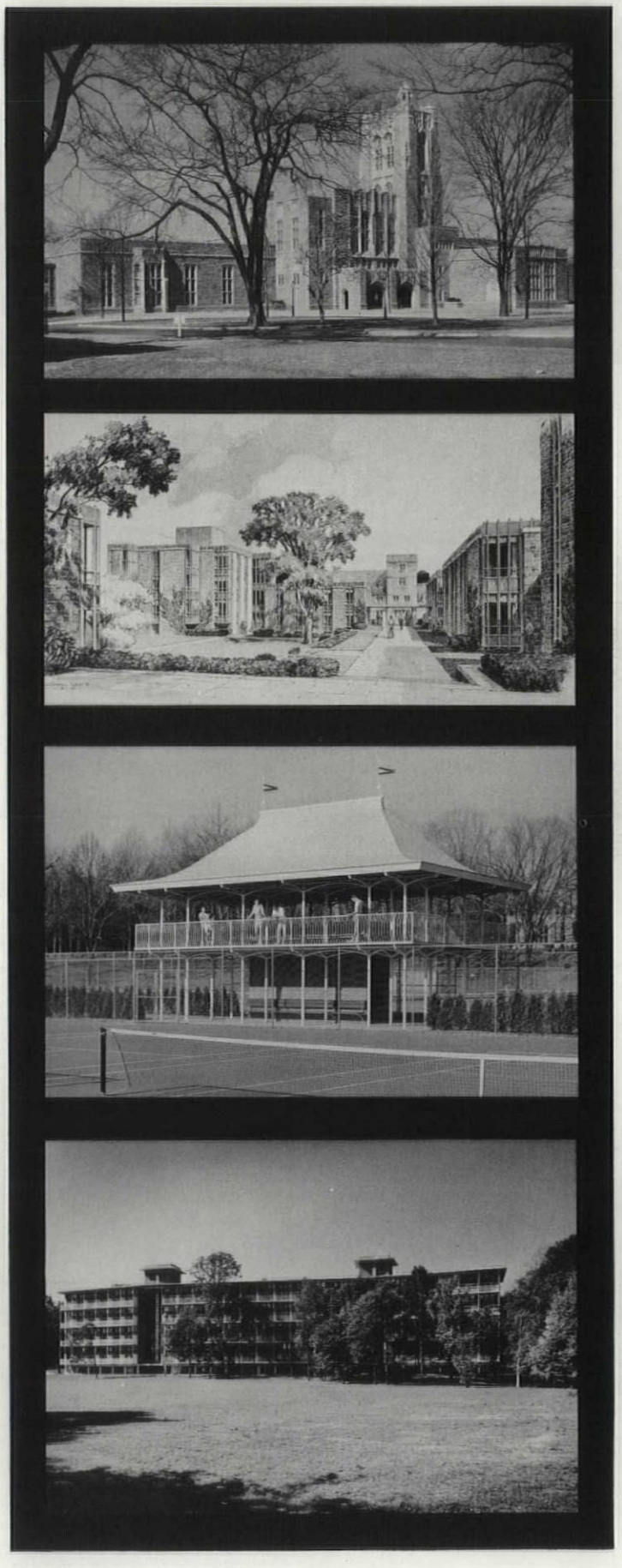
Blair Hall (*facing page*) is typical of the picturesque approach that flourished in the 1920's and 1930's. Even as late as 1948, in the Firestone Library (*top right*) by O'Connor & Kilham, the same style was imposed. The compromise between the style and the basically functional approach to planning, fenestration, and detail is all too evident.

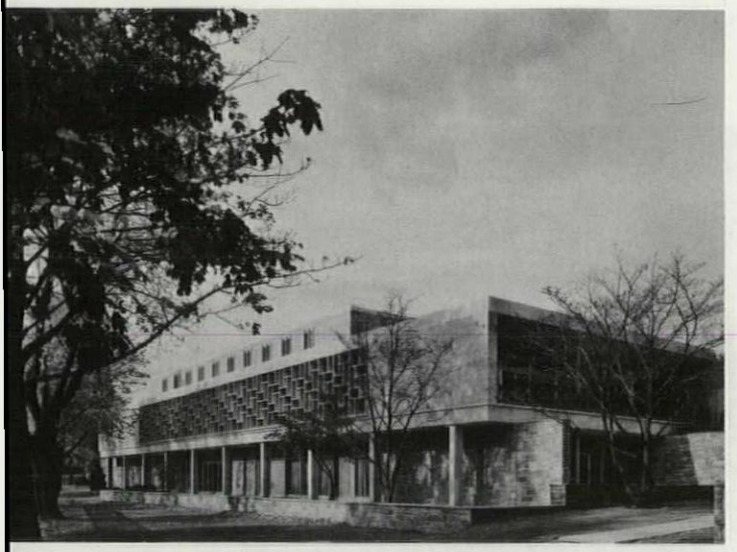
Three recent projects by Ballard, Todd & Snibbe (now Ballard, Todd Associates) illustrate the varying degrees of influence still exerted by the established style. The proposed graduate dormitories (*second from top, right*) echo the spacing, massing, and wall patterns of the adjacent older dormitories. The new tennis pavilion (*third from top, right*) represents a freer approach to tradition. The firm's eight-story faculty apartments (*bottom right*) indicate the design freedom permitted in more remote parts of the campus.

The initial phase of the Sherwood, Mills & Smith project includes five dormitory buildings, housing 222 men, and a central dining and social facility. The dormitories offer a wide choice of accommodations in suites housing from two to ten students. The traditional entry system, in which each entry leads to a stair serving a few units, has been retained. The space saved by eliminating both long corridors and common lounges has been used to increase the size of the individual suites.

The living rooms of the suites are designed to contrast with the bedrooms in spatial character and fenestration. In place of the traditional fireplace, they feature built-in room dividers with spaces for books, radio, television, phonograph, and coat storage.

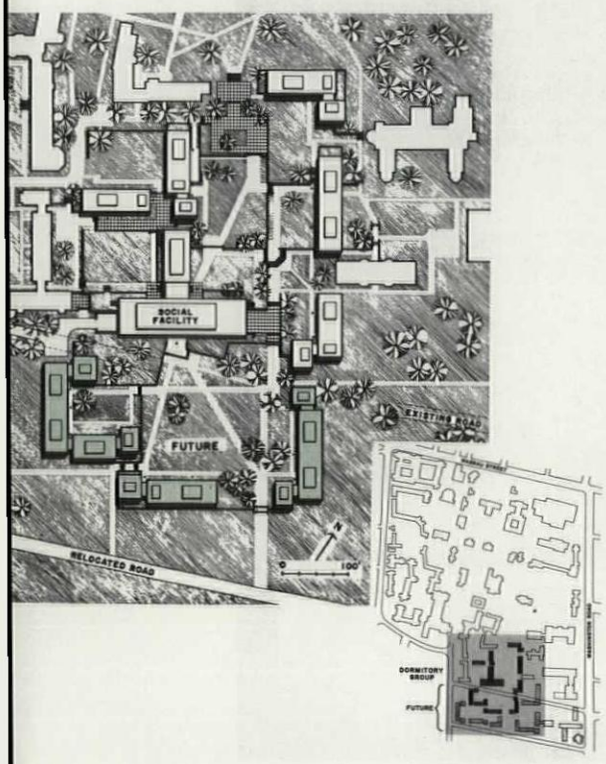
Photos facing page and top right, courtesy of Princeton University; third from top, right, George Cserna; bottom right, Alexandre Georges.

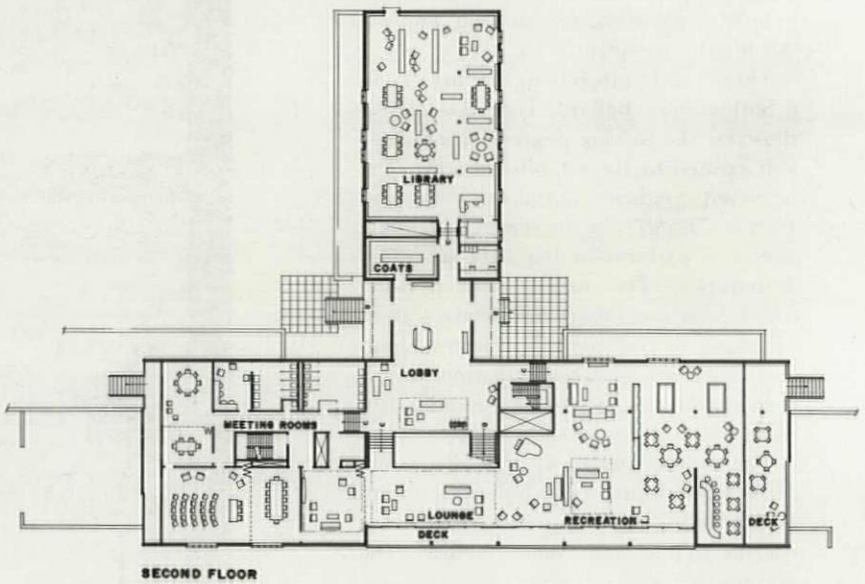




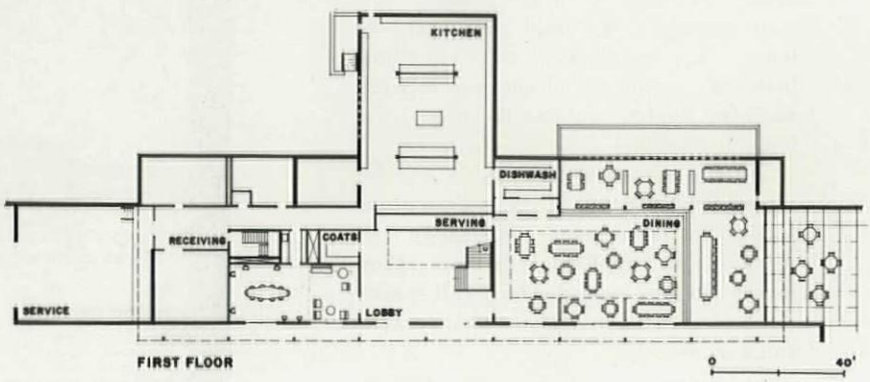
PHOTOS, THIS AND FACING PAGE: JOSEPH MOLITOR

The spatial character of the campus has been maintained in the new dormitory group. The buildings define a series of courts (plan below), *but care was taken not to eliminate views of existing buildings. The social facility* (photo above and plans at right) *will be at the center of the completed development. It serves the dormitory residents, houses visitors, and accommodates campus-wide social functions. The small-scale dormitory blocks* (above right) *vary in height and follow the levels of the site, which was originally terraced for tennis courts.*



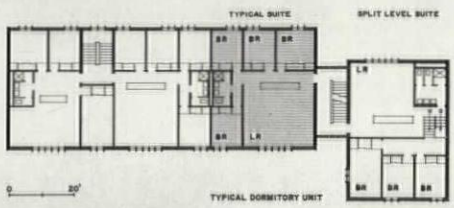


SECOND FLOOR



FIRST FLOOR

The dormitory units (left) *provide a variety of accommodations, including duplex suites* (above). *The extensive use of limestone in trim, column covers, and stairwell walls and the application of brownstone ashlar on basement walls relate the new buildings to their neighbors. Upper walls are of salmon brick.*



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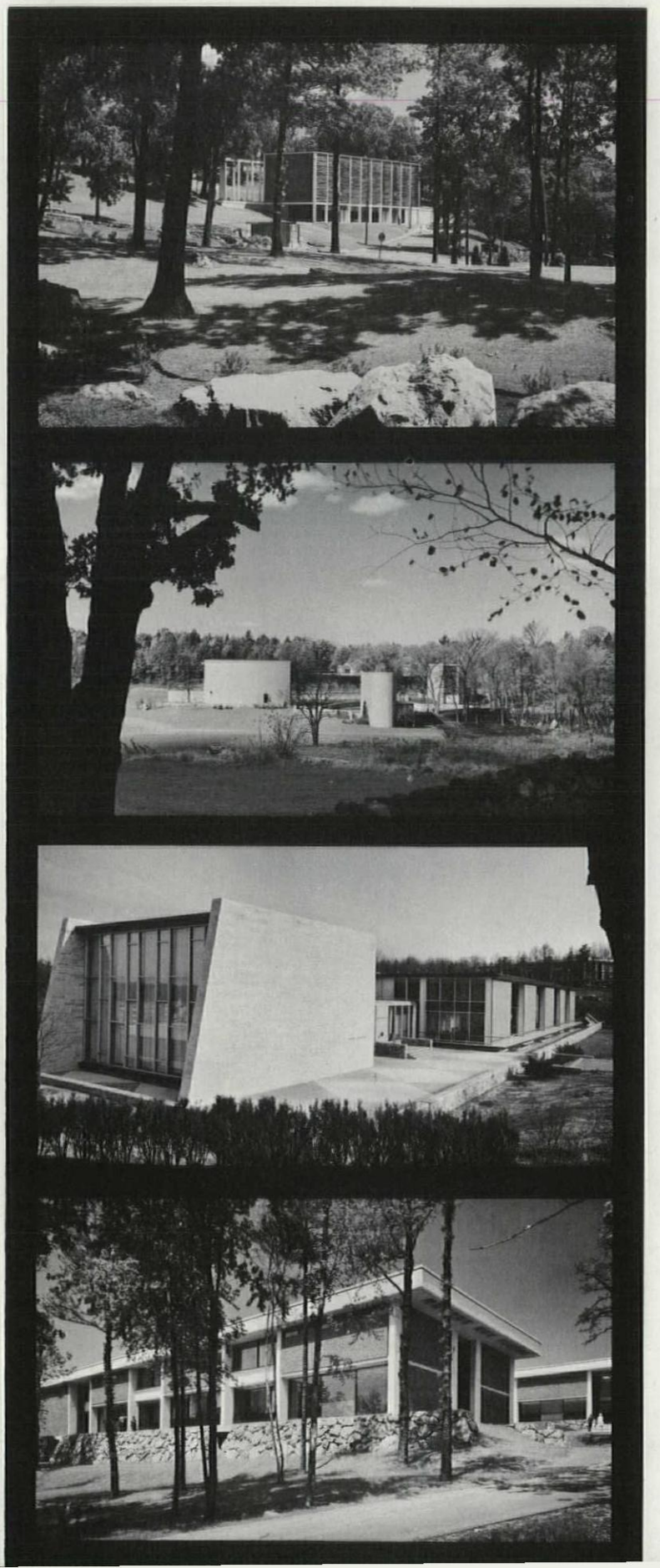


BERNSTEIN-MARCUS ADMINISTRATION CENTER, BRANDEIS UNIVERSITY • WALTHAM, MASSACHUSETTS • HUGH STUBBINS & ASSOCIATES, ARCHITECTS

When Brandeis University was founded in 1946, it acquired 260 acres of hilly, rocky, wooded land from a defunct medical college. The only large building on the property was a vast pseudomedieval pile generally referred to the "the castle."

Eero Saarinen drew up the first master plan, which proposed a concentration of major buildings around a rectangular plaza at the center of the campus. His peripheral housing groups, some of which were built in 1949, were informally arranged to follow the terrain. When Max Abramovitz succeeded him as planning consultant, the casual approach to siting buildings was extended to the entire campus, which never acquired an identifiable center or area of maximum concentration.

The firm of Harrison & Abramovitz has designed the majority of the campus buildings. The neat lines of their wood-framed Ullman Amphitheater (*top left*) greet the visitor as he enters the campus. Their most widely known works at Brandeis are undoubtedly the three chapels (*second from top, left*), completed in 1955. Among the firm's more recent contributions is the Goldfarb Library (*third from top, left*), which, like several of its contemporaries, seems out of place in its rustic New England setting.

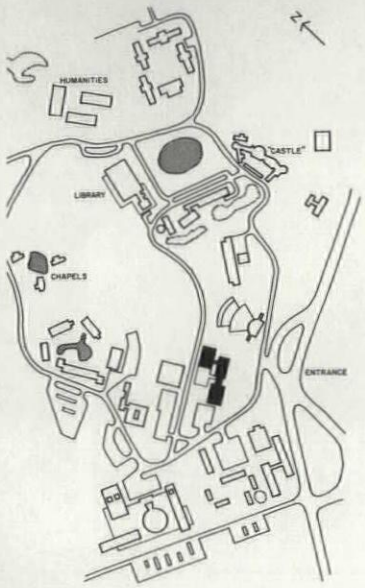
A wide variety of materials can be seen on the campus. Recently, however, an effort has been made to establish consistency by limiting exterior materials to red brick, white concrete, and local field stone. The Humanities Center (*bottom left*) by The Architects Collaborative, utilizes these materials in a design of remarkable composure that seems quite at home in the landscape.

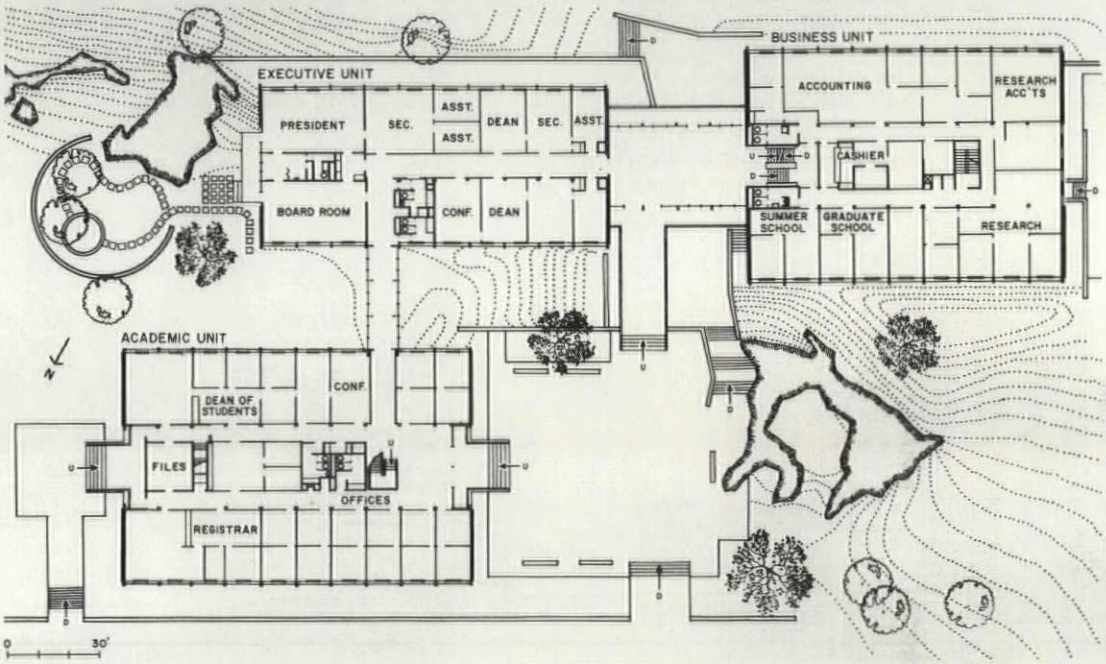
Hugh Stubbins' administrative center is located on a rocky slope overlooking the entrance to the campus. The original scheme, which won a P/A Design Award Citation in 1958, included two separate buildings of simple form, one of which was clearly dominant. The relative intricacy and lack of emphasis in the final design result largely from the insistence of donors on the articulation of the individual parts that they contributed.

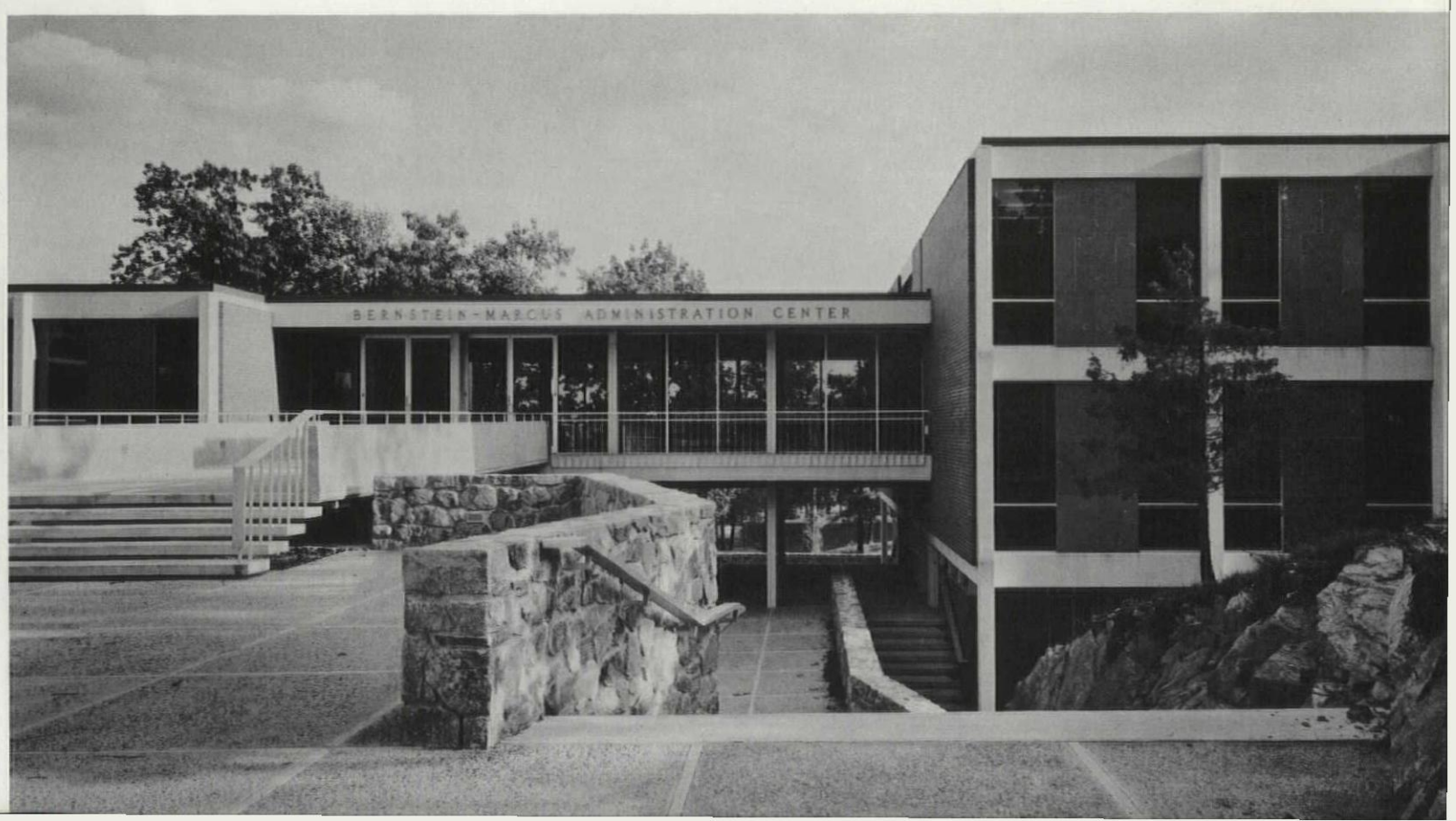
The building is framed in steel, except for the exterior columns, which are of precast concrete. Floors and roof are of concrete poured on steel decking. Movable steel partitions have been employed to afford flexibility in office layout.

Photos at left: Ezra Stoller Associates

PHOTOS, THIS AND FOLLOWING PAGE: DAVID HIRSCH

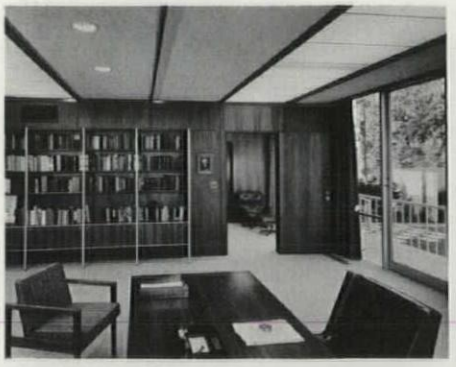


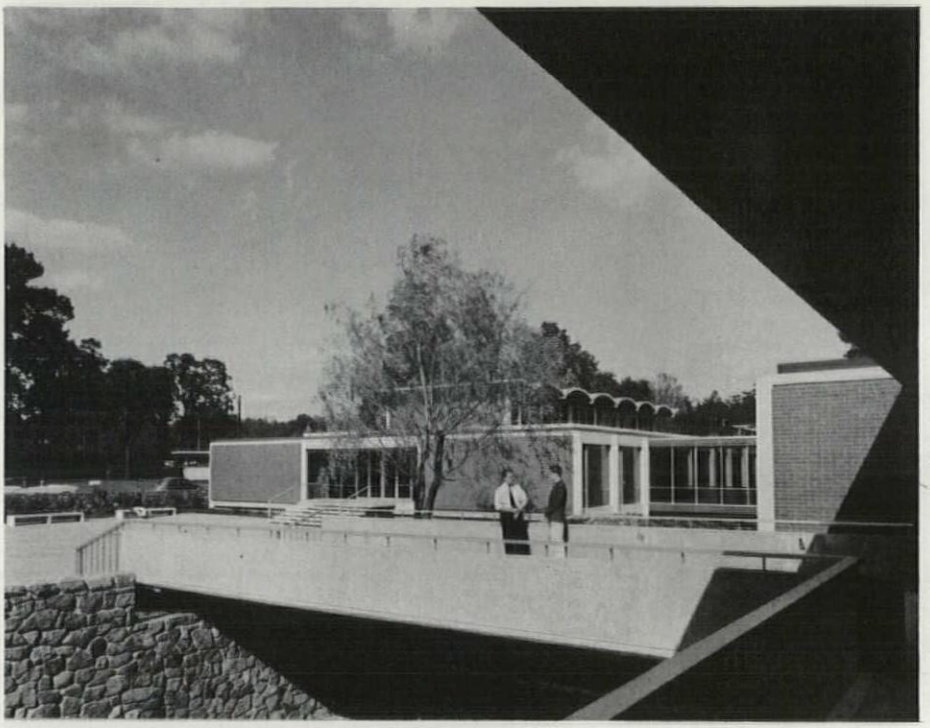


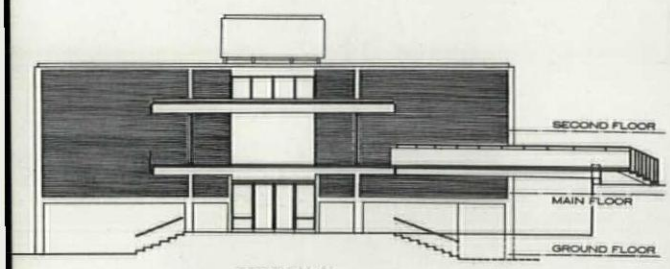


Precast exposed-aggregate concrete columns and spandrel panels establish a light-colored framework for the typical wall (photo below), *within which are set darker materials—gray glass, purplish slate, and red brick. The architect's original choice of "brownish" brick, to harmonize with the slate, was changed to red brick for the sake of conformity. The penthouse offices have been accentuated by a vaulted concrete roof.*

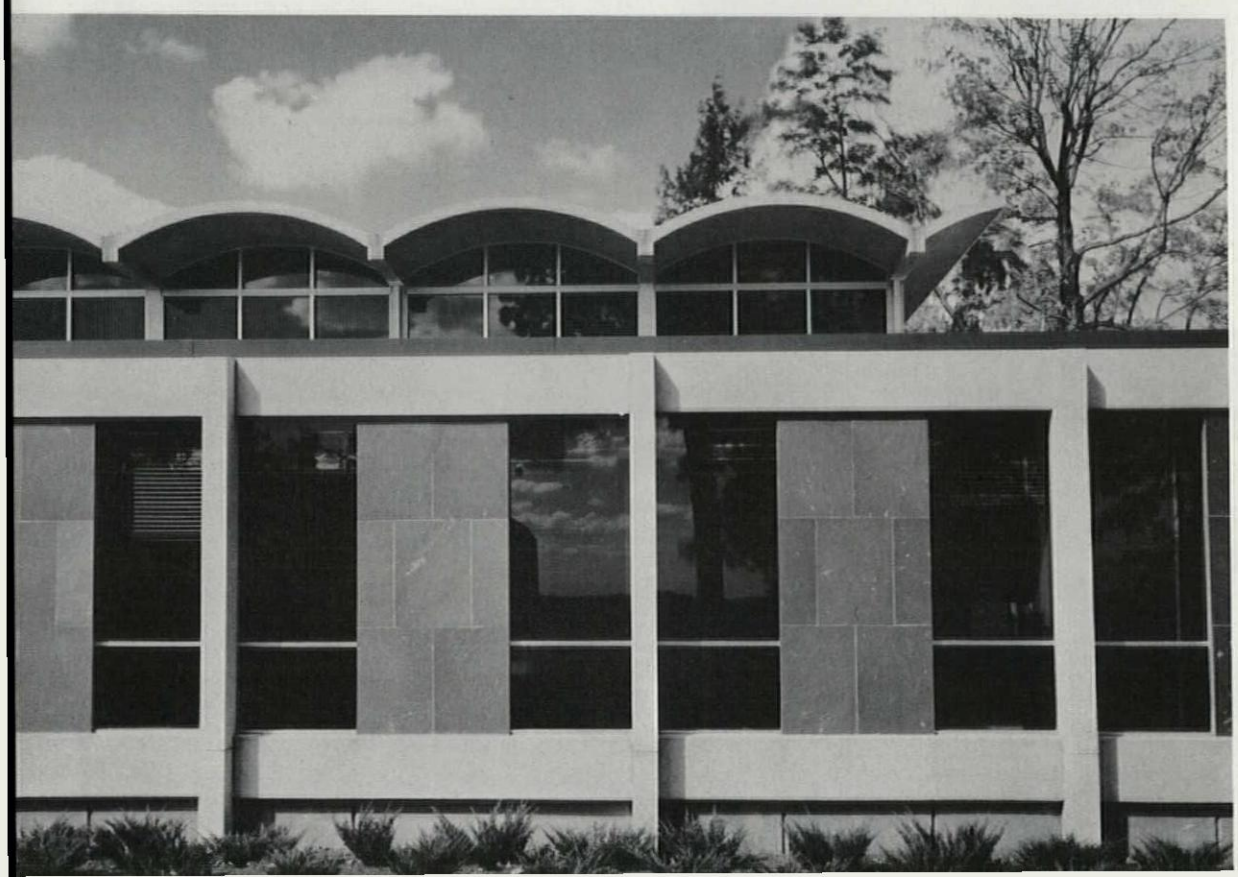
Retaining walls of rubble stone, removed from the excavation, create a series of paved terraces (photo middle right and section below). *Outside the president's office* (above right) *is a garden* (above, far right) *designed as a secluded outdoor room.*







SECTION 'A'



CHEMISTRY AND LIFE SCIENCE BUILDINGS, UNIVERSITY OF SOUTH FLORIDA • TAMPA, FLORIDA • MARK HAMPTON, ARCHITECT

SOUTH FLORIDA

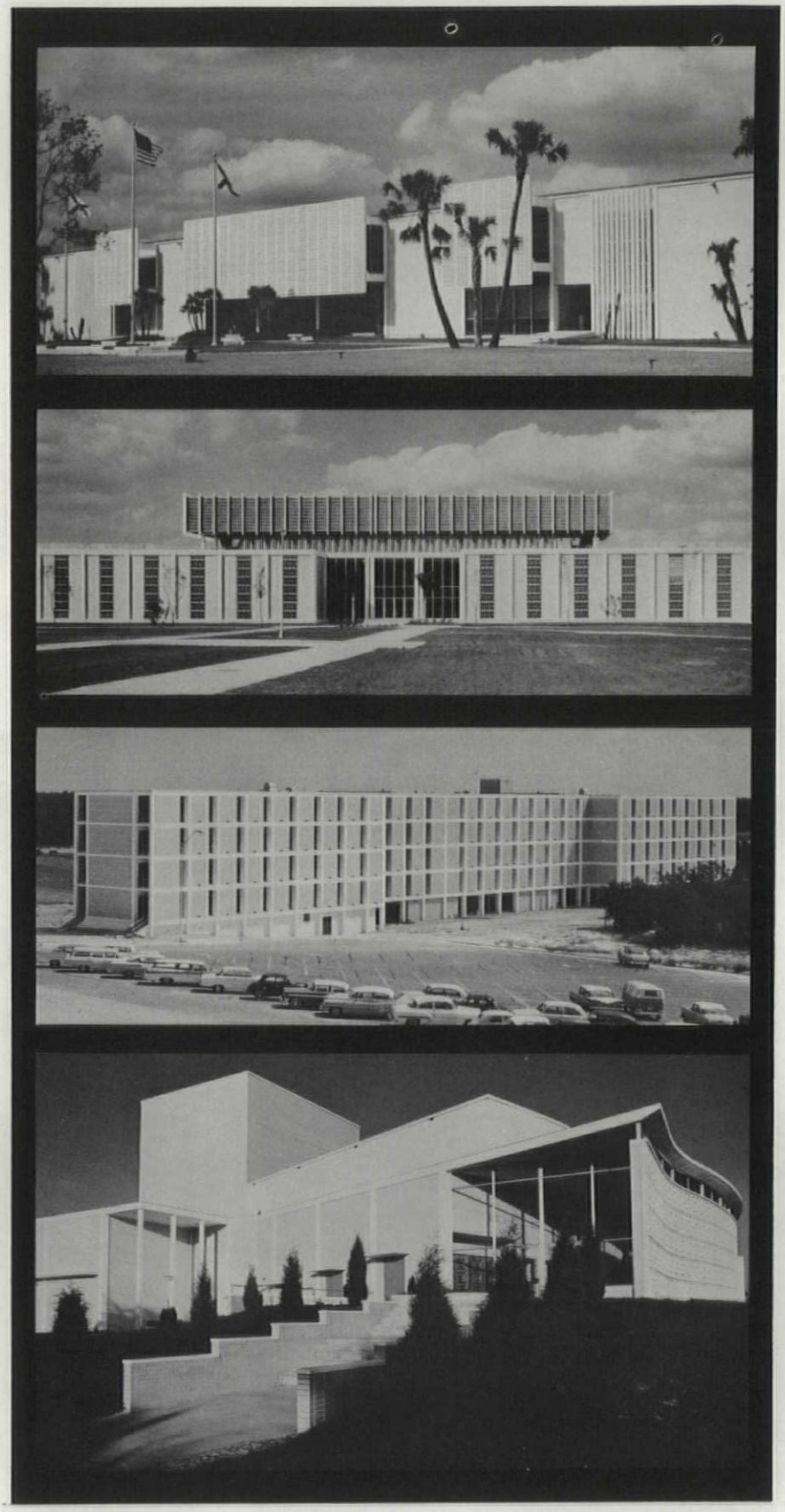
The development of the university was authorized by the Florida State Legislature in 1955. A site of 1734 acres was selected and the State Board of Control was given the responsibility for construction of a campus. An over-all campus plan was drawn up through collaboration between several planning and engineering consultants and the Architect to the Board of Control. The layouts of roads and utilities took precedence in the planning, and building sites were determined without any strong concept of physical form.

Five firms were commissioned to design the first five buildings in association with Guy C. Fulton, Architect to the Board of Control, who handled programming, co-ordination, approvals, and supervision. The firms were expected to confer during the design stage to establish an architectural identity for the school. They were able to agree on certain design standards: all buildings were to have exposed white concrete frames, with emphasis on the vertical members; exterior walls were to be of beige clay brick or precast concrete panels; since all of the buildings would be air-conditioned, windows were to be minimized and shaded by wide overhangs or concrete grilles.

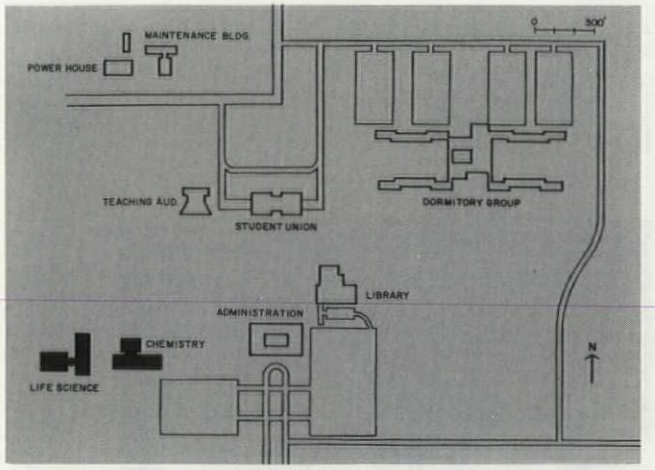
Among the first buildings constructed were the Administration Building (*top right*) by Pullara & Watson; the Student Union Building (*second from top, right*) by Robert M. Little & Associates; the Women's Dormitories (*third from top, right*) by Forrest M. Kelley, Jr.; and the Teaching Auditorium-Theater (*bottom right*) by Gamble, Pownall & Gilroy.

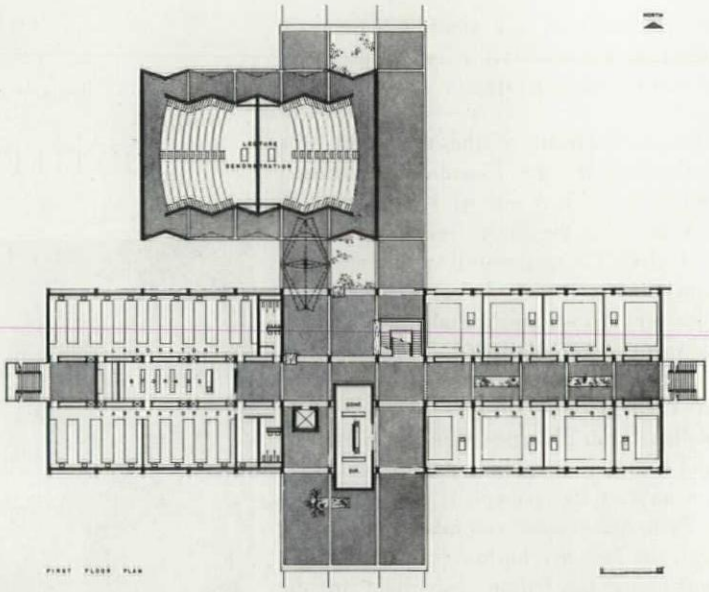
Mark Hampton's Chemistry Building was one of the first five projects commissioned. The building is divided into three distinct functional blocks, connected above grade by covered walks and bridges and below grade by common service spaces. The folded concrete walls and roof of the lecture-hall wing were chosen partly for their acoustical advantages.

The Life Science Building was designed in association with Forrest M. Kelley, Jr., the current Architect to the Board of Control. One wing of the building contains flexible laboratory space on the ground floor, with faculty offices and research laboratories on the floor above. The other, more elaborate wing has offices opening from a ground-floor gallery that is sheltered under cantilevered second-floor classrooms.



Photos at right: Courtesy University of South Florida





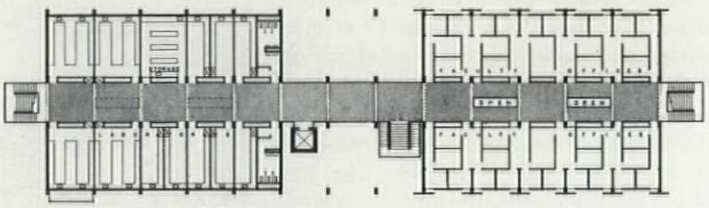
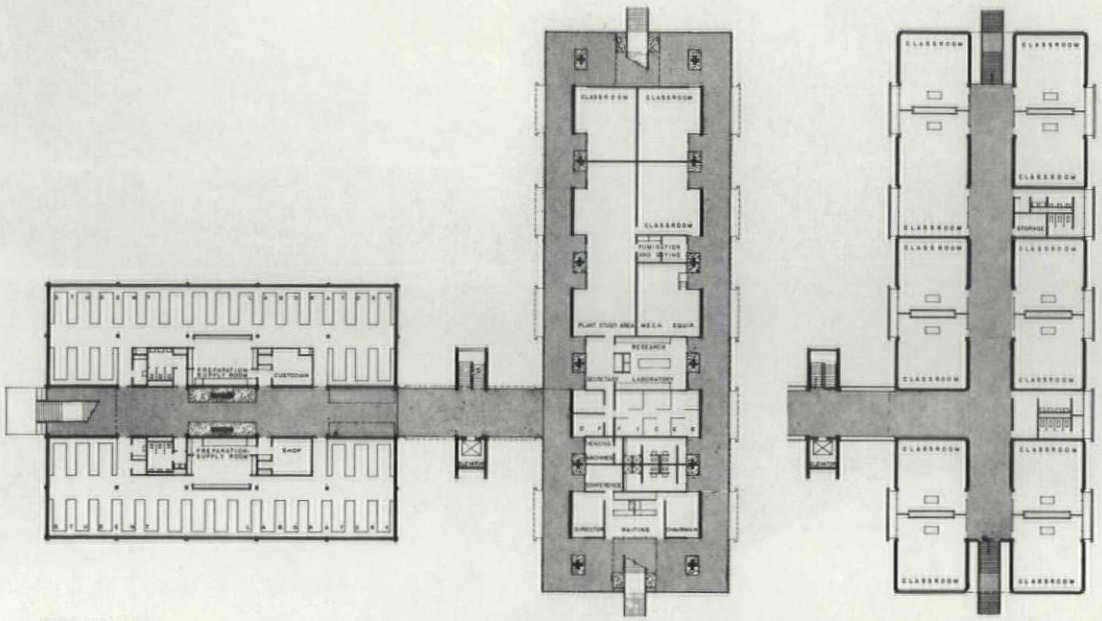


PHOTO: BLACK-BAKER

The laboratory and classroom blocks of the Chemistry Building (below left) *are separated by an open portico* (left). *Glass tile on the walls of the elevator shaft and administrative unit adds accents of blue and brown to the white and beige of the basic materials. A sculptural concrete canopy* (far left) *links the portico to the low lecture hall block. A relief by Joe Testa-Secca extends entirely around this folded concrete structure* (below).

PHOTOS, EXCEPT AS NOTED: ALEXANDRE GEORGES



GROUND FLOOR PLAN

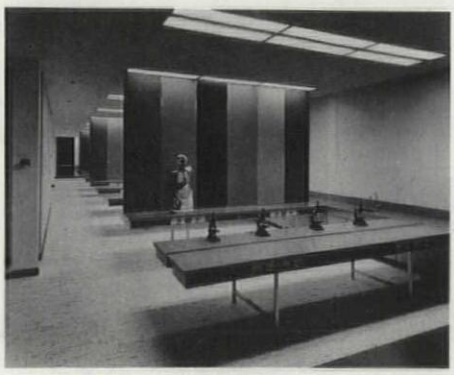
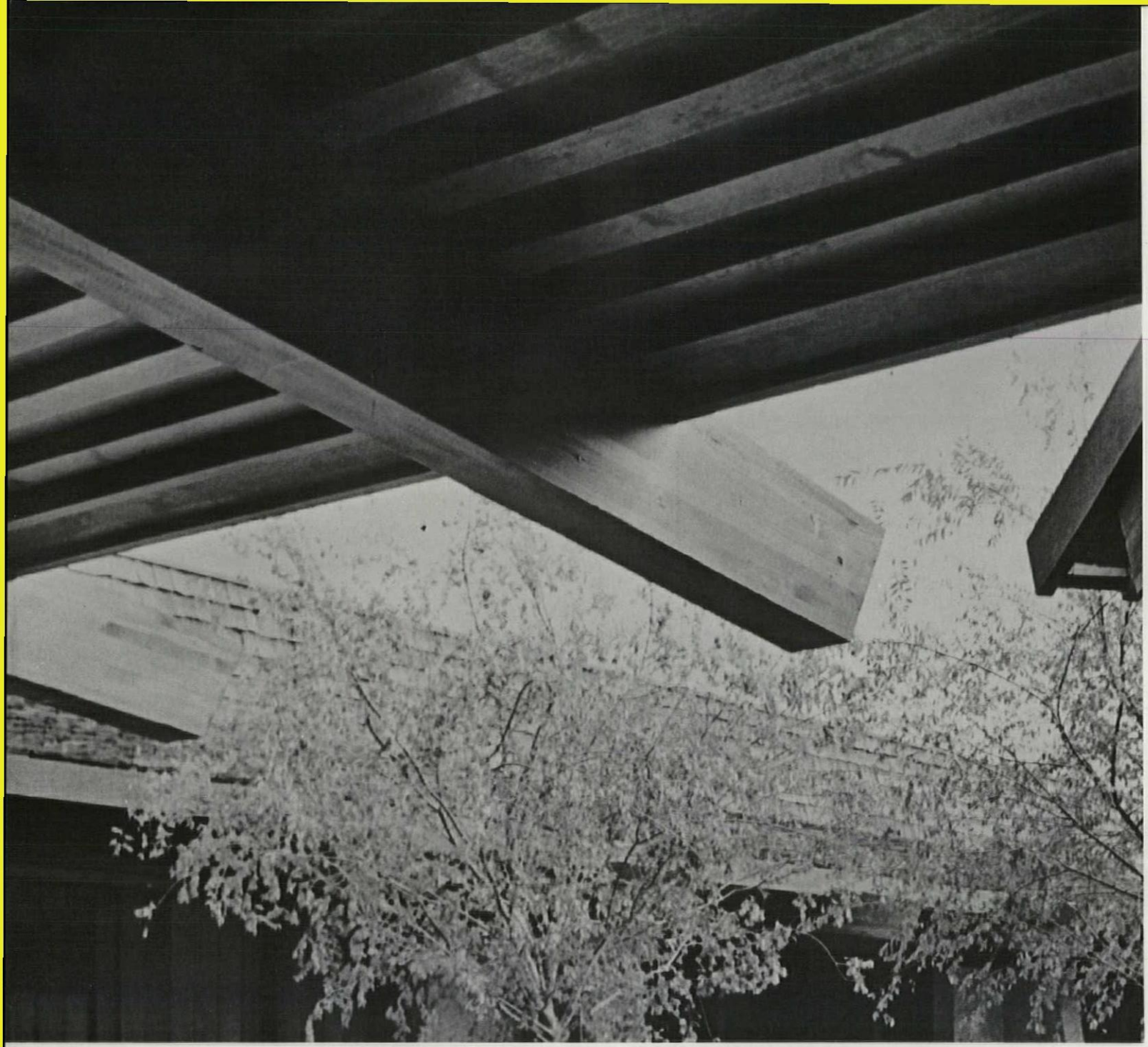


PHOTO: BLACK-BAKER

In the classroom block of the Life Science Building (below), *ten cross-shaped columns support 19' x 24' structural "capitals"* (right) *that carry the remainder of the second floor and roof. Precast concrete sunscreens protect the classrooms on the upper floor* (left). *The windowless, loftlike laboratory spaces* (above) *are partially divided by asbestos panels finished to double as chalkboards.*

PHOTO: BLACK-BAKER



A Dream in Redwood

FOOTHILL COLLEGE • LOS ALTOS HILLS, CALIFORNIA • ERNEST J. KUMP AND MASTEN & HURD, ASSOCIATED ARCHITECTS

"This was a project architects dream about," says Ernest Kump. "This was a new institution, with no intrinsic problems or immutable conditions, no conflicts between vested interests." Out of this dream commission, Kump and his associates have created an admirable reality.

Their design for an entire campus has been attracting the attention of the architectural world since it received a P/A Design Award Citation in 1960. A lively discussion of its merits and shortcomings took place at the Design Award Seminars that year (see NOVEMBER 1960 P/A). As a completed complex, it was the sole winner of an Honor Award in the 1962 AIA awards program.

Foothill is one of 69 junior colleges operated under the supervision of the State Board of Higher Education and serves a district comprising six incorporated communities in Santa Clara County. It is primarily a two-year day college designed for a capacity of 3500 students, but it also offers evening courses and serves as a setting for community civic and cultural activities.

The District Board of Trustees was able to lay down unusually well-defined architectural criteria for the campus. They requested a solution that would "be related to the background and tradition of the area"; "express informality"; avoid "rigid formality or obvious geometric discipline"; yet produce "an air of quiet dignity and sophistication appropriate to a college." They were seeking a forward-looking design, "taking advantage of con-

PHOTO: VANO-WELLS-FAGLIARO

temporary advances in . . . construction and environmental and educational planning techniques." Their ultimate objective was a campus that would "inspire deep and lasting regard and affectionate remembrance in all those who attend its classes or participate in its educational work."

The site comprises 122 acres adjacent to a proposed freeway. The surrounding area is now largely agricultural, but medium-density residential development can be expected. The principal terrain features are two low central hills, separated by a shallow ravine. Existing oak trees are numerous and well distributed.

The 39 buildings of the complex have been organized into 11 departmental groups, clustered around individual courts that lead to a large central mall. Buildings such as the gymnasium, student centers, and theater, which are available to the community, have been located near the main access drive. Parking areas have been distributed around the base of the slopes, where they are least obtrusive.

The majority of the buildings are made up of standard modular units 60′ x 68′. These units, which are structurally and mechanically self-sufficient, are defined by four concrete piers that sustain lateral loads, eliminating the need for shear walls. Intermediate wood posts support the exterior wall panels and carry the vertical load of the wood-framed roof. The interior of the unit is entirely free of bearing elements and can be partitioned as desired on a 4-ft grid.

All mechanical equipment is housed within the hipped roof forms. The parapets at the crown conceal all fans and vents. Mechanical services can be freely

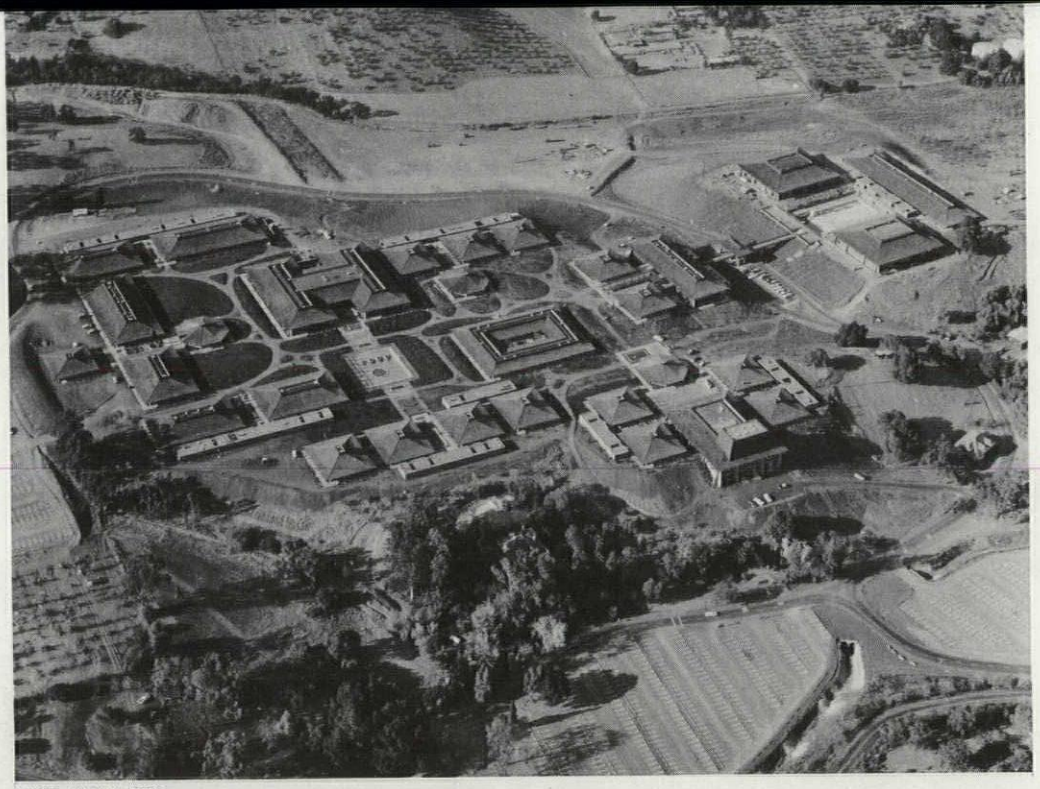
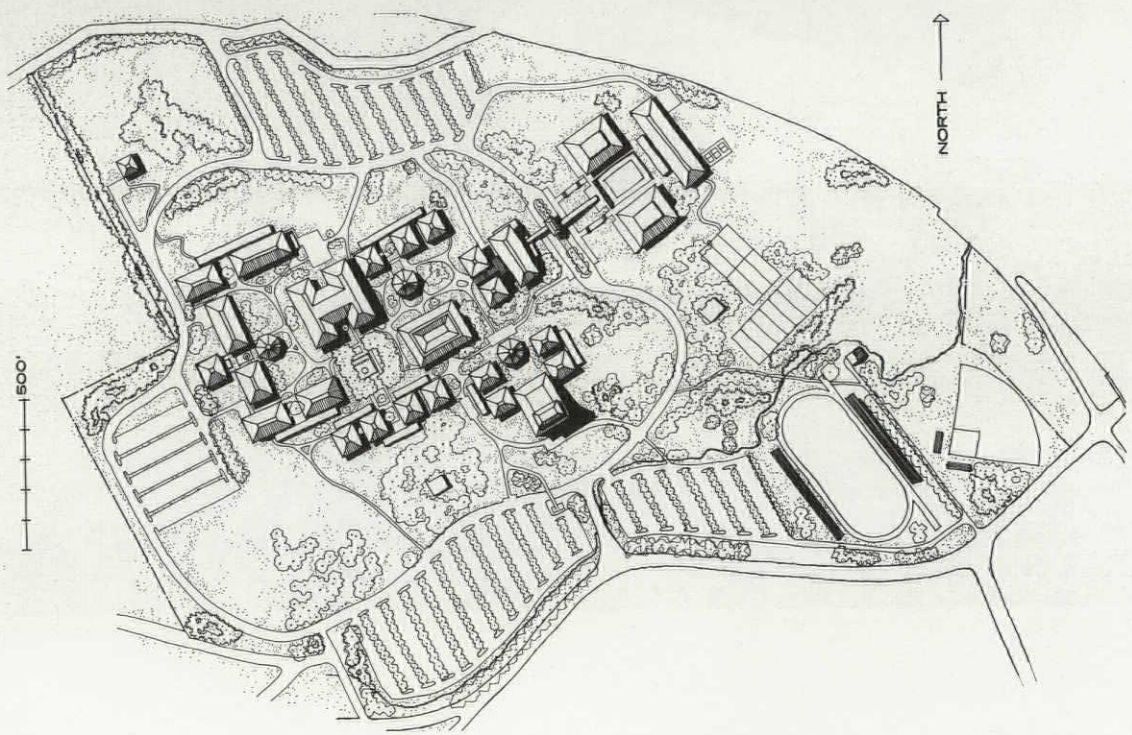
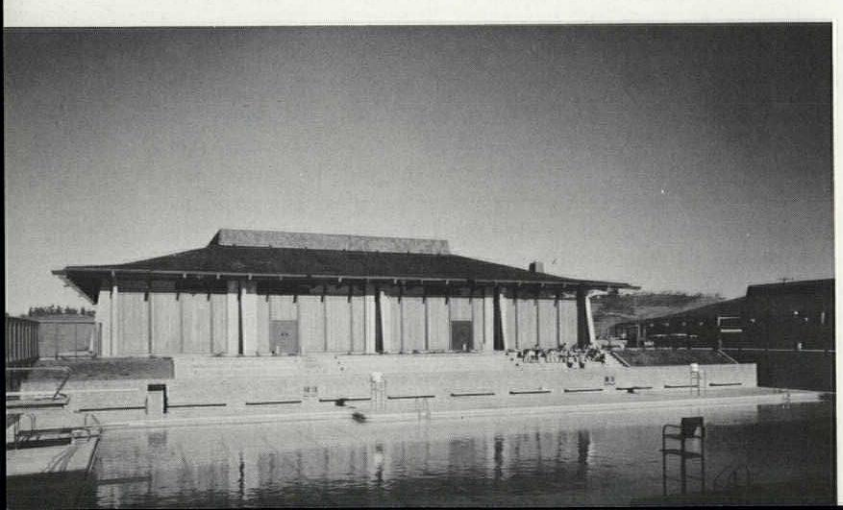
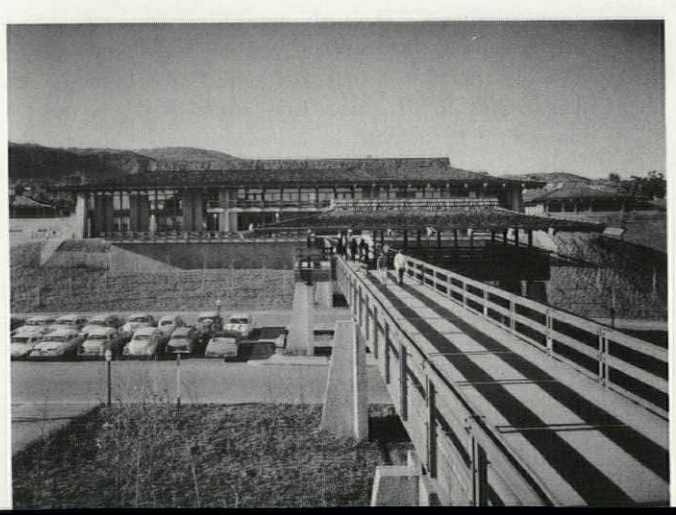


PHOTO: KARL H. RIEK





PHOTOS, EXCEPT AS NOTED: MORLEY BAER



rearranged to serve any 8′ x 8′ space.

The materials selected for these buildings are slow-burning, low in cost, and readily available in the area. The finish materials will be affected little by time and wear. The roofs are clad with redwood shakes and framed with laminated Douglas Fir beams (stained the color of redwood wherever they are exposed). Exterior wall panels are faced with re-sawn redwood siding on both sides. Interior partitions are finished in redwood, vertical-grain Douglas Fir plywood, gypsum board, plaster, and cork board. Cabinets and furnishings are in natural-wood finishes. Paint colors are generally limited to tans and off-whites; subdued tones of olive, cocoa, and plum are introduced in the chalkboards.

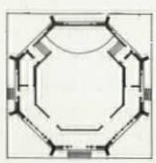
The flat-roofed office structures provide a counterpoint in materials, as well as form. The brick of their solid exterior walls has been left exposed on the interior. The wood-framed structural system is covered by a composition roof.

The landscape development has exploited the natural advantages of the site by preserving most of the trees and emphasizing the original land form. The character of the local terrain is reflected in the rolling lawns and meandering paths within which the geometrically organized building groups are set.

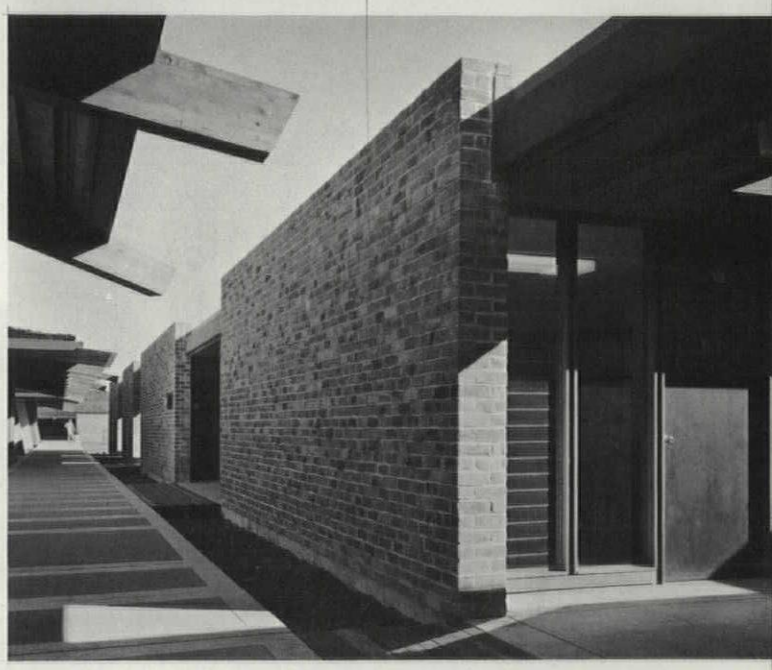
The budget for the entire development was $10,400,000. Construction cost was $8,216,000, or about $16.90 per sq. ft.

The aerial view (facing page, top) *shows the organization of the campus in departmental clusters around the central mall. The classroom buildings are based on a rectangular structural module of 60′ x 68′. Offices are housed in adjacent one-story structures. The three octagonal lecture-hall buildings and other facilities with special space requirements add variety to the composition. The athletic complex, which surrounds a large outdoor pool* (facing page, lower left) *is linked to the main campus by a bridge* (facing page, lower right). *The stair pavilion at the middle of the bridge serves as a point of access from the main entrance drive beneath it. The view to the west from the redwood pergola of the student center* (photo above and SELECTED DETAIL, p. 145) *reveals the expanse of the central mall. In developing it, the landscape architects, Sasaki, Walker & Associates, have re-created—at pedestrian scale—the characteristic land form of the locality.*

A variation on the typical roof form makes an effective landmark of the theater flyloft (above). *The entrance loggia of the theater* (far left) *faces a court surrounded by music and arts buildings. The theater interior* (left) *can be divided into two halls by a sound-retardant partition. The "appreciation hall"* (below left and plan below) *is used for lectures and chamber music.*



Departmental groups are organized around courts (top right) *that are intimately related to the buildings in scale and design. Faculty and administrative offices and service facilities are located in low brick-walled structures* (middle right) *that close the ends of the courts. The interiors of the larger blocks are left free for division into teaching spaces. The Language Arts and Communications Department* (plan below) *has spaces of varying size, from individual darkrooms to speech classrooms. Walks adjacent to the buildings* (photo below) *are composed of precast concrete units that provide access to utility trenches beneath. The overhanging roof structure provides shelter. Rain water is directed to planting beds by the redwood spouts projecting from the rafters.*



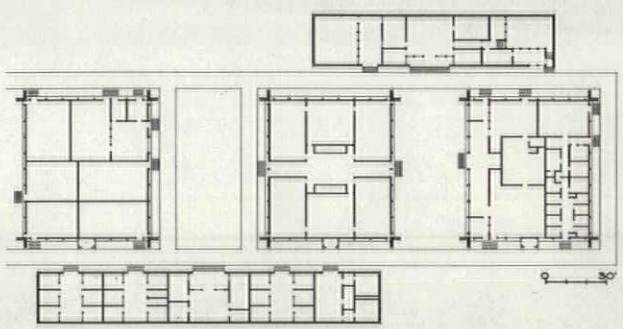
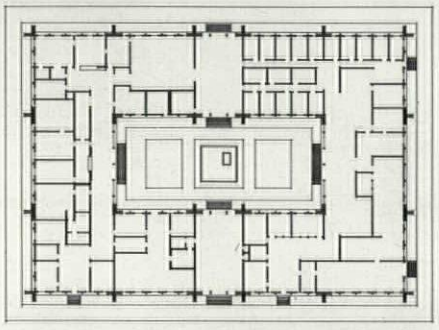


PHOTO: VANO-WELLS-FAGLIARO



The plan of the Administration Building (above) *illustrates the adaptability of the basic 60' x 68' space module. Offices are entered by way of the central court* (top photo), *paved in brick and concrete.*

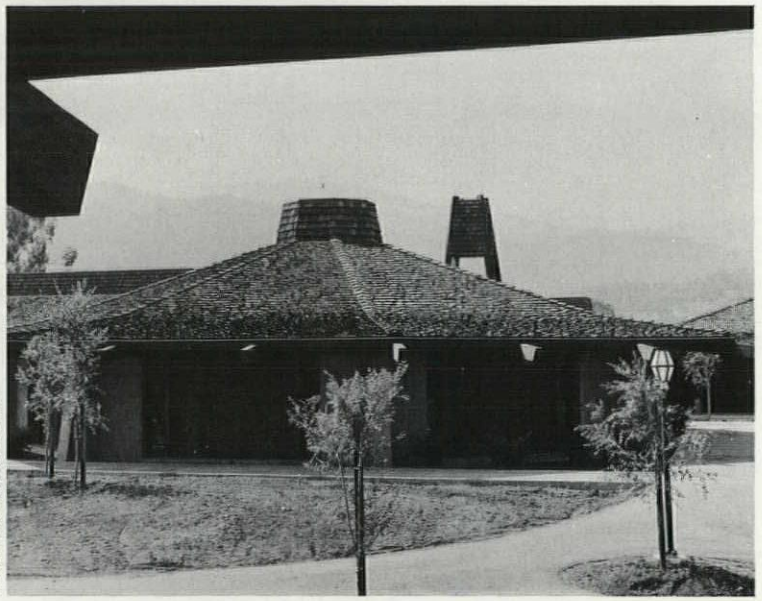
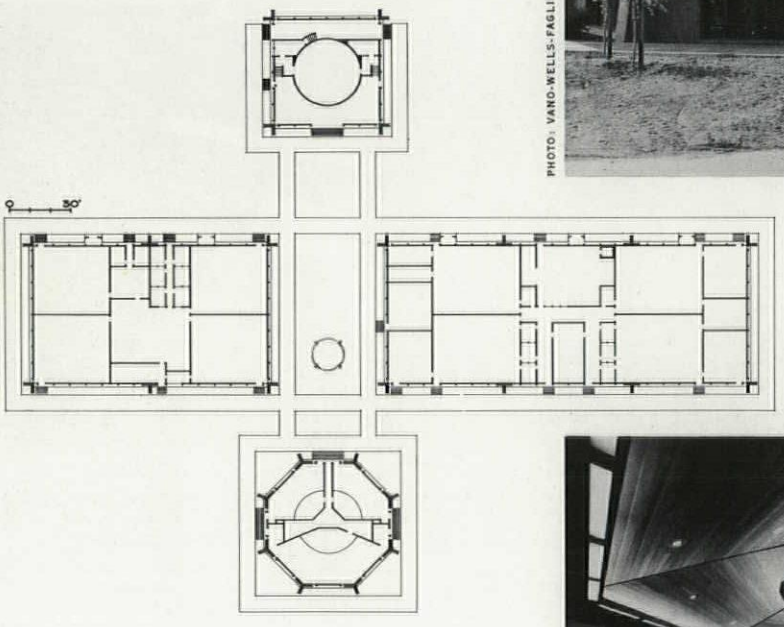
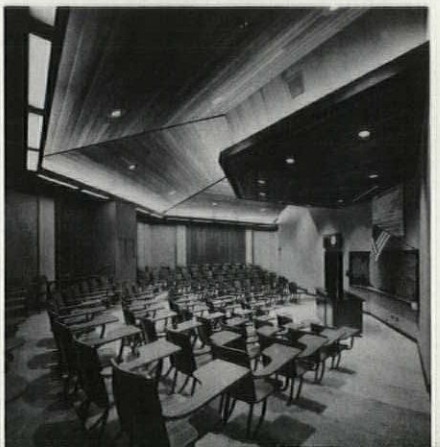


PHOTO: VANO-WELLS-FAGLIARO





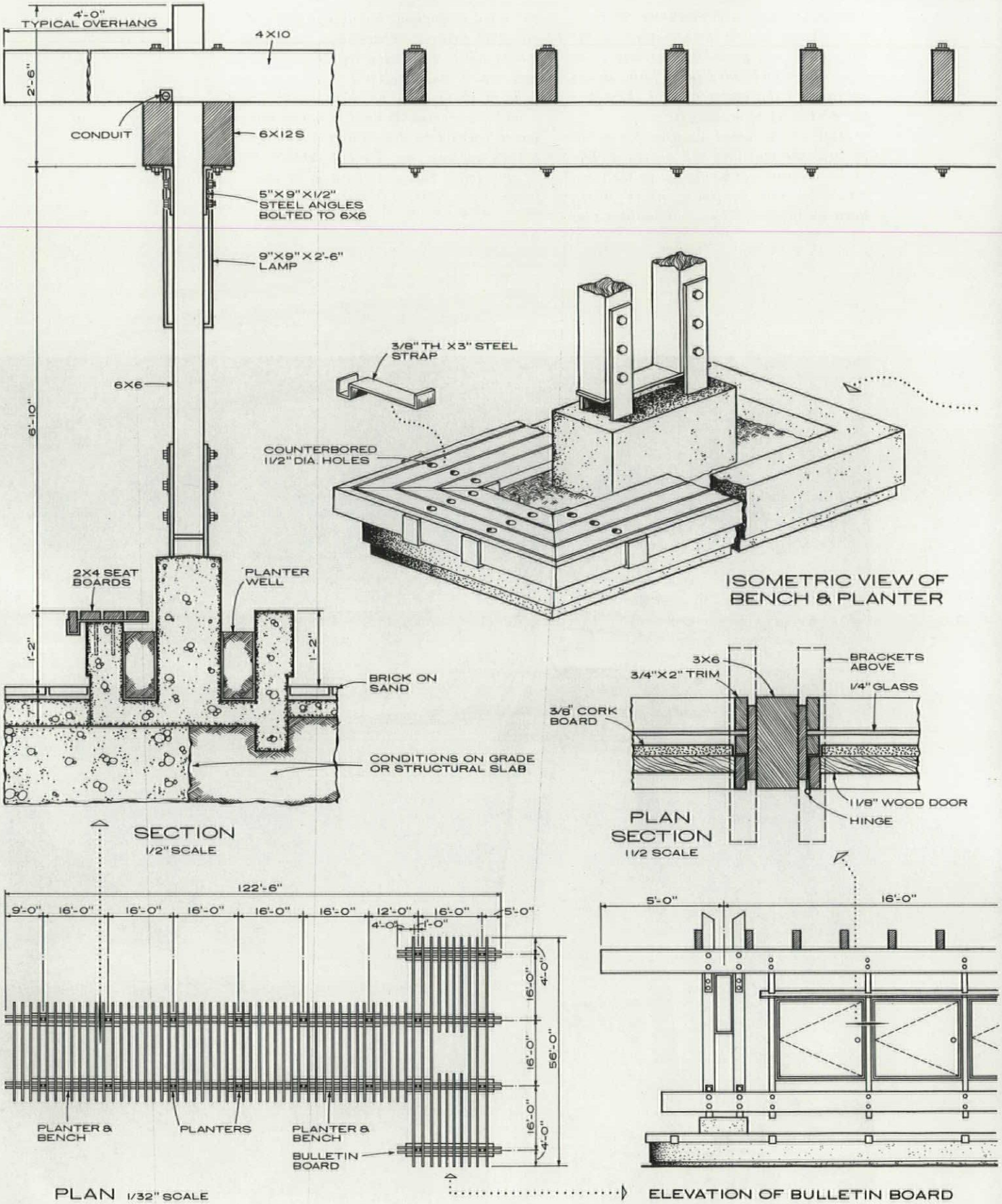
The octagonal science lecture hall building (above) *is one of three similar structures on the campus, the special function of which is expressed in their form. In this case, the octagon is divided into three halls* (plan at left), *separated by common preparation space. The wood-paneled interiors* (left) *follow the form of the structure. The court in the science group* (facing page) *features a tower with a Foucault pendulum.*

This was a golden opportunity to create a milestone in the architecture of the community college, which heretofore has been rather undecided in its form. It was sobering to the architects, for there was the possibility of muffing it.

Most of the usual excuses for architectural shortcomings did not exist. The architects were not hampered by the institution, but were, on the contrary, stimulated by the rare degree of rapport that prevailed throughout the design and construction phases. There was sufficient money not to hamstring us. (Time, however, was a consideration.)

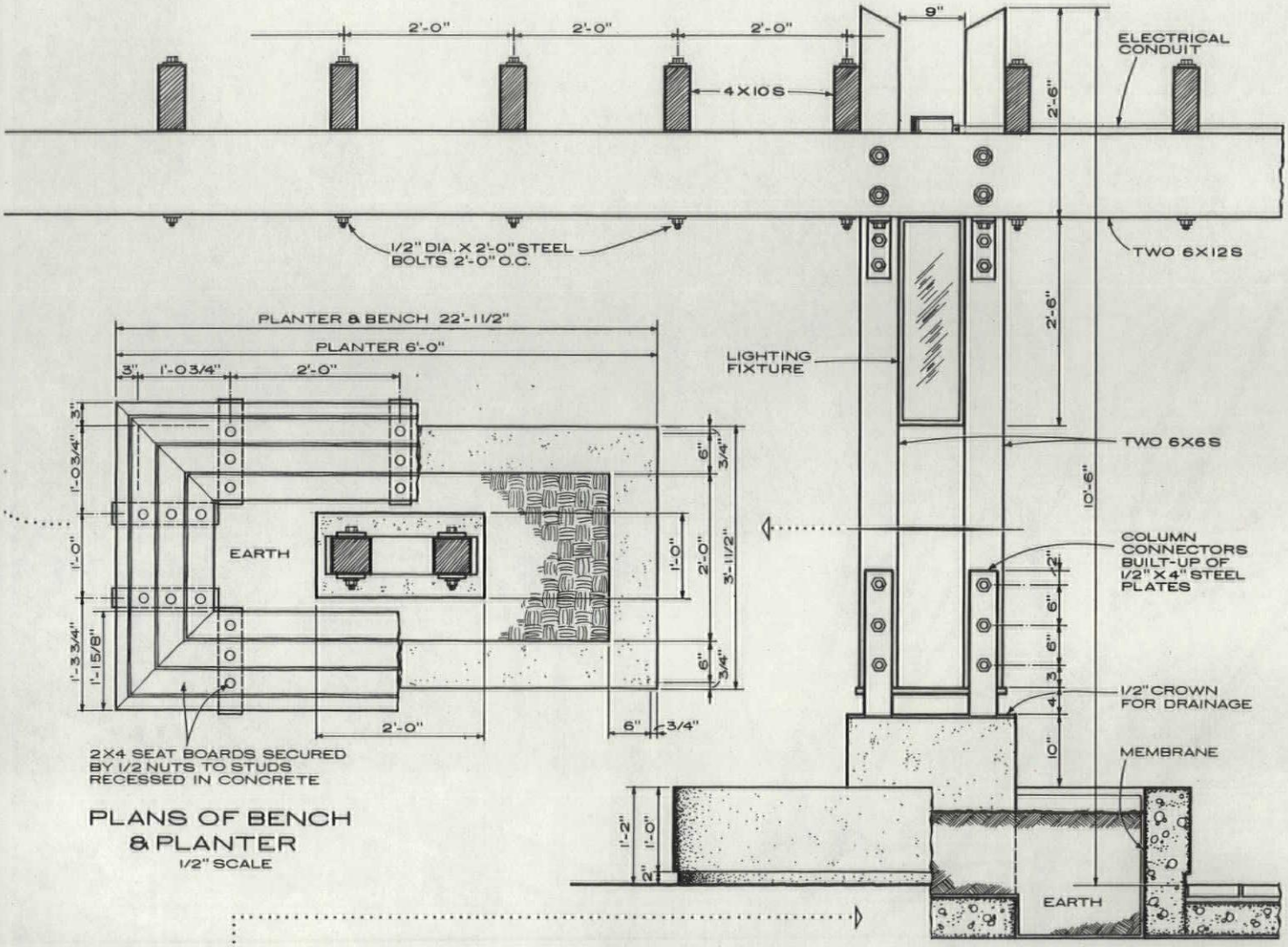
Were the job to be done again, we would not necessarily do it the same way, but this would be due to a creative urge, not a corrective one. We felt exhilarated in completing this project, a great challenge that we feel was met successfully.

THE ARCHITECTS



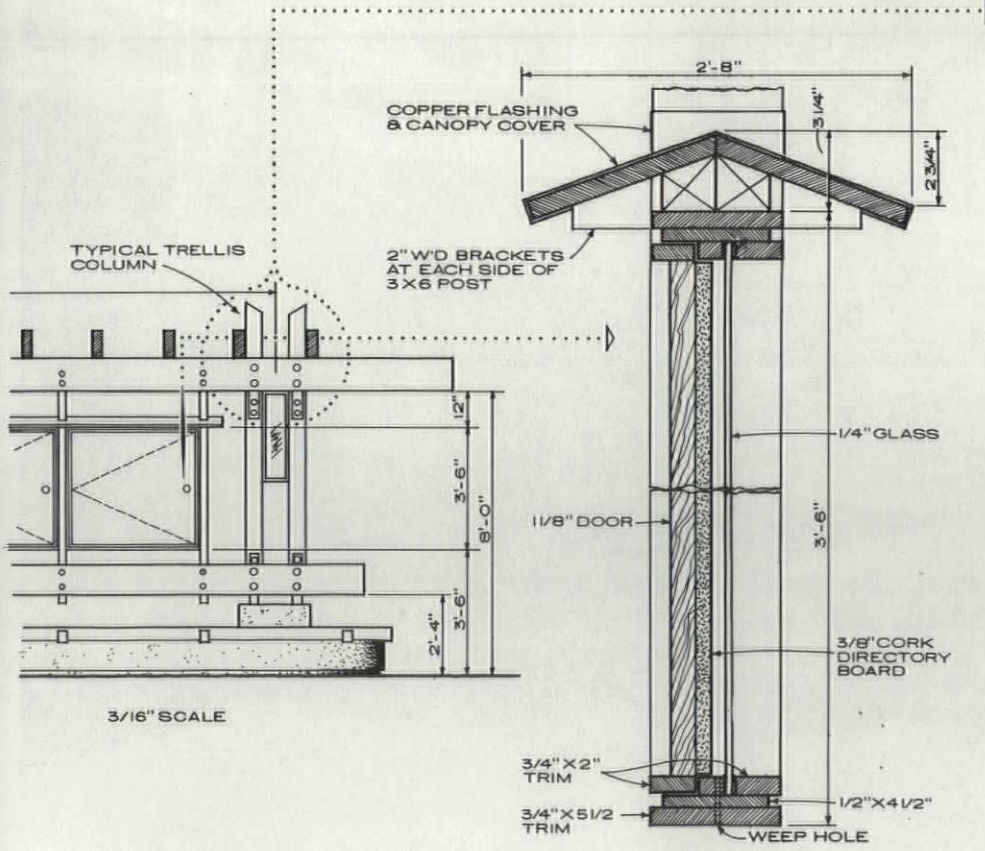
FOOTHILL COLLEGE: Los Altos Hills, California
ERNEST J. KUMP and MASTEN & HURD, Architects

SELECTED DETAILS
TRELLIS and BULLETIN BOARD



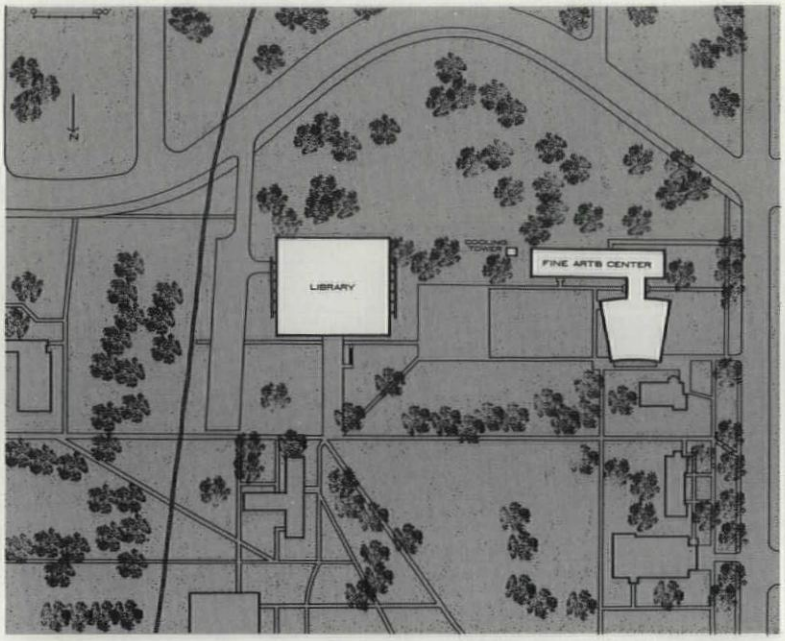
PLANS OF BENCH & PLANTER
1/2" SCALE

ELEVATION OF PLANTER & TYPICAL TRELLIS COLUMN
1/2" SCALE



3/16" SCALE

SECTION 1 1/2" SCALE



PHOTOS: BALTAZAR KORAB

Grinnell's Library and Fine Arts Center

BURLING LIBRARY, ROBERTS THEATER, AND FINE ARTS CENTER • GRINNELL COLLEGE, GRINNELL, IOWA • SKIDMORE, OWINGS & MERRILL, ARCHITECTS • KEYES D. METCALF, LIBRARY CONSULTANT • JAMES HULL MILLER, THEATER CONSULTANT

The Burling Library is the first building to be constructed at Grinnell under the directives of a development plan drawn up by SOM to increase the enrollment capacity of the college to 1100. The library site was unoccupied; two buildings that SOM determined obsolete were demolished to provide the site for the Fine Arts Center, which includes the theater. Together, the buildings form a new core for the academic area (*above*).

The library has an unpretentious exterior that fits in with the scale of the old buildings on the campus. Although three stories high, it appears to be lower: the grade on the entrance side rises to the level of the middle floor; a bridge at the entry spans a shallow moat that exposes the lower-floor windows.

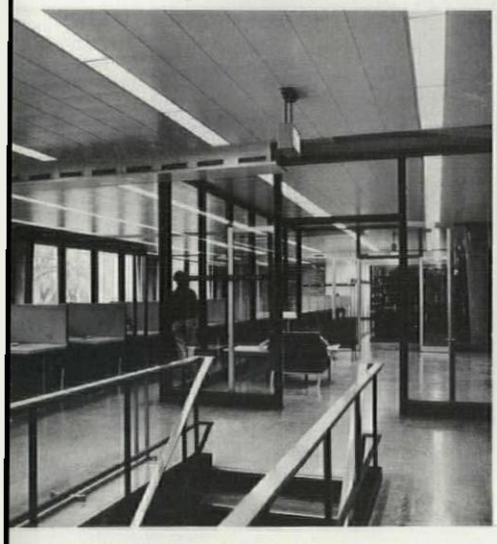
Precast T-columns and tie beams support a roof system of precast double T's. The solid side walls are of brick; on the front and rear, the walls are of gray glass in specially designed aluminum extrusions. The glass walls are set at the column line so that the T's provide deep overhangs above two balconies projecting from the main level (*facing page*). Students can read outdoors on the sheltered balconies in good weather. By this simple architectural device, the library becomes a symbol of an alma mater.

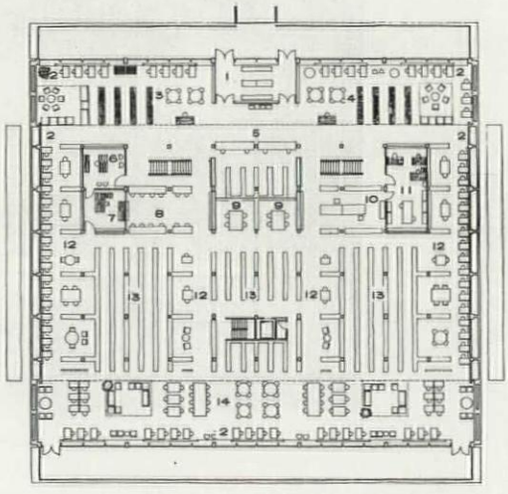
The basic idea of the building is that it can be experienced on the interior as a single large room: a mezzanine running through the main space is arranged so that the unity of the space is everywhere apparent. Except for the foyer, offices, cataloguing room, and the Twentieth Century Room (a reading lounge devoted to modern literature), the campus level

and the mezzanine are arranged in an open plan. There is an interpenetration of books and readers—stacks, aisles, carrells, tables, reading lounges and alcoves —so that the entire space becomes a study area without hindering the privacy of the individual. Carrells ring the periphery of both levels; this placement orients some of the carrells toward views of the campus and others toward brick walls. Students can choose study areas according to the amount of concentration they require for their work.

Grinnell's Fine Arts Center, the second unit of SOM's development plan, comprises two buildings: the Arts Building and the Roberts Theater. The Arts Building (*facing page*), a two-story rectangular block that has a concrete structure with prestressed bents, contains classrooms, workshops, studios, and rehearsal rooms. Exterior walls are of dark gray brick and gray glass set in special aluminum extrusions (*facing page, center, left*).

The Roberts Theatre is a separate struc-

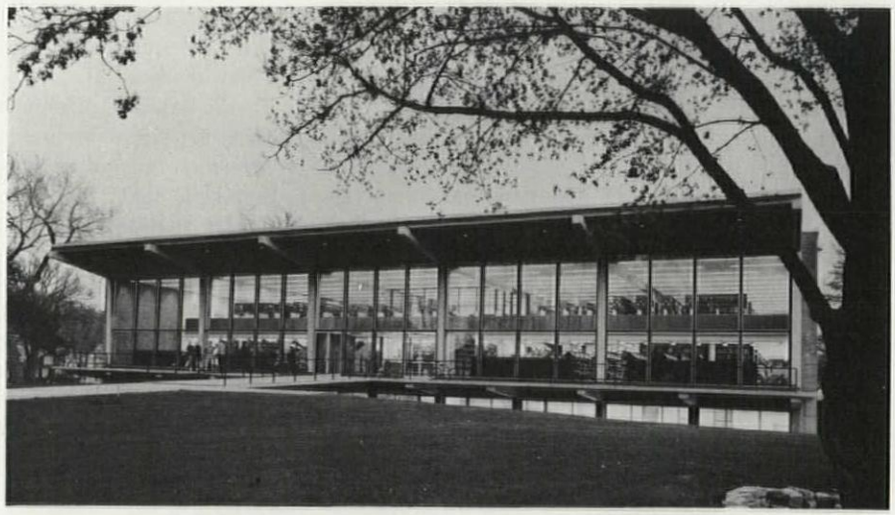




THE CAMPUS LEVEL

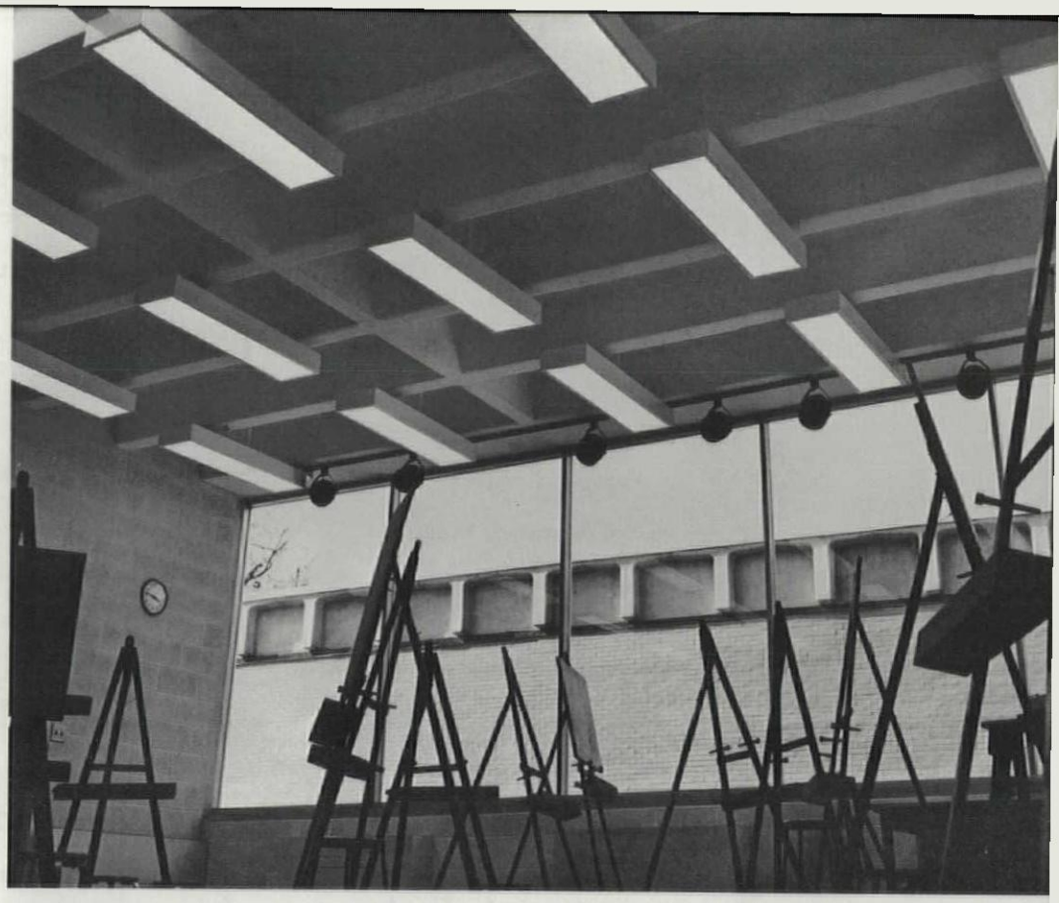
1, Vestibule. 2, Peripheral carrel seating. 3, Periodicals and newspapers. 4, Reference reading. 5, Charging desk. 6, Librarian. 7, Secretary. 8, Periodical index. 9, Bibliography. 10, Public card catalog. 11, Cataloguing. 12, Stack reading areas. 13, Stacks. 14, Reading room.

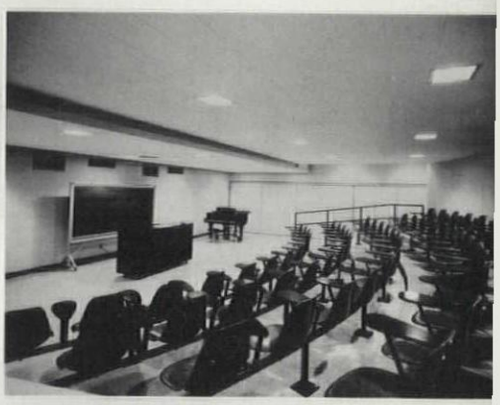
From the carrells at the rear of the mezzanine, students look out over the lounges and carrells below, and past the balcony to the campus (top). *Stairway to the mezzanine* (center) *leads to the Twentieth Century Room, which is furnished with classics of modern design. On the entrance side* (right), *grading minimizes the height of the building.*



ture, joined to the Arts Building by a glass-walled connecting link that serves as a foyer for both. Except for the basement level, the 424-seat theater structure is separated from its auxiliary functions—lobby, toilet facilities, even some of the backstage storage areas such as wardrobe are in the adjacent Arts Building. The theater, in fact, is devoted almost exclusively to what the spectator shares with the performers, and this is openly shared; even front-of-house lighting is exposed (*following pages*). This purity of purpose is clear, and the separation from the classroom spaces neatly expresses the distinction between apprenticeship and performance.

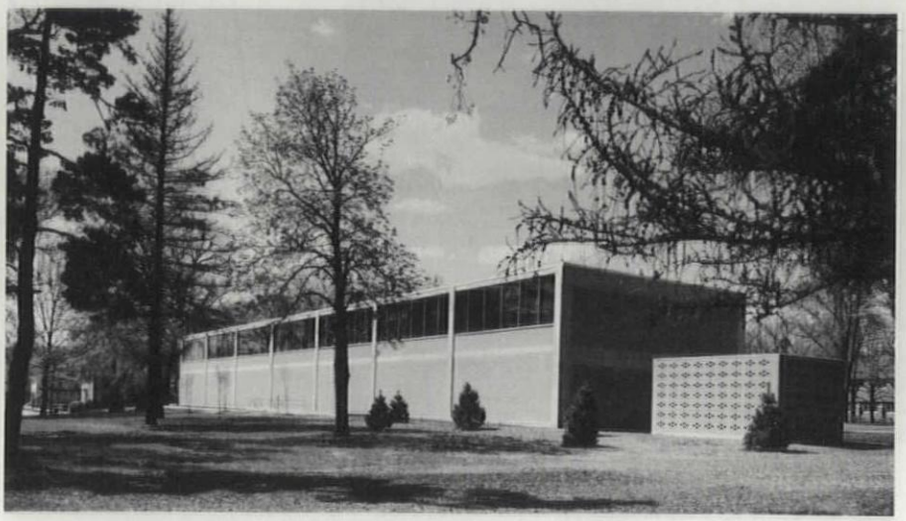
The structure is composed of precast concrete columns and girders with a roof system of precast, prestressed T's. The T's are exposed on the interior and on the front and rear of the exterior. The building is horn-shaped, making it suggestive of its acoustic function, and is enclosed by dark gray brick.



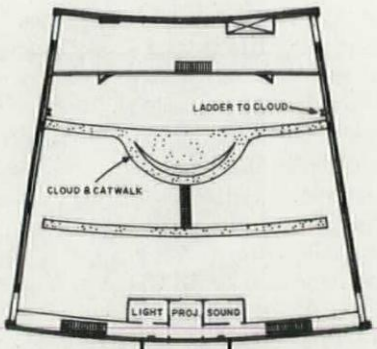


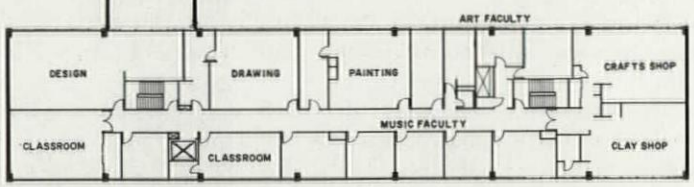
The small arena theater (above) *is an uncommitted, flexible space. Stage lighting is exposed. The lecture room* (right) *is used also for choral rehearsal.*

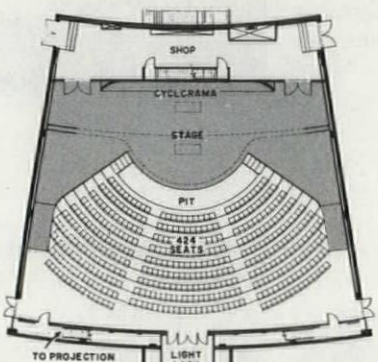
On the south side of the Arts Building (bottom), *exterior walls of the first floor are solid brick so as to exclude outdoor noises from the rehearsal rooms and small arena theater. The cooling tower for the Fine Arts Center is to the east of the Arts Building. On the north side, the studios look out onto the theater* (top).

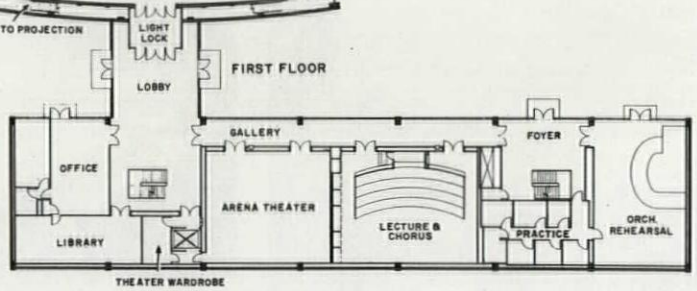


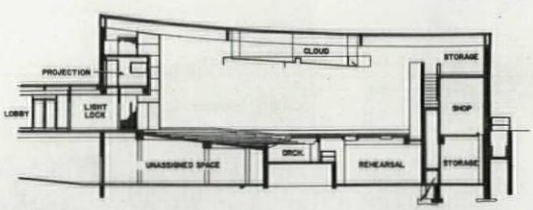
The function of the Roberts Theater has been emphasized by separating it from the classroom building. The theater structure is devoted principally to the auditorium and stage, which are in a single, undivided chamber; lobby, audience toilet facilities, and theater storage are in the adjacent Arts Building. The theater has a single-form open stage that is a combination of apron and caliper. A fixed cyclorama is provided for projected scenery. Front-of-house lighting is only slightly masked from the view of the audience by a catwalk and "cloud." The Arts Building also contains classrooms, studios, rehearsal rooms and offices for the music, art, and drama faculties.

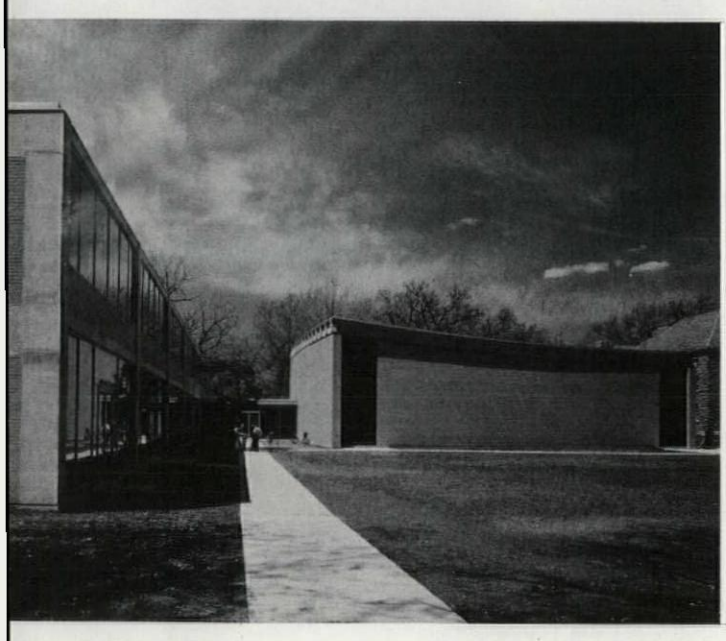


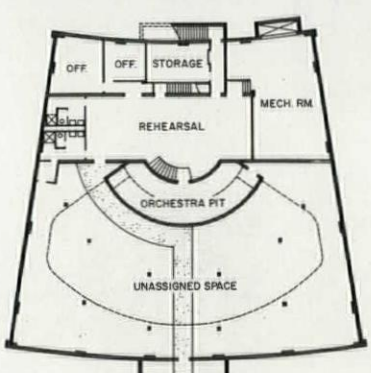


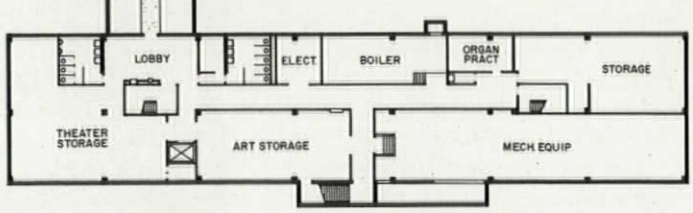












The theater is designed with a single-form open stage that combines both the apron and caliper forms; that is, the stage has a fixed shape comprising an acting area that projects into the audience, and extensive side stages that surround the audience. The stage is frameless; performers and spectators are in a single, unseparated chamber.

The stage is planned for free-standing set-pieces and for projected scenery so as to minimize the work of stage crews and to permit students to concentrate on the play itself.

This theater is an example of one of two significant new types to be developed in this century, the other being the mechanized multi-form theater (FEBRUARY 1962 P/A). As such, it has been the subject of heated discussion in theater circles for some time. Because this controversy typifies the current status of theater design, we present an evaluation of the theater by theater designer Arthur C. Risser, and an answer to this critique by James Hull Miller, the consultant on the design of the Roberts Theater.

ARTHUR C. RISSER: The architecture of a theater should be dictated by the activities within the building. The Grinnell theater will produce plays of all periods; therefore, flexibility of equipment and techniques is essential. One particular theater form will not be universally satisfactory. Other stage arrangements would have been possible within the Grinnell program.

Several undesirable features may be noted in the theater. The designers have not been successful in their attempt to avoid a proscenium: in conjunction with the catwalk over the audience (immediately in front of the curtain track), the curtains, even when fully opened, create a proscenium effect. The long-span prestressed roof members serve a purely utilitarian purpose and are not treated as the finished ceiling of the auditorium and stage.

Inadequate sight-lines are immediately apparent upon examination of the drawings. In order to mask off-stage personnel, lighting instruments, and rigging hardware, the scene designer must use an inordinate number of masking units. Some theater designers maintain that masking is unnecessary; however, glare from a light, and both movements and objects irrelevant to the play, are disturbing to an audience and can shatter the impact of a scene.

Although the theater designer planned for projected scenery, he provided a screen that does not extend to the ceiling and that only partially encloses the acting area. To many persons in the audience, actors playing in any of the forestage areas will be unrelated to the scene projected on the screen.

The stage is shallow, with cramped circulation behind it. The narrow space provided behind the cyclorama is inadequate for scene construction purposes, and the storage space above will be partially visible to the audience.

No public restrooms are provided. The omission of public restrooms in a theater is inadvisable.

In the following examples of other possible arrangements, the same building envelope as that actually built is used, with the exception that the high portion of the ceiling is located over the stage area rather than over the rear of the auditorium. The two proposals incorporate all the required production facilities, and accommodate multi-form stages within that volume.

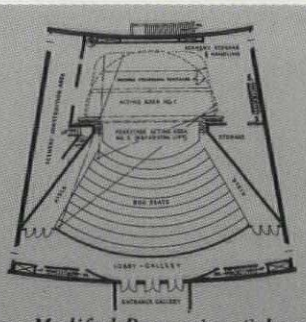
Figures 1a and 1b show a modified proscenium stage. An orchestra lift provides a flexible forestage that may be used for an orchestra in a pit, for audience seating, or for playing area. A full cyclorama encloses the acting area. Seating for approximately 300 persons is provided, with only two outside aisles, in the Continental manner. The addition of a lobby separated from the auditorium eliminates noise. Larger areas for scene construction and storage are also incorporated.

The theater illustrated in Figures 2a–d has a flexible arrangement that provides the advantages of the Grinnell stage, possesses the proscenium-and-forestage features of the first proposal, and also offers an opportunity for the arena arrangement.

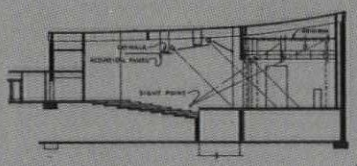
As a theater becomes more flexible, greater mechanization of the stage is required in order to reduce labor requirements; the result is that initial costs and maintenance costs are greater.

The foregoing discussion is not a recommendation of one particular theater plan but attempts to encourage the study of each theater in the light of the functions it is to serve. When the form of a theater is the result of the architect's desire to use a particular kind of building material or method of construction, the usefulness of the building for the production of plays is likely to be limited.

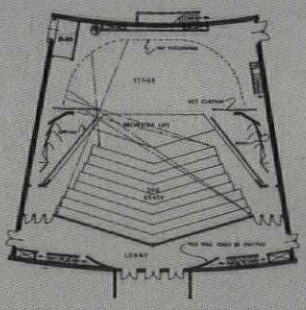
JAMES HULL MILLER: The Roberts Theater was designed to serve orchestra, chorus, drama, operetta, opera, children's theater, dance, forum, lecture, and classwork. As anticipated, the theater is in use continuously — morning, afternoon, and evening. What a college needs is a new kind of theater that will realistically meet the requirements of this complex new pro-



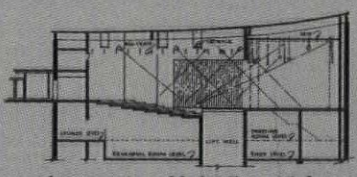
1a: Modified Proscenium Scheme



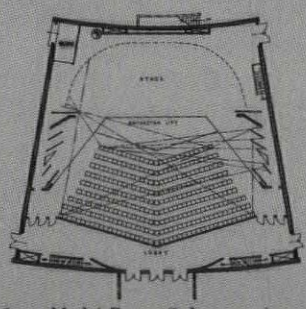
1b: Section, Modified Proscenium



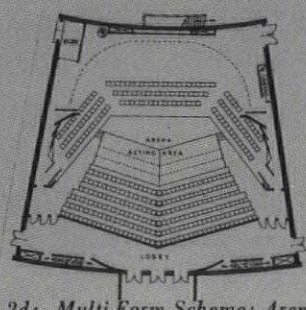
2a: Multi-Form Scheme: Proscenium



2b: Section, Multi-Form Scheme



2c: Multi-Form Scheme: Apron



2d: Multi-Form Scheme: Arena

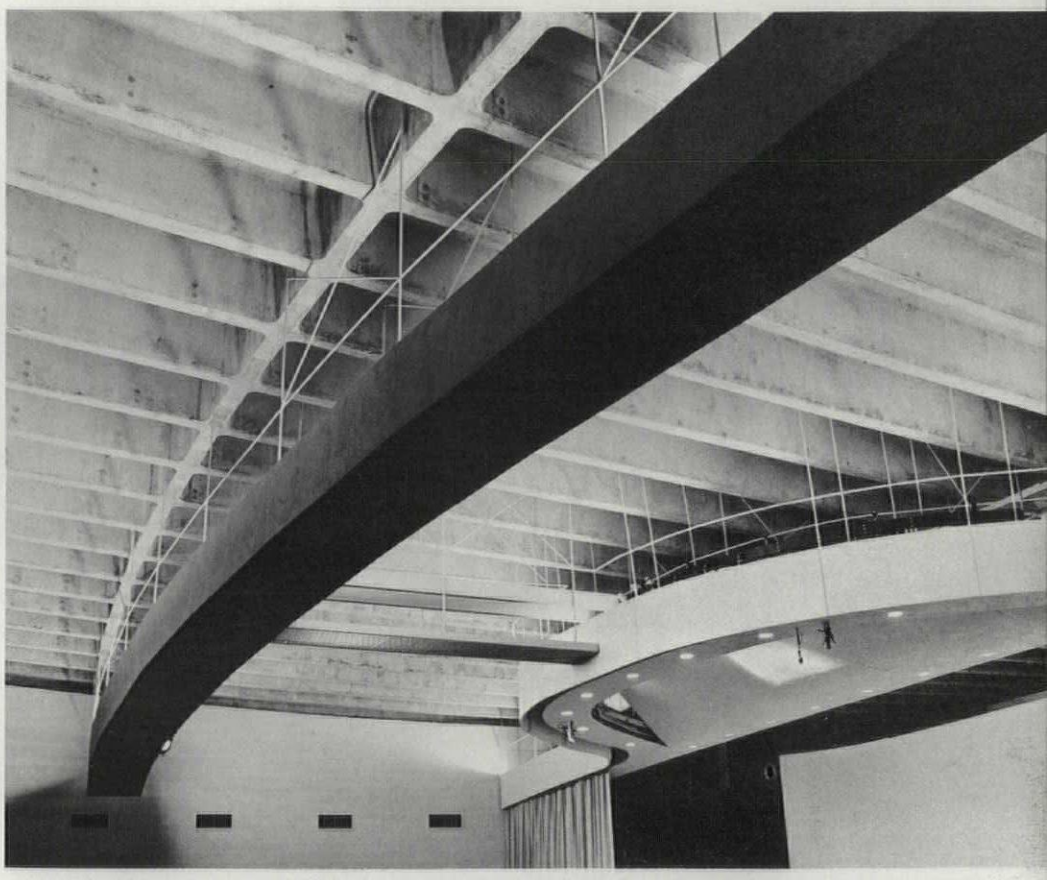
gram. The Roberts Theater is interesting because its design represents this sort of new concept.

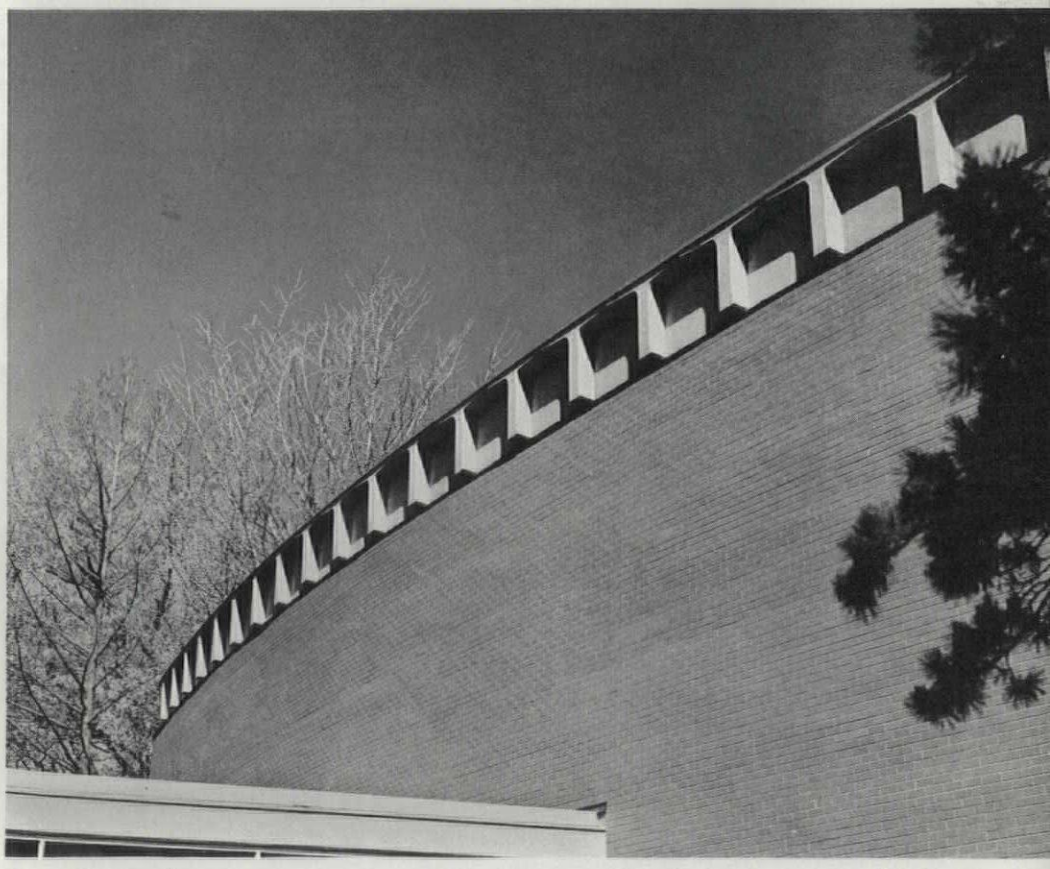
Four features, I believe, are important in making the theater fulfill its requirements: the single chamber containing both stage and seating, the caliper stage that surrounds the audience as well as forming the central performing area, the ceiling-roof combination, and the suspended lighting system. The architectural features create an envelope that favors a simplified stagecraft.

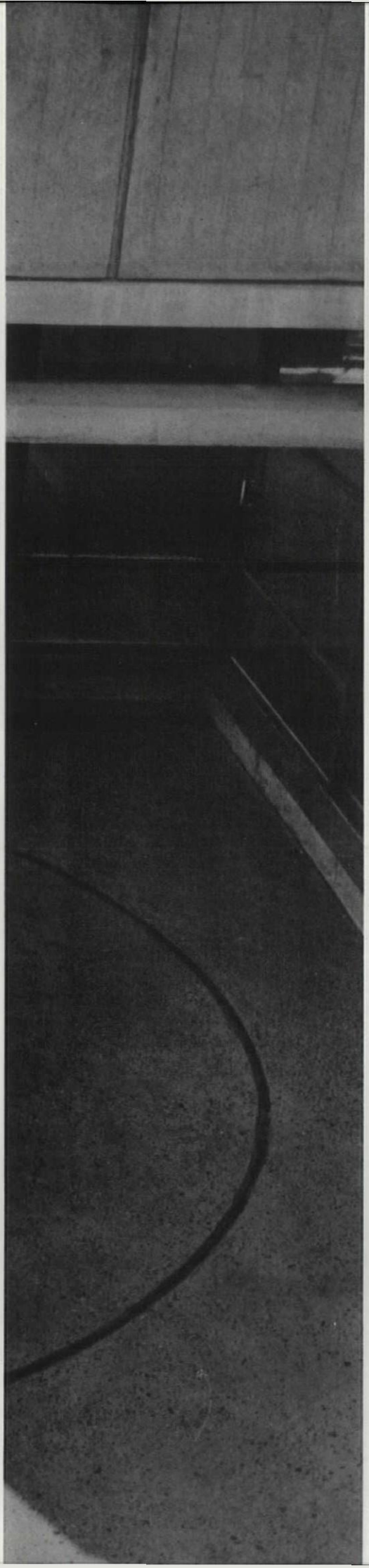
There are two schools of thought on what a theater should be to an audience. One feels that the spectator should be presented with an illusionistic slice of life. The other school believes that dramatic imagery is more intense when the spectator is completely aware of all the forces of playmaking. The techniques of the latter, the open-stage school, are based on a visual shorthand, in which associations stir up a complete imagery; these techniques are based on the principles of gestalt psychology. The history of theater is replete with rich examples of both experiences, thus giving the lie to the criticism that one is more limited than another.

Generically, there are two types of scenic design: one where the setting surrounds the acting area, as in the proscenium theater; in the other type, the acting area surrounds the settings. Proscenium staging tends toward the display of successive scenes, stored to the sides and above the stage; open staging displays multiple settings, often simultaneously, within a larger space; off-stage storage spaces may be provided by arranging temporary screens. Open staging is, of course, the more traditional in the history of Western culture.

The stage lighting system at Grinnell is introduced within the total space, not above it, beyond a false ceiling. This solution also is determined by the philosophy of what a theater should seem to the audience. The pendant lighting plane in the Roberts Theater was initially designed as metal bar tracery, as a part of a sculptural pattern. I regret the "masked functionalism" which was executed, and also take exception to the abundant use of curtains. But I believe that the Roberts Theater is a milestone in the development of theaters for college and community activities. It is a theater that is economically feasible and practical to operate.







place and occasion

"There is a garden in her face." Thomas Campion

Space has no room, time not a moment for man.
He is excluded.

In order to include him—help his homecoming—he must be gathered into their meaning (man is the subject as well as the object of architecture).

Whatever space and time mean, place and occasion mean more.

For space in the image of man is place, and
time in the image of man is occasion.

Today, space and what it should coincide with in order to become "space"—man at home with himself—are lost.
Both search for the same place, but cannot find it.

Provide that place.

Is man able to penetrate the material he organizes into hard shape between one man and another, between what is here and what is there, between this and a following moment?
Is he able to find the right place for the right occasion?
Is he able to linger?

No—so start with this: articulate the inbetween. Make

a welcome of each door

a countenance of each window.

Make of each a place; a bunch of places of each house and each city (a house is a tiny city, a city a huge house).

Get closer to the shifting center of human reality and build its contraform—for each man and all men, since they no longer do it themselves (if society has no form, who can build the city-counterform?).

Senmut, the Egyptian, made what he was commanded to make: a habitable house of granite for a single dead queen. Are the sons of Senmut today unable to make what they are requested to make: habitable places for the millions that live, but are no longer able to fashion their own houses with mud, no longer forced to drag granite.

Architects and urbanists have become true specialists in the art of organizing the meager.
The result draws very close to crime.

The time has come for another sort.

City implies "the people that live there"—not "population."

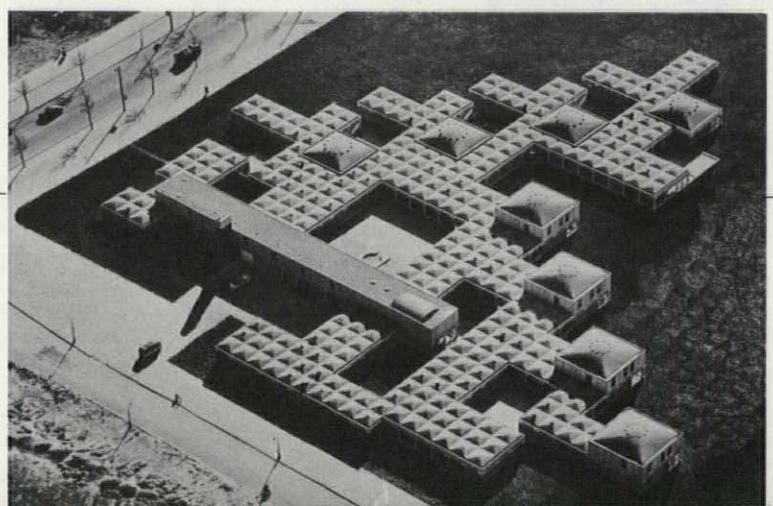
Whoever attempts to solve the riddle of space in the abstract will construct the outline of emptiness and call it space.

Whoever attempts to meet man in the abstract will speak with his echo and call this a dialogue.

Man still breathes in and out.
When is architecture going to do the same?

The above thoughts were written by Dutch architect Aldo Van Eyck. They are a capsuled credo of Van Eyck's philosophy and help to explain his latest work: a home for homeless children near Amsterdam, which houses 125 children and a staff of 30 to 40, 12 of whom live on the premises. In the design of the building, Van Eyck attempted to reconcile the positive qualities of both a centralized scheme and a decentralized one ("twinphenomenon of the collective and the individual") and to avoid their pitfalls ("concentrated institutionalism and loosely knit additive sprawl"); he also made an attempt at reconciling the idea unity with the idea diversity and to achieve one by means of the other. The method he employed was to create a dispersed complex pattern drawn together by interior streets ("a device with an unquestionably human content") and by use of a consistent construction principle. All of the eight different age-group departments (each marked by a large cast-in-place concrete cupola, 366 smaller precast cupolas roofing most other areas), and also the activity rooms and service spaces, open onto the interior street. The children can play here, mix, and move from area to area; they are supposed to feel as vigorous as on the outside. The materials used are the same as those on the exterior, and the lighting is similar to streetlighting in the sense that one moves from illuminated place to illuminated place via comparative darkness. Van Eyck calls the interior street an "intermediary place." Other "intermediary places" are the courtyards, which he calls "exterior rooms strung along the interior street." As Van Eyck explains, "The building was conceived as a configuration of intermediary

1 *Department for boys 14–20 years old; bedrooms above*
2 *Department for girls 14–20 years old; bedrooms above*
3 *Department for boys 10–14 years old; bedrooms above*
4 *Department for girls 10–14 years old; bedrooms above*
5 *Department for children 6–10 years old*
6 *Department for children 4–6 years old*
7 *Department for children 2–4 years old*
8 *Department for babies*
9 *Small hospital*
10 *Festive hall*
11 *Gym with stage, and space for pingpong*
12 *Staff*
13 *Administration and archives*
14 *Staff sitting room; meeting room above*
15 *Service hall, store, bath, laundry, and stair to cellar*
16 *Garage for small bus*
17 *Central linen room and storage*
18 *Central kitchen*
19 *Apartment for head of home*
20 *Apartment for head of departments*
21 *Bicycle ramp; apartments for staff above*
22 *Proposed metal sculpture with encircling trees*
23 *Paved areas with encircling trees*

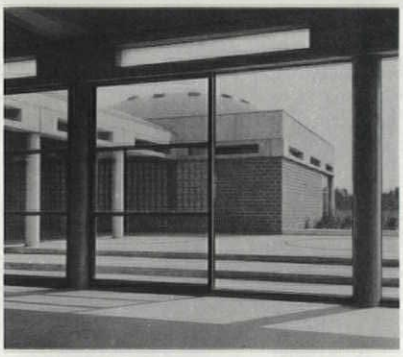


Aerial view of the building from the north: "A small world in a large world. A large world in a small world. A house like a city. A city like a house. A home for children."

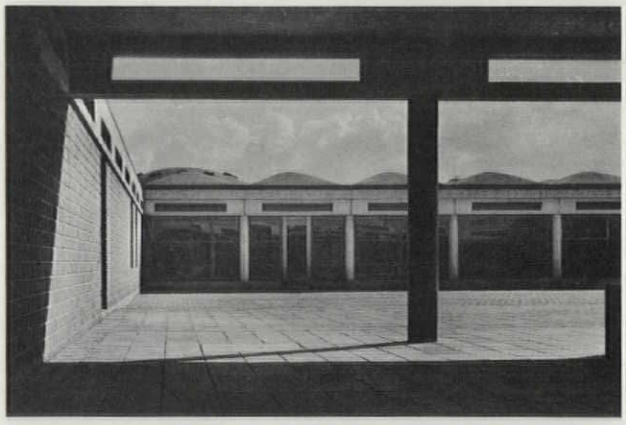
One of the departments for children as seen from the highway.

"Doorstep" entrance square with recessed circular seat.

Entrance square looking outward.



Department for babies seen from festive hall.

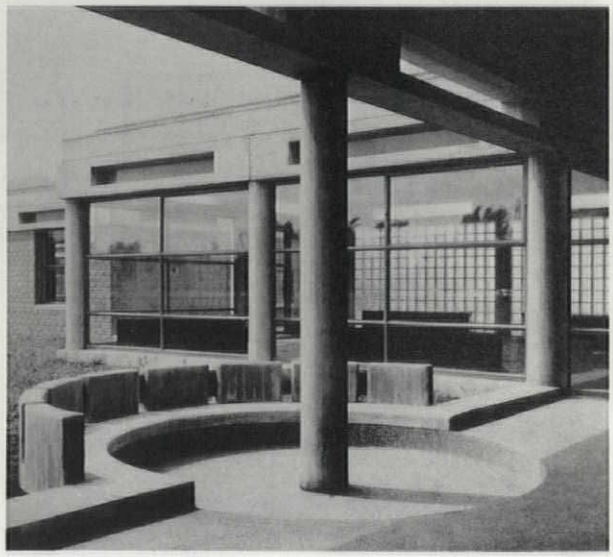


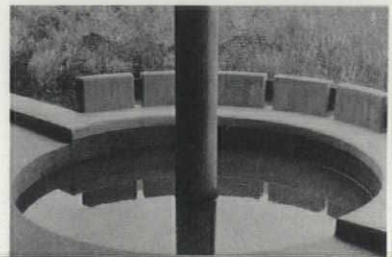
Entrance square looking inward.

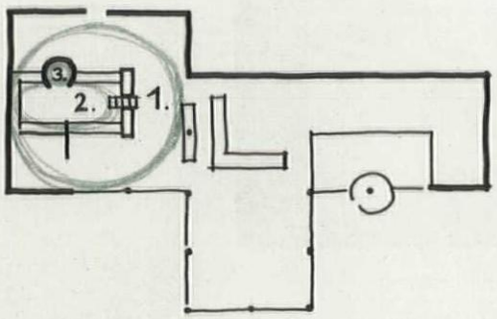
places clearly defined. This does not imply continual transition or endless postponement with respect to place and occasion. On the contrary, it implies a break away from the contemporary concept (call it sickness) of spatial continuity and the tendency to erase every articulation between spaces, i.e., between outside and inside, between one space and another. Instead, I tried to articulate the transition by means of defined inbetween places which induce simultaneous awareness of what is significant on either side."

All walls and partitions throughout the building, and all elements built within them, terminate at column height. The space above this line and below the roof is occupied by horizontal, precast, reinforced concrete architraves ("intermediary elements that bind and enclose, form an extension of the walls upward, an extension of the roof downward"); their voids are either filled with glass or left open. The walls themselves "envelope, interlock, and open consecutively." Within the

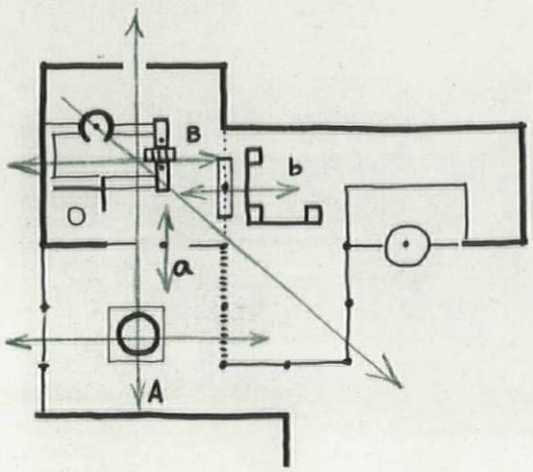
A pool without water becomes an "intermediary place" for children to play; thick pale pink glass is inserted in the spaces between the "battlements." Details like this one, prevalent throughout the building, are characteristic of Van Eyck's humanistic approach to design.



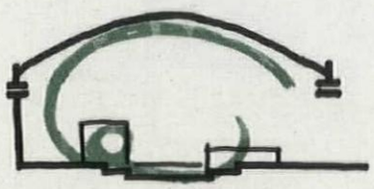




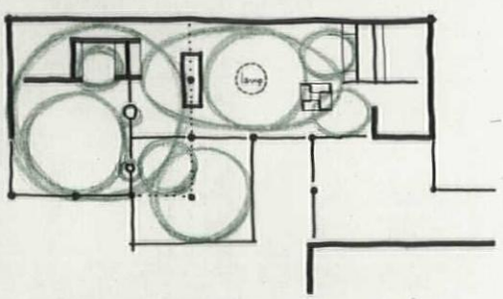
"Reconciliation of basic principles: centralized space; rest through axiality and symmetry; movement through shift of center and of axis (baroque) and spatial continuity (De Stijl); opened and enclosed space. Why? Because not one but all these principles have basic human value! Synthetic revitalization of architectural history—of basic human heritage—is valid always. First sketch shows double reduction of dimension (1→2→3) under large cupola and shift of place-center in relation



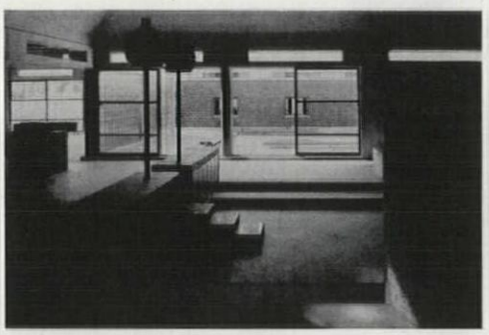
to given space-center. Second sketch shows central axis A and B as well as shifted sub-axis a and sub-axis b. Again the problem of place-center and space-center (a = symmetry of sliding door exit to patio; b = symmetry of open kitchen; A = entrance, center cupola, sandpit; B = recessed part, lanterns). This axis shift (center-shift) enhances liberating diagonal attention from enclosed center towards outer world (main road), i.e., diagonal attention outwards at right angles to

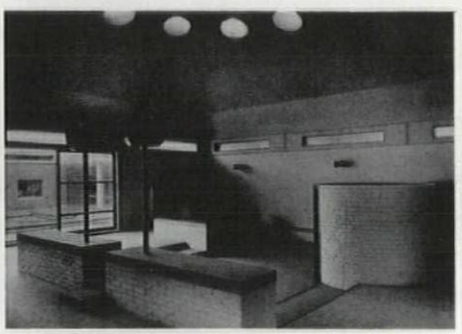


diagonal movement of pavilions. Third sketch shows contra-movement to cupola through recessed floor. Little circular house (no roof) placed excentrically under central circle of light holes in cupola. Tyranny of cupola

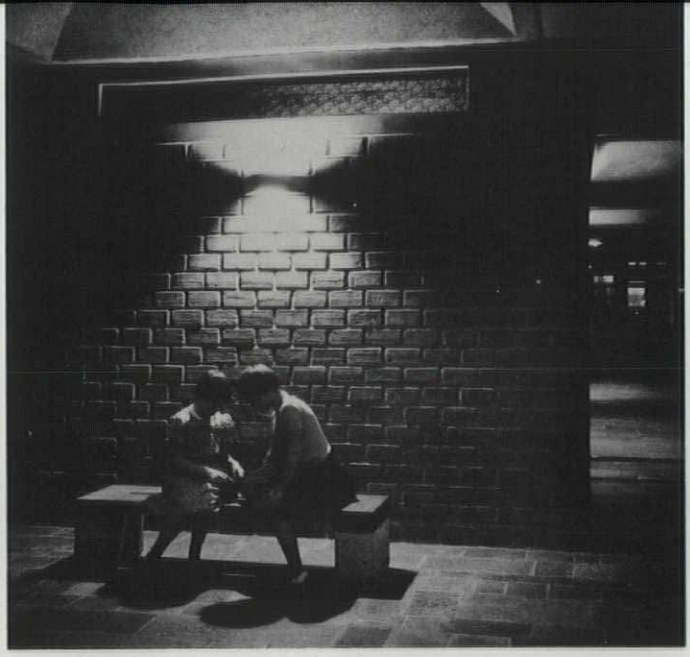


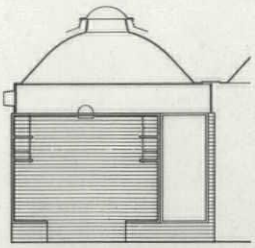
center humanized. The fourth sketch (department for girls 14-20 years old) shows interpenetration of centralized spaces and articulation through defined intermediary places (doorstep conception), i.e., spatial continuity by means of articulation instead of by elimination of articulation between spaces (a contemporary architectural sickness from which De Stijl did not suffer)."





Playroom for small children has twofold reduction of dimension: a recessed central part, and a small circular "house" painted red. See diagrams and Van Eyck's explanatory notes at left.





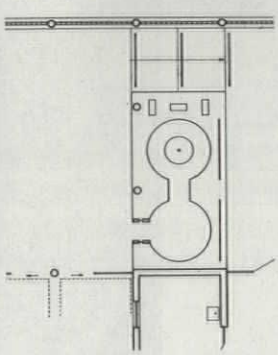
Reading corner in departments for older girls has pale pink square on wall; missing in photo is a lamp in the lower wood ceiling (see section).

Concrete lighting elements provide "place to place" lighting in the building's "interior streets."

departments, the walls are plastered and there are patches of color; but the rhythm of architraves and cupolas continues. From the outside, the cupolas "assist the part-whole, small world-large world, unity-diversity idea. They continually shift one behind the other. As one moves, the building moves within itself. But it remains part of a larger world all the time."

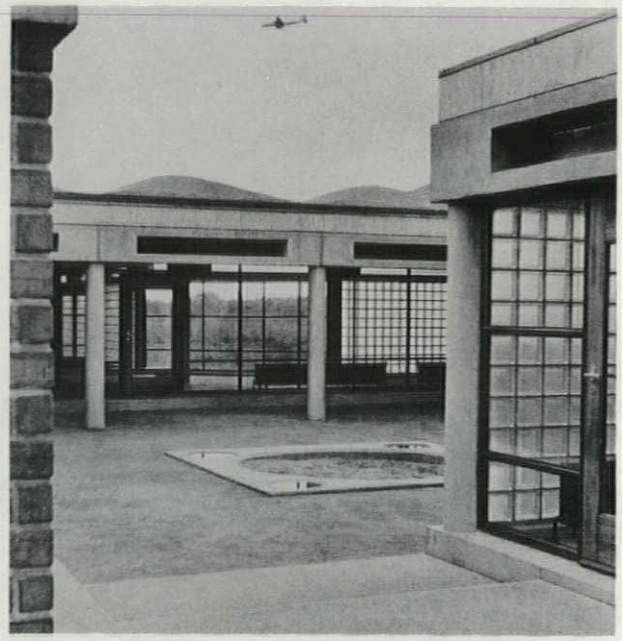
Since the most important aspect of this building is the quality and sequences of spaces (and space canont be photographed), it is difficult to convey graphically the aesthetic effect of Van Eyck's masterpiece. But those who have seen it consider it one of the most significant buildings erected in recent years.

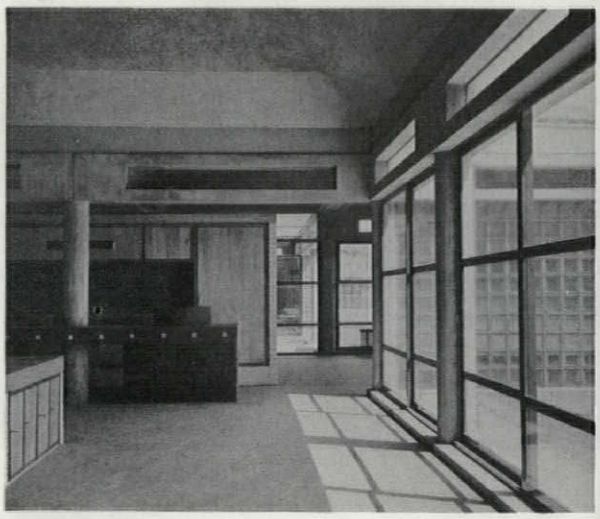
(For listing of photo credits, see page 212.)



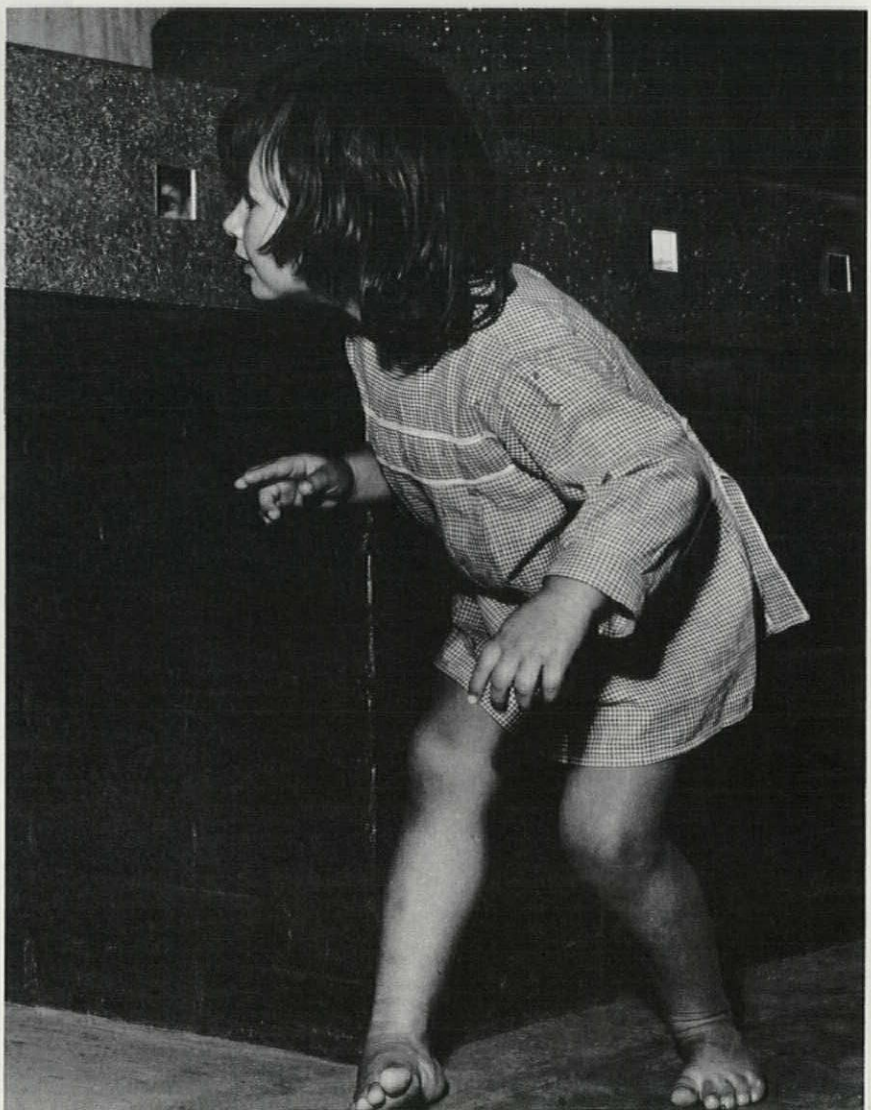
In the "festive hall," recessed circles form inviting pits for play and story telling. Van Eyck provided many such details throughout the building (see next two pages).

One of the patios for children after the rain; note the four hollows for collecting rainwater.

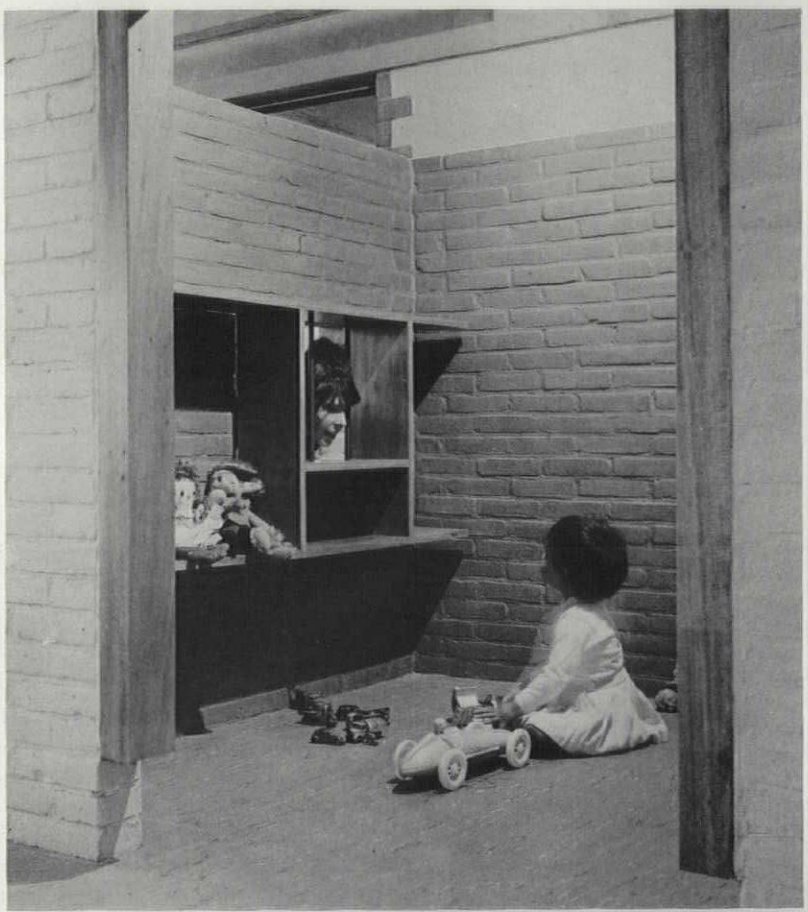


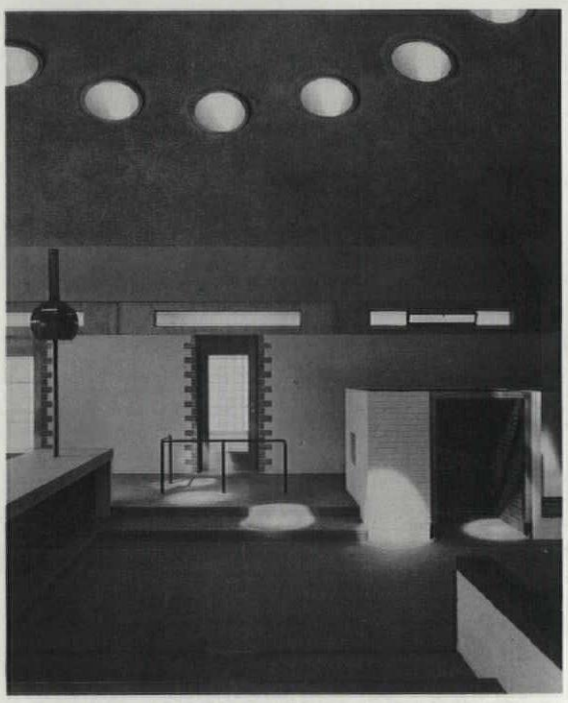


View of one of the playrooms for children: "Since concrete, stone, and timber do not sparkle, and something always should, small bits of mirror were embedded in stone slabs in each department. Cheap jewels . . . but jewels!"

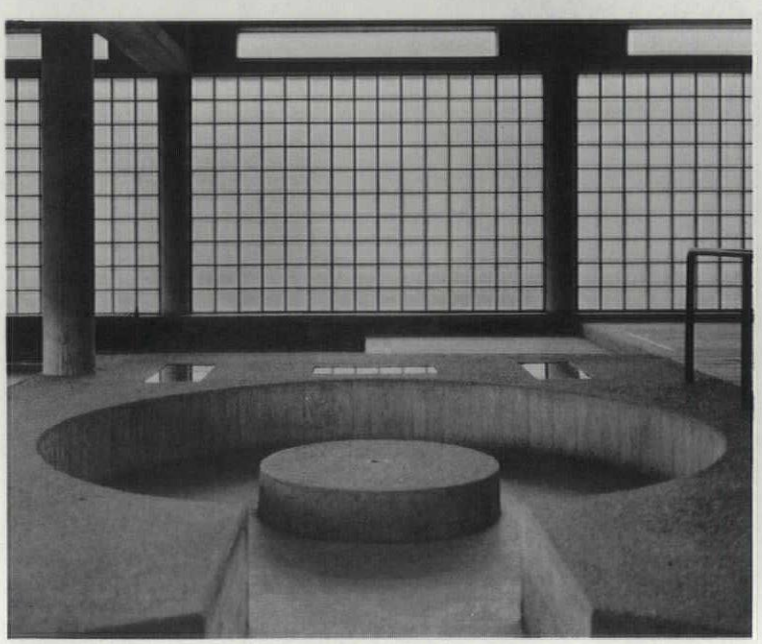


Circular concrete steps: "Last intermediary between the child's bed and the outside world."

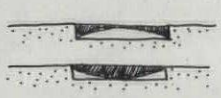


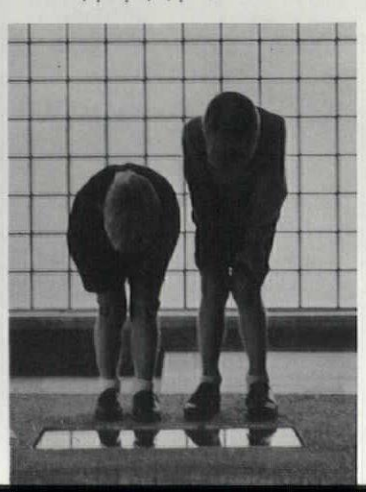


Another playroom for children: a small space within a larger one. (The interior of the "little house" is painted red.)

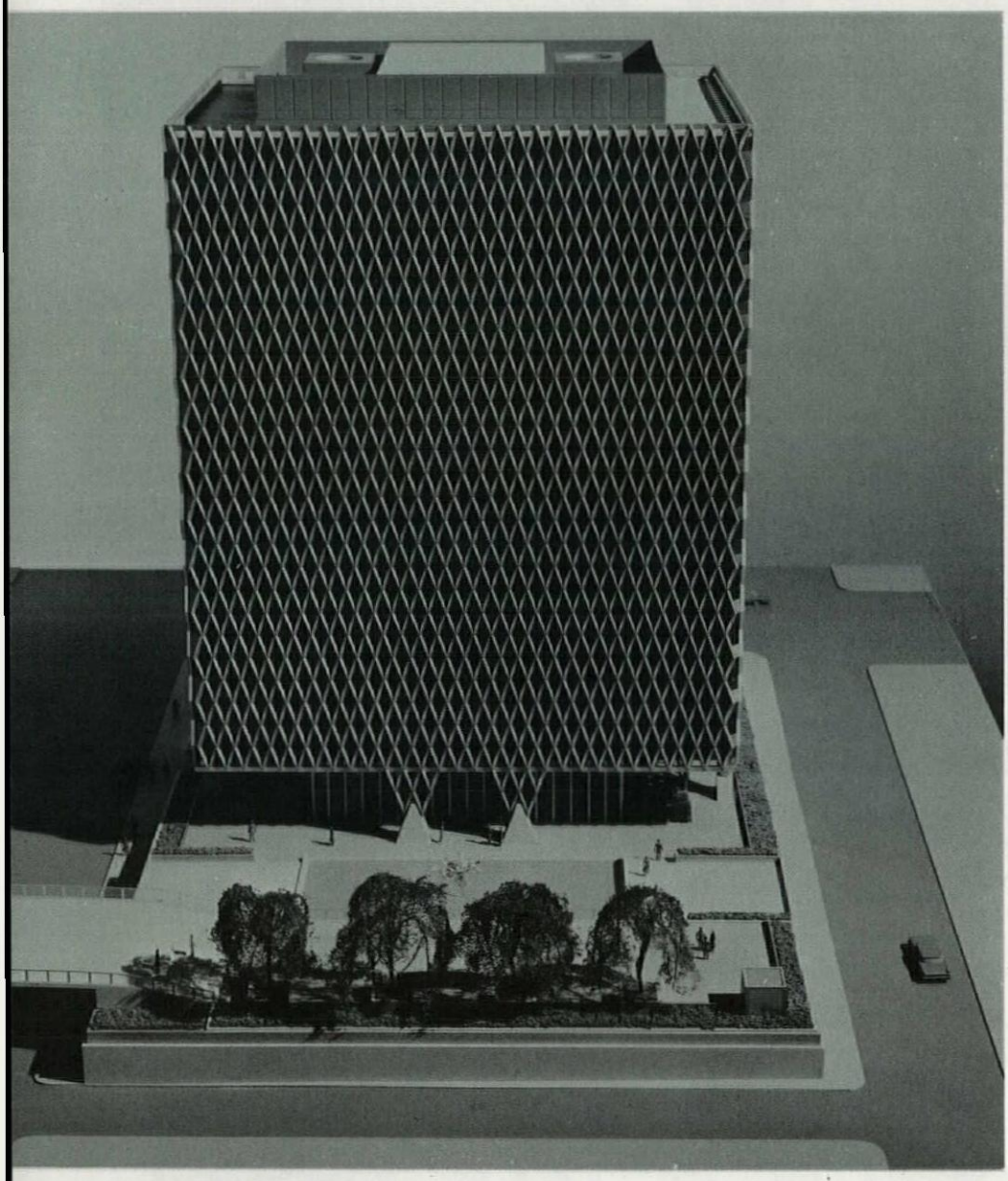


Next to the recessed circles of the "festive hall" are distorting mirrors to evoke laughter. (Hole in circular slab is for Christmas tree.)





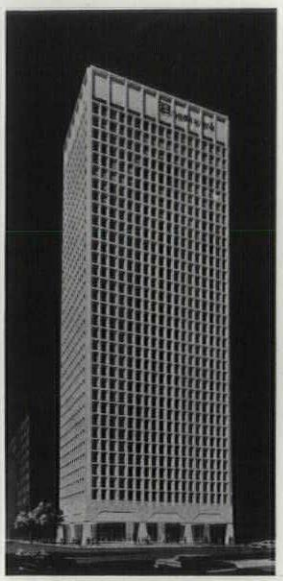
IBM's Exterior-Truss Walls



Fifth building of Equitable Life Assurance Society's Gateway Center complex in Pittsburgh, promises to be one of the most advanced office buildings yet constructed. Its primary technical advances are discussed and illustrated with both architectural and structural detail drawings.

Any office building is the product of a collaboration between architectural and engineering talent: it involves always a team of professionals who work closely together to achieve an acceptable solution for the spatial requirements set by their client. What is unique about the IBM Building, however, is that such a design team, without real innovation in structural technique, has managed to achieve a total refinement in office-building design.

In a progressive sense, the new IBM Building for Pittsburgh, now under construction and to be completed in 1963, is one of the most unique office structures to be designed since plans for the United



(1) Brunswick, Chicago: SOM.

(2) IBM, Pittsburgh: C&D.

(3) American Cement, Los Angeles: DMJ&M.

Recent examples of load-bearing exterior walls for office buildings. Massive 23-ft-deep girder, enclosing mechanical room, spans 56-ft column spacing ***(1)****. Two-pylon-points of support for each wall truss, spaced 27 ft apart on longitudinal elevation and 54 ft on transverse, define location of core* ***(2)****. Transition floor, 10 ft deep, supporting bearing-grille wall above, and also enclosing air-conditioning equipment, extends 42 ft between columns* ***(3)****.*

Nations Secretariat tower were completed in the late 1940's. Combining four exterior load-bearing truss walls (having only two points of support for each elevation) with a central core (normal post and beam construction), this 13-story structure will be the fifth and latest addition to Pittsburgh's Gateway Center complex owned by Equitable Life Assurance Society of the United States. Principal contributors to this collaboration were: Curtis & Davis, New Orleans, architects; Worthington, Skilling, Helle & Jackson, Seattle, Consulting Civil and Structural Engineers; Cary B. Gamble & Associates, New Orleans, Mechanical and Electrical Engineers; and George A. Fuller Company, New York, General Contractors.

Design Philosophy

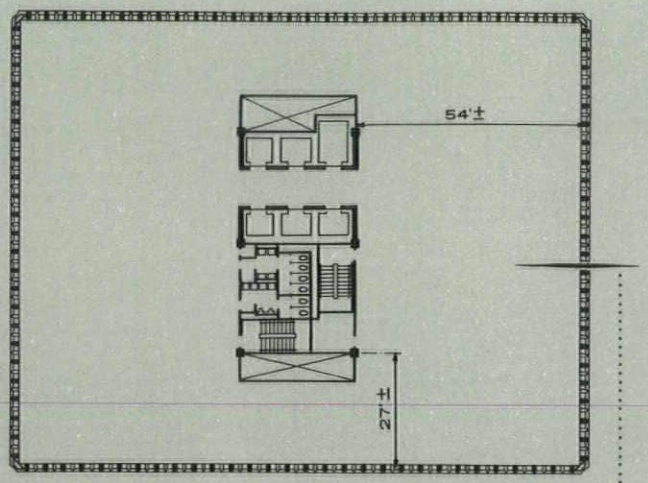
"Perhaps the most interesting aspect of this project," according to Arthur Q. Davis, one of the architectural partners, "is not the resultant building itself, but the procedure that we went through to achieve the conclusions that are visually evident in this structure."

After thorough, critical analysis, it was decided that the variations of expression in most of today's metal-glass skin buildings have been investigated about as far as possible, and that there was little new in creative expression that could be attempted in that direction. Therefore, rather than prepare designs similar to the best that had already been accomplished, C&D decided to assemble a genuine work/design team of structural engineer, mechanical/electrical engineer, and architect—with the architect acting in the beginning only as moderator.

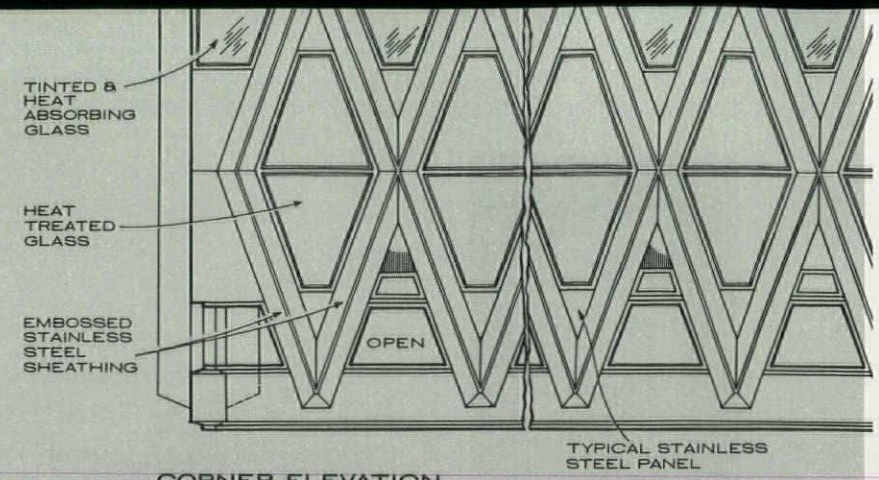
Ground Rules

It was next decided to establish certain ground rules upon which the total design would be based. The engineers would advise what conditions would be ideal from their point of view, and the owners and tenants would suggest what would be best for them in terms of economic operation and management. The architects could then work toward this ideal goal, rather than beginning with a preconceived space, skin, or over-all aesthetic.

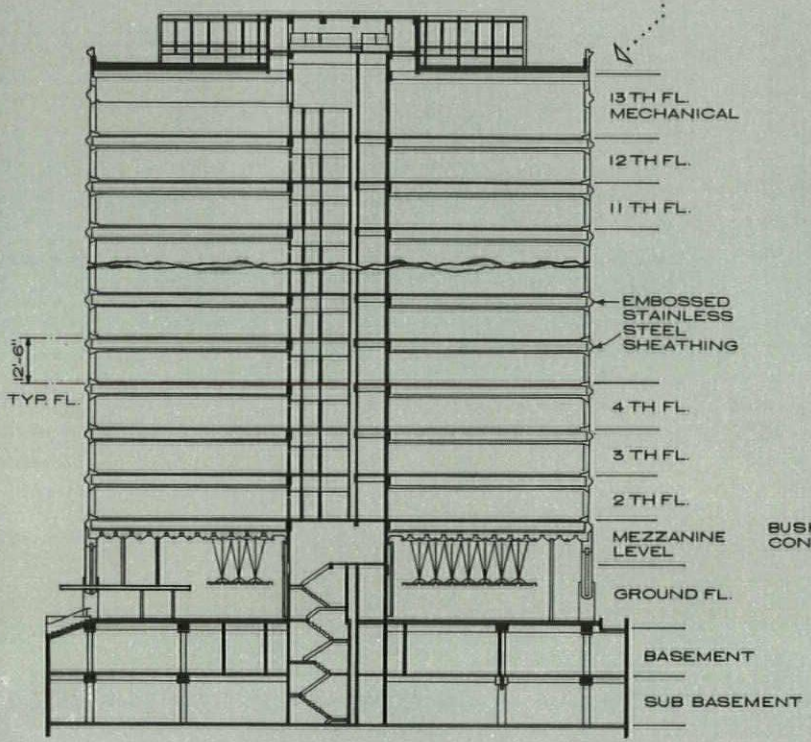
The primary ground rules established were: a 4'-6" module, which had previously proven satisfactory for the owners in other C&D-designed projects, would be used; between 13,000 and 14,000 sq ft would be the most economical size floor to meet IBM's requirements; the number of floors would be determined by the requirements of tenant and owner. (Since IBM would need only about six floors, Equitable had to determine how many additional floors would be feasible for future rental in downtown Pittsburgh.) Other considerations were that the building must be completely flexible; it should honestly express what takes place within and on the outside of the structure; and it should be compatible with Gateway Center.



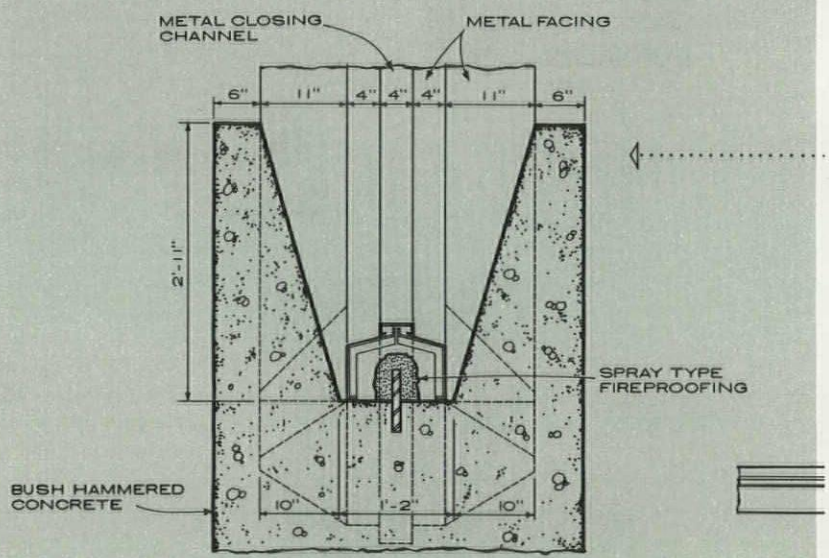
PLAN 1/64"SCALE



CORNER ELEVATION



LONGITUDINAL SECTION



SECTION
1/2"SCALE

Framing Design

Initially, the architects asked the mechanical engineers what conditions would permit them to design an ideal mechanical system. Their reply was that the most efficient building should not have more than 30 per cent of exposed glass, and with as much of it as possible sheltered from direct sunlight.

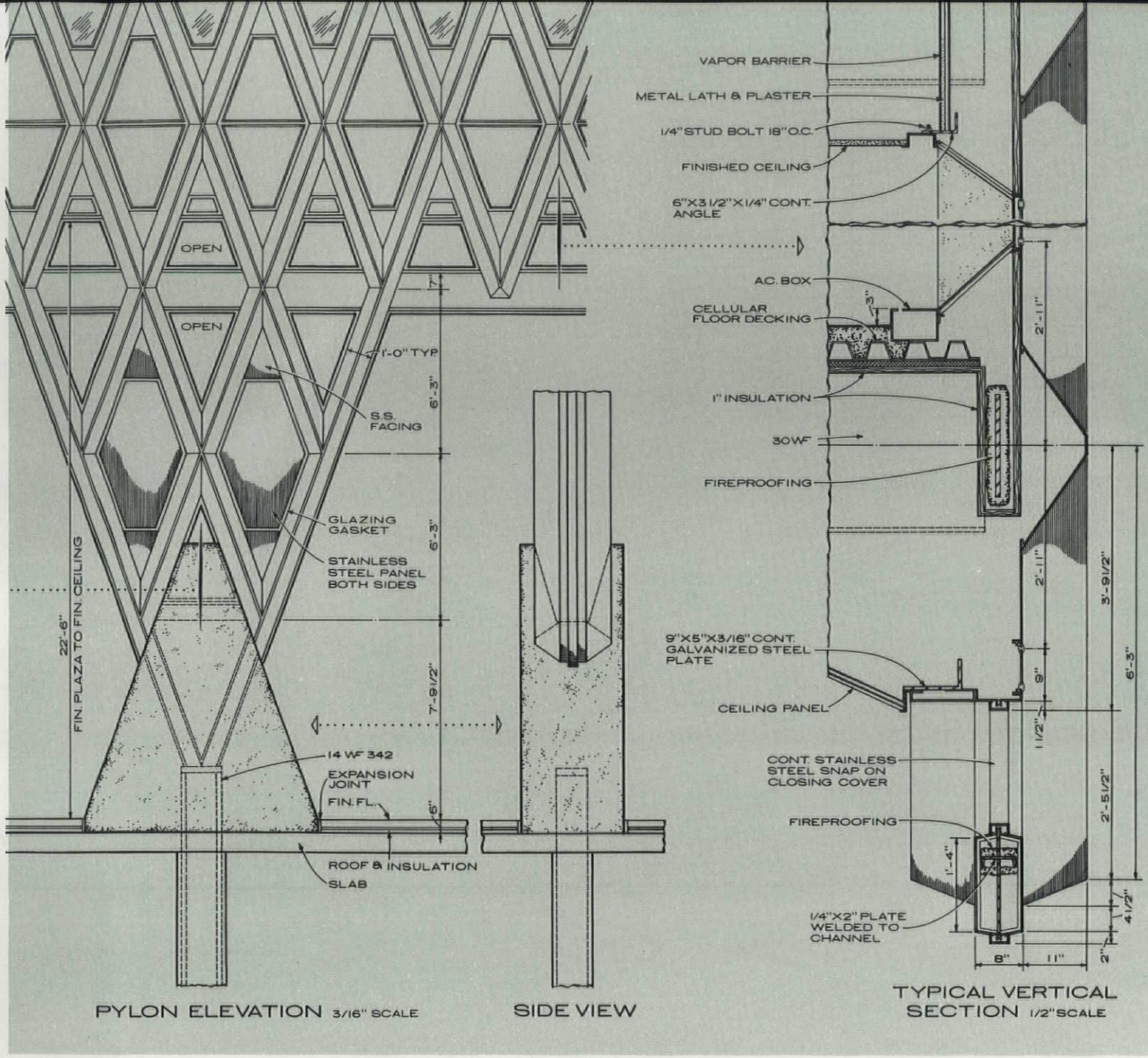
In the structure that developed, the diagonal truss-wall carries the peripheral vertical loads and wind loads, and also serves as the window mullions containing tinted/heat-absorbing and heat-treated glazing. There are no supplementary framing members in the wall other than the basic structure of the wall itself. The central core in the rectangular-shaped building will carry all inner floor, wall, and elevator loads, thereby eliminating spandrel beams and all vertical columns from the skin to the core, allowing spans of 54 ft and 27 ft. Story heights are reduced to 12'-6".

By using the floors as horizontal diaphragms, the walls carry all wind loads to the ground. Due to the great stiffness of the walls, the sway of the building will be almost negligible. A row of columns might have been used to support the wall; however, the use of only two pylons at the base of each façade provided greater freedom of space at lobby level. These points of support, possible with high-strength steels, also reflect the extent of the core on the interior.

Relying fully on the family of constructional steels available for architectural expression, five different steels representing four strength levels are being combined in the structure. Included are 100,000 psi minimum yield strength constructional alloy steels, which are USS "T-1" and "T-1" type A being used for the first time in major construction.

These steels are incorporated into the structure in such a way as to force each framing member to work as efficiently as possible to reduce building costs, while at the same time developing the unique structural steel framework of the exterior grid system that will be sheathed with embossed stainless steel. No wall members have any significant flexure and all components work in either tension or compression.

Due to the stiffness of the structure,



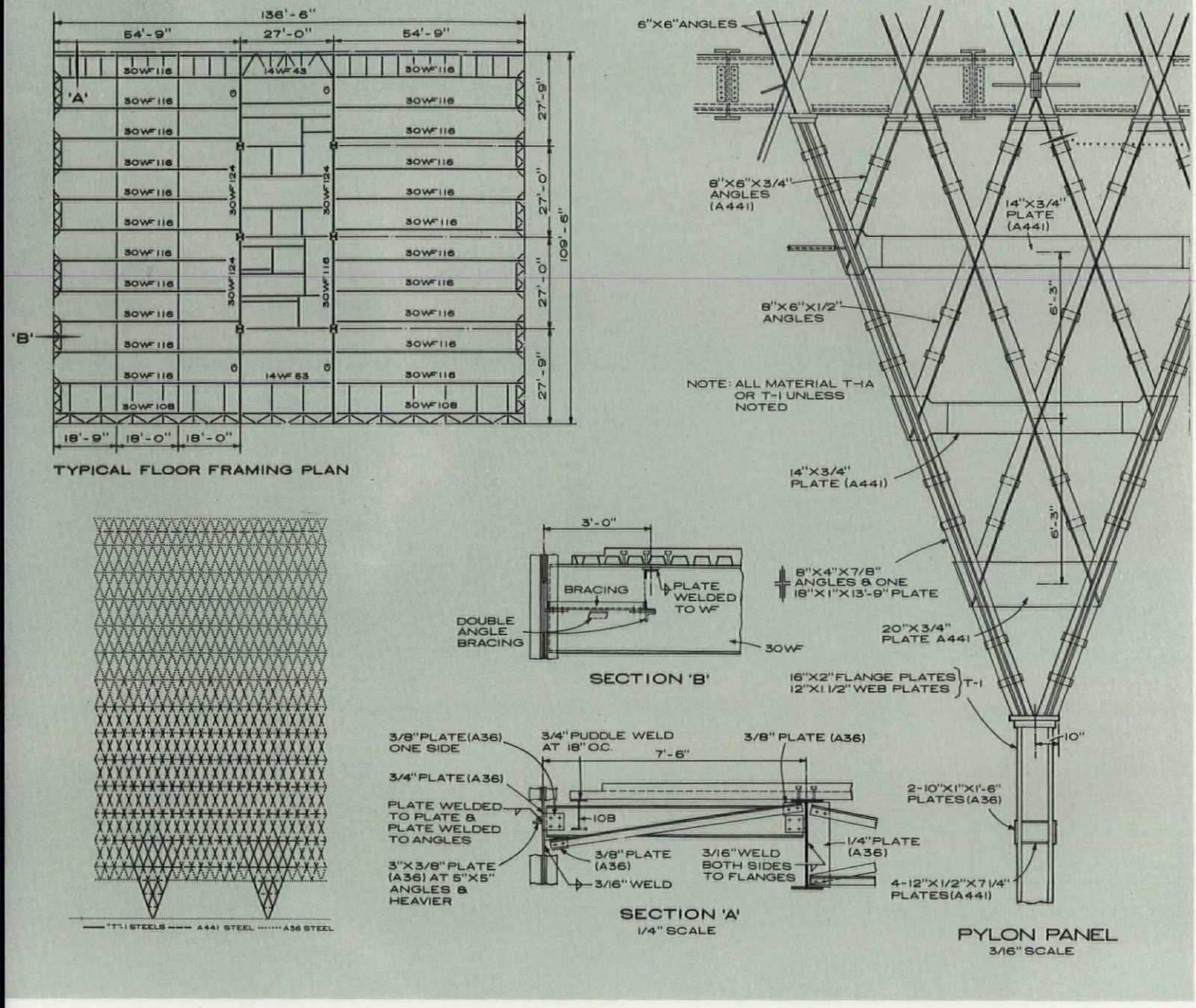
the wall is essentially a plate from about the fifth floor upwards, and distribution of stress across the section is quite uniform. Below the fifth floor, however, structural analysis was far more complex and account had to be taken of the deformation in each member. High-strength steels were of great advantage in this kind of design, as control of deformations could more readily be effected by the selection of one steel or another. The combination of steels of varying strength has both economic and aesthetic advantages. The "T-1" steels will be used in the lower stories where the stresses are greatest: below-ground columns of "T-1" and above-ground members of "T-1" type A. The midstructure will generally be constructed of Tri-Ten A441, which has a minimum yield point of 50,000 psi, with controlled chemistry for welding. Upper stories, where stresses are lightest, will be constructed primarily of A36 carbon steel, which has a 36,000 psi yield point (*see diagram*). Base plates, below ground level, will also be of A36 steel. Some miscellaneous steel will be A7. As finally designed, it is estimated that approximately 200 less tons of steel will be required than would have been needed had conventional post-and-beam steel design, with interior columns, been used.

Cost Data

There are approximately 231,000 sq ft of space in the building with a net rentable area of 178,000 sq ft, or about 77 per cent of the total. Cost of the structure will be $6,500,000, including $500,000 spent for garage space. The sq ft cost including all building standards—floors, ceilings, air conditioning, etc., except for partitions—will be about $25.40 per sq ft. In the opinion of the designers, this figure is a significant justification of the fact that the structure has sound design, and that it should by no means be considered simply a tour de force.

Mechanical/Electrical

The air conditioning is supplied by a double-duct, high-velocity system. Because of high construction costs, the designers were forced to save space. Since more horsepower than space can be afforded, high velocity, which means more horsepower, was a natural choice. Temperature



can be controlled at 22 points on each floor, and with this type of system another 22 could be added if needed. One room can be cooled while another adjacent to it is being warmed; the system can cool the inside of the building while at the same time it can be heating the peripheral areas.

The 30-WF floor beams of the structure permit 16-in. round holes to be run through them in order to accommodate the air-conditioning ducts.

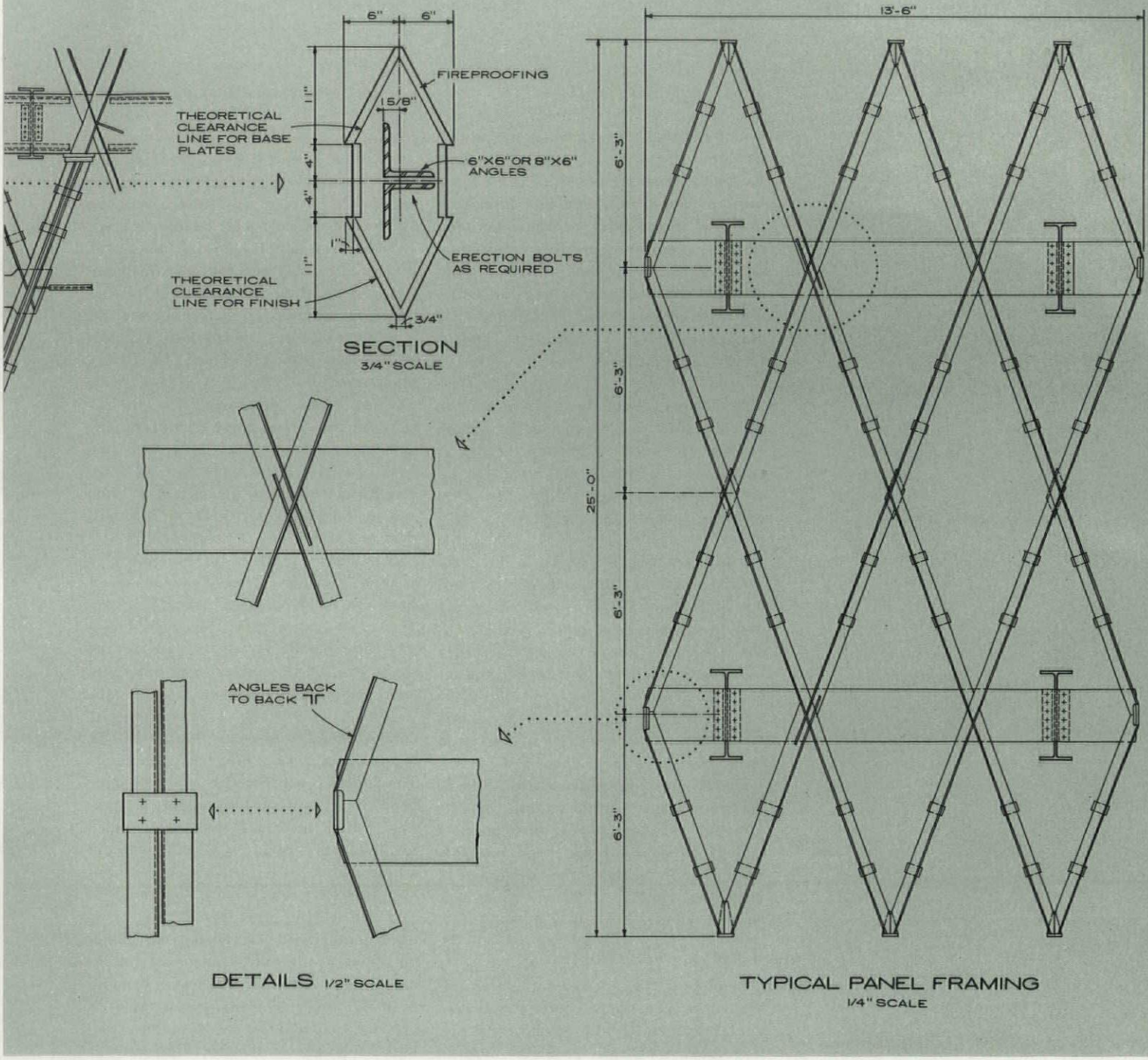
Like the primary structural elements, the air-conditioning and electrical systems follow the same 4'-6" module. Electrical distribution is through the cellular floor, so that outlets may be placed anywhere within the building. The same holds true for the lighting. In each lighting module, there is a light fixture that is equipped with an air outlet. Air diffusers can be placed as required to accommodate load demands at various locations and at different times of the year.

Fabrication and Erection

During the design stage, George A. Fuller Company lent its assistance by making estimates and guiding the architects with respect to pricing. In this connection, reliance was also placed on the knowledge of subcontractors. After drawings and specifications went out for bids, Fuller still had to bid competitively to get the job, of course.

Shop fabrication is being carried out in sections of 13'-6" x 25'-0" (*see typical panel framing*). These double-angle panel assemblies will be shop-welded and erected in the field with high-strength bolts. Structural steel components will be color-coded so that sidewalk superintendents can observe the application of the different steels as the structure proceeds to completion.

The initial stress distribution for vertical loads was adjusted to make the shears at wall intersections approach zero. This condition was required to eliminate the indeterminacy caused by a differential in vertical load stress levels in two adjacent walls, and will be accomplished by a procedure of loosening and tightening of corner connection bolts as each increment of load is added. Stresses caused by story-height truss action will be reduced by shoring during construction until the first



five stories of wall and deck are completed. Above this height, shoring would accomplish little and shoring loads would increase significantly. For the lower five stories, the wall was analyzed in terms of compatibility of stresses and deformations. The remainder of the wall was analyzed based on assumed stress distribution taking the more conservative of two extreme paths. The ultimate strength of the entire wall was then checked, requiring a factor of safety of two or more, the factor depending upon the indeterminacy of the area in question.

Stresses induced from temperature changes were held to a minimum. The principal problem was providing flexibility for horizontal expansion and contraction at the base of the wall. This was accomplished by cantilevering the supporting columns from the plaza level, and by providing for flexural rotation of these columns within the fireproofing envelope. The support columns could then be designed for a specific horizontal deflection at the end of the cantilever—the deflection depending upon the expected temperature variation.

Secondary stresses due to construction tolerances were reduced by specifiying that each welded wall panel be constructed in a jig with dimensional tolerances of plus zero–minus $\frac{1}{32}$ in. Further, if the negative tolerance builds up, shims are required. Stress levels allowed member size reductions in the upper portions of the wall, such that normal AISC tolerances for over-all alignment satisfied tolerance requirements of the stainless steel skin.

Secondary stresses caused by differential settlements were held to a minimum. Since this rigid-box type of construction is sensitive to differential settlements, extreme care was taken in foundation design. Short and heavy steel piles were driven to absolute refusal in the bedrock underlying the site, assuring a uniform foundation.

To insure that the walls will be leakproof, a full-scale section of the wall—one-and-a-half stories high and two bays wide—was tested at the University of Miami last spring.

American Bridge Division of United States Steel Corporation is the steel fabricator and erector; Limbach Company is the stainless-steel contractor.

Prefab-Concrete Forms

BY E. E. HALMOS, JR.

During the past two decades, the use of prefab concrete forming has grown to such an extent that today this method accounts for about 50 per cent of all concrete formwork erected in this country. Characteristics and capabilities of these forming systems, engineering services provided by the manufacturers, and possible savings through their use are among the topics discussed by the author. Mr. Halmos is a Magazine Editorial Consultant and a Contributing Editor to P/A.

A rapid change in methods of constructing concrete formwork is one of the factors causing architects to restudy the use of cast-in-place concrete, not only for interior walls, footings, columns, and other features, but also for architectural purposes.

The "revolution" is keyed to the availability of prefab form panels of various materials that can be assembled to produce components of almost any size or shape, require almost no on-site skilled labor, have considerable inherent strength and thus eliminate the need for much waling and bracing, and can be re-used many times, either as separate units or in large "gangs."

Prefab forming systems also provide opportunities for architectural concrete uses that can far outclass other building facings in point of cost, and probably come close to matching the appearance of precast-concrete or metal panels that have become popular in the last decade.

What Are The Problems?

Undoubtedly, though comparable figures are hard to come by, a concrete wall cast-in-place integrally with columns will present fewer structural problems than an attached panel. It will cause fewer maintenance problems, since anything attached to the building's main elements must be sealed against air and moisture leakage, adjustments must be made for differing expansion-contraction rates, and so on.

Several architects have estimated that an 8-in. cast-in-place concrete curtain wall, even with some decorative treatment (including a color wash), can be built for little more than half the cost per sq ft of a concrete sandwich panel. In the Chicago area, cost of such a panel is estimated at about $5 per sq ft.

Architects, however, have kept away from cast-in-place concrete mainly because of its appearance—which is, of course, a function of design and close supervision, and skill on the part of the contractor and his crews.

Concrete will take the shape of anything it is cast against, and that shape can be unpleasing and difficult or impossible to rectify, once set. By the same token, poor supervision at any stage, from mixing to form construction to placing of the mix, can result in poor appearance. On the other hand, precast wall panels (as well as metal and other materials that have been used for this purpose) can be manufactured under better conditions of control, can be rejected before permanent inclusion in a wall, and can have a variety of patterns, colors, and sizes to fit any requirement.

Thus, when considering the use of factory-built forms, many architects may have apprehensions. Inevitably, since the form sections are made in standard lengths and heights (usually 2-ft wide and up to 8-ft long), their outlines will show when the wall is stripped.

In addition, there is the possibility of a slight "pillow" effect that can result from use of the forming panels (it appears also, though sometimes in a different way, in job-built forms), caused by the slight give of the facing material spanning supporting members, under the weight of the concrete. This is especially noticeable after several re-uses of the forms if they are not properly maintained. The "pillow" or projection in a well-made panel is never more than slight, perhaps $\frac{1}{16}$" within the 2' x 1" rectangle formed by the normal bracing system. When light strikes such a wall at certain angles, however, the effect can be quite apparent.

On an interior wall that is to be plastered or otherwise covered, or that will not be visible to the public, such aberrations are of no importance. But on an exposed beam, or other element of a structure's exterior, particularly on a massive element, odd effects of this kind can be disastrous unless they are covered (seldom done completely successfully), ground or rubbed away, or otherwise treated.

There is also an additional problem: the need in any concrete formwork for tie-rods extending through the concrete to hold the opposing faces of the form to the wall during casting. These rods contribute greatly to the elimination of much bracing and shoring, and provide adjustments that can produce battered, counterforted, or curved walls. But, after break-back, they leave holes in the surface that must be patched.

Solutions

Most of these objections can be overcome. A primary solution lies in recognizing the defects and making use of them.

For example, one Chicago architectural

firm, Fox & Fox, has designed 12′ x 30′ wall panels as main architectural features of the new factory and office building for the Symons Manufacturing Company, using vertical rustication strips at the panel joints. The "fin" formed at the horizontal joint was permitted to appear, leaving a pattern that gives the wall a block appearance. Strips placed in the panel joints serve the double purpose of providing a control joint, and hiding the ends of the wall ties (which in most factory-built forming systems are designed to slip between the adjoining edges of the panels). To give added effect, the architects used a form liner on the inside face of the assembled panels to add a rough texture to the finished concrete.

Thus, by using the joints, and by cutting the long vertical sections into roughly square boxes, annoyance with the "pillow effect" was eliminated. On the factory areas of the two-winged building, the architect used the panels without rustication or other treatment, placing them lengthwise to accentuate the horizontal lines made by the panel edges.

A principal problem is supervision: one batch of poorly mixed concrete; improper vibration in the forms; improper placement methods; or slight variations in cement and aggregate proportions can, for example, produce variations in appearance, honeycombing, and other undesirable effects. In this respect, there is no substitute for close supervision of all operations by the architect and his staff.

There are solutions for minor errors. "Sacking down" a wall (covering it with a painted-on grout, then rubbing it off with burlap) can fill minor voids and produce a uniform color. The finished surface can also be painted, or covered with a thin "skim coat" of cement grout, which can be mixed with color and applied in any required design; this will usually last as long as the wall itself.

Perhaps the key to good appearance lies in the comment of one architect: "Concrete shouldn't be something slick or shiny, something made to look like something else. It is a medium with characteristics and possibilities of its own, and should be designed on that basis."

Why Use Prefab Forms?

Factory-built forms offer such great economies to the contractor, and in so many different ways, that it is to the advantage of the architect (and owner) to consider their use whether an architectural-concrete finish is to be used or not. The contractor can rent (for as little as 20¢ per sq ft) or buy the quantity of forms he may need. Because of re-use possibilities, he need

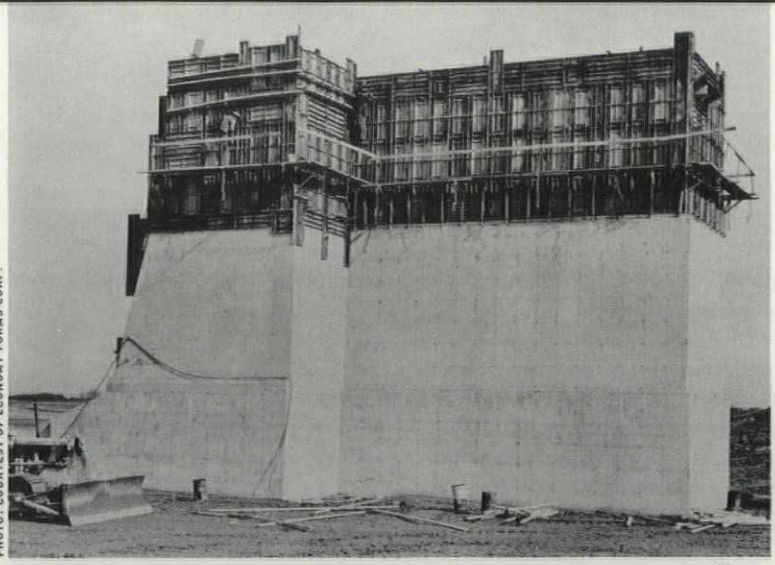


PHOTO: COURTESY OF ECONOMY FORMS CORP.

Prefab forming after being raised to new position at newsprint paper mill.

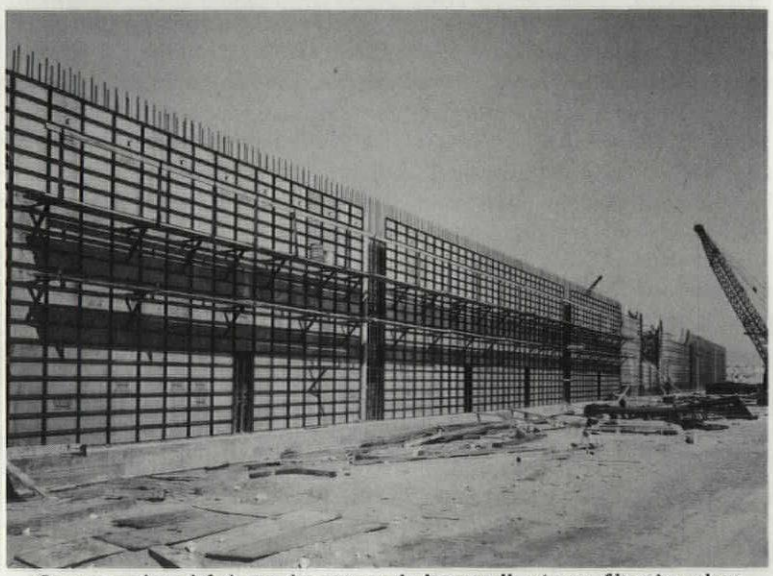


PHOTO: COURTESY OF UNIVERSAL FORM CLAMP CO.

Gang-use of prefab forms for extremely long walls of new filtration plant.

Complex dimensioning of dormitory did not limit use of factory-built forms.

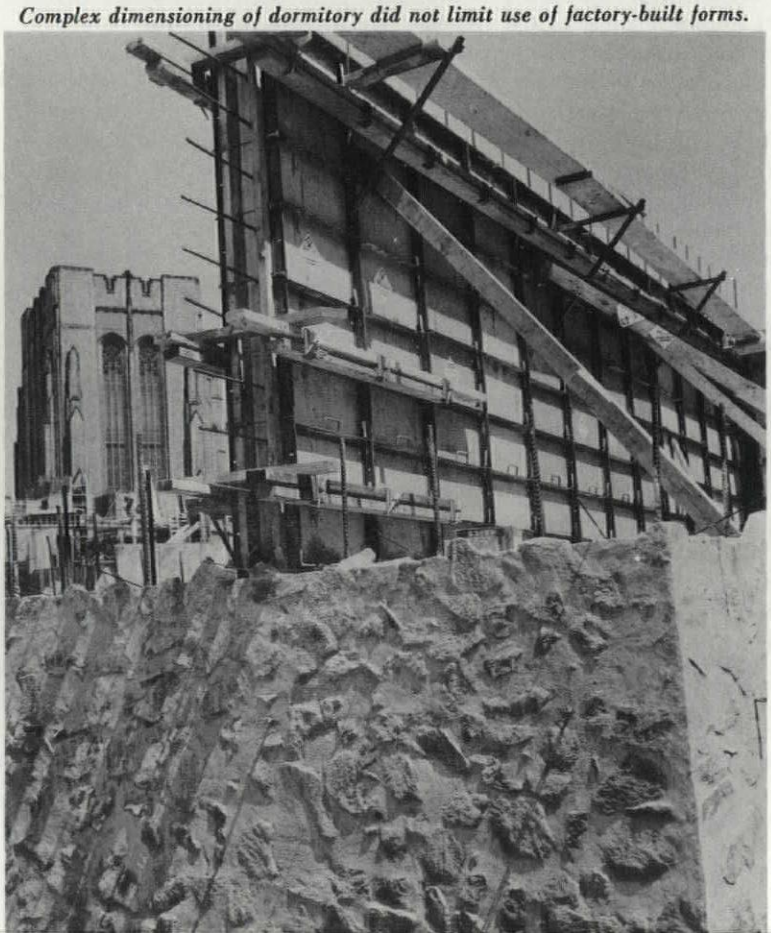


PHOTO: COURTESY OF SYMONS MANUFACTURING CO.

not obtain more than a percentage of the total square footage of surface that will be erected.

It is important to emphasize that the contractor buys or rents a "system," not just rectangles of metal or plywood. When his formwork is delivered to the job site, little skilled work is required on the part of the crew. The forms are in standard sizes, often carefully determined for the contractor by the manufacturer's engineers to suit the job and the architect's requirements, and they come as a complete package.

All necessary hardware items are supplied: connectors, tie-rods, corner pieces of various types, filler sections varying from 1 in. to 20 in. wide, brick ledges, built-in attachments for mounting scaffolding and walkways, drop-out panels or chutes for concreting, stakes, bracing members, and others.

Most available forms, since they attach to each other at contiguous sides, are self-aligning. Backed by steel angles or ribs and carefully enginered supports of other types, they have great inherent strength, comply with most safety requirements, and do not need more than nominal bracing or other added supports. A manufacturer's engineer will even advise the contractor as to acceptable and safe rates of pour, depending on temperatures, mix designs, and so on.

Assembly is easy, even for relatively unskilled workmen. Most of the systems utilize metal wedges that can be driven into eye slots on the tie-rods, or on metal connectors between abutting form panels, with a tap of a hammer. They are as easily removed in stripping. One form manufacturer provides small plastic pockets on each form panel, for insertion of small hardware pieces as the form is disassembled. Special connecting devices can be utilized when large sections of the panels are "ganged" for re-use.

Most form sections are strong enough to be used as a system for casting a floor slab, in conjunction with adjustable shores of several types. In addition, they eliminate the need for the forest of shoring and bracing that is common in this kind of work.

The contractor need not set up forms for the entire height of a wall. He sets up a first pour of some convenient height, and can then jump the forms upward for a second lift, using the holes left by the tie-rods to anchor a higher footing strip. Thus his crews need never work inside the forms or at great depths, which allows better vibration and supervision.

The Systems

There are now about 20 makers of prefab forms in standard modules, and one manufacturer provides polyester glass-fiber liners in forms built to order. Of these, three can be considered to be national in scope of operations: Symons Manufacturing Company and Universal Form Clamp Company, both of Chicago; and Economy Forms Corporation, of Des Moines.

Two of these systems utilize a steel frame with a plywood facing; one (Economy) is based on an all-steel panel. One of the plywood systems (Symons) adds a specially made plastic coating to the plywood face as a standard item for a hard, smooth surface resistant to warping that could be caused by moisture content of the concrete.

Some of the smaller systems use plywood sheets alone, with various attachments for holding and alignment. One system consists entirely of attachments, with the plywood sheets cut on the job.

The advantages and limitations of each type and its accompanying accessories are hotly argued by the different manufacturers. The arguments, however, can be reduced to a relatively few points:

1. The plywood-faced forms are lighter (about 4½ lb per sq ft *vs.* about 6½ lb per sq ft for the steel panels), and thus are handled more easily.

2. The plywood-faced panels are less affected by extremes of cold or heat detrimental to concreting operations.

3. Either the plastic-coated or plain plywood face has the advantage that it can be refinished to a great extent by sanding or planing; the plywood can be reversed or replaced completely.

4. With proper care and oiling, the plywood-faced forms can be re-used many times without refacing, and for uniformly good-looking results. If used for footings or other places where the resulting wall appearance is not important, the re-use possibilities are even greater.

5. The steel forms, on the other hand, with proper care, can be re-used an almost unlimited number of times, though they are subject to denting and marring from rough handling or excessive pressure.

6. If heavy enough, the steel forms will resist the "pillow" effect, and, of course, will not absorb water from the concrete. They too will show a "fin" at joints, but it will not be as pronounced as with the plywood-faced forms, where the plywood is inset behind its steel bracing.

7. The steel forms are not as likely to be damaged by improper or careless handling of vibrators and other tools, or poor handling that might bring them into contact with the reinforcing cage or other elements of the wall.

Engineering

Some manufacturers have spent a considerable amount of money and time on development work, and all offer engineering service to aid contractors. Engineering services range from advice concerning bracing and placement, or methods of assembly to meet an unusual requirement, to carefully drawn plans for assembly of the forms in the most economical manner. Such plans, as mentioned above, will specify the type and location of tie-rods, walers, strongbacks, and other supports; suggest the best combinations of sizes and filler pieces to achieve the desired results; detail quickest methods of assembly and stripping; and give advice as to speed of pour and amount of vibration.

Such service is a welcome aid to the contractor, who thus need not tie up his own staff on design of formwork, and to the architects as well, particularly in the many cities that now require formwork to be approved by the architect or his engineer before construction can proceed.

In addition to the sort of field engineering recorded above, some companies are doing considerable work in their own plants on research and development.

Out of this has come a variety of accessories: tie-rods, of varying lengths and strength, which snap off or can be screwed off well within the surface of the finished wall, and which can be adjusted (according to careful engineering calculations) to achieve almost automatically the correct batter on a wall; tools for stripping, aligning, and erection; simple and extremely strong methods of connection and clamping; bracing, shoring; and still others.

Sometimes these devices are of unexpected help to the architect: In a dormitory at Yale University, plans called for wall-hung furnishings in some of the rooms. The contractor used screw-on-type tie-rods, unscrewed the construction heads during stripping operations, then used the resulting threaded rod ends firmly embedded in the 11-in.-thick walls as anchors for the wall-hung equipment.

Out of manufacturer experiments have emerged ingenious devices for forming

corners of almost any dimension and angle; brick-ledges to accommodate veneer finishes; special filler pieces to allow the forms to be used in making curved surfaces; stakes and rods to support formwork and other elements; even, as mentioned, a complete, self-contained forming system for casting floor and roof slabs.

It was the form manufacturers who developed the idea of using a cheap, easily available paint roller as a means of oiling a form quickly and uniformly. Attached and attachable devices for lifting and handling the forms are designed with great strengths, to permit lifting considerable loads, as well as one-man handling of panel sections. These one-man "handles" also have served an unexpected purpose: The ladder-like backs of the forms (with crosspieces at 1-ft intervals) make it easy for workmen to climb up them, with the lifting handles on each panel serving as readily accessible and safe handholds.

Costs

Few contractors determine their costs on the basis of sq ft of wall in place. Most figure such costs on the basis of cost per cu yd, often adding the cost of formwork, or charging that cost to labor or to other materials.

The importance of the cost of formwork to a contractor is indicated in a report ("Formwork For Concrete," Title 57-48, Committee 622 of the American Concrete Institute), which comments that "the cost of formwork may be 35 to 60 per cent of the total cost of the project."

A 1952 publication by the Portland Cement Association put the recommended number of workmen for conventional, job-built forms at 14 to 19 carpenters and 6 to 9 helpers to build, erect, and strip 10,000 sq ft of contact area forms.

Estimates by the prefab formwork manufacturers indicate savings to the contractor of as much as 5 cents per sq ft of contact area, which would average about $2.70 per cu yd for a 12-in. wall.

The savings accrue in many ways, in addition to the substantial help the contractor gets in designing his form layout.

For example, regardless of the type of factory-built form used, the material is the best available, since a manufacturer who can buy in carload lots can get better materials at lower prices than any individual contractor. Through the accumulated experience of many jobs, the manufacturers can offer solutions to problems that would be difficult to solve for an individual contractor.

Primary saving, however, is in the aforementioned on-site labor. With the available sizes, and with fillers in almost any width, length, and shape that might be required, there is virtually no on-site carpentry. The forms can be erected and stripped by nearly unskilled labor, with a minimum of supervision. Similarly, there is little or no waste involved after stripping; all pieces (even the walers and strongbacks) can be stockpiled or re-used. Nothing has been cut into unusable shapes or sizes. And the traditional bonfire to consume useless lumber is substantially reduced or entirely eliminated. A significant amount of contractor profit has gone up in the smoke of such bonfires.

It is almost impossible to set up a general rule for labor costs and other expenses, since so much depends on local rates and practices in the construction industry, as well as on the size of the element being formed, weather, temperature, and other factors.

But, in general, forming for an 8-ft-high residential foundation wall can be erected and stripped for as little as 5 cents per sq ft of contact area; the same wall for an industrial building might run a minimum of 10 cents per sq ft.

The savings made possible by use of truly large ganged sections for a repetitive operation are obvious: On a cement plant built at Mitchell, Indiana, last year, the contractor ganged sections as large as 32′ x 24′ to form successive bays on a 912-ft-long wall.

Special Effects

The limitations of the factory-built form panels need not deter their use for distinguished architectural effect. They can be used, in combination with job-built "special effects," to great advantage and with excellent results.

An example is the chapel of a Catholic teaching center recently completed at Wilton, Connecticut. There, Architect J. Gerald Phelan called for an arrowhead-shaped chapel containing a total of 36 cast-in-place concrete arches, the largest of which has a span of 45 ft from haunch to center, and weighs more than 50 tons.

The arches form a pattern across the roof area, four arches crossing in an elongated "x" at points along the underside of the ridge line, with the exposed white-aggregate concrete serving as a major part of the architectural design. The structure at each abutment consists of two arches springing from a common base: one quite large in dimension (as much as 16 in. wide by 8 ft long); the other considerably smaller (1-ft-11 in. by 16 in.), set at about a 30-degree angle.

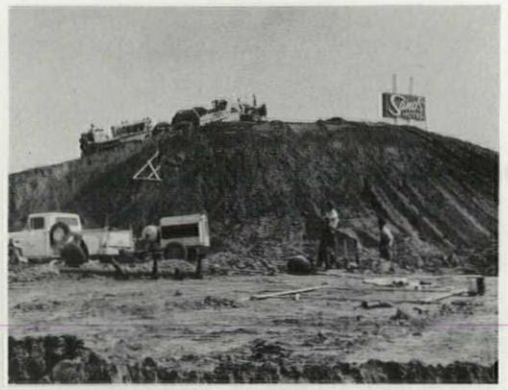
To form these arches, and to meet a specification calling for a fine, fluted appearance to the lower side, the contractor used standard prefab form panels to form three sides of the member, and adjustable, job-built end-dams to meet variations in depth and appearance. The end-dams were made of plywood sheets, cut to required width and held in place at proper curvature by standard tie-rods. To achieve the desired fluted effect, contractor carpenters used quarter-round, 2-in. chamfer strips, nailed to the inside of the end-dam plywood, to provide a rounded, inset effect.

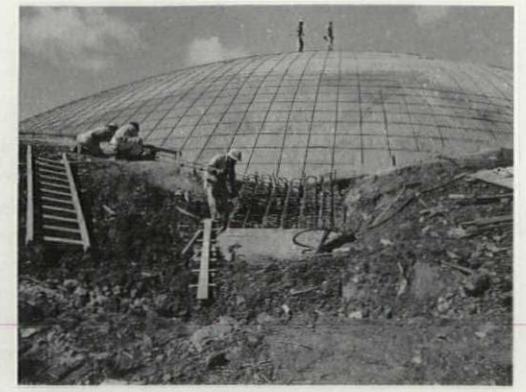
An entirely different architectural use is seen at Saarinen's Stiles-Morse Colleges at Yale University. There, the architect designed the buildings in the spirit of medieval English colleges: he used a design in which there are almost no duplicated dimensions; building heights, curvatures, and almost all other dimensions vary from room to room and section to section. As a matter of fact, so complex are the dimensions that the contractor had to work from a system of co-ordinates, rather than from a normal plan showing dimensions in feet and inches.

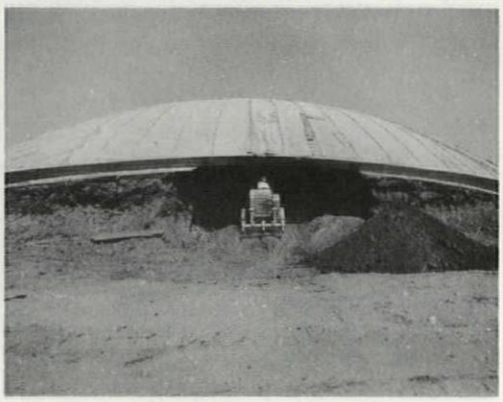
To top these problems, there was also the use of a rubble-concrete construction for the 11-in.-thick exterior walls, made by the process of filling the forms with granite chunks (up to 10 in. size), then pumping in a heavy, liquid grout.

Despite the obvious forming problems, the contractor used factory-built forms throughout, with job-built assemblies only at some corners where he could re-use them by "jumping" them upward. By the same token, the prefab formwork could also be re-used vertically, moving upward after each pour without changing the assembly.

In yet another special use, a Baltimore builder is erecting nearly 200 cast-in-place concrete dwellings (three bedrooms, kitchen, dining area, living room, bath, with carport, and storage space) with a permanent, hinged assembly. This assembly (weighing about 18 tons) can be placed on a foundation slab as a unit, locked up, used for a pour, then lifted intact for the next unit. With the exception of the roof, the entire structure is cast in a single operation.







Earth Form for Membrane Dome

BY DONALD H. SWEETMAN

Believed to be the largest structure of its type, a new dome-shaped theater in San Diego was recently constructed for $3.50 per sq ft. This was accomplished by using earth formwork and by taking advantage of the principles of membrane design. A discussion of the structural and engineering problems follows.

A theater-in-the-round, a dome-shaped concrete structure recently completed in San Diego, California, is considered to be the largest structure in the world using this type of support. The Circle Arts Theater, 190 ft in diameter and 36 ft in height, posed several difficult problems to the architectural firm of Richard George Wheeler Associates and to A. J. Blaylock Associates, Structural Engineers.

The first obstacle was the client's desire to erect a prefabricated dome. The dome would have been entirely satisfactory as far as a structure was concerned, but the cost would have been high (about $6.40 per sq ft of covered area), and freedom of design would have been curtailed by limitations of the prefabricated structure. The client had to be convinced that a concrete shell would be cheaper to construct and would allow much more freedom of design.

Pierced-Membrane Design

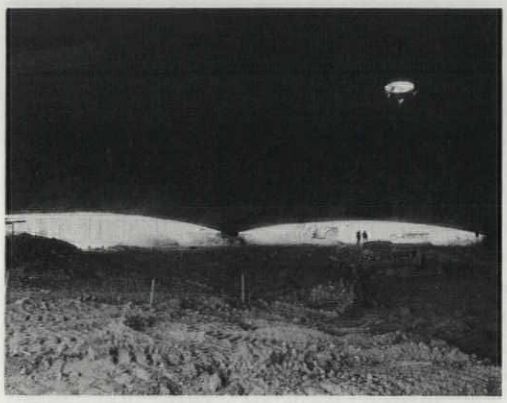
From the beginning, the architect was reluctant to allow any columns in the interior near the periphery. This precluded use of a formal tension ring, and immediately changed the engineering problem from one page of calculations to a structural analysis involving 80 pages.

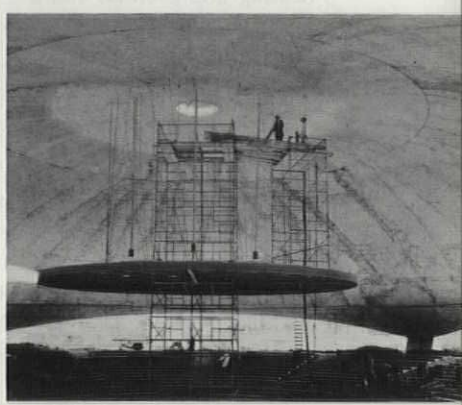
"At first we hesitated to leave the edge-ring philosophy completely," A. J. Blaylock, the structural engineer, explains, "and we designed the dome as supported by a deep beam at the edge. But finally, after much discussion, we decided to investigate what we came to call 'pierced' membrane."

The membrane design follows a suggested analytical method described by Timoshenko in his textbook *Plates and Shells*. His membrane theory, highly idealized, is predicated upon the example of a hemisphere with open sides and consequently no horizontal component of thrust. Timoshenko's theory develops only a partial solution, stating that the membrane theory cannot satisfy all conditions of the problem, but that the provision of an edge arch is usual to absorb the unresolved shear forces. The maximum membrane stresses are about 330 psi compression, 60 psi shear, and 175 psi tension under live and dead loads.

The dome design was now developed around a support of five thrust-blocks at the periphery, with five equal arches between the thrust-blocks to allow vertical openings 9-ft high. An edge arch between the thrust-blocks was added. This was not objectionable to the architect, and was desirable for stiffening the thin edge of the opening. The thrust-block footings were situated, fortunately, in a heavily cemented conglomerate. Consultation with the soil engineers, Woodward-Clyde-Sherard, resulted in a soil bearing of 10,000 psf on a slope of about 35 degrees, with no horizontal tie between the five thrust-blocks. Plate-bearing tests by the soil engineers determined that the thrust-blocks would have an elastic movement of about ¼ in. under a load of approximately 500,000 psf per block. Since stresses caused by the dome's weight tend to rotate the thrust-blocks away from the

PHOTOS: CHARLES AQUAVIVA





dome, a belled caisson was placed at the toe of each thrust-block.

Two curtains of No. 4 reinforcing steel, with steel 2 ft o.c. and running at right angles, strengthen the dome. The curtains are positioned at an angle of 45 degrees to each other, giving four layers of steel in the cross-section. A 3000-psi concrete was used, with a lightweight aggregate. The dome's thickness is 4 in., except within 18 ft of each thrust-block, where it thickens to 16 in.

Earth-Mound Form

The contracting firm, Peter Keiwit Son's Co., chose to use an earth mound for a form instead of wood forms or an inflated-balloon device, because of the stability and accuracy afforded by the earth. Its cost was estimated to be slightly less than alternate methods, but due to an unexpected difficulty encountered in removing the earth after the concrete had set, the saving was negligible. To give the interior surface of the dome a smooth surface, a skim coat of 1-in. concrete was placed over the earth form and coated with bond-breaking wax. When the earth was removed from the interior of the dome, the skim coat was broken away, leaving a smooth surface.

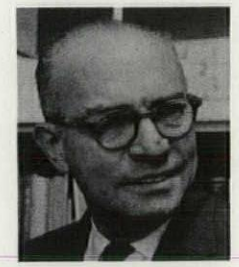
The demounding process was begun within 42 hours after the last concrete on the dome had been poured. The structural engineers required the contractor to tunnel into the center of the dome and then dig outward uniformly from the center. A few anxious moments were experienced when one of the engineers, standing near the center while equipment was working underneath, noticed that vibrations in the dome had a longer period than usual. Work was immediately halted and a check made to determine the cause. It was found that the contractor had not started the earth removal directly in the center and that the dome was being loaded unevenly. Corrections were made, the remainder of the earth was removed evenly, and the dome performed as expected.

Observations

"We learned a lot from this job that will make the next one easier," says Blaylock. "Our next earth form will have lenses of sand placed at intervals to speed up the earth removal. Also, we will make more adequate provisions for ventilating the dome while tunneling out the dirt. We will leave openings in the dome to admit fresh air into the tunnels so that more equipment can work at the same time."

"Also," continues the engineer, "we found out just how much 'give' there is in a concrete dome of this kind. We were curious as to how much deformation would take place in the dome after the earth was removed. We felt we knew the general shape the movement would take; for instance, a point on the crown would move down vertically while a point on the quarter circle would move upward and outward, and the thrust-blocks would tend to dimple the dome. The question, however, was how much movement would take place. We placed precisely-located surveying points in the outer surface of the dome after the cement was poured. After the earth was removed, the points were again located with precise surveying methods. We found that the center of the dome dropped $1\frac{5}{16}$ in., and the points at the center line of the opening moved about $1\frac{3}{8}$ in. outward."

The final cost of the dome was approximately \$3.50 per sq ft, a considerable saving over the \$6.40 per sq ft originally contemplated for a prefabricated dome.



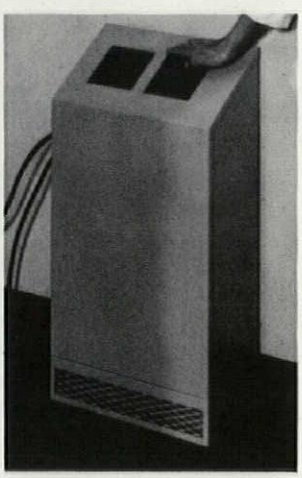
Thermoelectric Heating/Cooling

BY WILLIAM J. McGUINNESS

Recent developments in thermoelectric heating and cooling, and a brief, general description of one proprietary system, are discussed by a practicing mechanical engineer.

During the past few years, there have been periodic reports from the precincts of research laboratories about the imminent development of thermoelectric cooling as a practical and competitive process. Expectations have been that it would take its place with the compressor-type refrigeration cycle and would offer a more compact and silent method of cooling for refrigerators, ice makers, water coolers, and air conditioning. Enough of these hopes have now materialized to make a convincing argument that the rest may be achieved.

Prior to Lord Kelvin's experiments in 1850 with the refrigeration and heat-pump cycles, Jean Peltier had observed in 1834 that when heat was applied to the connection of two dissimilar metal conductors, an electric current would flow. Known to us as a thermocouple, this is, of course, a familiar device for determining a temperature by measuring the voltage it produces. It is also well known that when a direct current is passed through such a joint, one side of the connection will become warm and the other side cold. Capturing these thermal effects and putting them to practical use has been the problem of the research scientists. The challenge was great and the rewards appeared interesting—simplicity, silence, and no moving parts.



The Borg Warner Corporation, one of the organizations actively engaged in developing this application of Peltier's findings, recently announced four of its major applications of the principle. In the guidance system of missiles that target on the enemy's jet exhaust, accuracy is increased by thermoelectrically cooling the detector (an infrared-sensitive cell). A thermoelectric refrigerator will soon be available and a storage-type ice-cube maker has been perfected. The fourth application is in a package-type air conditioner.

The air conditioning unit developed by York Division of Borg Warner (*see photo*) is of ¼-ton capacity. The same cabinet will house a ¾-ton unit; a 2-ton unit will be available in a larger cabinet. At present, a 25-ton installation is planned and capacities up to 250 tons are contemplated. The ¼-ton unit and other small capacity conditioners presently cost three to five times as much as those of conventional type, though the cost of operation is no more expensive and may even be slightly less. It is hoped that, in time, the purchase price will also be competitive. The thermoelectric conditioner is flexible, easily installed, compact, light, and quiet. Each unit is designed to change over from heating to cooling, so that a room will always be kept at the same temperature regardless of whether heating or cooling is required. Circulation of air is accomplished by a small fan and the unit is designed to use a filter.

Alwin B. Newton, York Division's Vice-President and Director of Engineering, makes the following comments about the air conditioner: "The unit is really a thermoelectric heat pump which supplies heat when needed, and cooling when needed. When it cools, it also dehumidifies, and it is so arranged that it can dehumidify and reheat if required to do so, though this feature may not be used on every application. When needed, controls will be provided for the reheat function.

"Since it is a thermoelectric unit and the function of any group of thermocouples can be locally determined, the unit can also dehumidify while heating, as is frequently necessary during mild weather. We believe, therefore, that the thermoelectric unit is unique in its ability to control both humidity and temperature with precision. The unit itself has no recifier, and a feature of our system is to provide a controlled d-c power level for individual zones of the building. The heat is removed or furnished by a circulating liquid system.

"For the materials of the thermocouple, it is desirable to have metals with low electrical resistance and good qualities as thermal insulators. These requirements led everyone interested in thermoelectric cooling into the field of semiconductors, which are the same class of materials of which solar cells and transistors are made. A typical semiconductor which has been found useful in thermoelectric heat pumping is bismuth telluride.

"In a practical assembly, each thermocouple requires two types of materials, one called a P-type and the other an N-type. The bismuth telluride in the N-type material is treated, or "doped," so that it has an excess of electrons free to move around whenever an electrical voltage is applied. By contrast, the P-type semiconductor has a lack of electrons, and since its atomic structure is not completely filled with electrons, it is said to have holes.

"One piece of N and one piece of P material—placed side by side and connected across the top with a good electrical conductor like copper so that they occupy an inverted U—are needed to make a thermocouple. Usually, two separate additional pieces of copper are attached to the open legs of the inverted U for ease in making electrical connections. If a battery or generator applies direct current with the negative side connected to the leg made of the P-type material, the copper plate on top will become cold and absorb heat from the surroundings. This heat is transferred through the semiconductors to the lower copper strips, causing them to become hot."

The RUBEROID Co. Announces the 4th Annual

$25,000 Awards Ruberoid/Matico Design Competition

THE JURY, left to right, James J. Hurley, Taylor-Hurley Assoc., New York, N. Y.; Prof. Vernon DeMars, A.I.A., Chairman, Dept. of Arch., Univ. of Cal., Berkeley, Cal.; William L. Slayton, Commissioner, Urban Renewal Admin., Wash., D.C.; B. Sumner Gruzen, F.A.I.A., Professional Advisor, New York, N. Y.; Ralph Rapson, A.I.A., Head, School of Arch., Univ. of Minnesota, Minneapolis, Minn.; Edmund N. Bacon, A.I.A., (Chairman) Exec. Dir., Phila. City Planning Comm., Phila., Pa.

"Improved Human Environment through Urban Renewal"

The 4th Annual Ruberoid/Matico Competition was designed to stimulate the interest of architects in urban renewal. The winning submissions, in each group, were most excellent. In the Grand National Award category, the Jury decided to combine the first three prizes and make equal awards. The prize winning plans will be reproduced in a brochure to be available before the end of the year. If you desire a copy write to the Ruberoid Company on your letterhead.

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Stephen N. Abend, Kansas City, Mo.

Ralph Lewis Knowles, Auburn, Ala.

Stuart Kenneth Neumann, Chicago, Ill. and
Donald L. Williams, Fern Creek, Ky.

NATIONAL MERIT AWARDS (6)

J. D. F. Boggs, Jr., Herman F. Goeters and
Robert F. Lindsey, Houston, Texas

Jean-Michel Charnet, St. Louis, Mo.

John C. Dyer, Boston, Mass., Thomas S. Marvel,
Puerto Rico and John W. Shenefield, Jr.,
Cambridge, Mass.

Jan Lubicz-Nycz, San Francisco, Cal.

F. Kempton Mooney, Columbia, S. C. and
Joseph L. Young, Clemson, S. C.

Minoru Takeyama, New York, N. Y.

SPECIAL STUDENT AWARDS

FIRST PRIZE
Edward Z. Jacobson, Pittsburgh, Pa. and
Kenneth Schwarz, Kew Garden Hills, N. Y.

SECOND PRIZE
Michael Marczuk, Minneapolis, Minn.

THIRD PRIZE
Daniel E. Green and Eugene J. Mackey, La Due, Mo.

STUDENT MERIT AWARDS (4)

H. Stow Chapman and Richard A. DeVine, Champaign, Ill.

R. Alan Forrester, Tadeusz M. Janowski, Ilmar Reinvald
and Donald E. Sporleder, Urbana, Ill. and Elam L. Denham
and Anthony Pellecchia, Champaign, Ill.

Melvin Leon Ford, Glendale, Cal.
Duk Won Lee, Edward Richard Niles and
Jay Barton Walter, Los Angeles, Cal.

Terrence Andrew McCormick, Champaign, Ill. and
Ilmar Reinvald, Urbana, Ill.

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Responsibility of Producers

BY HAROLD J. ROSEN

Many times a contractor is confronted with construction problems that are the results of improperly produced items. A method of eliminating the extra cost of removing and replacing such items, through proper specifications, is proposed by the Chief Specifications Writer of Kelly & Gruzen, Architects-Engineers.

Every contractor is familiar with the situation in which a producer—whether he is a manufacturer of materials and equipment; or provides cut stone from a quarry; or assembles several component parts into a finished item—ships products to the construction site, which, upon installation, are found wanting in several ways, and fail to meet pre-established levels of quality.

The contractor is thus placed in an embarrassing position: he must fulfill his contractual obligations as provided for by the architect's specifications, yet he frequently finds these are difficult to meet due to the producer having failed to furnish products on time, or in the correct quantity or color selection, or that the quality of the material is not in keeping with stated tolerances.

These failures can be very costly both to the contractor and the owner. A board of education, for example, which is sweating out a completion date for a new school, is compelled to take incorrect colors in order not to delay a project. Or the owner of a hotel, who already has booked reservations, must open his facility with unfinished areas or inoperative utilities.

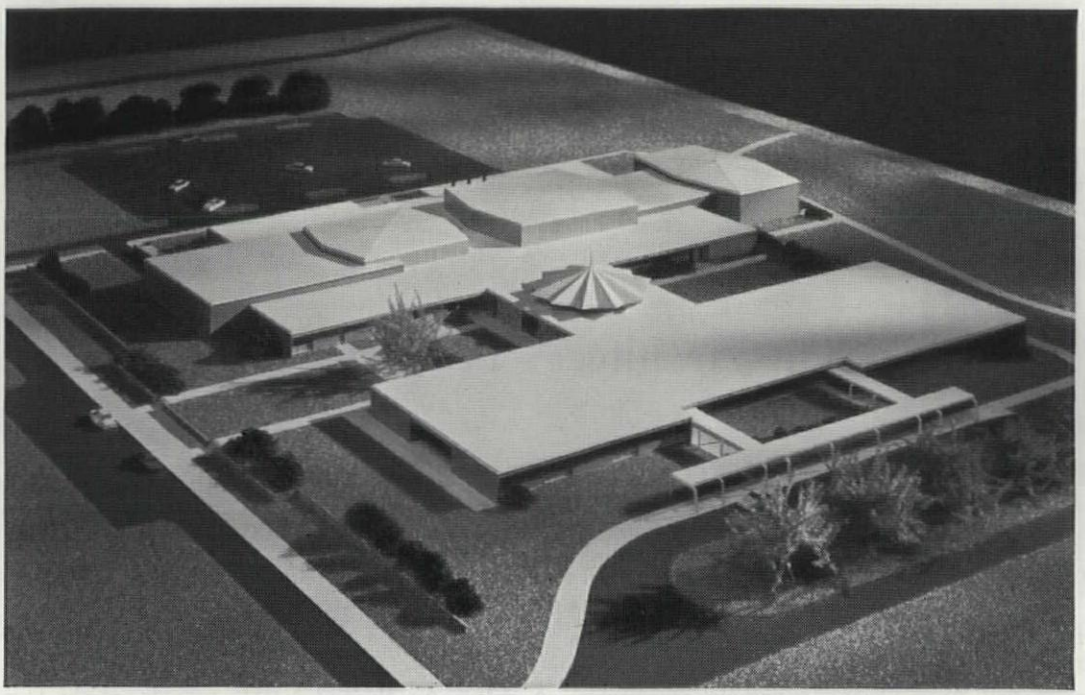
The list of product inadequacies that are frequently met with is endless: rolled-steel sections, exposed in the finished work, are sometimes found to be so twisted out of plane that abutting masonry will not align with them. Tubular-steel sections for exposed work are found to have large areas of dross that have to be ground off. Structural facing tile is erected in a wall, and, because tolerances are exceeded, the jointing is faulty and the wall out of plane. Concrete blocks for exposed partition walls are frequently disfigured, discolored, or cracked due to poor control during the manufacturing process. Cut stone coming from a different section of a quarry, once it is placed in the wall, suddenly develops stains upon being exposed to the weather.

How can the contractor protect himself from these problems and insure that his projects are completed on time? For one thing, he can place orders for materials promptly. Too many times he falls into the trap of shopping around for bids and delaying award of subcontracts. Thus he works himself into a tight delivery and construction schedule, forcing producers to meet impossible target dates. The producer, in turn, in order to meet these tight schedules, is compelled to take shortcuts that result in substandard production runs, errors in shipping orders, and other situations that could have been avoided.

In some cases, of course, the producer is at fault through failure to exercise the proper physical and chemical controls during his production runs. Samples, for instance, that meet specifications requirements, may differ from the product delivered to the job site. An architect confronted with poor performance of a product in one of his projects may very well refuse to approve products from this source on subsequent jobs.

Another potential trouble-spot for the contractor, which can be avoided with a little foresight, is in situations where only a single product is specified. If the producer is lax in his performance or delivery, the contractor is placed in the position of taking it or leaving it. The contractor's position in such a situation can be strengthened if he is not restricted to doing business with only one supplier but has a choice in the specifications among several optional products. Specifications could be written so as to require award of subcontracts within 30 days after the general contract has been awarded, and proof of such subcontract awards submitted to the architect. Then, if the architect is notified that certain specified materials cannot be delivered to the project in time, he could propose the use of several substitute materials to avoid delay.

Producers who have provided contractors with defective materials are sometimes willing to replace these; but this does not include the additional cost of removing, replacing, and finishing them—or assemblies contiguous to the defective ones. Here again, the contractor could protect himself by having included in the specifications certain provisions that would make such a producer liable for his inefficiencies. The specifications would provide that, if products are built into the work and fail to measure up to specifications requirements, the contractor would be required to disassemble and rebuild the unsatisfactory work with products meeting the specifications requirements—at no additional cost to the owner. The contractor, in turn, could make such provisions a part of his contract with the producer or supplier.



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The Architect's Fee: Part 2

BY JUDGE BERNARD TOMSON AND NORMAN COPLAN

In the second of two articles, Nassau County District Court Judge and a New York attorney discuss contractual provisions by which an architect may protect himself in collecting a fee for designing alternates.

Contracts between owner and architect that provide that the architect's compensation is to be determined by a percentage of the cost of construction are often inadequate to compensate the architect for his services. If, for example, the architect is required to design alternates, and if the contract let does not include all alternates, a serious question arises as to whether he is entitled to any fee in excess of the basic rate as calculated by a percentage of the cost of the work actually constructed.

Courts, in construing contracts for architectural services, tend to interpret fee provisions literally. The rule has been generally enunciated that, where a contract contains an express and unambiguous stipulation as to the method of determining the amount of compensation for architectural services, the stipulation, no matter how "unfair," is conclusive, regardless of inferences that might be drawn from other provisions of the contract.

An example of such a literal approach is reflected in a case in Pennsylvania (*Osterling* v. *First National Bank*, 262 Pa. 448) that dealt with the interpretation of an architectural contract for the furnishing of plans, specifications, and supervision for a fee of 5 per cent of the cost of the work. The architect was required to revise his drawings because of changes in the scope of the project requested by the owner. These changes in scope increased the cost of construction, and the architect sought as his compensation, not only the contract percentage of that cost, but an additional fee for the revisions that he was required to make in his completed drawings. The services necessary to effect these changes and revisions seemingly constituted an extra under the applicable provisions of the architect's contract. The architect also claimed extra compensation for unanticipated time expended on supervision, the result of delays, caused by the owner, which occurred during the construction of the project. The Court, in refusing any extra compensation for the revision in the drawings or for the extended supervision, stated the following:

"... the architect 'proposed and agreed to furnish all necessary plans and specifications to erect the building.' . . . As an architect, he was doubtless familiar with the fact that most owners in the course of building make changes in both plans and specifications. . . . The changes made during the process of building increased the total cost. . . . He was paid 5 per cent on this amount as his compensation. If he regarded the work of preparing the drawings as work outside of his contract, he should not have accepted the percentage of the total cost. He surely cannot claim both the percentage on the total cost and extra compensation for preparing the drawings which increased the total cost, but he must be held to his contract, which is clearly expressed. . . .

"The claim for compensation for delay is also without merit. The contract under which he claims, fixes no time within which his services were to be completed. The building actually cost almost double the amount originally contemplated, and his commissions were correspondingly increased. This was adequate compensation for the delay incident to the construction of the enlarged building, but this is not the reason for our refusal to allow his claim. He was not entitled to make it under the contract which he himself prepared."

Similarly, when changes in the scope of the project have reduced the cost of construction, courts have construed the architect's compensation as limited to a percentage of the actual reduced cost. If, in addition, an extra for revision of plans is denied under the rationale of the Pennsylvania court, the architect would indeed sustain serious hardship. It is therefore essential that the architect's contract expressly and clearly provide, at the very least, that revisions that reduce the cost of the project are to be compensated for as an extra in addition to the basic fee rate.

Where alternates are required by the owner, it might be contended that, in the absence of any other provision, the architect should be compensated for an alternate not executed under the abandonment clause of the contract. It is unlikely, however, that the courts would sustain this contention. By the very nature of the alternates, it necessarily follows that a portion of the work performed by the architect will not be executed. Consequently, to find an abandonment in order to afford compensation to the architect would seem to be strained reasoning.

An architect who is required to design alternates, should, therefore, include a specific provision in his contract covering the situation. A suggested contractual provision is as follows:

The Owner agrees to pay the Architect as compensation for his services _____% of the construction cost of the project. In addition thereto, if the architect is required under this agreement to provide alternate plans or specifications which are not executed, he shall be paid the cost of technical personnel employed to furnish such alternates, plus _____% of that cost for overhead and fee.

Since the architect's services may not result in construction due to such diverse reasons as death or discharge of the architect, abandonment of the project by the owner, discard of plans necessitated by changes in the scope or program of the project, design of alternates not utilized, an architect's contract that only provides as compensation a percentage of the cost of construction is inadequate.

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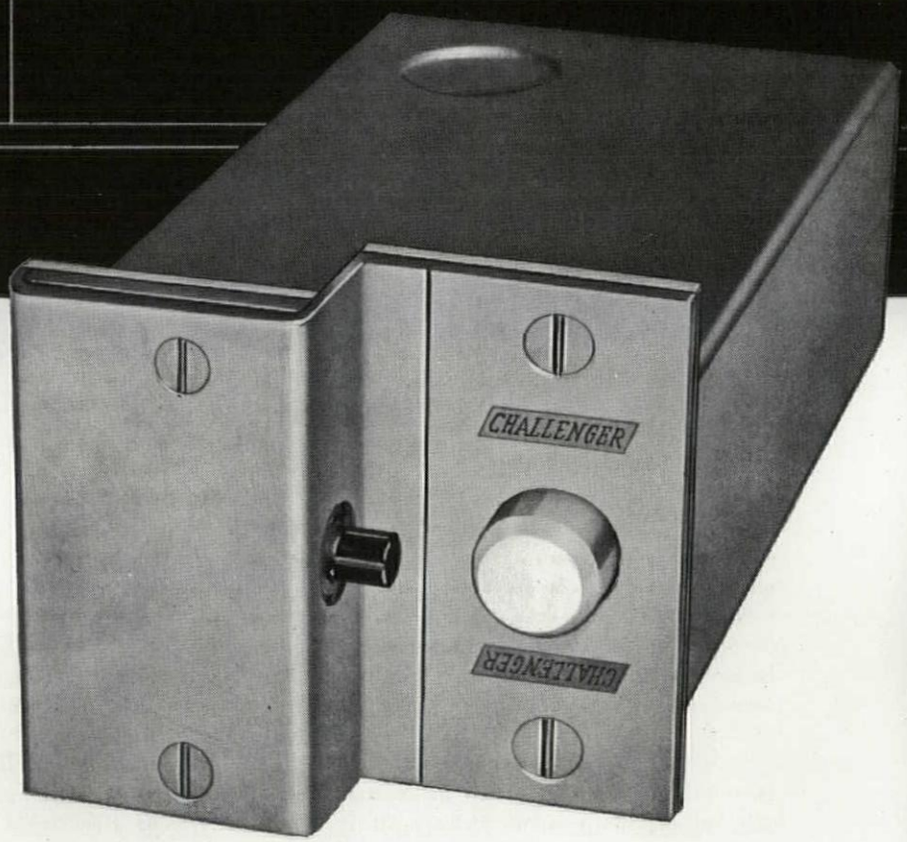

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More on the Seattle World's Fair

Dear Editor: Congratulations on the wonderful analysis of the Seattle World's Fair [NEWS REPORT, JUNE 1962 P/A].

We are particularly proud of the fine acclaim you gave our office and wish to thank you for your thoughtfulness and the coverage given our work. Of course, with such fine compliments, we are prejudiced, but the entire office feels that the article is the only coverage and critical discussion of merit in all of the architectural publications.

PAUL HAYDEN KIRK
Seattle, Wash.

Dear Editor: The Seattle World's Fair is admirably presented in your lively critique. I thoroughly enjoyed the effective criticisms and excellent photographs, which are a partial substitute for someone who cannot make the actual trip to Seattle. My main impression of the fair—based on the over-all, high-level architectural direction, with the necessary contrapuntal aberrations—is a favorable one. The many aesthetic views are charming; and the story about the restaurant concession that is rumored to be under the management of a relative of a high-ranking state official is amusing.

In comparison, the New York World's Fair was buried before it started, not by a rumor, but by a total and gross lack of sensitivity and design direction. The design quality evident from your article respects both refinement and gaiety. With its naive and clumsy theme, the New York World's Fair is destined to produce an unfortunate reaction to the prestige that this city has gained as a world-leader in the arts.

OLINDO GROSSI
Pratt Institute
Brooklyn, N. Y.

Dear Editor: I think that your Seattle World's Fair Critique is on the road to intelligent, informed, opinionated criticism. Let's have more with less velvet gloving.

Since I did not visit the fair, I cannot comment on the designs with authority. However, from the photos, etc., I am not very pro.

EDWARD F. KNOWLES
New York, N. Y.

Dear Editor: Your article on the Seattle fair reflects my general feelings. It is rather nice to see that I have some company in questioning the validity of the Federal Science Pavilion. I do not think that Venetian architecture benefits terribly from stylization, and most decidedly does not seem like a suitable container for today's science. One other detail I liked about the article was that mention was made of the graceless joint of abutments and roof trusses in the Coliseum.

All in all, my impression of the fair is that nothing revolutionary seems to have happened in the way of architecture.

JAMES VALKUS
New York, N. Y.

Dear Editor: Let me say first that I enjoyed your article; I found it to be a most complete and well-written report. Secondly, if I had had any intention of going to Seattle (which I did not), your article removed any doubt from my mind.

There are certain elements and details that I should like to experience visually, but there does not seem to be enough of greater interest to make the trip worthwhile. It would appear that, on the whole, this fair falls into the category of being another exaggerated State Fair. I do take world fairs—that is, international exhibitions—seriously, and I expect to find a series of tremendous jolts of stimulation, connected by relaxing passage of landscape for rest and tranquility. Save for a few exceptions, the Seattle fair does not seem to provide this in either the temporary or permanent buildings, or in the landscape.

MORTON RADER
New York, N. Y.

Dear Editor: I must commend you on publishing the refreshing criticism of the Seattle World's Fair by James T. Burns, Jr. Here is a man saying what he thinks, with no eye cocked on "PR," who is not afraid to say a thing is bad. This is a real service to the fair and to your readers.

EDMUND BACON
Executive Director
City Planning Commission
Philadelphia, Pa.

A Matter of Inspiration

Dear Editor: It's nice to read in P/A about projects being undertaken in the Philippines. You have placed our country on the proverbial map.

Although I appreciate the design and planning of the U. S. Embassy Building in Manila by A. L. Aydelott & Associates [JUNE 1962 P/A], I sincerely hope that other American architects who come here to do similar projects either stay long enough to absorb more of the "Philippine Spirit," or team up with Filipino architects. The use of the old Spanish walls of Intramuros as a source of inspiration does not express the "Philippine Spirit." On the contrary, the new walls of the American Embassy not only look forbidding to Filipinos, but are also a grim reminder—now that we are an independent republic—of our centuries of colonial past under foreign domination.

Perhaps you can help dispel any misconceptions P/A readers may have about Philippine architecture by publishing more projects designed by our talented architects, which, in our humble opinion, compare favorably with architectural works in "more advanced" countries.

C. F. AGBAYANI
Secretary, League of Philippine Architects,
Manila, Philippines

Reaching New Heights

Dear Editor: Your article in the JUNE 1962 P/A about tower-climbing cranes is certainly factual and should be of interest to architects working in concrete. However, I do feel that P/A should not swallow certain statements without first checking the facts.

The article claims that the Tower East luxury apartment building, at 35 stories, is the tallest reinforced concrete framing in New York City. We have no desire to achieve any status by stating that we are creating the tallest concrete-framed structure in the city, but at the same time we feel that, in all justice to architects and builders, you should know that the Americana Hotel (which is nearing completion and was designed by our firm) is 50 stories high and is a concrete-frame building, even though we did not use tower-climbing cranes.

MORRIS LAPIDUS
Morris Lapidus • Harle & Liebman
New York, N. Y.

The Pros Have It

Dear Editor: I enjoyed reading your "P.S." this month [JUNE 1962 P/A] on the AIA's program for reaffirming the architect's ability to perform all the comprehensive services demanded by today's building projects. You have clearly analyzed the pros and cons, and, I agree, the pros have it.

MORRIS KETCHUM
Washington, D. C.

A Very Late Explanation

Dear Editor: The NEWS REPORT of the JANUARY 1962 P/A has a story on the John Fitch Way Redevelopment Project in Trenton, New Jersey, in which it is stated that the over-all redevelopment plan was developed by Frank Grad and Sons, with Alfred Clauss collaborating. For your information, the responsibility of the above-mentioned individuals was with respect to the architecture of the state complex in the redevelopment project, but our firm prepared the over-all redevolpment for the project.

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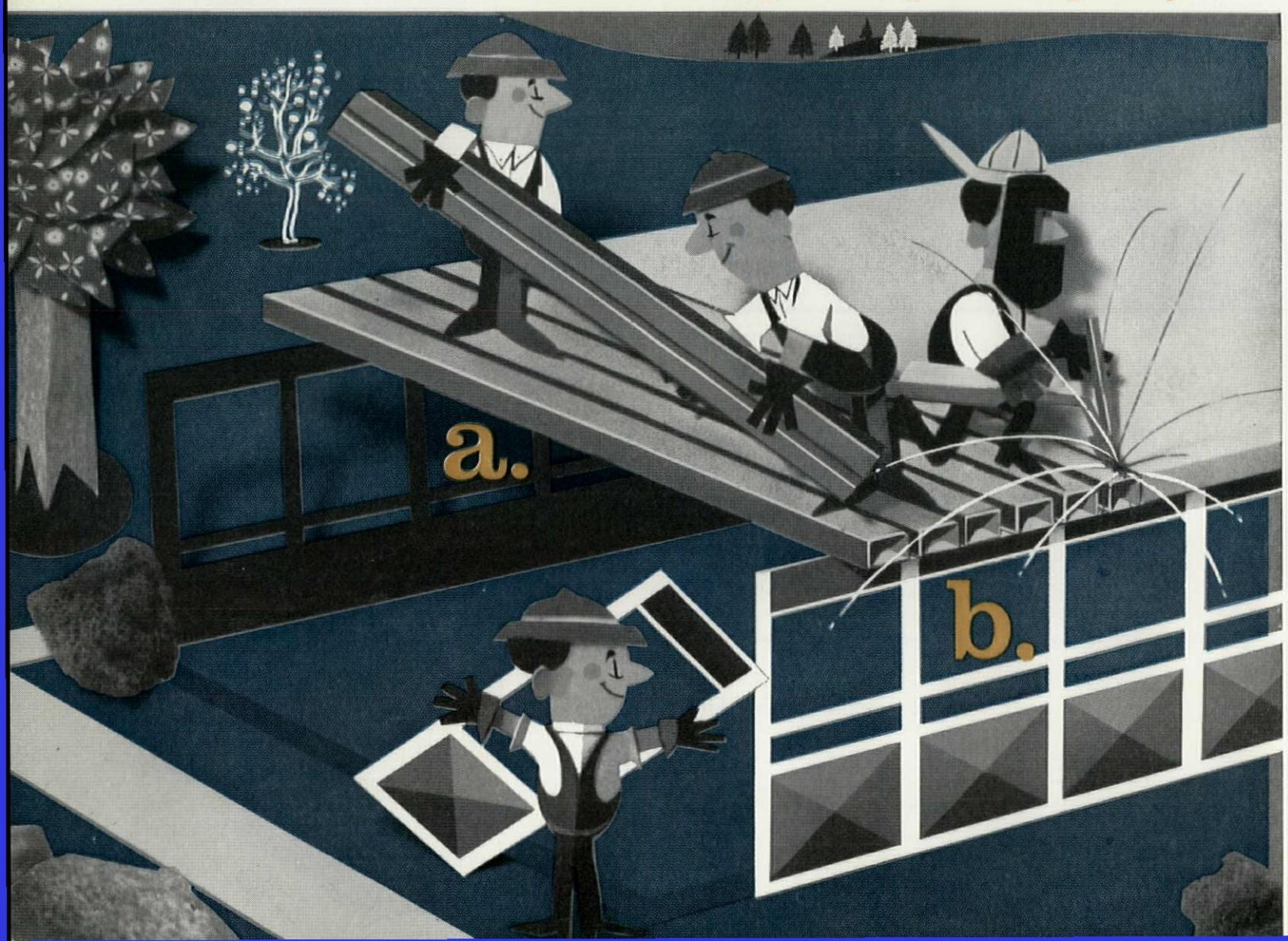

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Continued from page 182

up so much general interest; never before has a work of public art been so widely and hotly debated. This is, at last, as it should be, and it gives the story of the FDR memorial its special significance. It makes this, to use a mundane expression, a test case. And the test is not only whether architects and artists can create a fitting symbol, but also whether, after decades of rebellious alienation from society, modern art can, and will again, be publicly accepted without destructive compromise. As Sigfried Giedion has said, "The most vital monuments are those which express the feeling and thinking of . . . the people."

When the competition was announced in the spring of 1960, the modern movement in architecture had just about reached the point where its proponents felt it appropriate to aproach the problem at all. An overwhelming majority of the 574 entries are in the modern idiom. This was not at all obvious. For in the first flush of rebellion against Victorian and Beaux Arts falsification of forms, the moderns seemed to think a monument without social purpose *ipso facto* immoral. They seemed to agree with Walt Whitman, who remarked more than 100 years ago: "The day for conventional monuments, statues, memorials, etc. has pass'd away . . . they are both superfluous and vulgar." Lewis Mumford, for instance, as Creighton notes, was moved to state as late as 1938: "The notion of a modern monument is veritably a contradiction in terms; if it is a monument it is not modern, and if it is modern, it cannot be a monument." But much of this talk, as Creighton points out, was merely semantic confusion. It wasn't long until monumental manifestoes about new manifestations of monumentality were proclaimed by the avant-garde. New forms soon followed the words. Ronchamp was probably a milestone.

"And as the period of the chaoticism of the '60's arrived," writes Creighton, "demonstrated and defended by the algebraic and geometric involutions of the Space-Framers, the Geodesicists, the Hyperbolicists, and the Suspensionists; by the shape-searching of the Sculpturalists and the Virilists; and by the nostalgia of the Nouveau Artists-Nouveaux and the Neo-Libertarians; it suddenly appeared that many possible new approaches to the concept of monumentality were being developed."

A bit too lightly, perhaps, Creighton touches on some of them. He recalls, among others, Mies van der Rohe's Liebknecht and Luxemburg Monument in Berlin of 1926; Eric Mendelsohn's proposed memorial for Six Million Jewish Victims of the Nazis, in New York; Belgiojoso, Peressutti & Rogers' Monument to Those Fallen in Germany, in Milan; and the Fosse Ardeatine in Rome by a group of young Italian architects.

Some of the most stirring modern monument designs, Creighton points out, were the result of competitions: Naramore, Bain, Brady & Johansen's Corregidor Bataan Memorial; Reginald G. Knight's Fermi Memorial; and Eero Saarinen's Jefferson National Expansion Memorial arch in St. Louis. It is doubtful that such good, fresh solutions would have come to the fore by any other method of selecting the designer. The usual "objective" political appointment would certainly not have created them, as can be seen on Capitol Hill and Roosevelt Island in Washington. Creighton has served on numerous national and international architectural juries and competitive award programs and is thus well qualified to discuss the advantages and pitfalls of competitions. He does so with almost detached frankness. But

Continued on page 192

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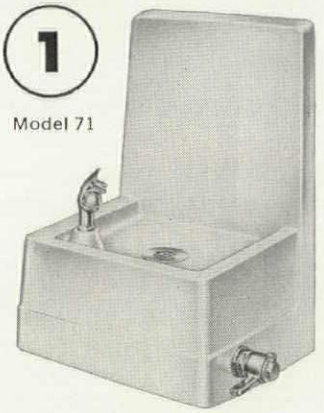

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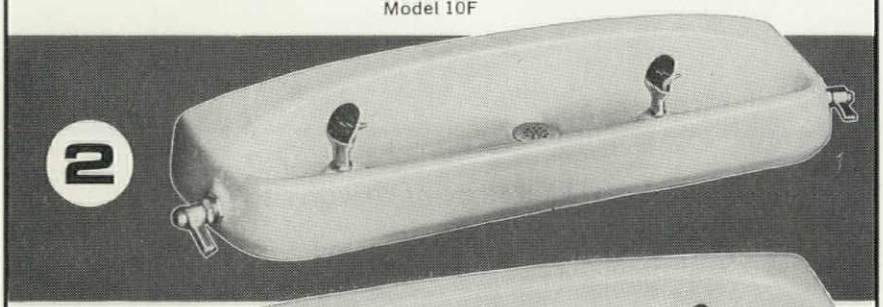

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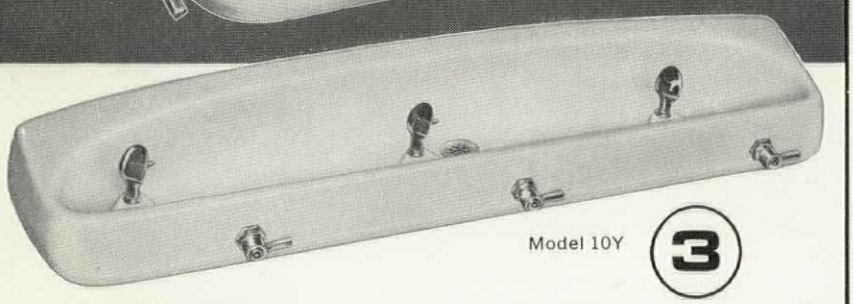

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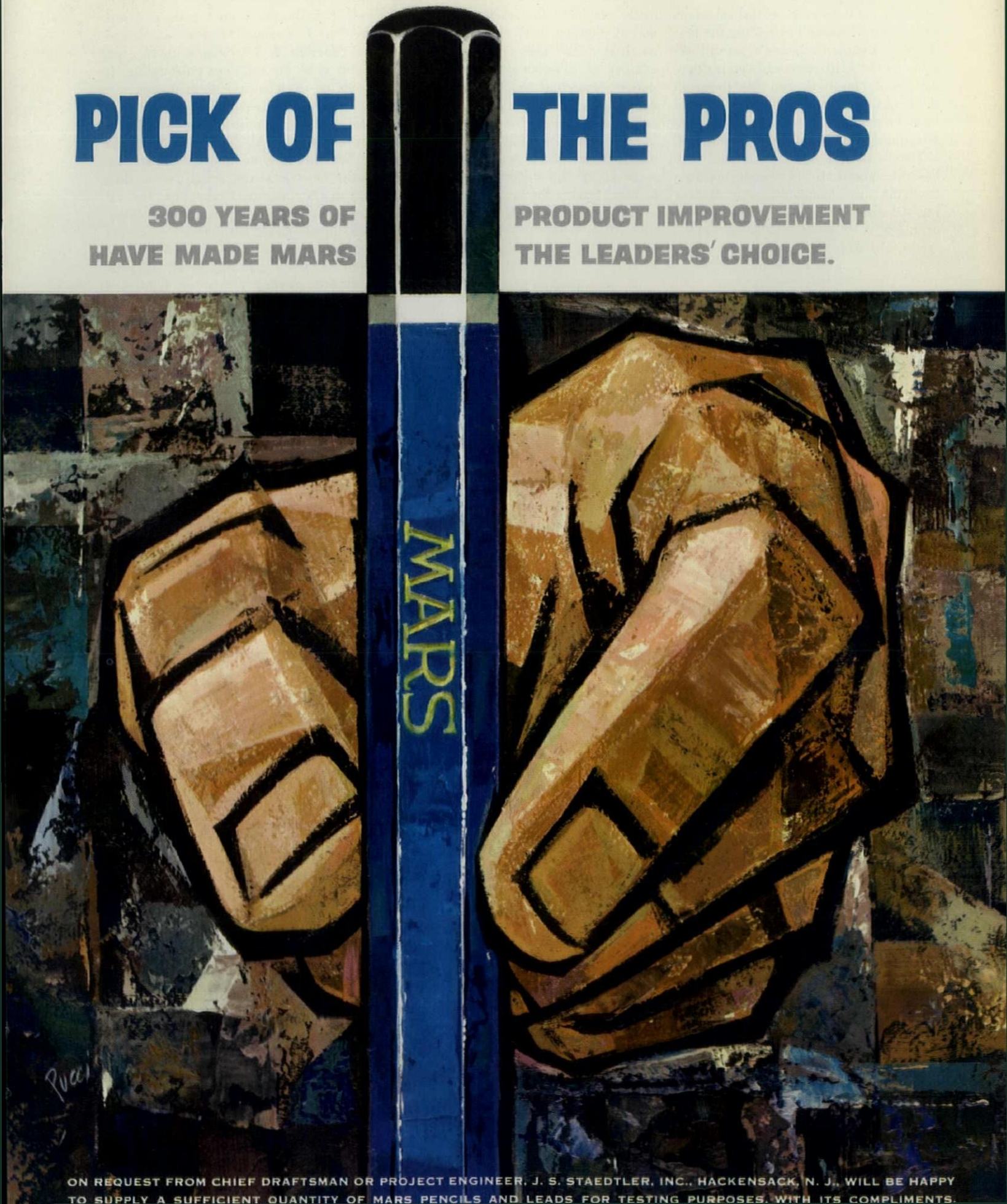

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Continued from page 190

whatever the drawbacks of this laborious and expensive method of finding the best possible design, Creighton's careful account of the FDR memorial competition, the people involved, and the thorough thinking that went into this effort, should leave no doubt that it was expertly, conscientiously, and competently conducted.

Thanks to this book, the reader now has the opportunity to Monday-quarterback the jury. Creighton, after discussing the six semi-finalists at length, has arranged most other significant entries (there obviously was not enough space to reproduce them all, and some were so badly presented that they simply would not photograph well enough for reproduction) into basic categories. Their number is surprisingly small, to wit: shafts, landscape solutions, structures, and sculptural forms. Each of these is analyzed in terms of its appropriateness to the theme. Yet Creighton himself does not quarterback the jury. He lets the designs speak for themselves. A number of them scream for attention, like hawkers on Coney Island. Most mumble banalities. But some, in the view of this reviewer, convey a clear and appealing message. This reviewer also finds, however, that the array once more confirms the jury's choice. The winning design by Pedersen & Tilney and their associates is by far the most outstanding. It needs no explanations or apologies.

The few professional architects who spoke out in opposition to this design seem opposed to all 20th-Century art and architecture and, implicitly, at least, condemn the style of the design rather than the quality of the work. The Federal Commission of Fine Arts, in its ambiguous thumbs-down verdict, allowed that the Pedersen & Tilney scheme has "great dramatic force and impact of imaginative and stirring effects of light and shade and the expression of much that is characteristic of our time." It seems to object to the times rather than to the expression. In other of its actions, too, the Commission seems far more sensitive to officialdom of which it is part than to the living arts of which it has some time ago ceased to be part. And our officialdom, to quote Giedion, rightly "represents the average man of our period in [its] artistic judgments. Like this average man, [it] experiences a split between methods of thinking and methods of feeling. The feeling of those who govern and administer the countries is untrained and still imbued with the pseudo-ideals of the 19th Century."

The country's leading architects, the AIA's leaders, and the architectural critics, on the other hand, have highly praised the winning design. The profession thus seems to have answered in the affirmative the question of whether a modern monument is possible. But that is only part of the answer. A design is not a monument. It is still open to question whether the architect as an artist, or catalyst of the visual arts, can effectively lead the public in the vital matter of bringing creative art into the public domain, whether he will docilely follow or courageously lead public feeling and thinking. This is a vital problem, and the battle over the FDR memorial is surely only the first of many such encounters to come.

Creighton has therefore wisely included rather detailed passages on the public debate that followed the jury's decision. He relates how "people used to covering speculative real-estate developments" filled the news columns with their descriptions of the winning design "in non-professional, non-comprehending terms;" how others hurled amusing epithets in an exercise of their quick wit rather than their responsible judgment; and how both the architectural press and

Continued on page 198

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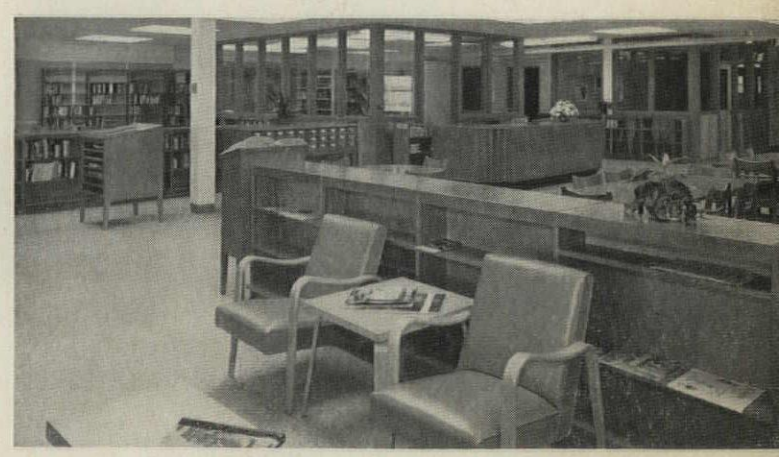

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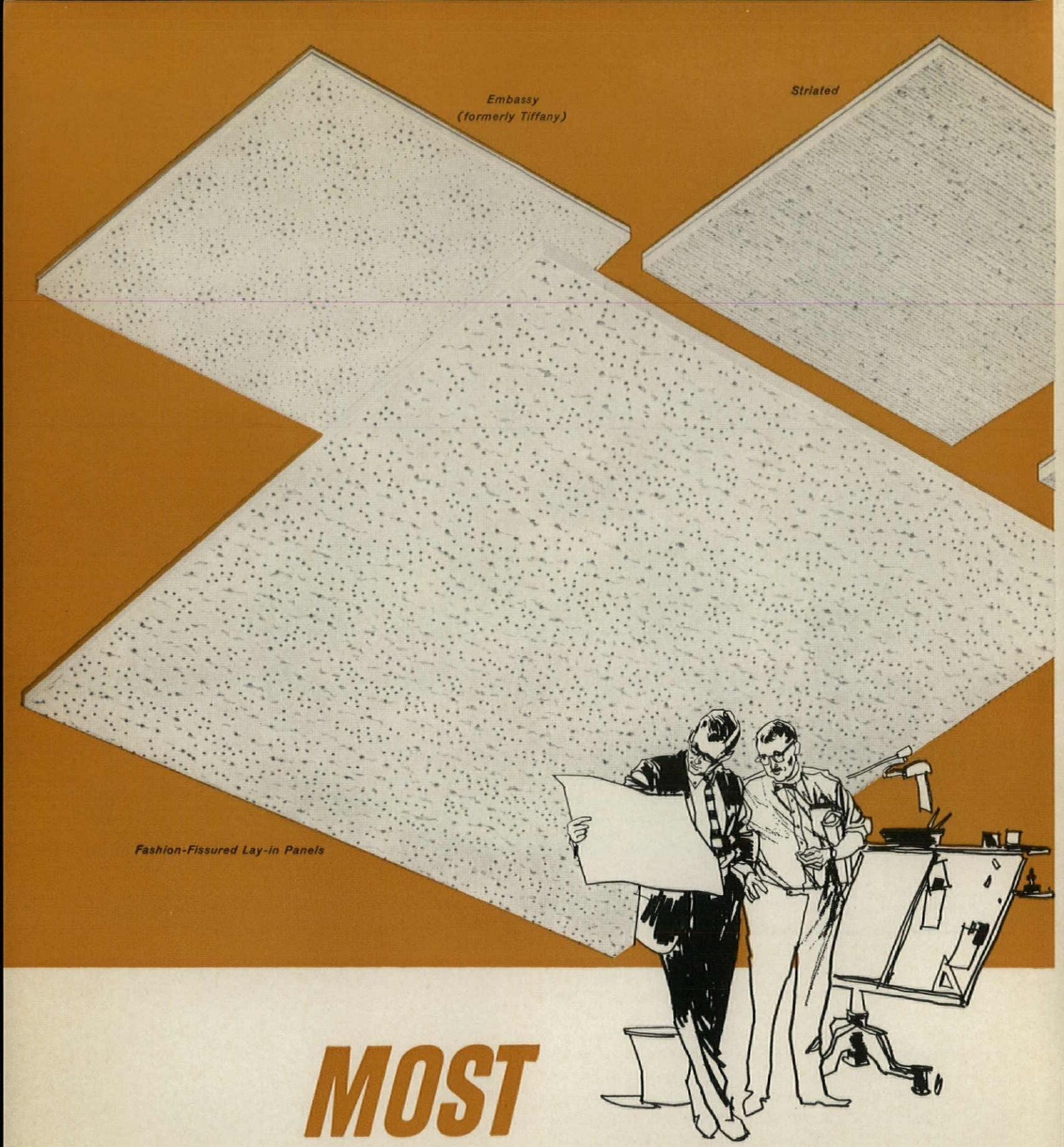

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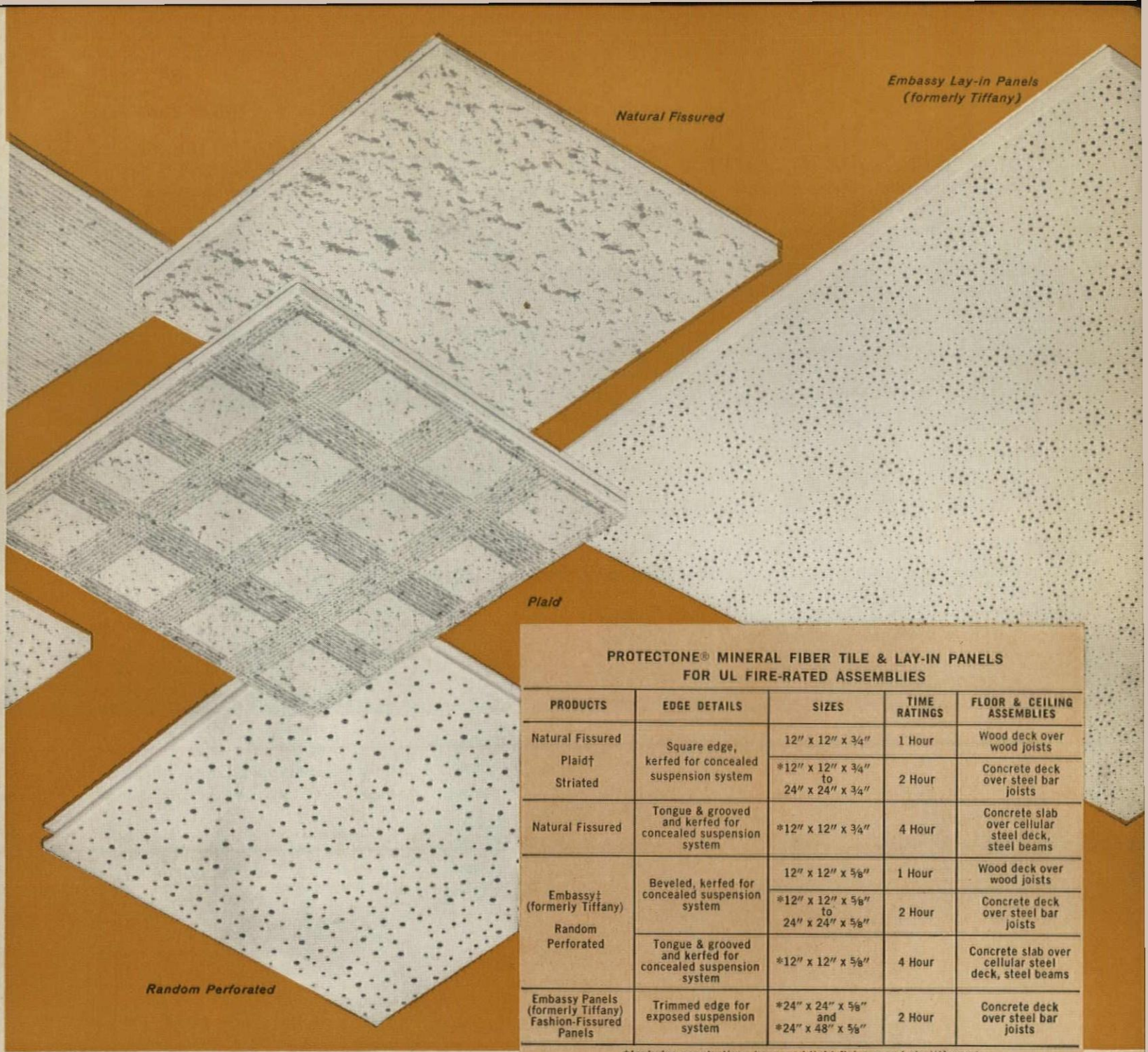

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Natural Fissured Plaid† Striated	Square edge, kerfed for concealed suspension system	12″ x 12″ x ¾″	1 Hour	Wood deck over wood joists
		*12″ x 12″ x ¾″ to 24″ x 24″ x ¾″	2 Hour	Concrete deck over steel bar joists
Natural Fissured	Tongue & grooved and kerfed for concealed suspension system	*12″ x 12″ x ¾″	4 Hour	Concrete slab over cellular steel deck, steel beams
Embassy‡ (formerly Tiffany) Random Perforated	Beveled, kerfed for concealed suspension system	12″ x 12″ x ⅝″	1 Hour	Wood deck over wood joists
		*12″ x 12″ x ⅝″ to 24″ x 24″ x ⅝″	2 Hour	Concrete deck over steel bar joists
	Tongue & grooved and kerfed for concealed suspension system	*12″ x 12″ x ⅝″	4 Hour	Concrete slab over cellular steel deck, steel beams
Embassy Panels (formerly Tiffany) Fashion-Fissured Panels	Trimmed edge for exposed suspension system	*24″ x 24″ x ⅝″ and *24″ x 48″ x ⅝″	2 Hour	Concrete deck over steel bar joists

*Includes penetrations (recessed light fixtures and air diffusers)
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For more information, turn to Reader Service card, circle No. 417

Continued from page 192

responsible architects rose to the challenge so that in the end "the quick news jibes could be dissipated by the reasonable amount of more considered critical appraisal." Since the book was published, more prominent architects have courageously and eloquently spoken up before a Congressional committee. Among them are Philip Will, Jr., Philip Johnson, and Paul Rudolph.

At this writing, Congress has not yet acted on the resolution authorizing the FDR Memorial Commission to proceed with the necessary fund-raising to construct the design it approved with but one dissenting voice. But it can already be fairly stated that win, draw, or lose, architecture of today is at last emerging from arrogant isolation, is beginning to speak up, and is learning to communicate with the society it serves not only in terms of building cost and efficiency but on behalf of the art of architecture. This is encouraging.

And Creighton's excellent *The Architecture of Monuments* is sure to go far in helping this trend along. His book demonstrates that a complex architectural problem can be presented thoughtfully, objectively, and comprehensively to the profession and the public alike.

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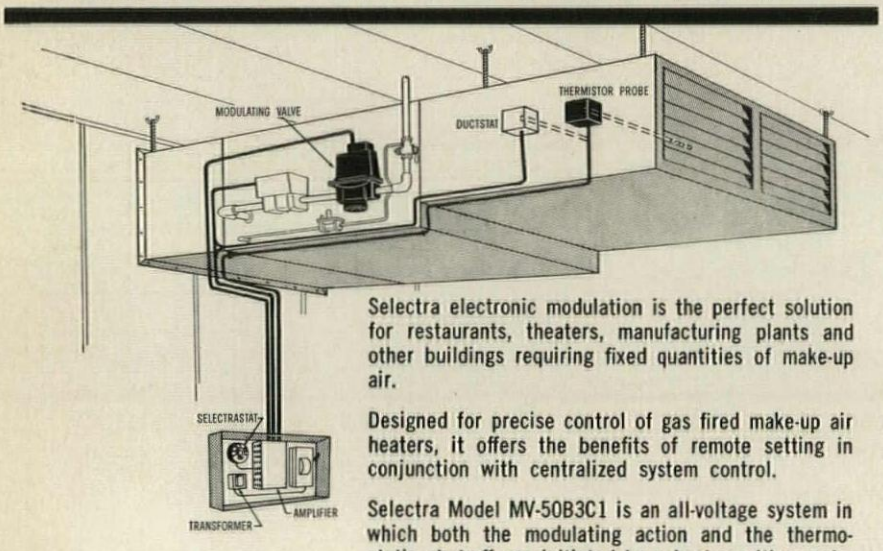

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Manual on the "Hard" Landscape

DESIGN AND DETAIL OF THE SPACE BETWEEN BUILDINGS *by Elisabeth Beazley. Published by The Architectural Press, Ltd., 9-13 Queen Anne's Gate, Westminster, S.W. 1, London. (1960, 230 pp., illus., $6.20)*

Every office has its old "pro," bless him, who has spent a lifetime with specifications and working drawings. *Design and Detail of the Space Between Buildings* reads as if the notes accumulated during such days were pasted and stapled at lunch-hour and rushed to publication without benefit of an editor. I realize this is a serious criticism. But Miss Beazley has done the uncommon: she has badly written a good book about how outdoor space can and should be designed.

She earns full marks for describing the contents of this space, and, in general terms, the importance of detail in its design. She has preserved techniques that might have disappeared forever if it had not been for her interest in them—Pembrokeshire stone hedging, for example. But after reading her book in fascination and frustration, one wishes she had applied some discipline to her material.

As a starting point, these introductory remarks of Miss Beazley's are quite tenable:

"There is a strange resignation on the part of the general public, who are often oddly confused about what they like and what we can now do. Though enjoying the past tradition, they do not seem to realize that a new and equally good one can, and in fact gradually is, taking its place. The present attitude towards outdoor design is one of either apathy or perverse preciousness, both of which are quite illogical. When the importance of exterior design is compared, in terms of the number of people affected, with that of the interior design of any building, this attitude is even stranger."

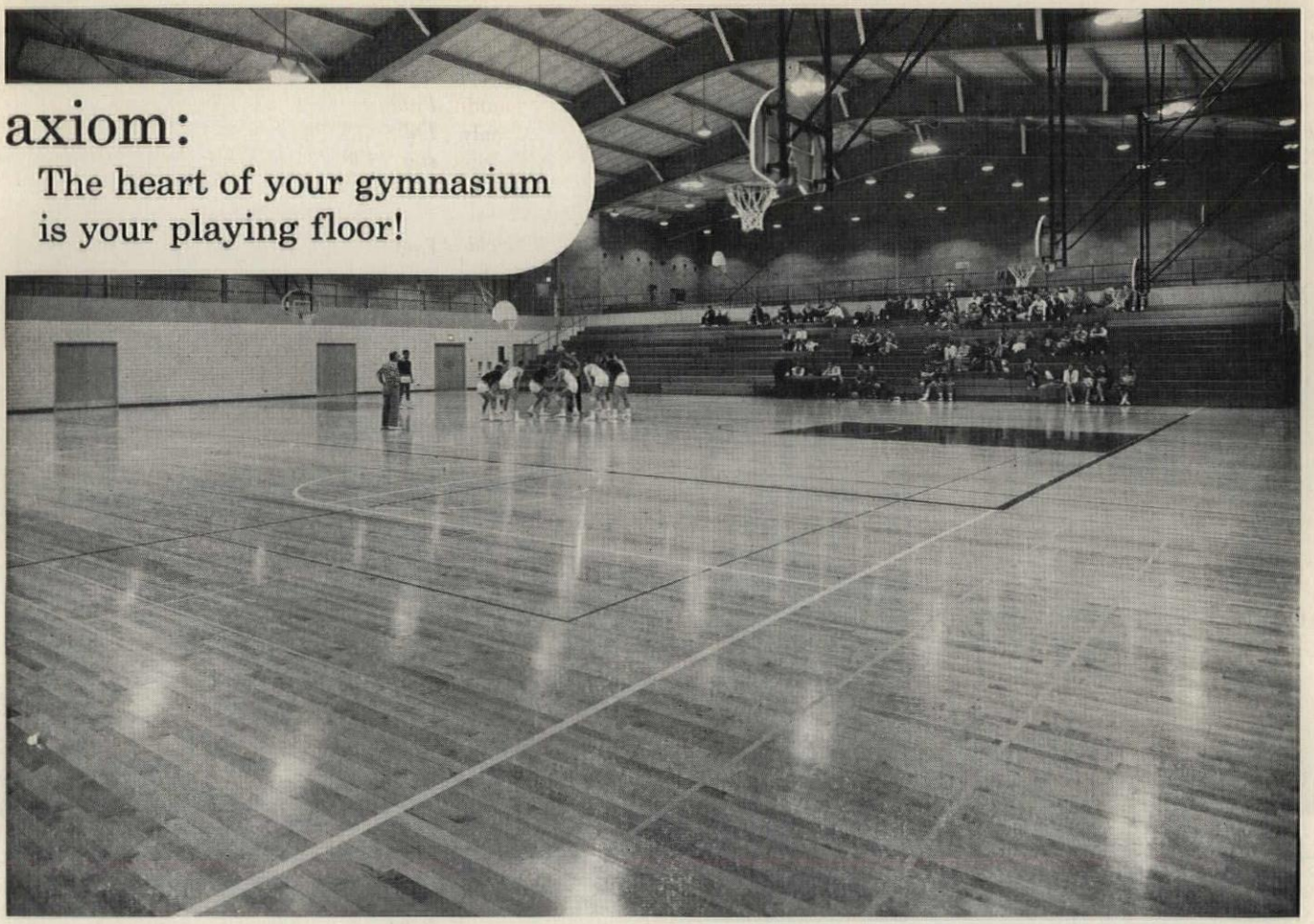
She pinpoints the current dilemma of appropriateness, with this example:

". . . grass has become synonymous with amenity. People who would not dream of putting an inexpensive felt carpet where they expect heavy wear will optimistically grass over the smallest patches or the likeliest shortcuts and then are surprised or disappointed when the grass is worn brown. The robust common-sense attitude of sane tradition has changed to a sort of neurotic anxiety to make things pretty, or to ignore the problem totally.

"Much of this is done for the sake of economy; labour is expensive and materials which were once taken for granted are now luxuries. Grass is initially cheaper. But there are new materials, and there are people who still feel it is worthwhile spending money on the old ones. There is also the old argument between the wisdom of facing mainten-

Continued on page 200

Palatine, Illinois, School No. 2 • Architects Nicol & Nicol, Chicago • Photograph by Bill Engdahl, Hedrich-Blessing, Chicago



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NORTHERN HARD MAPLE

THE finest FLOOR THAT GROWS

Continued from page 198

ance costs, versus a higher original capital outlay. But whatever is done, should be done with an awareness of what function the detail or material really has. Paving materials are not just so many scraps of cotton for a patchwork quilt. Walls and fences have their special uses and characters, some particularly suited to one situation and utterly foreign to another. . . . Street and garden furniture needs as careful choice as a dining-room table or chest of drawers."

The author believes that the gradual disappearance of good townscape is not necessarily the result of lack of interest, but of the "scattered form which the available information on these materials and details now takes." In the hope of providing a common vocabulary for design, and to link together a series of simple rules for selecting and detailing materials, she has put together this little manual on the "hard landscape" ("hard" because half the book is concerned with paved surfaces, and the remainder mostly with walls and fences).

The manner in which the material is presented is appalling. This book could have been a classic in design; but anyone looking for standard details, dimensions, and specifications on these matters would do better with *Graphic Standards*, so general, vague, imprecise, and incomplete are her instructions for resolving various design problems to which the book is addressed.

As a chapbook on design, though, there is great appeal in such free-standing comments as these samples from the section on walls. Entertaining, this kind of running commentary saves the day:

"Where heavy rainfall is expected, nothing withstands the climate as well as cleft oak."

"Brick walling, so satisfying when simply designed is still inclined to be jazzed up for art's sake. It is particularly maddening to see a good piece of brickwork ruined by fussy detail."

Another:

"Maintenance is a constant problem with fencing and walling. Good design in the first place is more than half the answer. It must be remembered that although there are few things more satisfying than a well maintained wall or fence, this is not always achieved, and some look much better when neglected than others. Traditional timber fences allow for casual patching; immense stone walls have their own special character in decay; so has brick. Wire and concrete look shoddy and depressed with rust stains; iron looks sad and faded with a 'known better days' air about it, but is still elegant if it started that way. Walls that rely on paint (e.g., white painted walls by the sea) must be painted often. So in selecting the material one must forecast the maintenance, remembering that except where stock is concerned people tend to be casual about upkeep. It is only human nature to spend money on the maintenance of buildings and to save on walls and fencing now that we live moderately peacefully in undefended settlements."

And this useful advice:

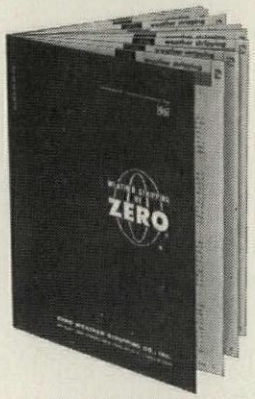
"It is commonly accepted that the 'right' side of the fence is that towards your neighbour; i.e., posts and rails are on the owner's side. Where there is no evidence to the contrary, this would be the view taken in any dispute over the ownership of a fence."

The author engagingly defends her central theme throughout the book. We have here a firm supporter of the romance of townscape. She writes:

". . . the streets, the square, the alleys and the yards, the sudden shadows in dark archways and the bright light in the courtyard beyond, the sociable openness of the market square contrasted with the privacy of high-walled town gardens, the bustling street, and the mysterious flight of steps leading around some blind corner to who knows where. It is the close-knit contrast that makes the drama, and the drama that surprises."

Though she does not tell us how, Miss Beazley believes this intangible atmosphere, which I would call three-dimensional urbanity, can be designed. Some will not share this view. The melding of history, climate, chance, the contrived,

Continued on page 206



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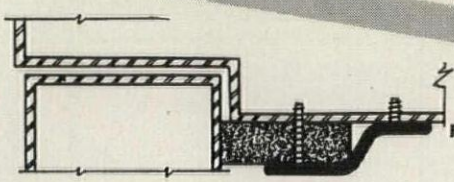

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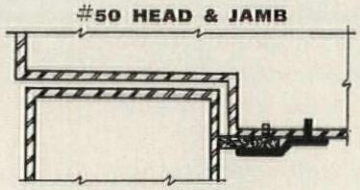

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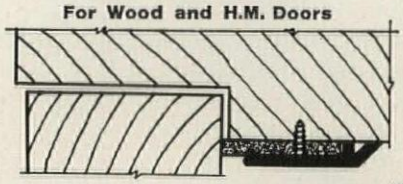

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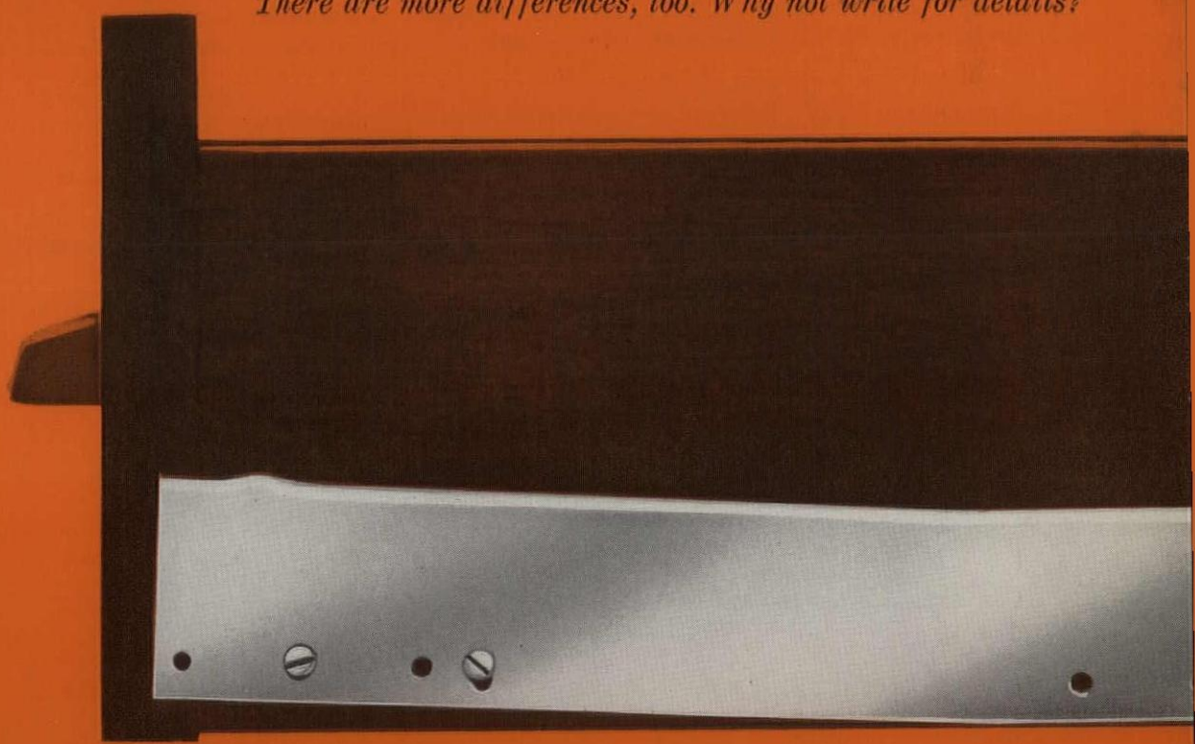

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By using Bethlehem high-strength steel reinforcing bars such as A-432 (60,000 psi min yield) and A-431 (75,000 psi min yield) you can save on concrete, steel, or both. Savings in steel can amount to as much as one-third of the materials needed if A-15 grade bars were used.

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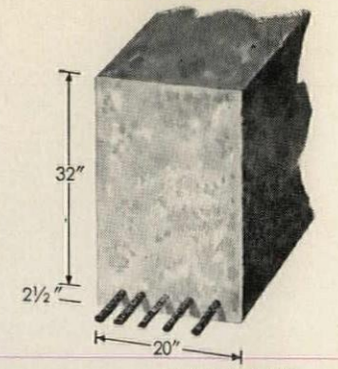
BETHLEHEM STEEL

BEAMS

Fig. 1 is a basic beam of conventional design having a 30 ft span. Figure 1A utilizes A-432 steel and ultimate strength design for savings of concrete. Fig. 1B shows the savings in steel when the beam size is left constant.

FIGURE 1



ASTM A-15
Intermediate Grade

4 #11 + 1 #9
As=7.24 sq. in.
f'c=2500 psi
fs=20,000 psi
Basic Design

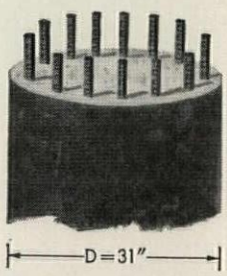
CONVENTIONAL DESIGN

ROUND COLUMNS

Fig. 2 is a basic round column of conventional design supporting a load of 914 kips. By using bars of A-432 or A-431 steel (Fig. 2A) column diameters are decreased. Maintaining the same column diameter as Fig. 2, Fig. 2B shows the resultant savings in steel.

FIGURE 2

ASTM A-15
Hard Grade



13 #11; As=20.3 sq. in.
f'c=3000 psi
fy=50,000 psi
Basic Design

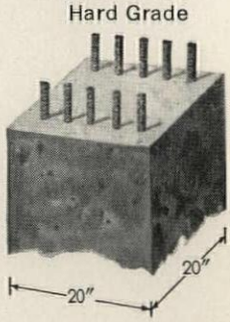
CONVENTIONAL DESIGN

SQUARE COLUMNS

Fig. 3 is a basic square column of conventional design supporting a load of 352 kips, having an eccentricity equal to 10 per cent of the column size. Fig. 3A demonstrates the savings in steel resulting from the use of A-432 steel bars, with column size unchanged. Fig. 3B shows the savings made using ultimate strength design. A-432 steel offers savings under either method of design.

FIGURE 3

ASTM A-15
Hard Grade

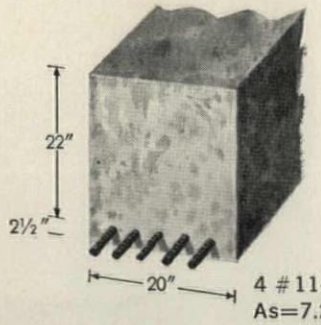


10 #11; As=15.60 sq. in.
f'c=3000 psi
fy=50,000 psi
Basic Design

CONVENTIONAL DESIGN (e=0.1t)

BETHLEHEM STEEL

FIGURE 1-A

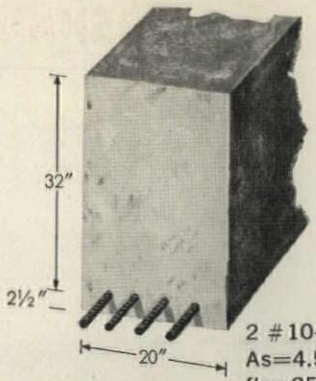


ASTM A-432

4 #11+1 #9
As=7.24 sq. in.
f'c=2500 psi
fy=60,000 psi
Saving Over Basic Design
Concrete=29%

ULTIMATE STRENGTH DESIGN

FIGURE 1-B



ASTM A-432

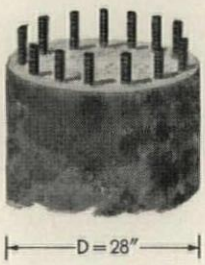
2 #10+2 #9
As=4.54
f'c=2500 psi
fy=60,000 psi
Saving Over Basic Design
Steel=37%

ULTIMATE STRENGTH DESIGN

BETHLEHEM STEEL

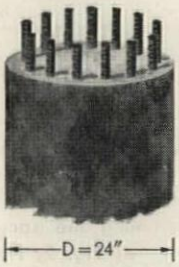
FIGURE 2-A

ASTM A-432



13 #11; As=20.3 sq. in.
f'c=3000 psi
fy=60,000 psi
Saving Over Basic Design
Concrete=18%

ASTM A-431

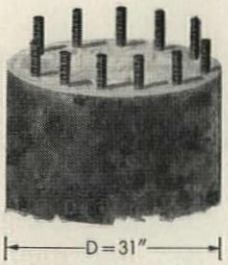


13 #11; As=20.3 sq. in.
f'c=3000 psi
fy=75,000 psi
Saving Over Basic Design
Concrete=40%

CONVENTIONAL DESIGN

FIGURE 2-B

ASTM A-432



11 #11; As=17.1 sq. in.
f'c=3000 psi
fy=60,000 psi
Saving Over Basic Design
Steel=16%

ASTM A-431

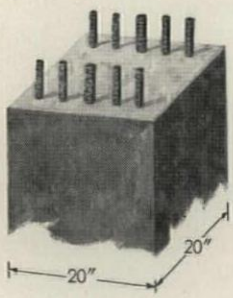
9 #11; As=14.0 sq. in.
f'c=3000 psi
fy=75,000 psi
Saving Over Basic Design
Steel=31%

CONVENTIONAL DESIGN

Spirals omitted from round columns for simplicity

FIGURE 3-A

ASTM A-432

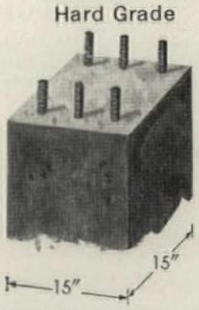


2 #11+8 #10; As=13.28 sq. in.
f'c=3000 psi
fy=60,000 psi
Saving Over Basic Design
Steel=15%

CONVENTIONAL DESIGN (e=0.1t)

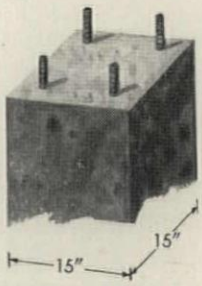
FIGURE 3-B

ASTM A-15
Hard Grade



6 #10; As=7.62 sq. in.
f'c=3000 psi
fy=50,000 psi
Saving Over Basic Design:
Steel=51%
Concrete=43%

ASTM A-432



4 #11; As=6.24 sq. in.
f'c=3000 psi
fy=60,000 psi
Saving Over Basic Design:
Steel=60%
Concrete=43%

ULTIMATE STRENGTH DESIGN (e=0.1t)

Ties omitted from square columns for simplicity

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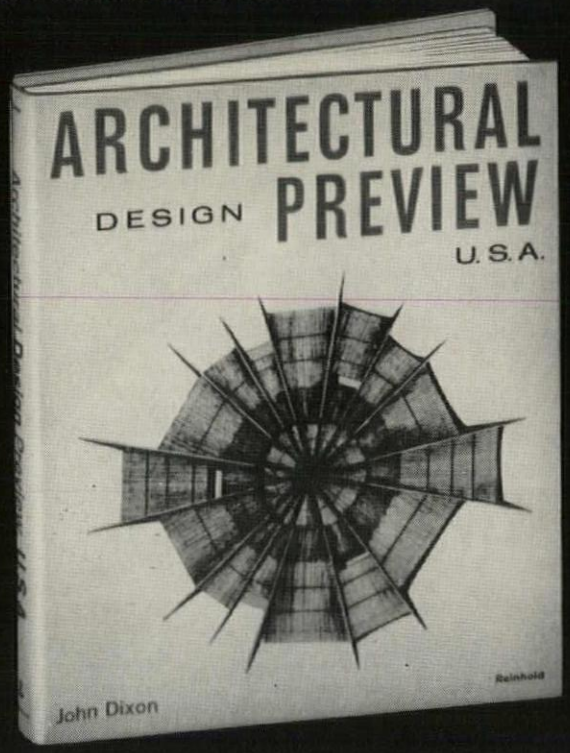

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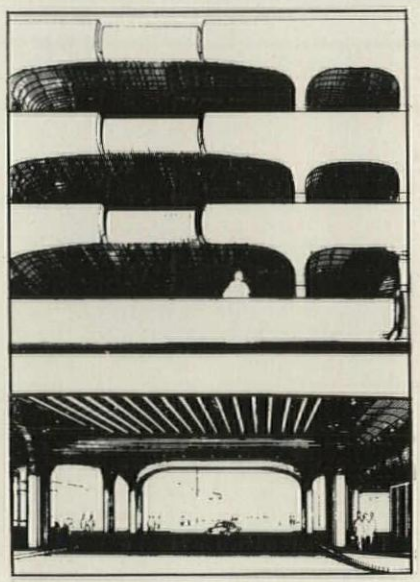
PROJECT: Weekend House
LOCATION: Carmel-by-the-Sea, California
ARCHITECT: Henry Hill; Associate: John W. Kruse



PROJECT: Temple Street Parking Garage
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ARCHITECT: Paul Rudolph

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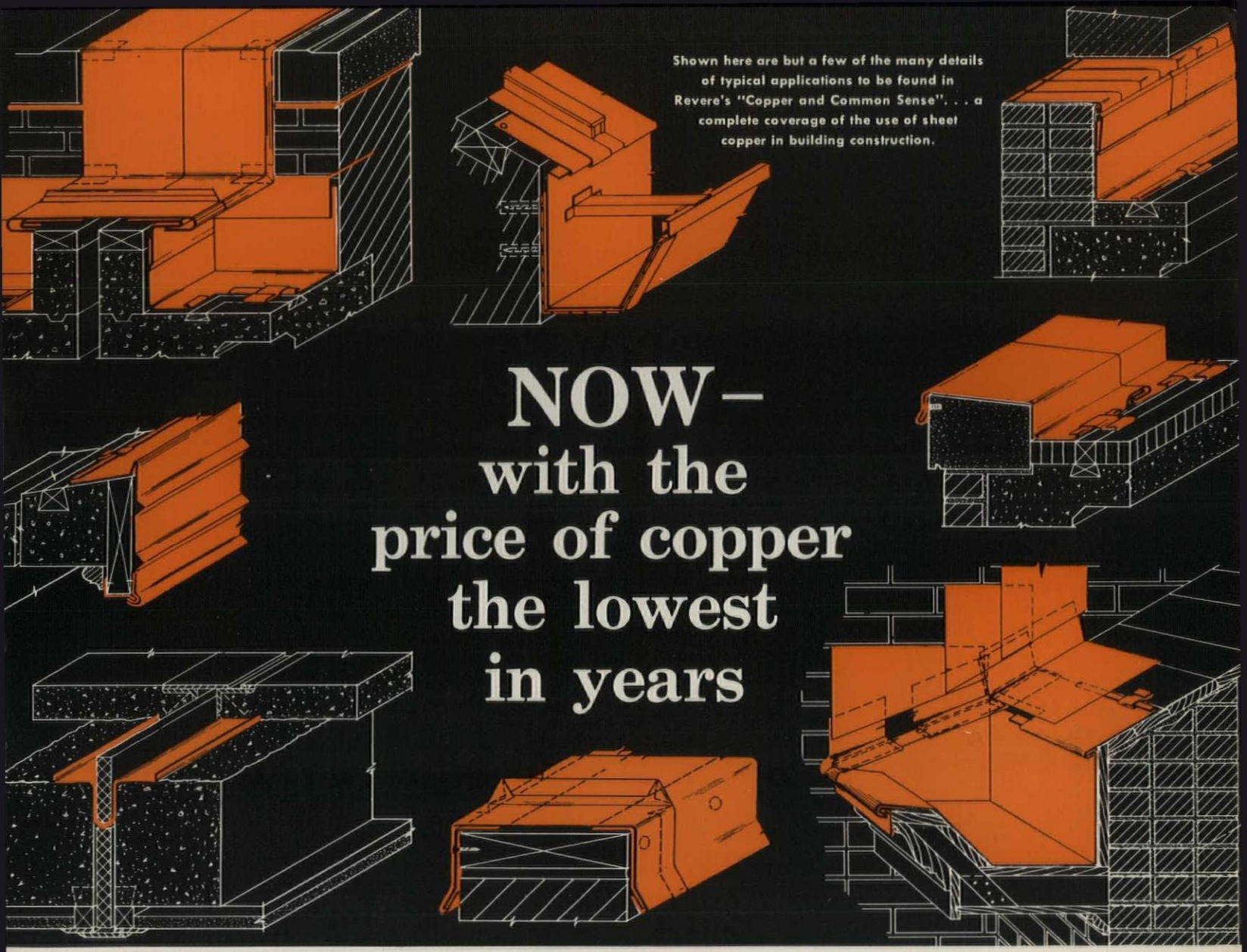

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Continued from page 200

the incidental, the remnants of changing taste, the allure of the new, the peopling of space—these elements of urban design can be preserved, controlled, encouraged to grow. And perhaps, as some urban theorists claim, these can be given a framework to evolve, but I doubt if they can be brought together in some grand gesture as forethought. For all its charm, her book is far from convincing even in its basic philosophy.

The sensitive regard for detailing townscape which Elisabeth Beazley brings to our attention deserves commendation. And her book is certainly timely, ambitious in scope, and important in subject matter. Unfortunately, its utility is seriously marred by sloppy editing and inconsistencies in content. Like a reputable label during a poor vintage, we can only praise it for what it is, and imagine what it could have been.

RICHARD P. DOBER
Executive Director
Sasaki, Walker & Associates
Watertown, Mass.

Outstanding Monograph

THE ARCHITECTURE OF MICHELANGELO *by James S. Ackerman. Published by The Viking Press, Inc., 625 Madison Ave., New York 22, N. Y. (1961, 2 vols., 310 pp., illus. $12.50 each)*

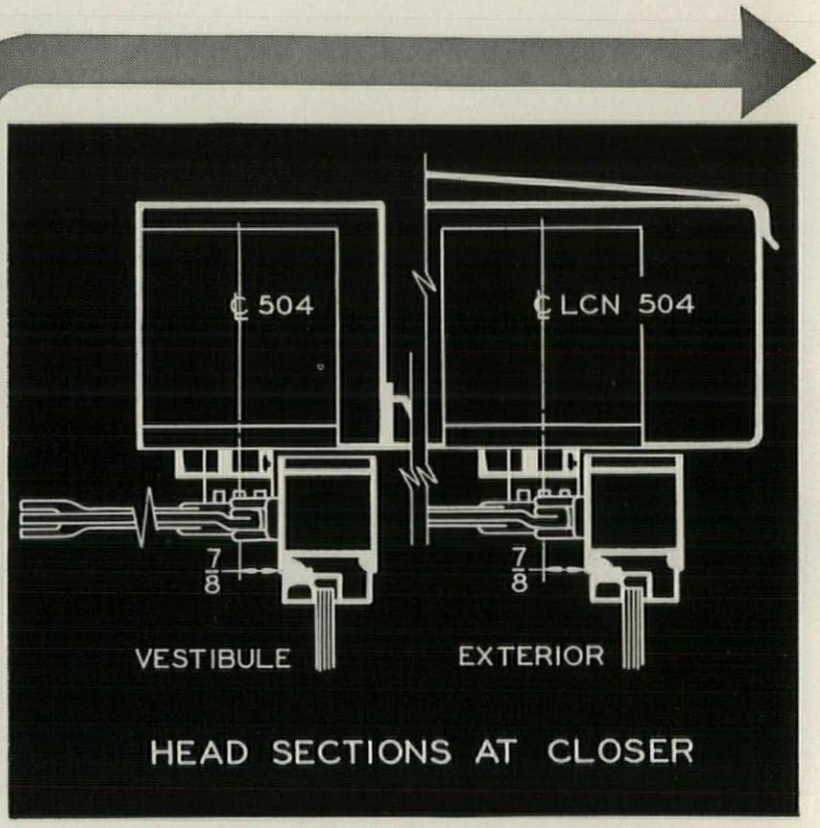
At the present stage of art history, the compelling task for the scholar would seem to be an exact definition of trends and styles, since popularization has brought about a rather loose and nonchalant use of such terms as Mannerism, Baroque, space, and movement. Michelangelo was a master neither of Mannerism nor of Baroque; still less was he the "father" of these styles. He anticipated characteristics that are generally and rightly attributed to creations of the second half of the 16th Century, of the 17th and even 18th Centuries, yet he did not directly "invent" them. It is also a fallacy to state that as an architect he was still mainly a sculptor, since in his greatest architectural works he is concerned primarily with a new and original definition of masses in space.

Michelangelo only began to express himself in architecture in 1516, when he was more than forty years old, and it is this facet of this universal genius to which James S. Ackerman, now Professor of Fine Arts at Harvard, devotes his outstanding monograph. (The work is published as Volumes IV and V in the series "Studies in Architecture," edited by Anthony Blunt and Rudolf Wittkower.) The author believes he has written not only for the benefit of scholars, but also for laymen, a claim that this reviewer considers doubtful; but quite certainly his book is of greatest interest to every true architect.

Ackerman analyzes each of Michelangelo's projects and executed works of architecture and city planning, from the reconstruction of the façade of San Lorenzo in Florence, to the projects and plans for the Capitoline Hill and St. Peter's in Rome.

A full discussion of these individual studies of specific works by Michelangelo would be out of place here, as interesting as Ackerman's original concepts may be — especially of the Laurentian Staircase, of the Palazzo Farnese, and of the plans for St. Peter's. In a most lucid style, Ackerman shows how Michelangelo still tried to combine architecture and sculpture in the San Lorenzo façade, how he later "preferred to treat buildings themselves as if they were sculptures," and how he applied entirely new principles to the design of the Laurentian Staircase. Of greatest interest to modern architects is Ackerman's insight into the way that Michelangelo eventually manipulated "structure for expressive ends," a discussion that should be required read-

Continued on page 203



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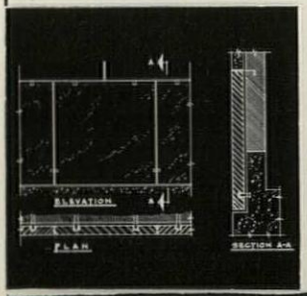

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ing for the fanatic standardbearers of mechanized functionalism. Ackerman calls Michelangelo's later architecture, like his paintings and sculptures, "kinetic" — "it incites an emotional response through its capacity to move the observer physically as well as emotionally" — "movement built in." This interpretation holds true not only for Michelangelo's architecture but even more so for his city planning (e.g., plans for the Capitoline Hill, the project for the continuation of the axis of the Palazzo Farnese), where he directs the observer even in open space, creating cityscapes of singular urban grandeur.

Michelangelo's theories on architecture, the fact that he hardly made any perspective sketches (because he conceived of everything in motion—not only the elements of the buildings but also the light), show the change in architectural concepts from the previous century. So too does Michelangelo's specific use of models. His relationship to antiquity was also thoroughly different from that of the architects of the 15th and early 16th Centuries. For Michelangelo the basic task of the architect lay in the expression, in architectural forms, of the emotional and philosophical essence of human life. Going beyond the inherited solutions and traditions of antiquity, he created an "organic" architecture, living, growing, moving—and yet not Baroque in the traditional meaning of the word—sometimes even reaching a kind of "neoclassic repose."

Since Heinrich von Geymüller's classical standard work of 1875, an unending flood of publications dealing with Michelangelo's architecture has appeared; Ackerman lists these in his thorough nine-page bibliography.

The second volume, the catalog, offers a thorough documentation for all projects discussed, lists the historical sources, the preparatory sketches, etc. Of particular interest here is a survey of rejected and obsolete attributions.

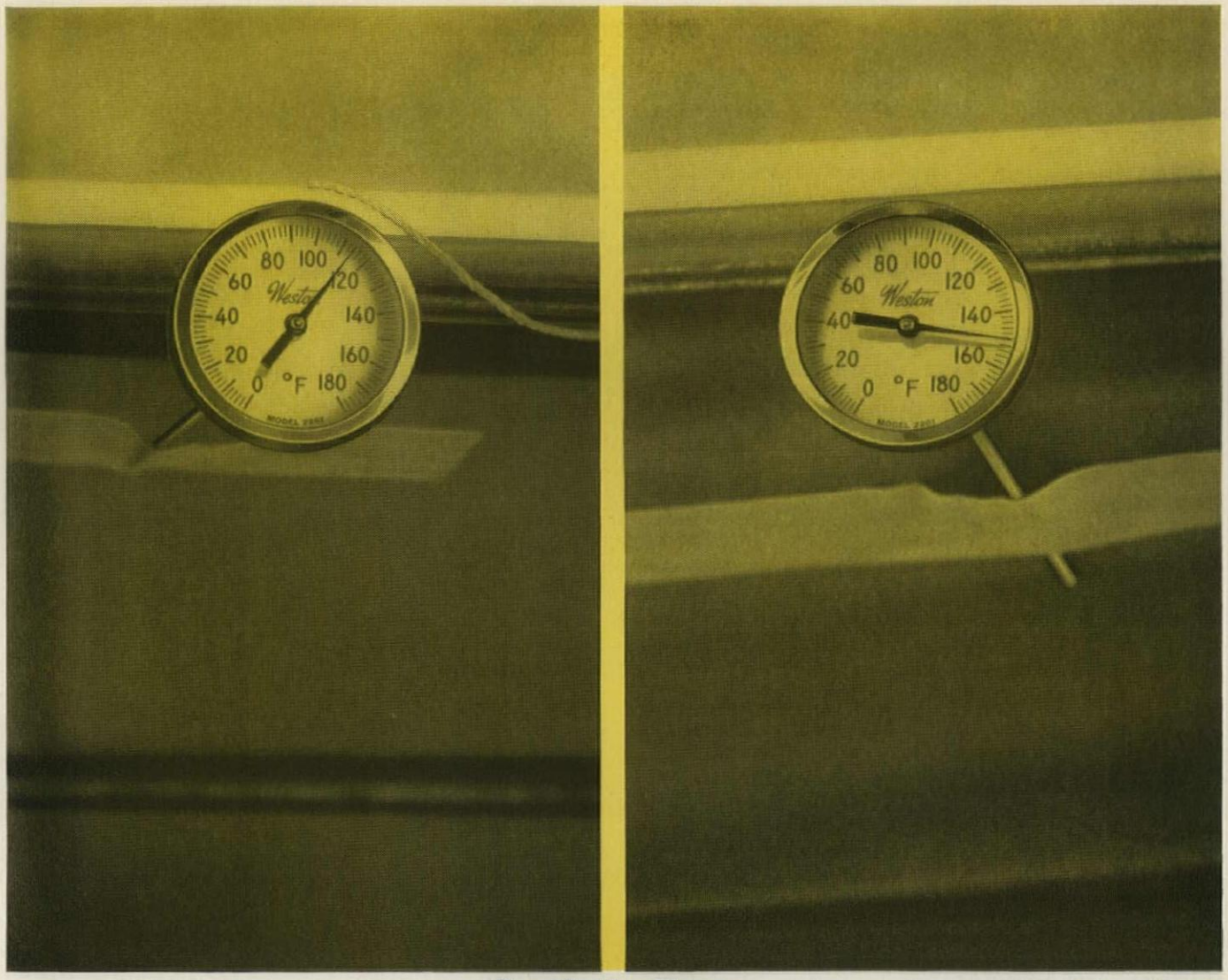
Selection and quality of reproductions are excellent for a work which, without any doubt, will become the standard work on Michelangelo's architecture.

PAUL ZUCKER, Ph.D.
Professor, Cooper Union; New School for Social Research
New York, N.Y.

OTHER BOOKS TO BE NOTED

Art Career Guide. Donald Holden. Watson-Guptill Publications, Inc., 111 Fourth Ave., New York 3, N.Y., 1961. 280 pp. $5.75

Continued on page 210



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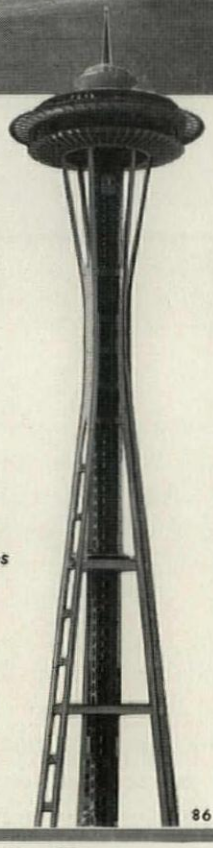

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Building Construction Handbook. Edited by Frederick S. Merritt. McGraw-Hill Book Co., Inc., 330 W. 42 St., New York 36, N.Y., 1962. 912 pp., illus. $15

Practical fundamentals on every major phase of building design and construction, written to be useful to the nonspecialist as well as the specialist. Complete discussions on professional services and business practices; stress analysis; properties of building materials; construction practices; surveying; estimating; insurance and bonds; control of internal environment. Editor-in-Chief is Senior Editor of Engineering News-Record.

Concrete for Radiation Shielding. American Concrete Institute, P.O. Box 4754, Redford Station, Detroit 19, Mich., 1962. 176 pp. $4.50

New edition, expanded to 11 papers, covers the use of concrete in protecting against nuclear radiation and the calculation of proportions and properties of various heavy concretes.

Mechanics of Engineering Structures. Grover L. Rogers and M. Lander Causey. John Wiley & Sons, Inc., 440 Park Avenue South, New York 16, N.Y., 1962. 428 pp., illus. $8.50

"Genuinely modern" introduction to structural engineering. The book gives particular attention to: (1) the development of design methods based on inelastic behavior; (2) increased interest in dynamic loading; and (3) the use of computational techniques involving electronic computers.

Modern School Shop Planning. Prakken Publications, Inc., 416 Longshore Drive, Ann Arbor, Mich., 1961. 223 pp., illus. $4.50 (spiral bound)

Third edition has several added features, including a completely new section on planning and equipping for technical education. Other material includes description of various programs offered in the schools, specific planning guides for these shop areas, and an extensive check list of standards for evaluating plans and facilities.

Planning in City and Country. Nordrhein-Westfalen Group of the German Academy for City and Rural Planning. Westdeutscher Verlag, Koln und Opladen, 1961. 99 pp., illus. 9.20 DM

Three lectures on planning, designed to inform the profession and interested laymen about the work of this group. First two lectures are on rural planning and city planning; third is on architecture and planning in the U.S. Text is in German.

The University Town in England and West Germany. E. W. Gilbert. Research Papers, Dept. of Geography, University of Chicago, Chicago 37, Ill., 1961. 79 pp., maps, diagrams. $4

A comparison of the development and current problems of several European university cities. Local planning for the future development of these cities is also analyzed.

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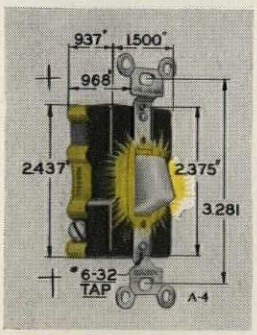

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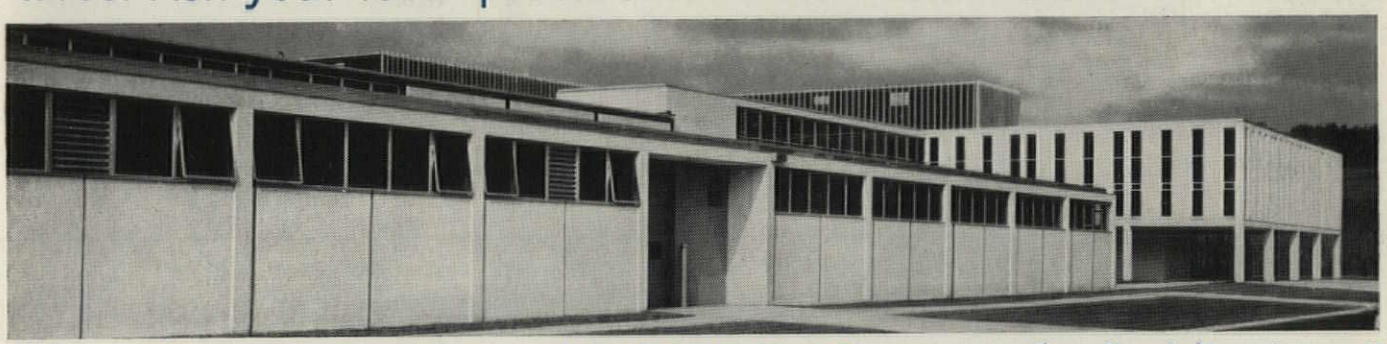

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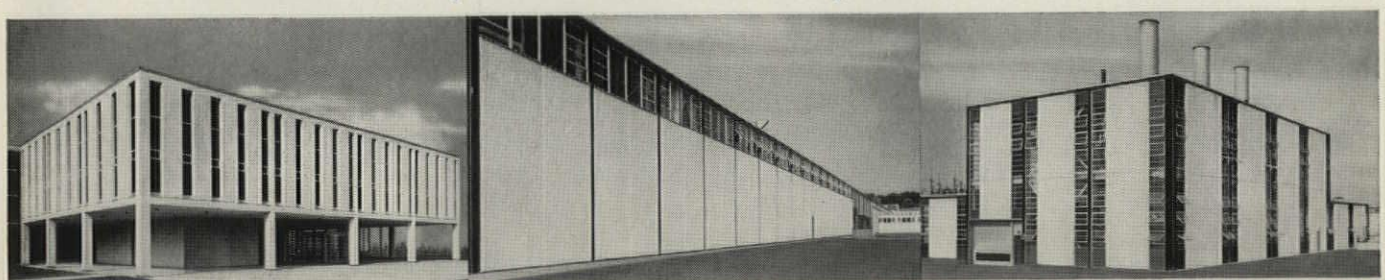

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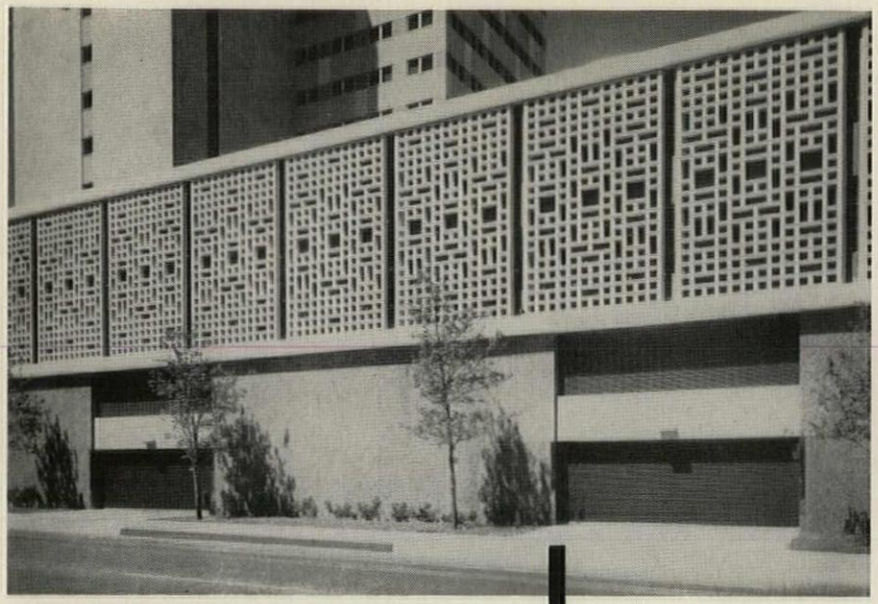

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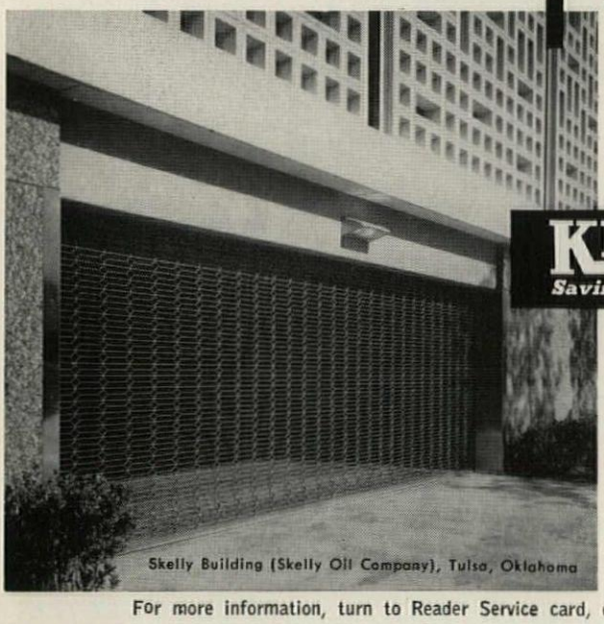

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ROBERT T. DUTTER, named Associate in firm of MILTON KLEIN, Architect, Union, N. J.

THOMAS H. KLAUSMEYER, EDWARD H. MATTHEI, J. RAYMOND MATZ, RAYMOND C. OVRESAT, FRANK RAIMONDI JR., JOSEPH F. SCHROEDER, made Senior Associates; KEN BRISTOW, JOHN P. GALLAGHER, HEM C. GUPTA, JOHN E. KEEGAN, WILLIAM J. MCCOY, DONALD J. MILLAR, NORMAN C. MILLETT, DEAN H. MORGAN, ROBERT P. MORIN, ALBERT H. STUBING, STANLEY E. TURSMAN, made Associates, in firm of PERKINS & WILL, Architects, Chicago, White Plains, N. Y., and Washington, D. C.

Elections, Appointments

JOAN B. BARNET, appointed Advertising and Publicity Director in firm of JENS RISOM DESIGN, INC., Designers and Manufacturers of Contemporary Furniture, New York, N. Y.

JULIAN R. COWIN, elected President; FRED M. HARLEY, elected Vice-President and Treasurer; MALCOLM R. STIRTON, elected Vice-President and Secretary in firm of HARLEY, ELLINGTON, COWIN AND STIRTON, INC., Architects and Engineers, Detroit, Mich.

GILMAN G. HOSKINS, appointed Head of the Architectural Department in firm of WILSEY, HAM & BLAIR, Engineers and Planners, San Francisco, Calif.

I. ROBERT KRIENDLER, named to the Board of Directors of CHARLES LUCKMAN ASSOCIATES, Planners - Architects - Engineers, New York, N. Y.

HERMAN LONDON, appointed Chief of the

Continued on page 220

■ In the construction of this new Indiana State Office Building, a monolithic reinforced concrete frame helped maintain minimum costs. Other construction materials had been considered, but by actual cost comparison—based upon building height and width—monolithic reinforced concrete frame and one-way joist floors proved to be the most economical.

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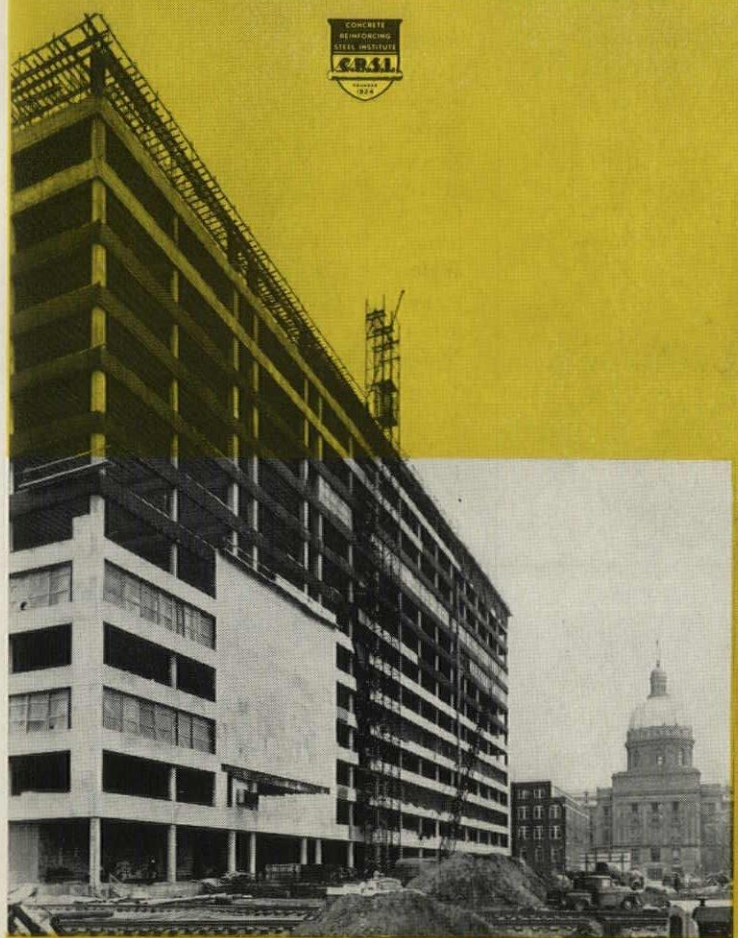

Indiana State Office Building, Indianapolis, Indiana
Architect and Engineer: Graham, Anderson, Probst & White, Chicago, Illinois; and Raymond S. Kastendieck, Gary, Indiana
General Contractors: Virginia Engineering Company, Inc., Newport News, Virginia

monolithic reinforced concrete holds the line on construction costs

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Lengthy laminated beams, dual-post supports, and a multi-toned planked ceiling create spacious luxury in the club's high clerestory-lighted room for dining and dancing. Wood's natural resiliency adds to dance floor pleasures, too. Interior Decoration: R. F. Associates.

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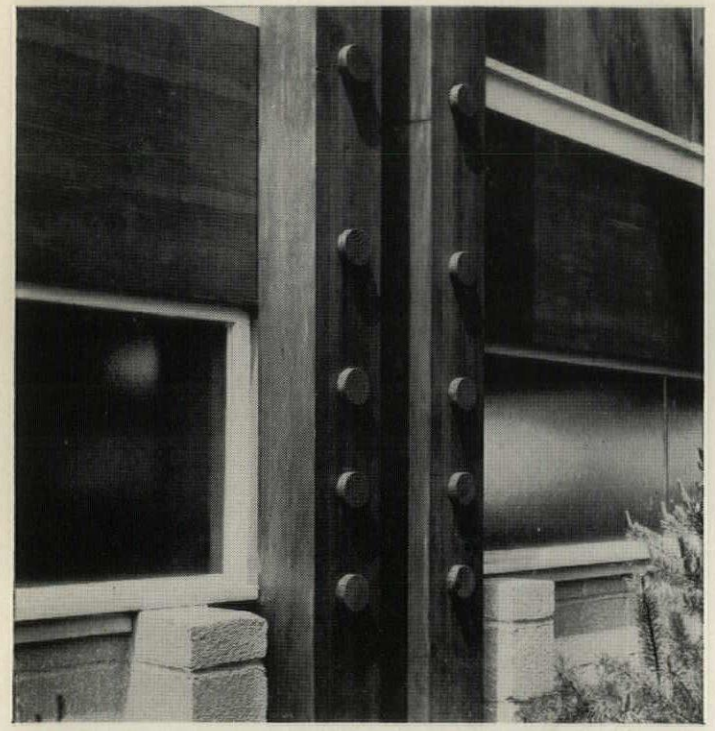

A close-up of the club's laminated posts shows off the inherent strength of wood in fist-sized peg fastenings. This grass-high view also illustrates wood's compatibility with the barest forms of glass and concrete.

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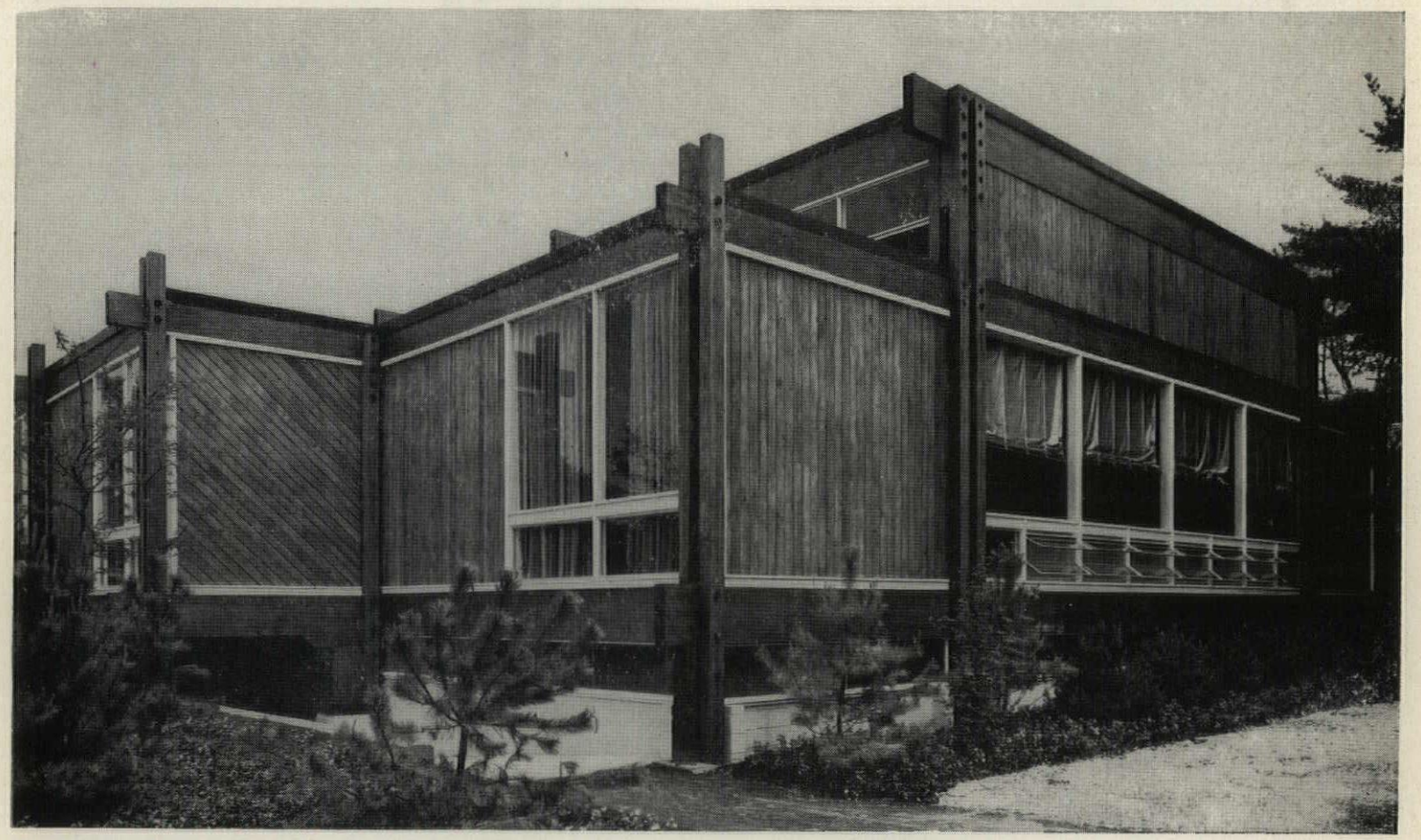

Weathered vertical and diagonal planked siding complemented with generous areas of glass, bound and supported by laminated wood girders in twos and fours . . . all form a precisely patterned yet warmly welcome facade for the Edgewood Country Club's pavilion-like clubhouse in River Vale, N. J. Architect: Norval White.

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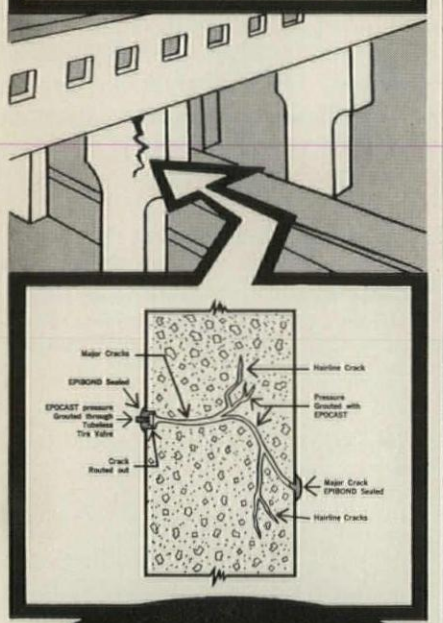

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Continued from page 216

Architectural Division of FISHER BROTHERS, New York, N. Y.

JOHN W. SENDERS, joined the Engineering Psychology group in firm of BOLT BERANEK AND NEWMAN, INC., Research and Consulting, Cambridge, Mass.

D. H. SHASHAN, elected Secretary in firm of ALBERT KAHN ASSOCIATED ARCHITECTS AND ENGINEERS, INC., Detroit, Mich.

PAUL HOWLAND VAN WERT, joined the firm of CABOT, CABOT & FORBES ASSOCIATES, INC., Architects, Engineers and Site Planners, Boston, Mass., as President.

New Interior Design Group

STORE PLANNING ASSOCIATES, specializing in interior design for stores, shops, offices, restaurants and other contract market operations, has been formed by members of the JOHN S. BOLLES architectural firm. Offices in San Francisco and New York.

Merger

Merger of A. M. KINNEY ASSOCIATES, INC., Architects and Engineers, and the Chicago architectural partnership of FRIEDMAN, OMARZU, ZION AND LUNDGOOT under the name of A. M. Kinney Associates, Inc., was announced. The new firm will be affiliated with A. M. KINNEY, INC. consulting engineers located in Cincinnati, Ohio. The office of A. M. KINNEY ASSOCIATES, INC. has been opened at Executive Plaza, 225 W. Touhy Ave., Park Ridge, Ill.

New Center

GRACE INDUSTRIES, INC., announced the opening of "The Letter Center" at 208 Fifth Ave., New York, where all types of architectural and display letters will be stocked and shown.

New Service

A new service program, including field assistance, consultation, technical installation data, available to architects, and engineers has been developed by WM. C. WESTERVELT & SONS, East Rutherford, N. J., recreation construction specialists.

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DR. JOHN T. BURWELL, JR., elected Vice-President, Research, of AMERICAN-STANDARD.

DALE R. FORD, appointed Advertising Manager in firm of MAINTENANCE INC.

JOHN KATULSKI, appointed Technical Director of the MARBLE INSTITUTE OF AMERICA.

C. FORBES SARGENT, elected Chairman of the Board of SARGENT & COMPANY.

JOHN SCHALLES, named General Sales Manager; PAUL R. HAY, JR., Vice-President of Vicrtex Sales Corp.; L. E. CARPENTER & CO., INC.

ROLLO GILLESPIE WILLIAMS, appointed National Sales Manager of CENTURY LIGHTING, INC.

DALLAS W. NORRIS appointed General Manager; WENDELL B. BULLOCK, Manager of Regional Operations: Elevator Div., WESTINGHOUSE ELECTRIC CORP.

DAVID DUNAY, appointed Vice-President in charge of the newly created store planning and design division of PERRY MEYERS, INC., Retail Consultants.

C. E. MOORE appointed Manager of Advertising of Sheffield Division, ARMCO STEEL CORPORATION.

LARRY L. PUTZEL promoted to National Sales Director of ARNOLD ALTEX ALUMINUM COMPANY.

JOHN P. ROCHE appointed Executive Vice-President of the AMERICAN IRON AND STEEL INSTITUTE.

JOHN ROUTLEDGE named Director of Public Relations and Advertising, Construction Materials Division of the MARTIN-MARIETTA CORPORATION.

PETER H. F. TRINGHAM appointed Technical Service Engineer for SIKA CHEMICAL CORPORATION.

NEIL R. TROUT named to new position of Vice-President, Sales, by JOSAM MANUFACTURING COMPANY.

MACE H. BELL promoted to Co-ordinator-Research & Development, SAMUEL H. CLARK promoted to Chief Engineer, ROBERT O. DISQUE made Assistant Chief Engineer, in firm of the AMERICAN INSTITUTE OF STEEL CONSTRUCTION, New York, N.Y.

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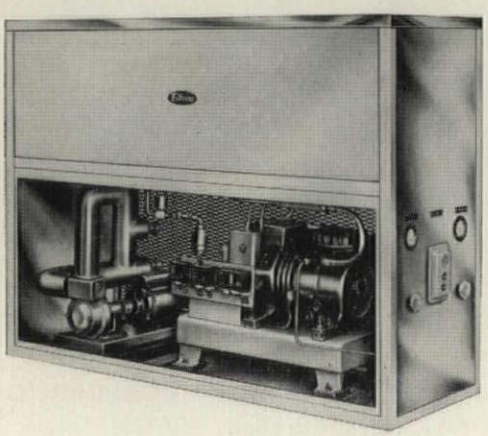

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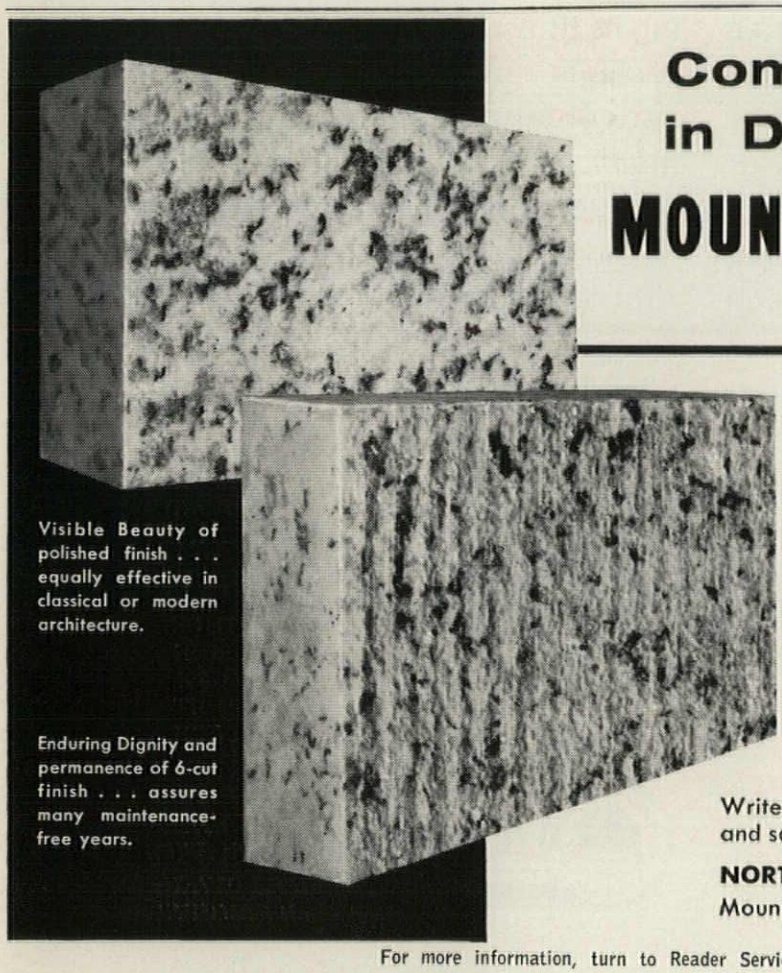
Continued on page 226



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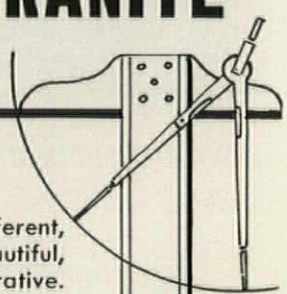

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Continued from page 224

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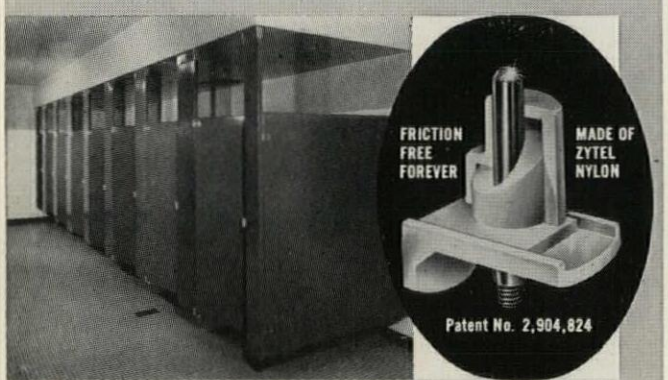

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THE AUTHOR

Professor Curt Siegel teaches at the Stuttgart Technische Hochschule and has devoted many years to a methodical analysis of the structural aspects of buildings in order to isolate the essentials that determine architectural design. His book, therefore, is also geared to students, who will be greatly assisted in their study of problems at the boundary where architecture and engineering meet.

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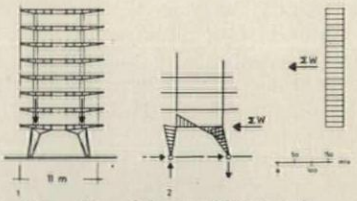
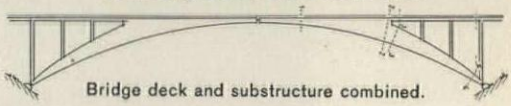
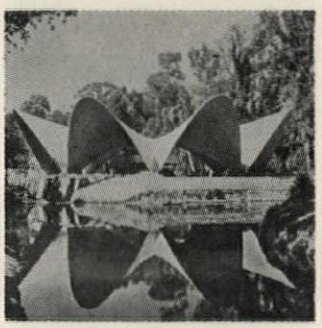


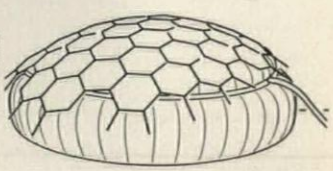
1 Two-hinged frame with tapered legs at the first floor.
2 Bending moments due to the wind.



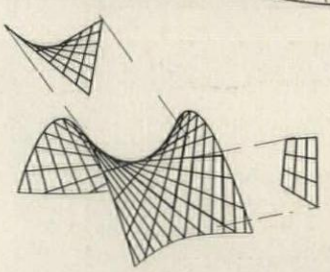
Bridge deck and substructure combined.



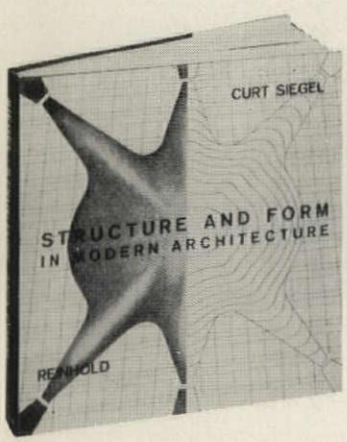
Restaurant in Xochimilco, Mexico/Eng: Candela



Erecting a dome from the top down by using a balloon instead of scaffolding.



The saddle surface of the hyperbolic paraboloid contains two sets of straight lines. Thus any warped form that can be defined by four straight lines can be cut out of an h.p. surface.



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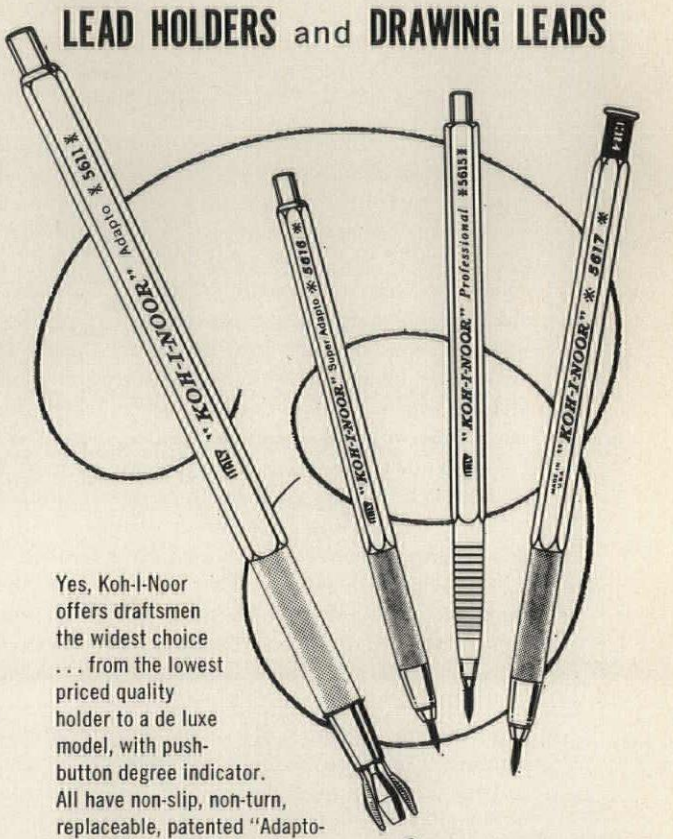

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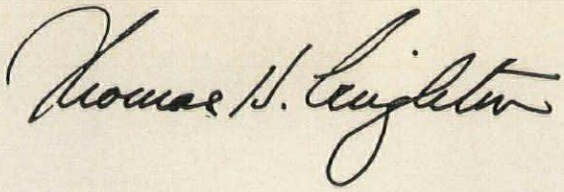

P.S.

Pride in Accomplishment is the greatest satisfaction that a creative person can hope for, and, conversely, mortification at what one has created is a bitter result. I remember an architect whom I worked for in the early days of my career who was very unsure of himself (with some reason, it must be said). He was always slightly astonished when a job got built—the process of turning out documents that really could produce a building was, to him, still an unbelievable phenomenon, after many years in practice. And then when the structure was up, he would sigh and say, "Well, there's another street I can never walk along." He knew that he hadn't produced anything great, and he didn't want to find out whether he had spawned a horror. On the other hand, I remember being very proud of some of my detailing on those buildings (whether I still would be I don't know; they have gone the way of most midtown structures of that period), and I used to walk the very streets my boss avoided. In the same way, I suppose, I get a big kick out of seeing certain of my books displayed in the book stores; when I see others I have written, I shudder slightly.

In the so-called Upper East Side area of New York where I live, there are countless new apartment buildings going up, some truly, significantly ugly, the bulk of them dull beyond bearing. The typical formula of a brick mass determined by code limitations, with holes in it determined by a layout formula, and with a lobby marked on the exterior by some costly looking materials and distinguished on the interior by second-grade imitations of avant-garde "art work," certainly can bring no flush of pride to the architects responsible and should call for the blush of shame my old employer feared.

There are exceptions, of course. The block that I live on is an interesting instance of what is happening to New York and some other urban spots. On the south side of the block, many of us are living in the old brownstones, remodeled to various degrees and in numerous ways; the module, the height, the townhouse character remains. On the north side, on plots too small to do anything significant or cohesive, three let's-make-a-quick-buck-out-of-the-luxury-apartment-boom uglies are in various stages of construction—and one handsome, thoughtful job. Whittlesey & Conklin have designed an exposed-concrete-frame building with in-set balconies that help to form an interesting, plastic façade, and with the lower two floors designed as townhouse duplexes, with their own front gardens and street entrances complementing ours across the street. My wife and I are very happy that we face this building.

I am coming to the point of my story. One Saturday afternoon a few weeks ago, as we were fussing with our front-yard planting, we saw Bill Conklin across the street, admiring his own work. *He* had no fear of walking this block. He came across to say hello and, as we stood talking, several neighbors came by and stopped. We introduced "the architect of the apartment house across the street," and the response was extremely interesting. "*Thank* you, Mr. Conklin, for giving us such a good-looking building on our block," one man said. "It *fits* the street," said another. "It doesn't fight the brownstones the way those others do." These were spontaneous and sincere reactions and compliments from people living in the neighborhood in which he was building. I can't imagine any greater satisfaction for an architect than Bill Conklin must have felt at that time.

As a matter of fact, a great deal of my own discouragement about the state of design and cynicism about the callousness of public reaction fell away—at least momentarily. I began to feel positively sentimental about the devotion of at least a part of the profession, and about the potential response of a people hungry for something to respond to.

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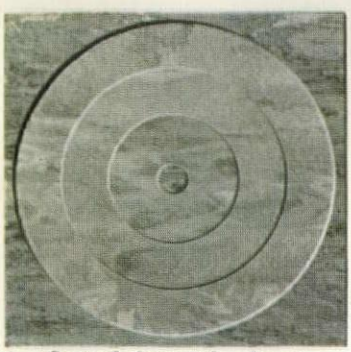

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