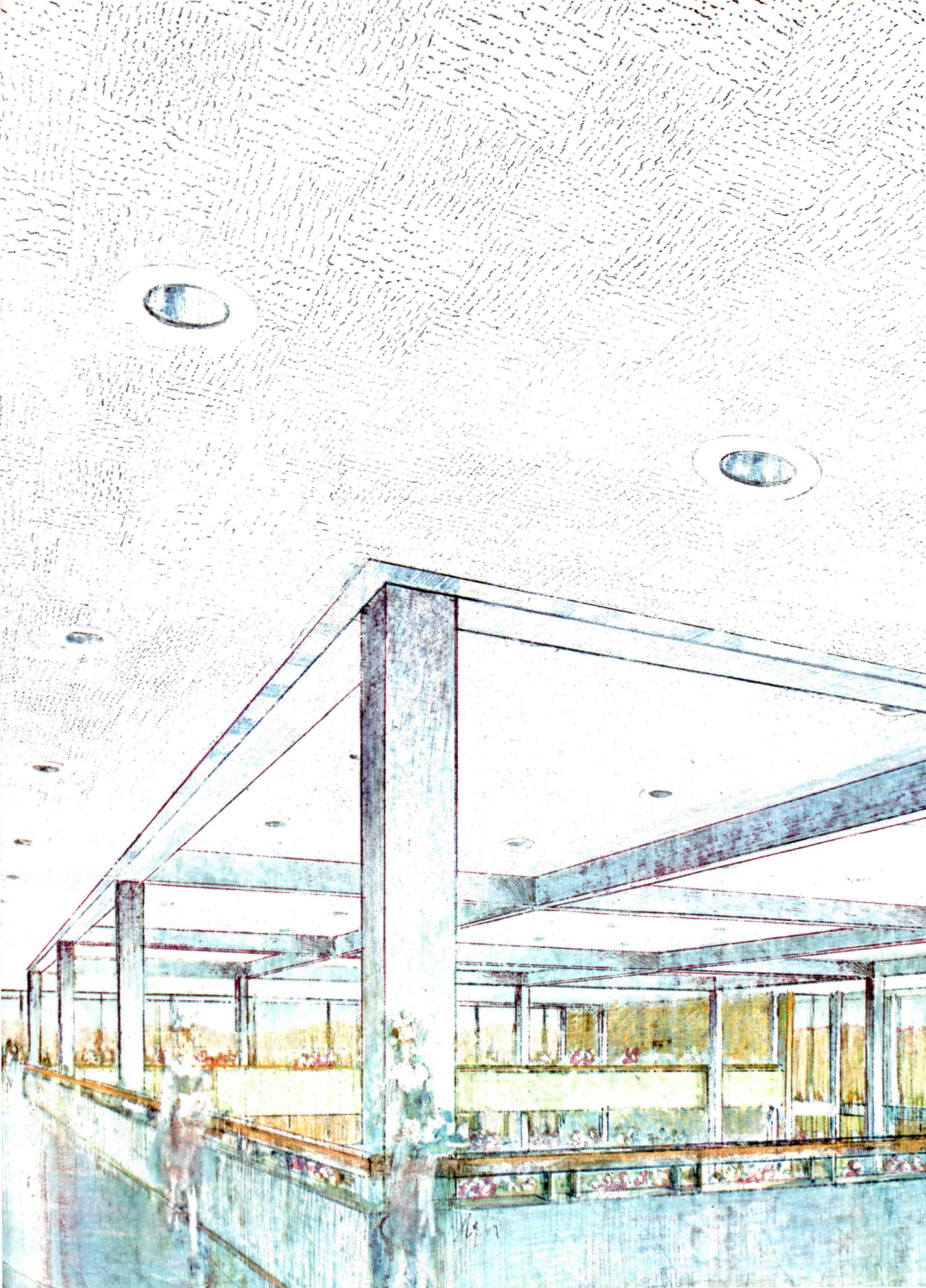
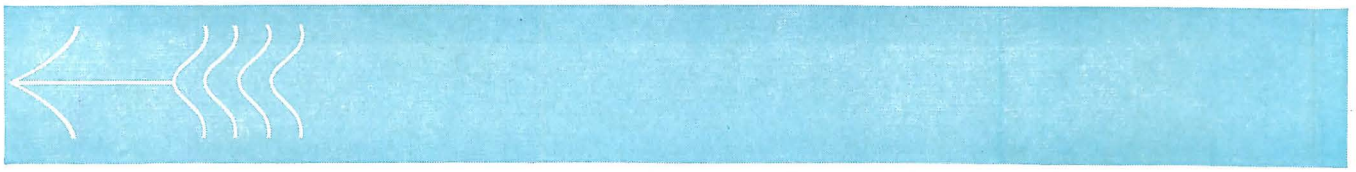
PROGRESSIVE ARCHITECTURE *April 1962*



THIS NEW ARMSTRONG CEILING PROVIDES EFFICIENT, COMFORTABLE AIR DIFFUSION IN GENERAL ELECTRIC'S NEW SPACE CENTER



This acoustical ceiling decorates, absorbs sound, and does another important job, too. It's an Armstrong Ventilating Ceiling, and here's how it works. Conditioned air is fed into the plenum above the ceiling through simple stub-duct openings. It fills the plenum and is forced down through thousands of ceiling perforations into the cafeteria below—efficiently and comfortably cooling or heating the spacious 27-foot-high area. This system eliminates diffuser ducts and diffusers. The continuous downward movement of the air keeps the ceiling dirt-free, and plenum engineering by the Armstrong Acoustical Contractor assures proper performance.

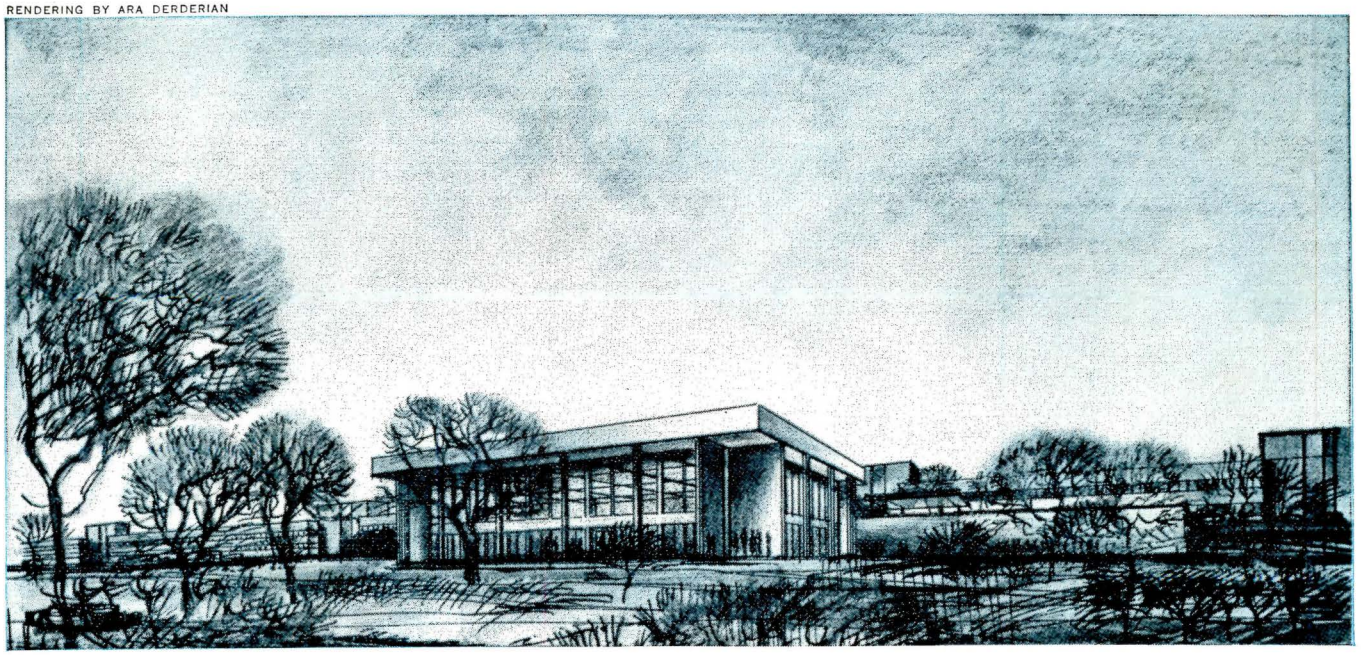
General Electric Space Technology Center, Valley Forge, Pa. · ENGINEERS: United Engineers & Constructors, Inc., Philadelphia GENERAL CONTRACTOR: Huber, Hunt & Nichols, Inc., Indianapolis · ACOUSTICAL CONTRACTOR: Berger Acoustical Co., Haverford.

DATA: ***Armstrong Ventilating Ceilings*** have been thoroughly lab- and job-tested to assure proper performance; are available in 5 materials (both tile and lay-in units), including Fire Guard, and 3 different patterns; are compatible with all conventional supply-air systems; often operate at much lower pressure than duct and diffuser systems. ***For special plenum-engineering data,*** with all factors and formulae needed to design and engineer this ventilating system, contact your Armstrong Acoustical Contractor or Armstrong District Office, or write Armstrong, 4204 Watson St., Lancaster, Pa.

Armstrong ACOUSTICAL CEILINGS

First in fire-retardant acoustical ceilings

RENDERING BY ARA DERDERIAN



Financial institutions invest their

Buildings for finance aren't what they used to be. Elevators aren't either.

It's a good thing, too, that elevator technology has kept pace with architectural esthetics. In this handsome savings and loan association building the elevator enclosure has been made a sculptural element contributing to design.

Rotary eliminates the elevator penthouse by pushing the car up from below on a powerful oil-hydraulic plunger. And there are other design advantages: no heavy load-supporting shaft sidewalls; flexibility in power unit location; latitude in topping-off the shaft for architectural effect.

These are some of the reasons why architects specify Rotary Oildraulic Elevators for buildings to six stories. But design considerations must be combined with owners' needs for economy and dependability. Here's where Rotary excels, too, because Oildraulic Elevators have many exclusive features pioneered and patented by Rotary to insure smooth, quiet, economical operation with unmatched dependability. This has been proved in thousands of installations . . . banks, apartments, offices, clinics, hospitals, institutions.

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GENERAL CONTRACTOR: Pulte-Strang, Inc.

Photos: Baltazar Korab

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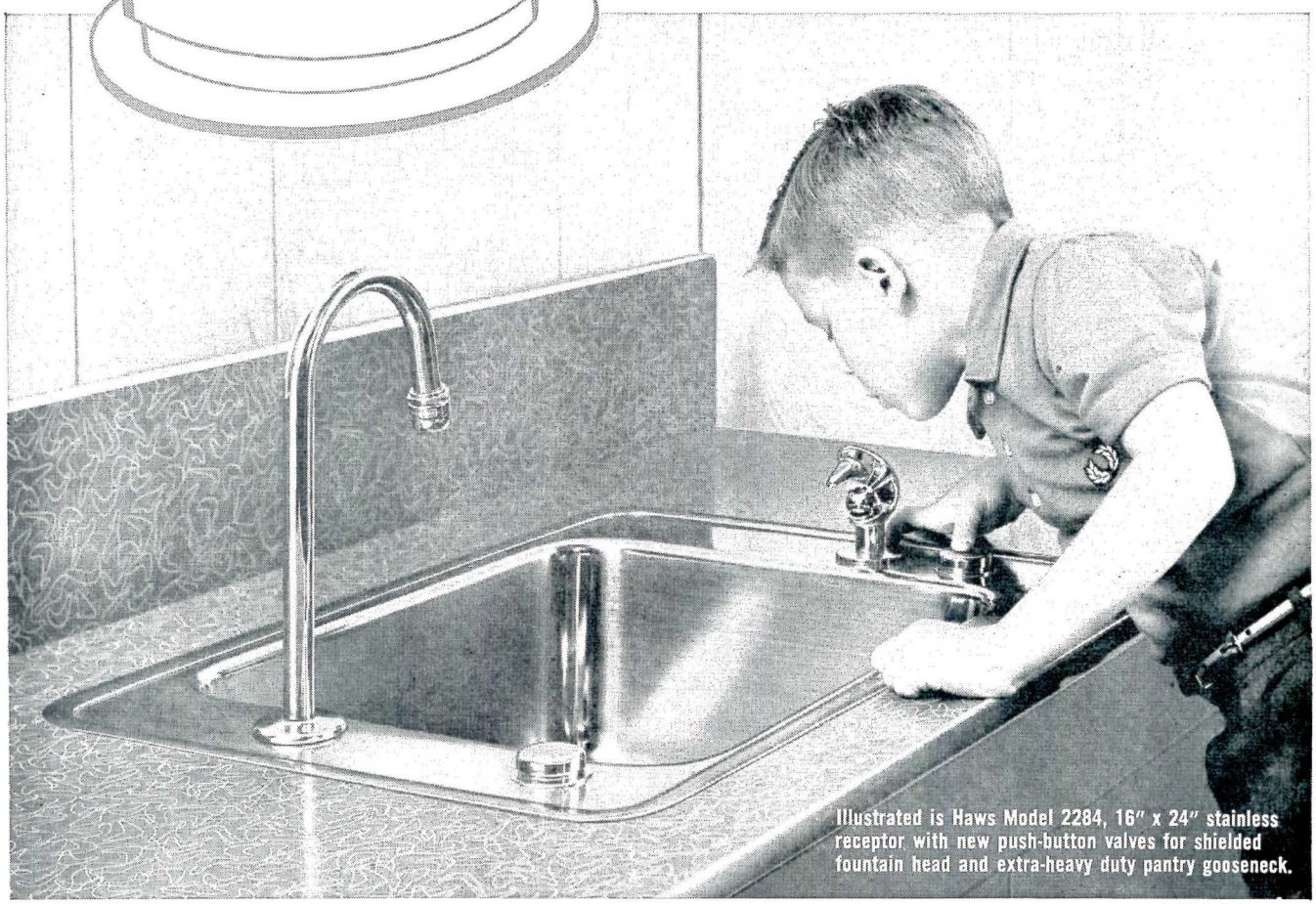
Indexed in Art Index, Architectural Index. Second-class postage paid at New York, N.Y. VOLUME XLIII, No. 4

New HAWS vandal-proof push-button valve



Illustrated is Haws Model 2284, 16" x 24" stainless receptor with new push-button valves for shielded fountain head and extra-heavy duty pantry gooseneck.

Easiest of all to use...and harder than any to misuse!

This exclusive Haws design sends vandalism worries down the drain! Trim, neat, push-button valves leave nothing for youngsters to grab and twist. Slow-closing valves work smoothly under slight pressure. The curving pantry faucet also frustrates damage with an extra-heavy gooseneck (⅜" IPS brass pipe) that even a grown man can't bend. Here is the smartest, most practical classroom package you can specify: with stainless steel and enameled iron receptors, both 16" x 24" and 20" x 30" sizes! DETAILED SPECS SENT IMMEDIATELY ON REQUEST. Get the facts on the entire model selection, by writing to: *Haws Drinking Faucet Company, 1441 Fourth Street, Berkeley 10, California.*

HAWS **DECK-TYPE RECEPTOR/FOUNTAINS**

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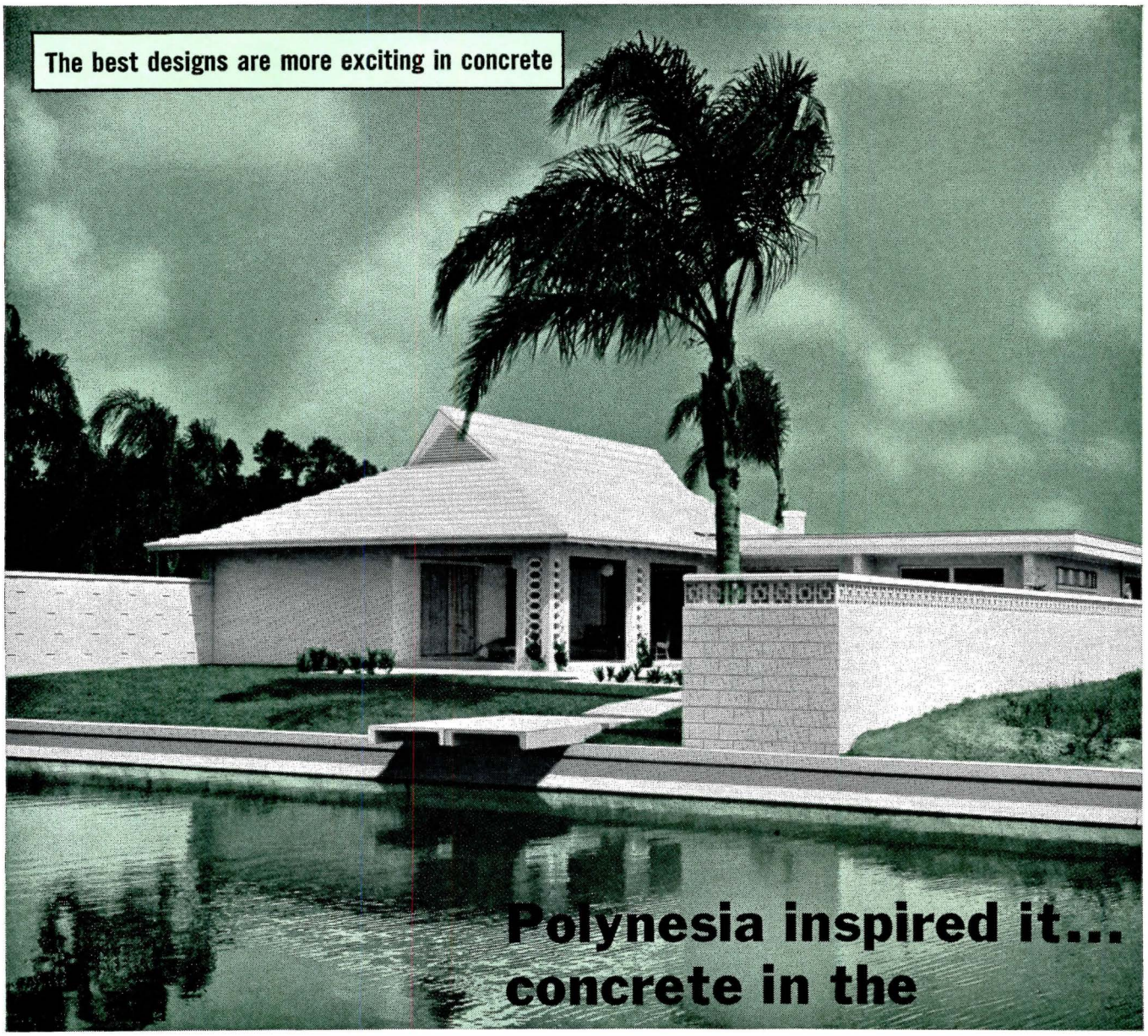


Outstanding home design from the 1961 Concrete Industries Horizon Homes Program. Architect: John B. Langley, A.I.A., Winter Park, Florida.

newest forms made it possible

Floors are gleaming terrazzo. This masonry divider is laid in a distinctive pattern and painted in two tones. Here is a gracious, easy-to-care-for interior.

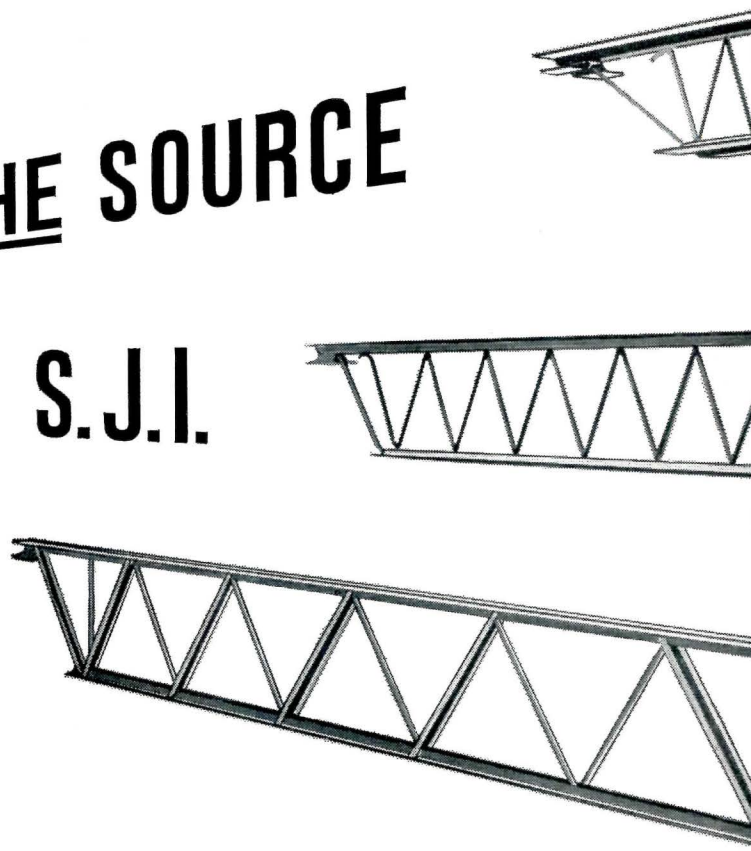
The warmth and livability of modern concrete is well demonstrated in this home in Orlando, Florida.

Its imaginative design has caught much of the form and spirit of South Seas architecture. Notice the distinctive roof, covered with concrete shingles. See how ingeniously the traditional symbols of the "Sign of the Turtle" and "Cloud of the North Wind" have been fashioned in concrete masonry and incorporated into the walls and pillars.

With unlimited shapes, colors and textures to choose from, concrete readily accommodates the newest concepts for modern living and provides opportunity for distinctive home design. *Plan to enter the 1962 Horizon Homes Program.*

PORTLAND CEMENT ASSOCIATION *A national organization to improve and extend the uses of concrete*

NOW-SHEFFIELD IS THE SOURCE FOR A COMPLETE LINE OF S.J.I. APPROVED JOISTS



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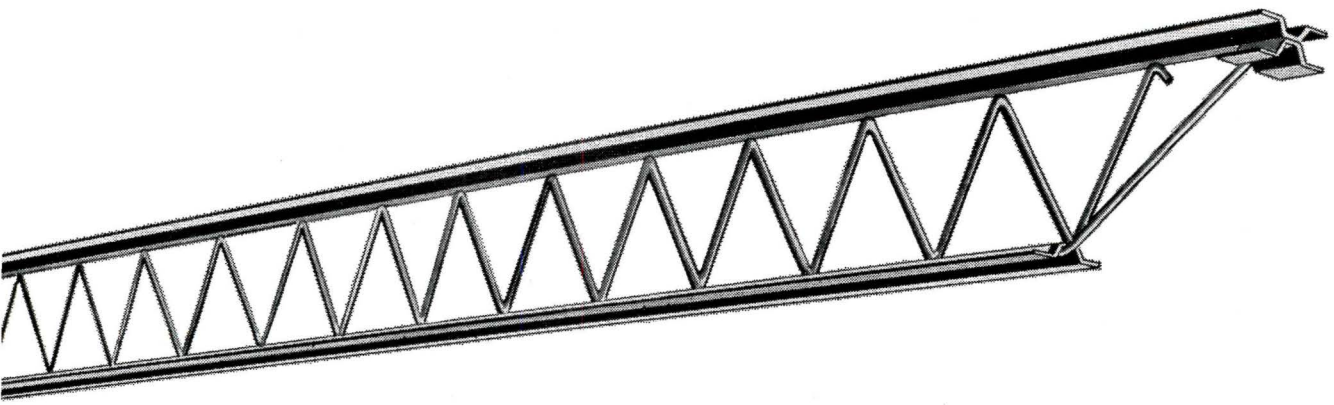

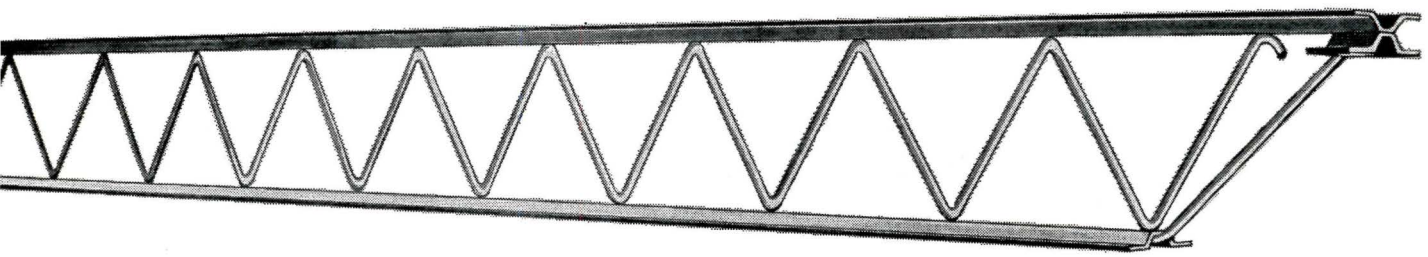

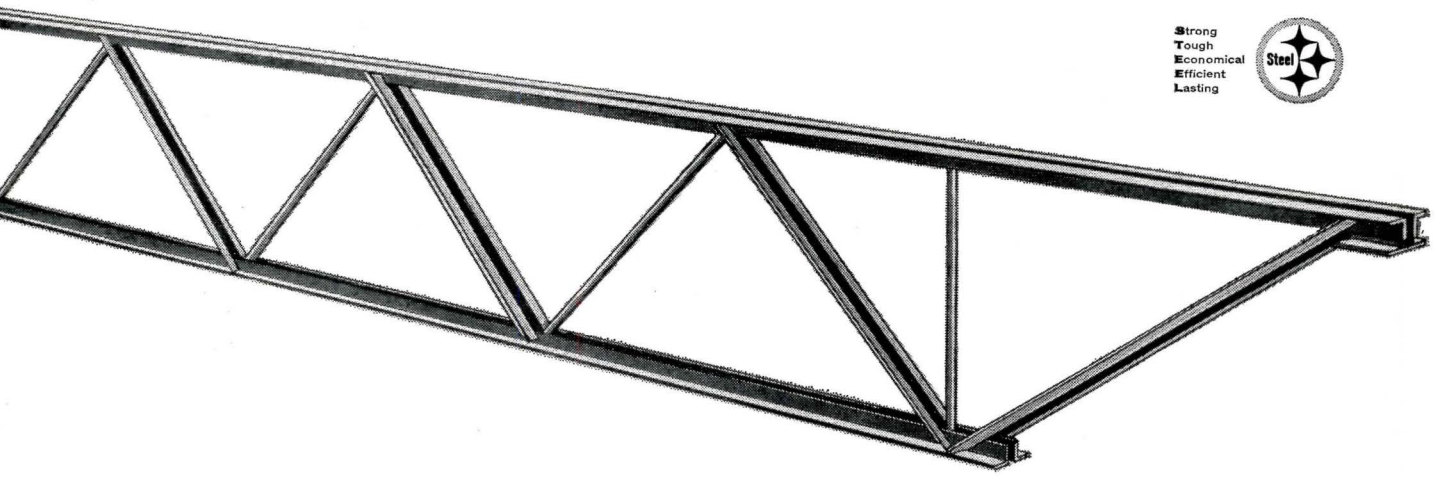

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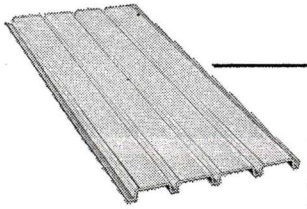

Check All The Advantages of New Sheffield Roof Deck

This superior roof deck is lightweight — may be spanned up to 10 feet. It's strong, attractive, easy to install, low cost, durable. Most important—it goes up fast, even under adverse weather conditions. Get the whole story. Just get in touch with your Sheffield representative.

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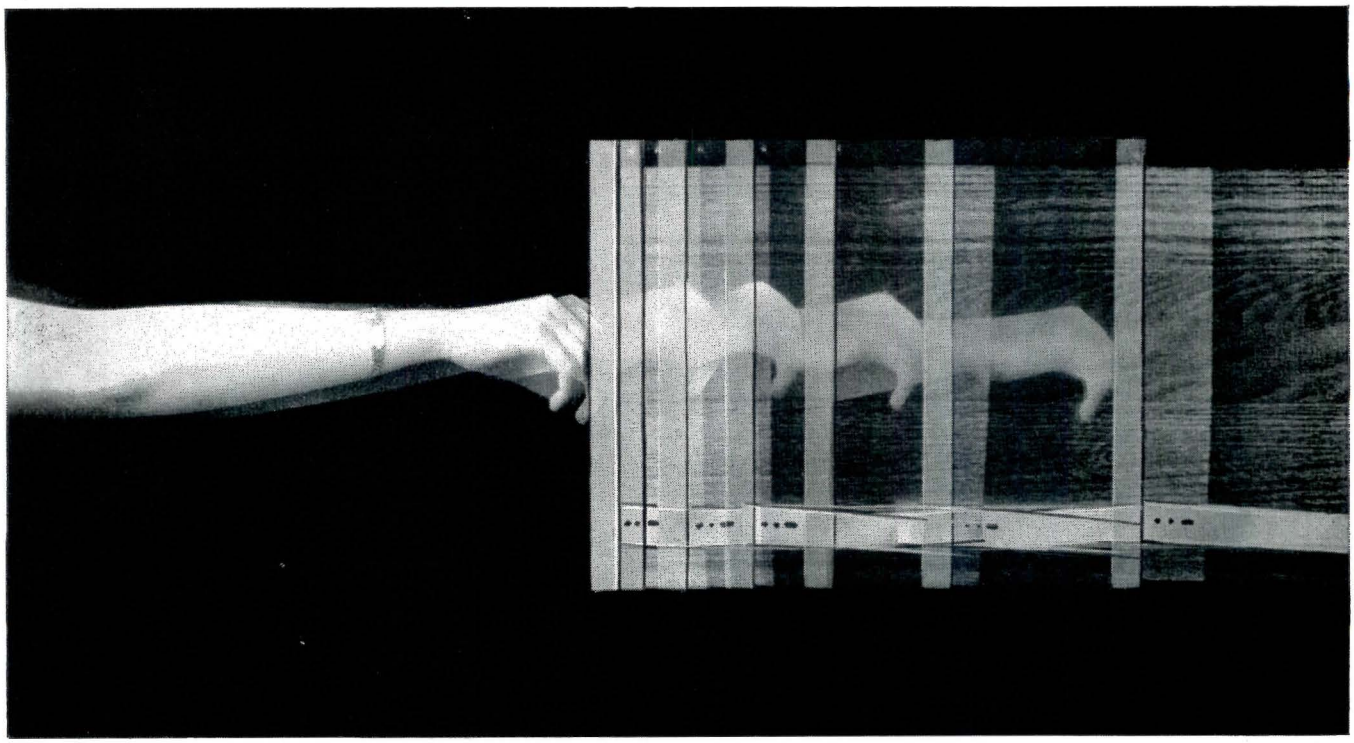
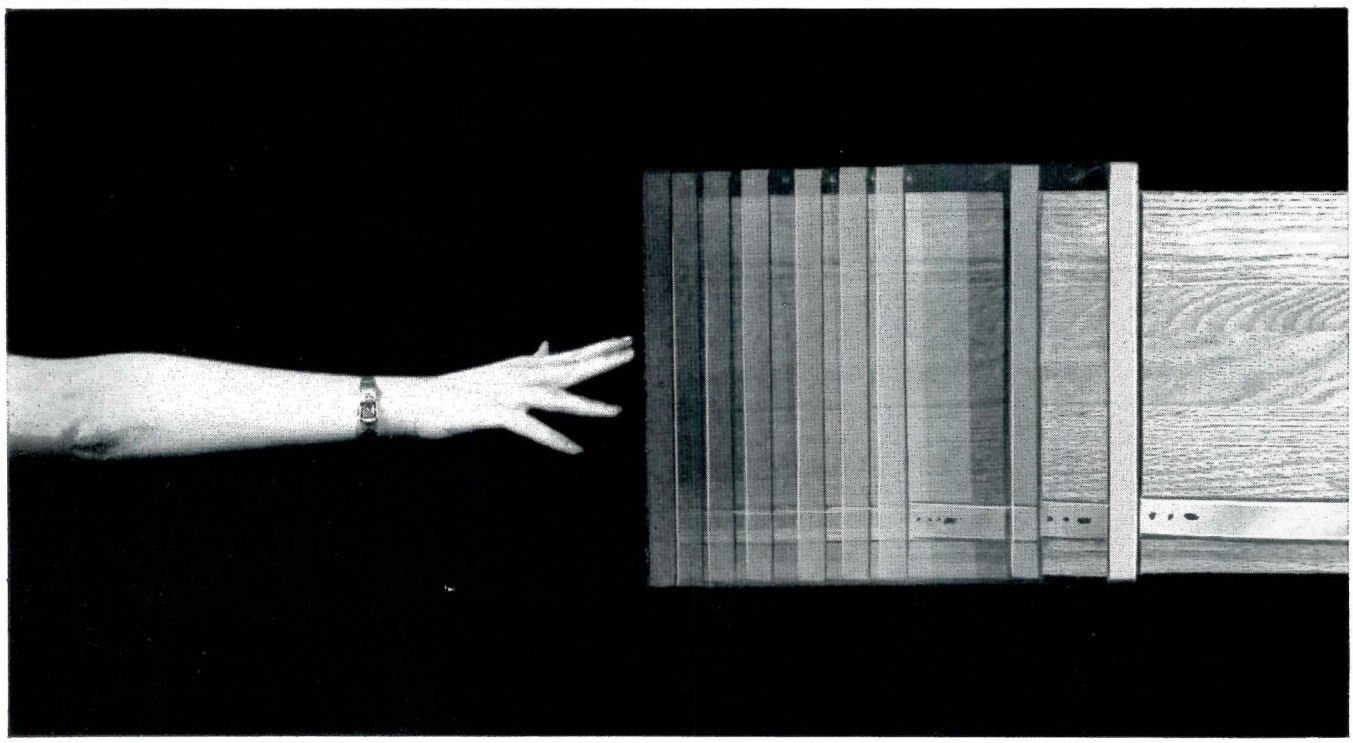
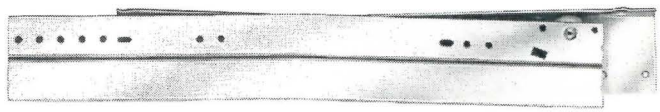




GRANT'S AUTO-SLIDE ROLLS THIS DRAWER SHUT *BY ITSELF!*

Grant's new Auto-Slide makes all other self-closing slides seem old-fashioned. And the proof of this is in the Auto-Slide's action. No self-closing slide ever moved so effortlessly, so quietly. Large nylon outer race rollers glide the drawer open or shut. A slight push is all that's needed, and the drawer shuts itself. The Auto-Slide requires but ½" of slide space at either side and will easily support loads up to 100 lbs. It finds perfect application in store fixtures and similar installations, where ease of closing is a necessity. Complete literature is available on request.



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Shown: Misceramic's "Coral Reef" in Buckshot Pattern, 1″ x 1″ tiles. Tiles also available in 1″ x 2″, 2″ x 2″ and in combination. "Speed Set" mounting provides a distinct aid to rapid installation and precise alignment.

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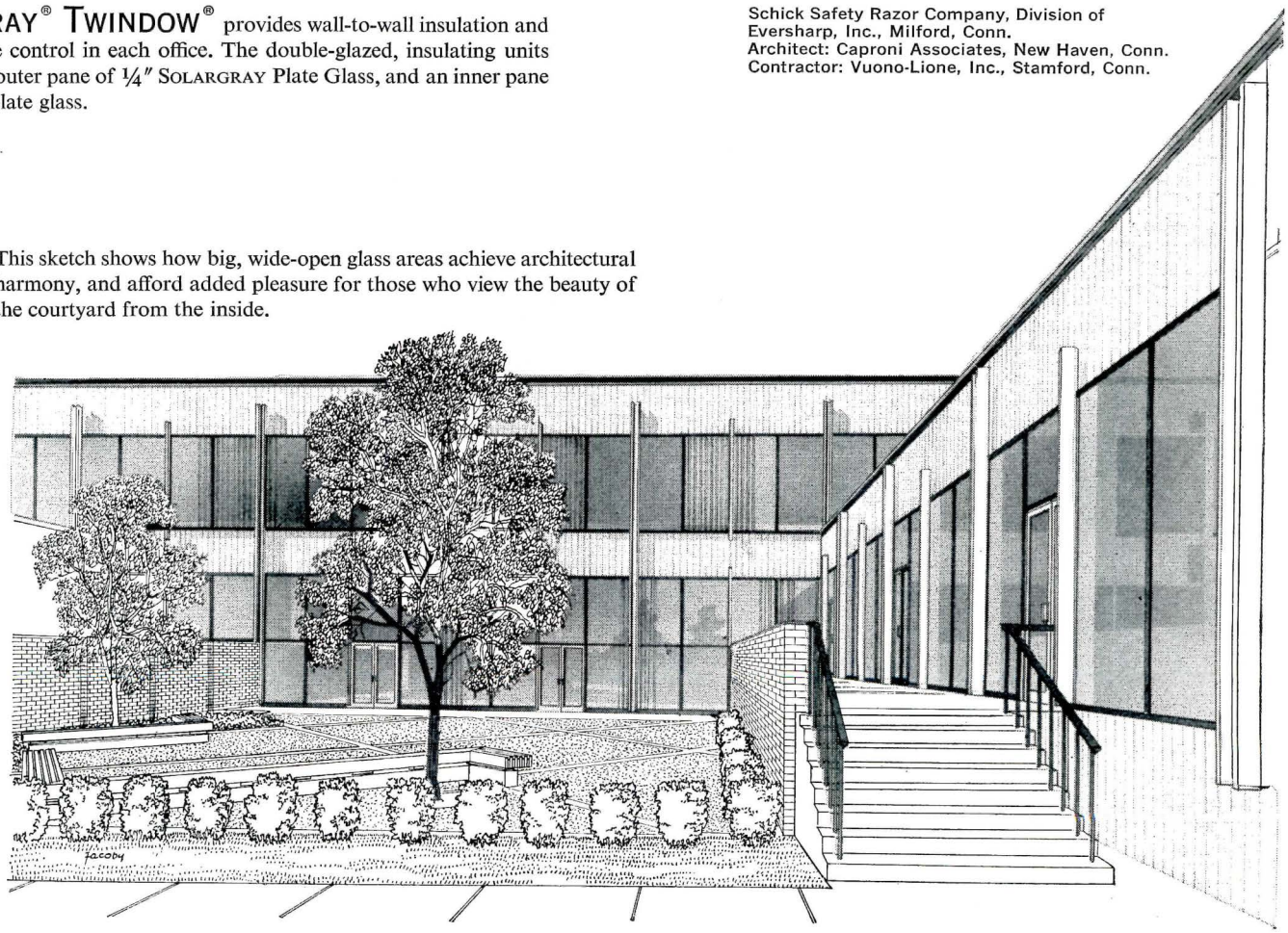
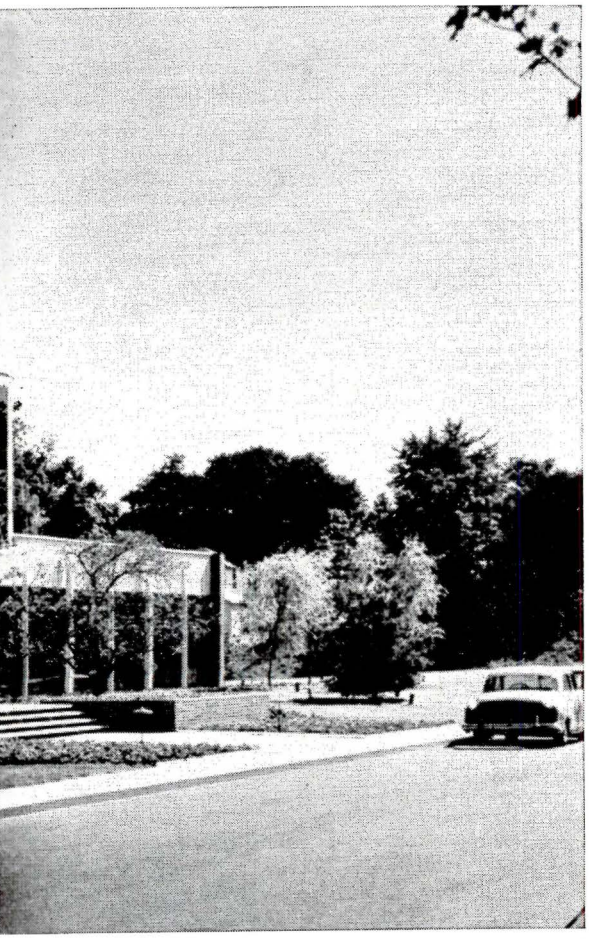
Schick Safety Razor Company, Division of Eversharp, Inc., Milford, Conn.
Architect: Caproni Associates, New Haven, Conn.
Contractor: Vuono-Lione, Inc., Stamford, Conn.

This sketch shows how big, wide-open glass areas achieve architectural harmony, and afford added pleasure for those who view the beauty of the courtyard from the inside.





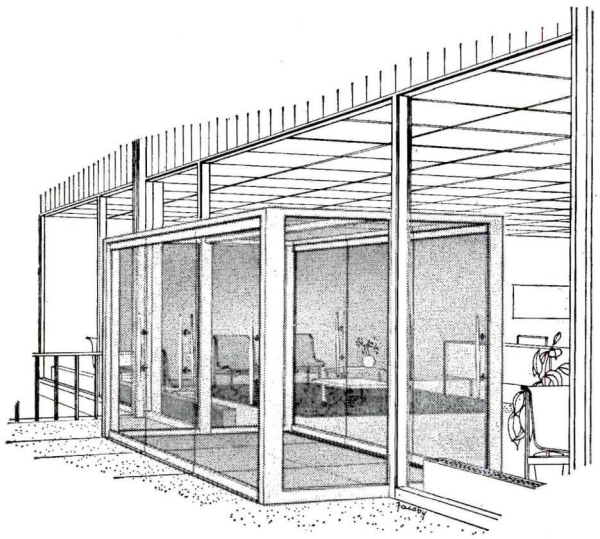
PPG Architectural GLASS can say so many things about a company

GLASS can help express what a company thinks of itself. And it was this idea that the architect considered as he was planning this new and strikingly attractive home for the Schick Safety Razor Company.

Glass can help you achieve a balance between symbolic beauty and practical performance. Big, wide open glass areas can show the warm and friendly character of a company. And classic, simple lines . . . with glass . . . can emphasize the clean, precise look of a *progressive* company.

Glass can provide extra comfort and convenience, too. Softly tinted SOLARGRAY® Plate Glass reduces annoying glare from the sun's rays, while admitting ample, useful light. And the combination of SOLARGRAY with PPG TWINDOW® Insulating Glass in this building, helps to maintain the desired temperature level despite outside weather conditions. Result: added comfort—reduced heating and cooling costs.

When you want any assistance with a project that involves glass, phone or write your PPG Architectural Representative. Also, be sure to look through the PPG catalogs in SWEET'S Architectural File—Sections 3e, 7a, 13e, 16a, 16e, 19e, 21.



The main entranceway illustrated here, shows how HERCULITE® Doors of Tempered Polished Plate Glass adapt to any structural requirement. These heavy-duty doors—four times stronger than ordinary glass of the same thickness—come in a wide variety of standard sizes, in ½ and ¾ inch thicknesses.

PITTSBURGH PLATE GLASS COMPANY
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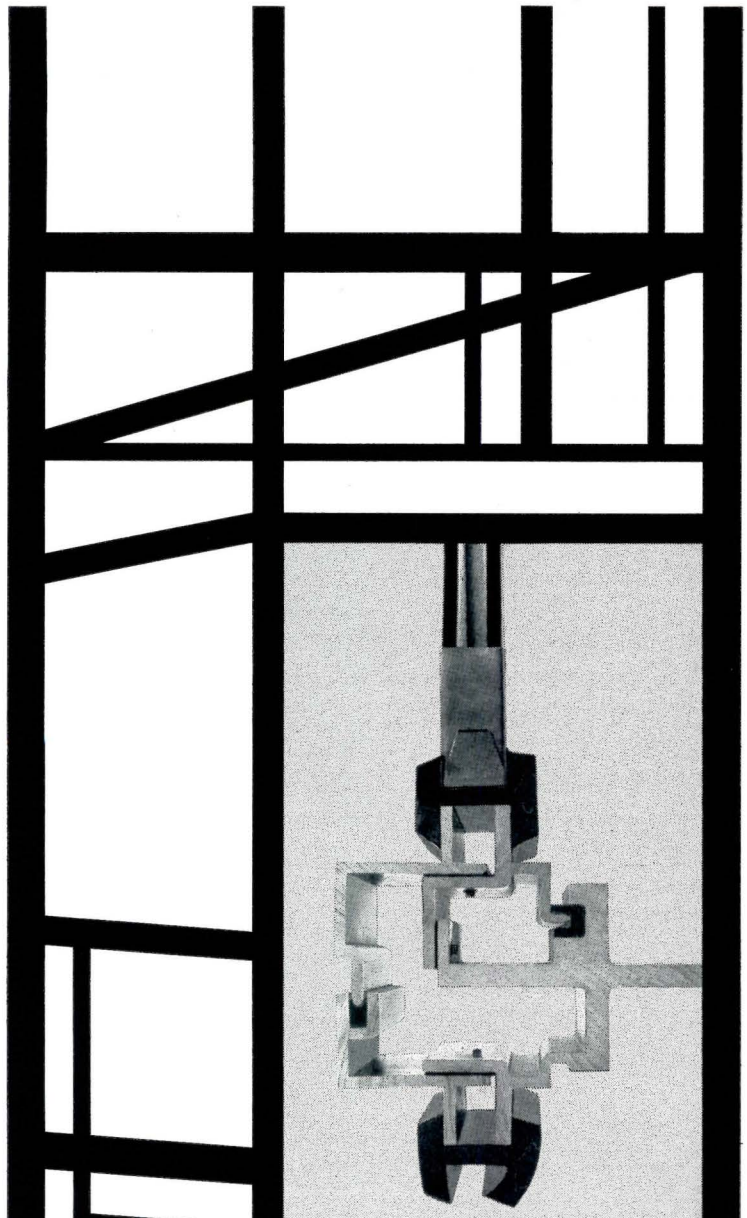

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Princeton University's Engineering Quadrangle dictated an entirely different window architecture. Here, General Bronze worked with *Architects* Voorhees, Walker, Smith, Smith & Haines and *Contractor* William L. Crow Construction Company. For custom-engineered windows–and for curtain walls, architectural metal work, entrances, revolving doors, call on General Bronze Corporation, Garden City, N. Y. Sales Office: 100 Park Avenue, New York, N. Y.

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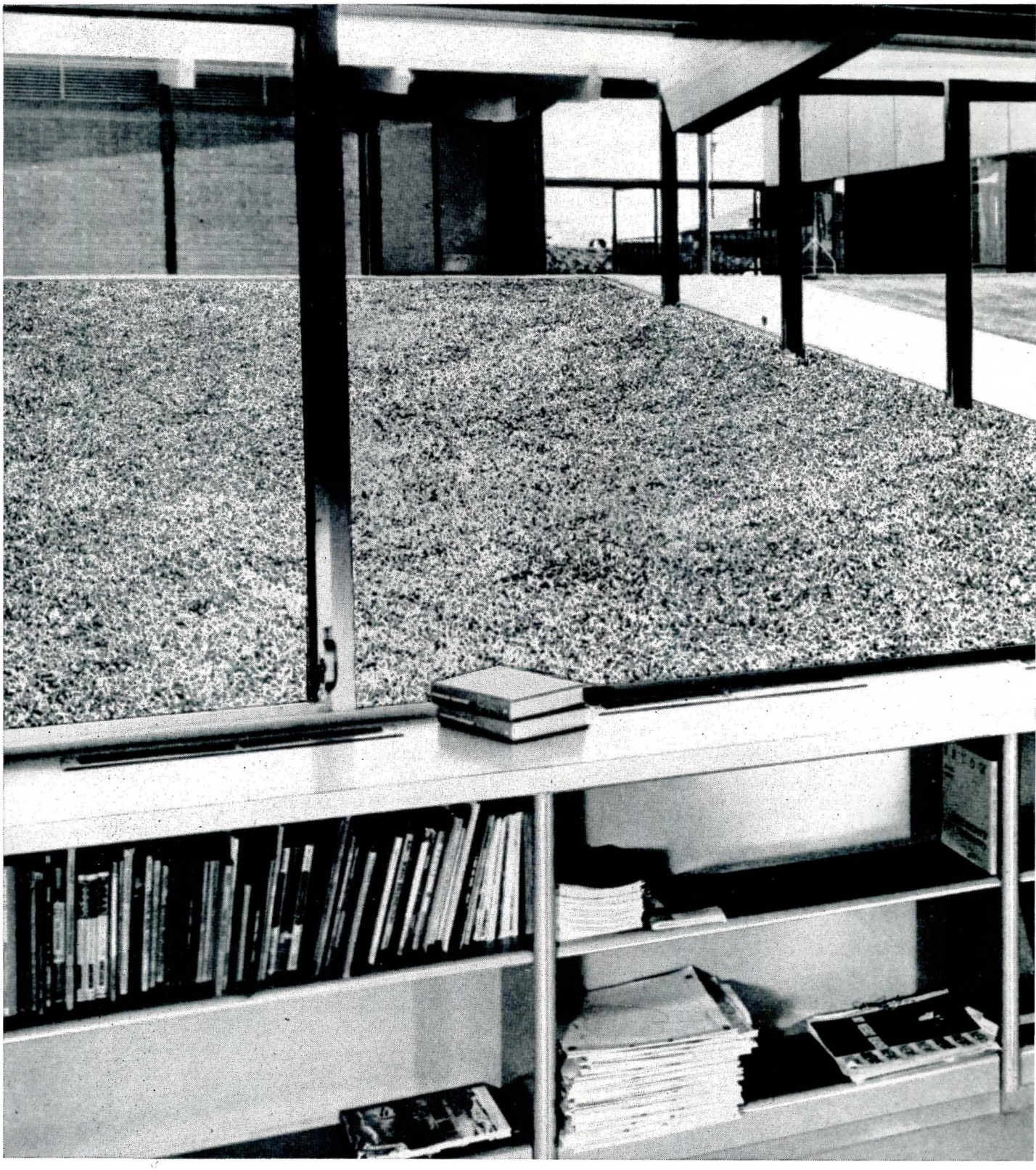
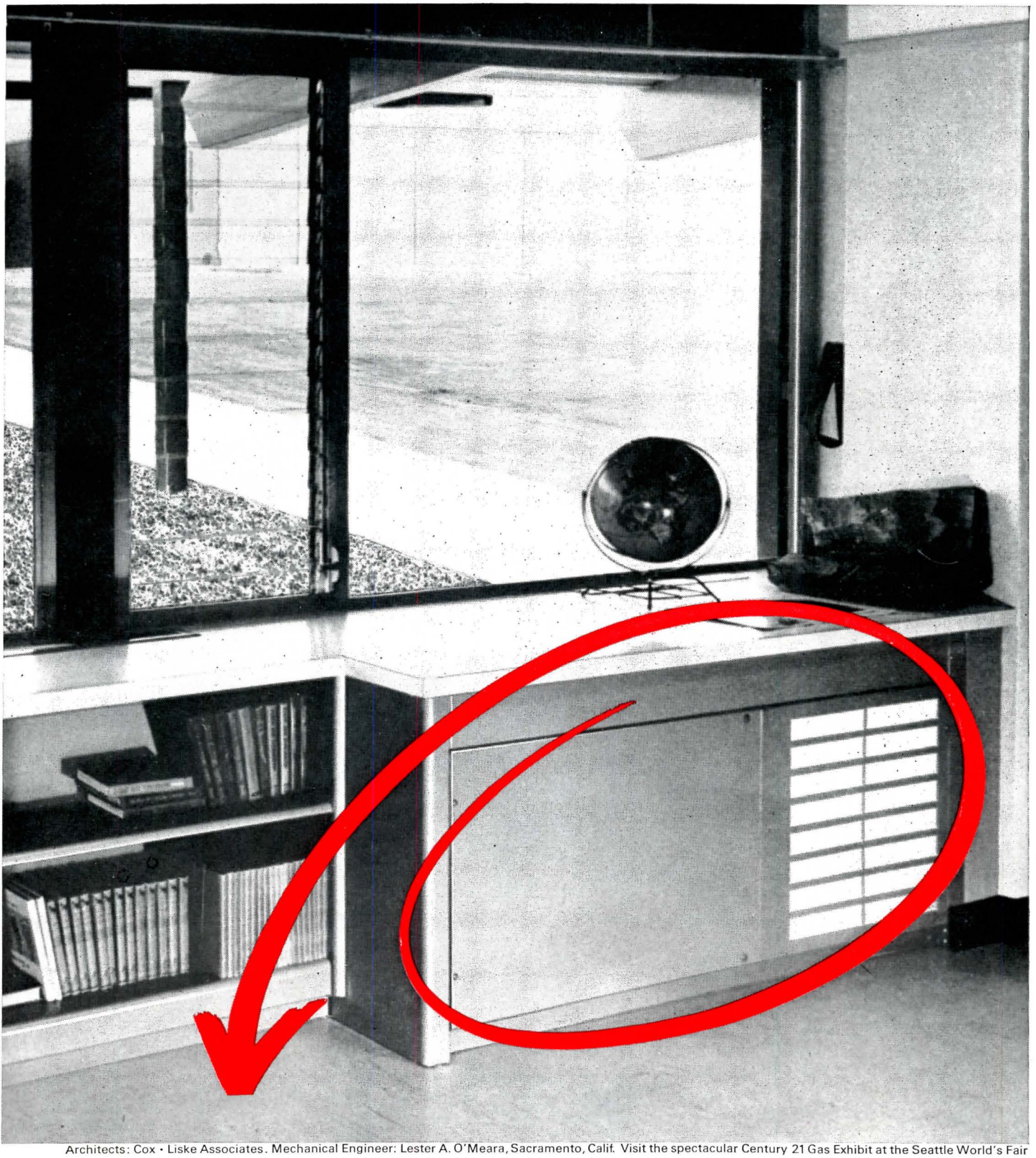


Gas heats classroom for $40 a year



Architects: Cox • Liske Associates. Mechanical Engineer: Lester A. O'Meara, Sacramento, Calif. Visit the spectacular Century 21 Gas Exhibit at the Seattle World's Fair

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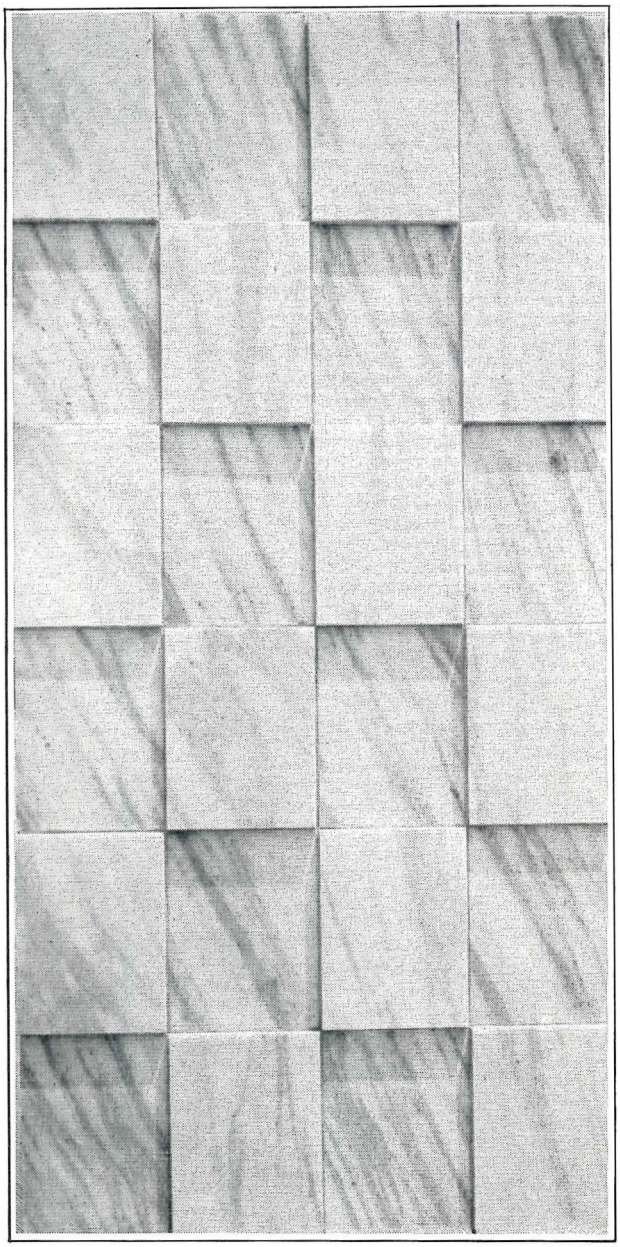

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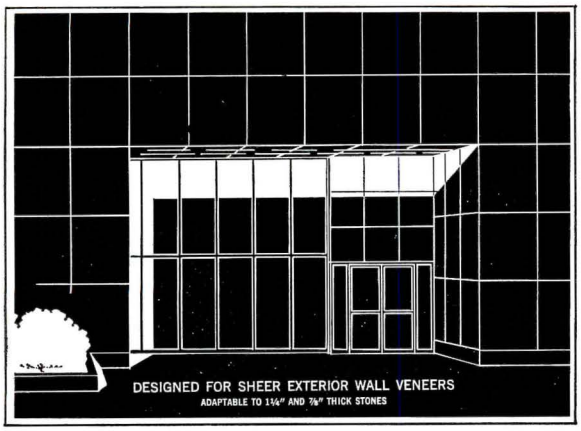
More, the development of marble-faced precast panels has virtually eliminated any difference in initial costs. The distinguished beauty, extraordinary durability and exceptional low-maintenance qualities of marble now cost no more than most ordinary materials.



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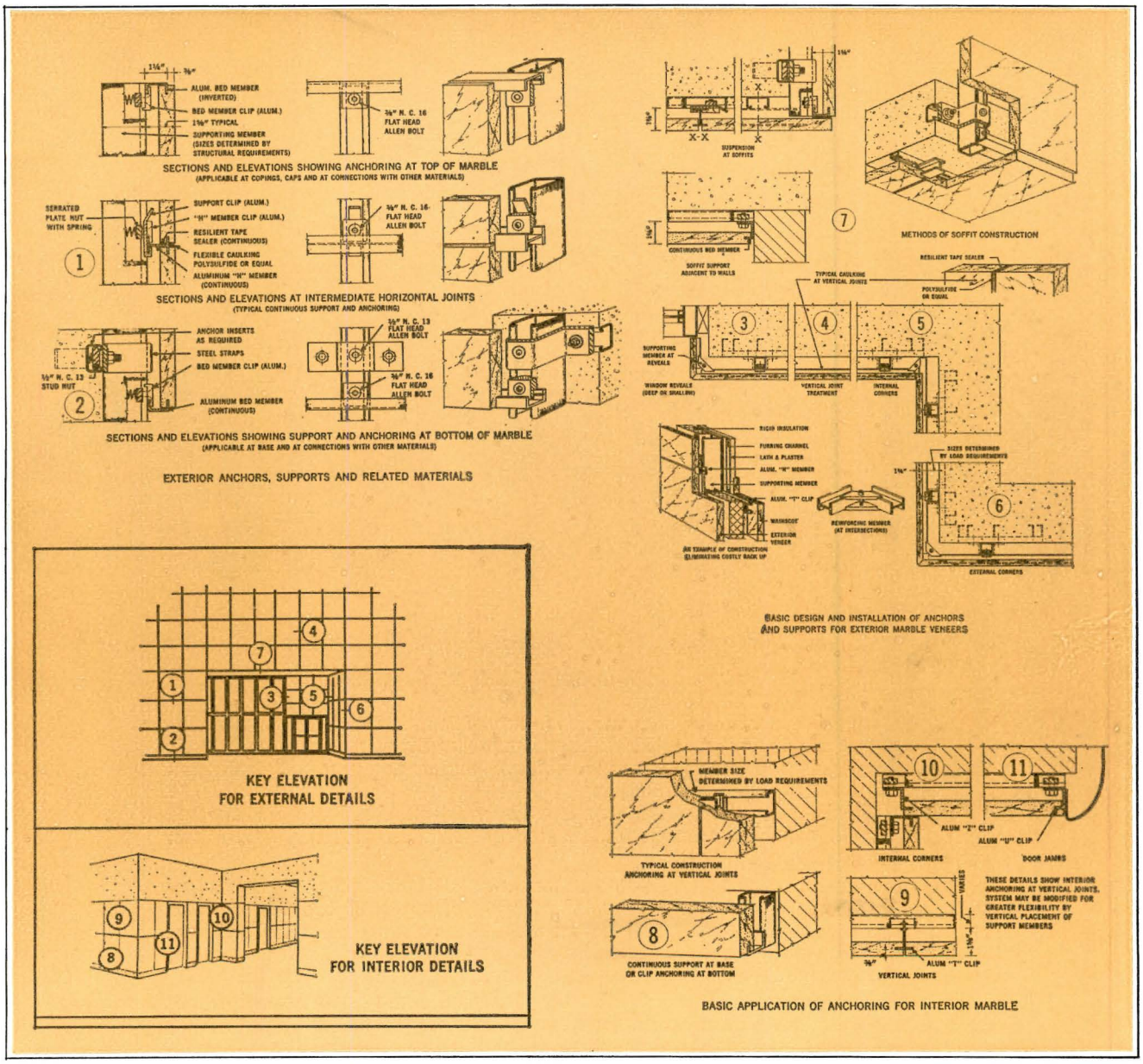

For full information and details, see our catalog, "New Artistry in Marble" in Sweets. Or write and we'll send you a copy by return mail.

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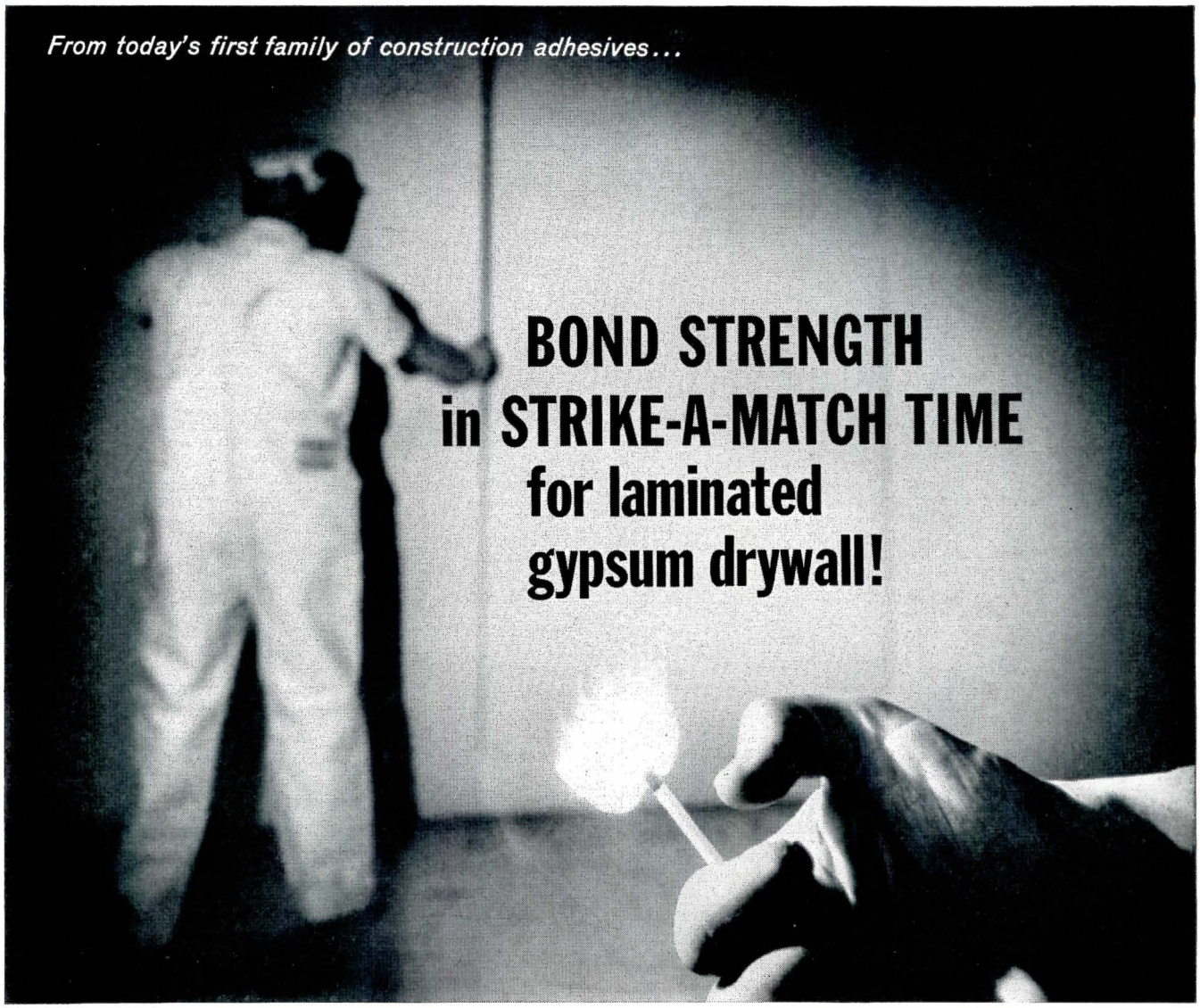
DIVISIONS: Structural, Nelson, Georgia; Calcium Products, Tate, Georgia; Alabama Limestone, Russellville, Alabama; Green Mountain Marble, West Rutland, Vermont; Tennessee Marble, Knoxville, Tennessee; Alberene Stone, Schuyler, Virginia; Willingham-Little Stone, Atlanta, Georgia; Consolidated Quarries, Lithonia, Georgia.



Non-flammable 3M Brand Drywall Contact Adhesive
. . . no bracing, no nails needed!

Get a trim looking laminated drywall job, and trim installation time up to 25% with 3M BRAND DRYWALL CONTACT ADHESIVE. Finish-ply goes on without nails, without shoring, and with but a minimum of spackling and finishing.

3M BRAND DRYWALL CONTACT ADHESIVE is water-dispersed and solvent-free. No fumes or flammability. Dangers from cigarettes, matches, heat and sparks from power tools are eliminated.

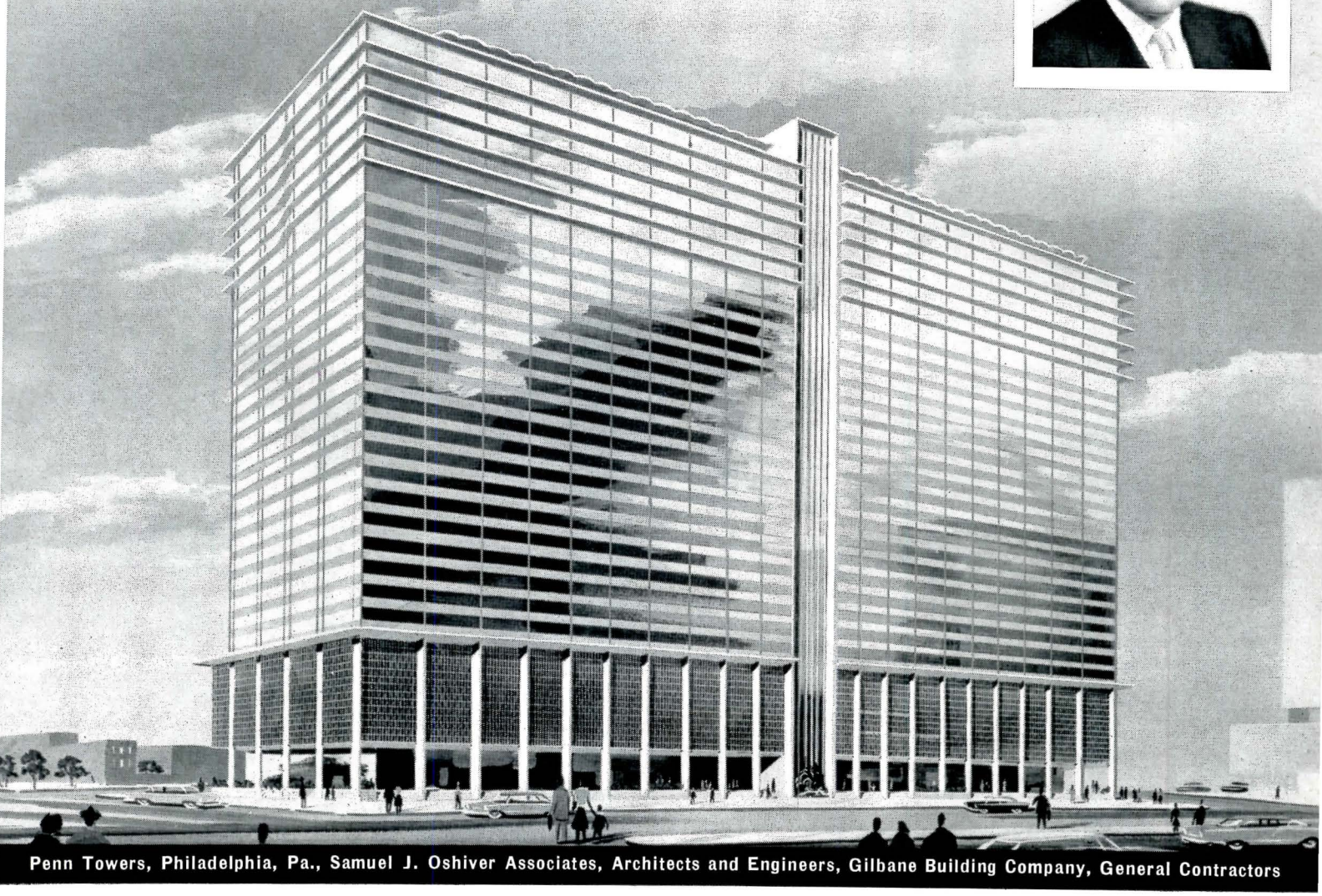
This new adhesive grabs on contact . . . has excellent workability, good heat and water resistance. *One gallon provides approximately 400 sq. feet of complete laminate.* Spray, brush or roll on with standard equipment. Gel consistency keeps 3M Adhesive from running and dripping. Coating can be applied up to 1 hour ahead of bonding. When finished, clean-up is easy with soap and water or detergent.

For the first ply on studs, try 3M BRAND DRYWALL JOIST/STUD ADHESIVE . . . goes on with a caulking gun. Requires few nails . . . reduces "popping." (Other quality construction products from the 3M family: Ceramic tile, floor tile, countertop, insulation adhesives, curtain-wall and duct sealers). See your nearest 3M distributor, or write: AC&S Division, 3M Company, Dept. SBC-42, St. Paul 1, Minn.

Adhesives, Coatings and Sealers Division 3M COMPANY

‘ › selected Haughton Elevators for the new Penn Towers . . . to provide speed with comfort”

. . . says Mr. Sylvester J. Lowery, President, Penn Towers, Inc.



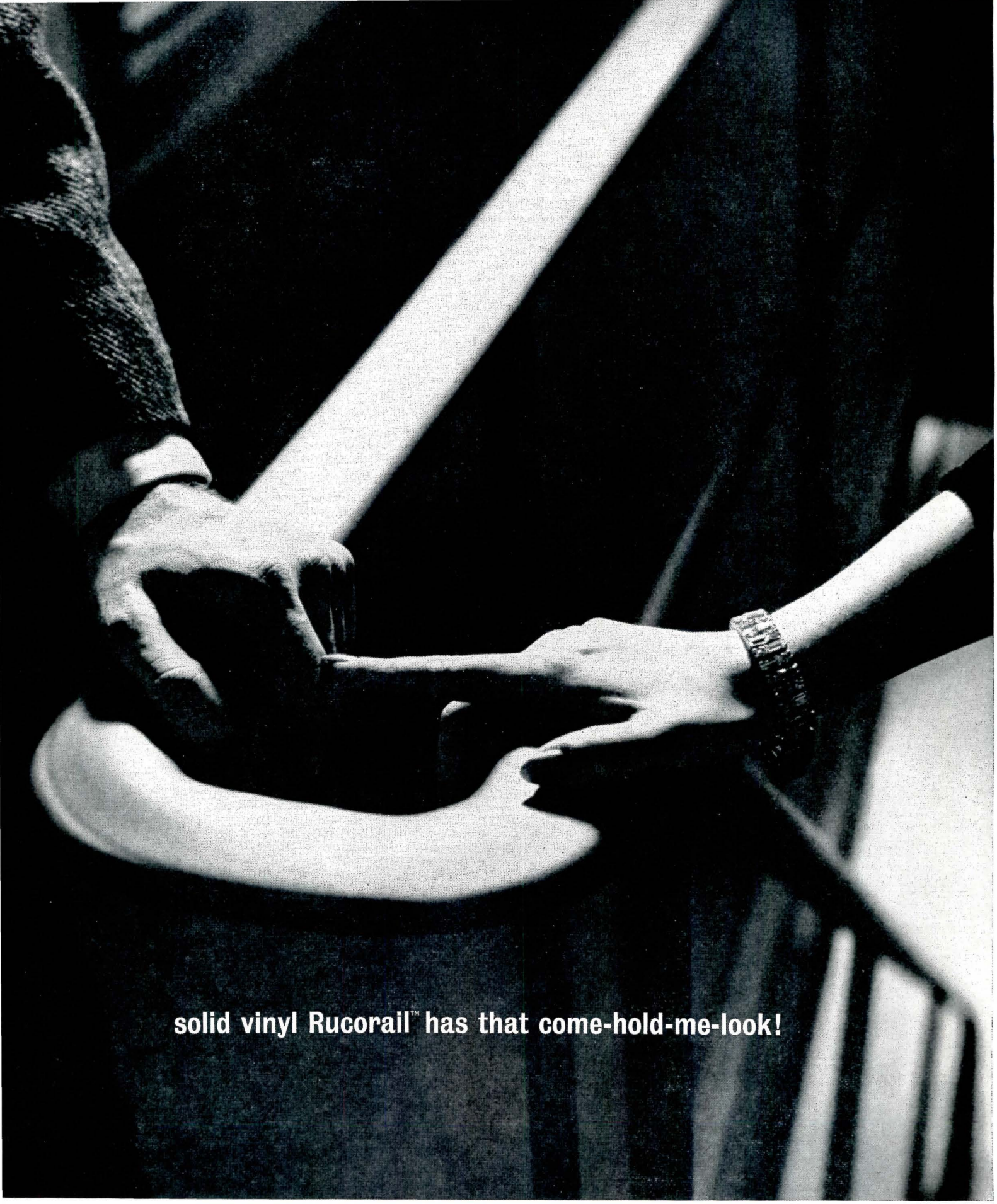
Penn Towers, Philadelphia, Pa., Samuel J. Oshiver Associates, Architects and Engineers, Gilbane Building Company, General Contractors

Combining the features of a luxurious apartment hotel and modern office building, the new Penn Towers in Philadelphia will have the most advanced system of electronically-controlled elevators, keyed to the age of automation. ■ Eight Haughton Operatorless Elevators will transport passengers with uncanny speed and comfort along the glass-enclosed vertical highways that bisect the front of this striking new building. ■ An automatic electronic computer will constantly receive and analyze data pertaining to amount and character of traffic, and make adjustments to match traffic needs exactly. ■ Such is the magic of Haughton Elevonics* . . . key to new standards in elevator performance. ■ Incorporate the advantages of Haughton Elevators in your plans. ■ Contact your Haughton sales office (listed in the yellow pages), see Sweet’s File 24a/Ha, or write: Haughton Elevator Company, Div. of Toledo Scale Corporation, Toledo 9, Ohio. ■ Passenger and Freight Elevators, Escalators, Dumbwaiters.

EMBLEM OF EXCELLENCE IN VERTICAL TRANSPORTATION

Haughton’s advanced program in systems research and engineering, with specific emphasis on the creative application of electronic devices and instrumentation for betterment of systems design and performance. Registered in U. S. Patent Office.

For more information, turn to Reader Service card, circle No. 352



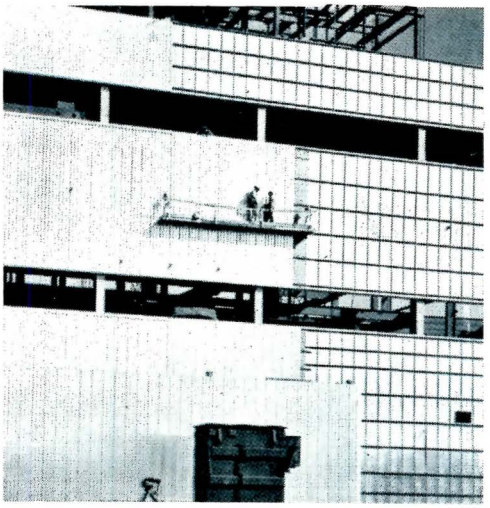
Rucorail is the dramatic handrail designed for imaginative architects...and for people. Hands are irresistibly drawn to Rucorail. Its brilliant colors say "hold me." Its warm, inviting glow provides built-in safety. Economy-minded builders, also, are drawn to *Rucorail, for interior* and exterior use. This low-cost solid vinyl installs effortlessly over metal and wood cores. Fabulously flexible, it follows any curve, any blueprint.

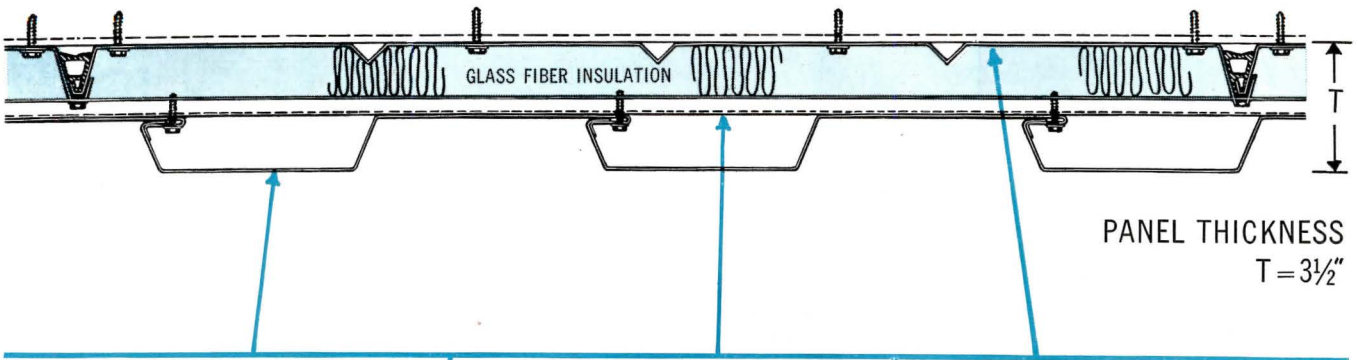
Rucorail is non-fading, non-flammable, non-corroding; stays clean and maintenance-free! Comes in 7 contemporary colors, 6 different sizes, in 100 ft. coils. It can be mitered, capped and thermo-welded. Send for specifications folder.

RUBBER CORPORATION OF AMERICA RC
NEW SOUTH ROAD, HICKSVILLE, N.Y. SALES OFFICES: N.Y. CHICAGO BOSTON

NEW, PAN-L-WALL FROM BOWMAN!

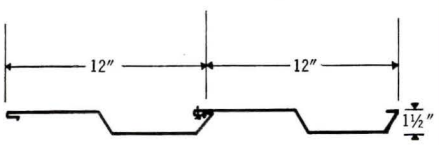
In answer to demands from architects and engineers for better insulated industrial curtain walls, Bowman's new Pan-L-Wall offers the following long-sought-after features.





PANEL THICKNESS
T = 3½"

EXTERIOR PANEL

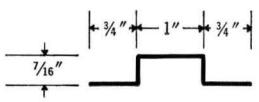


1. Invisible joint and invisible fastening.

2. Available in 40′ lengths to reduce the number of end joints. For buildings with elevations requiring longer lengths than 40′, the end joints of the panel are flared and countersunk to give a flush joint.

3. Available in Steelbestos and Bowmanized protected metals, with a selection of eight standard colors. Protected metal has previously been available only in corrugated sheeting, with lengths limited to 12′ and employing exposed fastening. Bowman's Pan-L-Wall now offers the builder the life time, service-free utility of Steelbestos and Bowmanized in a modern panel shape, and in eight permanent brilliant colors.

SUBGIRTS



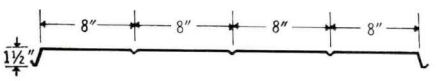
Subgirts are roll formed hat sections that are fastened directly to the joint of the interior panel, on 4–0" centers, and serve as a structural system to which the exterior panel is attached.

Bowman's subgirts are positively fastened with steel sheet metal screws—not dependent on flimsy clips that sometimes work and sometimes don't.

Bowman's subgirts are made of 18 gauge Protected Metal to insure maximum protection from corrosion within the panel system and eliminate metal-to-metal contact.

SEE OUR CATALOG IN (S) SWEET'S

INTERIOR PANEL

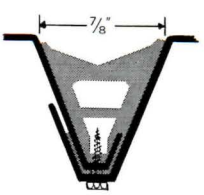


1. Extra wide to reduce number of side laps and minimize erection costs.

2. Available in color Steelbestos and color Bowmanized protected metal to eliminate the necessity of further painting and insure against corrosion within the panel assembly.

3. Positive fastening at side joints between structural girts.

4. Positive weatherproofing of side joints by using extruded vinyl joint closure rather than messy, undependable caulking compounds that stain adjacent panels and tend to harden and become ineffective.



BOWMAN STEEL CORPORATION

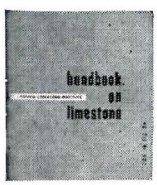
P. O. BOX 2129, Pittsburgh 30, Pa., WAlnut 1-7100

For complete information, write or call the Bowman Steel sales office nearest you: Baltimore, Birmingham, Boston, Chicago, Cincinnati, New York, New Haven, Norfolk, Philadelphia, Pittsburgh, St. Louis, Syracuse, and agents in other principal cities. Incorporated 1898.

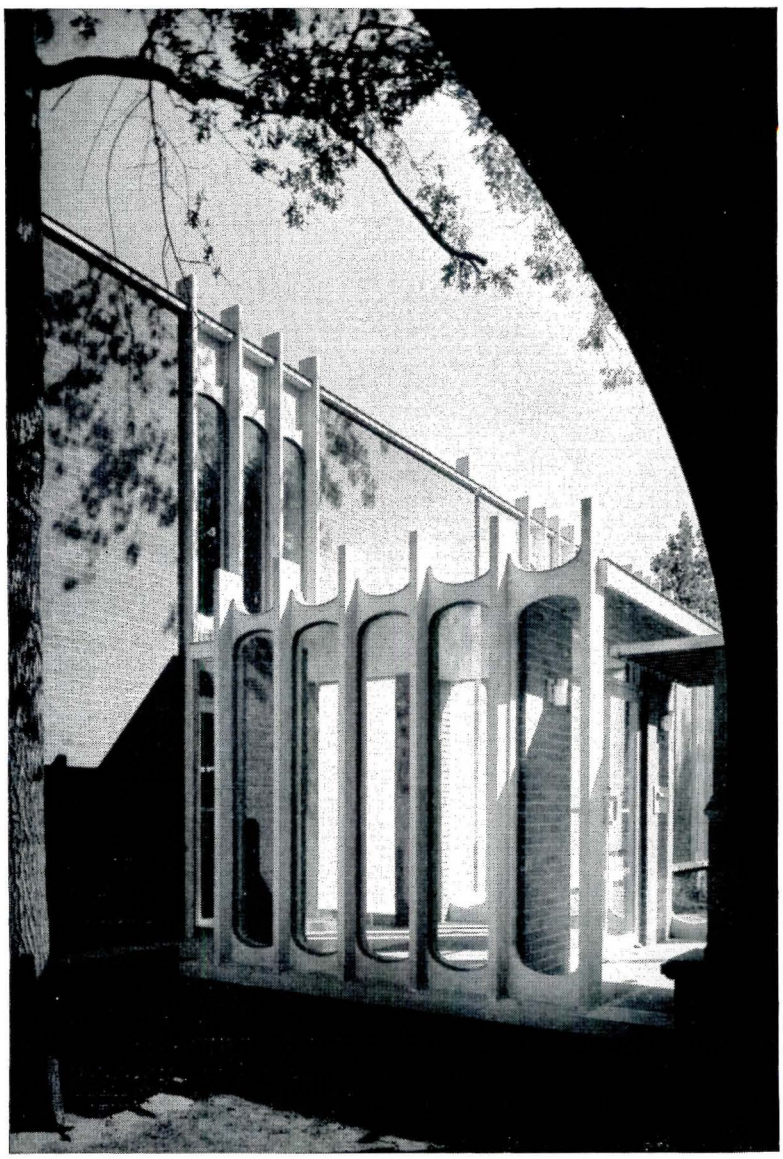
new ideas in Indiana Limestone

Accentuate the Entrance!

Indiana Limestone provides the architect with an excellent permanent material for sensitive, delicate treatments. Genuine limestone affords a choice of textures and finishes ranging from very smooth surfaces to rustic, informal applications.
Indiana Limestone blends handsomely with other building materials. A wide choice of fabrication techniques is available to the interpretive architect.



ARCHITECTS ARE INVITED TO WRITE THE INSTITUTE FOR THE NEWLY PUBLISHED HANDBOOK ON LIMESTONE, A COMPREHENSIVE TEXT ON LIMESTONE APPLICATIONS.



Music Library, Washington University, St. Louis, Missouri
Architects: Smith and Entzeroth
Clayton, Missouri

INDIANA LIMESTONE INSTITUTE

BOX 757 • BLOOMINGTON INDIANA

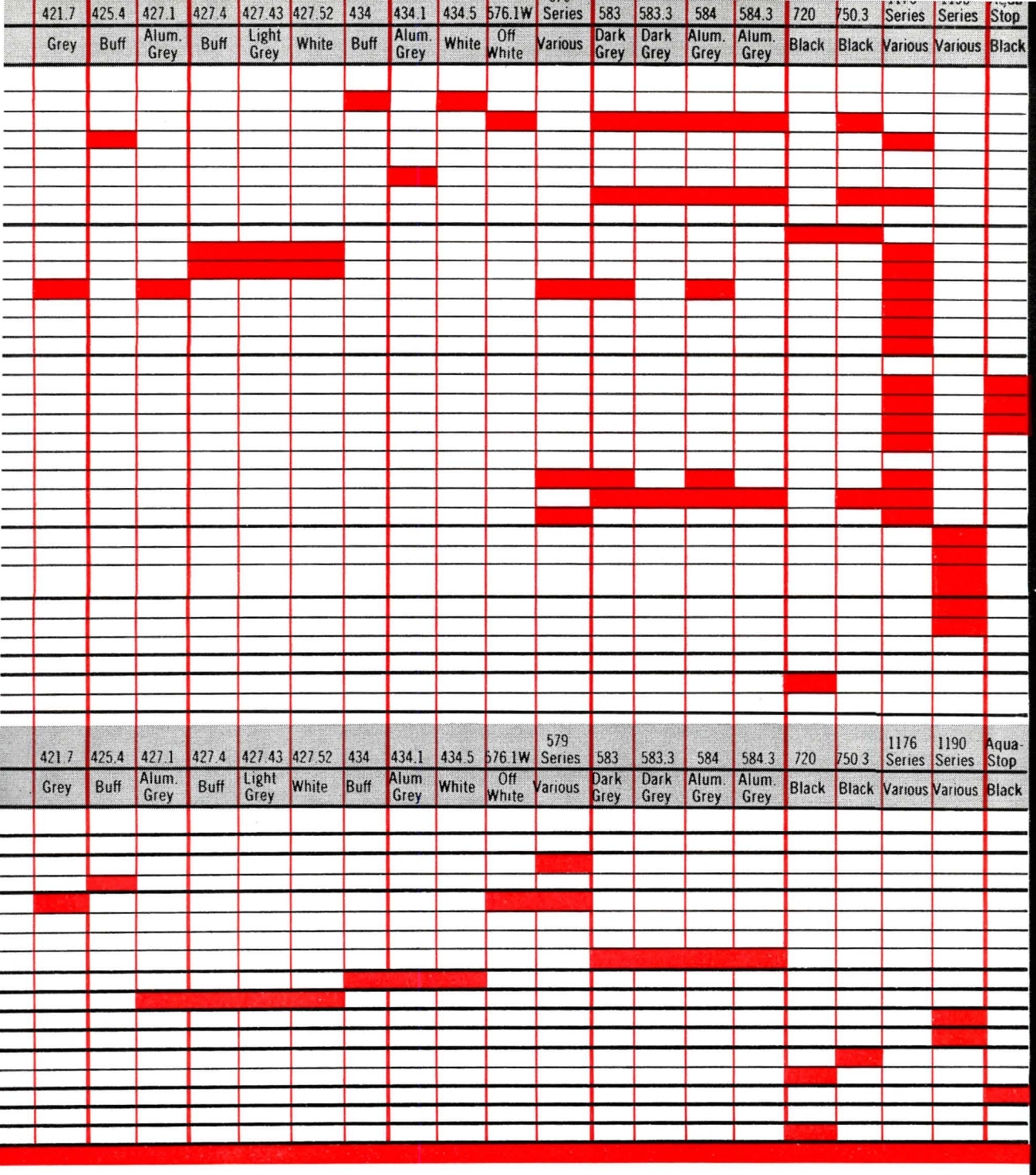
APPLICATIONS		PRODUCT NO.	54	120	140	155.8	162	162.3	163	164	165	168	168.3	210	215	215.1	232.1	375	412.9
		COLOR	Black	Light Amber	Black	Dark Grey	Black	Black	Black	Off White	Black	Alum. Grey	Alum Grey	Straw	Black	Straw	Buff	Black	Light Grey
GLAZING	Wood Windows (Fixed or Operating)																		
	With Glazing Clips																■		
	With Applied Stops					■				■		■							
	Groove Glazed																		
	Steel or Aluminum (Fixed or Operating)																		
	With Glazing Clips																		
	With Applied Stops					■	■	■				■	■	■					
	Interior Glass Partitions								■	■	■								
CAULKING	Joint Filler (Backup Material)																		
	Wood to Masonry													■					
	Metal to Masonry													■					
	Metal to Metal					■	■	■	■	■		■							■
	Joints in Granite													■					
	Joints in Marble													■					
	Setting Metal & Marble Thresholds													■					
SEALING	Building Expansion & Contraction Joints																		
	Vertical													■	■	■			
	Horizontal		■											■	■	■			
	Swimming Pool, Expansion Joints														■	■			
	Precast Concrete, Construction Joints													■					
	Curtain Wall																		
	Panels					■	■					■							
	Fixed Sash						■	■				■	■						
	Mullion Joints					■													
CONCRETE REPAIRING	Bonding Concrete to Concrete																		
	Repairing Precast Concrete																		
	Cementing Traffic Markers to P.C.C. or Asphaltic Surfaces																		
CONCRETE SURFACING	Epoxy Concrete																		
	Epoxy Mortar																		
	Non-Skid Surfacing			■	■														
VAPOR BARRIERS																		■	
INSULATION	Insulating Pipe & Tubing										■								

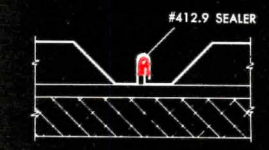
PRODUCT CLASSIFICATION		PRODUCT NO	54	120	140	155 8	162	162 3	163	164	165	168	168 3	210	215	215 1	232.1	375	412 9
		COLOR	Black	Light Amber	Black	Dark Grey	Black	Black	Black	Off White	Black	Alum Grey	Alum Grey	Straw	Black	Straw	Buff	Black	Light Grey
POLYSULFIDE BASE COMPOUNDS (Thiokol*)			■																
PRIMERS														■	■	■			
PUMPABLE SEALERS	Polybutene																		
	Modified Vegetable Oils																		
SEALING TAPES	Polybutene																		■
	Polyisobutylene						■	■	■	■	■								
	Modified Butyl					■						■	■						
	Vinyl Polymer																		
GLAZING COMPOUNDS (Modified Vegetable Oil Base)																	■		
GUN GRADE COMPOUNDS (Modified Veg. Oil Base)																			
PROTECTIVE COATINGS				■	■											■			
EPOXY COMPOUNDS				■	■														
JOINT FILLERS	Butyl Rubber (Closed Cell)																		
	Neoprene Rubber (Closed Cell)																		
WATERSTOP (Rubber)																			
VAPOR BARRIER BOARD (Asphaltic Board)																		■	
SPONGE RUBBER INSULATION (Closed Cell)																			

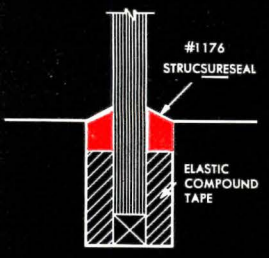
* Registered Trade Mark, Thiokol Chemical Corp.

SEALANT
SHOPPING CENTER

421.7	425.4	427.1	427.4	427.43	427.52	434	434.1	434.5	576.1W	579 Series	583	583.3	584	584.3	720	750.3	1176 Series	1190 Series	Aqua-Stop
Grey	Buff	Alum. Grey	Buff	Light Grey	White	Buff	Alum. Grey	White	Off White	Various	Dark Grey	Dark Grey	Alum. Grey	Alum. Grey	Black	Black	Various	Various	Black







Which sealant to use where is easily determined by this PRESSTITE Selector Chart. The chart also demonstrates why Presstite is looked to by architects for the widest choice of sealants for specific design needs.

Presstite's 38 years of research and product development has been in sealants exclusively. This specialization makes Presstite a preferred source for advisory counsel in relating sealant needs to construction applications.

A nationwide, technical organization is maintained by Presstite for this purpose. You are invited to use it without cost or obligation.

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Kansas City, Mo.	Willow 2-1718
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Louisville	JUstin 3-5518
Minneapolis	DE 5-4444
Newark	CHarter 6-3330
St. Louis	MOhawk 4-6000

See our detailed catalog with suggested specifications in Sweet's Architectural File, 3c/Pre, or write for a copy.

PRESSTITE DIVISION | MARTIN MARIETTA

GENERAL OFFICE: 39TH AND CHOUTEAU, ST. LOUIS 10, MISSOURI.

PLANTS: ST. LOUIS, MISSOURI
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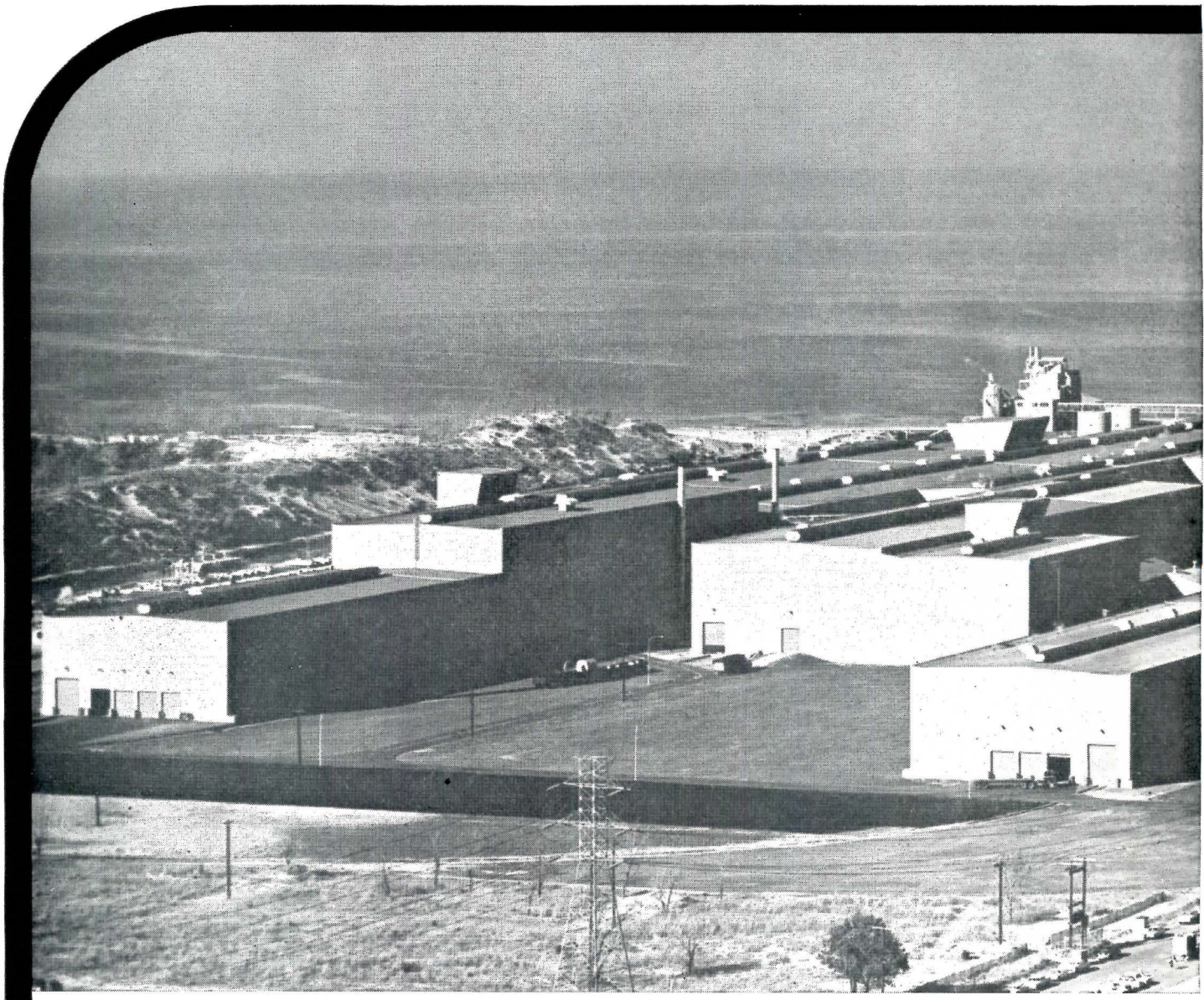
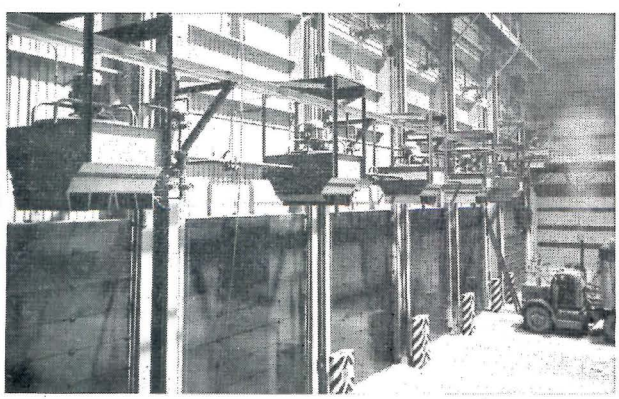
EL SEGUNDO, CALIFORNIA

For more information, turn to Reader Service card, circle No. 415



How to save more man-hours with



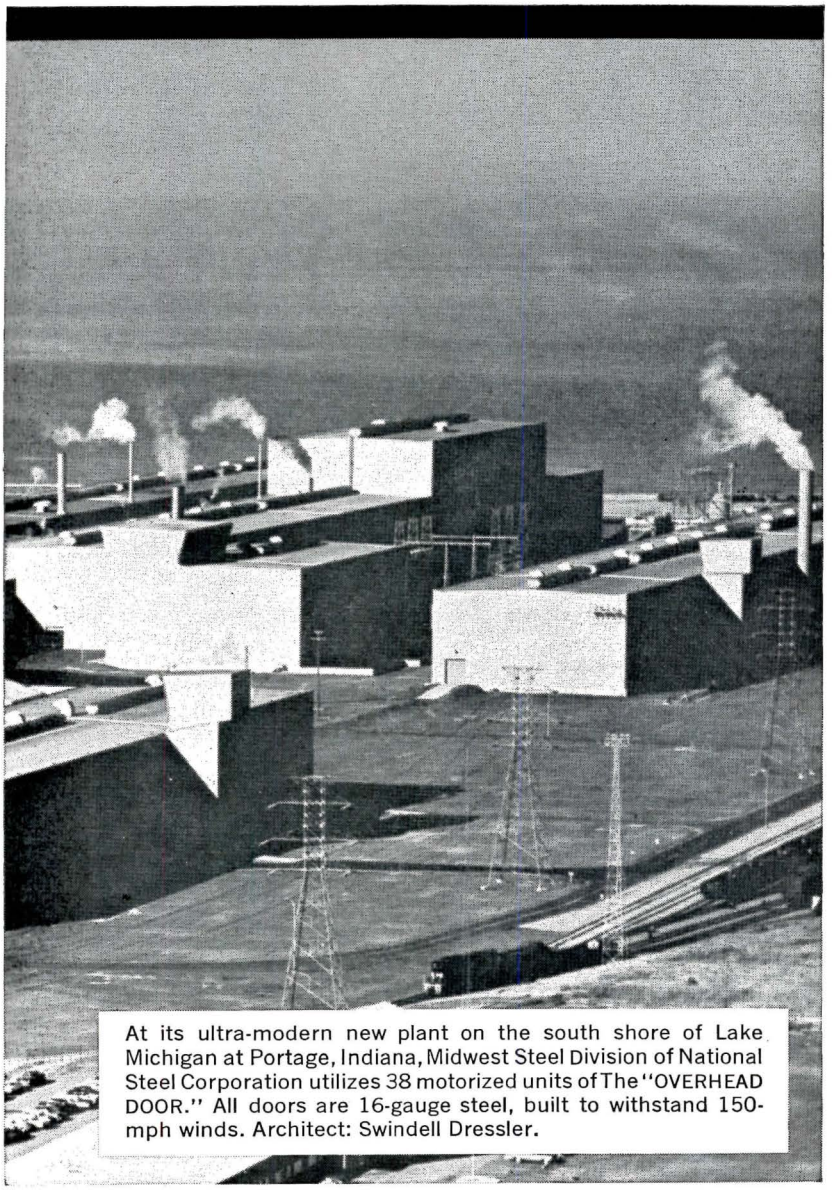
Bank of five steel "OVERHEAD DOOR" installations at Midwest Steel Division plant converts factory sidewall into a "movable wall," and provides control of traffic, time, space and climate.

The saving of man-hours can be a function of The "OVERHEAD DOOR," just as surely as it helps control traffic, space and climate through its "movable wall" function.

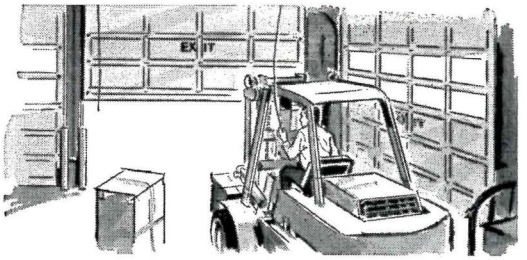
Motorized, push-button doors contribute importantly to this time-saving. And completely automated doors, operated electronically, can contribute even more. For example, a fork-lift driver may take 75 seconds to open and close an industrial door. At an average of one opening-and-closing per half-hour, 16 cycles per day per door, and a $2.25 wage rate, driver downtime alone can cost industry $183 per door per year!

When you multiply $183 by many doors, you can see the yearly savings possible with the automated "OVERHEAD DOOR."

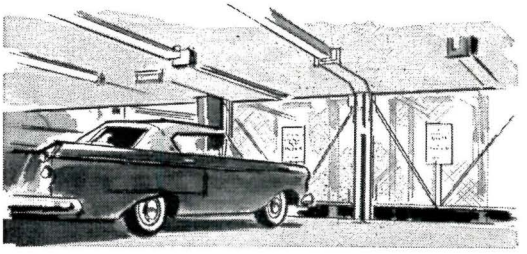
Besides man-hour savings and weather protection, both motorized and electronic "OVERHEAD DOOR" in-



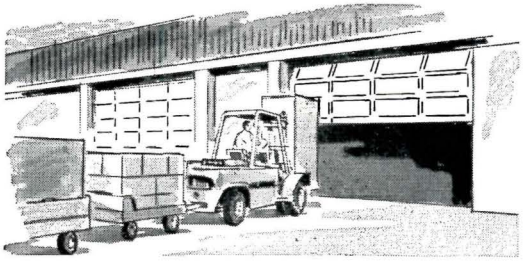
At its ultra-modern new plant on the south shore of Lake Michigan at Portage, Indiana, Midwest Steel Division of National Steel Corporation utilizes 38 motorized units of The "OVERHEAD DOOR." All doors are 16-gauge steel, built to withstand 150-mph winds. Architect: Swindell Dressler.



Driver has pulled cord, and "OVERHEAD DOOR" is moving up in Air Express building at Atlanta's new airport. Immediate door operation permits tractors to pull package-laden carts into and out of building, quickly and efficiently, saving many man-hours.



Automatically-operated, upward-acting, expanded-metal gates by "OVERHEAD DOOR" are used in this pigeon-hole parking structure at Columbus, Ohio. Representing the newest in car-park automation, this driverless "file system" depends on The "OVERHEAD DOOR" for swift, automatic handling.



Industrial truck and fork-lift operators need never leave their vehicles as they approach an automated "OVERHEAD DOOR" installation. At the touch of a dash-mounted electronic button, powerful lift mechanism raises the door, or outer gate, speeds traffic flow, eliminates stop-and-go man-hours.

the motorized "OVERHEAD DOOR"

stallations can provide unlimited ingress and egress at traffic-flow arteries; control strategic expansion or confinement of given shop areas and functions; and safeguard the welfare of employees by closing to preserve warmth in winter, opening to provide full ventilation in summer.

GET THE COMPLETE STORY NOW

For detailed information, call your local distributor, listed in the white pages. Or write Overhead Door Corporation, the company that engineered and pioneered door automation—and originated upward-acting sectional doors for industry, commerce and residential building. *General Office and Manufacturing Division:* Hartford City, Ind. *Manufacturing Distributors:* Dallas, Tex.; Portland, Ore.; Cortland, N.Y.; Hillside, N.J.; Lewistown, Pa.; Nashua, N.H. *In Canada:* Oakville, Ontario.

16j
Ove

THE "OVERHEAD DOOR" TRADE MARK

the original upward-acting sectional door, made only by

OVERHEAD DOOR CORPORATION

INDUSTRIAL • COMMERCIAL • RESIDENTIAL
WOOD • STEEL • ALUMINUM

For more information, turn to Reader Service card, circle No. 378

Announcement

Reinhold Publishing Corporation of New York is pleased to announce the acquisition on March 1, 1962 of Keeney Publishing Company of Chicago and its two outstanding magazines, **HEATING, PIPING & AIR CONDITIONING** and **AMERICAN ARTISAN.** This brings to four the number of Reinhold publishing services for the over-all construction market and for the architectural and engineering professions, manufacturers and fabricators, and specialized contractors associated with it.

The four services and their fields are:

1) **HEATING, PIPING & AIR CONDITIONING** . . . . founded 33 years ago as the magazine of consulting engineers, mechanical (HPAC) contractors and engineers, concerned with heating and air conditioning in plants and buildings. With a total paid circulation of over 18,000, it is today the most widely read and respected magazine of its kind and carries the largest advertising volume in its own field.

2) **AMERICAN ARTISAN** . . . . now in its 99th year, is the most influential magazine in the warm air heating and air conditioning field. It has over 10,000 paid subscribers, including dealers, contractors, wholesalers, and manufacturers of warm air heating and air conditioning sheet metal, ventilaton and exhaust equipment. It carries the largest advertising volume in its field.

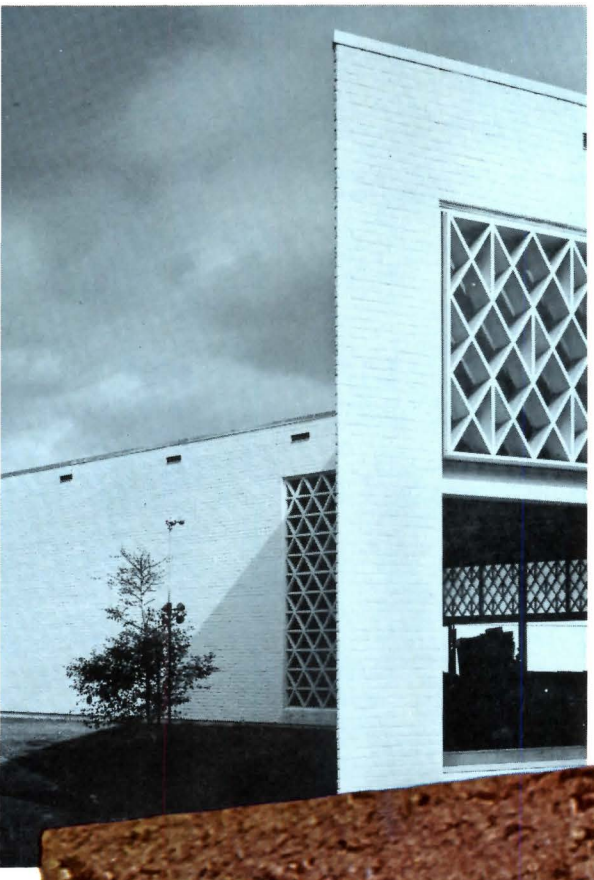
3) **REINHOLD BOOK DIVISION** . . . . an important source of books on architecture, planning and construction materials.

4) **PROGRESSIVE ARCHITECTURE** . . . . founded in 1920 as Pencil Points, and in continuous monthly publication since. The magazine has the world's largest architectural—professional paid circulation.

Reinhold also publishes **Automatic Control, Chemical Engineering Catalog, Chemical Materials Catalog, Materials in Design Engineering,** scientific and technical books, college text books, and also acts as advertising management for the applied publications of the American Chemical Society—**Analytical Chemistry, Chemical and Engineering News,** and **Industrial and Engineering Chemistry.**

The Keeney Publishing Company, now a wholly owned subsidiary of Reinhold, of which **PROGRESSIVE ARCHITECTURE** is a division, will continue to operate from 6 North Michigan Avenue, Chicago, under the direction of C. M. Burnam, Jr., Executive Vice President and General Manager, and with its qualified and experienced magazine staffs intact. The Keeney magazines will be operated by Reinhold in conjunction with **PROGRESSIVE ARCHITECTURE** to serve readers and advertisers interested in these markets. D. B. Wilkin, Vice President of Reinhold Publishing Corporation and Publisher of **PROGRESSIVE ARCHITECTURE** will be the Reinhold executive in charge of the Keeney operation and will have the responsibility of co-ordinating the activities of **HEATING, PIPING & AIR CONDITIONING** and **AMERICAN ARTISAN** with **PROGRESSIVE ARCHITECTURE.**

Philip H. Hubbard, President
REINHOLD PUBLISHING CORPORATION



Simple and Symbolic

The star form, created by Architect William W. Landsberg and Design Consultant Marcel Breuer in a simple bearing wall for the Westchester Reform Temple, Scarsdale, N. Y., becomes a religious symbol, expresses the building's function, and creates private exterior spaces in a residential neighborhood. Material for symbolism, function, privacy, and beauty: *brick.*

Structural Clay Products Institute 1520 18th St., N.W. Washington, D.C.

Installation: Sts. Philip and James School-Church-Auditorium, St. James, New York. Architect: John O'Malley and Associates. General Contractor: Schumacher & Forelle, Inc. Roofing: John Schneider Roofing Contractors, Inc.

Drains nothing but rain

This gleaming Nickel Stainless Steel gutter keeps maintenance money in the treasury

Few people will ever see the gleaming inside of this trough. Few people will have to, because maintenance is virtually eliminated with a Nickel Stainless Steel gutter.

The standard finish you see will stay bright for the life of the building. Corrosion-resistant all the way through, Nickel Stainless Steel can stand up against chemicals much more aggressive than plain rain water.

Designed to last for generations, this gutter is on the roof of a church. For lasting value, the architect specified Type 302 Nickel Stainless Steel not only for gutters, but for all downspouts and flashings as well. Even the nails are Nickel Stainless.

Strong enough for light, economical gauges, Nickel Stainless Steel delivers value right from the start. This gutter is only .018" thick, but its great strength-weight ratio will withstand all expected wind stresses and snow loads. Why not specify the practical advantages—and lifetime beauty—of Nickel Stainless Steel for all *your* sheet metal work? There's helpful information in the 26-page *Architect's Guide to Nickel Stainless Steel Flashings.* A postcard will bring it to you.

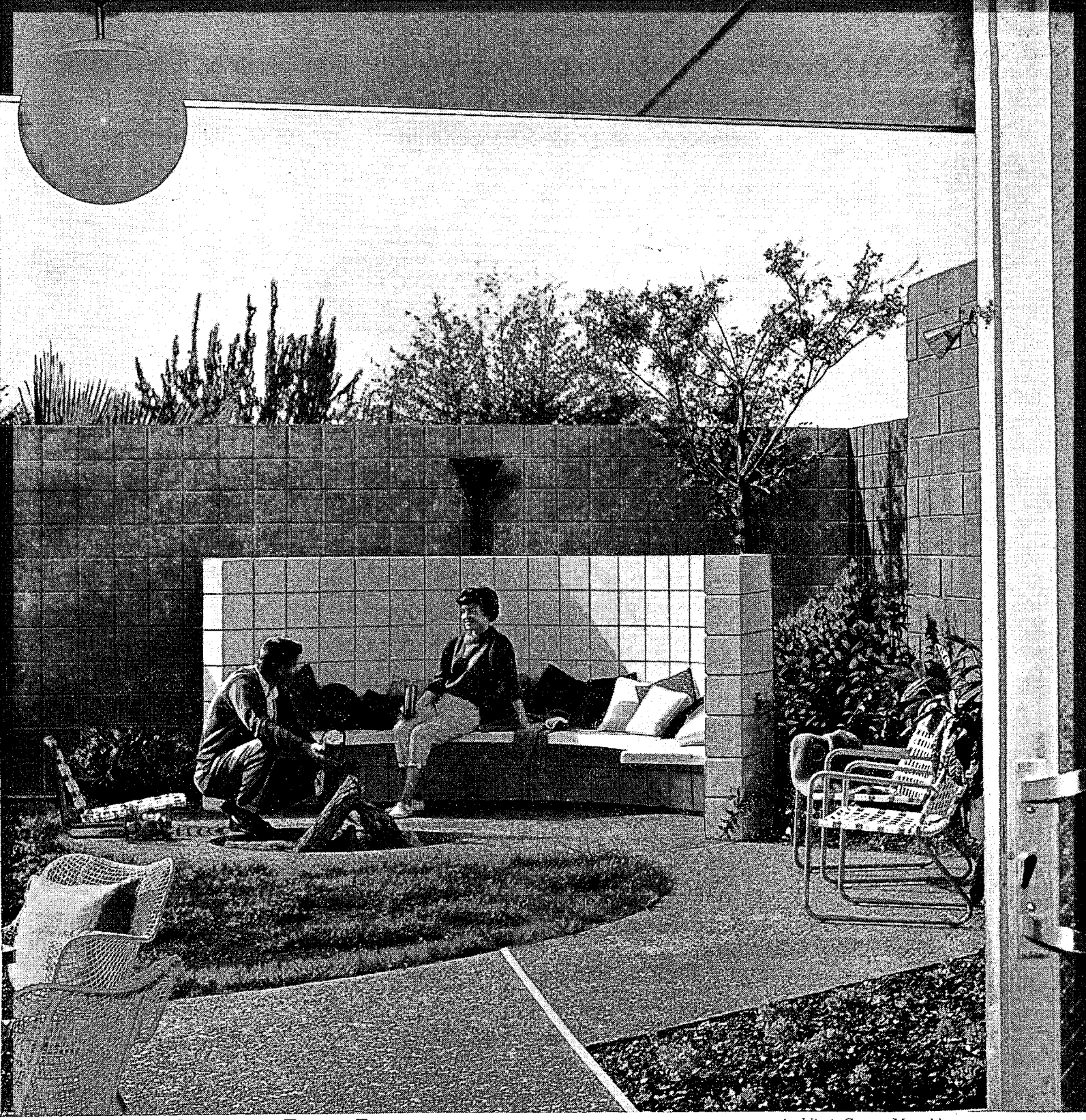
THE INTERNATIONAL NICKEL COMPANY, INC.

67 Wall Street INCO New York 5, N. Y.

INCO NICKEL

MAKES STAINLESS STEEL PERFORM BETTER LONGER

For more information, turn to Reader Service card, circle No. 356



Architect: George Muraki
Landscape Architect: Douglas Kelt

block becomes

YOUR OUTDOOR LIVING ROOM A clean, slick patio . . . a fence fraught with fashion . . . a serene garden path . . . a planter, pool or barbeque pit. Effect them all with the ease, elegance and economy of concrete block. A countless collection of block sizes, shapes, colors and textures lets you render attractive architectural accents of every nature—for more serviceable and stylish outdoor living. See how imaginative ideas in concrete masonry enhance home and property; provide more days and nights of fun and leisure for family and friends. Contact your local NCMA block producer about back yard beauty to be found—right around the block.

NCMA

NATIONAL CONCRETE MASONRY ASSOCIATION • 1015 WISCONSIN AVE., N.W. • WASHINGTON 7, D.C.

Fiberglas® reinforced panels made with 100% LUCITE® acrylic sirup retain original color, gloss and light transmission far longer than other reinforced translucent panels

Scientific tests show that panels made with 100% LUCITE acrylic sirup retain 98% of their original gloss after 2,000 hours in the Atlas Weather-Ometer. After three years of exposure in South Florida, acrylic panels show no appreciable change in color and a maximum loss of light transmission of only 11%. ■ On the other hand, "modified", "light stable", or other conventional panels fade severely after only 1,000 hours in the Weather-Ometer. They lose much of their gloss and they suffer a loss in light transmission of 30% to 60% in South Florida tests. ■ Be sure to specify panels made with 100% Du Pont LUCITE acrylic sirup. For more information, mail the coupon at right.

DU PONT POLYCHEMICALS DEPARTMENT
REG. U.S. PAT. OFF.

Better Things for Better Living . . . *through Chemistry*

E. I. du Pont de Nemours & Co. (Inc.), Dept. PR-4,
Room 2507L, Nemours Bldg., Wilmington 98, Delaware.

☐ Please send more information on acrylic panels.

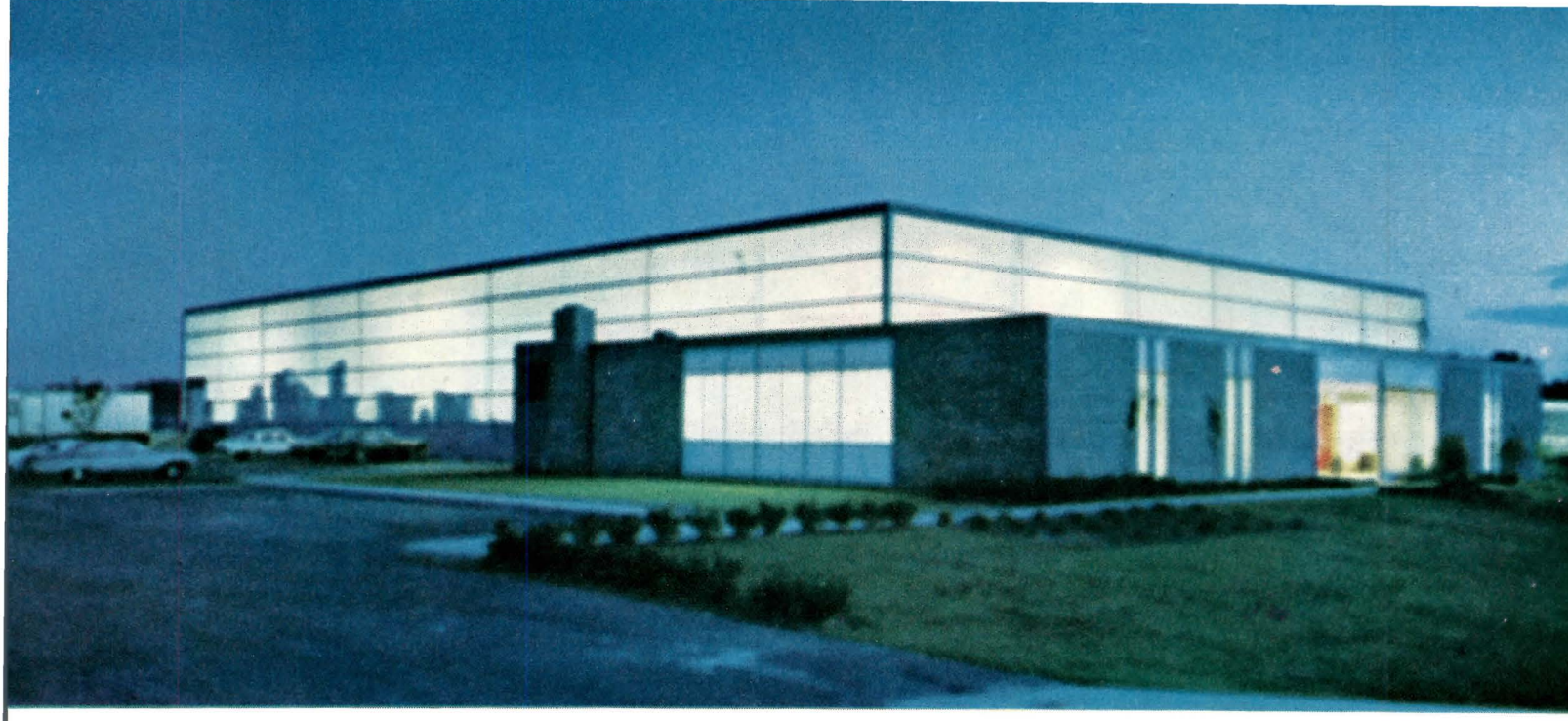
☐ Please ask a panel manufacturer to call on me.

NAME_____ POSITION_____

COMPANY_____

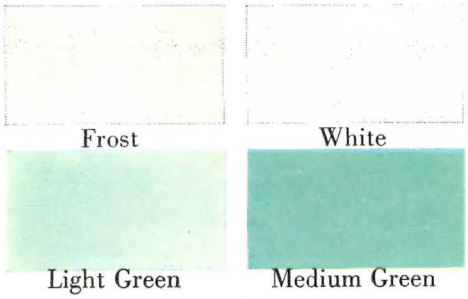
ADDRESS_____

CITY_____ STATE_____



EAUTIFUL, LOW-COST WAY TO LIGHT A PLANT...

enclose it with Fiberglas 100% Lucite Acrylic Daylighting Panels



Available in these colors and a complete variety of corrugated shapes and flat.

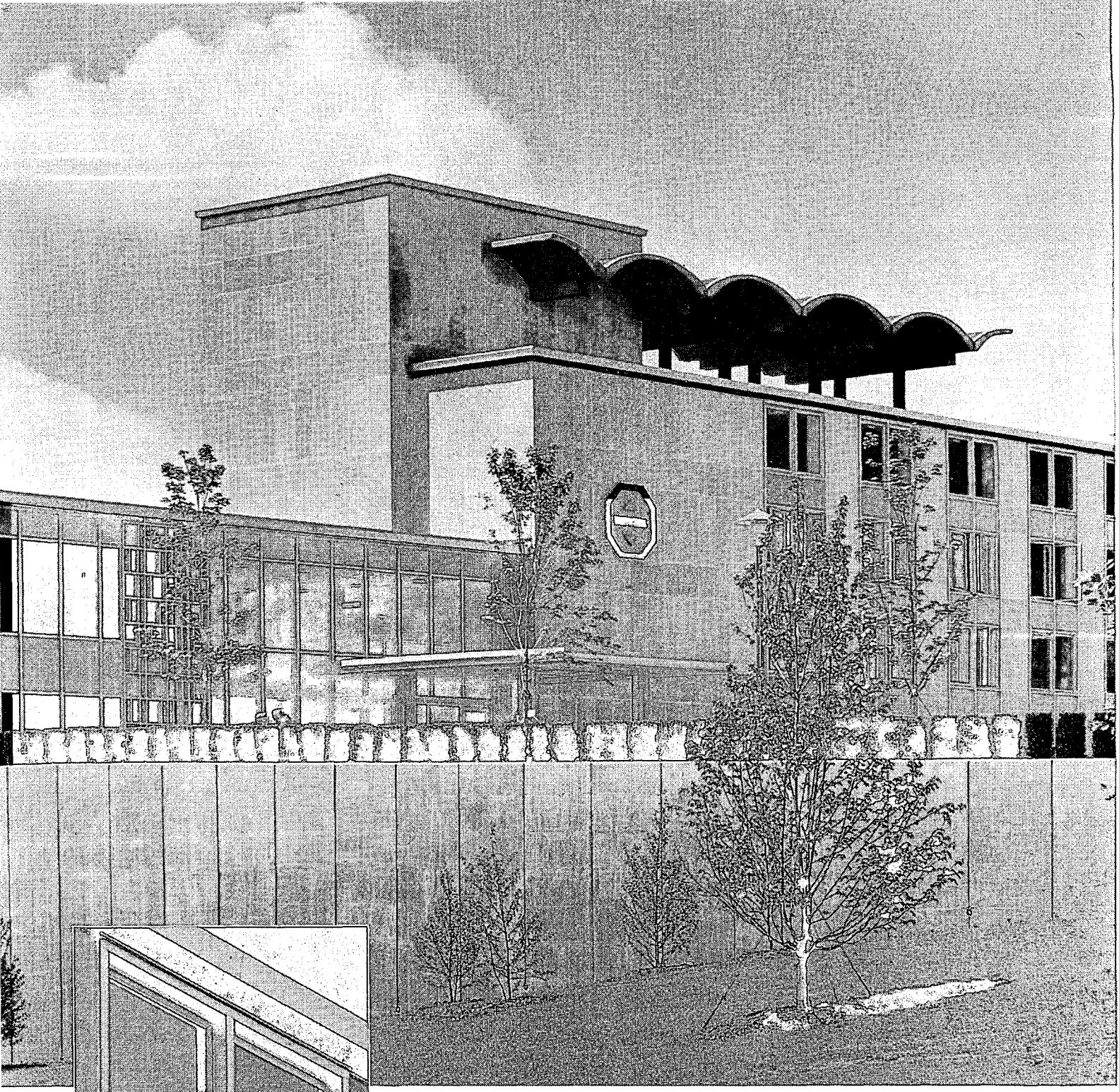
By night, a striking landmark. By day, flooded with uniform, shadow-free, natural daylight. That's the plant whose walls are of Fiberglas* Daylighting Panels. These modern panels are made of DuPont 100% Lucite** Acrylic—known for twenty years for its amazing weather resistance. Fiberglas-reinforced, these new panels are truly money savers. Their installed cost is less than glass and sash, often less than metal siding. They help reduce daytime illumination costs. And because they're shatter-proof, they eliminate expensive replacements. For full information and literature, write: Owens-Corning Fiberglas Corporation, Industrial and Commercial Division, 717 Fifth Avenue, New York 22, N. Y.

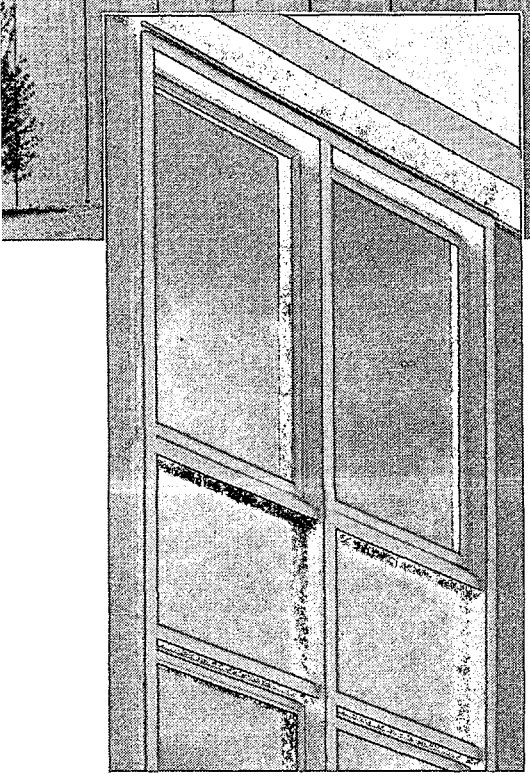
*T.M. (Reg. U.S. Pat. Off.) O-C.F. Corp. **Reg. T.M. DuPont

OWENS-CORNING RESEARCH pioneers new ideas in

OWENS-CORNING
FIBERGLAS
T.M. REG. U.S. PAT. OFF.

For more information, turn to Reader Service card, circle No. 379



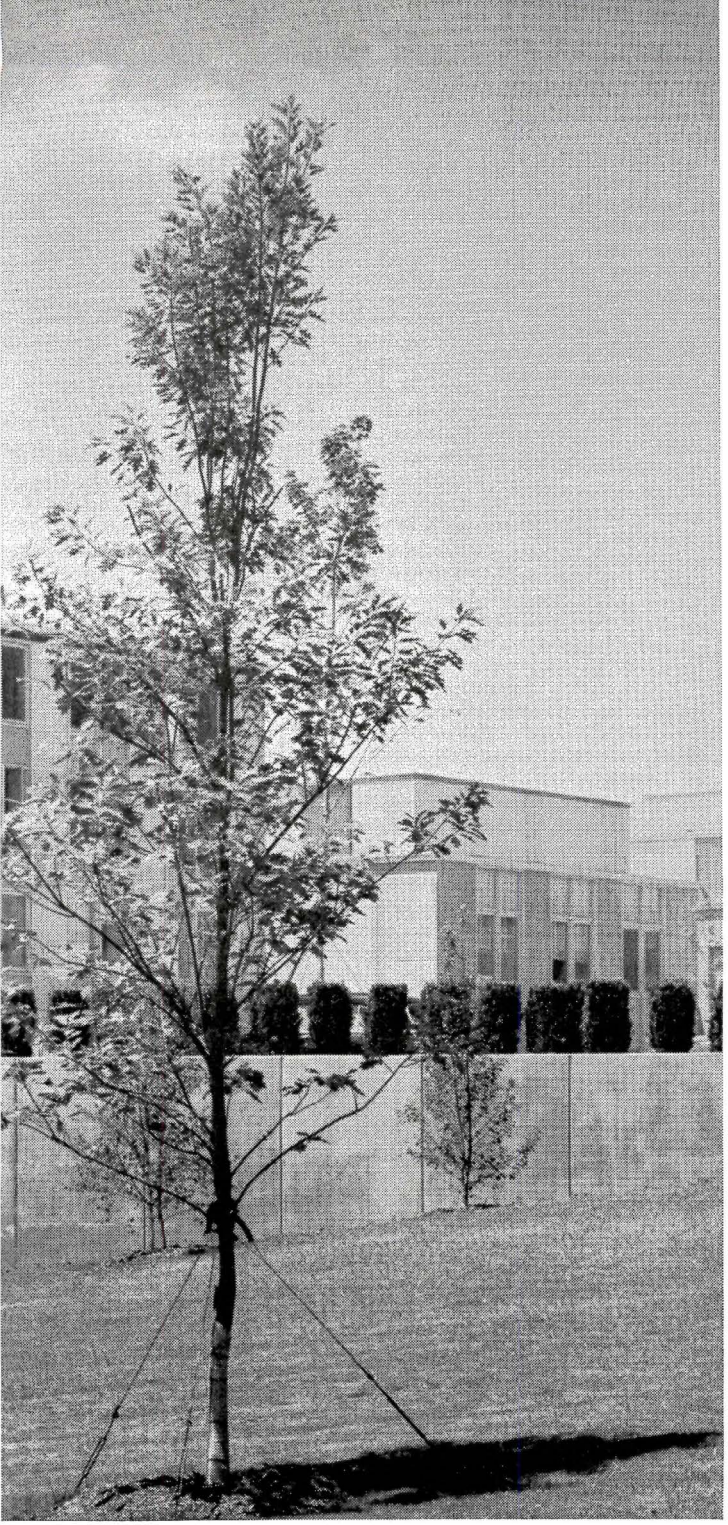


NEW WINDOWS IN TRUSCON CURTAIN WALLS INCREASE DESIGN POSSIBILITIES

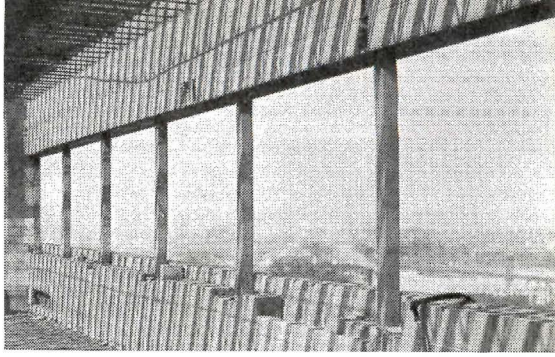
New Aluminum Vertically Pivoted Windows (illustrated) and Top-Hung Inswing Windows in Curtain Walls by Truscon, a division of Republic Steel Corporation, provide welcome new freedom in design and application.

Vision-Vent® and Grid-Vue are Truscon's Curtain Walls with the windows already in place. Their built-in, pre-engineered economies, combined with an ever wider choice of aluminum window types, make Truscon first choice for more and more outstanding new buildings.

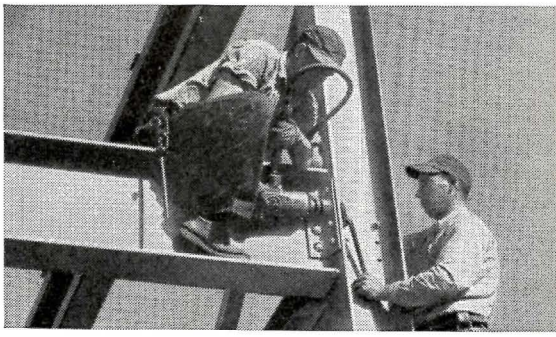
Truscon Curtain Walls are available in many window sizes, with a choice of high-gloss panel colors, porcelain enamel, stainless steel, or aluminum. For all the advantages of modern curtain wall construction (fast erection, reduced weight on foundation, more usable interior space, excellent insulation and ventilation), investigate Truscon Vision-Vent and Grid-Vue. See your Truscon representative or send coupon.



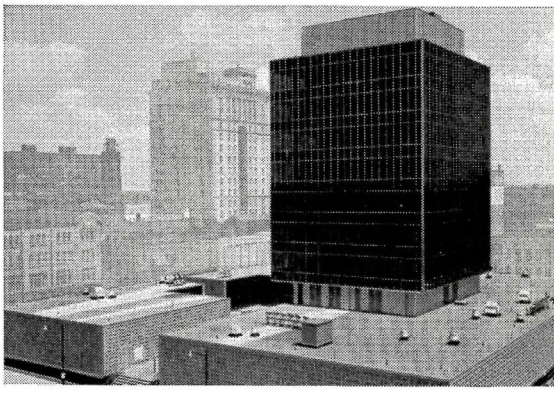
THE NEW KOPPERS RESEARCH CENTER, east of Monroeville, Pa., is doubly striking with its tall Aluminum Vertically Pivoted Windows in Truscon's Vision-Vent Curtain Wall. Panel shapes complement perfectly the clean, crisp lines of other wall materials and decor.



REPUBLIC'S NEW HIGH STRENGTH STRUCTURAL STEEL TUBING provides needed strength in columns, posts, lintels, spandrels, and other structurals—for fewer dollars. Lightweight strength cuts cost of footings and foundation; simplifies handling, fabrication, and erection. Easily joined, highly adaptable. Send coupon for Republic's new specifications booklet about ELECTRUNITE® Structural Steel Tubing with 36% more strength.



SAVE CONSTRUCTION TIME with Republic's New Heavy Head High Strength Bolt Assemblies. Two-man team replaces costly erection crews. When wrenched up tight, Republic High Strength Bolts provide a vise-like clamping force which transfers loads by friction to the structural members. Fatigue life is improved. Joints are stronger than connections where loads are carried in shear. Send coupon for illustrated folder.



THE NEW CANTON CITY HALL, CANTON, OHIO, takes full advantage of Republic's ENDURO® Stainless Steel: in mullions, column sheathing, curtain wall panels, rooftop equipment, doors, windows, elevator interiors, soffits, fasciae, and curtain wall back-up members. Need for painting was eliminated, cleaning reduced, maintenance minimized. For further information contact your nearest Republic representative or check Sweet's.

REPUBLIC STEEL

REPUBLIC STEEL CORPORATION
DEPT. PA-4194-A
1441 REPUBLIC BUILDING • CLEVELAND 1, OHIO

Please send more information on:
- ☐ Truscon Vision-Vent Curtain Walls
- ☐ Republic High Strength Structural Bolt Assemblies
- ☐ ENDURO Stainless Steel for architectural applications
- ☐ ELECTRUNITE Steel Architectural Tubing

Name_____ Title_____

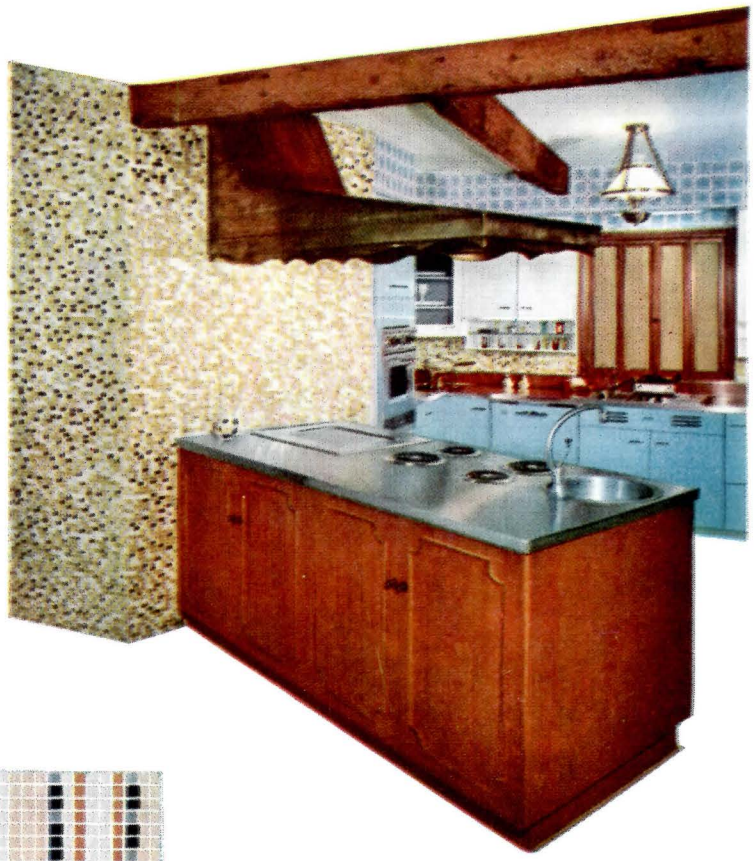
Company_____

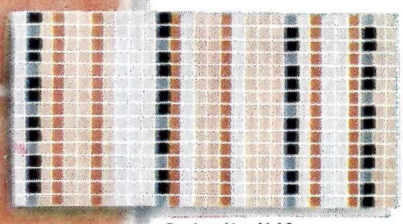
Address_____

City_____ Zone_____ State_____

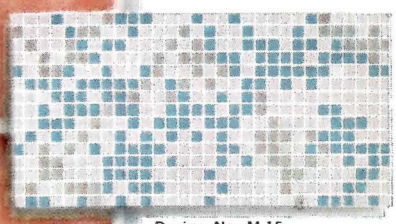
Have you discovered
the wonderful decorative possibilities of

HORIZON

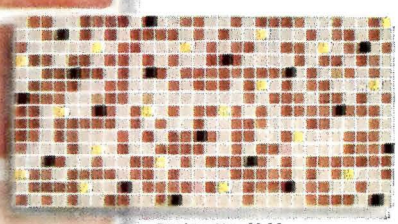




Design No. M-13



Design No. M-15



Design No. M-11

Design No. M-5
Actual size tiles

FREE COLOR PALETTE of actual tiles showing complete range of 58 different available colors will be sent without cost to architects and designers who write on their professional letterhead to Dept. PA-24.

Architects: Emerick, Albert & McGee

TILE*

The Crucifixion—
an 11'x15' mosaic mural
St. Andrew's Church
Columbus, Ohio
Muralist: Charles L. Madden
Resurgere Associates,
Phila., Pa.

...*the new* glazed ceramic mosaic produced in the U.S.A. by Suntile

Here's a sure-fire way of giving your interior wall designs an interesting fresh appearance . . . *Design them with* HORIZON TILE. This new, colorful wall tile has an informal, handcrafted appearance that's beautiful beyond description.

HORIZON TILE achieves its distinctive appearance through the intentional variation and irregularity of its shape, its surface texture and its 58 beautiful color shades that range from soft pastels to solid or textured tones.

Whether you use HORIZON TILE to create a beautiful mosaic mural, like the one shown here, or use one of the many interesting "Buckshot" or "Striped Pattern" designs created by Suntile's Design Department, you'll find that HORIZON TILE adds greatly to the beauty of your finished wall.

HORIZON TILE, made in America by Cambridge, is available through your local Suntile dealer. His name is listed in the Yellow Pages of your telephone directory.

OUR DESIGN DEPT.

under the direction of George Limke is ready to assist you with your tile design or layout problems. Send us your plans or elevations for suggested tile applications, or let us put your own tile designs in layout form.

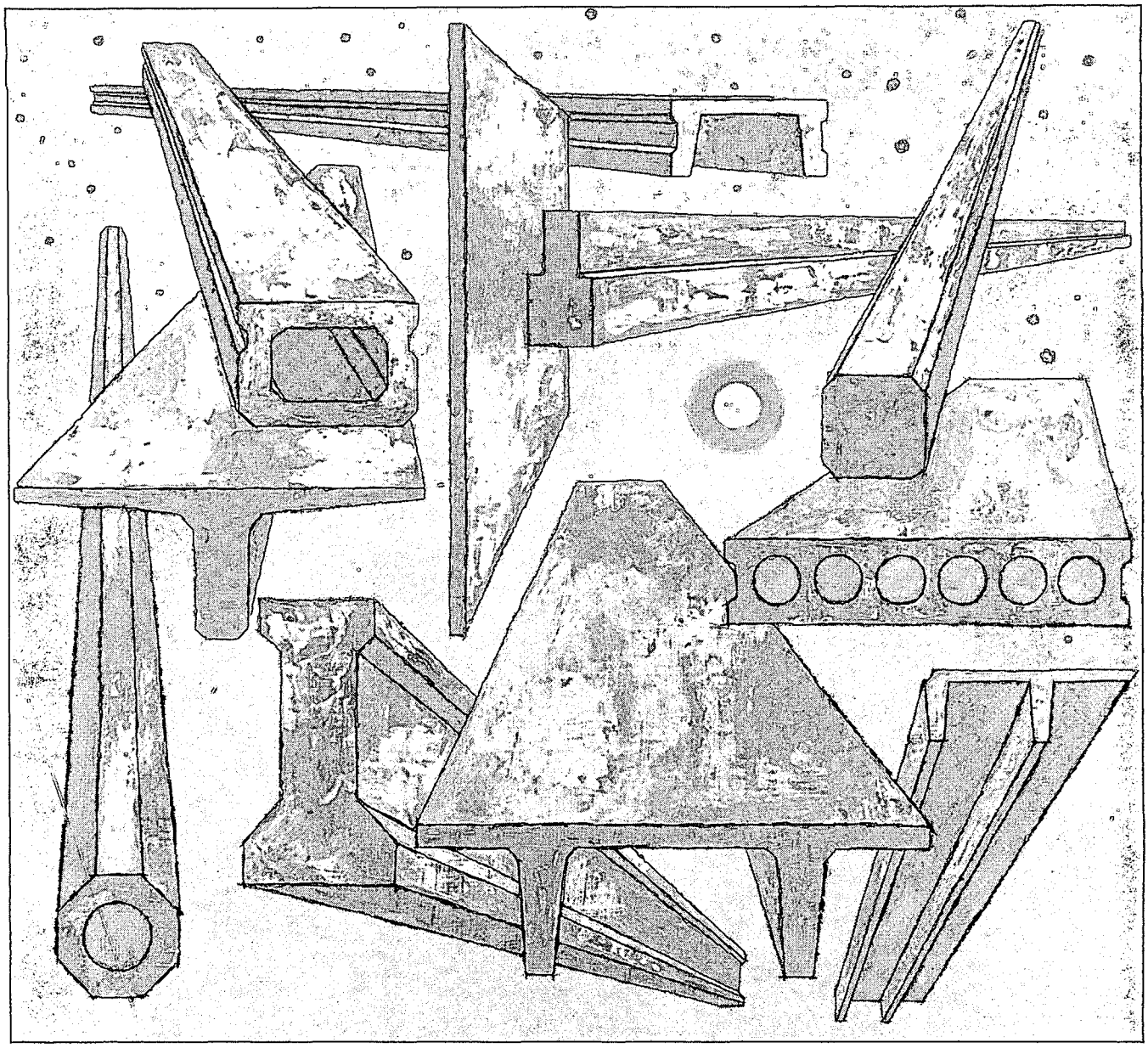
THE CAMBRIDGE TILE MFG. CO.

P.O. Box 15071, Cincinnati 15, Ohio

Design No. M-2
Actual size tiles

*U.S. Pat. No. 3,008,256

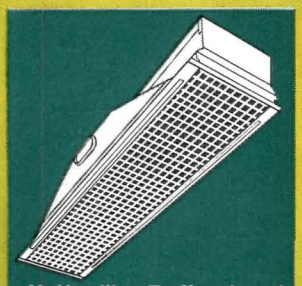
For more information, turn to Reader Service card, circle No. 331



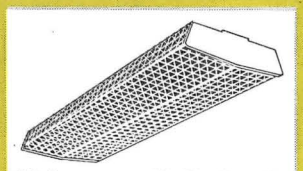
In one form or another, **PRESTRESSED CONCRETE** is used to obtain faster completion, lower finished cost, for virtually every type of permanent quality structure. Plant manufactured units, delivered to the site, need no fireproofing, finishing or painting, maintenance is eliminated, insurance rates reduced.

Send for "PRESTRESSED CONCRETE—applications and advantages." PRESTRESSED CONCRETE INSTITUTE, 205 W. Wacker Drive, Chicago 6, Illinois

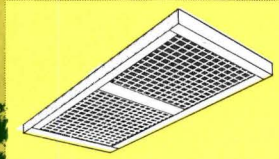
For more information, circle No. 351 ➤



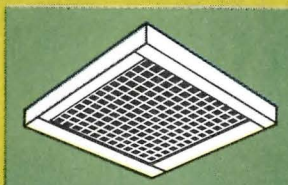
Air-Handling Troffers based on "Aspiration" principle; in 1′ x 4′ and 2′ x 4′ modules.



"Prismaround" **Air-Conditioned** units with improved Prismoid Gratelite**. Only wrap-around design for long life ballast operation.



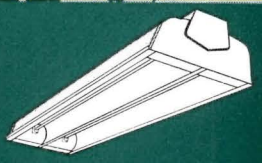
Double Square-Panel lamp unit for surface or drop mounting, lends itself to modular patterns and designs.



Single Square-Panel lamp for Surface or Suspended mounting. Features trouble-free installation.

Square-Panel recessed fixture featuring the world-famous Gratelite Louver Diffuser*.

Weathertite Cast Guarded units for surface-mounting. For rugged outdoor conditions. Protected from shock or weather.



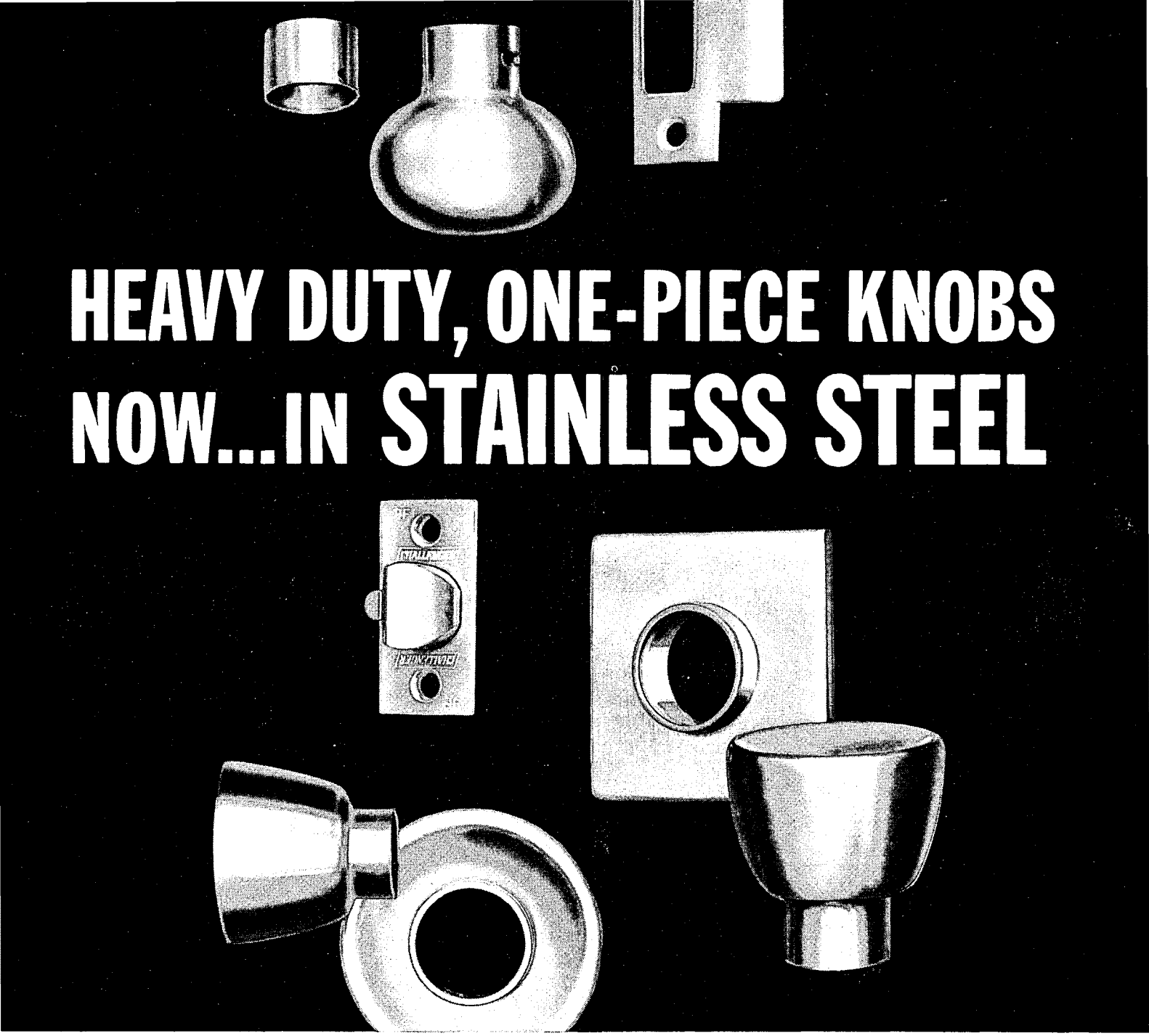
Heet-Liter† units match GUTH Industrials in design, yet provide heat and illumination for factory or warehouse.

The Edwin F. Guth Company presents seven dramatically new lighting fixtures, each one demonstrating an exciting advance in the science of lighting. We proudly designate this special collection of fixtures as our Anniversary Line in commemoration of 60 years of service to the industry. On this, our Sixtieth Anniversary, we cordially welcome you to the wonderful new world of lighting!

Guth LIGHTING since 1902

THE EDWIN F. GUTH COMPANY • 2615 WASHINGTON BLVD. • ST. LOUIS 77, MISSOURI

*® U. S. PAT. NO. 2,745,001 **® U. S. PAT. NO. 2,904,673 CAN. PAT. NO. 538,245 †PAT. PENDING



HEAVY DUTY, ONE-PIECE KNOBS NOW...IN STAINLESS STEEL

Another FIRST by

CHALLENGER®

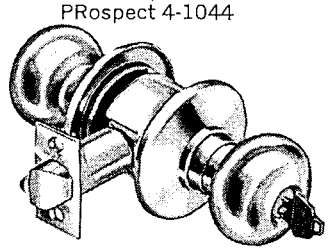
Here is new durability and beauty in a lockset. Challenger's heavy, one-piece seamless knobs are rigid and extra tough, formed from fine-grained stainless that resists corrosion; won't peel, chip or stain, to give you a longer wearing lock with *lasting* high lustre finish.
And, CHECK CHALLENGER'S COMPETITIVE PRICES...Now, almost *any* job can afford stainless steel.

Again, Challenger adds to its fast growing quality product line to give you better, more complete service so you can SPECIFY CHALLENGER THROUGHOUT for locking, latching and closing requirements on virtually any door in any type of structure. Three full series of locksets with more than 30 different functions Complete line *of compact* closers · Extensive range of accessories.

IMMEDIATE DELIVERY,
Heavy-Duty 900 series and
Semi-Heavy-Duty 800 series
Challenger locksets—with
new STAINLESS STEEL TRIM.

Ask Your Challenger
Representative or CALL COLLECT
for Complete Information.

CHALLENGER LOCK CO.
2349 W. La Palma Avenue
Anaheim, California
PRospect 4-1044



CHALLENGER IS ON THE MOVE • WATCH FOR OTHER NEW PRODUCT ANNOUNCEMENTS—SOON

CATCH THE SPIRIT OF THE JET AGE WITH SEATING BY ROYALMETAL!

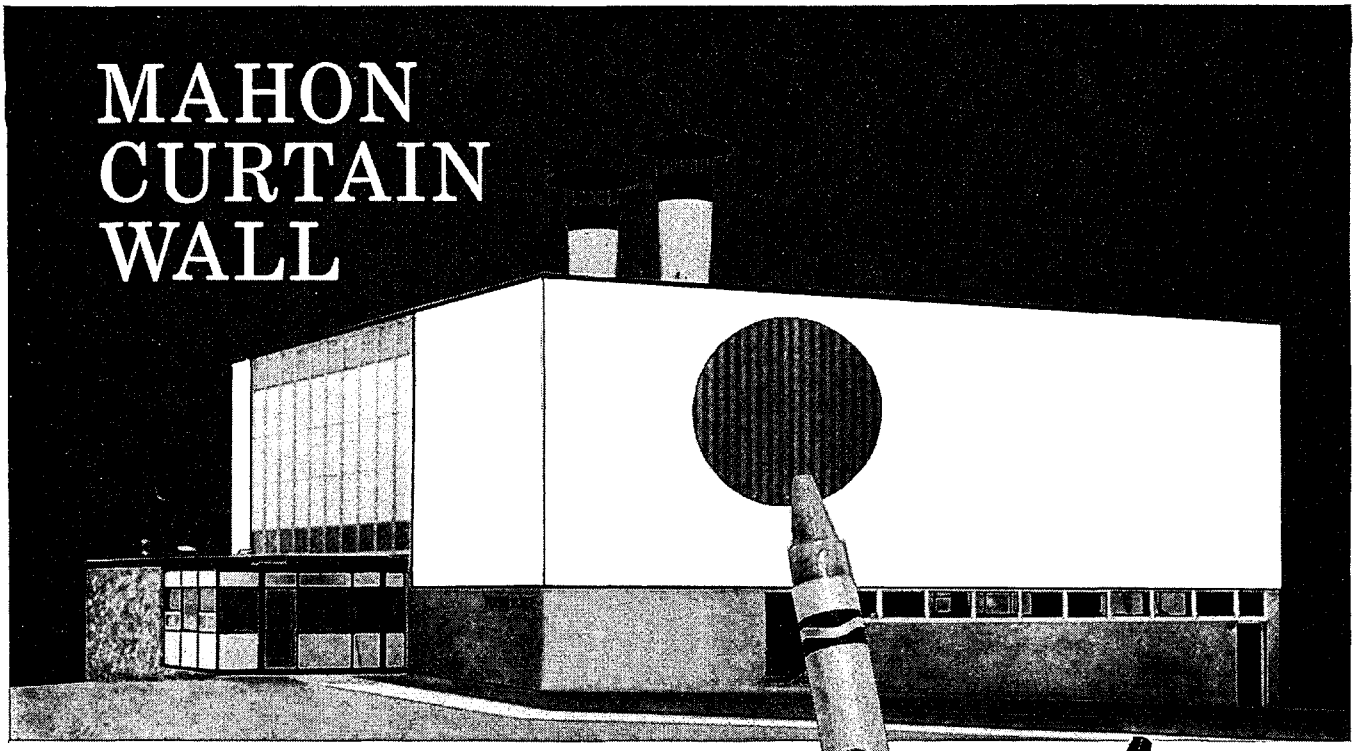
The unique and rapid acceptance of Royalmetal's Viscount Modular Seating System has been little short of spectacular. It has earned "first choice" honors in the newest, most modern public buildings from coast to coast. • For instance, it was the recent choice of Eastern Air Lines for their Idlewild Terminal building (see left). You'll spot the same trim, modern lines of Viscount in a fast growing number of hospitals, office and college buildings.

Such sudden and unique acceptance comes directly from the free rein Viscount Modular Seating System gives to the individual creativity of designers. Unlimited combinations are possible with four standard units. A simple turn of a bolt joins them into a single, rigid ensemble. • For full information, write: ROYALMETAL CORPORATION, Dept. 11-D, One Park Ave., N. Y. 16. In Canada— Galt, Ont. • SHOWROOMS: New York, Chicago, Los Angeles, San Francisco, Seattle, Atlanta; Galt, Ont.

ROYALMETAL

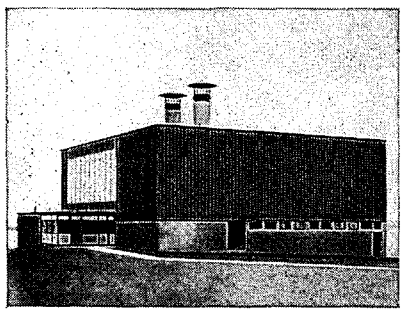
Royal®

MAHON CURTAIN WALL



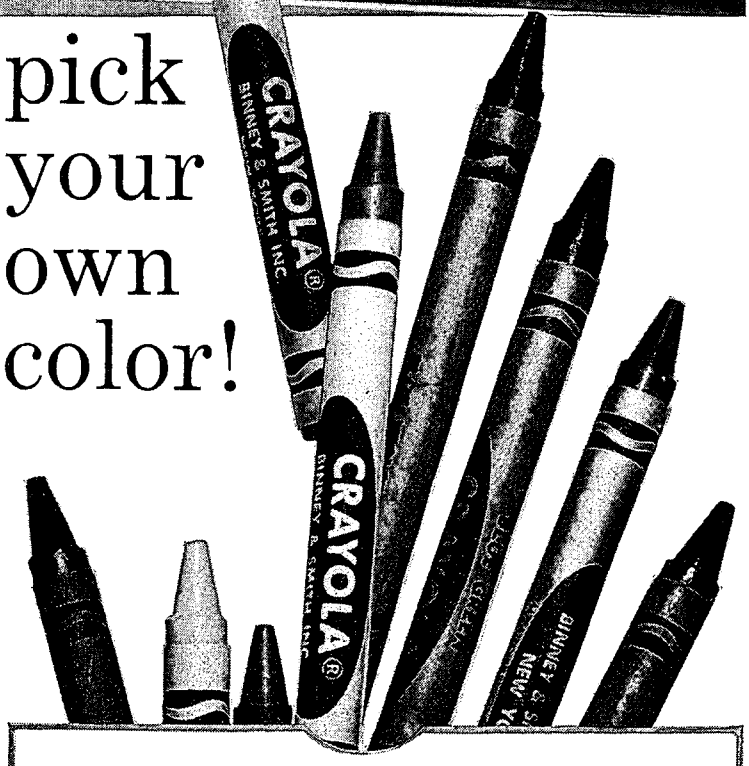
Pre-finished curtain wall panels by Mahon can be specified in a virtually limitless variety of colors. The curtain wall coating requires no further finishing treatment—it is complete as erected and ready to provide years of maintenance-free beauty and protection.

Mahon curtain wall is available in steel or aluminum, in several styles, in field-constructed or pre-fabricated form, in two or three hour Underwriters fire rating, and in a wide variety of standard as well as custom colors. Erection is a simple operation and can be handled by your local contractor or, if you prefer, can be arranged through Mahon. Call your local Mahon representative today for full details.



Power House, Central Michigan University, Mt. Pleasant, Michigan.
Architect: Roger Allen & Associates, Grand Rapids, Michigan.
General Contractor: Charles C. Englehardt Construction Co., Bay City, Michigan.
Blue Porcelainized Aluminum Curtain Wall by Mahon

pick your own color!



MAHON

1912-1962 50 MAHON

THE R. C. MAHON COMPANY

6565 E. EIGHT MILE ROAD, DETROIT 34, MICHIGAN

Manufacturing Plants—Detroit, Michigan and Torrance, California.

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OTHER BUILDING PRODUCTS ■ Metalclad Fire Walls ■ Rolling Steel or Aluminum Doors ■ Acoustical Metal Walls, Partitions and Roof Deck ■ Long-Span Roof Deck

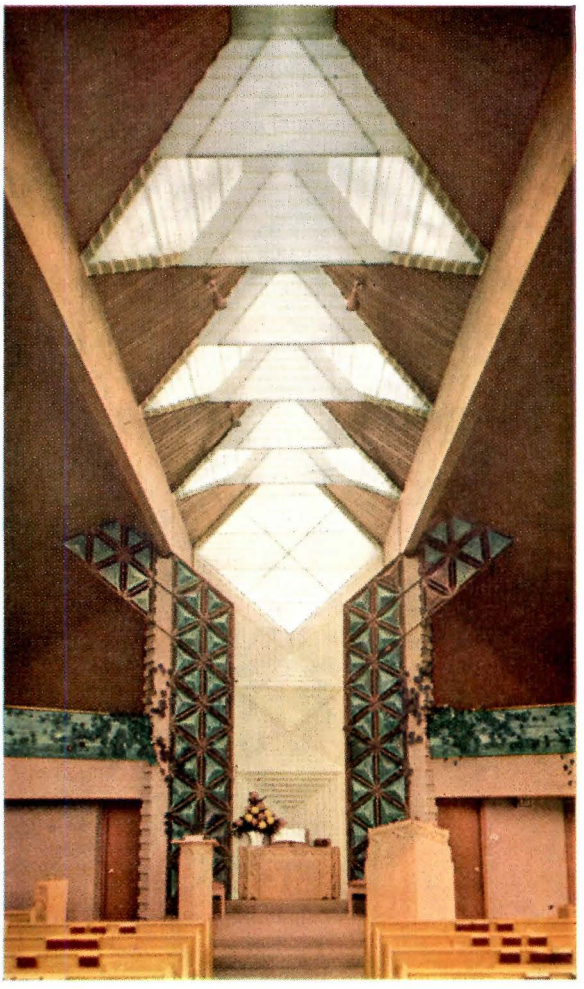
MAHON CONSTRUCTION SERVICES ■ Structural Steel—fabrication and erection ■ Steel Fabrication—Weldments ■ Geodesic Domes—fabrication and erection

As shown in ground-down tile at left, the random mottle of new Kentile Architectural Marbles goes all the way through. Tiles are truly random in appearance, with no two alike.
Specifications: 9″ x 9″ tiles; 3/32″ and 1/8″ gauges.

New! Kentile Architectural Marbles – the vinyl asbestos tile with through-and-through mottle . . . at no extra cost! Perfect for heavy traffic areas. 8 muted colors fit any and all commercial décors.

KENTILE® REGIONAL OFFICES: NEW YORK, PHILADELPHIA, ATLANTA, CHICAGO, CLEVELAND, KANSAS CITY, TORRANCE, CALIFORNIA

KENTILE VINYL FLOORS



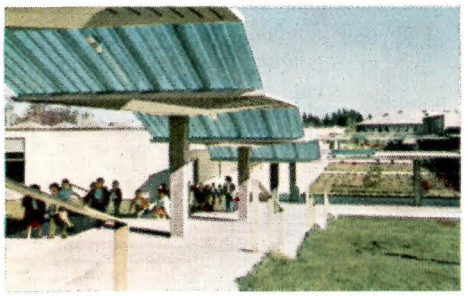
WORK WITH LIGHT and ALSYNITE

Sample the solutions that come to light when you mix imagination and translucent Alsynite. By day, even cavernous interiors open up to the spacious natural light—but diffused and glare-free. By night, Alsynite gives special emphasis to backlighting. In commercial, industrial or institutional work, it meets the practical objective of daylighting with contemporary appearance. Wherever you use it, watch it work with other materials to enrich color, form and texture. And shatterproof Alsynite is reinforced with millions of glass fibers . . . eliminates breakage, cuts maintenance. Premium quality you can use with assurance, backed by the world-wide resources of RCI, a great name in chemicals. For complete specifications, consult Sweets Catalog File 7d/AL. Or for free literature, write Alsynite, Department PA-462, San Diego 9, California.

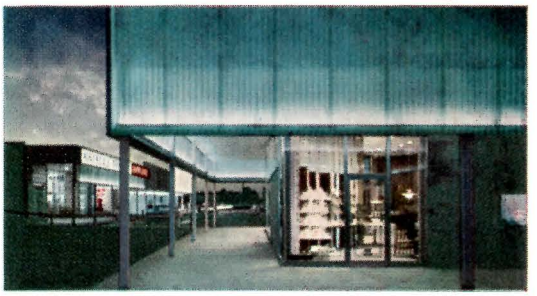
ALSYNITE®
TRANSLUCENT PANELS
A DIVISION OF REICHHOLD CHEMICALS, INC.

At the Seattle World's Fair

In Schools and Institutions



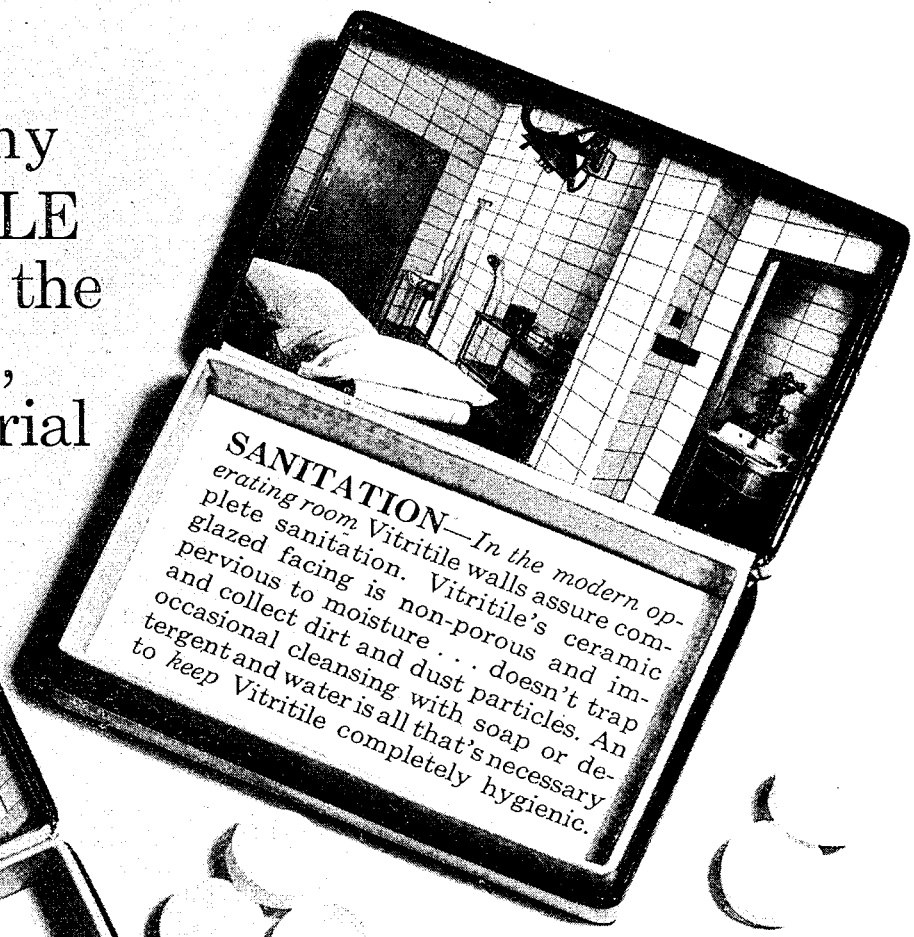
In Commercial Applications



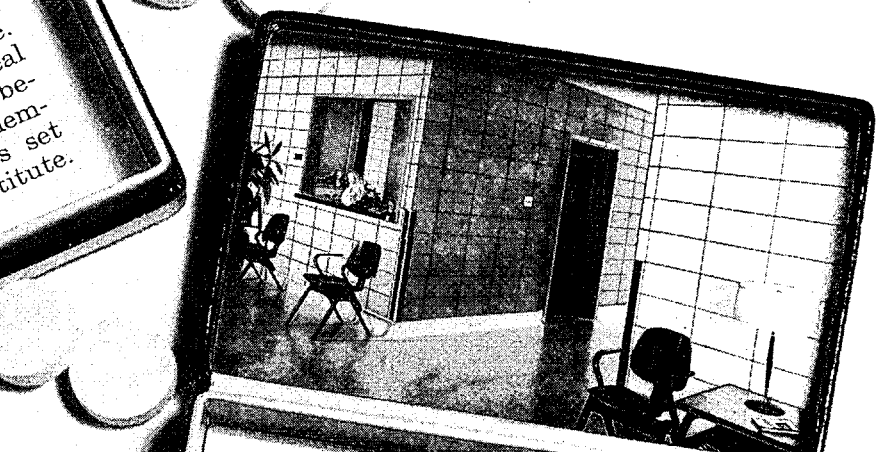
KANSAS CITY ■ LOS ANGELES ■ PATERSON ■ PHILADELPHIA ■ SAN DIEGO ■ SAN FRANCISCO ■ SEATTLE ■ ST. PAUL ■ TAMPA

Three reasons why NATCO VITRITILE was prescribed for the Shreveport, La., Schumpert Memorial Hospital

RESISTANCE—*Walls of the hospital pharmacy* are of moisture, acid and alkali resistant Vitritile. Ceramic glazed Vitritile is ideal for this type of installation because it meets all the rigid chemical resistance requirements set up by the Facing Tile Institute.

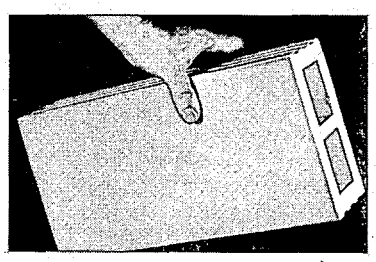


SANITATION—*In the modern operating room* Vitritile walls assure complete sanitation. Vitritile's ceramic glazed facing is non-porous and impervious to moisture . . . doesn't trap and collect dirt and dust particles. An occasional cleansing with soap or detergent and water is all that's necessary to keep Vitritile completely hygienic.



ATTRACTIVENESS—*The emergency lobby* is just one area where Vitritile adds restful beauty to the hospital's interior. Vitritile—available in a complete variety of attractive colors—never loses its original "new look" because its colors and finishes are permanently "fired" on each unit under intense heat.

Are you planning a new hospital or an addition to your present structure? If so, we will be glad to give you complete information on our full line of genuine structural clay tile products.



Vitritile comes in three nominal face sizes:
8″ x 16″
5⅓″ x 12″
5⅓″ x 8″
in 2″, 4″, 6″ and 8″ thicknesses.

NATCO CORPORATION

NATCO QUALITY CLAY PRODUCTS SINCE 1889

General Offices: 327 Fifth Avenue, Pittsburgh 22, Pa. Other Branch Sales Offices: Boston, Chicago, Detroit, Houston, New York, Philadelphia, Pittsburgh, Syracuse, Birmingham, Ala., Brazil, Ind. In Canada: Natco Clay Products Ltd., 55 Eglinton Ave. E., Toronto.

The Ohio Oil Company's hangar at Findlay, Ohio, Airport.
Engineers: Wilbur Watson Associates, Cleveland.
General Contractors: The Sam W. Emerson Co., Cleveland.
Shadowall Panels in Colorgard manufactured and erected by Elwin G. Smith & Co., Inc.

Smith color panels enhance yet another kind of building:

jet age hangars

Doors, walls and facia, all erected of Egsco Shadowall® insulated metal wall panels with Colorgard®, match the modernness of this unique hangar design.

The long, clean lines and planes of this attractive wall are unbroken by panel laps because Smith makes the panels to equal the height of each surface. And the Smith erection technique eliminates visible fasteners.

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Smith panels are protected during manufacture, shipping, storage and erection by Peelcote®—a strippable plastic skin, removed when erection is complete.

The architect or builder who specifies Egsco insulated wall panels, specifies away his headache of details: engineering, supply, shipping and erection to a single responsibility—and at an economy unmatched by comparable wall construction.

For complete information, see Sweet's Files 3a/Sm, or write:

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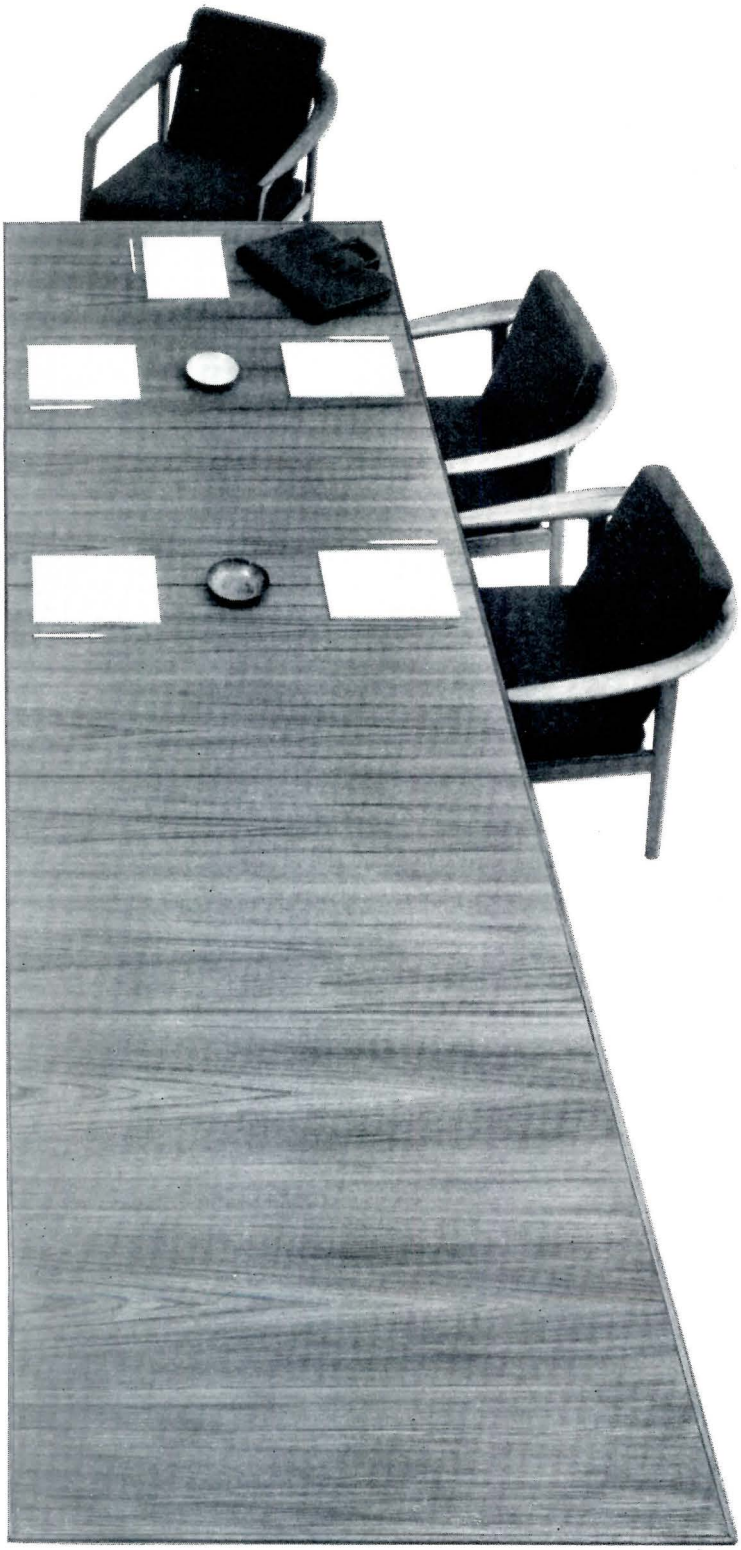

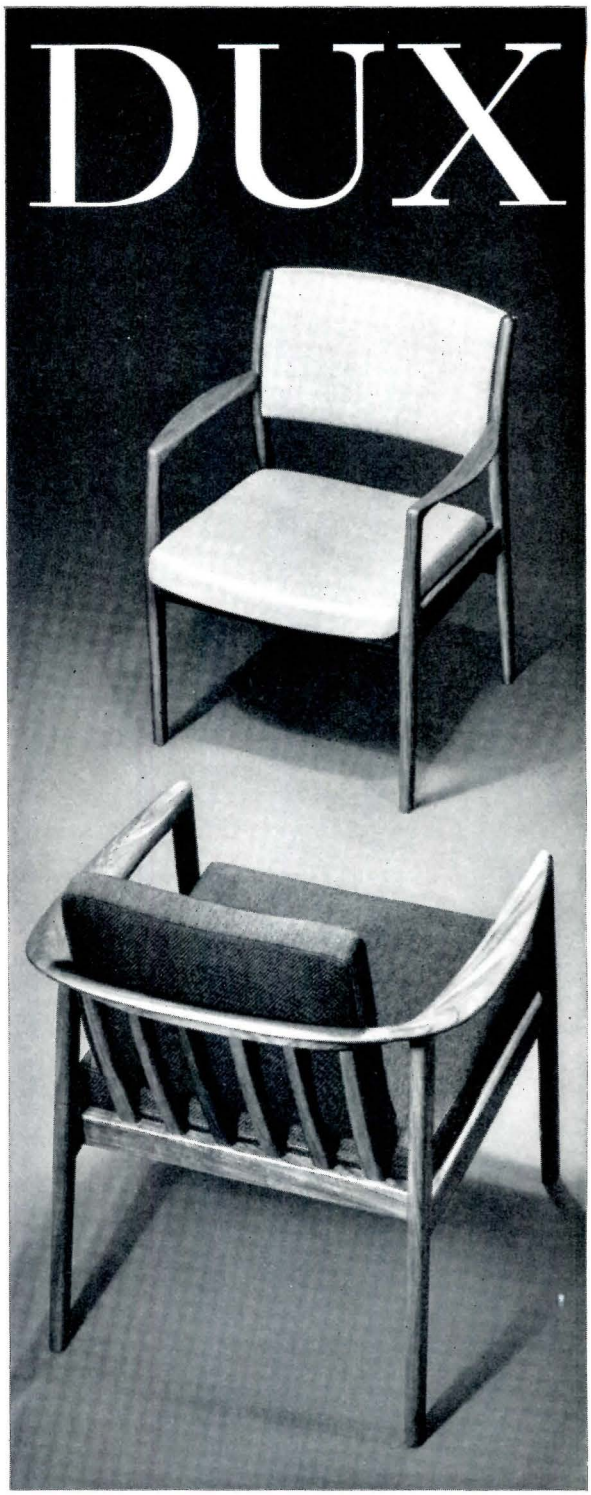

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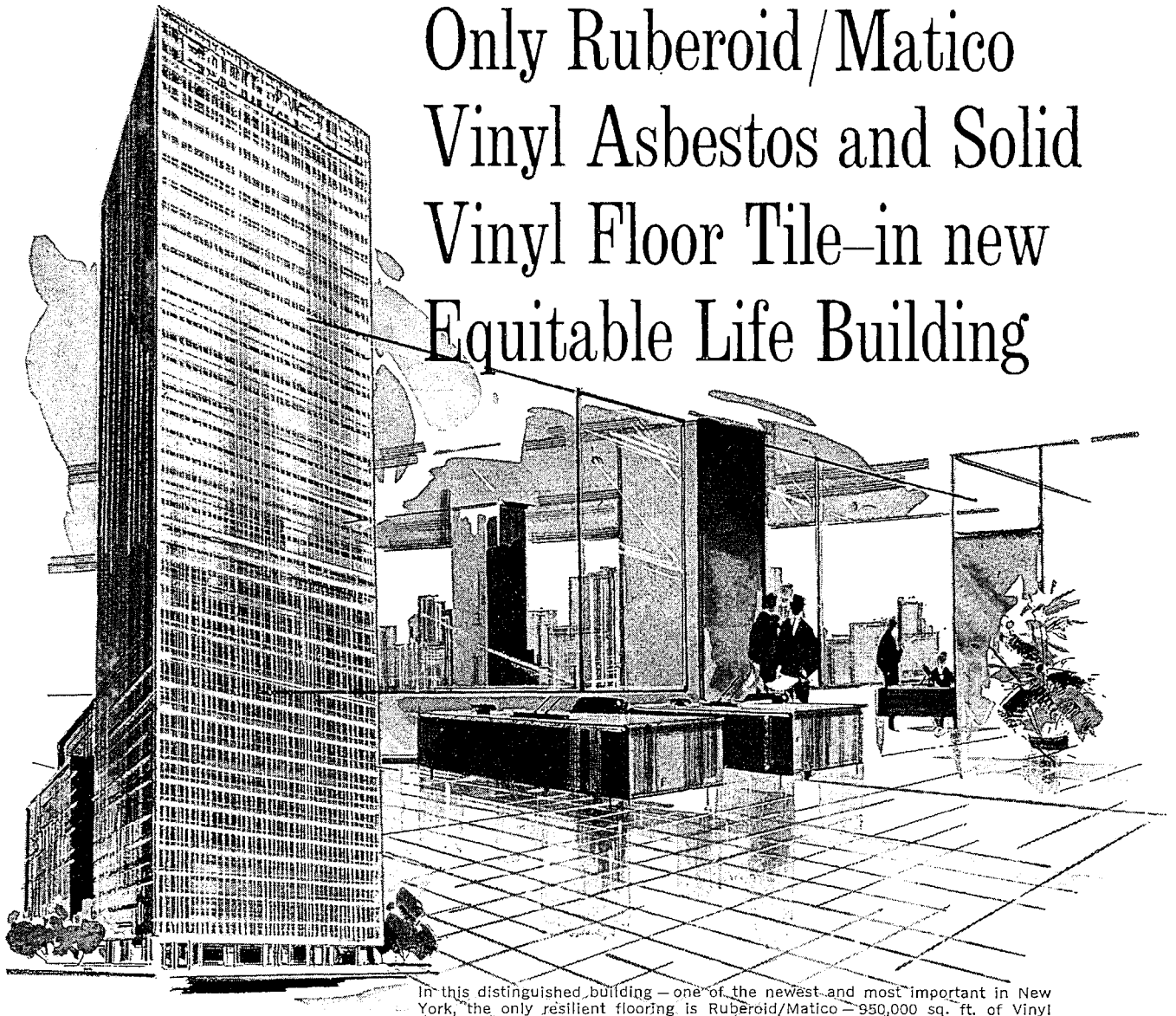
For more information, turn to Reader Service card, circle No. 342

Only Ruberoid/Matico Vinyl Asbestos and Solid Vinyl Floor Tile–in new Equitable Life Building



In this distinguished building – one of the newest and most important in New York, the only resilient flooring is Ruberoid/Matico – 950,000 sq. ft. of Vinyl Asbestos and 60,000 sq. ft. of Solid Vinyl. Opened in October 1961–The Equitable Life Building is located at 51st & 6th Ave. Architects: Skidmore, Owings & Merrill. Builders: Turner Construction Co. Flooring Contractor: Circle Floor Co., Inc.

Now–57 colors and styles in Vinyl Asbestos... A complete new color line meeting every specification

The new Ruberoid/Matico line is the result of Ruberoid's continuing research to present the finest styling and performance in Vinyl Asbestos. All popular styles are included: Marbleized, Confetti, Tweed, *Maticork*, Wood hues and Lode o' gold patterns. Ruberoid/Matico's improved Vinyl Asbestos gives you smooth, tight surface, ease of cleaning, long wear, increased flexibility. It resists grease and acids—has greater resistance to indentation, too! True dimension, sharp, clean corners, assure flawless installation. Ask your Ruberoid/Matico distributor or representative for further information.

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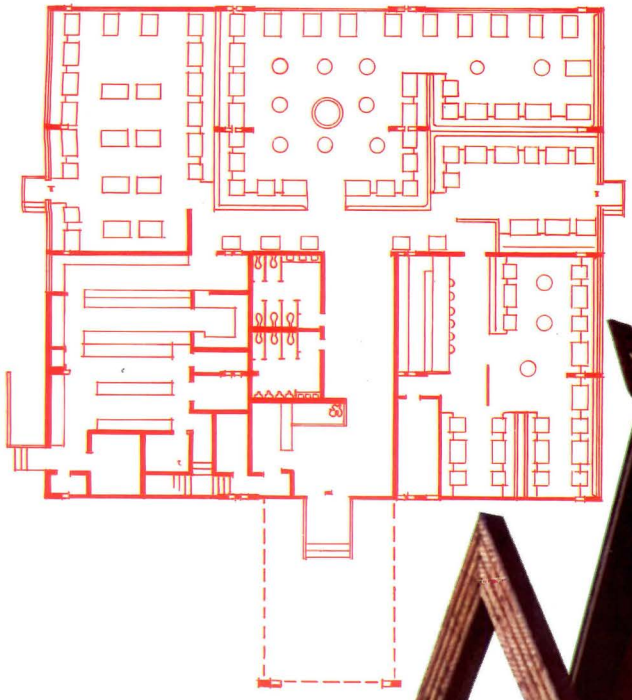

Architect:
Raymond Peck, A. I. A.

MODERN DESIGN

Uses WEST COAST LUMBER

WEST COAST DOUGLAS FIR
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CENTURY 21 EXPOSITION

Seattle World's Fair
April 21 to October 21

The character and colorful atmosphere of the South Pacific is designed gracefully into this specialty restaurant, located on the brink of Puget Sound, only a short walk from busy downtown Seattle. The Polynesian long house influence is reflected in a modern adaptation of the "A" frame type of construction. West Coast Lumber simplified the architect's requirements and at the same time maintained the dignity of the design objective.

The 80′ x 90′ structure is an example of utilizing heavy West Coast Douglas Fir timbers to meet building code requirements in a No. 1 fire zone. The solid 10″ fir timbers taper from 9″ at the base to 21″ at the top and each is handcarved with an authentic Polynesian design. Interior one-hour fire resistant walls are ⅝″ sheet rock applied to 2″ x 4″ fir framing. The floor joists are 2″ x 12″ West Coast Douglas Fir and the interior wall partitions are of 2″ x 4″ of the same dependable species.

Arch beams of Douglas Fir, spaced 20′ on centers, form the three roofs of the structure. The peak of each is decorated with a hand carving in Western Red Cedar to duplicate the prow of a native war canoe. Forming the roof and interior ceiling is 4″ x 6″ West Coast Hemlock tongue and groove roof decking. The restaurant is on piling extending 20′ above the water. Its exterior is 1″ x 8″ Western Red Cedar tongue and groove siding applied at a 57 degree angle to the arch of the frame.

Here is another example of adapting imagination to the practical use of standard sizes of West Coast Lumber. This same dependable lumber is available at your local lumber dealer.

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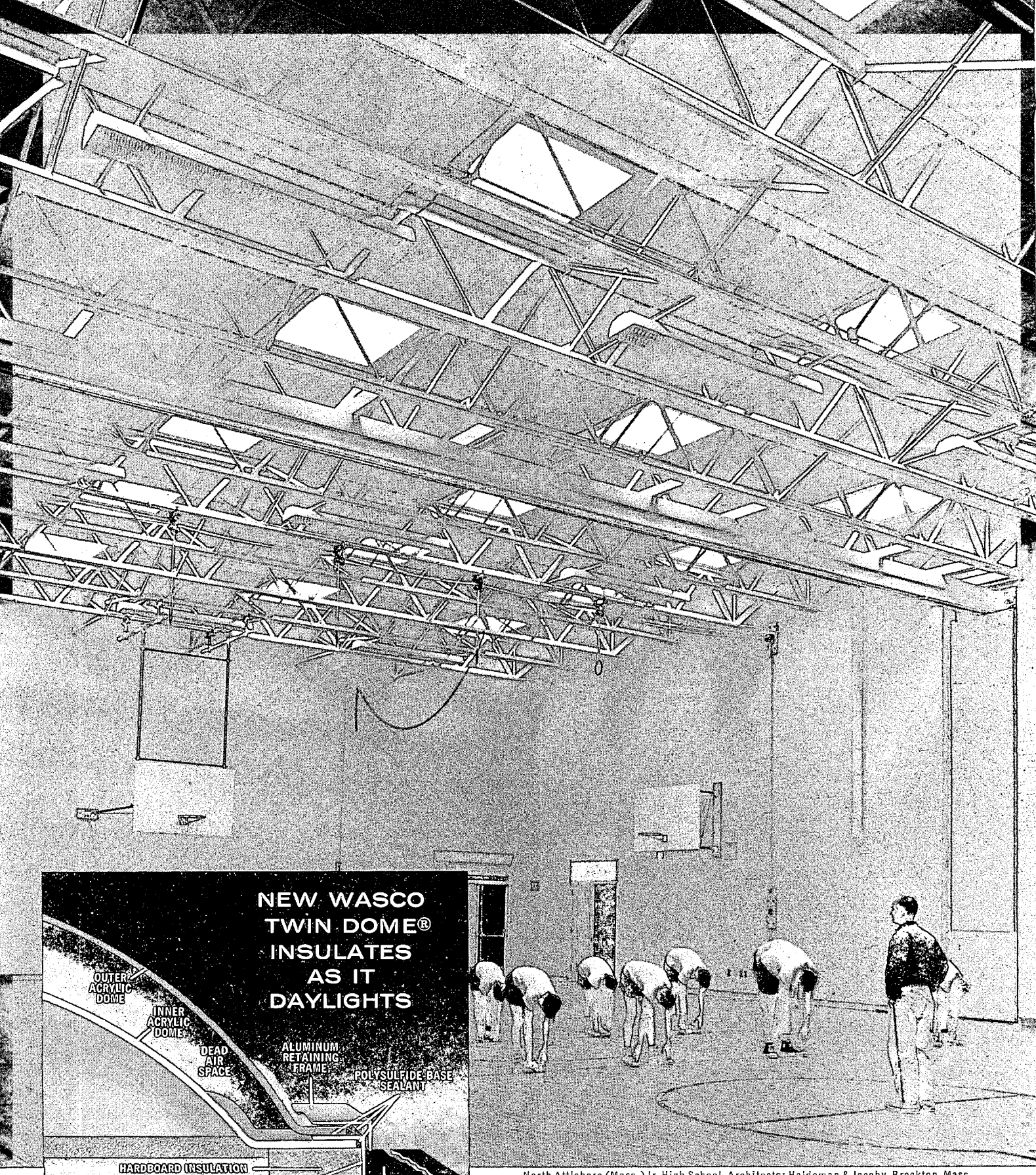

North Attleboro (Mass.) Jr. High School. Architects: Haldeman & Jacoby, Brockton, Mass.

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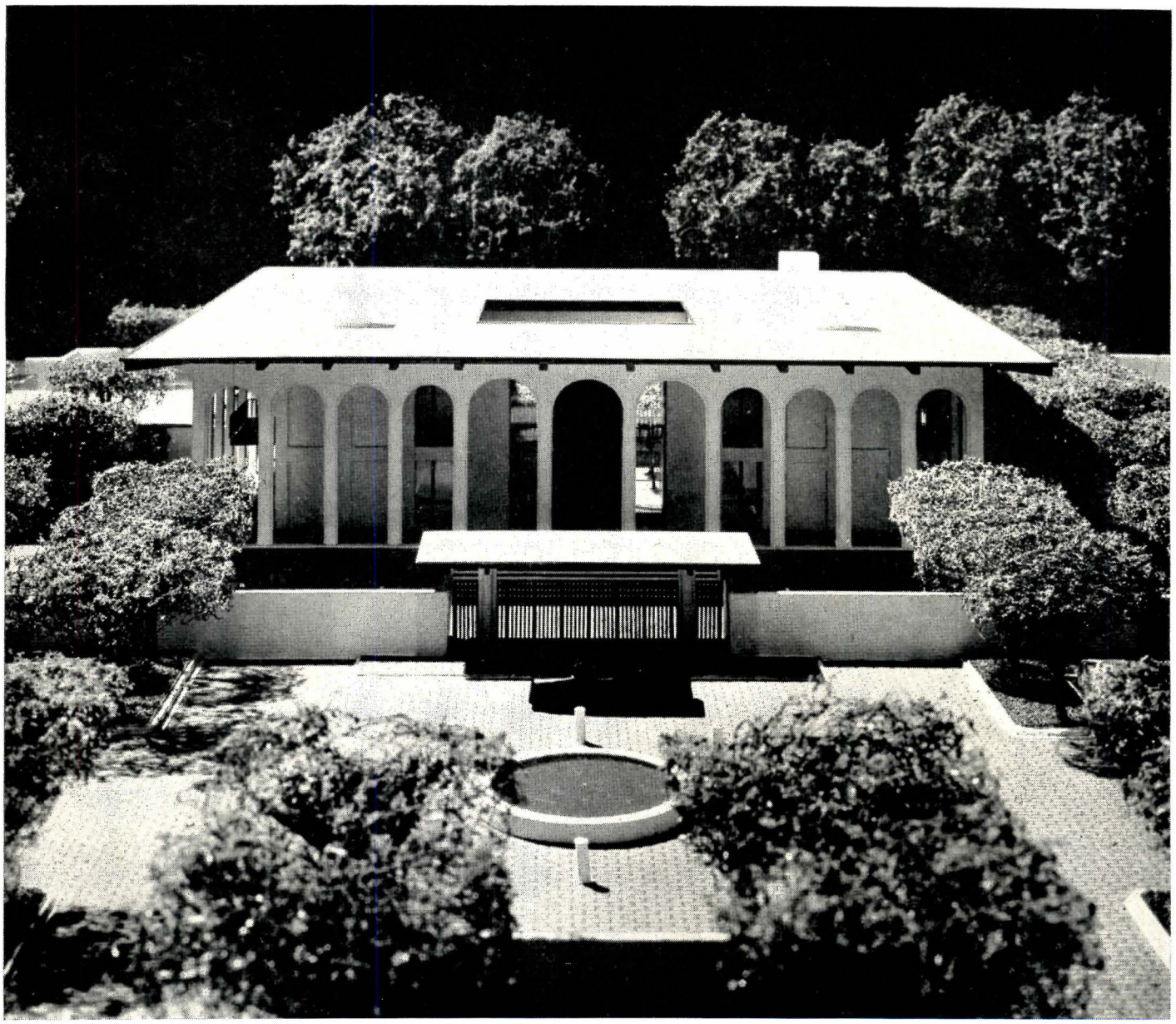
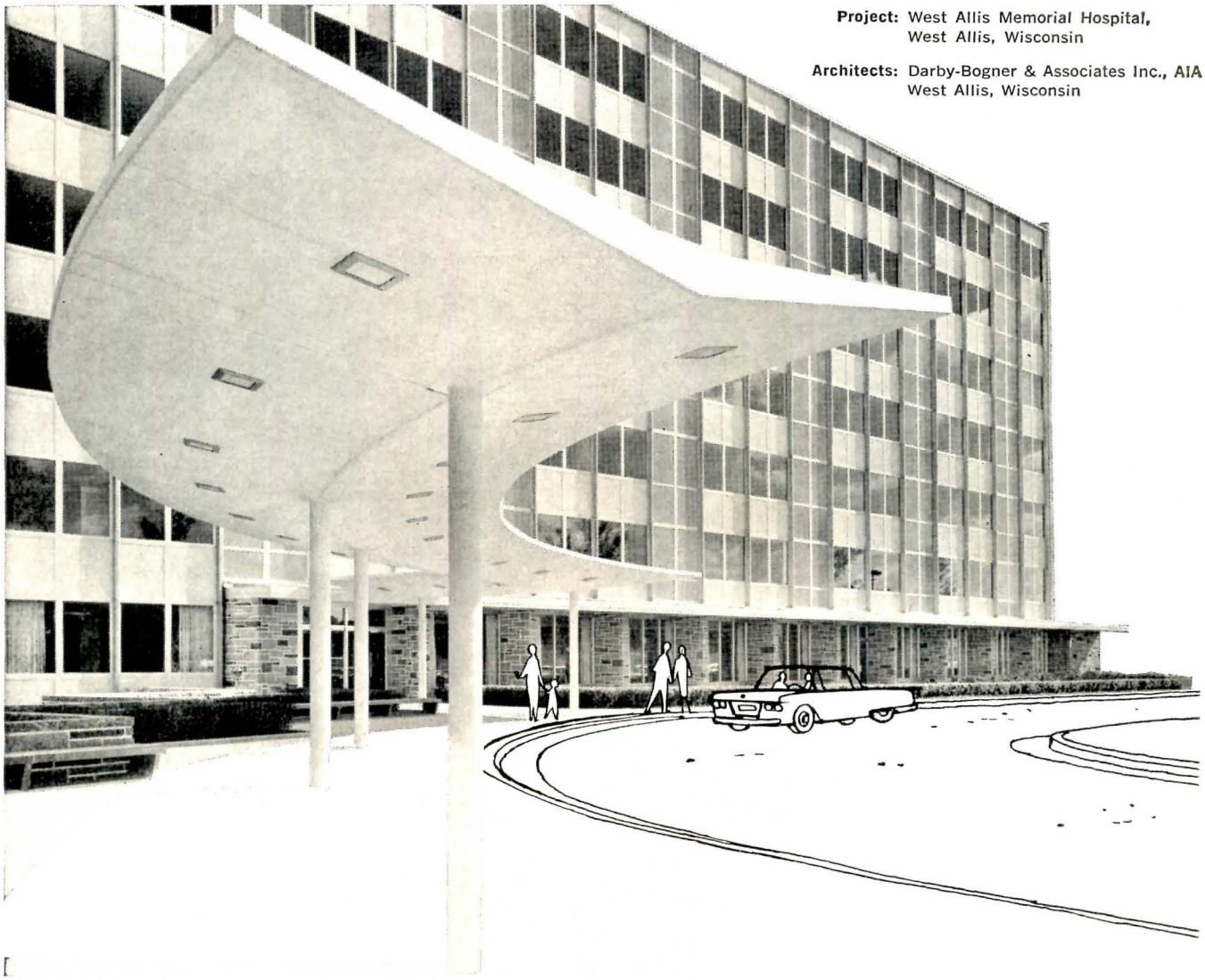
PROGRESSIVE ARCHITECTURE APRIL 1962

NEWS REPORT

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

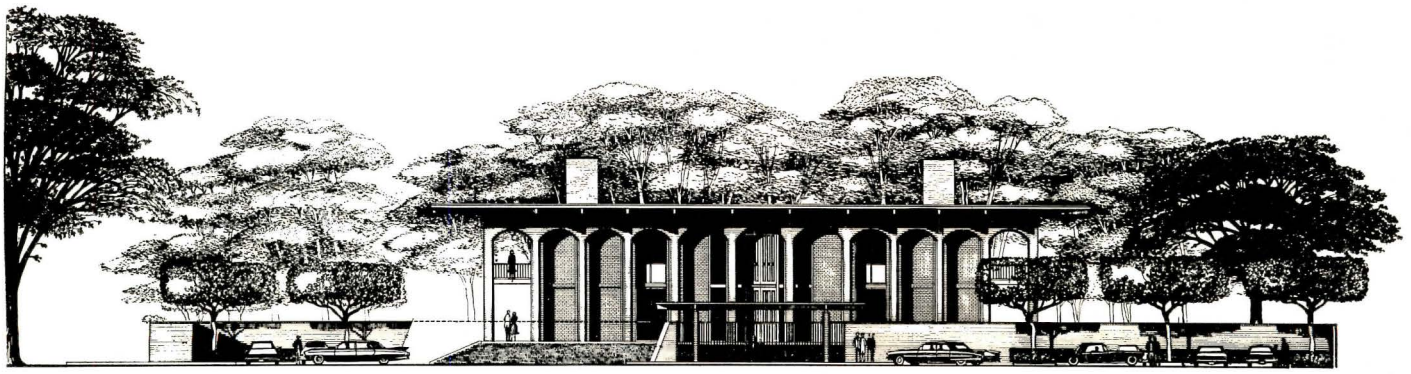


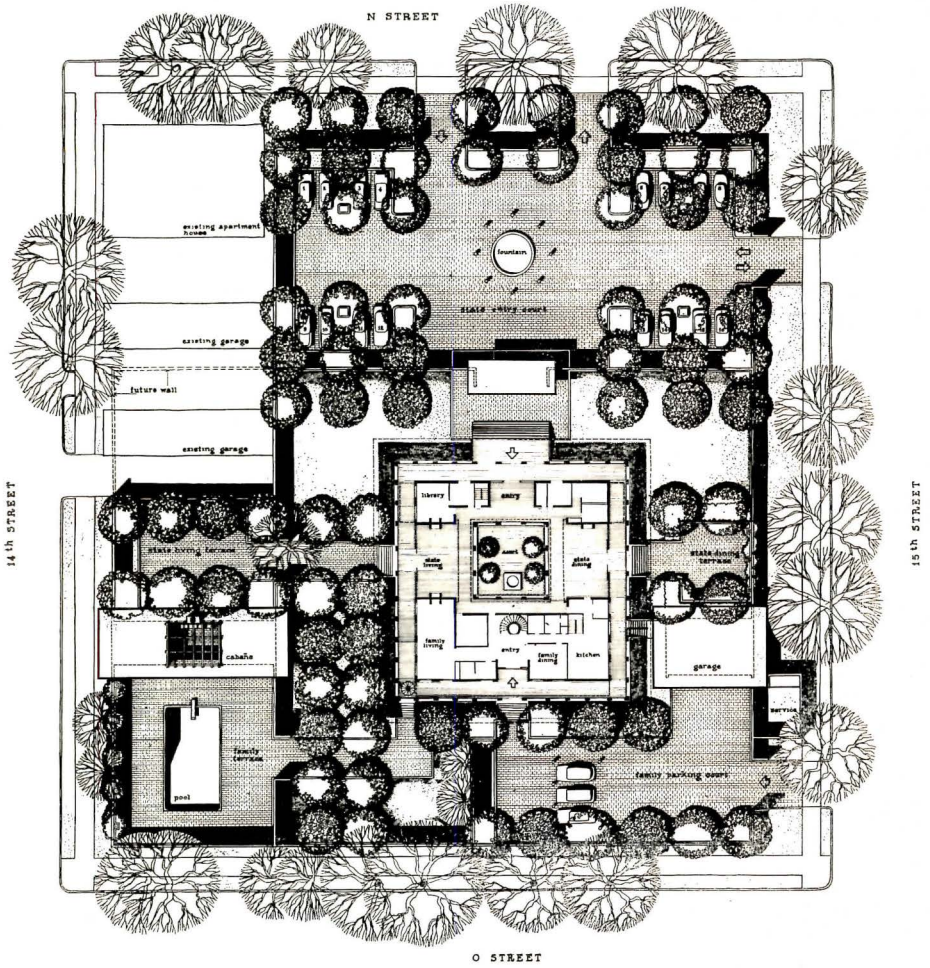
Winning design in competition for California Governor's Mansion is a serene arched structure around an interior court.



Project: West Allis Memorial Hospital, West Allis, Wisconsin

Architects: Darby-Bogner & Associates Inc., AIA West Allis, Wisconsin

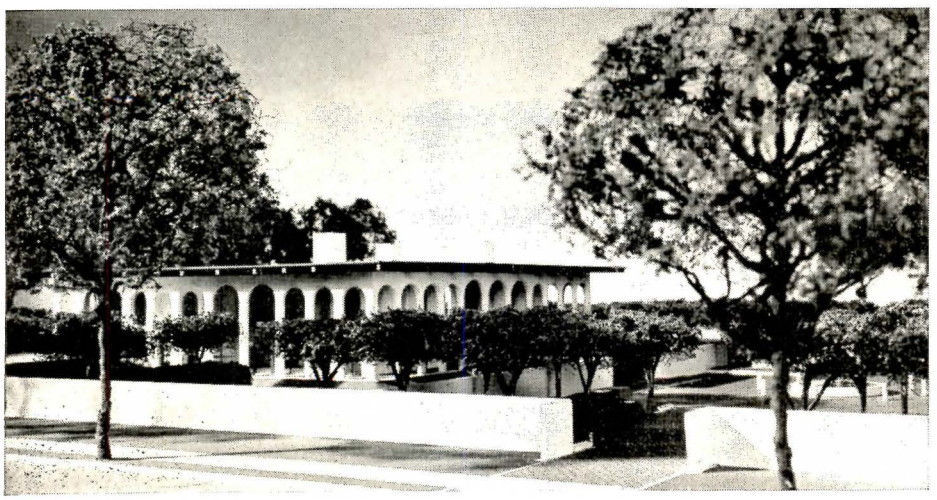


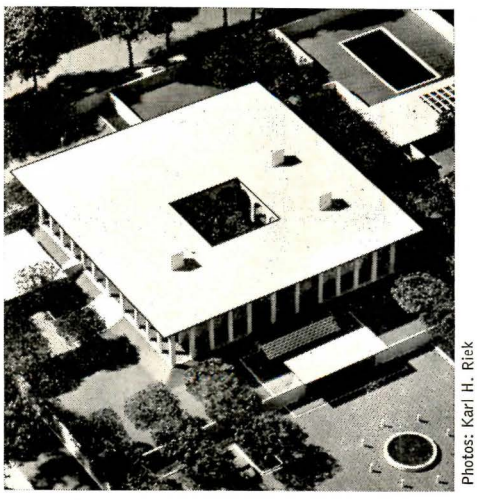


CALIFORNIA GOVERNOR'S MANSION

SACRAMENTO, CALIF. Winners of the statewide competition for the design of the Governor's Mansion are Worley K. Wong, Allen Don Fong, Terry Tong, and Harry W. Namitz of the firm of Campbell & Wong.

The victorious San Francisco architects have designed a gracious pavilion of whitewashed brick that takes careful note of the dual purpose of such a structure: living quarters for the chief executive and his family *and* facilities for state entertaining. The plan is a two-storied square around a generous court. The family areas are separated from the spaces given over to state functions; separate entrances are provided on the ground floor, and sleeping areas on the second floor are detached from the guest rooms by the court, being connected only by bridges. Scale of the two different areas also provides a contrast. The state areas are given an appropriately large scale, the state living and dining rooms rising the full height of the building. Family living areas, on the other hand, are given a domestic scale. Orientation of the mansion takes into account future landscape developments for the surrounding area.

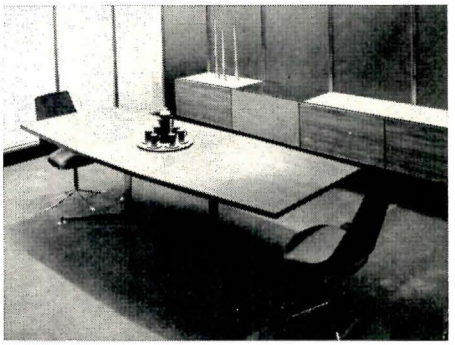




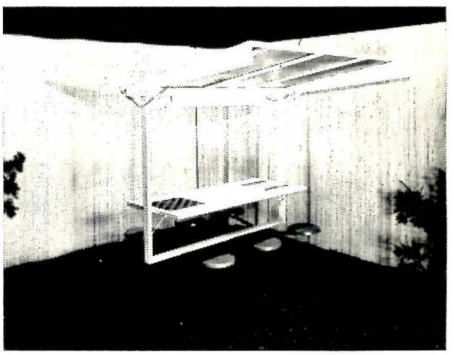
Photos: Karl H. Riek

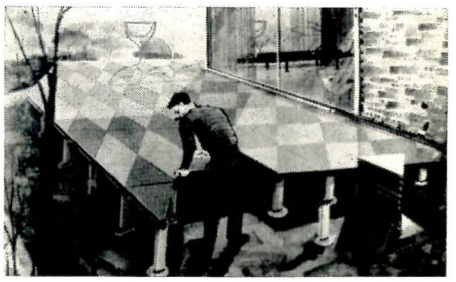
U.S. Steel Shows "Study in Steel—1962"

United States Steel has introduced the second in its "Study in Steel" programs (for the first, see p. 54 JANUARY 1961 P/A). Designed as a promotional campaign "to capture for steel the top spot as a preferred design material," the program features designs and design ideas utilizing steel to best advantage. The current display emphasizes new approaches to furniture and equipment for dining room, kitchen, and outdoor living areas. U.S. Steel stated that the designs—created by Peter Muller-Munk Associates—did not mean that the company is in the equipment design business, but that it is merely, as a service, trying to point directions in which good design might be going, and to stimulate better design.



The dining area in "Study in Steel" utilizes, for its table, the leg system designed for the office equipment in last year's program: two V-legs connected by steel stringers. Top of the table is wood-laminated, foam-filled panels; central panel, when not in use, becomes a decorative element beneath the table. Chairs have tubular steel bases, one-piece steel backs compression-joined to the seats, and wire fabric seats covered with plastic cloth. The storage unit houses dining accessories and equipment.





An outdoor picnic center of steel opens, as shown, to seat six and provide its own shade. The table section has a surface with built-in game boards. To close against weather, the stools fold up, the table top swings to a vertical position, and the top folds down as a case. A plastic seal at the top provides thorough protection.

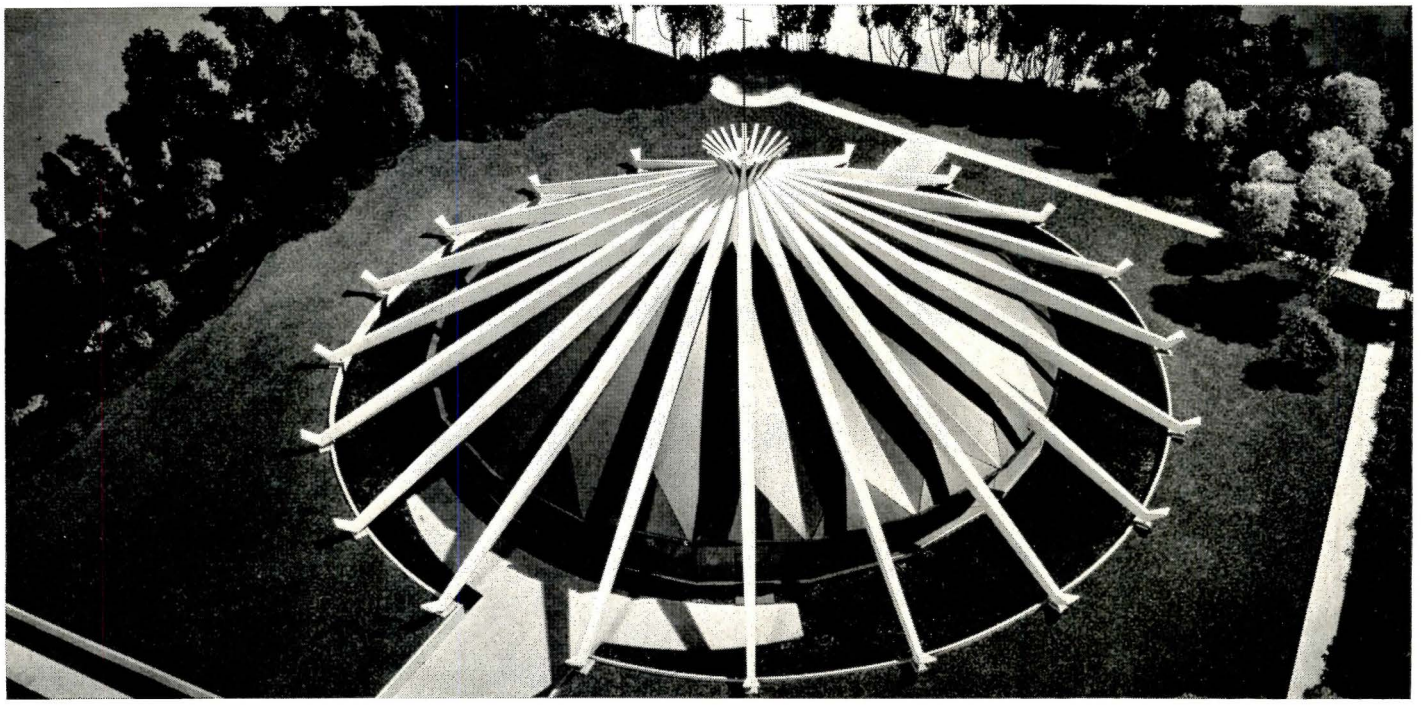
A system for quickly built, attractive exterior decks utilizes interlocking triangular steel pans mounted at their jointures on adjustable supporting steel legs. Sockets at the pan joints are used to hold especially designed single-legged steel chairs, tables, and outdoor cooking equipment.

Photo: Louis Checkman

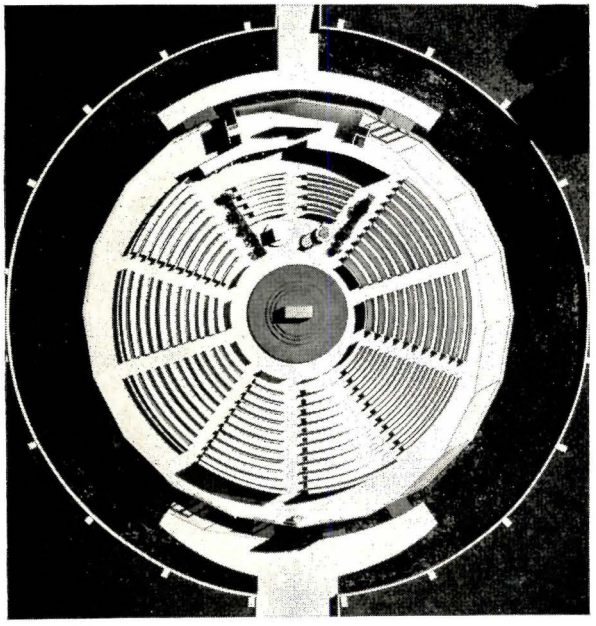
BUNNY BUSINESS IN NEW YORK

NEW YORK, N.Y. The siren tones of "My name is Margie, sir, and I'm your Bunny for the evening," will soon perfume the night air in the vineyards of Manhattan.

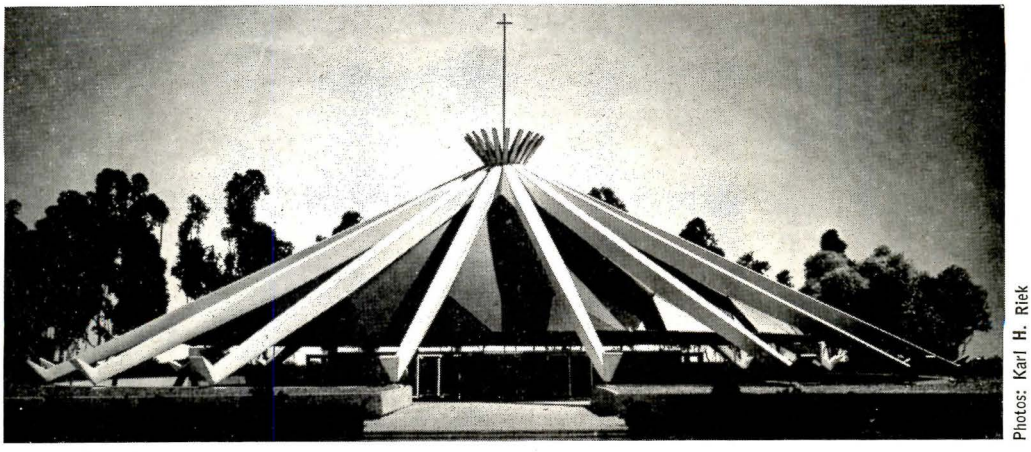
Following the example of, among others, New Orleans and Chicago, New York will have its own Playboy Club. Now under construction just off Fifth Avenue, and convenient to such activities as jumping in the Plaza Fountain after an evening of high jinx, the club will occupy a seven-story remodeled building. Five floors and a mezzanine will be set aside for entertainment of Playboys and their guests, the sixth will contain dressing rooms for entertainers and Bunnies; offices will be on the seventh. Designed by the young New York firm of Oppenheimer, Brady & Lehrecke, the Playboy Club will have an entrance which the architects hope "is a fitting gateway to a palace of lusty but innocent fun."



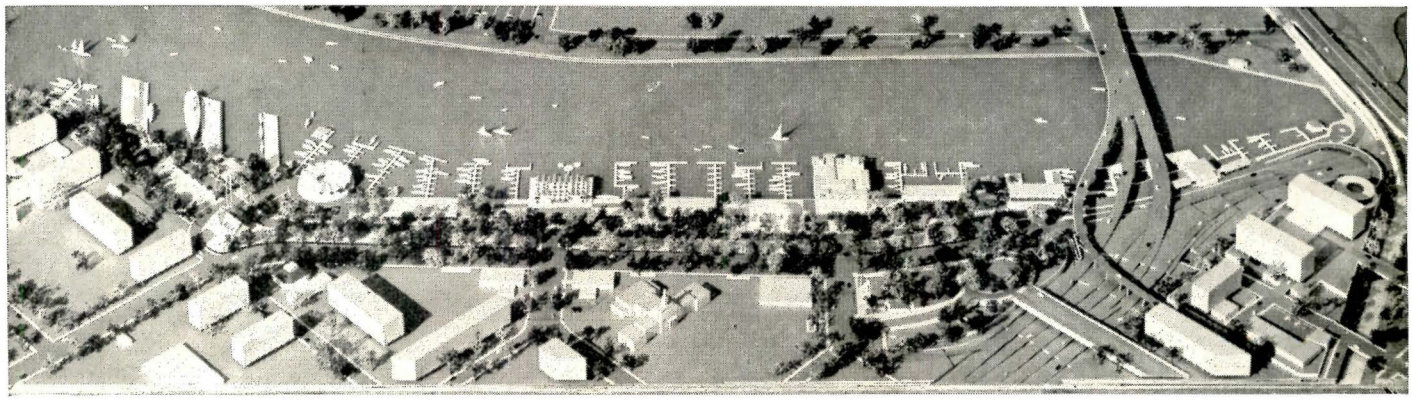
Circular Catholic Church Shows Structure



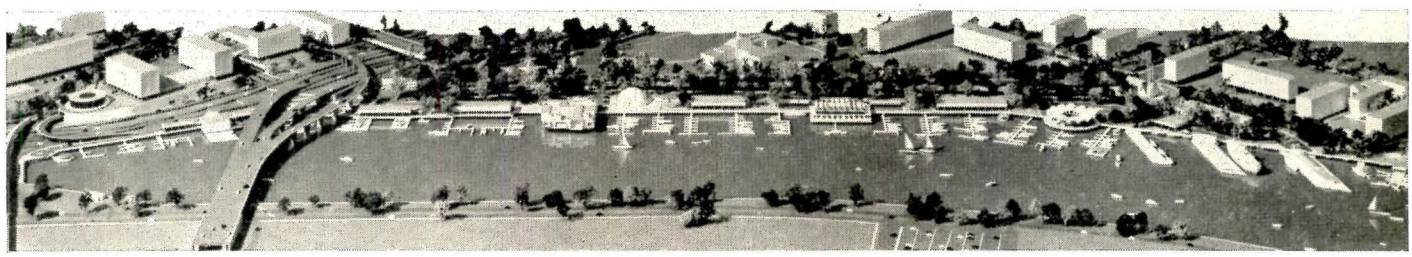
LINDA MAR, CALIF. For this growing community south of San Francisco, Mario J. Ciampi and his associate Paul W. Reiter have designed a dramatic circular Roman Catholic Church for the parish of Saint Peter's. An exposed structure of precast, reinforced concrete will support a roof system of hipped, folded-plate plywood shells. The circular form, says Ciampi, will express "the powerful liturgical focus of the high altar." The altar will be at the center of the building, beneath a lantern supporting a tall cross. Since the building will sit in a garden "moat" over which the radiating structural arms of concrete will leap in an enclosing manner, the periphery of enclosed landscape will be subordinated to the drama of the altar. A limited budget for the 1000-person church has been met through imaginative use of simple materials.

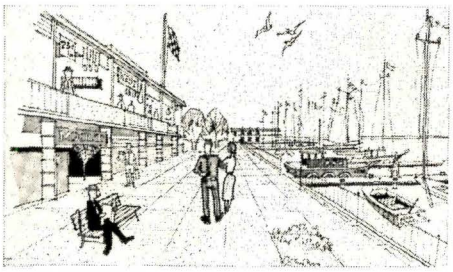


Photos: Karl H. Riek

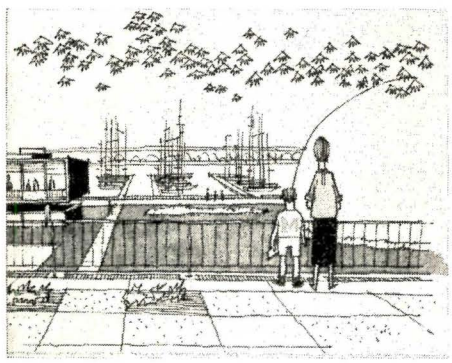


Washington Waterfront to Highlight Seafood, Strolling, Shopping

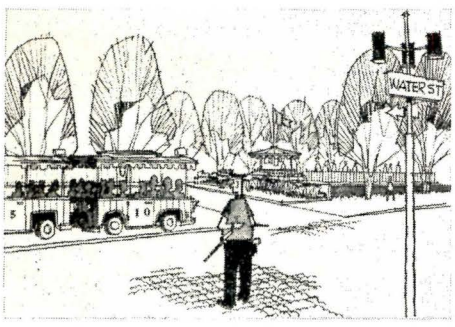




Waterside walk



Marina from Channel Promenade

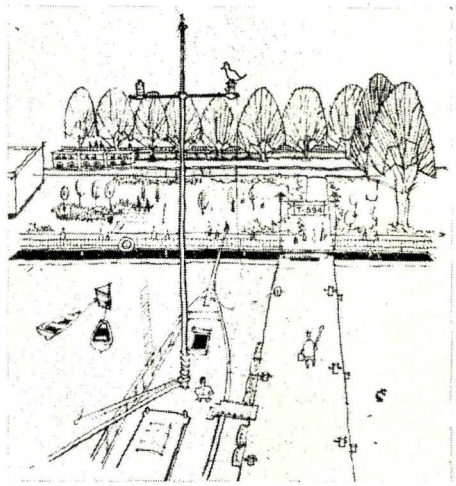


Promenade from Water Street

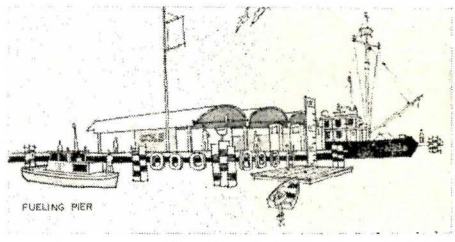
WASHINGTON, D.C. Aficionados of the Capital City's waterfront on Washington Channel, of whom there are many, will find the Southwest Waterfront Design Program by Satterlee & Smith of more than passing interest. Proposing the renewal and redevelopment of the fish-house and marina area across from East Potomac Park, the program would save and develop the few acres available in the area, and increase them through bulkheads in the channel.

Stating that the present proposal is a basic design for the use of developers, the architects state that it should be administered by a "strong" group insisting on good design quality. Fundamentally, the scheme creates a series of seven public plazas that lead directly to the water through various commercial areas. Each plaza will have its own character—cobbled, landscaped, treated as a viewing terrace, etc. As designed, the proposal maintains for the site its traditional uses—boating, shopping for seafood, dining—and adds a few more: watching waterfront activities from the new terraces, strolling on the long Channel Promenade, shopping in new stores for boats, sails, motors, flowers, comestibles, and so on. The marina facilities will be greatly expanded, and there will even be ponds for model boats in the park south of M Street.

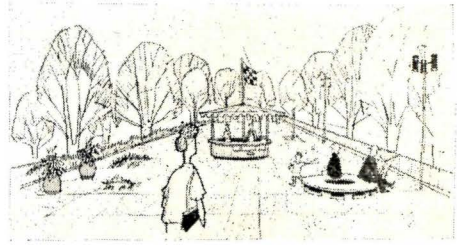
Since there will be about 175,000 sq ft of first floor and more than 100,000 sq ft of second floor building areas for commercial purposes, the architects have proposed a two-story limit for the area.



Water Street from channel



Fueling pier



Channel Promenade

Critique to Follow AISC Awards Program

PROGRESSIVE ARCHITECTURE *announces a program of Workshop Critiques on Steel in Architecture in New York City on June 14 and 15, 1962.*

Extending the concept of the critical seminar discussions that have become a part of its own Design Awards Program, PROGRESSIVE ARCHITECTURE has arranged to invite the winners of the Architectural Awards of Excellence Program of the American Institute of Steel Construction, and others, to a program of analysis and critical discussion of the buildings that win these awards.

The purpose will be evaluation of the best work in steel that has recently been done, as chosen by the AISC jury, and an attempt, through discussion, to find new directions in which steel structures might advance.

One day of the Workshop Critiques will be devoted to the presentation of a number of the AISC award-winning buildings, with analyses by respected critics in architecture and engineering and discussion by those attending the program. Another day will be devoted to visits to significant structures in the New York area.

Further details of the program, and methods of registration, will be announced later. In the meantime, we urge architects of buildings which use steel structures in an outstanding manner, and which were completed or occupied in 1961, to submit them as entries to the Architectural Awards of Excellence Program of AISC, 101 Park Avenue, New York 17, N.Y., *before April 25.*

Major Competition Set for Cincinnati

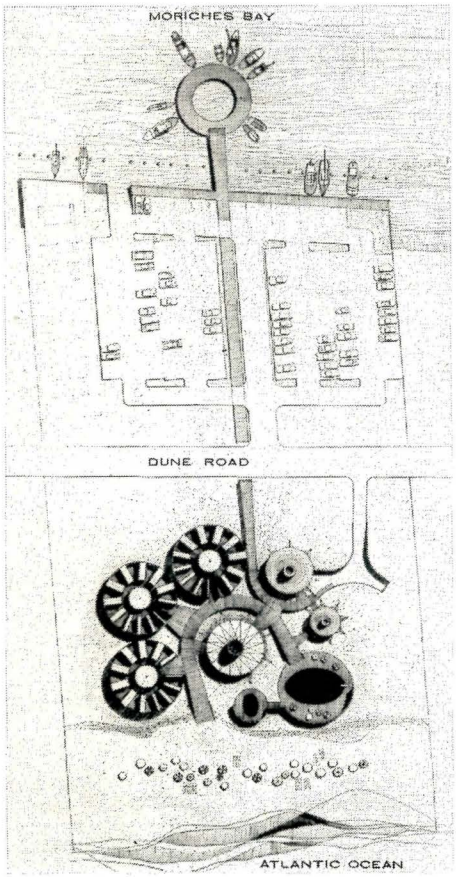
Photo: Fairchild Aerial Survey

CINCINNATI, OHIO In a program somewhat similar to St. Louis's Jefferson National Expansion Memorial Competition of some years back, Cincinnati has announced a nationwide competition for the design of a "symbolic structure" for a historical-memorial park to be established as part of its waterfront on the Ohio River.

Sponsored by The Cincinnatus Association, a 42-year old local nonprofit organization, the structure will "celebrate the unique history and the significance and future of Cincinnati." Jury consists of P/A Editor Thomas H. Creighton; Gordon Bunshaft of Skidmore, Owings & Merrill; Paul Rudolph, Chairman of the Yale Department of Architecture; Grady Clay, author and journalist for the Louisville (Ky.) *Courier Journal*; Architect Douglas W. Orr of New Haven, Conn.; Ernest F. Pickering, Dean of College of Design, Architecture, and Art, University of Cincinnati; and Cornelius J. Hauck, President of the Board of Park Commissioners of Cincinnati. The competition's Professional Advisor and Jury Chairman (without a vote) is Walter A. Taylor, Director of the School of Architecture, Ohio University, Athens, Ohio. The architect placing first in the competition will be given the commission to design and provide architect's service for the project, and an advance fee of $6500. Second-place architect will receive $2500, and $1000 will go to the architect placing third. The Cincinnatus Association is setting no limit to the cost of the project, but will not entertain "extravagance." It is the intention of the city to build the structure as soon as possible.

Conditions and registration forms are available from Professional Advisor Taylor. Registration closes May 1; last day for receipt of submissions is August 31; and announcement of awards will be made approximately October 15.

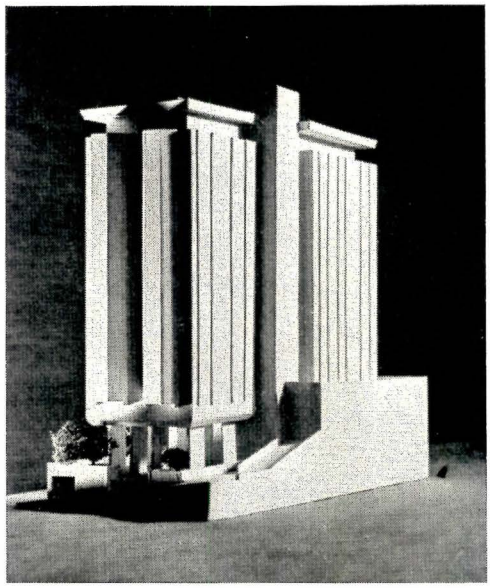
Paraboloid Pavilions for L. I. Beach Club

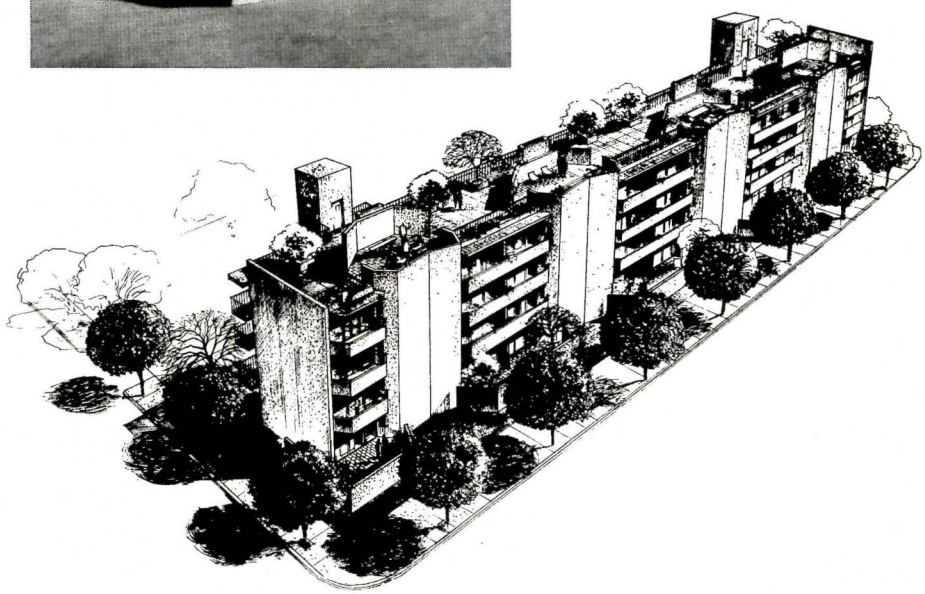


WESTHAMPTON BEACH, N.Y. Out past the burgeoning "slurbs" of New York's Long Island, where sea and sand and sun still meet, there soon will be the curvilinear new Westhampton Beach Club. On a narrow strip of land between the Atlantic Ocean and Moriches Bay, the club will provide recreation facilities for 250 members.

On the bay side of the site, which is bisected by Dune Road, there will be generous parking spaces, plus a circular dock for temporary docking of small boats. Other boat docking will be against the bulkhead, and there will be a ramp into the water for the loading and unloading of boats.

The buildings on the ocean beach will include three locker buildings, one each for women, men, and families; a dining pavilion; an open air pavilion; and a bar. A swimming pool and a wading pool will be mounted above the beach in their own circular decks. Roof form of the pavilions will be parabolic. *Architect:* Whittlesey & Conklin.





IMAGINATIVE APARTMENTS FOR SAN FRANCISCO

SAN FRANCISCO, CALIF. The field of apartment design, so sadly in need of fresh thinking, will receive a boost in the Bay Area in the form of two projects by Chan-Rader & Associates.

An apartment building on Russian Hill (*top*) will have two vertical apartment elements placed around the elevator and service core. Typical floor will contain a three-bedroom apartment, two two-bedroom apartments, and a studio flat. The latter space may be divided and rooms added to the other quarters to make a four-bedroom apartment and another three-bedroom apartment. A landscaped roof garden will provide the setting for two penthouses. Living rooms of all apartments except the studios will have contemporary counterparts of San Francisco's well-known bay windows overlooking views of either the bay or the city. The two-story lobby, penetrated by eight large concrete piers, will be approached through a raised, landscaped garden separating the structure from the street. Enclosed parking will be provided at the rear of the lower level. Consulting Engineer: Chin & Hensolt, Inc.; Mechanical Engineer: Kasin, Guttman & Associates; Electrical Engineer: Smith & Garthorne.

The Jones Methodist Church Apartments for elderly persons (*bottom*) will have an open corridor serving eight apartments on each of its four floors. Concrete bearing walls which separate the back-to-back units, and concrete slab floors, will form the basic structure. All units will have individual terraces. The roof will be developed as a series of raised gardens, separated by the bearing walls, which will terminate here. Structural Engineer: Stefan Medwadowski; Mechanical Engineer: Wistort & Beech.

PERSONALITIES

The cinema-buff hero of Walker Percy's National Book Award-Winning *The Moviegoer* would find an architect to his own tastes in **Ransdell Cox.** For the past year, 33-year-old Cox has been working with a non-architect colleague, Ted Brkic, on the filming of a low-budget, full-length film titled "Tracks in the Sand." Dealing with a few weeks in the lives of four young people in New York, the film has attracted the attention of several distributing organizations. One of them, a British firm, is interested in entering "Tracks in the Sand" in the Cannes Film Festival. As this is written, the fate of the movie is still up in the air, so there are a lot of crossed fingers over at the Cox-Brkic office.

A native of Monroe, Louisiana, Cox received his B.Arch. from Tulane University in 1952, after which he put in a 40-month hitch in the Navy. Following a period in the office of Edward D. Stone, during which, among other projects, he worked on the U.S. Pavilion at the Brussels **World's Fair** Cox opened his own office. So far, his practice has been confined to residential work, with houses in the Poconos and on Long Island. As for the future,

he says he would like to continue to divide his time between architecture and movie-making, concentrating on small commissions and quality, low-budget films. Next film project is "Chimaera," to be shot this summer; there are two more scripts in the typewriter.

Commenting on his life as an architect-film maker, Cox says that it is not as schizophrenic an existence as it might seem at first glance. "There are many similarities between film making and architectural practice," he says. "Aside from conceiving the design in the case of a building and the story ideas in the case of a movie, there is a tremendous amount of coordinating of trades and skills in both endeavors. And just as the putting up of the framework is often the simplest part of building, so the shooting of a film is the comparatively easy prelude to months of editing optical effects, dialogue, music, sound effects, and so on. Of course, through both professions runs the constant thread of financing and keeping the project within a specified budget."

Asked if Cox-Brkic and such people as John Cassavetes and Shirley Clarke represent a *nouvelle vague* in the American film, Cox demurred slightly, saying that he only knows that Hollywood has left a void in the field of art films which Europe is filling. He and Brkic have as their aim trying to fill some of this void with American movies.

P/A Publisher BRAD WILKIN was made an Honorary Colonel on the staff of Kentucky Governor Bert T. Combs. . . . Receiving the red ribbon as Fellows at the AIA Convention in Dallas next month will be: CECIL ABRAHAM ALEXANDER, S. ROBERT ANSHEN, WILLIAM GLENN BALCH, THEODORE C. BERNARDI, ROMOLO BOTTELLI, JR., EDWIN WINFORD CARROLL, WILLIAM WAYNE CAUDILL, ALEXANDER SMITH COCHRAN, CHARLES R. COLBERT, NATHANIEL CORTLANDT CURTIS, JR., PAUL WOODHULL DRAKE, FREDERICK W. DUNN, CARL FEISS, CLINTON GAMBLE, GEORGE FOSTER HARRELL, DOUGLAS HASKELL, HERBERT HOWARD JOHNSON, B. KENNETH JOHNSTONE, RALPH H. KLOPPENBURG, HEEREN SAMUEL EILTS KRUSE, HOWARD HAMILTON MACKEY, HARLAN EWART MCCLURE, SINGLETON PEABODY MOOREHEAD, SETH IRWIN MORRIS, JR., ROBERT W. NOBLE, CLARENCE JOSEPH PADEREWSKY, JOSEPH JULIAN PATTERSON, LISLE FREDERICK RICHARDS, LINN CHARLES SMITH, RAPHAEL S. SORIANO, DONALD J. STEWART, SIDNEY LLOYD STOLTE, JOHN CARL WARNECKE, MAYNARD WINTHROP WOODARD.

When she left her native Stuttgart in 1938 for a year's study in the United States, **Ilse Meissner Reese** (née Ilse Meissner) did not dream that she would wind up happily married in Forest Hills Gardens *and* a hard-working Contributing Editor of PROGRESSIVE ARCHITECTURE. Of course, World War II broke out in 1939, preventing her return to Germany. Already enrolled at Pratt Institute, Ilse completed the course in Industrial Design there, and worked for Russell Wright for two years. Plagued by a feeling that the industrial design field was "too much talk and too little design," she studied sculpture for a year, winning the annual award for sculpture

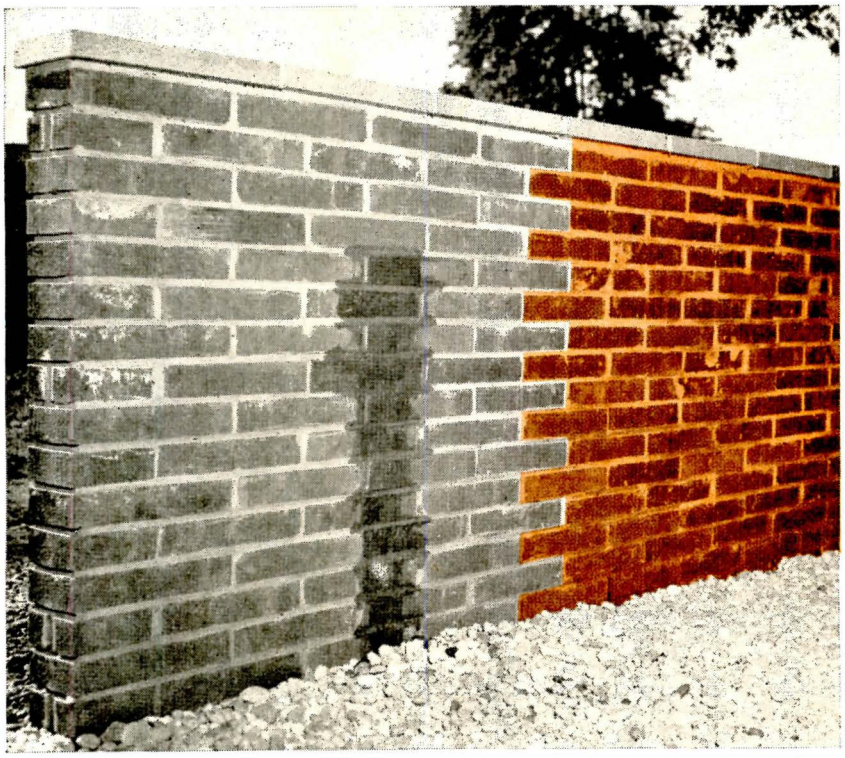
at the Art Students League. Wishing to consolidate her varied training within a profession that would combine both the arts and the sciences, she went back to Pratt for a degree in architecture. On graduation, she became the first woman to win Pratt's Medal of Excellence in Architecture. While still a student, Ilse was brought to the attention of the profession when P/A published her thesis on urban housing (pp. 42–48, FEBRUARY 1947 P/A). She worked summers for the firm of Ketchum, Giná & Sharp, and, after leaving school, was with the firm for five years until her marriage to Baxter Reese. In 1949, the couple moved to Buenos Aires, where Baxter was Standard Brands Sales Manager for Argentina. (He is now the New York-based Advertising Manager for Standard Brands International.) Their daughter, Consuelo, was born in 1950. In 1951, Baxter was called back into Army Intelligence and they were sent to—Stuttgart.

Before joining P/A as Associate Feature Editor in 1955, Ilse spent some months with the Knoll Planning Unit working on a project for a Boston investment firm's offices. Year before last, she decided that she wanted to spend more time at home with Consuelo. P/A, loath to lose completely such a valuable asset, persuaded her to become a Contributing Editor. Now she's creating more feature material than she did full time! (Note the January, May, July, and December issues of this year.)

The lucky visitor to the Reese home in Forest Hills Gardens (Grosvenor Atterbury, Architect; Frederick Law Olmstead, Planner) is likely to enjoy, after some bone-dry martinis by Baxter and a succulent *boeuf Stroganoff* by Ilse, a delightful postprandial concert of Bach partitas on the Stuttgart-made harpsichord (Ilse) and the recorder (Baxter).

NEWS from Dow Corning

How to keep water out



Silaneal strengthens mortar bond; helps prevent leaky walls

See what happens when a brick wall is laid dry with high suction rate brick. That dark area indicates severe leakage. Now, look further along the wall to the right. No wetness here. Why? Because that half of the wall was built of the same brick, plant-treated with Silaneal®. Here's the story.

The wall was built of high suction brick — a 6″ SCR brick with a 31 gram suction rate. The brick used in the right hand half had been treated with Silaneal, the sodium siliconate treatment that controls suction rate. In this instance, suction rate for the treated brick was reduced to below 20 grams. The brick in the left half were left untreated.

Here's the test. After brick was laid up and mortar properly cured, two streams of water — simulating wind-driven rain — were directed against the wall, one against each half. *In only two minutes,* water had penetrated the untreated section and was soon trickling down the other side. But after seven hours of this continuous soaking, the Silaneal treated section still showed no sign of leaking!

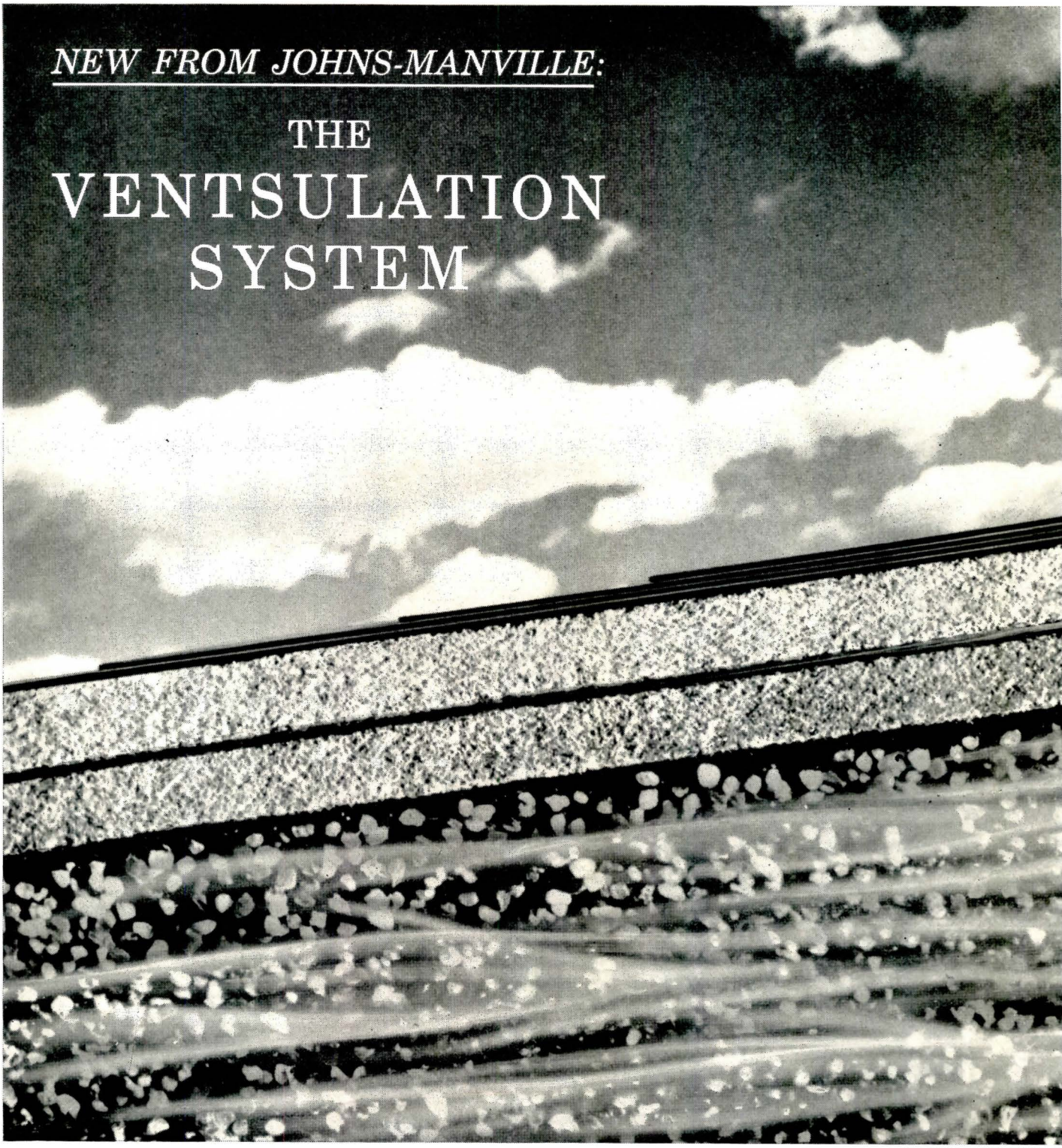
Walls are stronger. How well mortar does its job depends on its quality and how it cures. And to cure correctly and bond securely, mortar must hydrate slowly, thoroughly. A high suction brick, laid on fresh mortar, immediately draws much of the moisture from the mortar, which results in shrinkage cracks at the brick-mortar interface. But Silaneal controls this suction, slows it, allows mortar to cure properly and bond as it should. In the test above, for example, untreated sections gave a wall strength of 63 lb./sq. ft., while Silaneal treated sections reached a strength of 83 lb./sq. ft.

Brick stays clean. Dirt that falls on high absorption brick is pulled into the brick with the first rain. Silaneal makes the brick surface water repellent so dirt washes away with rain. And when water can't get into the brick, efflorescence is minimized. Clean-up after brick is laid seldom requires more than just simple brushing. And maintenance is reduced because mortar doesn't crumble. Equally important: brick are left free to "breathe" because Silaneal does not fill the pores in the brick and obstruct passage of air.

You can be sure your designs will be stronger, leak-resistant and more attractive by *specifying* that high suction brick be plant-treated with Silaneal to reduce suction rate to the 10 - 20 gram level. For more information about this new building aid and a list of manufacturers now supplying Silaneal-treated brick — write Department 6804.

SILANEAL®
keeps brick clean

Dow Corning CORPORATION
MIDLAND, MICHIGAN



...A built-up roof that "breathes"

The new J-M Ventsulation Roof System is an exciting major development in built-up roofing. As the model roof section shown above clearly demonstrates, it is now possible for air and moisture to "ventilate out" of the roof assembly, both during construction and throughout the life of the roof. Now—for the first time—it is possible to eliminate the blistering, cracking and premature failure once caused by sealed-in air and moisture that had no way to escape!

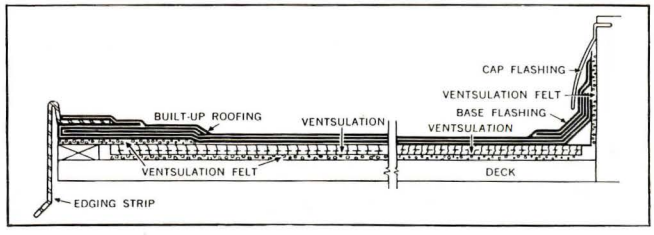
Here's how this unique new Johns-Manville system allows a built-up roof to "breathe." The Ventsulation Felts are of heavy asbestos, asphalt-saturated and coated, with large mineral granules embedded in the underside. The felts are applied to the deck granule side down, thus providing millions of tiny passages between felt and deck for free outward passage of air and moisture.

Each unit of the roof insulation itself—either J-M

Roofinsul or J-M Fesco Board—is kerfed on all four edges. This provides still another avenue for air and moisture to travel out of the roof assembly through vent spaces at the edges of the roof.

The new Ventsulation System can be applied over any type of roof deck . . . requires no special application techniques. The finished built-up roof and flashings are applied in the usual way.

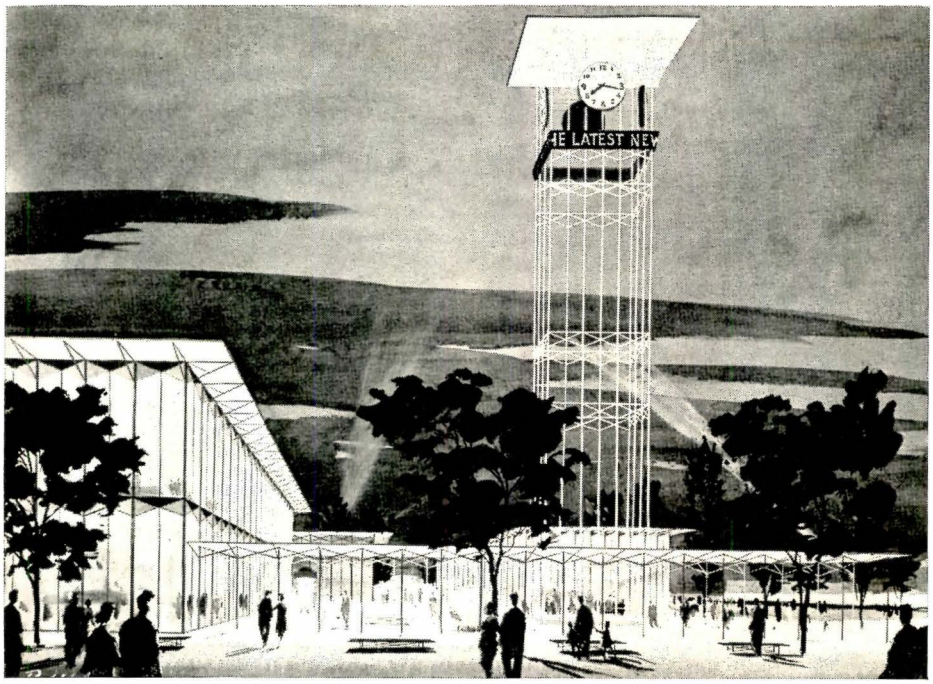
You can get complete details about this unique and important new breakthrough in roofing by writing for Booklet BU-125A. Address Johns-Manville, Box 158, Dept. PA-462, New York 16, N. Y. In Canada: Port Credit, Ont. Cable: Johnmanvil.



JOHNS-MANVILLE
BUILT-UP ROOFING PRODUCTS

JOHNS-MANVILLE JM PRODUCTS

1



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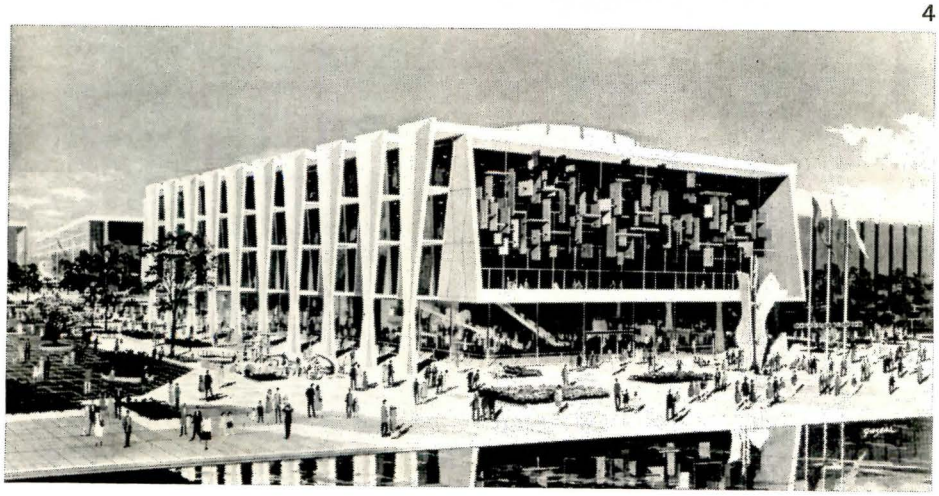


NYWF DESIGNS GAIN STRENGTH

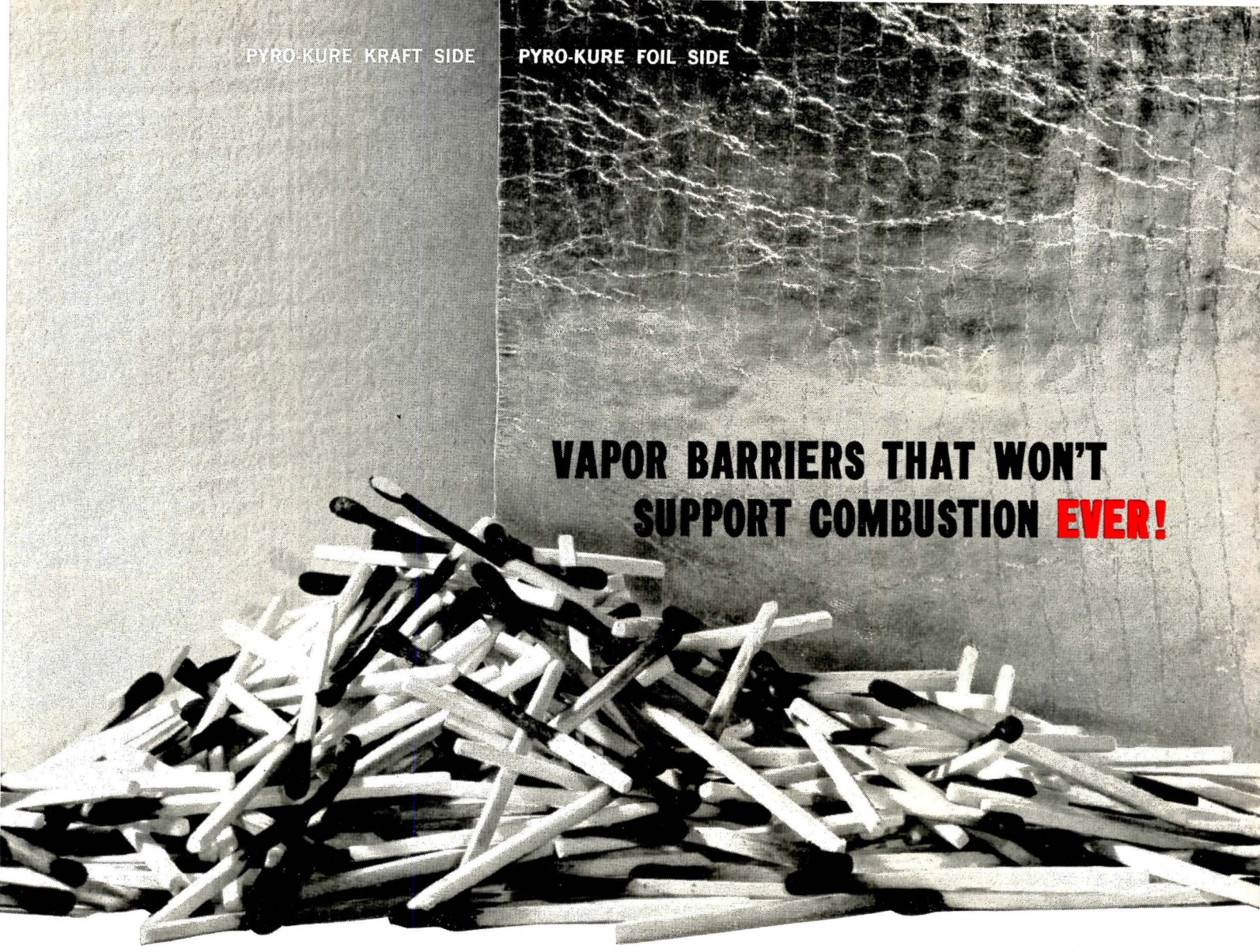
Designs for pavilions at the 1964–65 New York World's Fair have improved in the past few weeks, perhaps because many of the new ones are designed by architects instead of by industrial – interior – graphic – promotional, etc., designers.

The Communications Pavilion **(1)**, designed by Richard W. Snibbe, will house displays by firms in the three basic branches of communications: the press, radio and television, and the communications arts (motion pictures, advertising, records and record equipment, etc.). The project, which will make ingenious use of open-web joists, has been designed around a court that will contain outdoor exhibits and an outdoor café adjoining a restaurant.

Winner of the statewide competition for the New Jersey Tercentenary Pavilion at the Fair **(2)** is Philip Sheridan Collins of Princeton. Twenty-one small pavilions, one for each county of the state, will be situated around a central theater and four interior gardens. The exhibit platforms will rise from a continuous reflecting pool. Roofs will be suspended from 16 nightlighted masts arranged in groups of four. The individual exhibits will have a modular system of frames, panels, and display units, designed for utmost flexibility.

The Hall of Medicine and Science **(3)**, by Skidmore, Owings & Merrill, will have exhibits by many firms in the fields of medicine and health. Over-all theme will be "The Family," and there will be two large exhibits on "The Life Span of Man" and "The Prevention of Accidents." There will be a 100–150 capacity auditorium for the showing of health films, lectures, and demonstrations. A pool in the central court will be used for life-saving demonstrations. The hall is viewed by the proposer, The American Museum of Health (an educational, scientific, nonprofit institution sponsored by the New York Academy of Medicine), as a precursor to a permanent Museum of Health.

Designed by Frederic P. Wiedersum Associates, the Hall of Education **(4)** will contain, in addition to exhibits by various firms interested in the education field, a "School of Tomorrow," a "Library of Tomorrow," a "Communications Auditorium" featuring the latest in audio-visual advances, and an "Art Department of the Future" in which a gallery of "living walls" will present full-sized reproductions of famous works.



VAPOR BARRIERS THAT WON'T SUPPORT COMBUSTION EVER!

This vapor barrier line will never burst into fire because flame-smothering gases are given off at the material's combustion temperature. This incombustible property is permanent — unlike any similar vapor barriers!

Pyro-Kure is a line of laminations made of aluminum foil and reinforced kraft or plastic in various combinations. Vapor transmission is rated at 0.02 perms or below; and U/L flame spread ratings are 5 for the foil side of foil-faced grades and 25 for the kraft side of kraft-surfaced grades. Pyro-Kure is very flexible yet super-tough, and many grades have attractive surfaces for exposed applications, such as insulation facings in metal buildings.

These Pyro-Kure qualities are ideal for facings on duct and sidewall insulation and as jacketing for pipe insulation because they provide a new and important step towards total fire protection. Leading insulation manufacturers now offer Pyro-Kure facing and jacketing under various trade names, or Pyro-Kure may be purchased as a vapor barrier only, in convenient sized rolls.

To be sure your project has the permanent protection of Pyro-Kure, your specifications should include: "a vapor barrier with a vapor transmission rate of 0.02 perms or below and a permanent U/L Flame Spread Rating of 25 or less". Send for complete details and flame-test samples. Write: American Sisalkraft Company, Attleboro, Massachusetts.

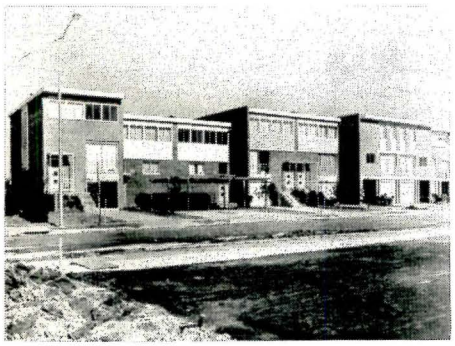
PYRO-KURE® NON-COMBUSTIBLE VAPOR BARRIERS FOR INSULATION FACING AND JACKETING

a development of AMERICAN SISALKRAFT COMPANY/DIVISION OF ST. REGIS PAPER COMPANY

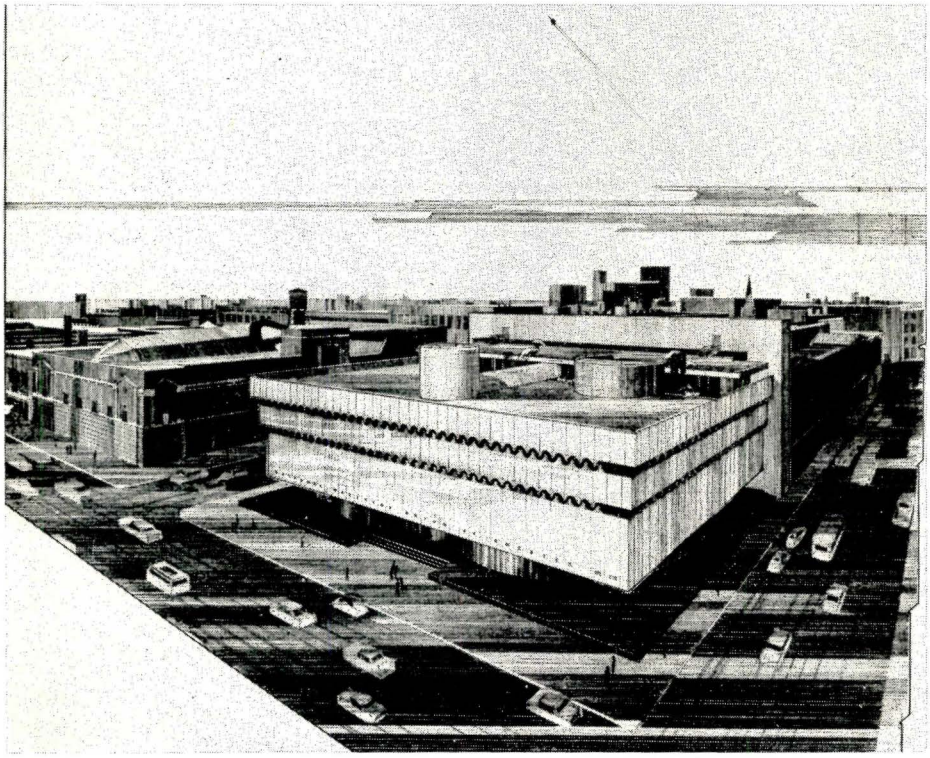
S002-1

DOXIADISITIS: FIRST SYMPTOMS

Five model homes (going by such names as Floral, Orchard, Arbor) have been opened recently in the New Eastwick Redevelopment Area of Philadelphia, and will be followed, in the next ten years, by a thicket of 10,000 other row houses. On the 2000-acre site, billed as the nation's largest urban-renewal development, Doxiadis Associates have planned a grid-iron system of spine streets feeding cul-de-sacs that serve 50-60 dwellings. Through collector walkways and a central esplanade, pedestrians move inward "toward the central core of amenities which serves as a focal axis for the community." A pedestrian scheme in more than one sense, it appears. (An earlier plan for Eastwick, by Geddes-Brecher-Qualls, had wedge-shaped units in crescent-shaped blocks, and won a P/A Design Award in 1960.)

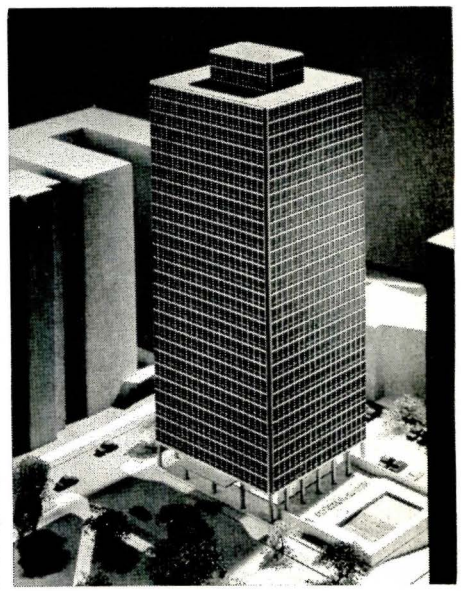


Reynolds Metals Company, a sponsor of the project, has worked approximately 650 pounds of aluminum into each house in the form of carports, canopies, siding, railings and balcony grilles, prefab stairways, garage and entrance doors, fascias, soffits, duct-work—even door chimes. (Several of these represent new applications of Reynolds products.) What's good for Reynolds is good for the homeowner too: the masonry and aluminum construction of the houses requires a minimum of exterior maintenance. Houses have three and four bedrooms, at prices from $11,990 to $14,490. Consulting architects are Wright, Andrade, Amenta & Gane of Philadelphia.



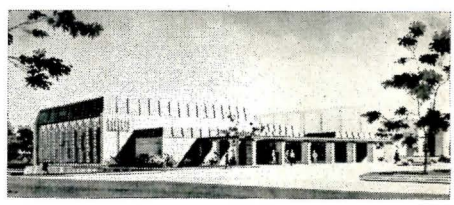
National Maritime Union Building Under Way

A new building in New York for the National Maritime Union is rising on Seventh Avenue between West 12th and West 13th Streets. The building, by Albert Charles Ledner of New Orleans, will have as basic structure reinforced concrete structural elements, precast concrete facing panels, and two large, circular walls on the first floor under the main mass of the building, which will be composed of 12-in.-sq clear glass blocks. The executive offices will be found in the circular units on the roof, as well as in a long, rectilinear roof area. Service core containing elevators, stairs, and mechanical equipment rooms will be in a poured-in-place concrete unit at the rear of the property. What was originally raised terrazzo base for the building has been enhanced by the addition of planting to provide a pleasing transition from the sidewalk up into the building.



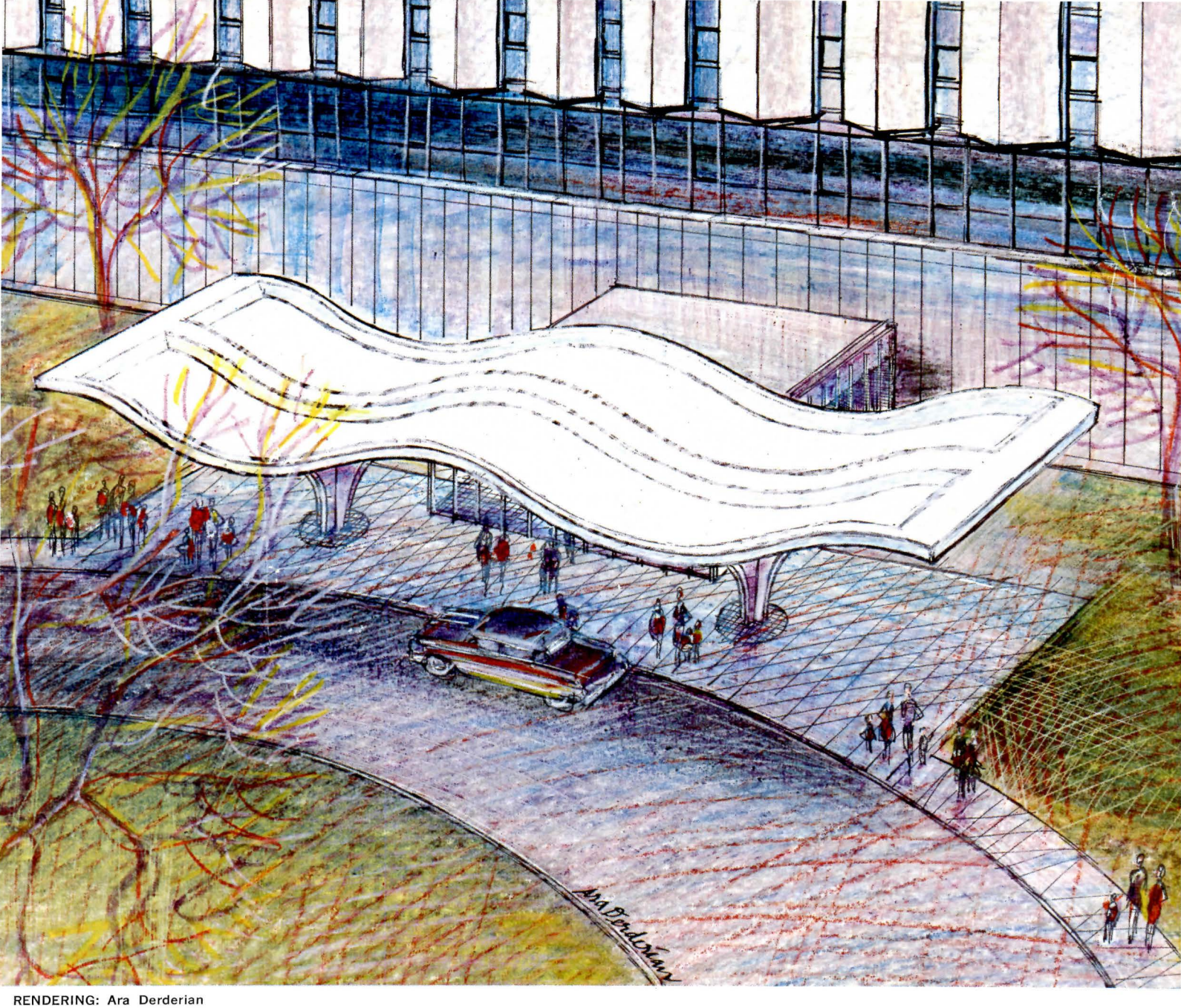
Mies on the Lake Again

Another apartment building by Mies van der Rohe will rise in Chicago on the Lake Michigan shorefront. To stand at 2400 Lake View Avenue, the building will be known as "2400 Lake View Apartments." It will have a concrete structural frame with a natural aluminum curtain wall and gray-tinted glass. Special features of the 264-unit structure will be a heated swimming pool, year-round central air conditioning, and a high- and low-rise elevator system.



Sanctuary Joins Community Center

A synagogue designed by Edgar Tafel Associates will join a 1928-vintage community center on a downtown corner in Gloversville, N.Y. Soil problems on the new project will be solved by use of the foundations of a theater that was recently demolished on the



RENDERING: Ara Derderian

F/A Roofing by Armstrong

made for today's imaginative free form shapes

Armstrong F/A Roofing is a durable, weatherproof, and colorful roofing material designed for use on concrete or plywood roof construction. Here it provides a protective membrane for an undulating concrete shell.

Charlotte Memorial Hospital, Charlotte, N. C.
ARCHITECT: A. G. Odell, Jr., and Associates, Charlotte
GENERAL CONTRACTOR: Little Construction Co., Charlotte
ROOFING CONTRACTOR: G. G. Ray Co., Charlotte

Application of F/A Roofing involves five basic steps. Mechanics here use the roller method as they apply the second coat of F/A 400.

APPLICATION OF ARMSTRONG F/A ROOFING

The concrete or plywood deck is first primed with a cut-back solution of F/A 400. Open joints are then sealed with Armstrong Deck Sealer. Once joints are sealed, Armstrong Flashing Tape is applied where necessary as a reinforcing membrane. (Gravel stops, metal edging, and fascia are not needed.)

F/A 400 is then applied in two layers. The second application, in a different color, provides visual gauging of film thickness. Application by hand or pressure-fed roller is recommended.

Two applications of F/A 600 complete the installation and provide final weatherproofing and the desired color.

Armstrong Flashing Tape—a companion product to F/A Roofing. Armstrong Flashing Tape is a high tensile strength glass fiber fabric designed for use as a flashing membrane and joint reinforcement.

Armstrong Deck Sealer—an elastic caulking compound used in preparing the roof deck for the application of the F/A Roofing System (i.e., filling depressions, cracks, and voids in the roof deck and at joints and flashing points).

Armstrong F/A Roofing

DESIGNED TO SOLVE MODERN ROOFING PROBLEMS

Today's imaginative free-form roof construction of thin shell concrete and plywood is giving America's skyline a striking new look. These roof decks, with their irregular, elliptical, or undulating slopes, call for roofing materials with both decorative and protective qualities. Armstrong F/A Roofing is designed especially to meet these requirements.

Two liquid roofing products have been combined in F/A Roofing to form a roofing membrane which is both tough and flexible: F/A 400, which has a neoprene base for strength and durability, and F/A 600, a Hypalon* base coating that forms the finished surface. Because of its fluid form, F/A Roofing can be applied where conventional roofing materials are frequently unsuitable. After application, it presents a colorful and protective membrane that forms a permanent bond with the roof surface.

*TRADEMARK OF E. I. DU PONT DE NEMOURS & CO., INC.

ARMSTRONG F/A ROOFING IS:

Durable Because its elastomers (neoprene and Hypalon) resist physical deterioration and weathering, F/A Roofing withstands prolonged exposure to the elements. Many installations indicate that F/A Roofing will offer years of satisfactory protection.

Flexible F/A Roofing is elastic, allowing it to expand or contract with the surface beneath it. Hairline cracks in the decking material won't cause the protective film to tear. F/A Roofing is also extremely light, with a weight of less than 20 pounds per 100 square feet.

Weatherproof F/A Roofing resists all kinds of weather. It does not become brittle in winter nor soften in summer. It provides excellent protection against moisture because it cures to form a permanent, watertight bond with the roof structure.

Versatile Free-form design often makes the appearance of the roof as important as its protective function. Armstrong F/A Roofing is particularly well suited to buildings that frequently employ contemporary design—such as recreational, religious, commercial, and civic structures. It actually enhances the over-all design of the free-form structure. F/A Roofing also provides a monolithic protective membrane for structural trim.

Colorful Available in white and a variety of bright shades and pastels, F/A Roofing gives the architect new freedom in creating exterior color schemes. F/A Roofing maintains the reflective qualities of light colors and pastels indefinitely, thereby reducing a building's inside temperature and lightening the load on air-conditioning equipment.

Easily maintained If F/A Roofing is damaged, a simple renewal of the F/A Roofing System makes the surface watertight again. No hot-melt equipment is required for its application. Where reinforced with special glass fiber tape, F/A Roofing is self-flashing.

For free literature, specifications, and technical data on Armstrong F/A Roofing, contact your Armstrong District Office or write Armstrong Cork Company, 4604 Watson Street, Lancaster, Pennsylvania.

Armstrong F/A ROOFING

site. The synagogue will have a lead cornice, exposed roof timber construction, and cavity-brick walls. Tafel states that "It is always exciting to work within the confines of a proscribed envelope of buildings built in the past."

Openings in the Peace Corps

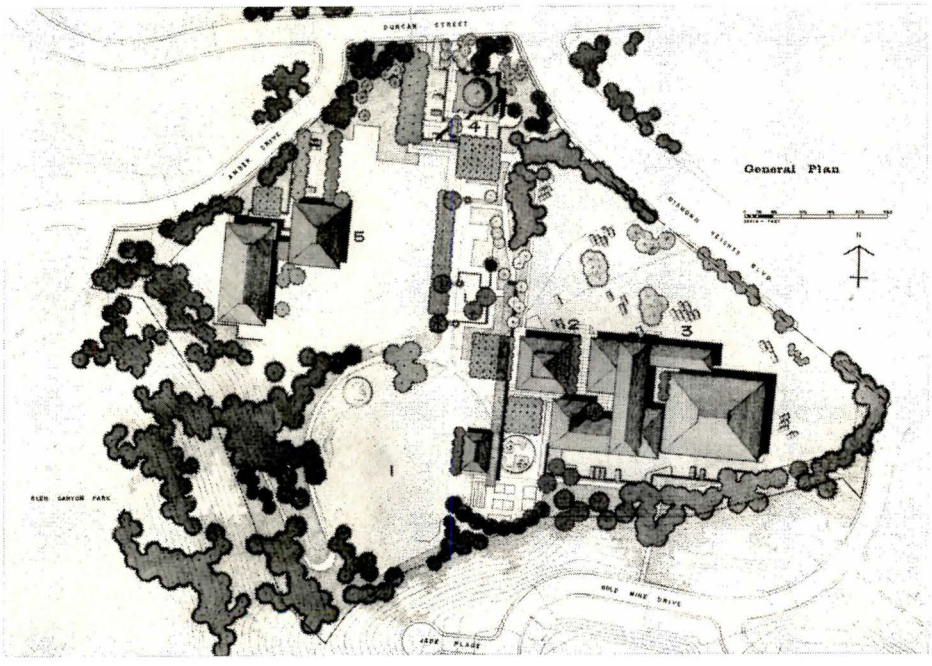
The Peace Corps reports that there are opportunities for architects, builders, and city planners to work in Tunisia. For further information write to Peace Corps, Jules Pagano, Chief, Professional and Technical Division, Office of Public Affairs, Washington 25, D.C.

Improvement Awards

Kalamazoo, Mich., and Pittsburgh, Pa., received the gold and silver medals, respectively, in the Ward Melville Awards for Community Improvement. The awards go to cities which have done most to improve their "cultural, aesthetic, and economic values."

SOM ON AIR RIGHTS

An office building and a transportation center in Chicago will be the first elements in a multimillion-dollar construction program to be pursued by Anglo-American interests under the leadership of Erwin S. Wolfson. This is virtually the same combine which is currently building New York's Tower of Babel, the Pan-Am Building. The proposed structures will rise over —or is it in?—7½-acres of above-track air rights leased from the Chicago Union Station Company. Preliminary studies for the office building by Skidmore, Owings & Merrill indicate an 18-story structure on an elevated, landscaped plaza. The plaza would be set back about 20 ft from the curb lines, and the building itself would occupy only half of the full block site. A concourse would run directly through the building. Prime rental space would command views of the Chicago River. Wolfson has revealed that definitive plans for the transportation center are awaiting the outcome of discussions with the Mayor.



Neighborhood Center Planned for Diamond Heights

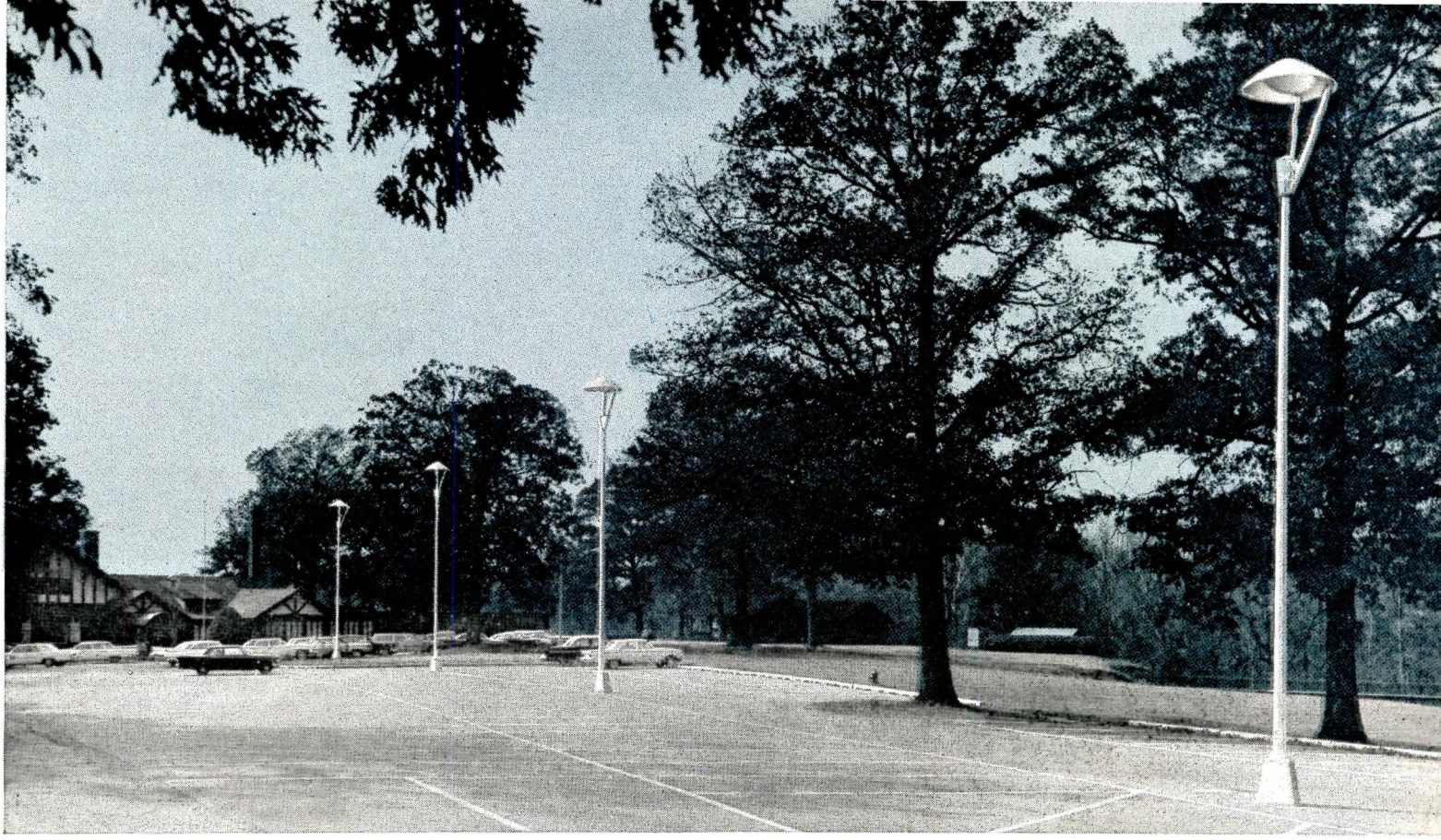
A neighborhood center has been announced by the San Francisco Redevelopment Agency for an open area near the site of the Diamond Heights-Red Rock Hill residential development (p. 37, AUGUST 1961 P/A and p. 60 DECEMBER 1961 P/A). The site development, prepared by Architect Lawrence Lackey as Urban Design Consultant and Royston, Hanamoto & Mayes, Landscape Architect, will include St. Nicholas Syrian Antiochan Church, an elementary school, branch library, recreation building, and shopping facilities. The elements of the center will be unified by an open green plaza from which green fingers will extend to permit pedestrian traffic. Numbered above are: (1) playground with adjacent recreation building, (2) library, (3) shops and stores, (4) church, and (5) school.

COMPETITIONS, AWARDS

We received incorrect information on the competition for new projects at Dublin University [p. 70, JANUARY 1962 P/A]. The conditions are not yet in print; we will give you the news when they are. . . . Entries for the 10th Annual Industrial and Institutional Landscaping Awards Competition must be received by September 1; information from Curtis H. Porterfield, Executive Vice-President, American Association of Nurserymen, 835 Southern Building, Washington 5, D.C. . . . And don't forget to submit your entries for the AISC Competition before April 25; details: page 63.

CALENDAR

Construction Specifications Institute has its 6th annual convention at the Biltmore in Atlanta, April 23-25 . . . The 4th International Congress on Prestressed Concrete will take place in Rome and Naples, May 27-June 2 . . . A "Scandinavian Festival" has been announced for Denmark, Norway, Finland, and Sweden, extending from May 15 through June 16; music, drama, and dance will be featured in the major cities of those countries during the period . . . Following suggestions from, among others, Mies van der Rohe and George E. Danforth, two architectural tours of Europe have been scheduled, one from June 1 to 30, the other from June 8 to July 7; contact Henry H. Jayson, Lufthansa German Airlines, 410 Park Ave., New York 22, N.Y. . . . 8th annual Architectural Hardware Institute will be held at Ohio State University, June 10-16 . . . One feature of the MIT Summer Program will be a seminar on "Planning Industrial Expansion." Directed by Professor Albert Bush-Brown, it will take place July 9–13. Tuition is $200. Inquire from Summer School Office, MIT, Cambridge, Mass.



FOUR OF THE 8 L-M HIGH INTENSITY MERCURY STYLEVUE™ luminaires at the Lafayette, Indiana Country Club. Mercury color improved 1000-watt lamps provide 52,000 lumens, giving up to 10 footcandles of illumination. Units have IES Type IV light distribution. Mounting height is 30 feet on 25-foot aluminum poles, with a 240/480-volt multiple underground system. L-M Styled Mercury units are available in several single and twin designs; in two sizes for 400, 700 and 1000-watt mercury lamps. Choice of brushed aluminum or five decorator colors; with photocontrol if desired. Ballast built into base; installation exceptionally easy.

New L-M Mercury Stylevue™ Luminaires Light Lafayette Club Parking Area

Eight L-M Styled Mercury Stylevue™ luminaires were selected to light the parking area of the Lafayette (Ind.) Country Club. These highly efficient luminaires provide even, high intensity lighting, requiring a minimum of poles and fixtures. Here eight luminaires do the job that otherwise might have required 15 or 20 units if lower wattage luminaires had been used. Obviously these Stylevue luminaires offered a substantial saving on the cost of units and number of poles, and amount of wiring required; and they provide additional unobstructed area for parking.

Ask The Authorized L-M Distributor

Line Material offers, through Authorized L-M Distributors, a complete line of electrical apparatus and outdoor lighting equipment to meet almost every possible lighting need. Also available: L-M Lighting Application Engineering Service. Ask your L-M distributor; call the nearest L-M office; or mail the coupon. In Canada: CLM Industries, McGraw-Edison (Canada) Limited, Toronto 13, Canada.

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LINE CONSTRUCTION MATERIALS · PORCELAIN INSULATORS · FIBRE PIPE AND CONDUIT

For more information, turn to Reader Service card, circle No. 409

LEFT TO RIGHT: Kirby Risk, president of Kirby Risk Supply Company, Lafayette, Authorized L-M Distributor, who recommended and supplied the luminaires; James Varga, L-M Field Engineer, and George Mounce, president, Square Deal Electric Company, Inc., Lafayette, electrical contractor who made the installation. The service rendered to the contractor by Kirby Risk Supply Company is typical of the excellent cooperation available from the high grade distributors who have signed up with L-M.

PA-42

Line Material Industries, Milwaukee 1, Wisconsin

Please send information about your Styled Mercury luminaire line and name of nearest Authorized L-M Distributor.

Name_____

Company_____

Address_____

City_____ State_____

558

The Mills of Congress Grind Slow, Not Fine

By E. E. Halmos, Jr.

As April began, quite a few of the President's proposals that interest architects seemed to be in deep trouble in Congress.

The reasons are compounded in large measure of politics, but with a generous helping of concern over excessive spending, and fear of an ever-growing control over the U.S. economy by the Federal Government (particularly the Executive Department).

Both actual spending for construction work and matters that affect the economy of the industry are involved.

Here's a list of significant developments:

1. The vast package of education-aid proposals got a friendly, but not enthusiastic, reception from Congress, which proceeded to take things up in relatively small pieces.

(There's one big part of the package that you can figure won't get anywhere: aid to elementary and secondary schools, and any proposals for help in paying teachers' salaries.)

Both houses passed versions of an aid-to-higher education bill (HR 8900, the Senate okaying $2.7 billion including scholarships, the House $1.5 billion); but a conference was blocked by objections from the House floor, which sent the bill back to the Rules Committee and effectively blocked any action, at least until mid-March.

Another piece of this package—$750 million over 10 years for grants to aid construction of medical, dental, and public health schools—had received a hearing before committees, was slowly working its way along with many amendments.

2. The President's request for standby powers (under which he could spend up to $2 billion on public works projects if it were found that a recession was imminent or in progress) apparently will get nowhere: The political leverage inherent in such powers is too much for Congress to give away.

3. The House Ways and Means Committee dealt a heavy blow to hopes that tax relief would stimulate factory and office building construction, through credit (8 per cent) against income taxes for new buildings. The committee finally reported out a bill to allow such credits to manufacturers on machinery and "other productive equipment"—but not on new buildings.

4. To this list you can add the defeat of the plan for establishment of a Department of Urban Affairs.

Reasons why this proposal was killed by a lopsided majority: the political move involved in proposing the establishment of the department as a reorganization plan riled a lot of Congressmen who might otherwise have supported the plan; and there were some doubts as to the need for such a department and the effect it would have on many existing Government activities.

The Urban Affairs idea isn't dead, though there's little chance of any further action in this Congress. However, within minutes of the demise of the reorganization plan, bills were introduced in the Senate to set up a "Department of Federal-State-Urban Affairs," and in the House to set up an "Office of Urban Affairs" in the President's office. Architects who feel deeply on this matter of urban representation might write their Congressmen soon.

Contractors' Capers

Construction contractors are stepping up their campaign to get the Small Business Administration out of the construction industry.

Latest entry is the powerful Associated General Contractors, which argues that most contractors would qualify as "small business" under SBA's definitions (less than $5 million gross business, not dominant in field); that SBA's insistence on set-asides for small contractors results in a lot of incompetents surviving when they shouldn't and interferes with prime contractor's control of his own job; that SBA is overriding the judgment of qualified engineers and contractors in insisting on awards to smaller firms.

SBA's reaction didn't smooth the situation. Said Irving Maness, deputy SBA administrator: AGC's attack is "silly."

AFL–CIO's Building Trades Department supported the AGC position.

Labor Looks at Architecture

There's an interesting inside story behind Labor Secretary Goldberg's sudden emergence as an architectural advisor to the President. (He is head of an "informal" Cabinet committee that will shortly make recommendations to the Chief Executive on future Federal buildings.)

Goldberg spent some time at a Cabinet meeting complaining about lack of office space in Washington and elsewhere for Government employees, and poorly organized space in many existing buildings.

For his pains, he was promptly appointed head of a committee, which includes the head of General Services Administration and others, to "do something" about his complaints.

Always enormously energetic, Goldberg plunged in, interviewed architects, engineers, builders, Government employees, and announced early in March he was ready to submit a report and recommendations.

Indications are that the report will follow closely comments made by GSA Administrator Boutin (p. 54, FEBRUARY 1962 P/A): more landscaping, attempts to blend new Federal buildings with their immediate surroundings, plus more emphasis, where possible, on "modern" design and styling.

FINANCIAL

There's a peculiar feeling in the air about financial conditions—a feeling of a kind of a lull, perhaps awaiting spring before full-scale activity gets under way again.

There's nothing in particular to support the feeling—except that unemployment didn't decline in the past month, despite an apparent continuing business strength; and that voters in November turned down more bond issues for construction than they approved.

Otherwise, general business activity seemed to be going along in good shape: the gross national product apparently was on the upswing; housing seemed to be making a strong beginning for the year; and Government economists seemed to have lost no confidence in their predictions of a record business year for 1962.

Factors probably contributing to the "lull" feeling are: the wait for conclusion of the long negotiations over steel-industry wages; other wage disputes due to arise as spring bargaining time arrives in many areas; and a long unusually heavy winter in a large sector of the U.S.

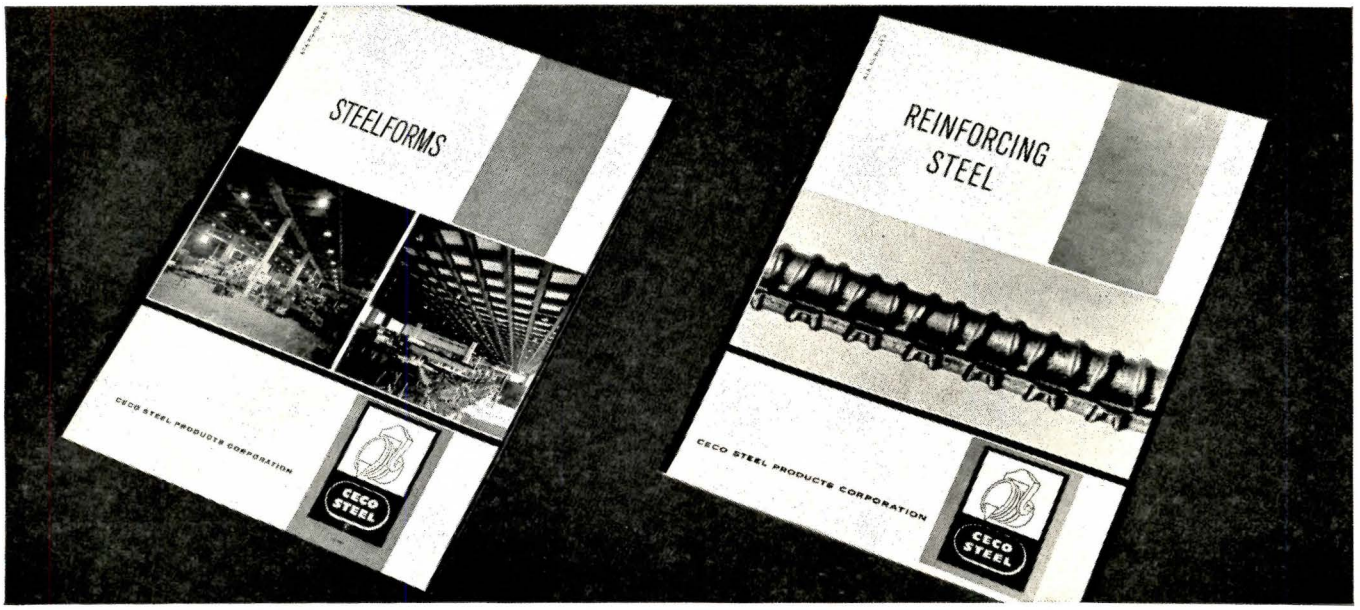
But a little more scratching for new business, and careful attention to existing sources, seemed to be a matter of prudence for most concerns—particularly those connected with construction.

Just off the press

New catalogs on ... steelforms reinforcing steel*

for monolithic concrete construction

Here is up-to-the-minute planning help for architects, engineers and contractors who design and build with poured-in-place concrete. These two new bulletins belong in your files . . . send for them.



Steelforms*

- presents a technical comparison between various steelform types: steeldomes, flangeforms, adjustable steelforms and longforms.
- includes size data, concrete estimating tables, planning and erection details and procedures.
- more than 45 photographs, isometric details, cross-section drawings and tables. 16 pages.
- describes the use of underfloor electrification in monolithic reinforced concrete construction.

**This is a condensed version of a more detailed manual on monolithic reinforced concrete construction. If you are interested in the comprehensive 72-page version, ask for Manual 4002-C.*

Reinforcing Steel

- designed for easy reference in specifying reinforcing steel for schools, commercial and industrial buildings, bridges, missile sites or other monolithic reinforced concrete structures.
- includes identification code, types, grades, dimensions and weights of standard and high strength reinforcing steel bars.
- technical data on steel reinforcing spirals, welded wire fabric and bar supports and accessories.
- 16 pages; 50 photos, detail drawings and tables . . . also list of other available publications dealing with reinforced concrete construction.

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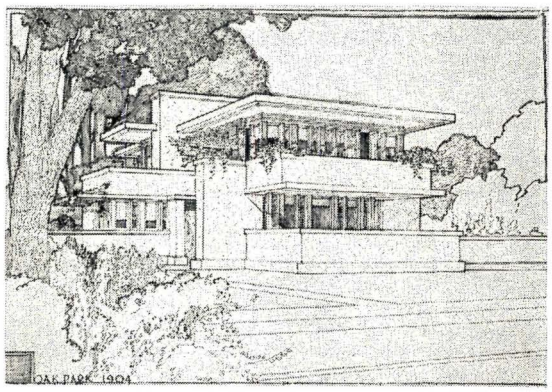
PA

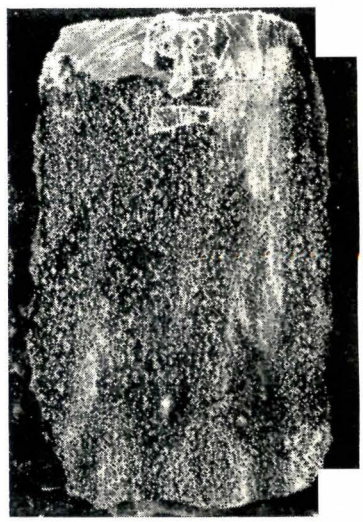
Art: Potpourri



Last month, the Museum of Modern Art had two notable exhibitions running concurrently: "The Drawings of Frank Lloyd Wright" and "Jean Dubuffet." The Wright show will remain until May 6.

Enough Wright drawings to fill all the first floor exhibition areas were amassed by Wilder Green and Arthur Drexler from more than 8000 in the files of the Frank Lloyd Wright Foundation. The well-known Wright genius for presentation is here documented from its earliest to its latest days; the drawings form, it is hoped, a significant object lesson for those present-day architects who cannot be bothered by such a "detail" as imaginative rendering. Shown here is Wright's drawing for the Mrs. Thomas H. Gale house, Oak Park, Illinois, 1909.

This viewer went to the Museum's Dubuffet show to scoff and remained to praise. Having had a slight exposure to some of this artist's more scabrous works in the "arty" pages of some of our consumer magazines, we conceived of Dubuffet and his *art brut* tendencies as dour and misanthropic in the extreme. Not so. "The Source of the Beard" (1959), shown here, dates from the end of the period when Dubuffet was doing works that could be as amazing and startling and funny as anything by Paul Klee. Lately, his palette has become extremely colorful in scenes of Paris and its people.



Continued on page 82

This new technical file describes...

New "integral mullion" windows and curtainwalls*...by CECO

Here are important features of Ceco Series 160-165 aluminum curtainwalls and windows that permit (1) imaginative and creative design and (2) reduced costs!

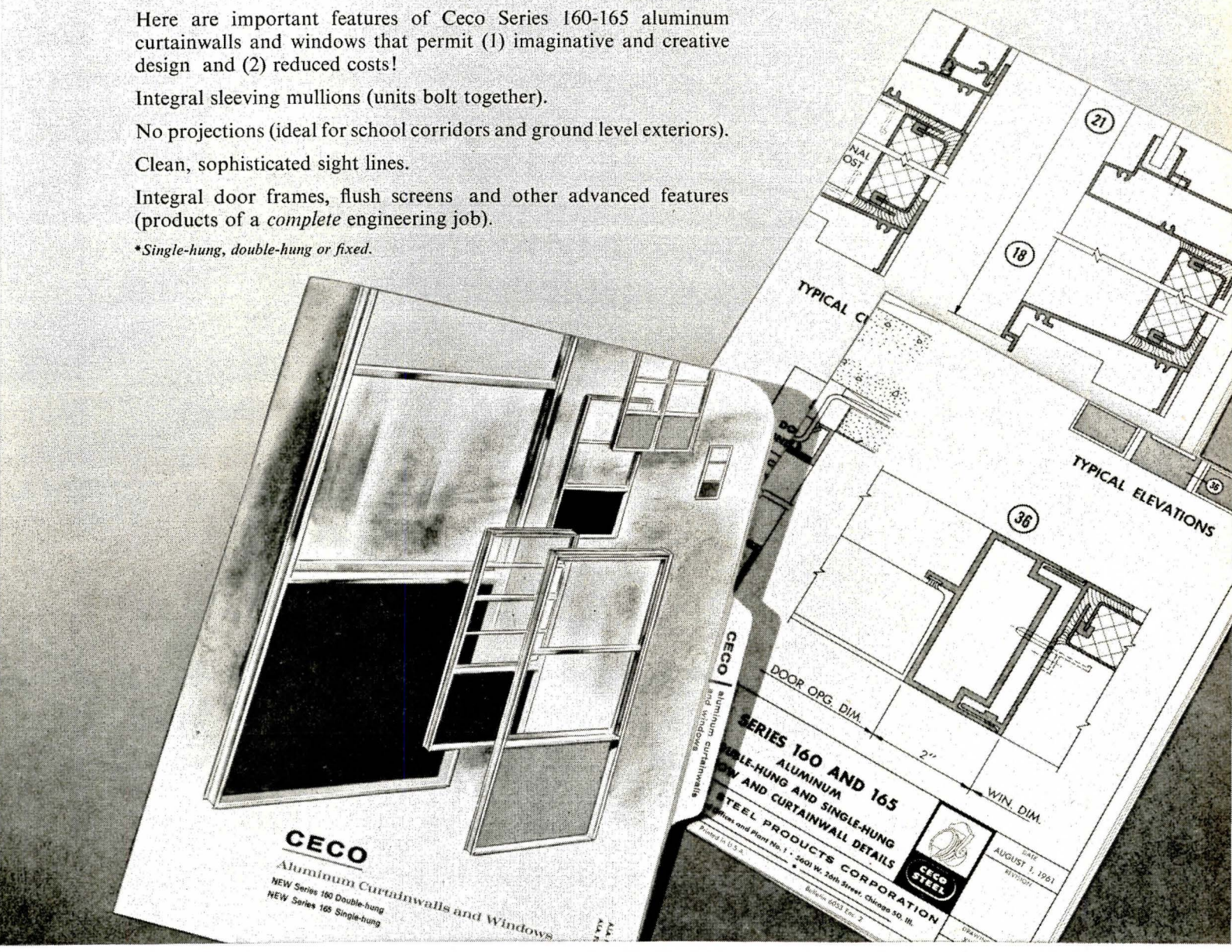
Integral sleeving mullions (units bolt together).

No projections (ideal for school corridors and ground level exteriors).

Clean, sophisticated sight lines.

Integral door frames, flush screens and other advanced features (products of a *complete* engineering job).

**Single-hung, double-hung or fixed.*



Send today for this technical file

It includes all specifications, dimensions, loads, 34″ x 22″ drawings illustrating window variations, typical door frame, jamb, mullion, head and sill details, typical elevations. Use the coupon .... or simply tear out this ad and send it along with your letterhead.

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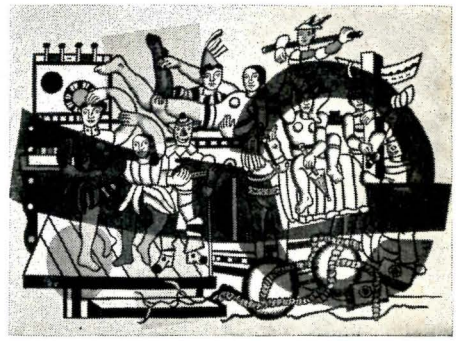
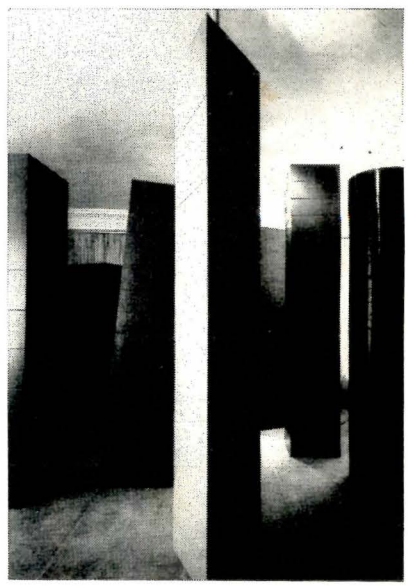


The giant canvases of Fernand Léger often impress one with the feeling of a circus balloon anchored to the ground by a dark stone. This feeling persisted in the recent show at the Solomon R. Guggenheim Museum, which also included many smaller studies. "The Great Parade," with its atmosphere of luminous color and vital forms contained in the framework of a heavy delineation, is illustrative of the techniques that pervade Léger's *oeuvre*.



Mathias Goeritz's new shapes and forms at the Carstairs Gallery were presented, Goeritz writes, "as a statement; a protest against almost all I have produced under the name of art; and a protest against myself as an artist. Art has been violated and is dead." Both his plaques called "Golden Messages" and his vertical "Red Realizations" (*shown*) were based on Biblical texts. The "Realizatoins," the more interesting of the two, used as inspiration *Ecclesiasticus* I:9: "The thing that hath been, it is that which shall be; and that which is done is that which shall be done; and there is no new thing under the sun." A solemn, if sincere, statement for an impressive group of multishaded red shapes among which it was a moving experience to wander.

For more information, circle No. 424 ➤

Masonry Products

Series of 21 sculptured designs is now available in "CV Durathin" line of ceramic facing material notable for its thinness (3/8"), lightweight (4 lb/sq ft), and large size units (maximum: 18" x 24" on centers). Design 13 is shown; architects may also create their own surfaces. Units are available in a wide range of colors, and solid or mottle colors may be specified in gloss, satin, or unglazed finishes. Federal Seaboard Terra Cotta Corp., 10 E. 40 St., New York 16, N.Y.

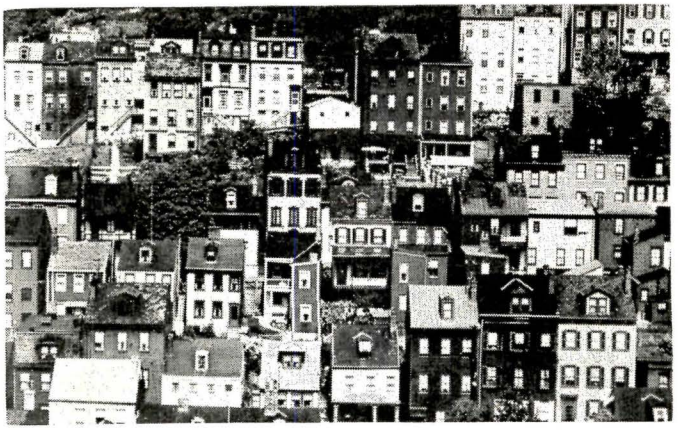
On Free Data Card, Circle **100**

"Ceramaflex" floor tile withstands heavy usage in institutional and commercial installations, comes in 12 patterns including eight random arrangements of matching colors and four solid color designs. The rubber-mounted units measure 9" x 9" and possess an extra thickness of 9/32". The unglazed natural clay ceramic mosaic tiles are surfaced-sealed at the factory for protection during installation. They have high scratch resistance, will absorb less than 3% of water by weight, and are not affected by common acids and alkalis. The tiles are described as having a "very good" thermoconductivity. United States Ceramic Tile Co., 217 Fourth St., N.E., Canton 2, Ohio.

On Free Data Card, Circle **101**

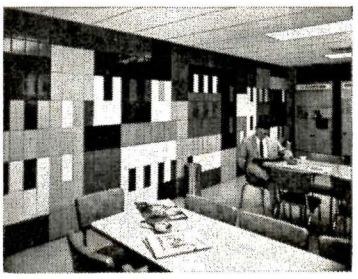
Terrazzo floors successfully withstand brutal treatment in the Boston College Campus Skating Rink. The floor is of brown and tan terrazzo, which is covered by a layer of ice 1½" thick and weighing about 90 tons for ice hockey games and communal skating of the students. When not in use for ice sports, the defrosted rink is used for dances, exhibits, community fairs, and assorted college activities. The National Terrazzo and Mosaic Assn., 2000 K St. N.W., Washington 6, D.C.

On Free Data Card, Circle **102**



A Mondrianesque abstract tile mural representing the houses on the side of Mount Washington in Pittsburgh adorns the wall of the canteen of local advertising agency Ketchum, MacLeod & Grove. "Vitritile" colors of the ceramic glazed structural clay facing tile reflect the multicolored houses on the slope of the steep hill. Tinted mortar integrates colors in the mural and eliminates lines. Each tile measures 3 3/4" x 5 1/16" x 11 3/4". Designer of the wall was agency art director Ed Hall. Natco Corp., 327 Fifth Ave., Pittsburgh 22, Pa.

On Free Data Card, Circle **103**



Textured marble tiles are achieved by "guillotining" 1/2"-thick sections from long rectangular blocks in 4" x 1 1/4" or 6" x 2" modules. These are then assembled into 12" x 5" and 12" x 6" tiles using a color-matched epoxy bonding agent. Comparatively light weight of 61 lb/sq ft makes "Salirpre" tiles feasible as curtain wall spandrels. Product is available in several colors and textures of Italian marble; creates a distinctive surface for exterior or interior applications. Gladiator Marble & Importing Co., 5911 Lemona Ave., Van Nuys, Calif.

On Free Data Card, Circle **104**

More masonry products on next page

MASONRY PRODUCTS cont'd

Ceramic over Plywood

New system for floors requiring high chemical resistance, strength, long life, and economy involves the installation of ceramic tile directly over a plywood subfloor using an epoxy-base adhesive and grout developed at the Princeton, N. J., research center of the Tile Council of America. A test installation of "AAR-II" (council designation for Acid-Alkali Resistant, two-part system) was made in a kitchen area at Fort Belvoir, Va., last year and has performed most satisfactorily, according to observers and users. Satisfactory installations have also been made over concrete, wood, and steel plate. The four companies now marketing AAR-II are Cambridge Tile Manufacturing Co., Summitville Tiles, Inc., The Upco Co., and L & M Tile Products, Inc. The Tile Council of America, Inc., 800 Second Avenue, New York 17, N.Y.

On Free Data Card, Circle **105**

Durable Coating for Masonry

"Desco Nyocon" protective coating for masonry must pass a 1500 "Weather-O-Meter" test without deterioration, must be unchanged after 100 hours exposure at 100% relative humidity with a temperature of 100F, and must be self-extinguishing after five minutes of exposure to a 2000 F flame. It provides a hard finish which is resistant to most acids and alkalis, plus bacterial and fungus growth. It is available in a wide variety of colors, is also a good coating for ships, bridges, and structural steel. Desco International Association, Box 74, Buffalo, N.Y.

On Free Data Card, Circle **106**

Masonry Unit of Converted Stone

"Brikcrete," a masonry building unit composed principally of converted stone in the form of gravel, crushed rock, and other mineral aggregates, is a block possessing a bi-nuclear interior opening which creates a "buttressed web" to give strength to walls and support to the course above. The units, which have color evenly distributed throughout at the factory, come in "modular" and "standard" sizes. Advantages claimed over existing products include greater strength, lighter weight, use of fewer units and less mortar, and superior insulation area. Brikcrete Associates, Inc., Holland, Mich.

On Free Data Card, Circle **107**

Surface Treatment for Cement Block Walls

The economic advantages of interior cement block walls are often lost by maintenance factors involved in keeping plaster or regular paint up to snuff, or in covering the blocks with another, perhaps expensive, material. To answer this problem, PPG has developed a coating system for cement block walls which is highly resistant to abrasion, stains, dirt, and chemicals. "Pitt-Glaze Block Walls System" will withstand rough industrial cleaning treatment such as steam hoses or mechanical scrubbers. The system uses first a couple of coatings of a heavy consistency water-dispersed block-filler, both applied in the same day. After this has dried, the surface is finished by applying a glaze treatment available in high gloss or satin sheen. Since this is a clear finish, any desired color may be obtained by tinting the filler with colorant before glazing. For maximum effectiveness, two coats of the glazing finish are recommended; they may be applied not more than an hour apart. Pittsburgh Plate Glass Co., 632 Fort Duquesne Blvd., Pittsburgh 22, Pa.

On Free Data Card, Circle **108**

Don't Do Without the Dry Tile Grout

"Sno-Brite" is a dry tile grout which actually comes in both white and gray colors. No pre-soaking or wetting is necessary; the grout requires a minimum amount of water. Joints can normally be struck in 10-20 minutes, and the dried film formed on the tile face is easily removed with a dry cloth. A firm hardness occurs in one day; complete cure takes three or four weeks. The grout should be used as is; the proper amount of sand is already in the material for grouting floor tiles. Technical Adhesives, Inc., 3500 Church St., Evanston, Ill.

On Free Data Card, Circle **109**

Savings in Money, Weight, Labor for Terrazzo

A new use for an established product has yielded a technique of applying terrazzo flooring which affords real savings in costs and application time. The material is "Rockweld C," originally developed as a bonding agent for reprairing concrete highway curbings A thin coating of the compound is spread on wood or concrete floors (eliminating customary materials such as sand, tar paper, concrete fill, and wire mesh), and within an hour—or considerably earlier than usual—the terrazzo topping is installed. After final grinding and polishing, the terrazzo slab is only about 1/2″ thick as compared to 2 or 3 in. using the old method. Total weight of the thin slab is only 5 or 6 lb per sq ft, allowing specification of terrazzo floors in a much wider variety of buildings than before. The manufacturer is starting a network of licensed contractors to install terrazzo under factory specifications and guarantees. Preco Chemical Corp., 589 Main St., Westbury, N. Y.

On Free Data Card, Circle **110**

One-Coat Paint for Masonry Exteriors

A one-coat, vinyl masonry paint for exterior use has been tested extensively in hot, damp areas of the country for up to five years and has proved successful. The paint, available in a variety of colors, dries to a dead flat finish and resists chipping, blistering, and peeling. It is applied directly to the surface without the use of primers, sealers, or undercoats. The coating contains ingredients which are not affected by moisture and chemical reaction, and hence obliterate "saponification," the softening, blistering, and peeling of paint due to moisture. Because of its high reflective qualities, the paint is said to be able to reduce interior temperatures by up to 20 de-

grees in hot, sunny months. Sapolin Paints, Inc., 205 E. 42 St., New York, N. Y.

On Free Data Card, Circle 111

Storage System Supplies Own Walls

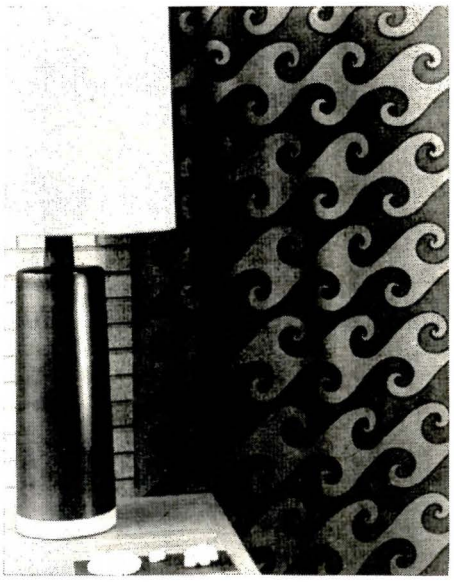
Those who like clean-looking shelf and storage walls should take to System Cado by Danish designer Poul Cadovius. Teak, pine, light oak panels or siding running either horizontally

or vertically, have inconspicuous strips for bracket connections; strips are, in effect parallel rows of holes drilled obliquely into the paneling. Brackets with angled wood dowels fit into the holes to support shelves or a variety of case pieces in the same three woods; no other supports are necessary. Panels can be mounted singly or in series on existing walls or erected as double-sided partition walls to provide for storage in two areas. A pole system designed on the same method is also available. Royal System, 1130 Third Ave., New York 21, N.Y.

On Free Data Card, Circle 112

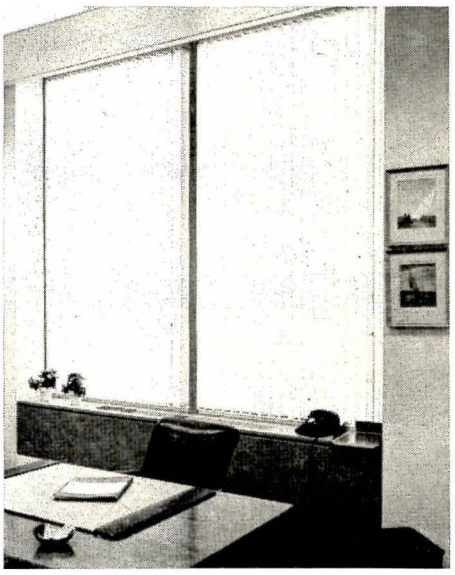
Contemporary Printed Fabrics

Natural motifs are the inspiration for a collection of prints designed by Eleanor and Henry Kluck. The striated pattern, which is silk screened on medium-weight linen, is called "Sunset" and is available in combinations of red-orange, yellow-lime-pale orange, blue-green, and red-violet. "Sea Scroll" is a reinterpretation of a Cretan symbol and is printed on Saranspun—a synthetic fabric designed to resist soiling and wearing in any climate. Its colorways are: blue-green,



gray-rust, and white-natural. Elenhank Designers Inc., 347 E. Burlington Street, Riverside, Ill.

On Free Data Card, Circle 113



Vertical Louver Blinds

These blinds rotate in a fixed position, insuring a controlled appearance to the exterior of a building as well as maximum light for the interior. A single control rod operates the synchronized movement of the head and sill channels for the louvers, which rotate 180 degrees on nylon bearings. Elkirt Corp., 1500-02 Illinois St., Des Moines 14, Iowa.

On Free Data Card, Circle 114

Fiberboard Sheathing's Insulation Value Rated

The Insulation Board Institute has established rated insulating values for the regular fiberboard sheathing produced by its fourteen member companies. Surface-to-surface heat resistance values (R-values) have been set at R 2.06 for 25/32-inch insulation board sheathing and at R 1.32 for ½ in. fiberboard sheathing. IBI member companies will now stamp the "IBI Rated Seal" on their sheets of regular fiberboard sheathing. It is said to be the first time that a trade group has rated a sheathing material for its insulating value and focuses attention on the superiority of insulation board sheathing. Insulation Board Inst., 111 W. Washington, Chicago, Ill.

On Free Data Card, Circle 115

Luxury Flooring of Leather Tiles

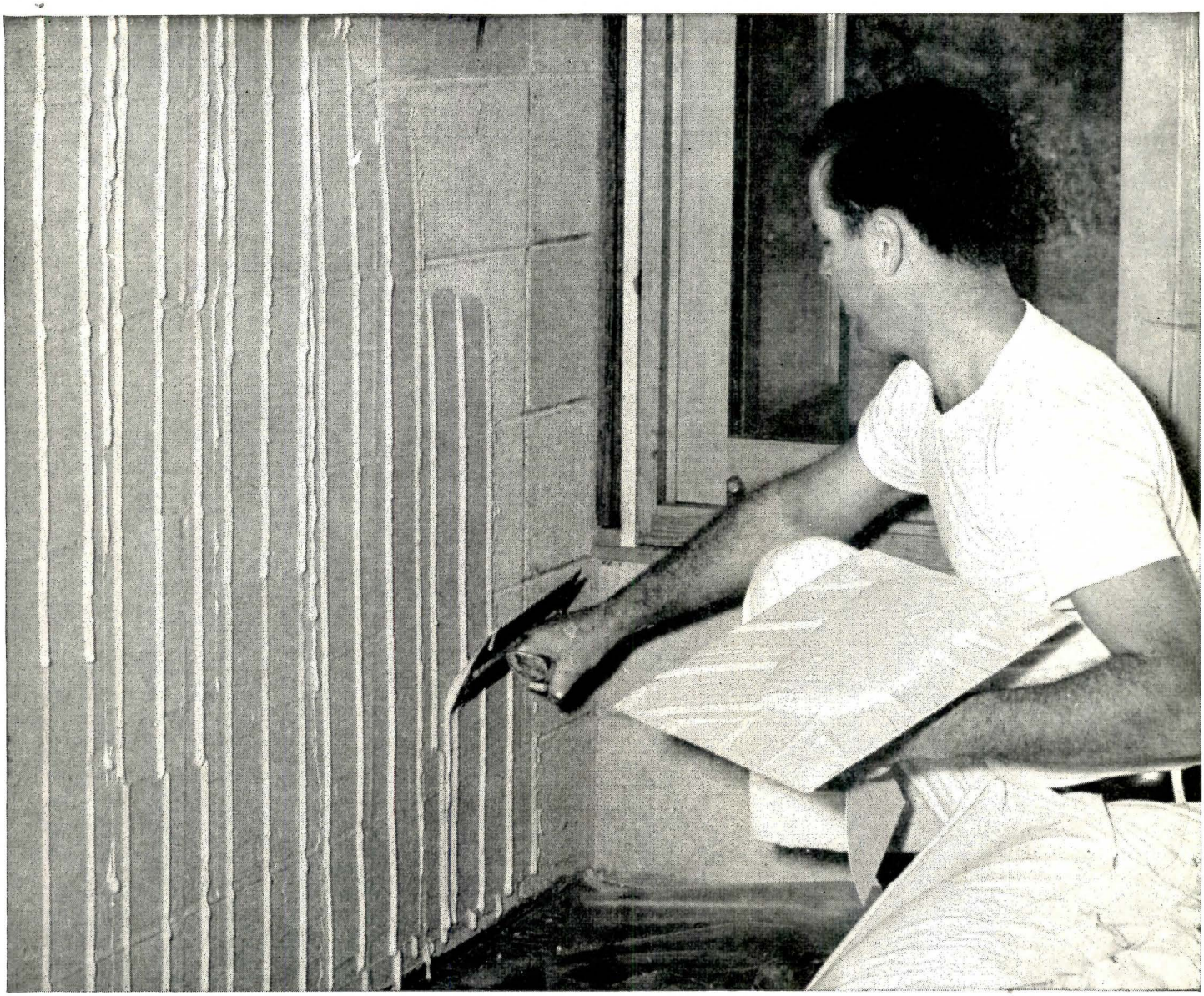
Nine-inch-square leather tiles of fine, firm cowhide create a flooring material with a truly rich look for executive offices, apartments, homes, and libraries. Installation tests over the past five years, plus abrasive tests at independent laboratories, have indicated that the tiles are quite durable and, may expect a long life. Ordinary cleaning and waxing will take care of most stains; a simple bleach may be used for major stains. Minor indentations due to heavy furniture, etc., soon disappear because of the material's resiliency. Because leather is a natural insulating material, tiles are comfortable to the touch at all times. Costs are in line with those of fine carpeting. Installation is accomplished using a special adhesive. Leather Tile Industries, Hanover, Pa.

On Free Data Card, Circle 116

Lightweight Panels of Porcelainized Aluminum

New line of porcelain-finished aluminum panels is priced to equal porcelain-enameled steel; with lighter weight, however, and resulting savings in transportation and installation, the in-place cost of aluminum panels may actually be lower than steel, the manufacturer believes. Several other advantages over porcelain-enameled steel are cited: aluminum panels can be sawed, drilled, or punched without chipping the porcelain coating. In addition, there are no unsightly rust stains at bare edges or drilled holes. The new panel products, made from Kaiser embossed enameling sheet, are available in veneer, insulated, and glazing types. Mapes & Co., Div. of Mapes Industries, Lincoln, Neb.

On Free Data Card, Circle 117



After Styrotac™ bonding cement is applied to either the wall or to Styrofoam, the insulation is pressed in place (center). After overnight setting, gypsum wallboard is either spot-coated or notch-trowelled with Styrotac and pressed in place over the Styrofoam insulation (right).

STYROFOAM®

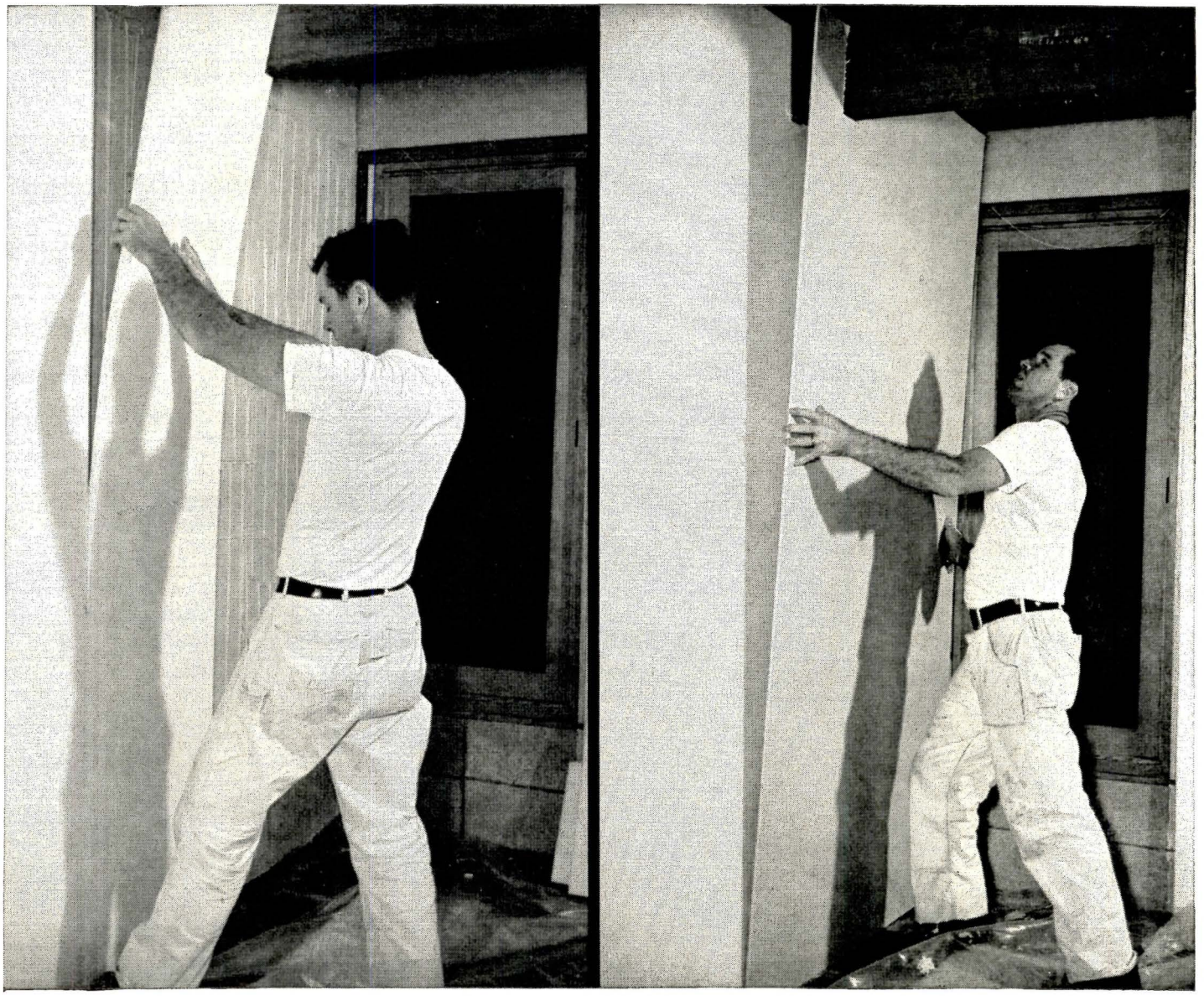
Here's a new step-saving, cost-saving method using Styrofoam insulation for insulating masonry structures which produces permanently high insulating values, provides a solid base for wallboard, and eliminates the problem of nail-popping . . . all in a single operation.

This new method makes use of Styrotac to bond Styrofoam brand insulation board directly to the inside face of the masonry wall, as illustrated. After the bonding cement has set overnight, gypsum wallboard is then adhered to the Styrofoam insulation using the same material.

Using this method, furring and lathing are eliminated, producing a solid insulated wall with no hollows. There is no wood present for insects to feed on, no nail holes to fill and "pop," and the completely-supported wallboard will not bow in or warp. This new insulating method, developed by Dow, offers architects a means of building-in the quality of double-laminate walls, using only a single thickness of wallboard.

Styrotac can be applied to dry absorbent masonry surfaces without first wetting the surface, or it can be applied to the Styrofoam. Either spot application or full coverage using a notched trowel is recommended. Only firm hand pressure against the boards of Styrofoam is required to bond them solidly to the wall.

For wet plaster installations, Styrofoam insulation is first bonded to the masonry wall with Styrocrete® or portland cement mortar. Wet plaster is then applied directly to the face of the Styrofoam. The cellular structure of Styrofoam



New insulating method saves money, saves steps in masonry construction

insulation provides positive keying action to the plaster, producing maximum bond strength.

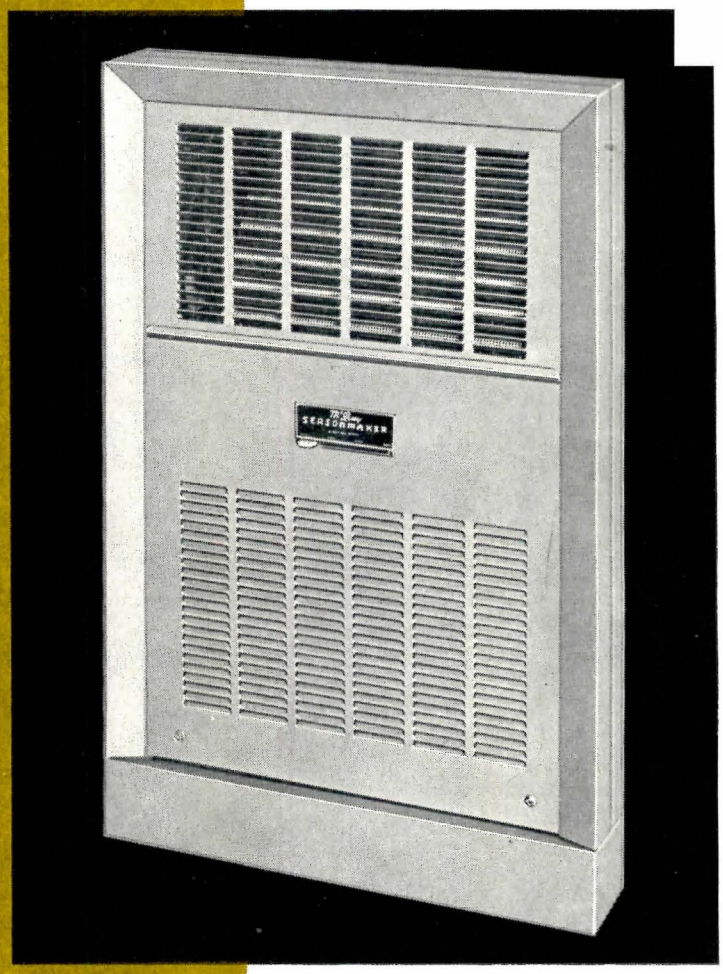
STYROFOAM insulation board provides permanent insulating values for masonry buildings because of its high resistance to moisture, and its low "K" factor. Styrofoam rigid foam insulation contains millions of tiny non-interconnecting air cells which don't soak up water or moisture, don't rot or mildew. *No separate vapor barrier is needed!* And because Styrofoam insulation has no food value, it doesn't attract insects or vermin. In addition, the high insulating efficiency of this insulation keeps heating and cooling costs to a minimum, year in, year out.

For more information on the time-saving, cost-saving advantages of using Styrofoam insulation and this new insulating method for masonry construction, write THE DOW CHEMICAL COMPANY, Midland, Michigan, Plastics Sales Dept. 1301EB4.

Styrofoam is a registered trademark of The Dow Chemical Company. It is applied only to the homogeneous expanded polystyrene made according to an exclusive Dow process. Styrofoam brand insulation board is available only from Dow and its authorized representatives.

THE DOW CHEMICAL COMPANY DOW Midland, Michigan

best looking,
best designed,
best built,
and
whisper
quiet



Seasonmaker JUNIOR

REMOTE AIR CONDITIONER

Now you get the best in looks, best design, best construction, and whisper-quiet operation in a new remote-type air conditioner—the Seasonmaker Junior from McQuay. Attractively and compactly designed with no protruding knobs, the Seasonmaker Junior's clean lines and neutral grey-beige enamel finish complement any decor. This new unit delivers full rated capacity, with up to 20 percent diversion of air to an adjoining room when used with the adjoining room assembly.

An exclusive new rheostat-type slide bar control—only from McQuay—permits modulation of air volume from 50 to 100 percent, while half-inch rigid fiber glass insulation guarantees quietest operation. And because the Seasonmaker Junior has more coil than any other unit of its kind—McQuay's famous Hi-F ripple fin staggered three-row coil—full moisture removal is assured.

Developed by McQuay for single-room installations where space is at a premium, the Seasonmaker Junior goes between the studs for both remodeling and new construction applications. It is available in two sizes—150 and 300 cfm—and two models—recessed and free standing. Accessories include the adjoining room assembly, a fresh air intake assembly, and a decorator base.

For more detailed information, see your McQuay representative, or write McQuay, Inc., 1638 Broadway N.E., Minneapolis 13, Minnesota.

McQUAY INC.
AIR CONDITIONING • HEATING • REFRIGERATION

MAKE THE SEASONS COME TO YOU

PLANTS AT FARIBAULT, MINN. • GRENADA, MISSISSIPPI • VISALIA, CALIFORNIA

MASONRY

Finished Structural Wall in One Masonry Operation

Folder, 6 pages, presents "Trazatex" faced buildings blocks, which give a finished structural wall in one masonry operation. Under the patented process, body and face are formed simultaneously and are cured as a monolithic all-concrete unit. Blocks are precision-ground, polished, and sealed. The result is a strong, sparkling material that is economical, enduring, and maintenance-free. Folder shows available sizes and shapes, gives standard specifications, and suggests some of the many colors that are possible. Marble Face Blocks, Inc., Subsidiary of Multiplex Concrete Co., Inc., Michigan Ave., Kenilworth, N.J.

On Free Data Card, Circle **200**

Ceramic Modules for Façade Treatment

New "Ceramic Façade Systems" offer unusual variety in the treatment of façades for new and old buildings. Three-dimensional sculptured ceramic tile is manufactured to the architect's design; all edges and surfaces are covered with a heavy ceramic-glaze coating to prevent moisture from entering the clay core and damaging the tile. Although the shape of the sculptured tile is designed by the architect, Metalframe offers the complete design service including aluminum or stainless-steel framing members. Folder shows two actual installations, one with exposed framing, the other with concealed framing members. Separate page depicts in color a number of the specially designed ceramic modules. Metalframe, 5832 E. 61 St., Los Angeles 22, Calif.

On Free Data Card, Circle **201**

New Industry Standard for Ceramic Tile

Standard types, sizes, shapes, and grades of ceramic tile for walls and floors are described in a new industry standard just issued by the U.S. Department of Commerce. Entitled *Ceramic Tile for Floors and Walls,* the new standard is the fourth edition of the series, which was first issued in 1927 and has been revised as needed to reflect changes and improvements in industry methods. The present revision includes new details on flat wall and floor tile, mosaic tile, and quarry tile, and new illustrations of the currently used matching trim shapes. Two notable additions are a modular-size series of ceramic mosaic tile, and data on the new ceramic mosaics with abrasive content for safer floors where greater resistance to slipping is desired. Another important feature is a system of grade-marking each package to assure purchasers that tile is of the grade specified. Write (enclosing 10¢) to: Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C.

Brick Floors That Wear Well

Folder, 4 pages, illustrates brick floors with corrosion-resistant and wear-resistant joints of ¼″ or less in thickness. "The narrower the joint, the better the floor" it is explained. Full product description and specifications for "Embeco" are included. Mortar made with this nonshrink metallic aggregate gives long life and low maintenance both to new brick floors and the repair of existing ones. The Master Builders Co., Div. of American-Marietta Co., 2490 Lee Blvd., Cleveland 18, Ohio.

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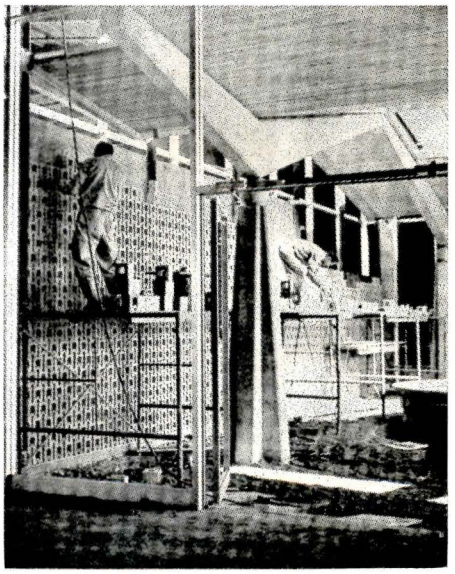

Epoxy Adhesive

Case-history reports on "Concresive" epoxy adhesive show the clean, yet amazingly strong, results achieved on two decorative-block screens. Construction procedures are described and photographed. Cost savings over conventional mortaring are cited. The data sheets also show the several methods of applying Concresive. Adhesive Engineering, Div. of Hiller Aircraft Corp., 1411 Industrial Rd., San Carlos, Calif.

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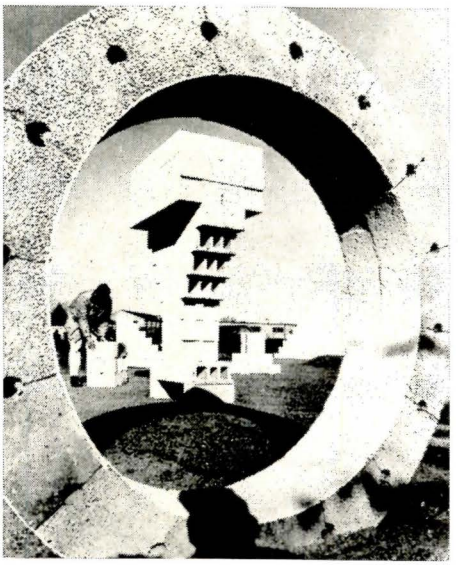


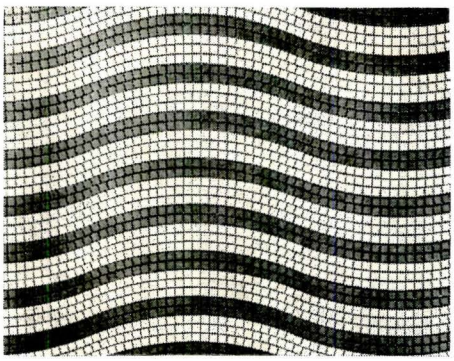
Remarkable Bonding

Information package on the recently introduced "Threadline Mortar" is available. Tests have shown that this remarkable adhesive for bonding masonry units is five times stronger than ordinary mortar. (Actual mortar strength could not be reported because, in all cases, Threadline was stronger in bond, flexural, and lateral strength than the masonry units themselves.) The product offers numerous other advantages over ordinary mortar: it cures nine times more rapidly, lays twice as quickly. In the information folder are 8 pages of questions and answers concerning costs, availability, application techniques, present jobs underway or completed, appropriate uses, properties, union response, code acceptance. A 4-page specifications bulletin is included, plus another 4-page bulletin on mixing and application. Test results are also available. Raybestos-Manhattan, Inc., Adhesives Dept., Bridgeport, Conn.

On Free Data Card, Circle **204**

New Patterns for Floor and Wall

Two brochures from Cambridge Tile, each 4 pages, show their new designs in ceramic tile. New "Serpentine" pattern (*shown*) uses a patented method whereby 1″ x 1″ or 2″ x 2″ tiles are precision-mounted on 2′ sheets to give a uniform hand-set appearance to the unique design. Serpentine floors are available in solid color or multicolor



combinations. Second brochure presents "Suntile Granite" textured ceramic mosaics for floors and walls. The various patterns are designed by Max Spivak. Again, the patented "Setfast" method is used to insure labor-saving, strong, and handsome installation. The Cambridge Tile Manufacturing Co., P.O. Box 71, Cincinnati 15, Ohio.

On Free Data Card, Circle **205**

Masonry Reinforcement

Data folder from Dur-O-WaL, a total of 14 pages, gives recommendations on masonry-wall reinforcement. The several reports cover the use of Dur-O-WaL with: (1) glass block; (2) stacked-bond masonry; (3) cavity walls; and (4) in combination with control joints. A brief specification for the location of control joints is also included. Dur-O-WaL Div., Cedar Rapids Block Co., 650 Twelfth Ave., S. W., Cedar Rapids, Iowa.

On Free Data Card, Circle **206**

Precast Wall Panels

Bulletin from the Mo-Sai Institute, 8 pages, illustrates precast facing and curtain-wall panels. Color photos show a few of the wide variety of colors and textures, a variety that can "suit the widest architectural expression." Method of fabrication is shown, also anchoring and handling methods. Bulletin descirbes the physical characteristics of Mo-Sai, and gives complete specifications. Mo-Sai Institute, Inc., 166 Chapel St., New Haven, Conn.

On Free Data Card, Circle **207**

Special Effects in Ceramic Tile

Bulletin, 4 pages, shows the distinctive tile designs manufactured by Pomona for special effects. "Sculptured" tile line includes 6 designs created by Saul Bass, George Nelson, and Margaret Lowe. The "*Designer*" series includes several handsome designs that may also be used as accents, stripes, panels, or over-all effects. In the "Scored" tile series, 6″ x 6″ units are made up of 1″ x 1″, 2″ x 2″, 1″ x 2″, or 1″ x 6″ modules. Unglazed scored areas are quickly grouted, saving considerable installation time and expense, and giving a mosaic appearance with perfectly aligned joints. Brochure also gives data on standard floor and wall tile—finishes, sizes, edges, and special features. Pomona Tile, 629 North La Brea Ave., Los Angeles 36, Calif.

On Free Data Card, Circle **208**

Color Co-ordinated Tile

Color Planner illustrates 36 co-ordinated color schemes for bathrooms (residential, commercial, and institutional) on a large sheet suitable for wall hanging. The 12 basic color schemes (with 3 variations on each) were assembled by Miss Lee Childress, color-planning specialist. Each plan shows one of the new (1961) patterns in 1$\frac{1}{16}$″ square unglazed mosaics, co-ordinated with Stylon's bright glazed wall tile, Stylon's countertop "V-Cap," an alternate selection in natural-clay mosaics, and American-Standard plumbing fixtures. Stylon distributors and showrooms are listed on reverse. Stylon Mfg. Corp., Box 341, Milford, Mass.

On Free Data Card, Circle **209**

Specs and Details for Exterior Marble

In a newly revised publication, the Marble Institute of America presents the American Standard specifications for: (1) exterior marble veneer 2″ and less in thickness, and (2) exterior marble in curtain or panel walls. The 42-page booklet also includes special data—on marble service, and marble classifications for soundness—which are not part of the ASA-approved specifications, but are included as a convenience to those who select and detail marble. Final portion of the reference is devoted to general details recommended for exterior marble work and particular marble details used in several noted buildings. Write (on letterhead) to: Marble Institute of America, Inc., 32 South Fifth Ave., Mount Vernon, N.Y.

Ceramic Wall Surfacing

New catalog of Design-Technics' sculptured ceramic wall surfacing has been published. Examples of installations show more than 50 designs currently available. Custom wall, mural, and screen treatments are also shown. The products are suggested for both interiors and exteriors of residential and commercial buildings. Design-Technics, 7 E. 53 St., New York 22, N.Y.

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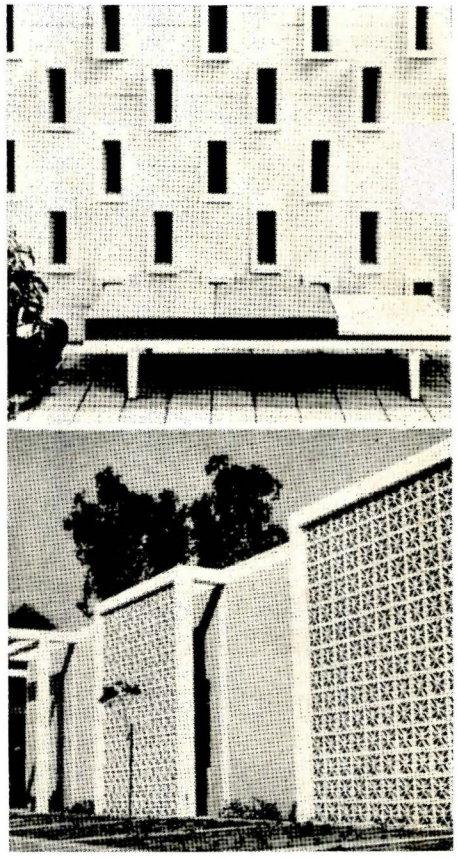


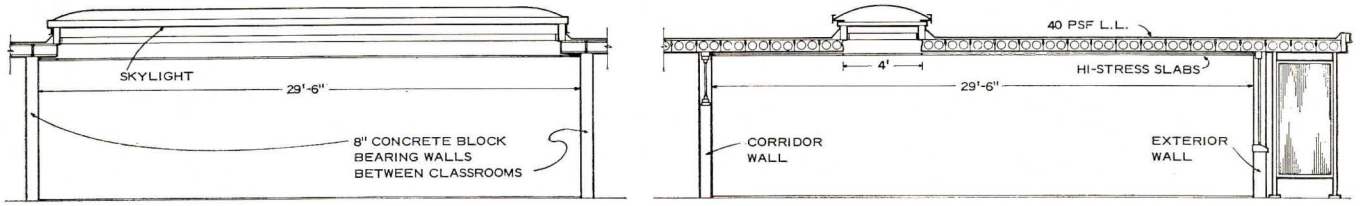
Masonry Cement

New 16-page brochure on proper mortaring practices, containing complete mortar specifications, has been published by Permanente Cement. Entitled *Masonry Cement: A Guide to Modern Design and Construction,* the well-illustrated booklet provides valuable reference material for architects, engineers, and masonry contractors. In addition to sections on mortaring practices and mortar-mix specifications, there is a review of the types of mortar joints and their uses. Permanente Cement Co., Room 2483, 300 Lakeside Drive, Oakland 12, Calif.

On Free Data Card, Circle **211**

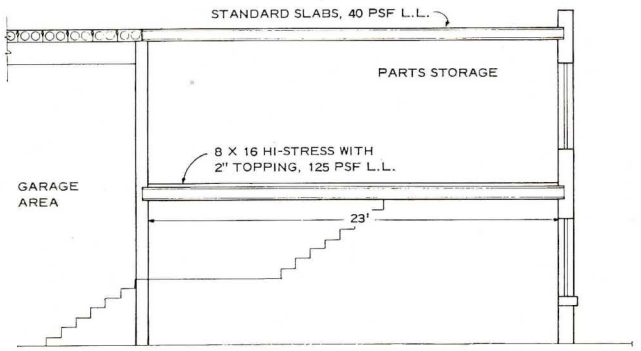
Limestone Literature

Handbook on Limestone provides extensive information on grades, color tone, and finishes of limestone, plus other technical data on engineering, application, specification, and maintenance. A large portion (67 pages) of

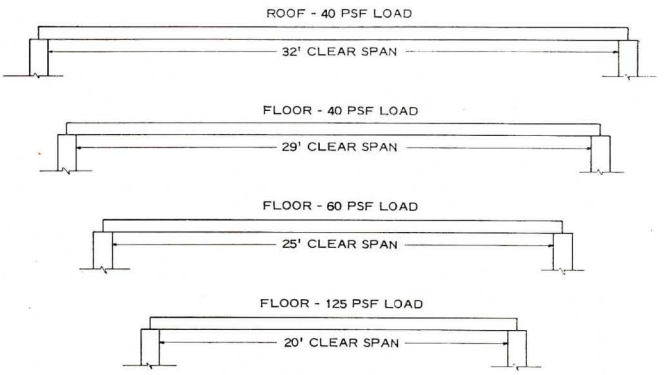


SCHOOL WITH CLASSROOM SKYLIGHTS. Flexicore Hi-Stress slabs with two 7/16" stress-relieved strands clear span the 29'-6" width of the rooms, are designed to carry 40 psf roof load. Four slabs, two on each side of skylight, have three 3/8" strands to carry the extra load of the skylight.

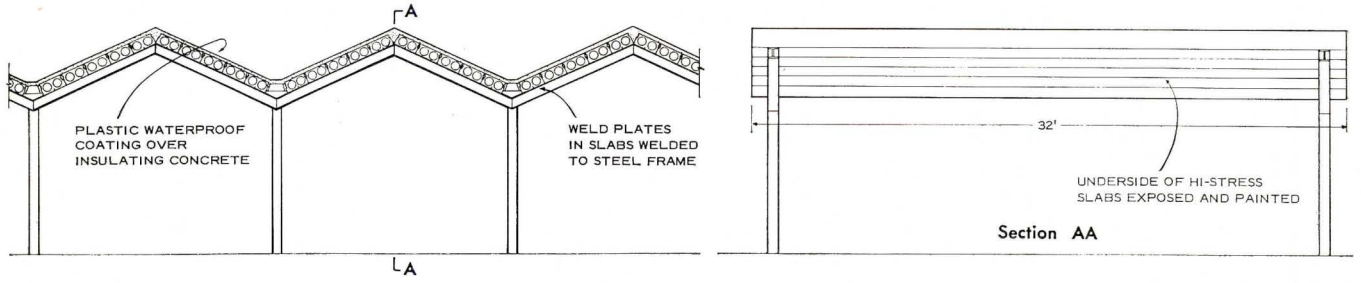
New Hi-Stress Flexicore Slabs Combine Longer Spans, Greater Loads, Improved Structural Performance



PARTS DEPARTMENT FLOOR in garage was designed for 125 psf superimposed load. Two inches of concrete topping on Hi-Stress floor gave a composite design to adequately handle this load on the 23' clear span. Standard Flexicore slabs were used on the roof.



TYPICAL LOAD AND SPAN combinations for 8 x 16 Hi-Stress Flexicore slabs. Superimposed loads shown may be increased with composite design.



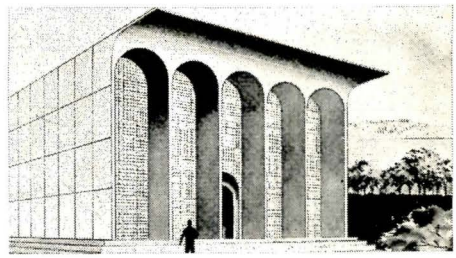
ONE-STORY COMMERCIAL BUILDING ROOF DESIGN requires only a steel frame on each side of the building to carry 8-inch Hi-Stress units on long clear span. Design can be repeated in any direction for larger building. Underside of slabs was exposed for neat, maintenance-free ceiling.

Floor or roof slabs erected quickly

New 8" x 16" Hi-Stress units are fully prestressed slabs (f_{si} 175,000 psi) cast in steel forms, with stress-relieved strands tensioned before concrete is poured. Appearance is similar to standard Flexicore slabs which use pretensioned intermediate grade steel bars.

For more information on these projects, ask for Hi-Stress Flexicore Facts 2, 4 & 5. Write The Flexicore Co., Inc., Dayton, Ohio, the Flexicore Manufacturers Assn., 297 S. High St., Columbus 15, Ohio or look under "Flexicore" in the white pages of your telephone book.

flexicore®
PRECAST CONCRETE DECKS

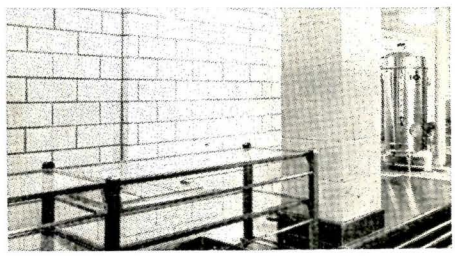


the handbook is devoted to recommend details—for walls, doorways, window surrounds, mullions, sills, copings, etc. Supplements and revisions will be added to the handbook from time to time, particularly in the "New Ideas" and "Engineering Data" sections. Publisher of the loose-leaf book is the Indiana Limestone Institute, which serves as a co-ordinating agency for quarriers and fabricators in the industry through the U.S. and Canada. Its purposes include the establishment and maintenance of standards, the dissemination of unbiased and authentic information, and the sponsorship of research. Indiana Limestone Institute, P.O. Box 757, Bloomington, Indiana.

On Free Data Card, Circle 212

Glazed Structural Units

"Glazon" pre-faced structural masonry units are presented in 8-page catalog. Physical, decorative, and economical



properties are described; standard colors and sizes are shown; and specifications are supplied. Application photos show Glazon units in use where interiors call for attractive appearance, durability, cleanliness, and chemical resistance. Test reports are available on the material's inflammability, stain resistance, and wear resistance. Glazon Corp., 666 Fifth Ave., New York 19, N.Y.

On Free Data Card, Circle 213

Split-Face Marble

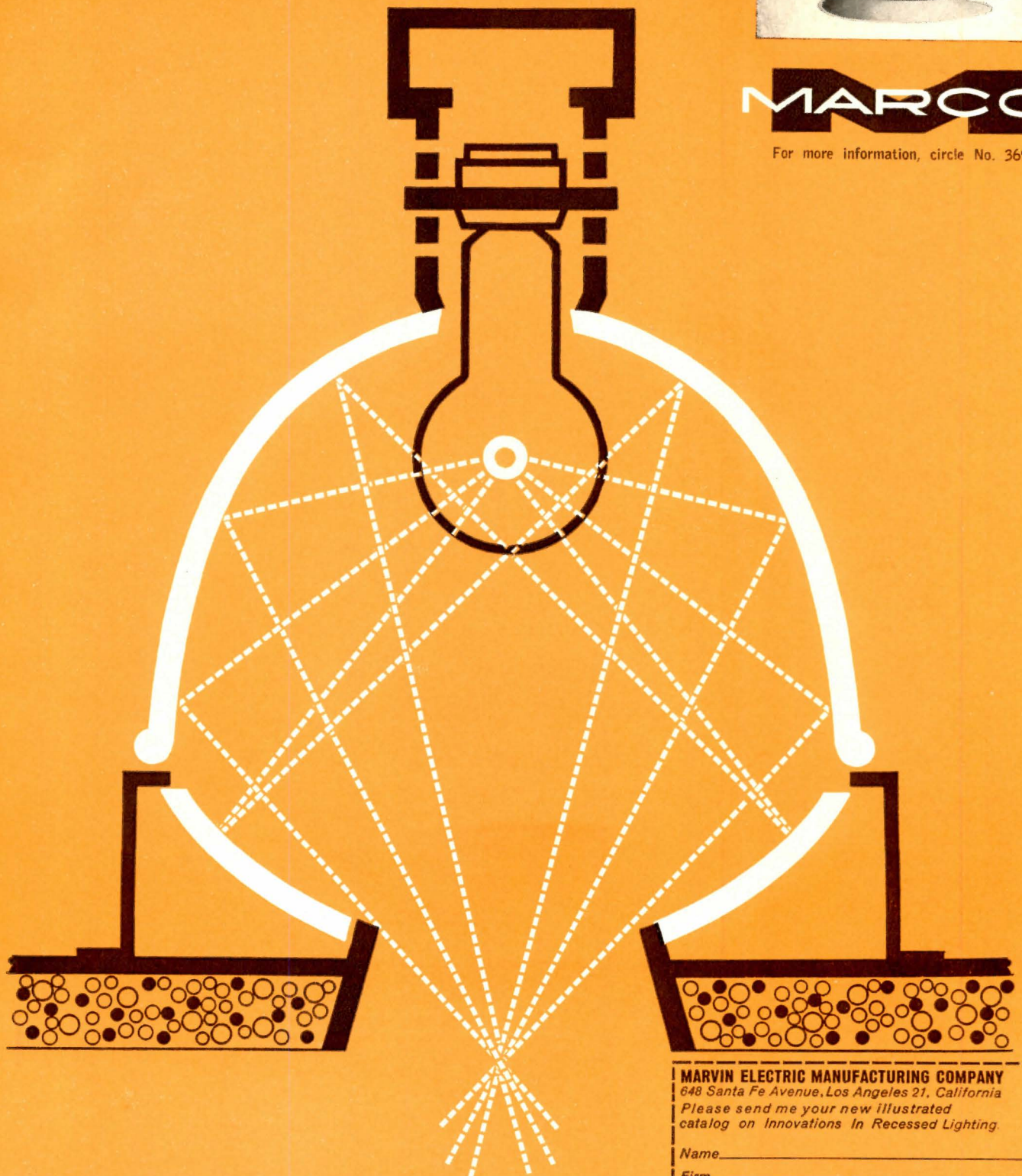
New "Marspac" by Walker & Zanger is a split-face marble permanently bonded in easy-to-handle, lightweight 5″ x 12″ or 9″ x 9″ tiles. Its face maintains the natural beauty and color of the original marble, enhanced by rugged texture. Available in 21 colors, the product is suitable and

Continued on page 102

AMPLIFLECTOR One of many innovations in our new Marco-Illumiline collection. Two reflectors (outlined in white) are so precisely related that light beams bounce off and back from them, ultimately to be funnelled through the aperture with virtually no glare. No baffles are required when this lighting principle is employed. Use coupon below for handsome Illumiline catalog illustrating over 100 new recessed lighting fixtures.

MARCO

For more information, circle No. 369



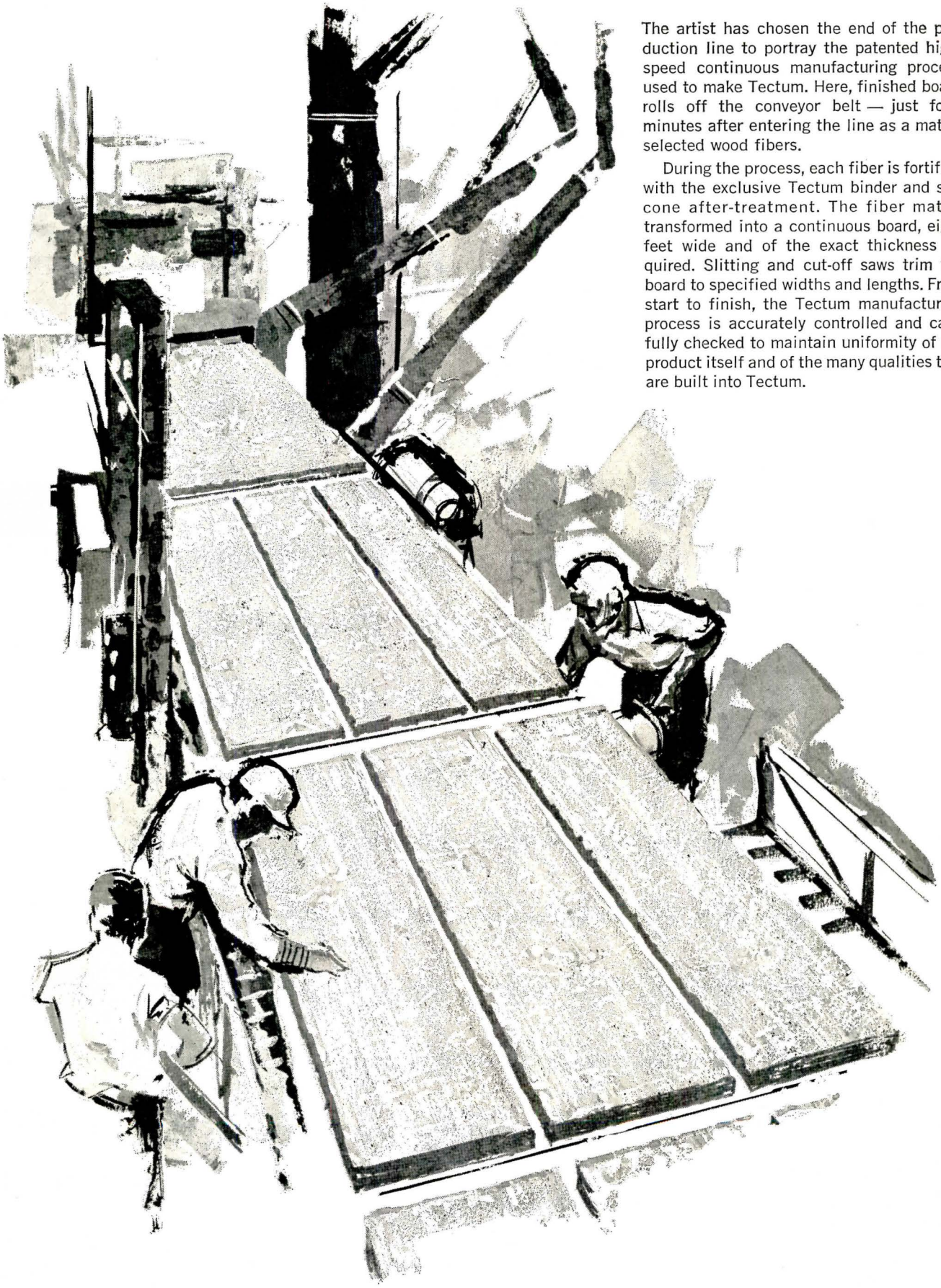
MARVIN ELECTRIC MANUFACTURING COMPANY
648 Santa Fe Avenue, Los Angeles 21, California
Please send me your new illustrated catalog on Innovations In Recessed Lighting.

*Name*_____

*Firm*_____

*Street*_____

*City*_____ *Zone* *State*



The artist has chosen the end of the production line to portray the patented high-speed continuous manufacturing process used to make Tectum. Here, finished board rolls off the conveyor belt — just forty minutes after entering the line as a mat of selected wood fibers.

During the process, each fiber is fortified with the exclusive Tectum binder and silicone after-treatment. The fiber mat is transformed into a continuous board, eight feet wide and of the exact thickness required. Slitting and cut-off saws trim the board to specified widths and lengths. From start to finish, the Tectum manufacturing process is accurately controlled and carefully checked to maintain uniformity of the product itself and of the many qualities that are built into Tectum.

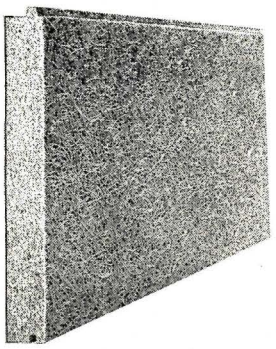
TECTUM CORPO ATION.....

Why do more Architects specify Tectum than any other roof deck of its type?

There is no equal for Tectum. At first glance, some roof deck materials resemble Tectum. The similarity stops here. There is no equal for Tectum because no other product is made like Tectum and in the making lie important hidden advantages.

Tectum is manufactured with a patented, continuous-belt process using an exclusive, fast-setting binder. The rapid chemical reaction is naturally compatible with wood fibers. The natural tensile strength and the high secondary strength of the live fibers, so important for impact resistance, are retained.

Tectum quality is controlled, continuously and automatically. As a result, Tectum has superior uniformity of thickness, density, binder dispersion, coloring and surface appearance.



Structural strength, insulating values and acoustical properties of a product are as consistent as its uniformity. One evidence of the automatically controlled uniformity of Tectum is the light reflective coloring of Tectum — an off-white tone that is the same throughout the board — not just a surface coating.

Designers appreciate the fact that Tectum is available in custom sizes for special modular requirements as well as in a wide variety of standard sizes. An "endless" board of Tectum eight feet wide rolls off the production lines continuously. Handling and shipping efficiencies are the only limitations to size.

As form plank, Tectum is ideally suited to the exciting shapes of thin shell concrete design.

Why do more Engineers approve Tectum specifications? A tough structural wood fiber board with exceptional impact resistance, Tectum is approved by engineers—even for areas where seismic conditions regulate building design. Its light weight, 40% to 100% less than similar products, makes Tectum ideal for light framing systems or buildings located on poor soil conditions.

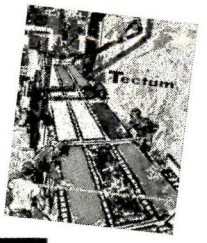
Why do more Contractors prefer to work with Tectum? Tectum is easier to handle, erect and roof than any product of its type. Tectum's uniform thickness simplifies roofing and the contractor finds many timesaving benefits. If roof deck planks are not uniform in thickness, difficulties are encountered at joints contributing to possible leaks or future problems. Tectum's thickness is mechanically controlled throughout the forming of the material. Uniformity is assured. Tongue and groove plank edges and rabbetted tile edges are factory fabricated, permit firm, tight joints that increase the strength of the roof deck. Because of its binder, Tectum can be cut easily on the job site with conventional wood working tools. Since Tectum is resilient, not brittle, it withstands shipping and handling with less breakage. Tectum decks supply important safety against impact loads during construction and maintenance. With normal care, Tectum does not require painting. A ply of roofing felt is factory applied on the topside to protect Tectum during shipping and to provide an excellent mopping surface for built-up roofing. Tectum simplifies the job, saving time and labor.

Growing in preference through performance . . .

More Tectum is installed in schools, churches, industrial and commercial buildings than any other product of its type. The economies of easy handling and quick installation are important to the total building cost. Tectum pioneered this building material concept. Tectum holds exclusive patents on the manufacturing process.

There is no equal for Tectum because no other product is made like Tectum, performs like Tectum, can be handled like Tectum or has the acceptance of Tectum.

For complete information on Tectum, see Sweet's Architectural File (2h/Te) (2f/Te) (11a/Te) and Industrial File (2h/Te) (11a/Te).



This new Tectum General Catalog illustrates the broad application of versatile Tectum. Send for your copy today.

Tectum®

.....535 EAST BROAD STREET, COLUMBUS 15, OHIO

Continued from page 98

economical for interior and exterior walls. Brochure, 4 pages, describes Marspac and gives suggestions for its installation. United Marble & Granite Corp., 100 Hudson St., New York 13, N.Y.

On Free Data Card, Circle 214

Mortars, Mastics, Grouts

Just published is an illustrated 8-page catalog on mortars, mastics, grouts, and other products for ceramic-tile installation. Also described is the complete line of "Tec" specialty items—including cements, sealers, polishers—for mosaic tile, marble, and terrazzo. Each product is fully described as to properties and appropriate use. Technical Adhesives, Inc., 3500 Church St., Evanston, Ill.

On Free Data Card, Circle 215

Terrazzo Installations, Standard and Special

Timeless Terrazzo for Fine Floors, condensed version of a recent Technical Data Brochure, is being offered to the building industry. In detailed text and scale drawings, the brochure presents specifications, methods of installation, and care of terrazzo. Standard terrazzo installations include floors, bases, stairs, wainscots, and partitions; specialized installations include monolithic, venetian, conductive, outdoor, and radiant heating. National Terrazzo and Mosaic Association, 2000 K St., N.W., Washington 6, D. C.

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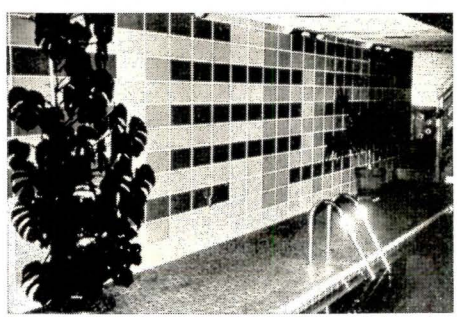

Glazed Block

Special properties of "Spectra-Glaze" structural masonry units are described in new 16-page bulletin. Among the product's unique advantages: various block shapes provide accommodation for utilities at great reduction in cost unit eliminates floor recess and simpli-

Continued on page 106

Hausermanaged* from layout through lifetime occupancy

beautiful, efficient solutions to space division

The man in Hausermanaged* Movable Walls is many men . . . from coast-to-coast. Men to suggest proper layout of Hauserman Movable Wall Systems. Men experienced in fast, efficient erection of a Hauserman Wall System because they are Hauserman factory-payroll employees, installing over 250 miles of walls in a year . . . more than a mile each working day!

When you select walls to divide an area, use equal parts of aesthetics and practicality. You want modern design and fashionable color . . . Hauserman Movable Walls have both. You want the look and feel of permanence with sound control and durability . . . Hauserman Movable Walls have all three.

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fies installation; ⅛″ glazed facing is integrally bonded within pores of the block, not sprayed on; and facing is overlapped at edges to minimize chipping and create a ¼″ joint. New lightweight modular units 8″ x 24″ and 12″ x 24″ promise significant savings. Bulletin shows standard shapes and more than 40 standard and special colors. Coursing details and specifications are also included. The Burns & Russell Co., Box 6063, Baltimore 31, Md.

On Free Data Card, Circle 217

Ceramic Tiles Cushioned in Rubber

"Ceramaflex" floor tile, billed as the newest luxury flooring on the market, consists of 1″ x 1″ ceramic tiles that are permanently bonded into a 9″ x 9″ flexible rubber grid. Floors are thus quiet and easy on the feet, and extremely simple to install. New 4-page brochure shows the 16 mosaic patterns —unglazed earth tones and crystalline-glaze pastels. In addition, there are four solid colors. Architectural specifications are given. United States Ceramic Tile Co., 217 Fourth St., N.E., Canton 2, Ohio.

On Free Data Card, Circle 218

SANITATION/PLUMBING

Survey of Fixture Needs

Plumbing-Fixture Requirements in University Instructional and Research Buildings, 20 pages, is the first of a new series of detailed studies on design criteria for university construction. The work is being conducted by the University Facilities Research Center of the Council of Ten and the University of Chicago (located at the University of Wisconsin and directed by W. S. Kinne, Jr., AIA). A grant from the EFL is making these investigations possible.

Plumbing installations were selected for study because of their significant cost in modern building construction. Also, it was felt that campus buildings present some unique characteristics of occupancy, and by having these buildings designed in accordance with usual code and custom, they are probably overfixtured. Conclusions based on field surveys support this hypothesis. Educational Facilities Laboratories, Inc., 477 Madison Ave., New York 22, N.Y.

On Free Data Card, Circle 219

Everything **and** the Kitchen Sink

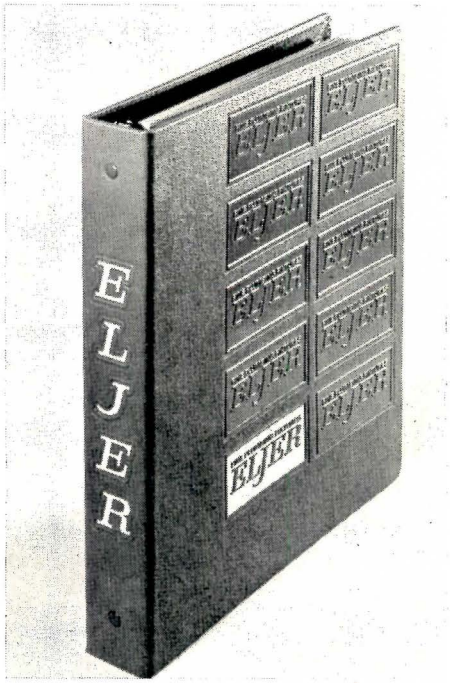
"Carlton" line of stainless-steel sinks for home, school, church, and institution is presented in new 40-page catalog. The wide range of models and accessories is shown in photographs and dimensional drawings. Catalog also includes data on finishes and features, and specifications. Carrollton Manufacturing Co., Carrollton, Ohio.

On Free Data Card, Circle 220

Glass Drainline for Corrosive Wastes

Two color films on "Pyrex Double-Tough Drainline," running a total of 30 minutes, are available. The first explains the effectiveness of the glass drainline in the disposal of corrosive wastes; discussion is by an engineer,

a plumber, a plumbing contractor, a building-maintenance man, and a plumbing-union leader. Second film demonstrates a typical installation in the actual time required for cutting and beading. Write to: Advertising & Sales Promotion Dept., Corning Glass Works, Corning, N.Y.



Large Catalog of Plumbing Fixtures

New 130-page general catalog has been published by Eljer, containing data and illustrations of one of the most complete lines of plumbing fixtures in the industry. Many new fixtures and fittings are included for the first time. Catalog also features plans of bathrooms designed to utilize Eljer fixtures. Eljer Plumbingware Div., The Murray Corp. of America, 3 Gateway Center, Pittsburgh 22, Pa.

On Free Data Card, Circle **221**

SPECIAL EQUIPMENT

Space-Saving Efficiency in the Drafting Room

New 32-page product and planning guide shows drafting-room equipment that is designed to reduce fatigue, increase efficiency, and save floor space. "Auto-Shift" drafting tables, developed from intensive research, have board positions that are instantly changeable, and have all facilities for drafting at the fingertips of the draftsman. Other items presented are

4-post drafting tables, tracing tables, and drawing boards. Hamilton's extensive line of filing equipment—for rolled or flat materials, active or inactive—is also shown. Hamilton Manufacturing Co., Two Rivers, Wis.

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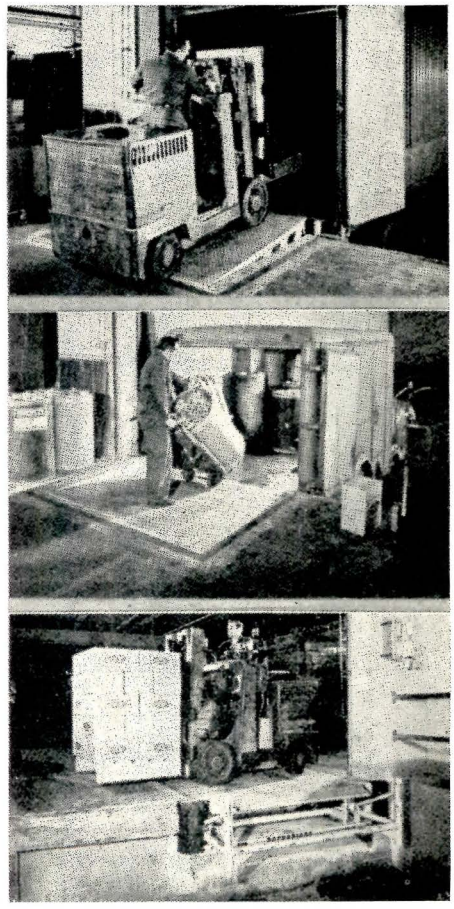
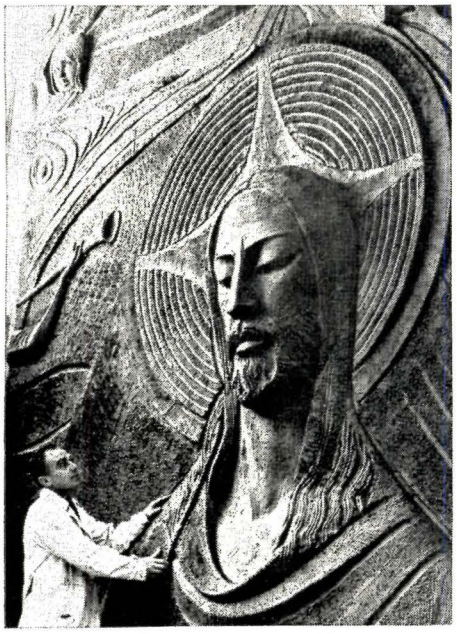


Getting the Goods –on a Ramp

Facts, Figures, Ideas for Designing Loading Docks, 12 pages, is a well-designed manual on goods-handling. Under the category of "General Design Suggestions" are discussions of

dock position, grading, paving, weather protection, apron space, and determining the maneuvering area for equipment. Also presented are design standards for truck terminals, methods for bridging the gap between dock and truck, and the economies of unit loading. Selection of the proper size of Dockbridge loading ramp is shown by graph. American Dockbridge, Inc., 235 W. Oklahoma Ave., Milwaukee 7, Wis.
On Free Data Card, Circle **223**

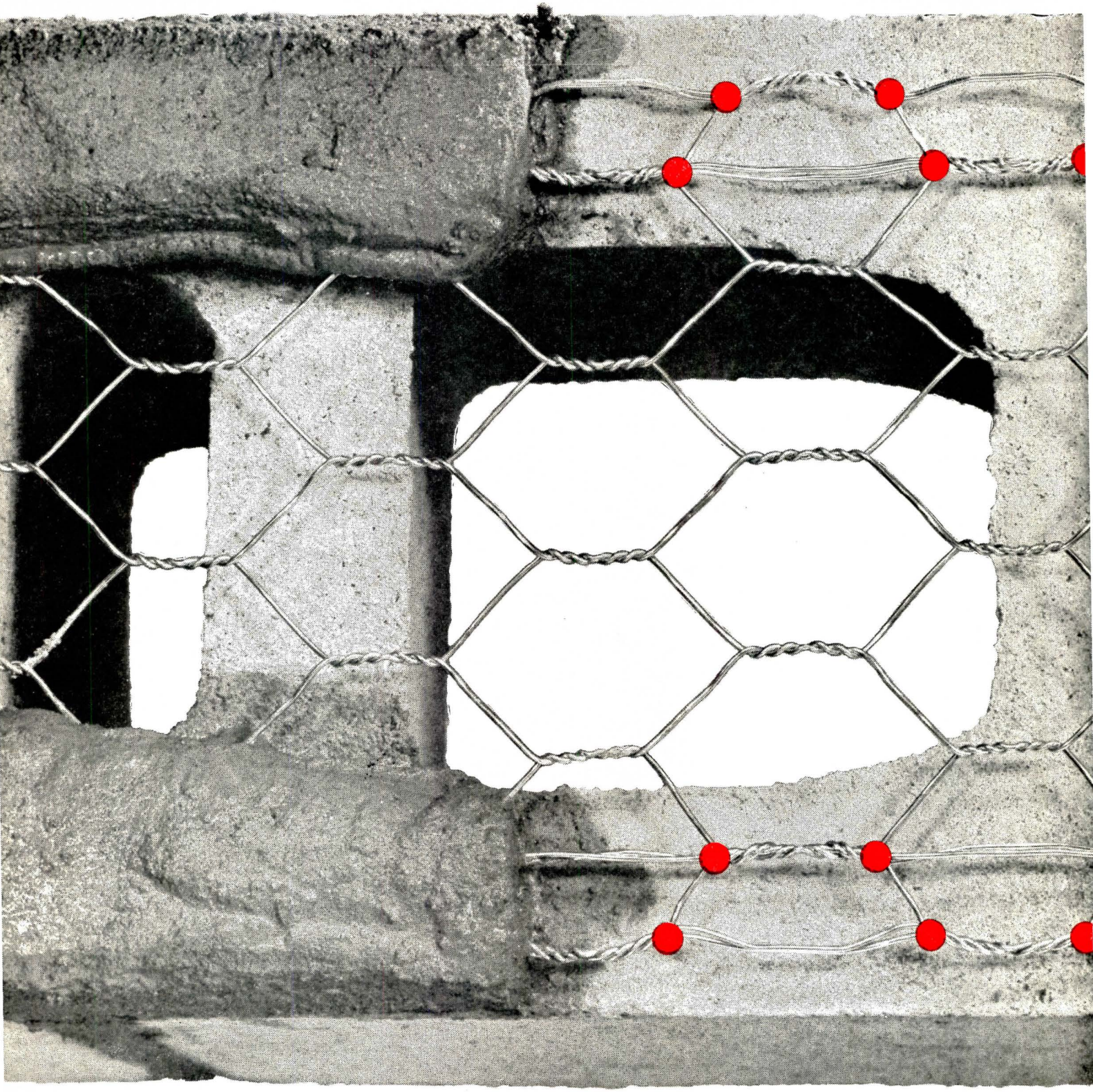


Liturgical Art

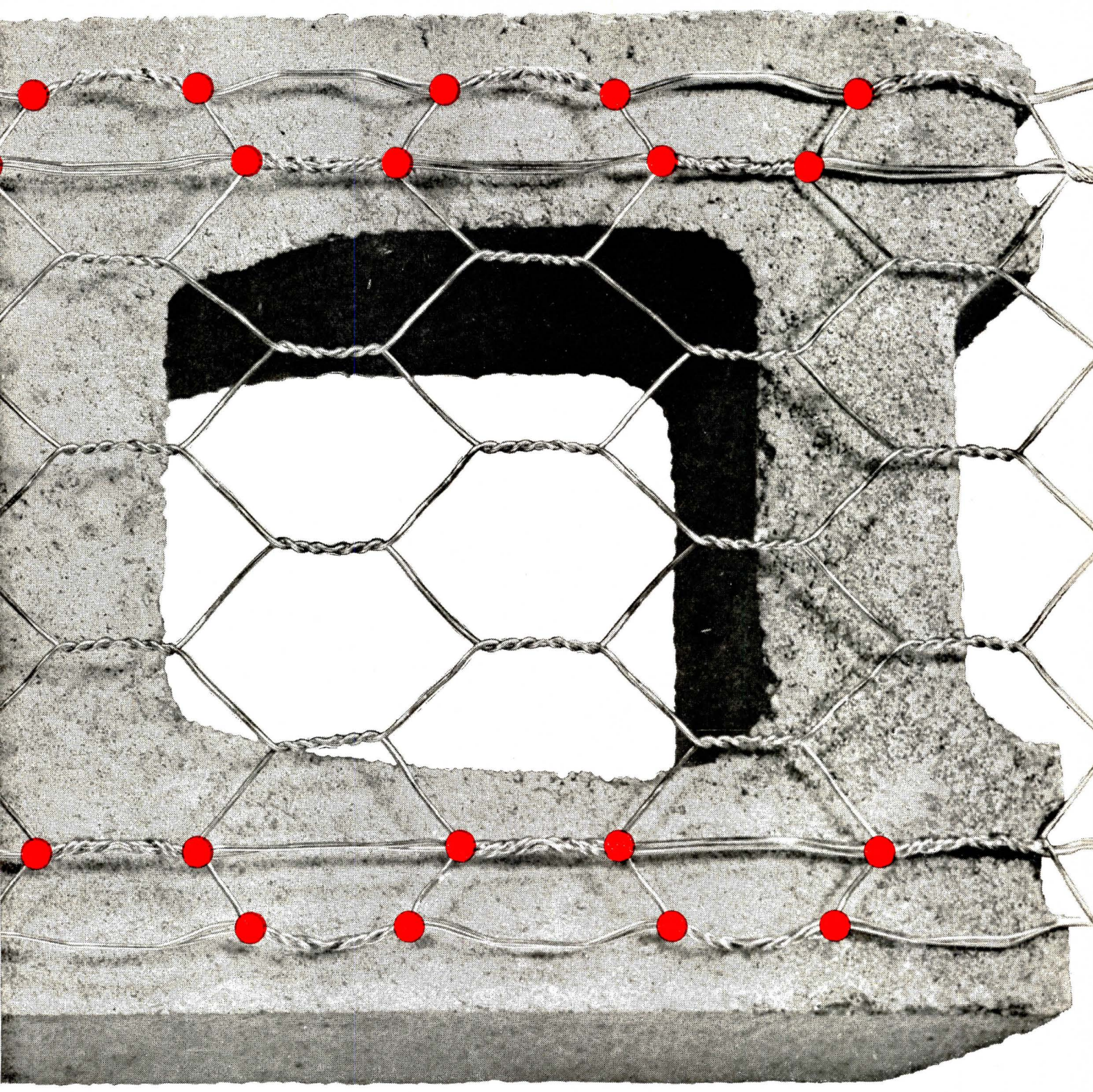
A modern reinterpretation of the medieval guild is achieved by the International Institute of Liturgical Art, which arose recently in Rome and which now has offices in the U.S. Its aim is to effect collaboration among independently recognized artists, craftsmen, iconographic experts, liturgists, and the local architect, and thus to create a high level of sacred art for church interiors. The institute is also active in promoting exhibitions, competitions, and conferences. A handsome 80-page booklet describes in detail the work of the institute. Architects engaged in ecclesiastical work may write to: The International Institute of Liturgical Art, Hotel Biltmore, New York 17, N. Y.

PROGRESSIVE ARCHITECTURE
NEWS REPORT

REINHOLD PUBLISHING CORPORATION
430 PARK AVENUE NEW YORK 22, N.Y.
Publisher.....D. Bradford Wilkin
Editor.....Thomas H. Creighton
News Editor.....James T. Burns, Jr.



KEYSTONE STEEL & RE CC PANY Peoria, Illinois



***28** mortar locks to the block foot with Keywall reinforcement. The more locks, the more resistance to cracks resulting from shrinkage. Movement is restrained at each of Keywall's mortar locks. No one lock has to restrain more than the movement in ¾″ of block. That's the kind of reinforcement that works.*

MORE LOCKS TO THE BLOCK WITH KEYWALL

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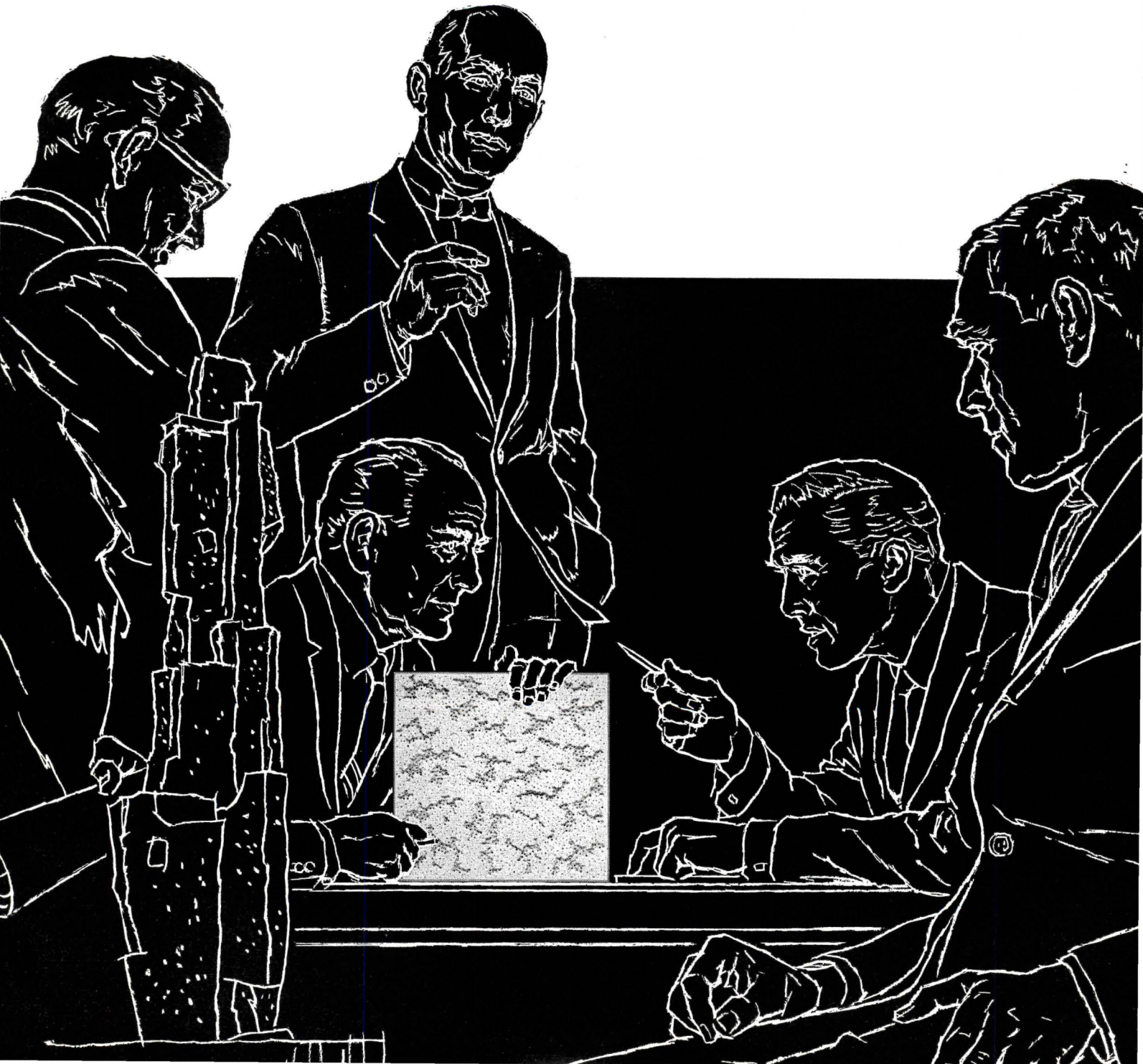
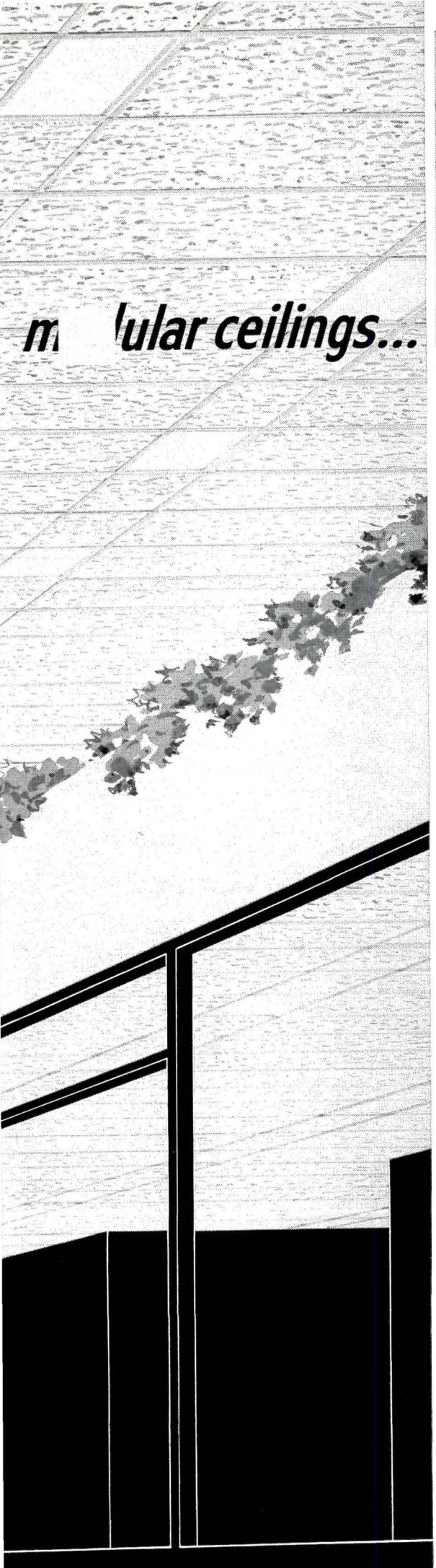
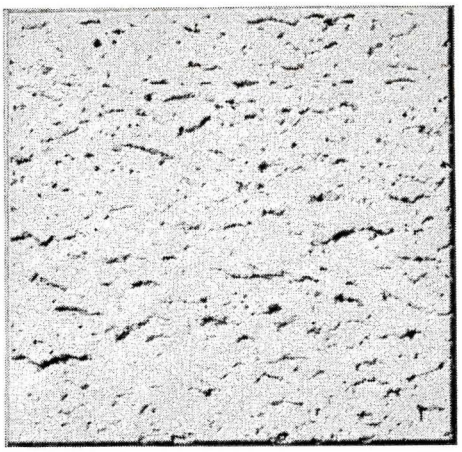
to give you better ways with ceilings

(*see the next six pages*)



Gold Bond gives you a better way with





Fissured Pattern

Acoustiroc lets you custom design acoustical ceilings—with unusually large tile sizes without fear of sag (when supported by suspensions on all four sides). Like this office ceiling, for instance. Special 48″x 18″ panels, interspersed with 18″x 12″ tiles, form an orderly pattern around 18″x 12″ lighting fixtures. The product: Gold Bond Acoustiroc, made with an exclusive felting process that interlocks long mineral wool fibers—for 50% greater strength than ordinary mineral wool tiles. Acoustiroc has a good sound-attenuation rating. You can get an almost unlimited size range, from 6″x 24″ wide to 6″x 72″ long. The minimum order for special sizes is 30,000 square feet. You can match tile proportions better to building modules. You will speed erection, reduce material costs. For even more ways with ceilings, call your Gold Bond® Representative. National Gypsum Company, Buffalo 13, N.Y.

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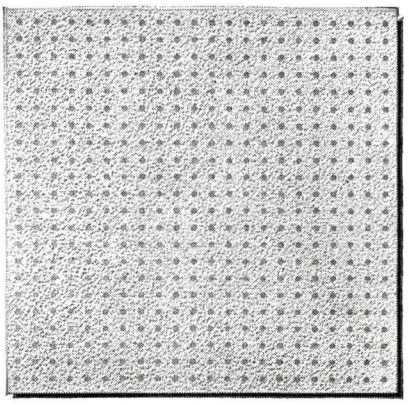
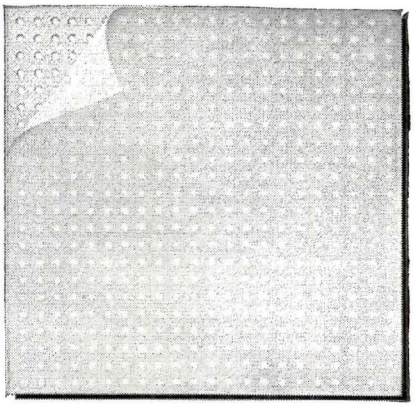
Gold Bond gives you a moisture-resistant

way with ceilings...



New special coating for protection plus new "rippletone" texture



New membrane backing reduces sound by diaphragmatic action

Asbestibel Perforated Asbestos—a way to design moisture out, beauty in. Guaranteed not to shrink, warp or sag, even in above-average humidity areas. And when the panels are backed with mineral wool pads (in various thicknesses), you get a wide range of sound-absorbing coefficiencies. New features have been added: 1. Perforated Asbestos Panels with a low-cost membrane backing that reduces sound by diaphragmatic action. 2. New special coating for surface protection makes cleaning easier and faster. 3. A new "rippletone" texture for heightened visual interest. For even more ways with ceilings, call your Gold Bond® Representative. National Gypsum Company, Buffalo 13, N. Y.

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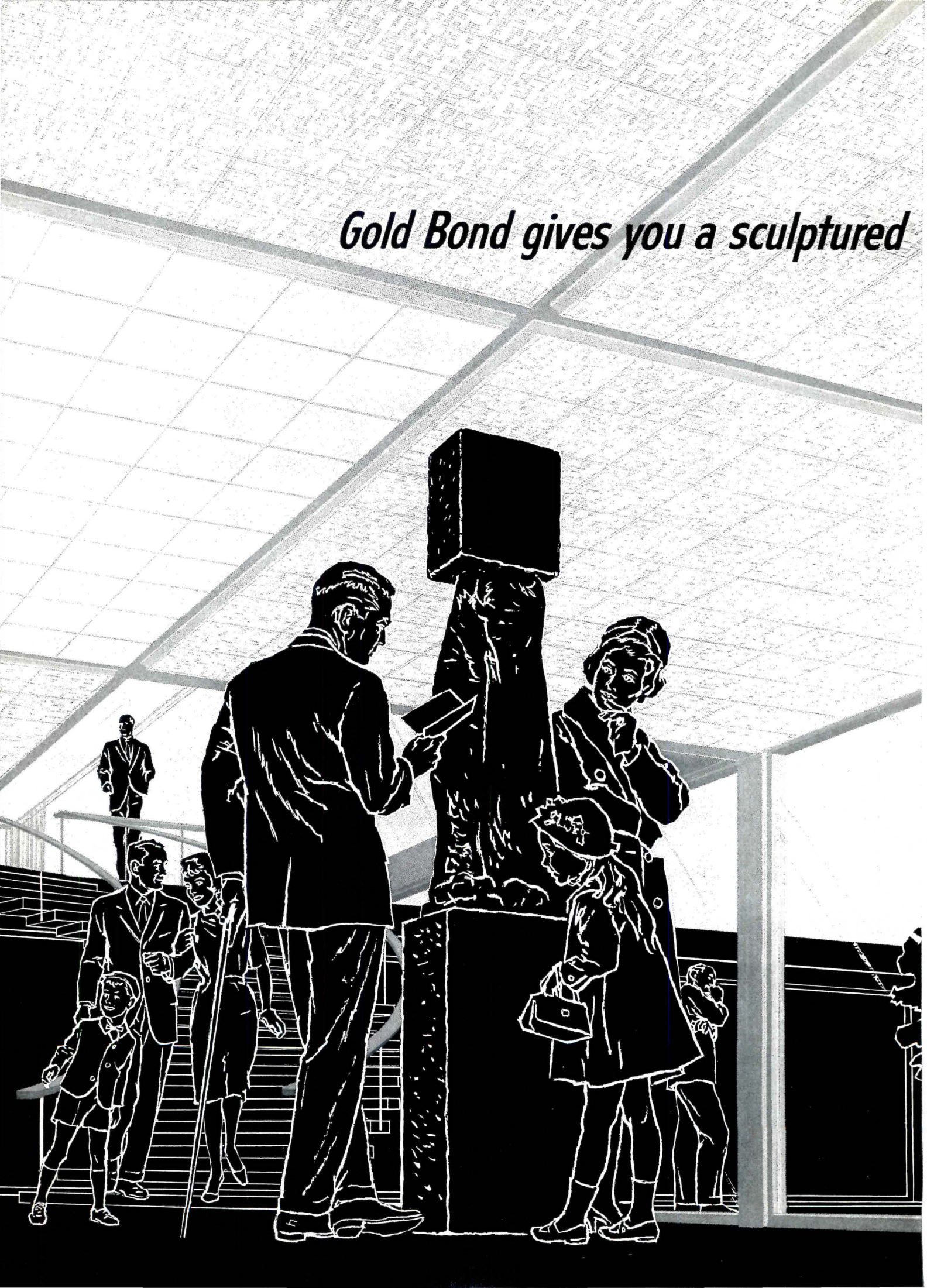
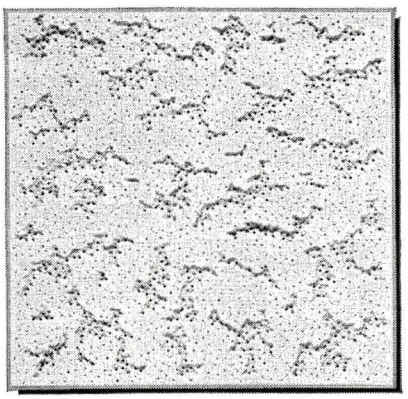
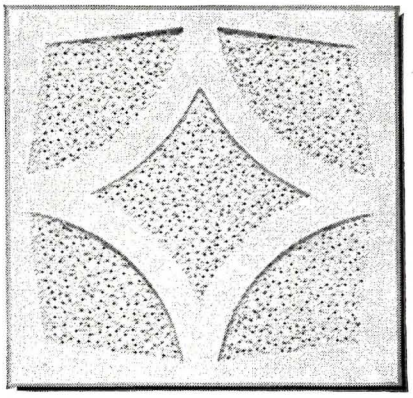

Gold Bond gives you a sculptured

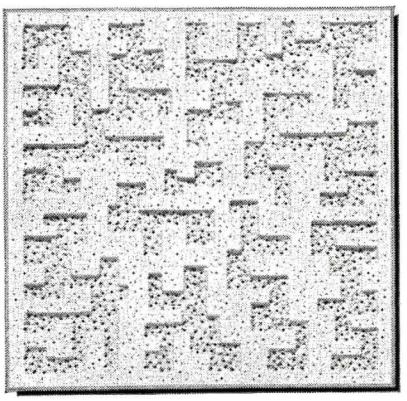
way with ceilings...

Coral Lace

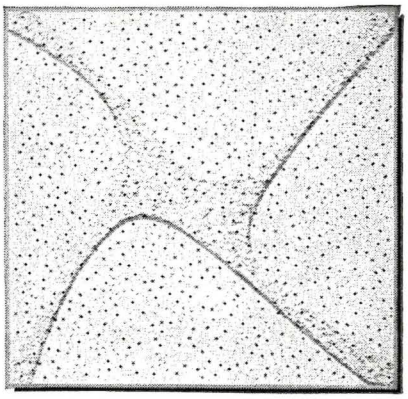


Bruxelles





Labyrinth



French Curve

Sculptured Solitude for an art museum—or any ceiling you want to beautify! Choose from our four patterns—or any pattern *you* care to design. There's practically no limit to the three-dimensional effects you can achieve . . . strikingly handsome in reception rooms, executive offices and homes. Gold Bond Sculptured Solitude does more than beautify. As an acoustical tile, it soaks up the clatter of the workaday world (up to 75 NRC). Made of mineral fibers, it's noncombustible . . . easy to vacuum clean . . . and may be repainted as often as desired. For even more wonderful ways with ceilings, call your Gold Bond® Representative. National Gypsum Company, Buffalo 13, N.Y.

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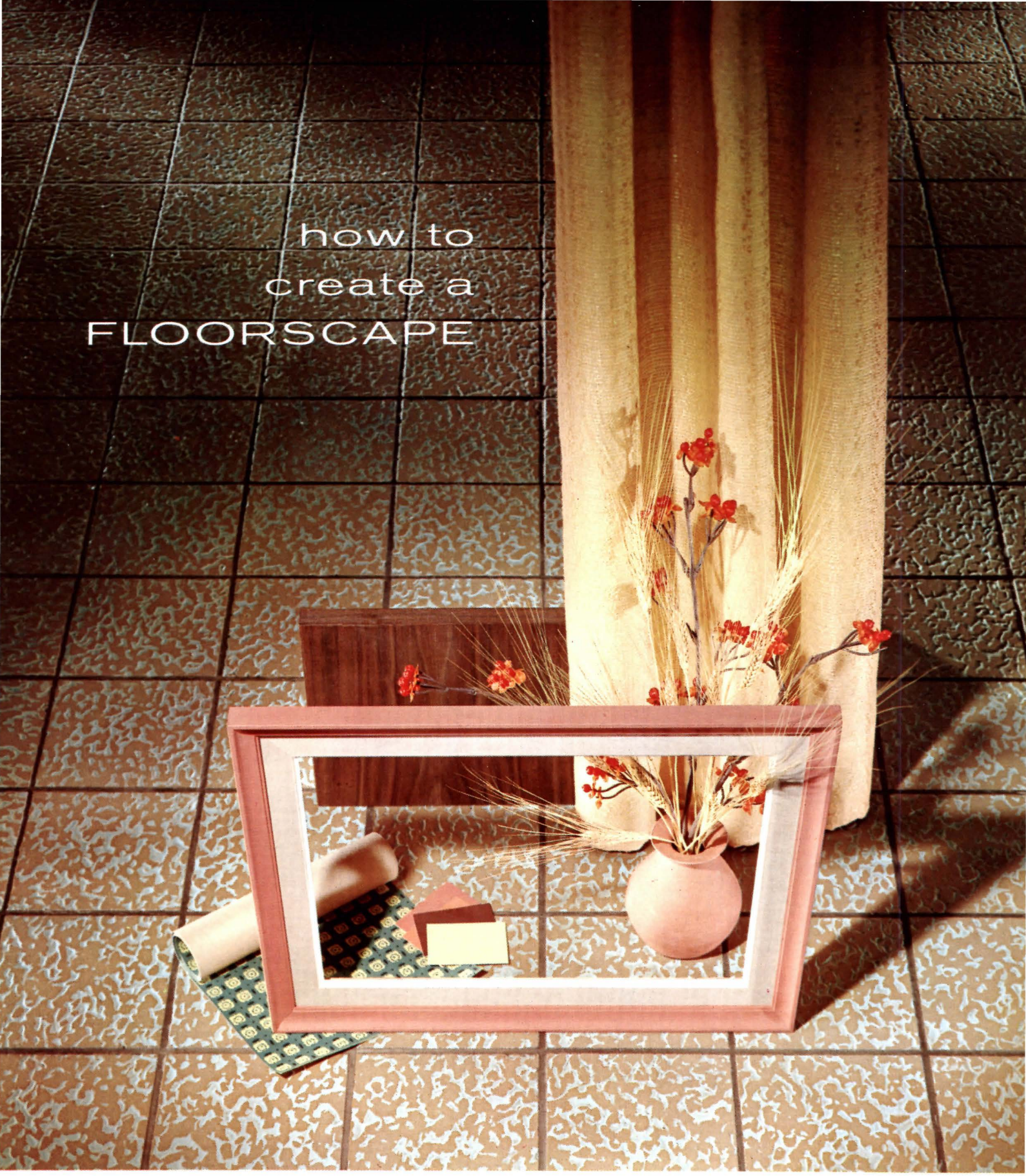
On the preceding six pages you have seen three major new innovations in acoustical materials from Gold Bond . . . the industry's leader. For more information on better ways with ceilings, call your Gold Bond Representative. He has the greatest selection of acoustical tiles and panels in the industry . . . 99 listings in the 1962 directory of the Acoustical Materials Association. More patterns and finishes. More sizes and edge details. Wide range of sound absorption, attenuation and fire ratings. Tiles and panels to fight humidity, to reflect more light, to effect building economies. Your Gold Bond® Representative is well qualified to help you with your selections and specifications—to save you time and money. National Gypsum Company, Buffalo 13, New York.

Gold Bond®
ACOUSTICAL PRODUCTS



A floorscape provides a 'setting' as well as a 'surface' for furnishings and decorations. It enhances the finished 'picture' conceived by the designer. It contributes to esthetic satisfaction and is created with a product like textured quarry tile that offers an almost unlimited range of patterns and colors.

Genuine Ceramic Quarry Tile offers many lifetimes of wear, will not fade or burn, never needs waxing and costs no more than other quality floor materials. Ask your Ceramic Tile Contractor for the full 'picture' or write direct to Summitville Tiles, Inc., Summitville, Ohio.

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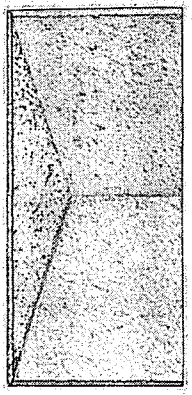
TEXTURED

QUARRY TILE

ANOTHER FINE EXAMPLE OF PRECAST CONCRETE CURTAIN WALLS

made with Trinity White



(Right)
International Building, San Francisco; Anshen & Allen, Architects; precast concrete curtain wall panels (Mo-Sai) by P. Grassi-American Terrazzo Company; Structural Engineers, Gould & Degenkolb—Robert D. Dewell

(Left)
Photo-diagram of an International Building panel showing the 3-dimensional surface with inverted hip-roof design.

(Inset)
Architect's model of International Building.

THE GREAT POPULARITY of precast concrete curtain wall panels rests on a combination of aesthetic and practical advantages.

On the aesthetic side, precast concrete offers a gamut-wide variety of both color and texture . . . it may be cast with a 3-dimensional surface . . . with sculptured or geometric design . . . it may be cast in units of great size to give feelings of mass and scale.

The several practical advantages include . . . speed of erection and rapid enclosure of the building . . . waterproofness due to larger panels and fewer joints . . . a complete wall unit with built-in insulation where needed . . . competitive first costs . . . minimum upkeep.

Additional Data on International Building

Curtain walls are on all 4 sides of the entire 22 stories. Panels are light weight concrete with facing of coarse white quartz and Trinity White Portland Cement. Panels are either 6'4" or 8' high by 13'6" wide; corner panels are cast in 1-piece with returns 7'4" in either direction; panels erected at rate of ⅓ of a floor per day; panels are bolted to structural steel frame.

Trinity White is a product of General Portland Cement Company

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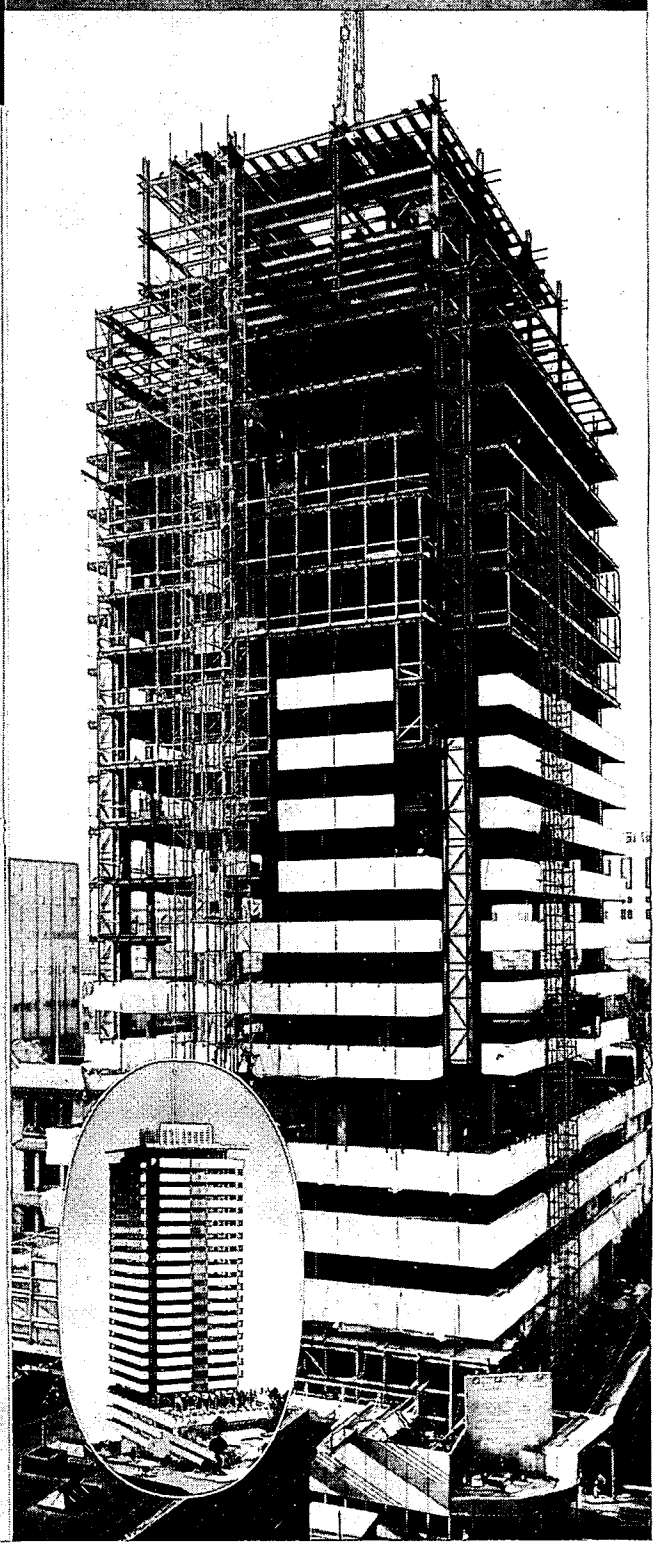


April 1962 **PROGRESSIVE ARCHITECTURE**®

REINHOLD PUBLISHING CORPORATION
430 PARK AVENUE, NEW YORK 22, NEW YORK

EDITORIAL FEATURES

CONTEMPORARY MASONRY

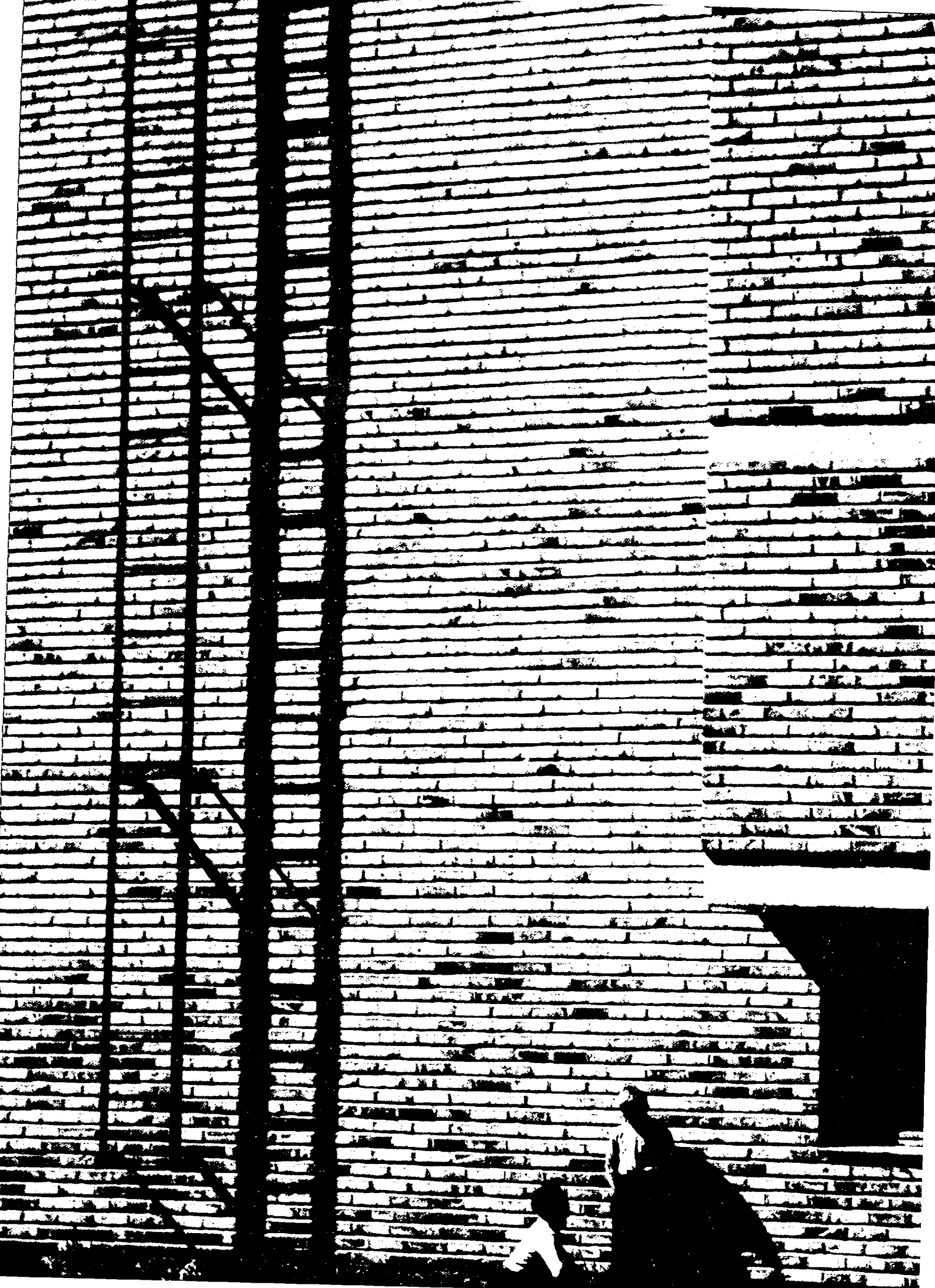
Until a century or so ago, masonry construction in its various forms provided the principal visual evidence of mankind's advancement in social culture. Since that time, and appearing with increasing frequency, other materials of construction have taken over functions that were traditionally served by masonry. The past 50 years, especially, have witnessed the arrival of countless new generic components capable of serving the structural-environmental demands of man-made enclosures. Recently, however, designers have evidenced a renewed interest in the use of masonry units. Much of this activity is due to a revitalization of the industry itself, primarily through technological advances. By way of introduction to this report, "Pattern and Texture" recalls many of the aesthetic potentials of masonry; this essay is followed by "Examples of Research and Development," which reviews avenues of exploration taken by industry; in conclusion, "Examples of Current Applications" offers significant contributions that have been made by the architect.

Pattern and Texture

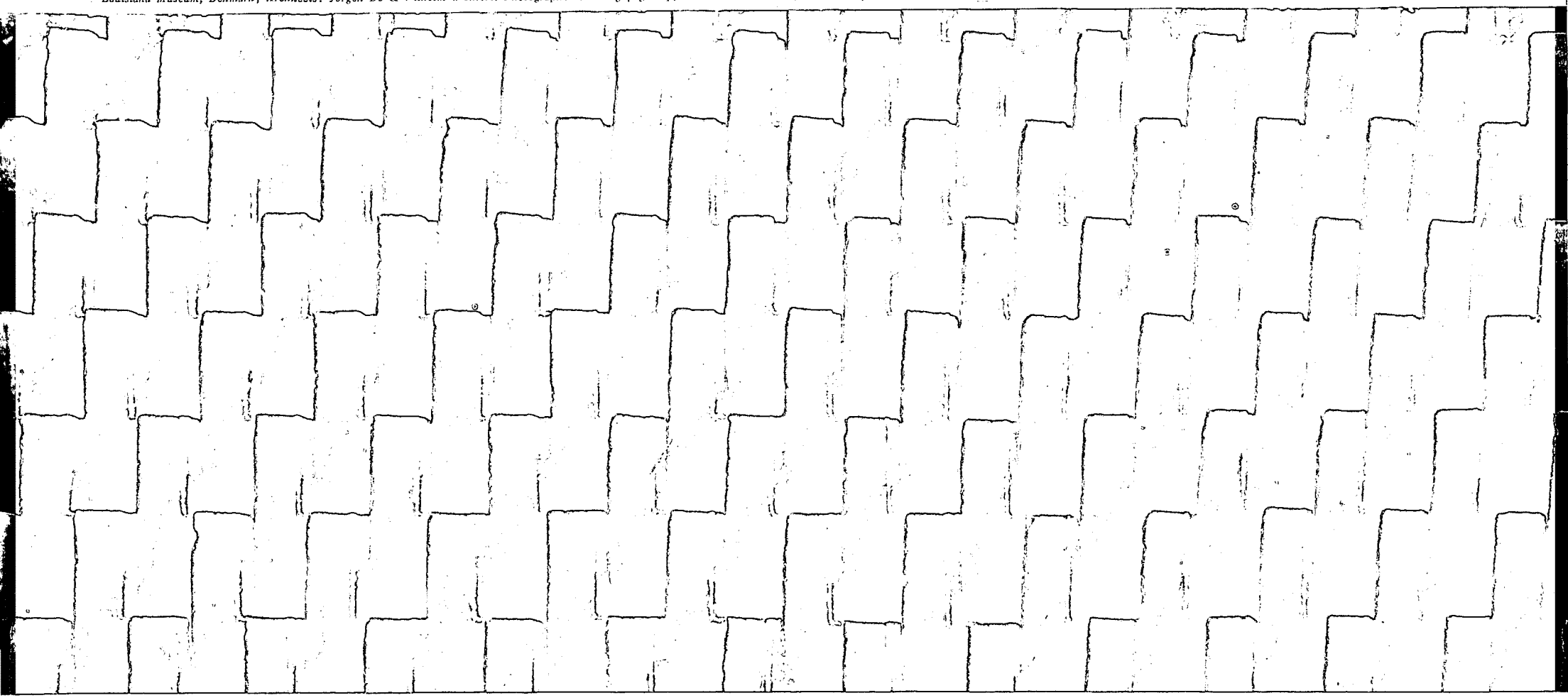
A pictorial essay on the expressive potentialities of masonry construction by Bernd Foerster, a faculty member of the School of Architecture, Rensselaer Polytechnic Institute, author of Man and Masonry *and a forthcoming book* Pattern and Texture. *Almost all photographs for this exclusive presentation were selected from the new book, which is being published by the Allied Masonry Council and will be distributed by the structural clay products industry within the next few months.*

Tensions, speed, and complexities of our world contribute to a deep need to comprehend our physical surroundings. Understanding the relationship between man and his environment is often aided by building elements of familiar dimensions. Ability to provide scale, possibility of varied patterns and textures, wide choice of integral colors, and flexibility of form are factors that enable masonry to encompass the entire emotional spectrum of architectural expression.

Housing, Finland; Architect: Viljo Revell. Photographer: Asuintalo Yatasau.

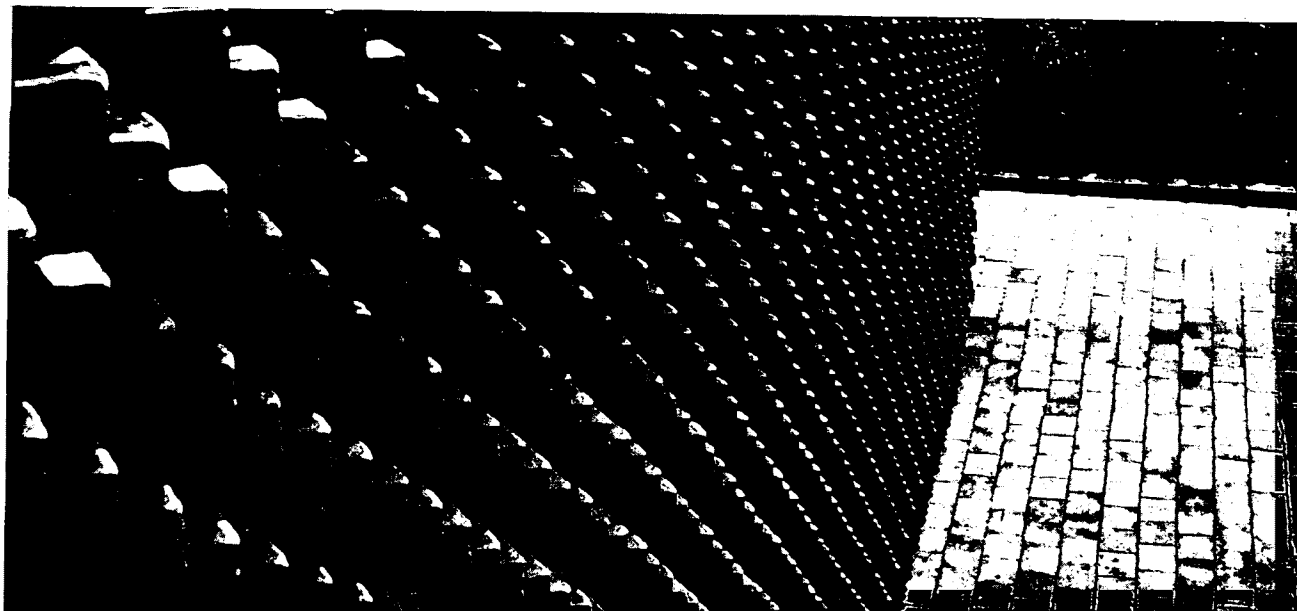


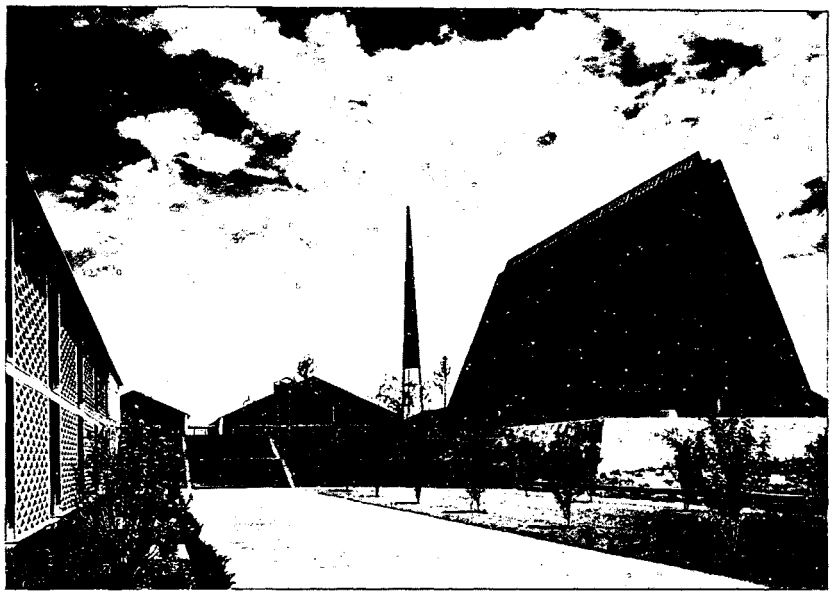
Louisiana Museum, Denmark; Architects: Jörgen Bo & Vilhelm Wohlert. Photographers: facing page top, *G. E. Kidder Smith*; others, *Jesper Höm.*



Motion . . .

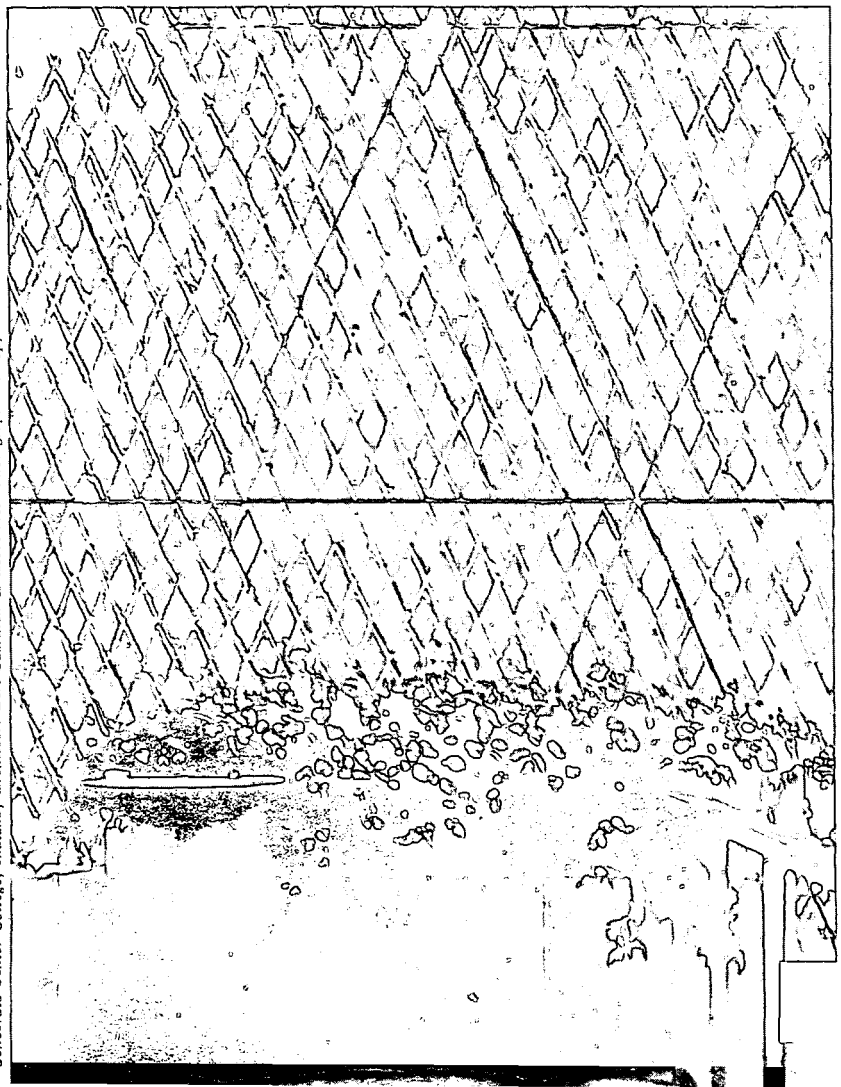
Motion is essential to the experience of architecture. These three illustrations of the same wall suggest how pattern and texture can be affected by a changing point of view. The effect that movement of an observer has on his perception deserves continuing exploration because of its important design implications.





Unity . . .

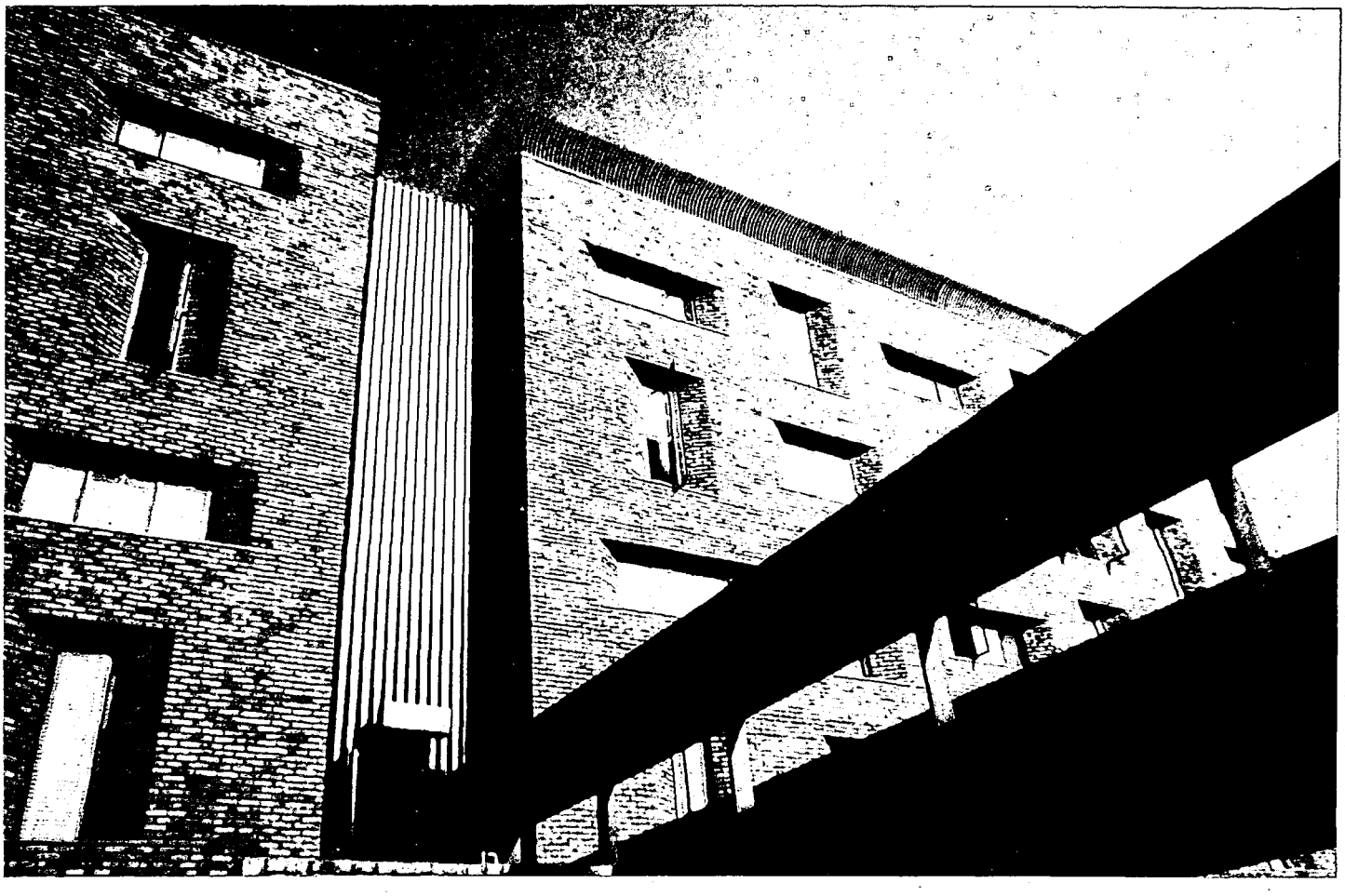
Buildings do not exist in isolation, and there is increasing awareness of the importance of relating them to their surroundings and to each other. These campus structures show the unifying effects of a similar use of materials, patterns, and textures.



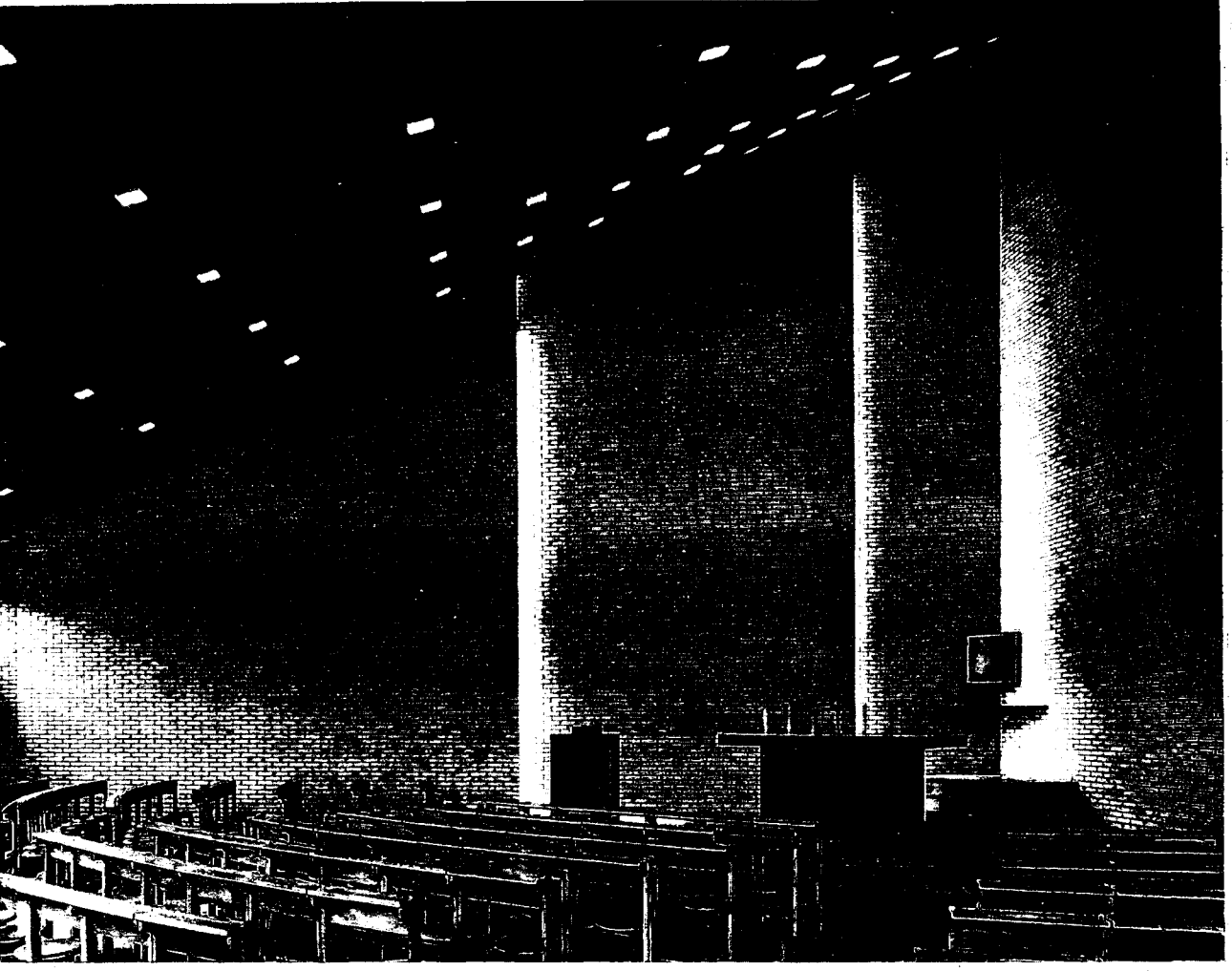
Concordia Senior College, Indiana; Architect: Eero Saarinen & Associates. Photographers: top, Alexandre Georges; bottom, James Gross.

Contrast . . .

The exterior of this women's dormitory is deliberately uninviting in order to contrast strongly with the interior. The inward-slanting walls create a sense of solidity, and make the windows slot-like, while the texture adds to the illusion of a protecting fortress.



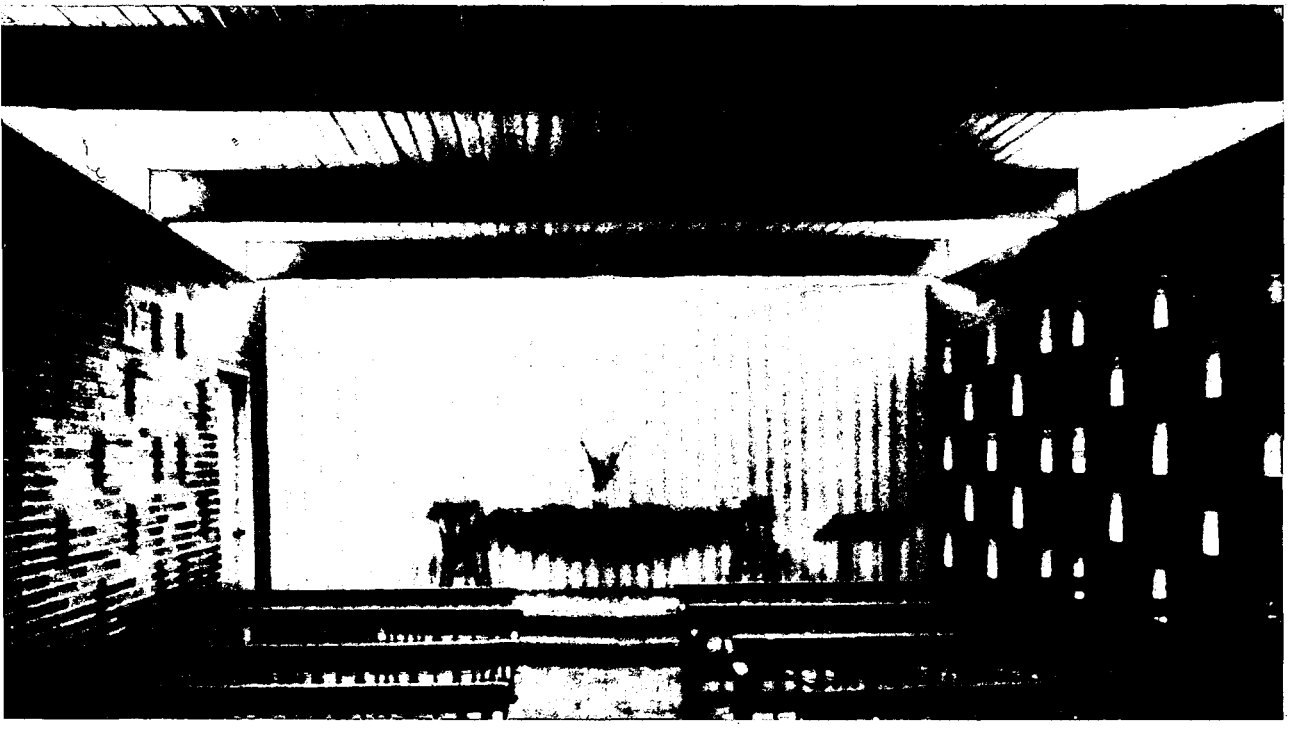
Dormitory, University of Pennsylvania; Architect: Eero Saarinen & Associates. Photographer: Bernd Foerster.



Church, Denmark; Architect: Johann Otto von Spreckelsen. Photographer: Helmer-Petersen.

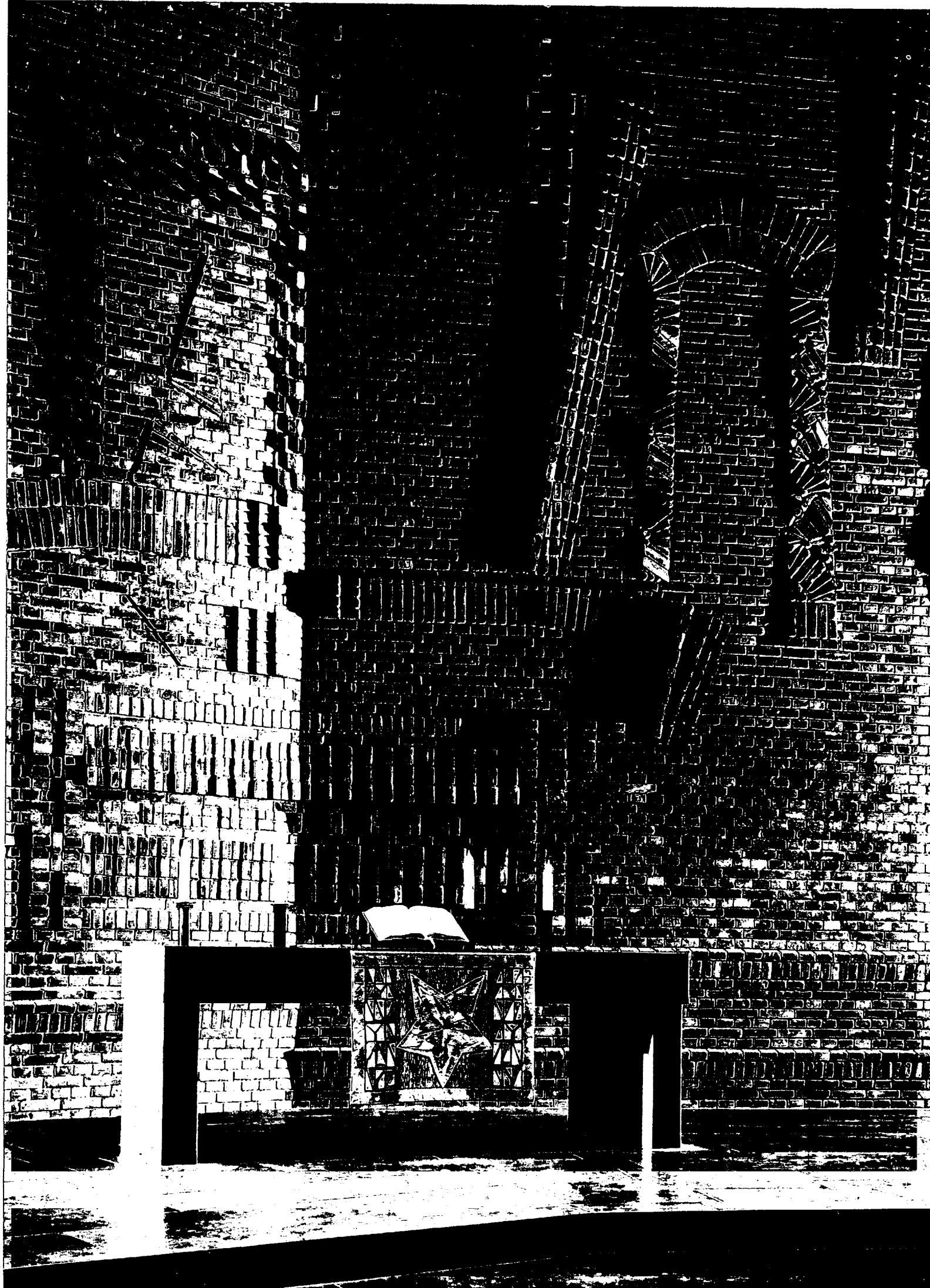
Light . . .

Without light, there can be no pattern and texture in an architectural sense. Various lighting conditions have predictable effects on textural and sculptural features, and in interiors the architect has considerable control over the direction, amount, and quality of light. These three churches indicate the variety, and hint at the aesthetic potential, of masonry.



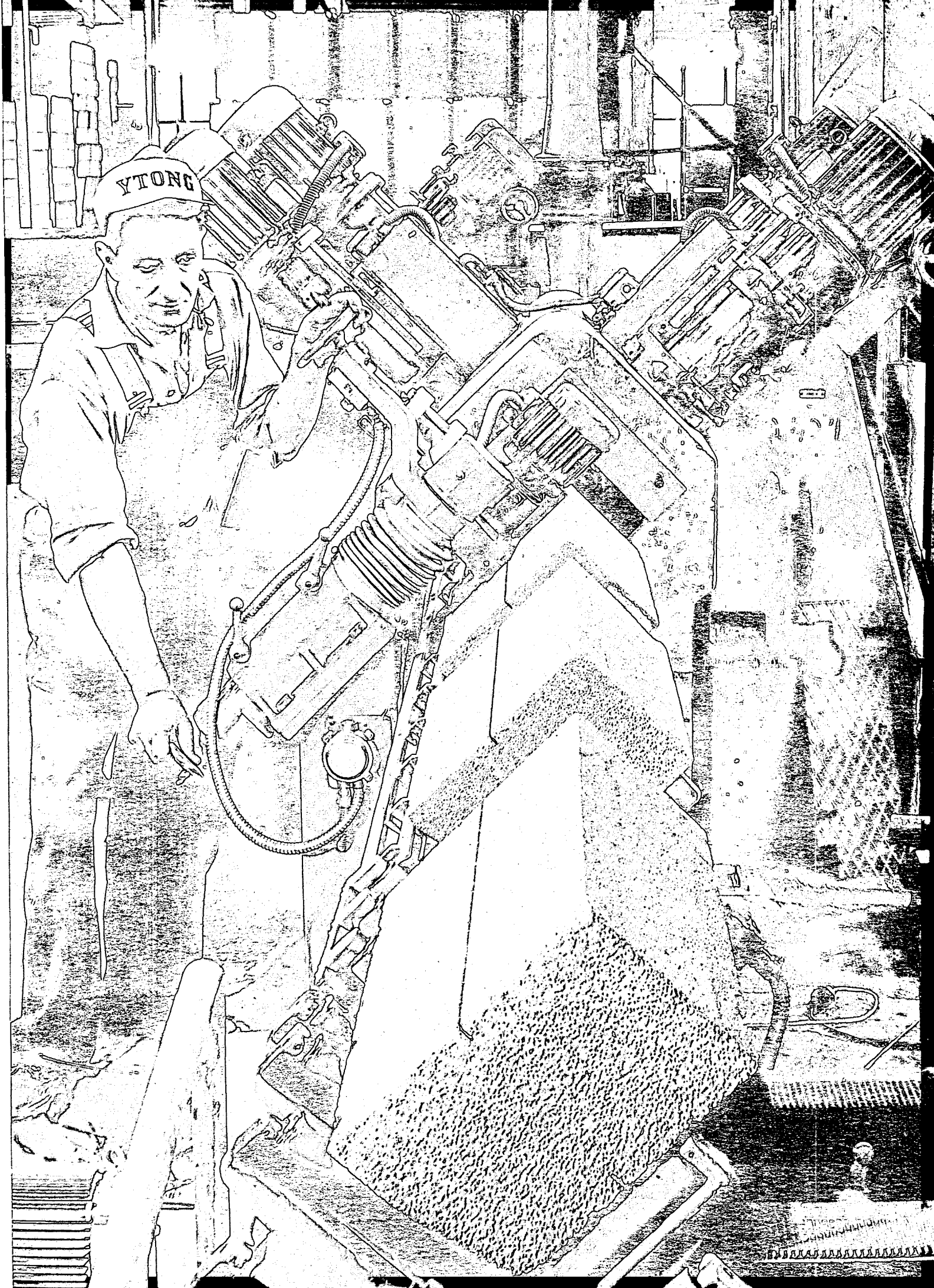
Church, New Hampshire; Architect: Hugh Stubbins & Associates. Photographer: B. Foerster.

Church, Germany; Architect: Dieter Oesterlen. Photographer: Heidersberger.



Examples of Research and Development

In building construction there is a trend toward larger components. Cost of site labor has steadily risen during the last 15 years, making the appearance of 4′ x 8′ limestone panels not uncommon. The Indiana Limestone Institute reports that units as large as 6′ x 12′ have been produced. Fewer joints and reduced erection time are immediate advantages. Although an increase in panel size would normally require some increase in thickness, systems have concurrently been developed to permit the use of thinner panels. With the industry's new fabrication techniques, natural stone now permits a greater flexibility in design. Milling and grooving machines (facing page) provide greater dimensional accuracy for lightweight units. Some recent developments in clay and stone products follow.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Structural Clay Report

BY ROBERT B. TAYLOR AND
JAMES G. GROSS

The Structural Clay Products Research Foundation and the Structural Clay Products Institute are symbols of the revitalized and modern brick and tile industry. These independent groups are supported by industry leaders who are determined that the brick and tile industry maintain and expand its age-old role as a leader in the field of construction.

Their memberships represent all areas of the United States and Canada. Of particular significance is the fact that these organizations exemplify how a decentralized industry, made up of many independent producers scattered all over the country, can recognize its need for product improvement and technical advancement, and, by co-operating on a national level, set up facilities to achieve that end.

Some of the major research and engineering developments of these groups are reported on by the Foundation's Director and the Institute's Associate Director of Engineering and Technology.

Inherently, clay-masonry panels have remarkable strength, and this characteristic can be tapped to help fulfill a variety of structural requirements. When tied together with steel components, assemblies of this kind can act as bearing walls, shear walls, or plate girders. Each of these structural functions is clearly demonstrated in the design of a model school unit (1, 2, 3). In this building, replacement of horizontal beams of steel or concrete by thin, deep plates of panels resulted in more efficient use of materials. Appropriately, steel is used in tension and clay masonry in shear and compression. In normal practice, the usual shallowness of steel and concrete beams is responsible for their reduced structural effectiveness. When part or all of a wall acts as a plate, however, flexing in its plane, beam action efficiency is high. Although there is concern over twisting and buckling when dealing with plates in this manner, our tests do not show these effects to be severely limiting.

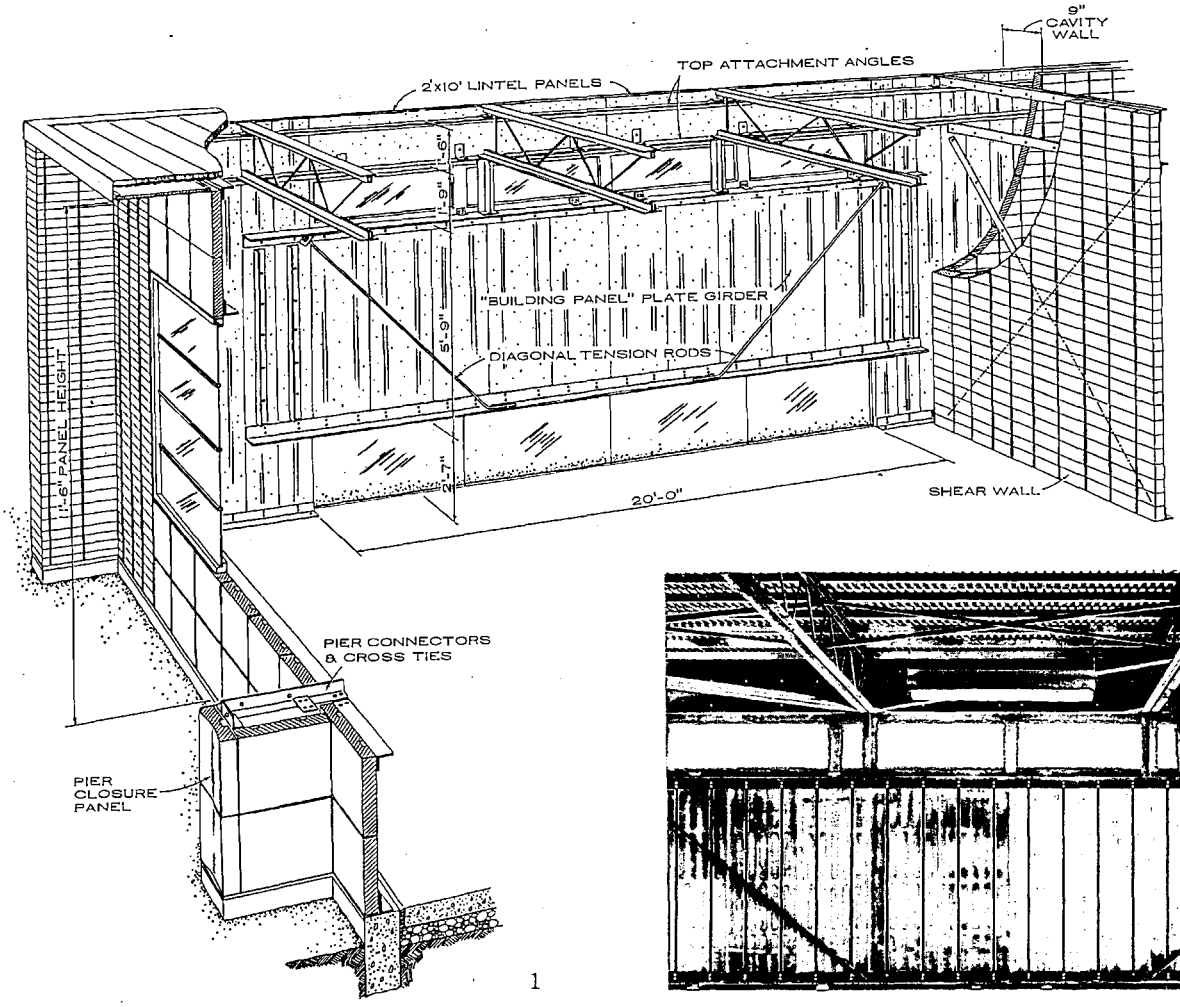
Thin panels of clay masonry can also be applied to folded-plate curtain-wall construction (4). In this enclosing wall for a department store, steel-framed 1′ x 4′ panels create plate girders measuring 4′ x 19′. Erected individually, these girders form the complete folds of the wall system. Spanning a clear distance of 16′, the slenderness ratio h/d is 77. As the current code limit for h/d is 20, a 12″ masonry wall would have been required in conventional construction. In order to accommodate its ponderous weight, a significant increase in steel costs would have been evident. Thus, this inherently stiff geometric form not only permitted the rational design of a 2½″ thick wall, but also satisfied the aesthetic demands of the designer.

Clay panels, as illustrated in the above project, can be produced in a variety of sizes ranging from 8″ to 24″ wide and up to 13′-4″ long. The larger size units will generally be terra cotta pieces (with ceramic veneer); the intermediate size units will be similar to currently available structural glazed facing tile; and the smaller units will be of face-brick sizes. All panel units will be available in many colors, glazes, and textures—each to be reinforced with ⅜″ round rods, 6″ on centers, and bonded into the panel with a quick-set grout.

Assembly of clay-masonry panels from relatively smaller pieces further permits a choice of aesthetic possibilities. By varying the unit size, patterns may be developed; by applying three-dimensional treatments to the panel face, intriguing textures and shadow effects are also possible.

High-Bond Mortar

Current advances in organic-chemistry technology have developed additives for conventional portland-cement mortars to increase their bond strength. The practice of using latex polymers in cement compositions for patching interior concrete floors, exterior concrete pavements, and preparing concrete surfaces for direct plastering is becoming widespread. Many



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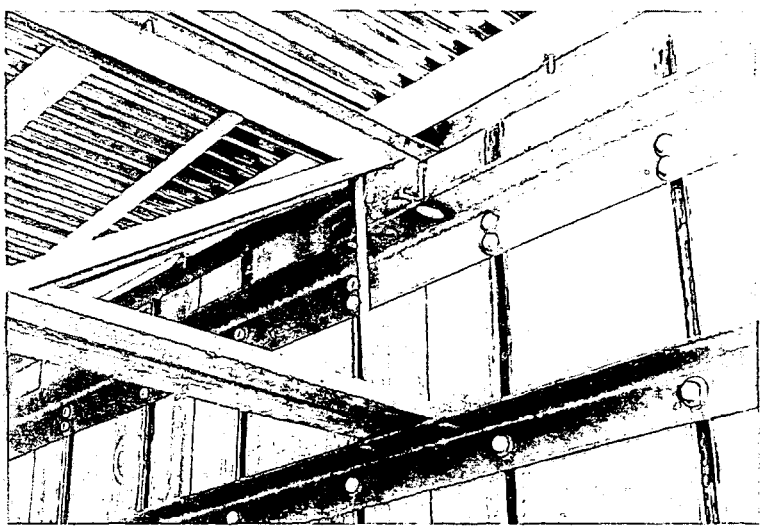
Structural Panels



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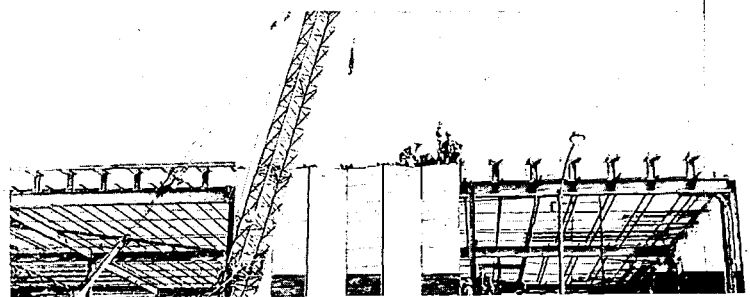

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PHOTO: COURTESY THE DOW CHEMICAL COMPANY

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High-Bond Mortar

of these additives, however, while increasing bond and other strengths adequately, are sensitive to water or moisture, which results in fluctuation of bond strength. For major structural use, a mortar additive with such a characteristic is penalized by a high safety factor. Joint research on a high-bond mortar by The Dow Chemical Company and the Foundation has resulted in clay-masonry assemblages approaching the inherent tensile strength of the clay ware, about 500 psi. The still-developmental Dow material, called "Sarabond," is free of moisture sensitivity, and increases the bond strength over conventional mortar by a factor of about four. It uses portland cement, sand, a special polymer, and water at its basic ingredients.

This high-bond mortar will cost more than conventional mortar, on a volume basis. However, cost of the high-bond mortar will be offset by enabling wall thicknesses to be reduced by half, or wall spans doubled. For example, an 8″ brick and concrete-block wall can be replaced by 4″ of brick with high-bond mortar. Thus even if the high-bond mortar costs several times as much as conventional mortar, the in-place masonry cost of such a wall would be reduced significantly. A thinner wall of this type, when insulated and finished, may save between 10 and 15 per cent in total wall costs. Thinner walls also mean more useable space within a given structure. Further, the dead load is reduced and exterior wall enclosure is more rapid.

Alternatives to doubling the span or halving the thickness could permit 8″ clay-masonry walls to be 26′-8″ high, and 12″ walls, 40′-0″ high. Such structural freedom should prove useful in church and auditorium designs. The increase in mortar cost here can be offset by the elimination of supporting columns or girts.

Where high lateral resistance of walls is required, as in blast, earthquake, and hurricane design, high-bond mortars offer a relatively inexpensive way to obtain strength. For severe, but momentary, lateral dynamic loading, a safety factor of 1.33 will yield the following uniform static loads that can be sustained for the wall thickness shown and a span of 10′:

d = 4″	w = 64 psf
6″	144
8″	256
10″	400
12″	720

The use of Dow's high-bond mortar with the SCR brick—a 6″ through-the-wall solid clay masonry unit—can make the average wall tornado-resistant and resistant to known hurricane and earthquake forces.

Increasing the bond strength of a clay-masonry assemblage also adds to its compressive strength. As compressive failure is characterized by a "tensile splitting," improved mortar adhesion reduces this action until higher loads are obtained. Thus it is not unreasonable to expect that clay masonry can attain an ultimate compression of 6000 psi. In comparison with 3000 psi reinforced concrete—at $70 per cu yd including forms and steel, it is possible that structural-clay masonry—at $100 per cu yd including steel and modified mortar, will be competitive. This competitive position is due in large part to the cost of formwork which comprises about 40 per cent of the concrete costs.

"Sarabond" mortar is not available commercially. A five-year development program of extensive testing saw a brick residence successfully built with this mortar in late 1961 (5). During 1962, field development and evaluation will include both residential and nonresidential structures.

Acoustic Tile Units

Sound is an inevitable by-product of civilization. To control it, the architect must combine skillful design with acoustically effective materials. Often these materials are used to block the transmission of unwanted noise as well as to absorb sound within an enclosed space. A single solution for both of these problems is provided by "SCR acoustile," a perforated facing tile providing high sound absorption and effective sound isolation in a ceramic load-bearing unit (6). In addition to perforations, which may be round or slotted and in geometric or random patterns, these components have an inner slot filled with a glass-fiber pad.

Contrary to popular belief (and practice), the ceiling can sometimes be the least desirable surface on which to install sound-absorbing material. There are numerous instances where sound-absorptive areas are better located on walls than on the ceiling. The practice of using an acoustical ceiling to solve all sound absorption problems can sometimes lead to intolerable acoustics. The amount and location of absorptive and reflective surfaces vary with the type of room and its use.

Sound-absorption tests show that "SCR acoustile" walls absorb more than 60 per cent of the incident sound energy, while sound-transmission research has demonstrated that a 4″ wall of the same material has an average sound resistance of 46 db. (Specific absorption and transmission loss data for a particular product can be obtained from its licensed manufacturer.)

More recently, these tiles are also available in "double-faced" units, 4" thick, with perforations on both surfaces. Such units provide more than 60 per cent sound absorption in *both* directions, and the sound-transmission loss, due to the central web, is 44 db. These are ideal units for partitions between classrooms and corridors. With them, one trade builds the wall, acoustically treats two rooms, and provides the final decorated wall surface. Perforations do not affect the compressive strength of these tiles, since the additional vertical web more than compensates for the perforated face shell.

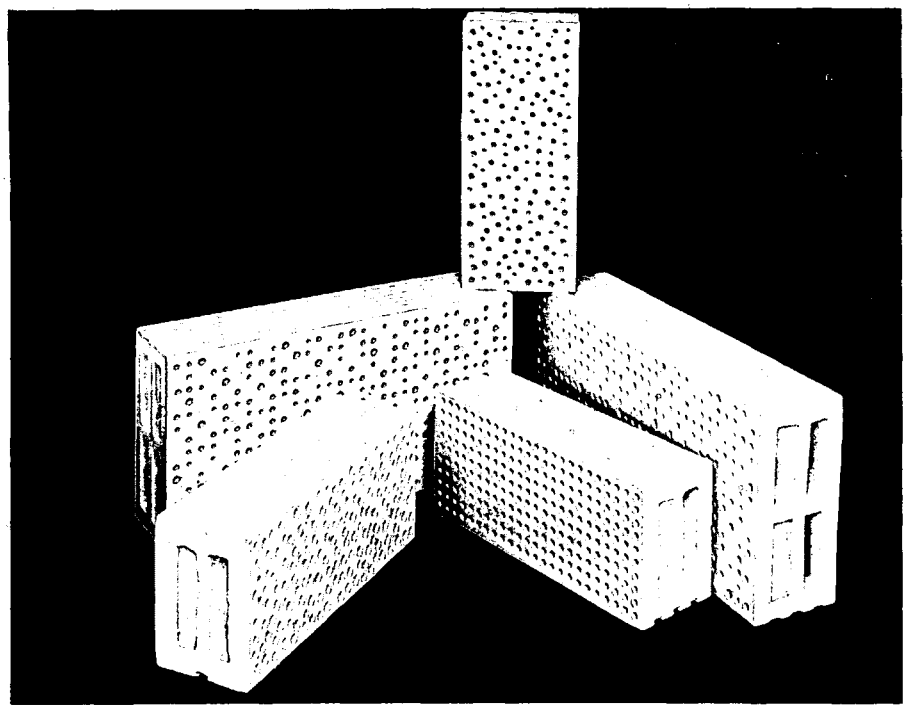
Fire tests, conducted at Ohio State University, revealed a resistance of more than one hour when unplastered. This evidence indicates that a fire resistance of more than two hours would be developed when ¾" plaster is applied to the back side. Dimensionally, these components are compatible with other facing tile units, and the specific sound-control problem will determine the amount of "acoustile" required in relation to conventional tiles.

Because of their highly impermeable surfaces, these tiles are easily cleaned. In the event that dust or dirt should settle in the perforations, it can be removed with a vacuum cleaner, without disturbing either the glass-fiber pad or the individual fibers. For many other acoustical products now on the market, a clean appearance requires periodic painting in addition to vacuuming. Painting of some materials can adversely affect their sound absorption, reducing a sound absorption of 70 per cent to as low as 25 or 30 per cent. Sound absorption of "SCR acoustile," however, can only be adversely affected if the water completely fills the glass-fiber pad. This is unlikely, since a pad would have to be completely immersed in water, and worked like a sponge, in order to reach its saturation point. These pads can hold no more than 20 per cent of their own weight, and as each one weighs only 0.03 lb, the water would amount to about 1/16 cu in. per tile unit, an amount that would evaporate in a relatively short time. Holes at the bottom of each cell, no matter which way the tile is laid, act as weep holes to drain any water that might enter the cells during any washing of the wall surface.

In areas where bacteria growth must be prevented, it is customary to clean walls with steam or other germicides. This practice can be applied to these "acoustiles" without deleterious effects.

Lightweight Clay Products

One of the Foundation's most important research developments has been "SCR



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Acoustical Tile Units

AVERAGE SOUND ABSORPTION COEFFICIENTS FOR "SCR acoustile"

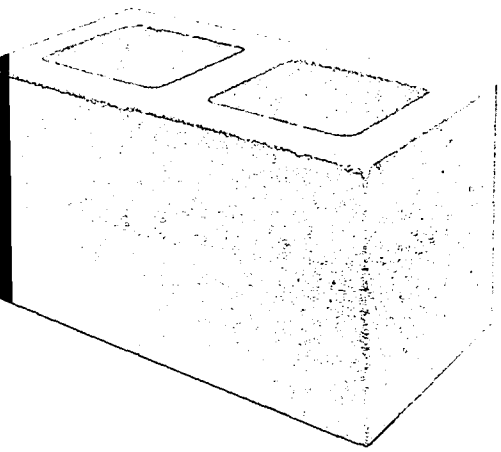
Sound Frequency, Cycles per Second	125	250	500	1000	2000	4000	NRC
Sound Absorption Coefficients, Sabins per Sq Ft	0.31	0.50	0.67	0.91	0.43	0.43	0.65

SOUND TRANSMISSION LOSS OF A TYPICAL "SCR acoustile" WALL

Sound Frequency, Cycles per Second	125	250	500	1000	2000	4000
Sound Transmission Loss, Decibels	36	47	46	52	52	47

Average sound transmission loss = 46 decibels

Lightweight Units



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veri-lite." This is a low-density fused clay aggregate of uniform particle size which, when added to conventional dense clay or shale and processed in the normal manner, will produce lightweight structural clay units (7). Units made from such mixtures in plant extrusion and dry press trials show every indication of having strength, durability, and color characteristics comparable to units produced entirely from dense clay—with weight reductions ranging from 17 to 40 per cent, depending on proportions of aggregate and dense clay used. The first full-size industrial plant for the manufacture of these products is expected to be in production this spring.

[*Extended research with this newly developed aggregate has been carried out at the State University of New York College of Ceramics, at Alfred University, and is reported elsewhere in this issue.*—ED.]

Advances in Cavity Wall

Compared to solid masonry walls, cavity walls are inherently weaker to transverse loading for the same net width of masonry. Two wythes of masonry tied with metal ties will function as two separate walls, each sharing one-half of the load. Such a wall is 30 per cent weaker than an equivalent solid wall of the same net width of masonry.

The standard cavity wall is nominally 10″ thick. Filling the 2″ cavity with a material that bonds the two wythes, so that they act jointly as a through-the-wall system, theoretically increases the lateral strength three times. In addition, if the cavity fill provides thermal resistance, such "in-place" sandwich construction will permit insulated, exposed masonry walls of considerable height.

Recent tests using foamed-in-place polyurethane as the cavity fill indicate actual later-strength increases of about 2.25 times. This, plus the basically high thermal resistance of polyurethane (k = 0.16), yields a wall construction of high thermal and structural performance (8). The foam's imperviousness to water provides an excellent moisture barrier. Actually,

Cavity Walls

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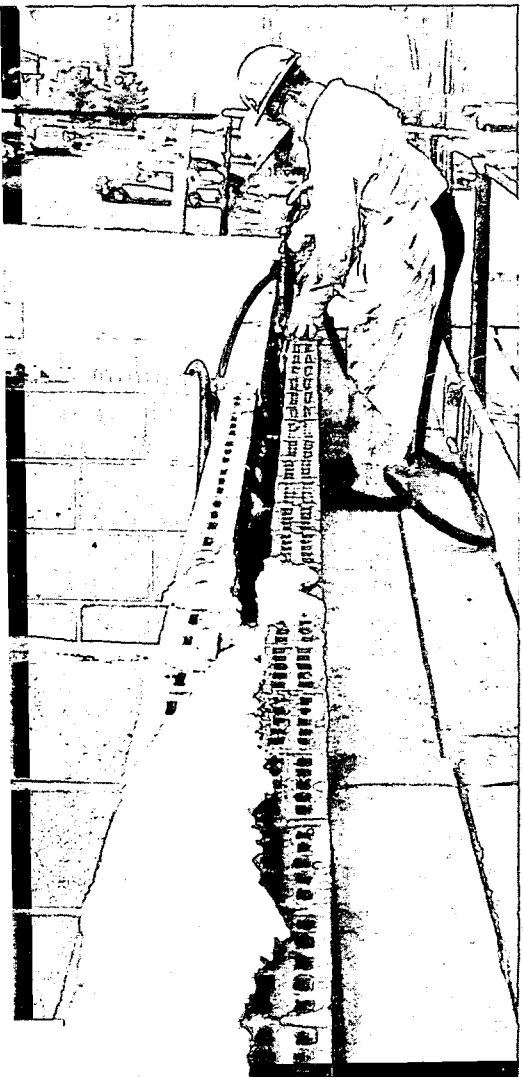
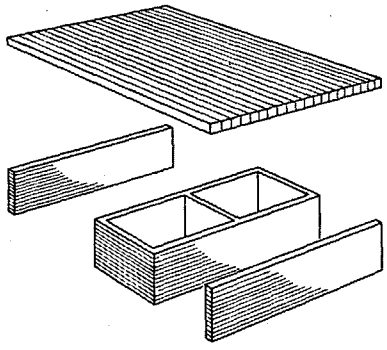
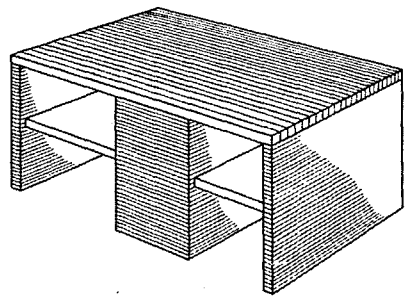


PHOTO: COURTESY DUPONT

STANDARD CONSTRUCTION BECOMES



These assemblies produce strong, durable weatherproof structural walls and floors with finished surfaces needing no further surfacing material or work.



The house construction then is firmly rooted in standard and conventional techniques exploited to produce good finishes.

this wall construction has transformed the cavity wall into a solid wall with an integral internal insulation. Walls of this kind can be built 50 per cent higher than standard cavity walls.

The relatively high cost of the polyurethane fill (estimated at about $0.35 per sq ft of 2″ cavity) is offset by its low U-factor (0.05) resulting in reduced heating expense, improved structural performance, steel savings for omitted wind columns and girts, and the elimination of vapor barriers. For electric heating, where high-heat capacity as well as thermal resistance in the wall is desirable, this construction should prove economical.

The air space in a standard cavity wall lends itself to post-tensioning cables between wythes (9). Such cables can be used to press the roof slab onto the walls, or to prestress the wall against lateral forces. It is economically feasible to prestress for 1 psi pressure (144 psf)—the equivalent static limit of known tornado forces. As post-tensioning alters the usual construction but little, it is estimated that cable costs, including installation with anchors, should not exceed $500 for the average house design.

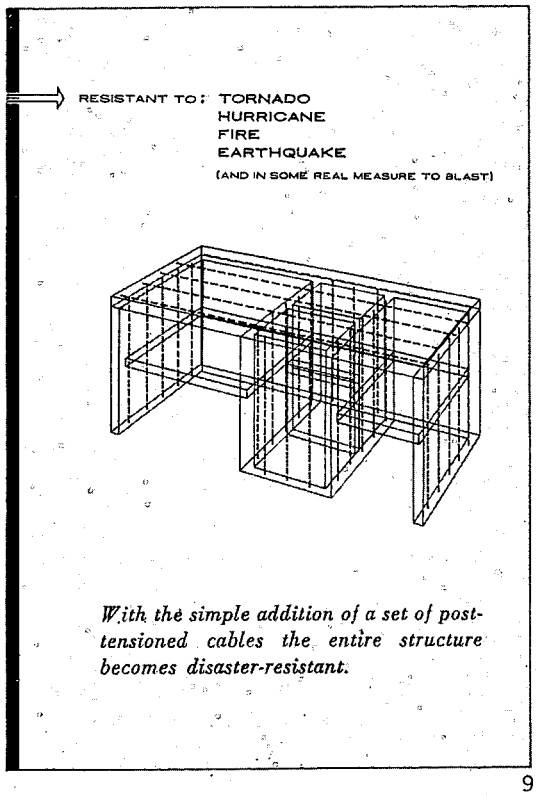
Cavity walls, post-tensioned in the manner described, can also be filled with loose fill insulation such as water-repellent vermiculite. These walls provide lateral resistance to ground water or soil pressures in the basement. When post-tensioned, cavity walls have increased racking resistance and, thus, can receive lateral forces from roof or floors acting as horizontal diaphragms. Diaphragm action is important to a well developed structural system in resisting horizontal dynamic loads.

Plate Action

Before the advent of skeleton-frame construction, masonry was exploited structurally as load-bearing walls or as arch and shell forms for roof and floor spans. Engineering analysis reveals that with improved mortar and clay units, this tradition can be applied today to plate action of vertical building elements (10, 11). As shown, 6″ clay masonry, without reinforcement, can not only act as load-bearing elements, but also as shear walls to carry buildings to heights of over 10 stories. Within the last decade, several European high-rise buildings have been built of clay units without the need for steel reinforcing. For example, 15″ walls of masonry support an 18-story office building in Zurich, Switzerland.

When reinforced, deep plates of clay masonry can span distances of 20′ to 40′. Plate action of this kind permits the design of Vierendeel trusses. Freedom from the rigid discipline of skeleton framing is available to the architect designing with high wall plates punctured with openings in a reasonably random manner. Buildings having cellular systems of interior walls, and having exterior walls with openings not greatly in excess of 50 per cent, can profit from the plate action of vertical building elements. Concentrating stress into slender columns may be unnecessary engineering where opaque wall areas can be utilized structurally.

Plate Action



With the simple addition of a set of post-tensioned cables the entire structure becomes disaster-resistant.

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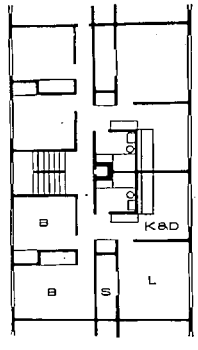

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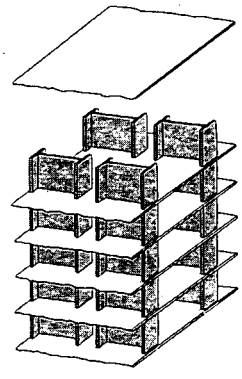

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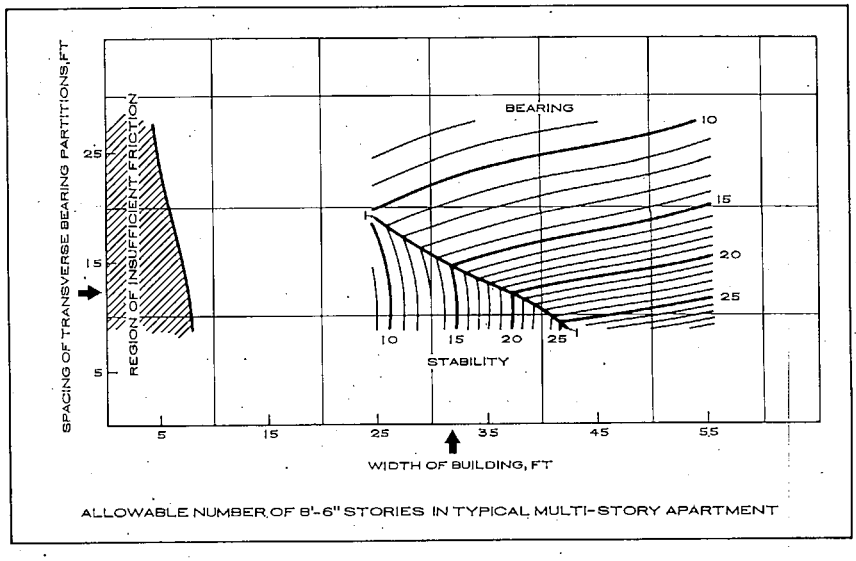

Reinforced Brick and Tile Masonry

To facilitate the use of reinforced masonry, the American Standard A41.2, the new *Building Code Requirements for Reinforced Masonry*, was patterned after the well-established and long-used *ACI Building Code Requirements for Reinforced Concrete*. Most designers are familiar with the ACI code and, therefore, have no trouble using the new ASA reinforced-masonry code. Unfortunately, because of the similarity, some designers have assumed that the ASA code is, perhaps, a copy of the ACI code. Such an assumption does an injustice to those who have devoted much time to testing and developing reinforced-masonry theory as well as to those who drafted the new code after long, careful deliberation.

Materials

Under the new ASA code, the materials for reinforced brick and tile construction are clay masonry units, mortar, grout, and reinforcing steel.

Masonry Units. All standard clay masonry units, brick and tile, glazed and unglazed, are adaptable to reinforced-masonry design. In addition, special shapes are often available, especially soffit shapes for lintel design. The designer should investigate local availability of special shapes before proceeding with designs based upon such shapes.

Mortar. Mortar contains cementitious materials and sand, conforming to ASTM specifications, Mortar and Grout for Reinforced Masonry C476-61T (12).

Grout. Grout may be type fine grout or type coarse grout. Type fine grout consists of cementitious material and fine aggregate plus sufficient water to produce a pouring consistency. It is generally used for isolated lintels or small volumes of reinforced masonry (12).

Type coarse grout has well-graded pea gravel added and is generally used as an economical mix on more extensive reinforced-masonry projects. Pea gravel grout has the additional advantage of reduced shrinkage tendencies (12).

Steel. Reinforcing steel may be rail, billet, or axle steel, or cold drawn wire. Deformed bars must also conform to ASTM Designation A305.

Properties

The properties of reinforced masonry are similar to those of plain masonry, except that strengths of reinforced masonry are greater.

It is preferable to determine ultimate compressive strengths of masonry by testing prisms of masonry. Test conditions should be nearly identical to job conditions; i.e., materials, moisture contents, consistency of mortar, workmanship, etc., should be the same as in the final structure.

In general, all test specimens of solid masonry have a height-to-thickness ratio h/d of 2.0 and are not less than 16" in height. Correction factors for prisms with h/d other than 2.0 are given (13).

For hollow masonry units, the determination of the compressive strength is made on prisms, 8" x 8" or 8" x 16" in

Code Requirements

MORTAR AND GROUT PROPORTIONS BY VOLUME

Mortar or Grout Type	Portland Cement	Hydrated Lime or Lime Putty	Type II Masonry Cement	Fine Aggregate	Coarse Aggregate
PL Mortar	1	¼ to ½	None	2¼-3 times	PL, PM, Fine: None.
PM Mortar	1	None	1	sum of the	Coarse grout: 1-2
Fine Grout	1	0 to 1/10	None	cementitious	times sum of cemen-
Coarse Grout	1	0 to 1/10	None	volumes	titious volumes

For the purpose of these specifications, the weight of 1 cu ft of each material is assumed to be:

Portland Cement	94 lb	Lime Cement (Quick Lime)	80 lb
Hydrated Lime	40 lb	Sand, damp and loose	80 lb of dry sand
Masonry Cement	weight printed on bag		

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CORRECTION FACTORS FOR TEST PRISMS

Ratio of height to thickness (h/d)	1.5	2.0	2.5	3.0
Correction factor*	0.86	1.00	1.11	1.20

* Multiply apparent compressive strength (test result) by the appropriate correction factor. Obtain intermediate values by interpolation.

13

ALLOWABLE STRESSES IN REINFORCED MASONRY

Description		Allowable Stress
Compressive:		
Axial	f_m	*
Flexural	f_m	0.33 f'_m
Shear:		
Beams with no web reinforcement	v_m	50 psi
Beams with web reinforcement	v	150 psi
Bond:		
Plain bars	u	80 psi
Deformed bars (ASTM A305)	u	160 psi
Bearing	f_m	0.25 f'_m
Modulus of elasticity	E_m	1000 f'_m
Modulus of rigidity	E_v	400 f'_m

* Allowable axial compressive stresses are given indirectly in column formulae.

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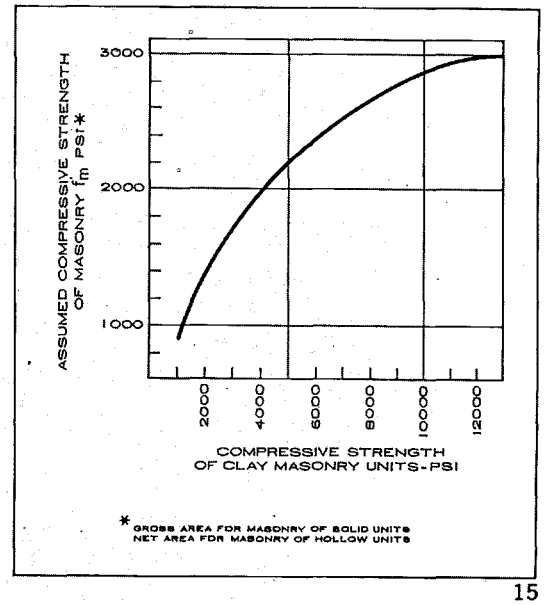

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plan, and 16" in height. The hollow cores are not filled with grout. Ultimate strength f'_m is computed by dividing maximum test load by net area of the units used in construction of the prisms.

If it is not possible or convenient to establish f'_m by preliminary tests, an assumed value may be used. These values are shown when the average compressive strength of individual brick and tile units is known and a type M or type S mortar is used (15).

Working stresses for reinforced masonry are based on values of f'_m. The allowable stresses for reinforced brick and tile masonry permitted by the ASA Code are tabulated (14).

Reinforced Lintels

An illustration of the practicality of reinforced masonry is its use as reinforced-brick lintels in masonry buildings. Many architects and engineers have become acquainted with reinforced-masonry construction by utilizing reinforced lintels. Reinforced brick and tile lintels are widely used for advantages they have over steel lintels, including: (1) more efficient use of materials; the masonry carries loads in conjunction with relatively small amounts of steel, resulting in significant savings; (2) lower maintenance costs; periodic painting of exposed steel is eliminated; (3) additional safety; the reinforced-masonry lintel has built-in fireproofing.

Various reinforced clay masonry lintels are illustrated (16, 17, 18, 19, 20, 21). The following recommendations are based on field experience and the American Standard A41.2.

Lintel Dimensions

Design width of reinforced-masonry lintels normally coincides with wall thickness. Where the design depth of a reinforced-brick lintel is limited by the height of masonry above the opening, compression steel may be required.

Although hollow units are often used to form lintels, in some cases it may be more convenient, and more economical, to use only brick. A reinforced-brick lintel which will carry the same loads imposed upon the structural-steel lintel, but having all the advantages of reinforced-lintel construction, is shown (19b). Here, labor and material costs for brick masonry are offset by a reduction in material cost of steel, resulting in a more efficient use of material. Other advantageous details may be worked out by the designer.

Design of Reinforced Lintels

Lintel design should not be by arbitrary selection of section and reinforcement. In any lintel design, a careful analysis of the loads to be carried, and a calculation of the resultant stresses, should be incorporated to provide adequate structural strength and to prevent cracking, subsequent leaking, and unsightly appearance.

Load Determination. In reinforced-brick masonry lintel design, determination of imposed loads is an important factor (22). At left is an elevation showing a wall opening with joists and a bearing beam. On the right is a graphic illustration of

Lintels

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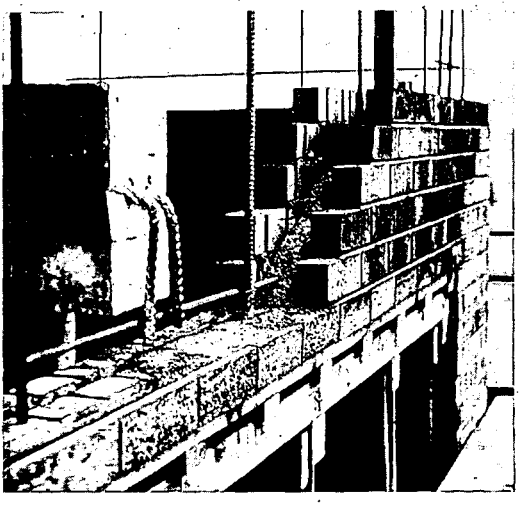

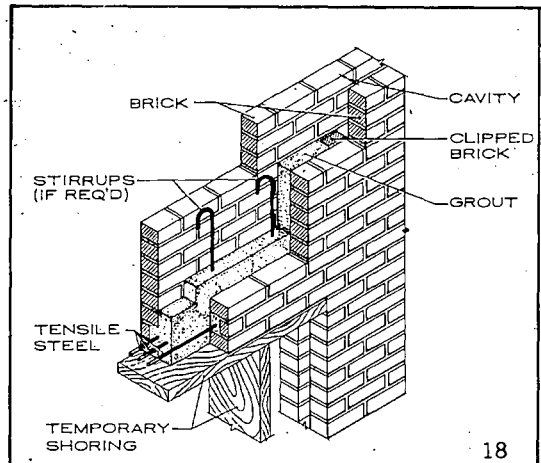

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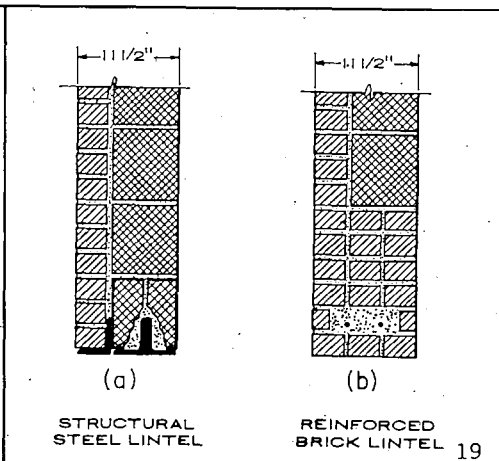

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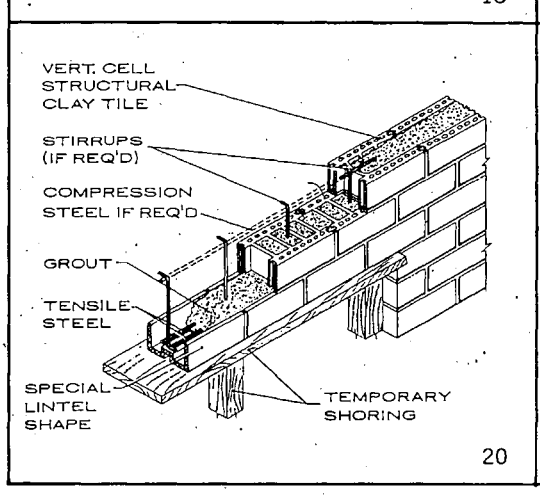

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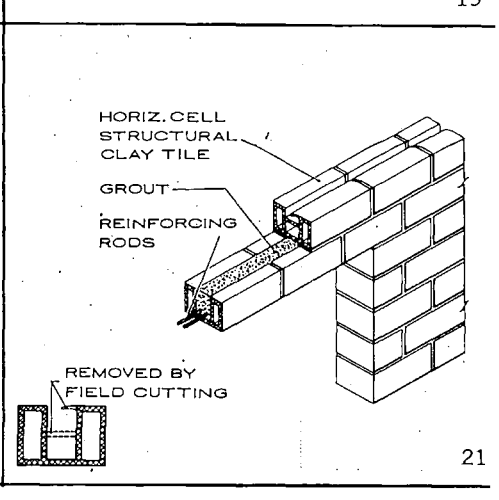

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the distribution of superimposed loads. Note the triangular wall area ABC immediately above the opening, with sides at 45-degree angles to the base. Arching action of a masonry wall will carry the dead weight of the wall and superimposed loads outside this triangle, provided that the wall above point B (the top of the triangle) is sufficient to provide resistance to arching thrusts. For most lintels, a depth of 8″ to 16″ is sufficient.

Provided arching action occurs, the dead weight of masonry wall, carried by the lintel, may be safely assumed as the weight within the triangular area ABC. To the dead load of the wall, add the uniform live and dead loads of floors and roofs, which bear on the wall above the opening but below the apex of the 45-degree triangle. Again, provided arching occurs, such loads above the apex may be neglected. Where D is greater than L/2, the floor load may be ignored.

Concentrated loads bearing above the opening must also be considered. These may be distributed over a wall length equal to the base of a trapezoid whose summit is at the point of load application and whose sides make an angle of 60 degrees with the horizontal. The portion of the concentrated load carried by the lintel is distributed over the length AE and can be considered as a uniform load partially distributed.

Bending Moments. Many reinforced-brick masonry lintels are designed as simple-span lintels. In short or deep lintels, there is little likelihood of cracking, due to deflection or end rotation. In relatively long, shallow, or highly loaded lintels, there is a possibility of cracking. If, in the designer's judgment, such cracking is likely, it is recommended that the lintel be designed with negative steel. For such steel to be effective, the end of the lintel must be tied down, i.e., steel continuous with column steel or extending into the wall beyond the jamb of the opening. In many instances, the easiest solution is to provide a continuous bond beam around the building. This beam is provided for little additional cost.

Shear. The maximum allowable shear in lintels with no web reinforcement is 50 psi. If the shearing stress is above 50 psi, but less than 150 psi, stirrups are required. Shearing stress in a lintel must not exceed 150 psi.

Bond. The perimeter of tension steel must be sufficient to insure that bond stress does not exceed the allowable. Tension steel should extend a minimum of 4″ past the face of the supports.

Special Cases. For normal, reinforced lintels, i.e., brick lintels laid with full bed and head joints or tile lintels laid with joints buttered with mortar, the full cross-sectional area may be used in design. If brick lintels are constructed with raked joints or if tile lintels are laid dry (units not mortared), then an appropriate reduction in cross-sectional area must be made. In general, it may be said that all clay masonry made continuous by mortar and in contact with grout may be considered as resisting forces.

It may be desirable, for job expediency, to construct minor lintels with ASTM

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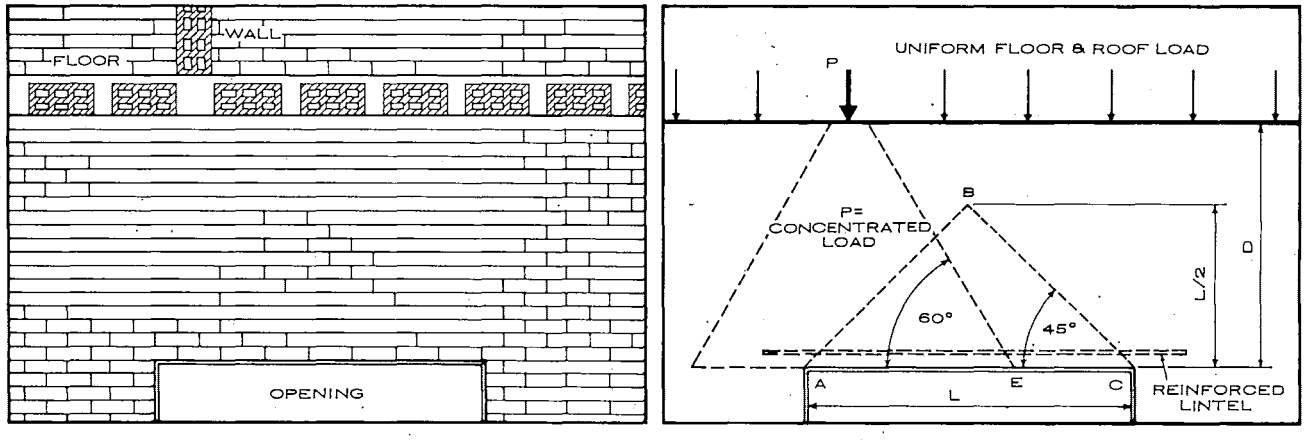

Type N mortar. In this case, reduce allowable working stresses by one half.

Construction Methods and Details

Although both reinforced-brick and reinforced-tile lintels may be either built-in-place or precast, tile is most readily adapted to precasting techniques. For built-in-place reinforced-brick lintels, the usual construction procedure includes temporary shoring upon which the soffit course is placed and the lintel subsequently constructed. The soffit brick may be standard units or special shapes placed directly upon the shoring with mortar in the vertical (head and collar) joints only.

In special cases, where exceptionally fine joints are required for exposed soffits, the soffit brick may have only the exterior portion of the head joint buttered with mortar. The remainder of the joints are temporarily filled with sufficient sand to prevent grout from running out the bottom and defacing the soffit units. After the removal of shoring, the sand will drop out, and the joints may be pointed with mortar from beneath.

Tile lintels may be built in place on temporary shoring, in which case special U-shaped lintel units are ofter employed. These special shapes may be manufactured for the purpose as shown (20) or obtained by field-cutting standard units (21). Manufactured special shapes may not be readily available in many localities, and, for this reason, their availability should be determined before proceeding with a design based on their use.

The vertical-cell tile is best suited to the placing of stirrups, and to continuous grouting to obtain larger effective depths (20).

Clay tile is readily adaptable to precasting techniques. The precasting method will depend upon the size of tile unit, the cellular arrangement of the tile unit, the span of the lintel and other factors. One method of precasting tile lintels is shown (23). The units are supported on a V-shaped platform at an angle to the horizontal to ensure complete filling with grout. Steel is placed with approximately ½" to ¾" clearance from the tile unit and may be held in place by accessories, wiring, templates at the ends of the lintel, etc.

Top steel is generally provided in precast lintels to prevent cracking when handling the section during construction placement. When spans and cross-sections so dictate, top steel may be designed as compression steel. Other details of construction are similar to normal details for reinforced-brick masonry.

Swimming Pools

Reinforced-brick masonry has been used extensively in swimming-pool construction. Most of these are built as cantilevered retaining walls. The use of brick, available in many colors, eliminates the need for painting and repainting, yet maintains a durable wearing surface even though constantly saturated with water. Unless curves are repeated many times, curved reinforced-brick masonry walls are almost always less costly than comparable, unfinished reinforced-concrete walls (24).

Pools

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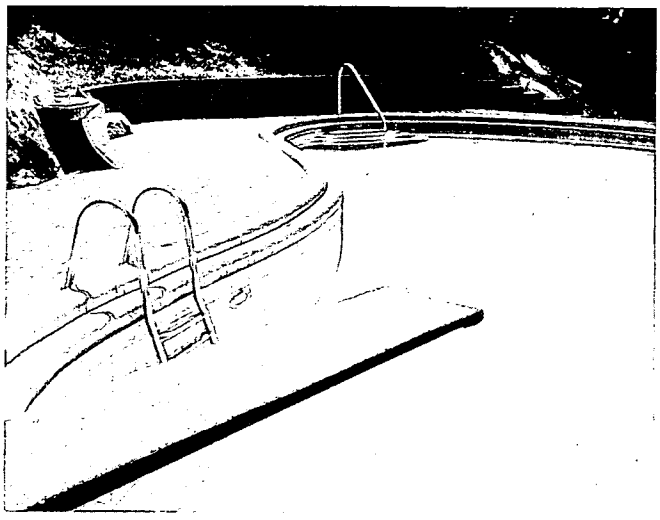
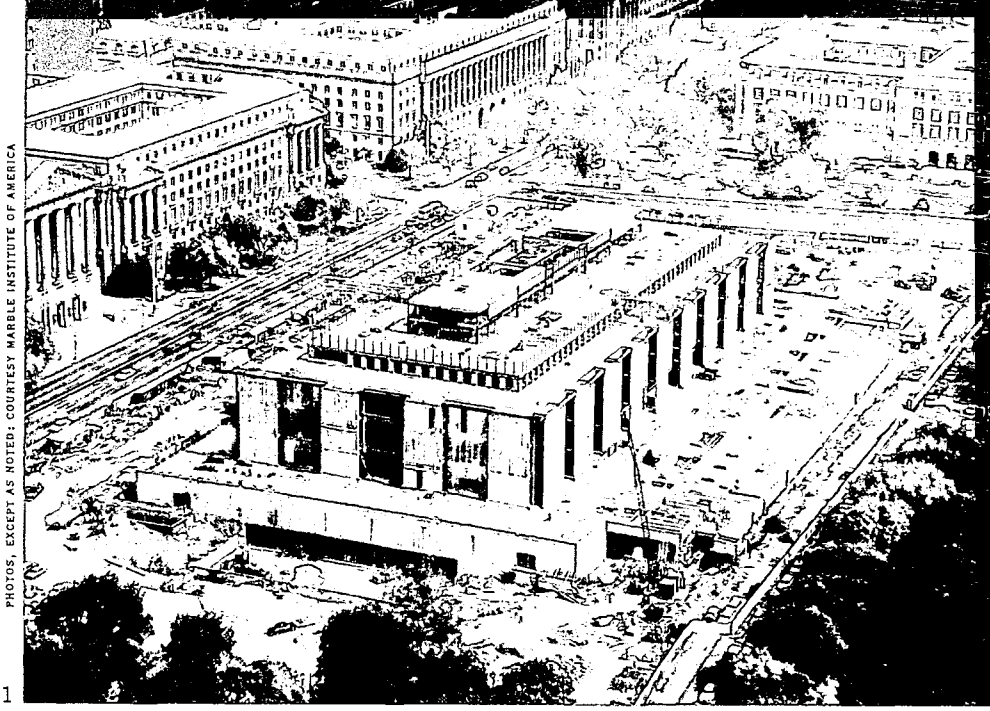




PHOTOS, EXCEPT AS NOTED: COURTESY MARBLE INSTITUTE OF AMERICA

1

New Techniques for Marble

BY JOHN E. SHACKELFORD

Primary innovations for the use of marble in building construction are new anchoring systems and an evident trend toward thinner panels. These and other developments are reported by the Managing Director of the Marble Institute of America.

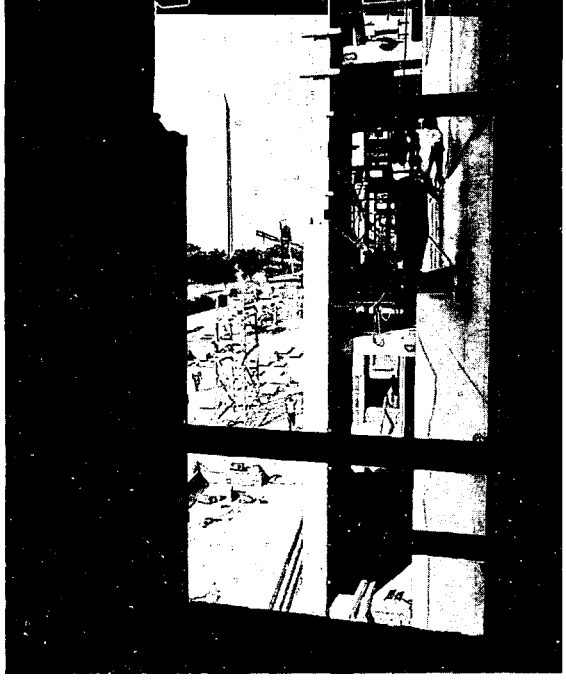
First monumental structure to be built on the Mall in Washington since the erection of the National Art Galleries, is the Smithsonian Institute's Museum of History and Technology (1, 2, 3, 4, and 5). Appropriately, its Architects are Steinman, Cain & White, successors to the renowned firm of McKim, Meade & White; Mills, Petticord & Mills are Associated Architects.

In former years, monumental buildings erected in Washington with marble walls would normally have had 4″ and 8″ facings of marble bonded with 12″ to 16″ of brick back-up. Although still a relatively thick curtain wall, when compared with contemporary commercial wall enclosures, the total thickness of the new Smithsonian wall is only 16⅜″. The size of the typical Tennessee marble facing panel is 4′-9″ x 2′-10″ x 3″. A rubbed finish was achieved by blowing the marble surface with sand and low-pressure air to produce a uniform, velvet-like finish. Color is Tennessee pink.

To support the marble facing, precast-concrete panels were used (5). These extend from floor to floor and are 4′ wide and 5″ thick. Rigid insulation and concrete block are other materials found in the completed wall. The total assembly, including its two air spaces, has a U-factor of .12.

Serrations in the plan's periphery are for exhibit purposes and daylighting. A wash of artificial light between the projections illuminates the exterior at night.

Two new proprietary anchoring systems that further reduce wall thickness have recently been made available to the designer: Georgia Marble's Zibell system, and Cathage Marble's CM system. With both, lightweight weathertight veneers are rapidly and easily installed. The Zibell method offers positive anchorage, alignment, and expansion control while per-



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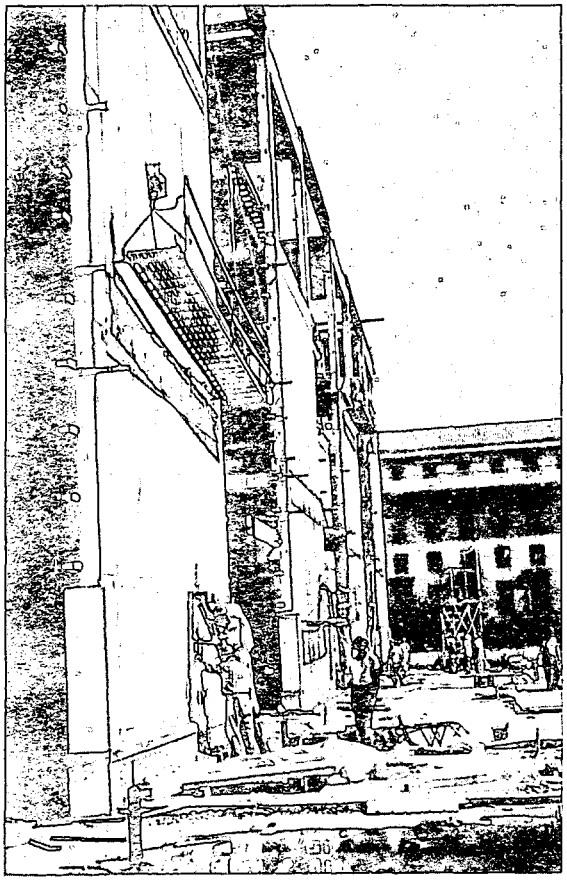

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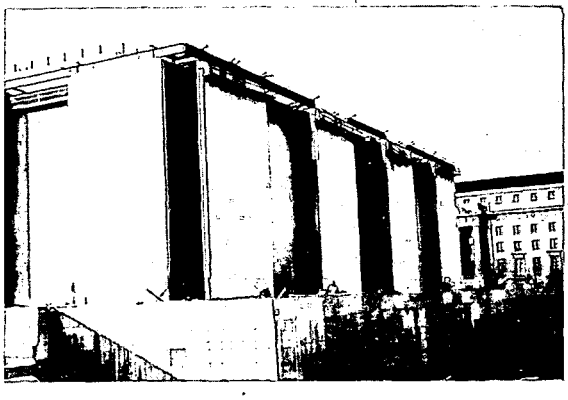

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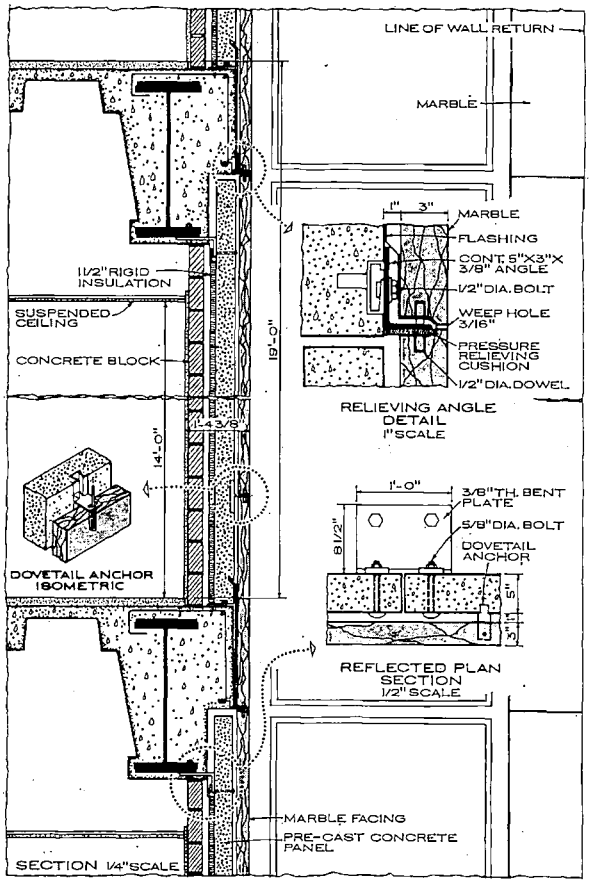
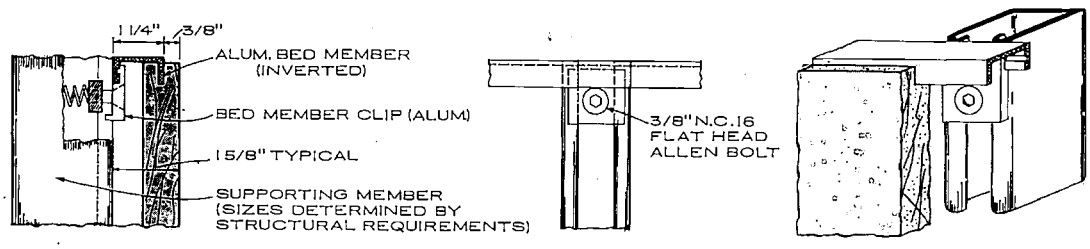
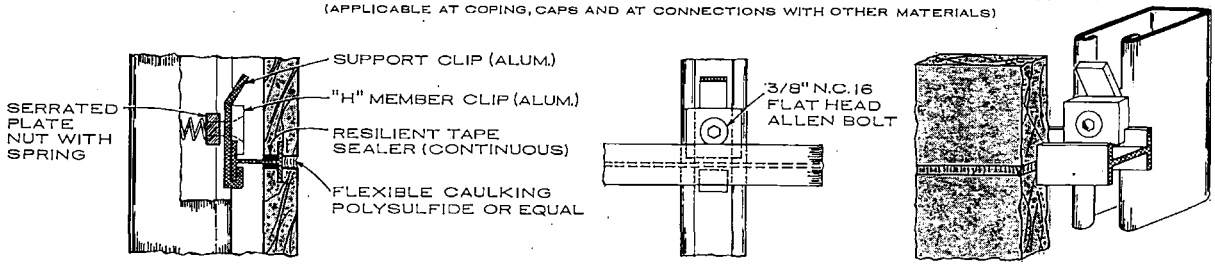

LINE OF WALL RETURN
MARBLE
1" 3"
MARBLE
FLASHING
CONT. 5"X3"X 3/8" ANGLE
1/2" DIA. BOLT
WEEP HOLE 3/16"
PRESSURE RELIEVING CUSHION
1/2" DIA. DOWEL
RELIEVING ANGLE DETAIL 1" SCALE
1 1/2" RIGID INSULATION
SUSPENDED CEILING
CONCRETE BLOCK
19'-0"
14'-0"
14 3/8"
DOVETAIL ANCHOR ISOMETRIC
1'-0"
3/8" TH. BENT PLATE
5/8" DIA. BOLT
DOVETAIL ANCHOR
8 1/2"
5"
1 1/2"
REFLECTED PLAN SECTION 1/2" SCALE
MARBLE FACING
PRE-CAST CONCRETE PANEL
SECTION 1/4" SCALE

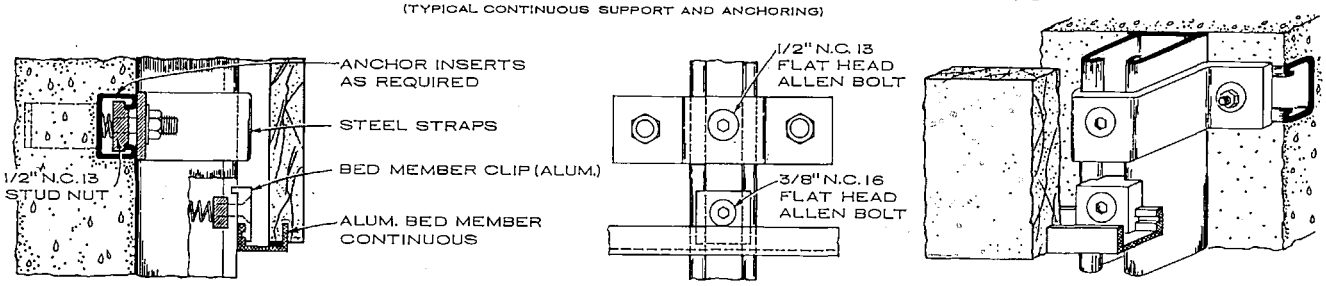
5



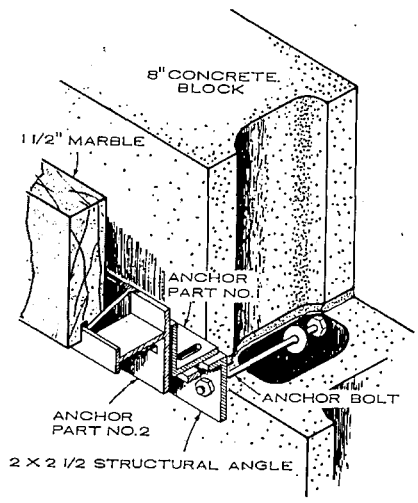
SECTIONS AND ELEVATIONS SHOWING ANCHORING AT TOP OF MARBLE
(APPLICABLE AT COPING, CAPS AND AT CONNECTIONS WITH OTHER MATERIALS)

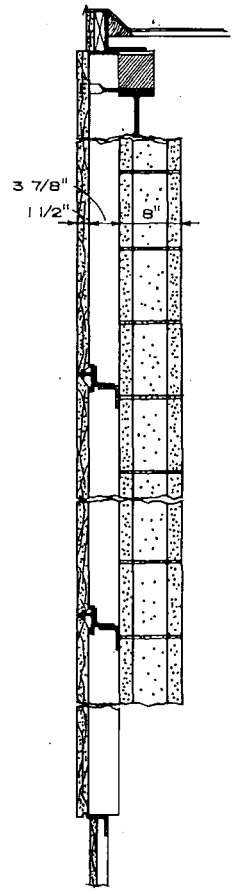


SECTIONS AND ELEVATIONS AT INTERMEDIATE HORIZONTAL JOINTS
(TYPICAL CONTINUOUS SUPPORT AND ANCHORING)



6 SECTIONS AND ELEVATIONS SHOWING SUPPORT AND ANCHORING AT BOTTOM OF MARBLE
(APPLICABLE AT BASE AND AT CONNECTIONS WITH OTHER MATERIALS)





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mitting a minimum marble thickness of 7/8". Since the veneer is mechanically attached to the structural grid system **(6)**, conventional back-up masonry can be eliminated and replaced by only those materials needed for insulation and interior finish. The CM system **(7)** consists of two parts: a cast-aluminum bracket and a slotted-steel clip angle coated with a heavy bituminous paint. Horizontal and vertical adjustments are provided by 1½" slots in the legs of the angles. Lateral adjustments are made by using spacers when attaching angles.

Gaining popularity is the new technique of utilizing precast, marble-faced, reinforced-concrete curtain-wall panels. With this method, 7/8" marble veneers have been used with concrete panels as thin as 2⅝". Many panels over 10′ x 6′ have been installed. Recent examples include: Washington Building, Seattle, by Architects Naramore, Bain, Brady & Johanson; Peachtree Medical Building, Atlanta, by Architects Danielson & Paine; and Barnett National Bank, Jacksonville, Florida, by Architects Kemp, Bunch & Jackson.

Other examples of contemporary use of marble are: Danish Embassy, Washington, designed by Architect Vilhelm Lauritzen with The Architects Collaborative acting as Consultants, which has coarse sand-finish Vermont marble with a 1¼" thickness **(8)**; Medical Center National Bank, Houston, designed by Architect Hamilton Brown in association with John A. Greeson and Charles McKim, containing 7/8"-thick Vermont marble panels that reduce, without entirely eliminating, sunlight on a southern exposure **(9)**. In Hillsborough, California, Architect Craig Ellwood has enriched a residence with white Greek Pentelic marble; each module contains three equal panels of ¾"-thick marble **(10)**.

PHOTO: ROBERT C. LAUTMAN

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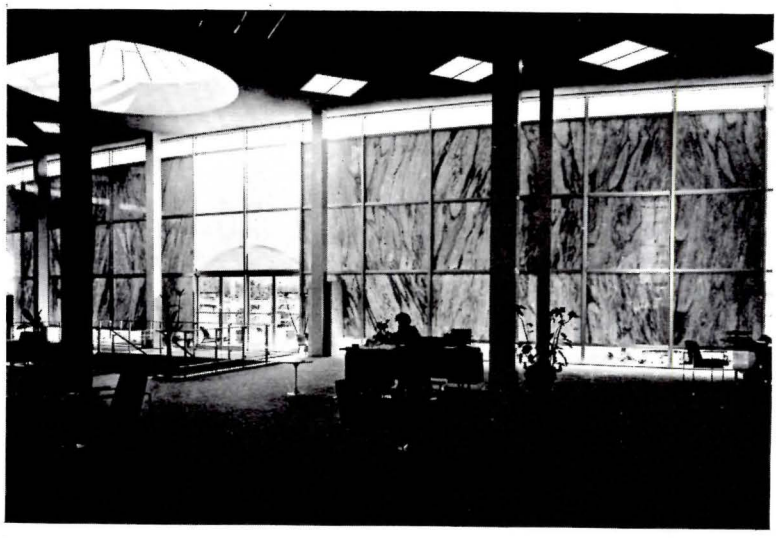

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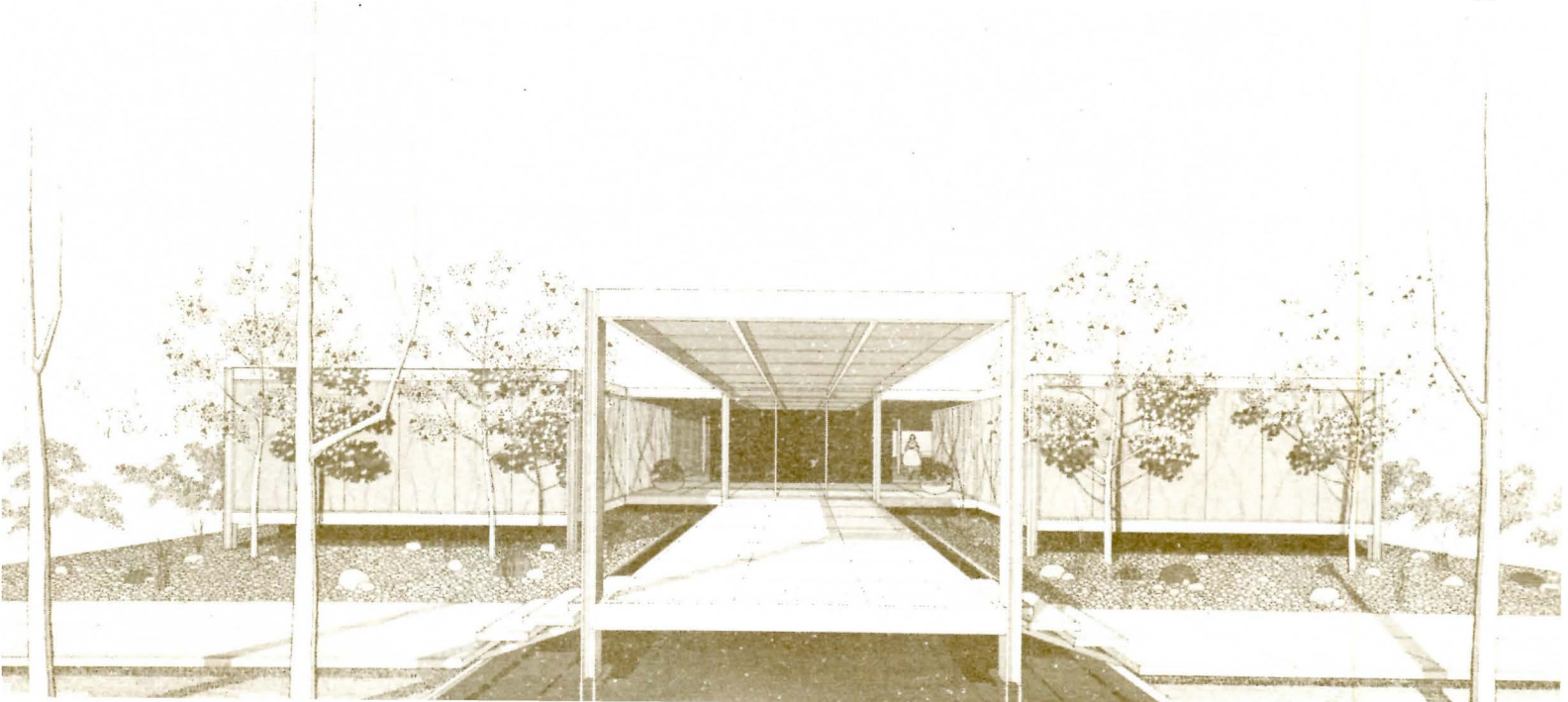

Lightweight

BY L. B. COFFIN, J. F. McMAHON AND W. G. LAWRENCE

Recent research at the State University of New York College of Ceramics at Alfred University has led to the development of a new lightweight ceramic material. Discussing the product's composition, fabrication, and properties are three staff members of the College of Ceramics.

For several years the Department of Research of the College of Ceramics at Alfred University has shown interest in the building materials industry, as evidenced by its research work in the clay products area. The purpose of such research has been not only the improvement of present products but also, and more importantly, the development of new products.

One cannot fail to recognize the merits of well-made ceramic building materials such as brick, wall tile, and floor tile; their durability, appearance, cleanliness, fireproof character, color, and texture make them a most desirable material.

One of their disadvantages, however, is weight, a result of which is that the flourishing ceramic roofing tile business has become almost nonexistent in the last decade. The entire building industry's steady trend to lightweight materials has made necessary similar trends in the ceramic construction materials.

Furthermore, present-day importation of building materials of all types, and the fact that all indications point to less and less tariff protection, have impressed the ceramic industry with the necessity of reducing costs of manufacture and "on the job" prices.

With these two objectives as a stimulus, research work has been carried on to develop a new type of lightweight building material, which is receiving considerable attention from architects, industrialists, and builders. This work on lightweight products was stimulated by J. D. Lowenfish, Chief of Architectural Research, New York State Division of Housing, and supported by this organization. Many persons have contributed to the development, including faculty and students from the Department of Industrial Design and Department of Ceramic Engineering of the College of Ceramics. The material has already seen its first application—an experimental installation in a New York

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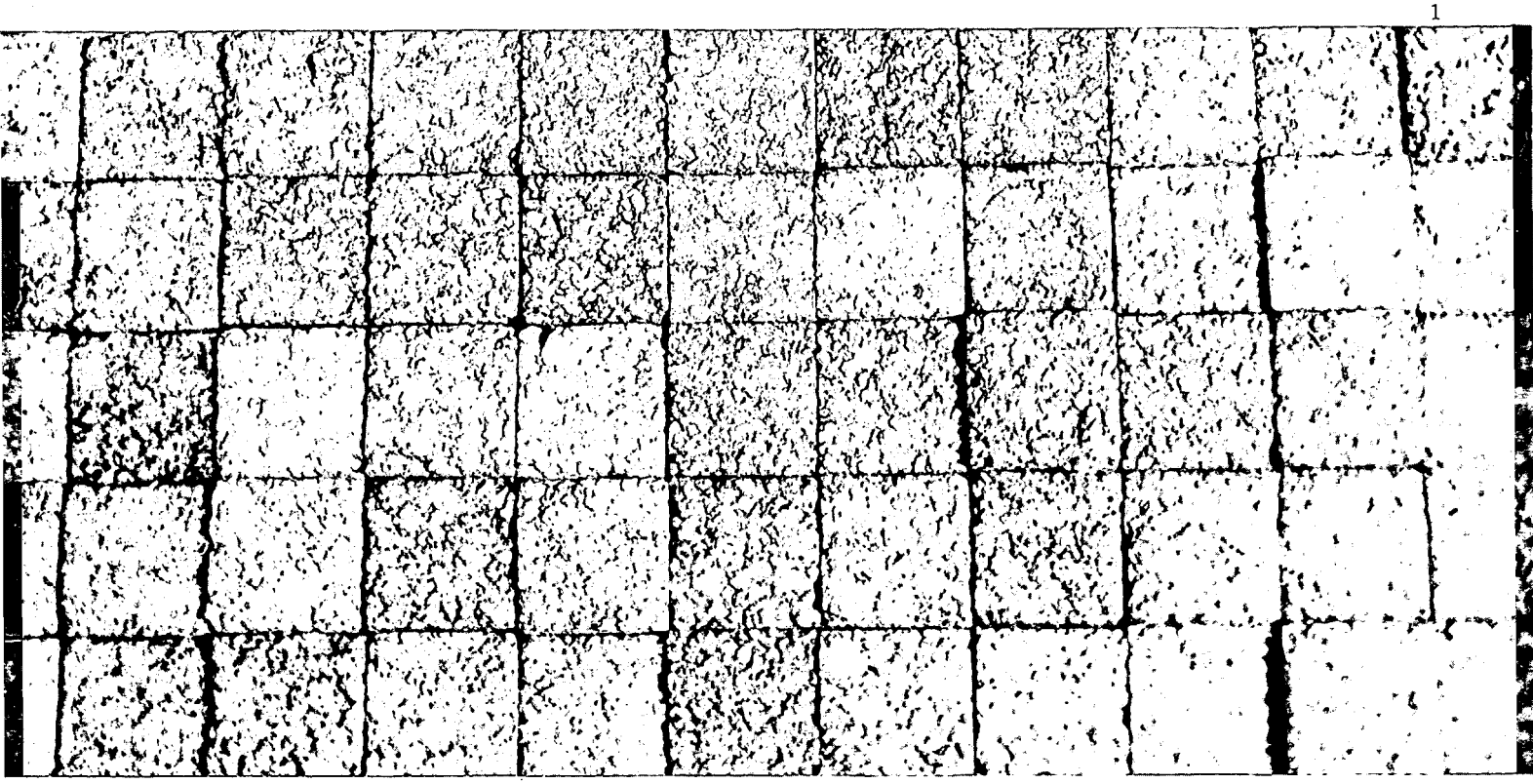

Building Material

State housing project; and the material is set to be marketed by two major brick and tile producers within the next few months.

Lightweight Aggregate

The basis of any lightweight ceramic product is a lightweight aggregate made from a clay or shale that has been expanded by a proper high-temperature heat treatment. Fortunately, there are hundreds of clay and shale deposits containing materials that are easily expanded or bloated by proper heating. The temperature required to bloat a clay or shale depends on its composition, but usually occurs in the 1800–2300 F range. Several types of furnaces are used for the manufacture of lightweight aggregates, including sintering belts, rotary kilns, and vibratory-hearth furnaces. With the better types of raw materials, having a bulk density in the 80 lb/cu ft range, it is possible to produce an expanded aggregate weighing 25–30 lb/cu ft.

The quality of the aggregate depends on its weight, surface character, and pore structure. The surface should be smooth, covered with a thin, impervious skin to prevent liquid absorption, and spherical for maximum strength-to-weight ratio. Hence an aggregate made by a sintering and crushing process, which exposes the pore structure, is not as desirable as a product in which the material undergoes no crushing operation. The aggregate should have a fine pore structure rather than coarse, large pores, for highest strengths.

The expanding of a ceramic aggregate depends on the rapid heating to develop a "glasslike" skin on the particle surface. This skin seals in gases that are generated from within the particle by decomposition of carbonates and sulfates or by oxidation of organic materials, all of which are present in most clays and shales. These gases expand the glassy matrix and lower the bulk density. The development of a viscous glass is thus necessary for proper bloating, but its presence also causes the most trouble in the process. If the temperature becomes too high or too much glass develops, the particles stick to each other. Since the best bloating occurs with maximum glass development (higher temperature), the aggregate producer must settle for a compromise between the weight and

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A variety of possible sizes and surfaces: small units, 2" x 2" x ½", in varying depths and colors ***(1)****; 4" x 4" x 16" block with one face glazed and with cutting guides marked on adjacent surface* ***(2)****; 6" x 6" x 1¼" unit with shadow effect from surface design, resting on 12" x 5" x 2" unit with glazed face* ***(3)****; and 6" x 6" x 1½" unit with glazed surface* ***(4)****.*

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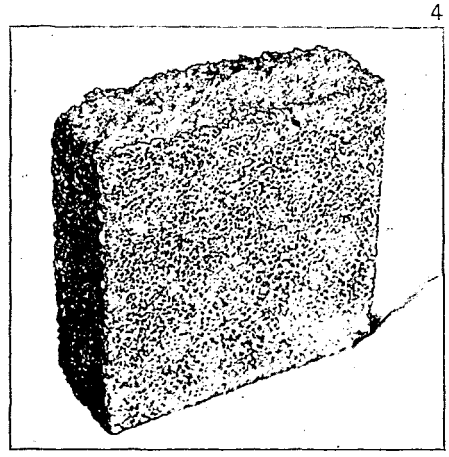

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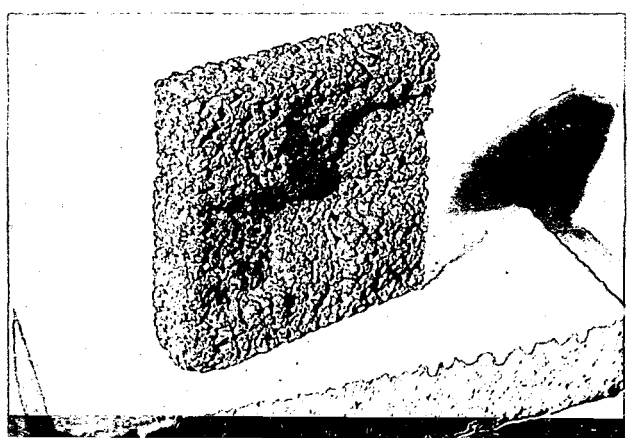

quality of aggregate produced and the temperature of kiln operation.

Recent development of vibratory-hearth kilns for aggregate production, which result in the particles being suspended in midair a majority of the time, or the "free-fall" type of furnace developed by the Structural Clay Products Research Foundation, have made possible the manufacture of higher quality aggregates than is possible by other presently known methods.

Fabrication Procedure

Because of the desirability of having a molding method which is simple, fast, economical, easily mechanized, and adaptable to any shape, some of the more common ceramic forming techniques were not considered. The desirability of rapid turnover, resulting in less mold inventory, is also an important factor. For these reasons, the possibilities of chemical bonding were explored.

A typical composition might include 80 per cent by weight of the ceramic lightweight aggregate, and 20 per cent by weight of raw clay, to which is added a material that will set chemically to provide strength for handling prior to the firing operation. Such possibilities include ethyl silicate, sodium silicate, phosphates, fast-setting cements, or combinations thereof. The amount added is determined by the strength required and the size of the piece being made. The liquid content of the mix is very low (15–20 per cent); hence the mix is free-flowing and easily compacted by vibration and/or tamping. Any desired shape or size may be easily formed. In 10–15 minutes it is hardened by the chemical set and is removed from the mold.

Because of the simple forming operation, no expensive equipment is required —only a mixer, a vibrating table, and the proper wood or metal molds.

Due to the small amount of liquid in the piece and the fact that 80 per cent of the mix consists of a prefired lightweight ceramic aggregate which undergoes no further shrinkage or expansion, the result is a dimensionally stable product. No special drying is necessary, as with conventional ceramic products containing large percentages of water and uncalcined raw materials. There is no shrinkage in

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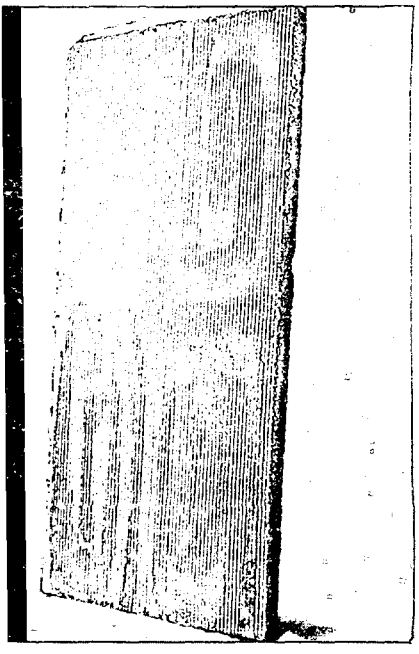

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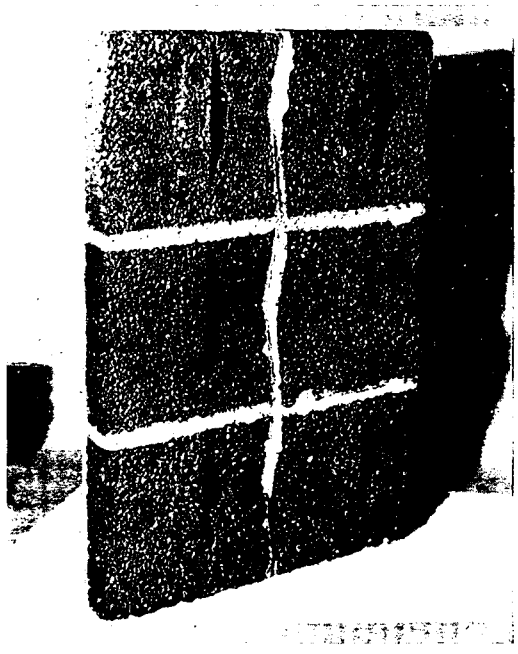

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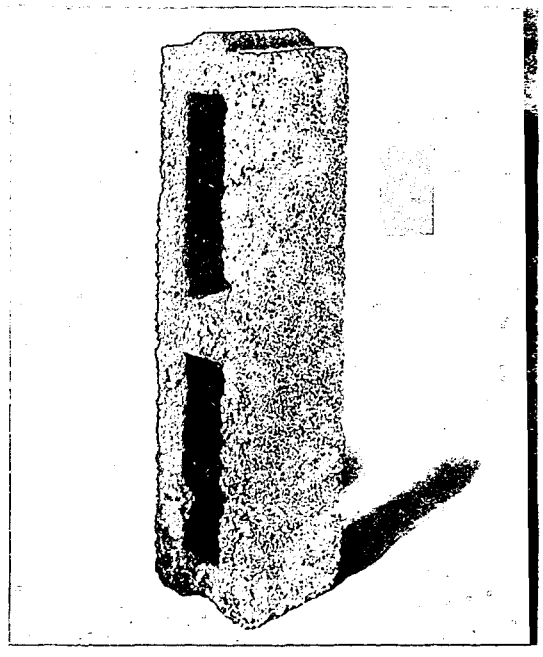

the drying operation as compared to other ceramic products.

After removal from the mold, the piece is ready to receive a spray coating of glaze, which is followed by the firing operation. Conventional glazes and glaze techniques are employed, with a wide range of colors and designs possible.

The firing operation matures the body, develops strength, and fuses the glaze. Due to the low percentage of raw clay material present, these units may be fired very rapidly. The firing temperature is usually 2000 F with a six-hour schedule, compared to 36–48 hours for comparable size units made in the usual manner.

Properties of Lightweight Products

Texture. A complete range of texture is available, since it may be controlled by the particle size distribution of the lightweight aggregate used and the amount of raw clay added to the initial mix. Surface designs are easily incorporated by inserts in the forming mold.

Color. The color of the unglazed product is normally red, but can be modified or changed by chemical additions, which in no way affect other properties of the product. Any color or combinations of colored glazes may be applied to produce designs and provide surfaces having durability, cleanliness, and aesthetic appeal.

Strength. The compressive strength of such materials is 1500–1800 psi, with a modulus of rupture of 800–900 psi.

Freezing and Thawing Resistance. These products have been tested according to ASTM specifications. Fifty freezing and thawing cycles were run with no failure; and outdoor exposure tests are now in progress.

Stability in Wall. Since this is a fired ceramic product, no rehydration or dimensional changes will occur at any time in the future.

Fire Resistance. It is completely fireproof, being 100 per cent ceramic product. It will not support combustion, and will support load up to its softening point, which approaches 1500 F.

Insulation Properties. No tests have been run, but due to the porous nature of the aggregate used the product would have superior thermal insulation properties as compared to conventional type of completely dense ceramic materials.

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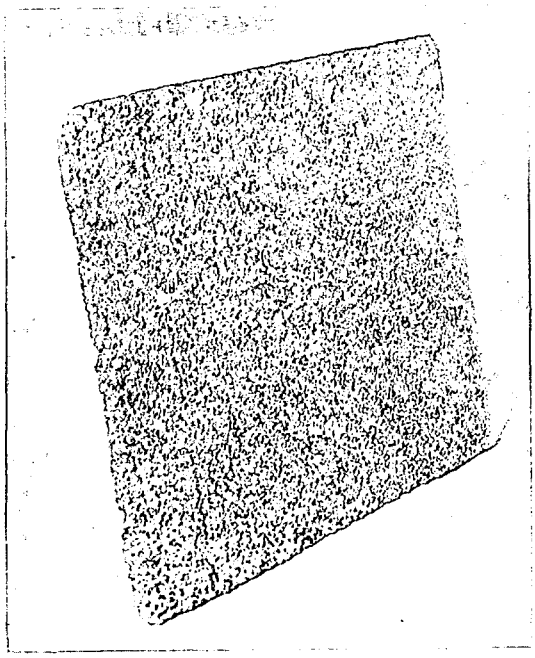

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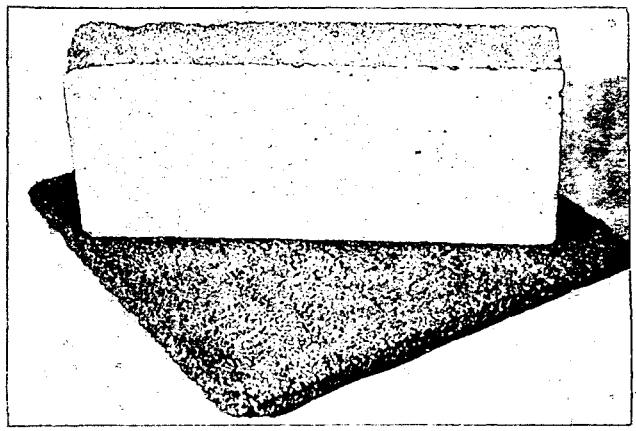

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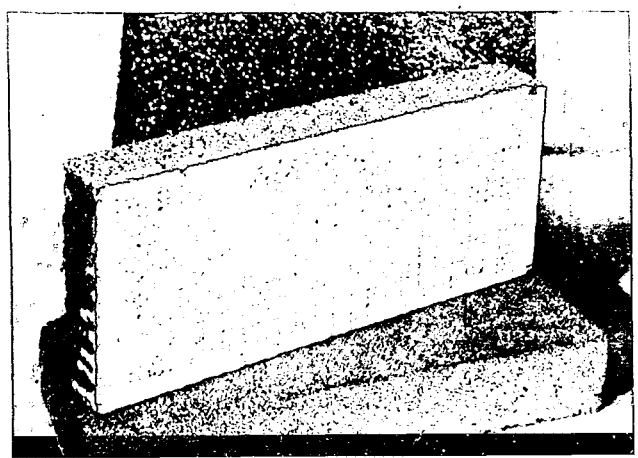


Further possibilities: 32" x 16" x 1¼" unit with molded surface and glaze color design (5); 6" x 6" x 1¼" unglazed units with surface design giving shadow effect (6); glazed 15" x 4" x 3½" unit made on cement-block machine (7); 12" x 12" x ½" unit with transparent glaze (8); 12" x 5" x 2" unit (9); and 12" x 5" x 2" glazed unit with molded surface (10).

Progress in Ceramic Tile

BY LAMAR H. BROWN

As the interest in easy-to-maintain surfacing materials increases, ceramic tile has, naturally, been the object of renewed attention. Some of the recent developments of the ceramic tile industry that facilitate installation and improve maintenance requirements are discussed in the following article by the architectural director of the Tile Council of America, Inc.

The domestic ceramic tile industry has seen a greatly increased use of ceramic tile in the past decade. Domestic tile sales have jumped from slightly over $40 million in 1947 to more than $140 million in 1959; production has increased 315 per cent.

Tile was used extensively as a fashionable material (particularly in hallways and on fireplace surrounds) in the period that began in the 1880's and culminated around the turn of the century. The material was then somewhat neglected for a time, until, in the 1930's, its use was revived (mainly in bathrooms). Today, ceramic tile is used as a surfacing material in almost every area of commercial, institutional, and residential structures, both indoors and outdoors. Last year, 10 per cent of tile manufacturers' production was used in exteriors. This figure may well double in the next two years.

Now available in over 200 colors and in many shapes and sizes, tile can be installed in a wide variety of patterns by a creative designer to show the versatility of the material (*facing page*). Greater production and new installation techniques have combined to bring what was once considered a luxury building material within reach of virtually every homeowner. Installation costs are now often as much as 20 per cent less than 10 years ago.

Some of the credit for this increase—in both the variety of the materials and in their use—is due to an association of 29 tile manufacturers, the Tile Council of America, which has built a half-million dollar Tile Council Research Center in Princeton, New Jersey, where several new products have been developed:

Dry-Set Mortar. For ceramic tile installations, dry-set mortar, a new water-retentive portland cement, has meant lower construction costs, higher bond strengths, and better tile installations.

Dry-set mortar is water-retentive by virtue of the addition of small amounts—less than 5 per cent—of polymeric materials. These additives greatly increase the viscosity of the mixing water, so that the damaging effects of capillary movement are eliminated. Water-retention makes it possible to install ceramic tile in a layer of dry-set mortar ⅛" thick or less over masonry, concrete, or cement plaster backings. "Dry-set" can also be used in thicker layers to level irregularities, a feature not possible with previously used, solvent-based organic adhesives.

Bond strengths of dry-set mortar are high when compared with either conventional mortar or organic adhesives. Requirements of "American Standard Specification for Dry-Set Portland Cement Mortar, A118.1-1959" are for shear bond strengths of 100 psi with quarry tile, 170 psi with ceramic mosaics, and 250 psi with glazed wall tile. These strengths insure a great factor of safety on the job. Dry-set mortar has grown from an experimental material in 1957 to actual use on 90,000,000 sq ft of ceramic tile in 1961.

Acid-Alkali-Resistant Grout. Another development of the research program is the epoxy-based, acid-alkali-resistant mortar known as AAR II. Previously, furan resins were the most satisfactory materials for making tile floors chemically resistant; AAR II has overcome all of the drawbacks of furans.

The pot life is approximately 2 hours—twice as long as furans; it allows larger batches to be mixed and more time to apply the material. Further, AAR II is water-cleanable while still plastic. Thus the tile setter cleans AAR II in the same way he traditionally cleans cement grout from the tile. Since only large units are practical for waxing, chemically resistant floors were previously limited to quarry tile and pavers; ceramic mosaic tile may now be used for these floors because waxing is unnecessary with chemically resistant AAR II.

An epoxy-base material, AAR II will bond to damp as well as dry concrete or mortar, and neutralizing is not necessary. Repairs in existing floors, therefore, can be easily made without interrupting operations. Successful repairs have been made in dairy buildings where there was standing water.

AAR II is also a superior thin-bed material for setting tile. The versatile qualities of this material have, in fact, just begun to be exploited. Last year, a test installation was made in an army kitchen in which quarry tile was set and grouted with AAR II over plywood subfloors.

Universal Grout II. The latest product with water-cleanable features to be developed is a stain and chemically resistant grout for glazed wall tile. This material, UG II, is similar to AAR II but has a

smooth, glossy surface that will wipe clean, as glazed tile will.

The water-retentive cements and water-cleanable epoxies have not only been a great boon to the ceramic tile industry but hold great promise for other segments of the building industry. For example, dry-set mortar is an excellent "thread-line" mortar, which costs a fraction of present epoxy "thread-lines." It can be used to bond thin terrazzo floors to existing concrete or to bond polystyrene foam to masonry.

Besides the newly developed products mentioned above, the Tile Council Research Center currently has several items in experimental stages:

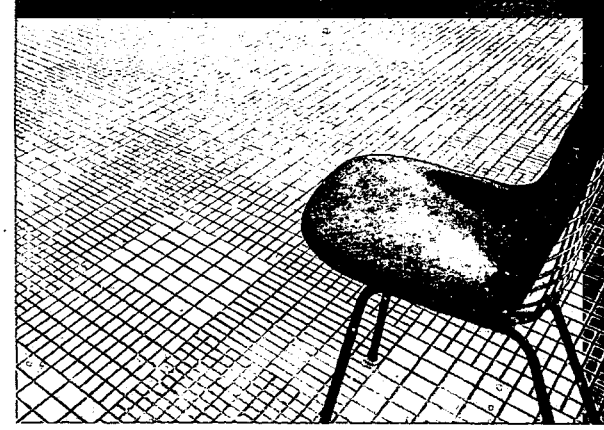
One-Component Epoxies. Epoxy-based grouts that have the same water-cleanable qualities as AAR II and UG II will be packaged as one component and require only water for mixing. These grouts will be known as AAR I and UG I.

Prefabricated Panels. One of the most interesting of the current research projects is the development of prefabricated panels of ceramic tile. Edge-bonded panels of glazed wall tile as large as 15 sq ft are being produced in the laboratory, as well as panels of ceramic mosaic tile 2 sq ft (*facing page*). Two advantages of these panels are immediately apparent: first, the time required for installation of a tile surface will be reduced, and second, a greater variety in pattern will be possible. The reduction in installation time will be achieved not only because large areas of tile can be installed in one movement rather than applying units individually, but also because it will be possible to install the panels over dry wall products, plywood, wallboard, perhaps even metal panels. The panels are composed of tile units edge-bonded by filling the joints with a nonstaining grout, which will eliminate cleaning in the field. The infilling grout, added mechanically, will release the designer from the restrictions of a small-scale grid, and therefore permit a wider textural variety.

Research is being conducted in three areas in order to make such prefabricated panels commercially available. First, the edge-bonding machines must be refined. Second, the materials available for edge-bonding must be studied. And, third, adhesives and mortar that will permanently bond the panels to existing walls must be developed.

These new developments by the tile industry may foretell an even wider use of tile and a greater interest in the design of its installations in the next decade.

An attempt to gain a degree of freedom from the dominating grid pattern has been noticeable in the designs of recent tile installations. Prefab tile panels (facing page), *now under research, will permit variety within a larger grid. Modulation of unit sizes* **(1)** *can also increase the apparent scale of the grid and achieve a less monotonous texture. This technique has been combined with a color variation by John Johansen* **(2)** *to effect a diaper pattern. Varying the dimensions of the grout has permitted rectangular tile units to be laid in a circular pattern* **(3, 4)**, *the latter by Paul Rudolph. Further, two differently shaped units are now available that can be arranged to form a serpentine pattern* **(5)**.



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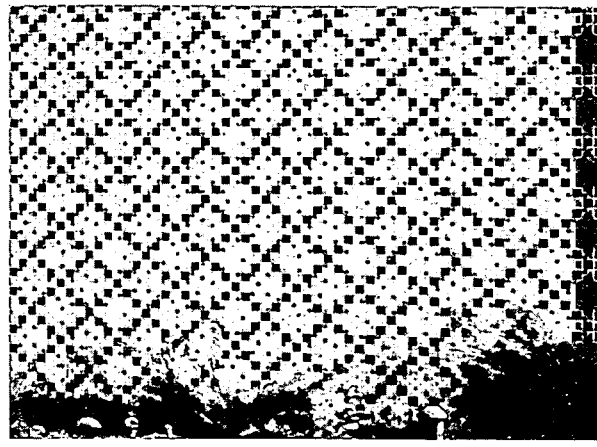

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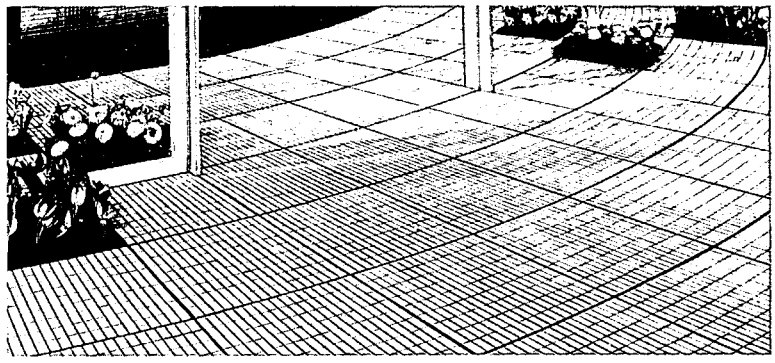
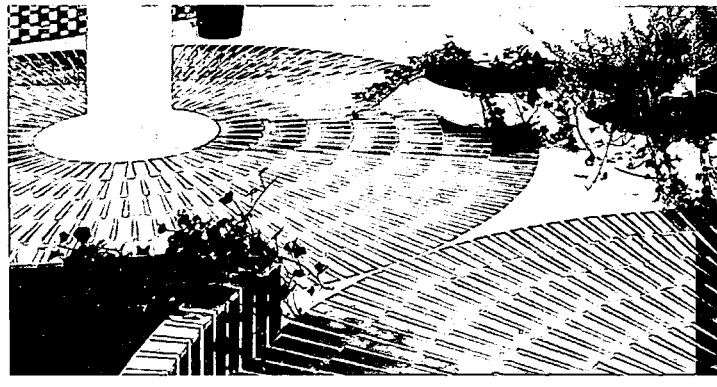


PHOTOS: COURTESY TILE COUNCIL OF AMERICA

3



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5

Examples of Current Applications

Research and development have little end value if their results are not acceptable to the designer and specifier. All too frequently in the past, prodigious amounts of energy and time have been expended on building-product research without the benefit of competent architecturally oriented leadership. The profession must welcome opportunities to counsel in efforts of this kind; for, ultimately, it is the intuitive architectural mind that conceives the basic forms for structures and possibilities for future assemblies of materials. Inventive applications of masonry units, designed by architects, follow.

PHOTO: COURTESY COLD SPRING GRANITE CO.

1

PHOTO: COURTESY PUBLIC SERVICE CO.

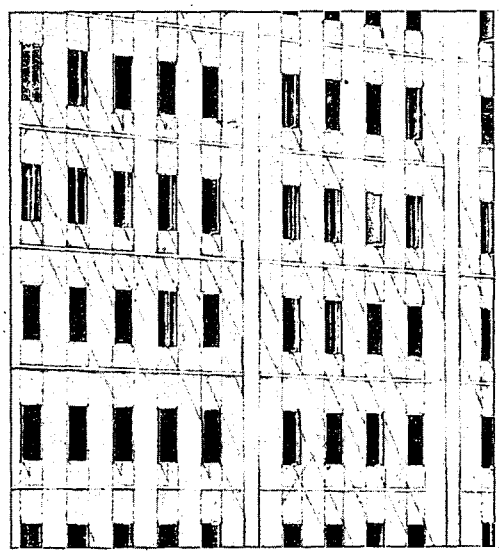

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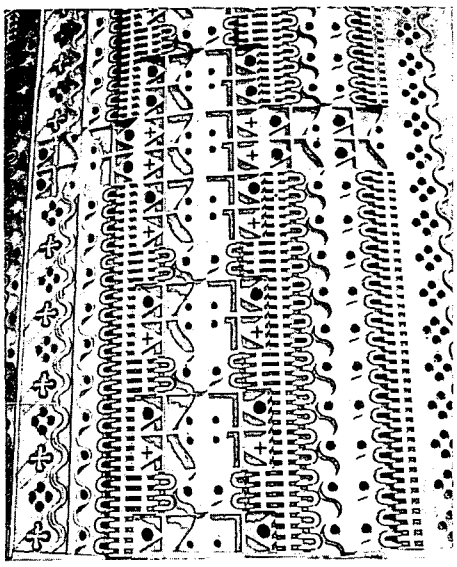
PHOTO: INDIANA LIMESTONE INSTITUTE



3

Precast granite mosaic panels ***(1)*** *sheathe the base of the Minnesota Centennial Office Building, St. Paul; Thorshov & Cerny, Architects. Granite facing of two finishes* ***(2)*** *is arranged in vertical stripe pattern as the skin of the Public Service Company of Colorado Building, Denver; Berne, Muchow, Baume & Polivnick, Architects. Sculptured limestone* ***(3)*** *forms the apse of Christ Methodist Church, Bethel Park, Pa.; Harold Wagoner, Architect. Limestone is laid in a "basketweave" pattern* ***(4)*** *that reads in reverse on the interior* ***(5)*** *of the Ohav Shalom Synagogue, Cincinnati; Leavitt Associates, Architects.*

PHOTOS: INDIANA LIMESTONE INSTITUTE

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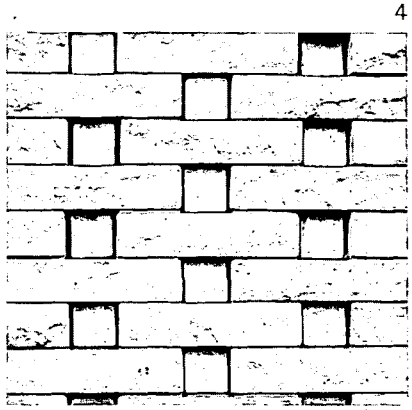

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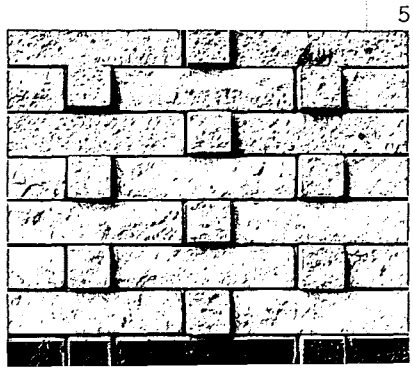

PHOTO: COURTESY DIESTE & MONTAÑEZ

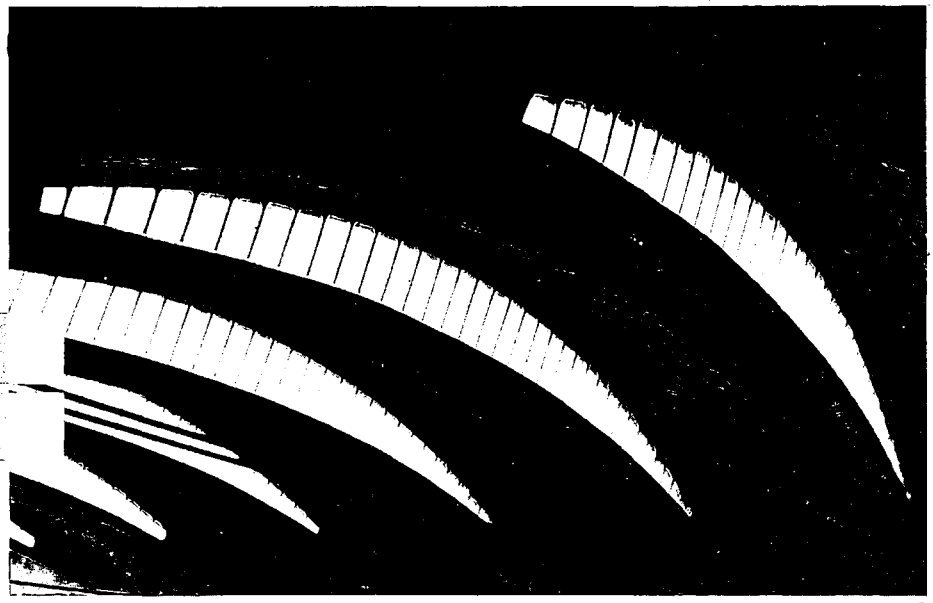

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PHOTO: COURTESY DESIGN-TECHNICS

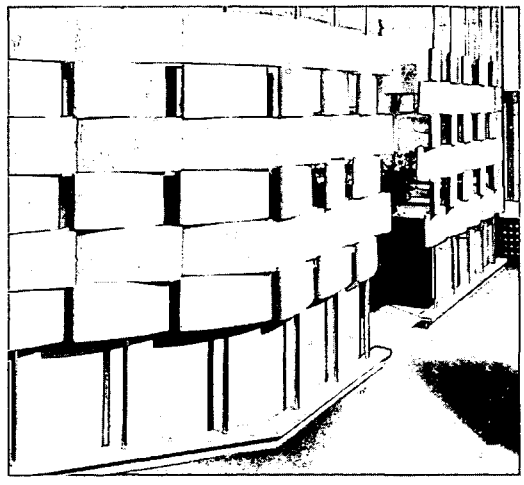

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PHOTO: COURTESY DESIGN-TECHNICS

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Eighty-ft vaults with antifunicular directrices ***(6)*** *in the Carrau & Cia, S. A. Industrial Building, Uruguay, are comprised of structural clay units; Diêste & Montañez, Engineers. A screen* ***(7)*** *composed of individually operable tile louvers serves as an office partition; Lee Rosen, Designer. Bas relief ceramic panels* ***(8)*** *are used for a lobby mural depicting an Italian village; Lee Rosen, Designer. Specially cast 8" x 8" limestone concrete blocks* ***(9)****, which use a river gravel aggregate, give a refinement in scale to the wall panels of Trinity United Presbyterian Church, East Liverpool, Ohio; Paul Schweikher and James Nessly Porter, Associated Architects. Natural color 8" x 16" cement blocks are used for partitions* ***(10)*** *in the offices of Jantzen, Inc.; redundant block quoins add a fillip; Space Design Group, Interior Designers. Two standard sizes of rectangular cement block* ***(11)*** *achieve a sculptural effect in this curved garden wall of a residence; George Goddard, Architect. Standard cement block lintels and jamb pilasters, with one side sawed off* ***(12)****, are used to create the decorative façade of the Southwestern Bell Telephone Company Building, Houston; Joseph Krakower, Architect; Herb Greene, Consulting Architect. Cement blocks 8" x 16" form the wall panels* ***(13)*** *of the Church of the Good Shepherd, Salinas, California; Germano Milono, Architect.*

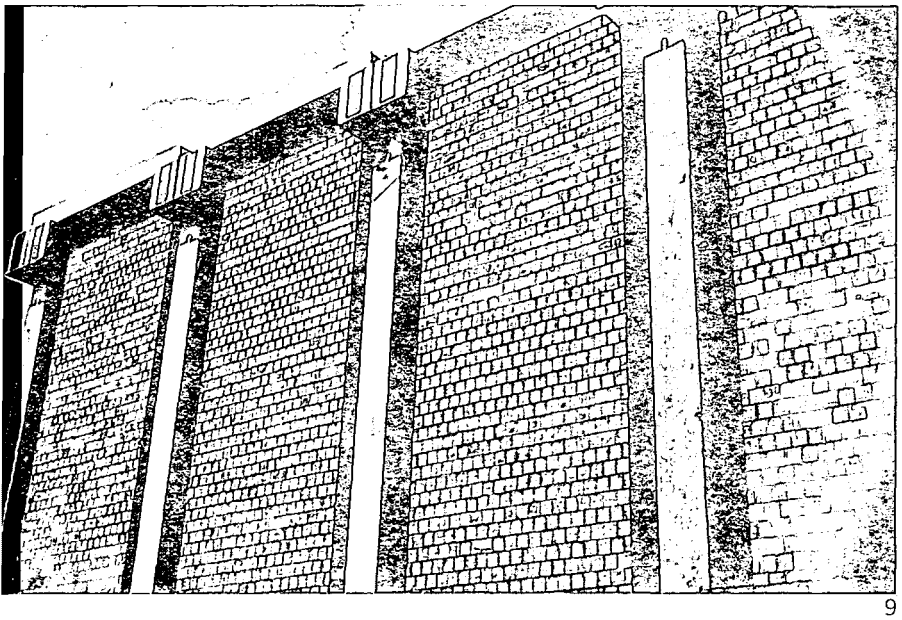

PHOTO: COURTESY PAUL SCHWEIKHER

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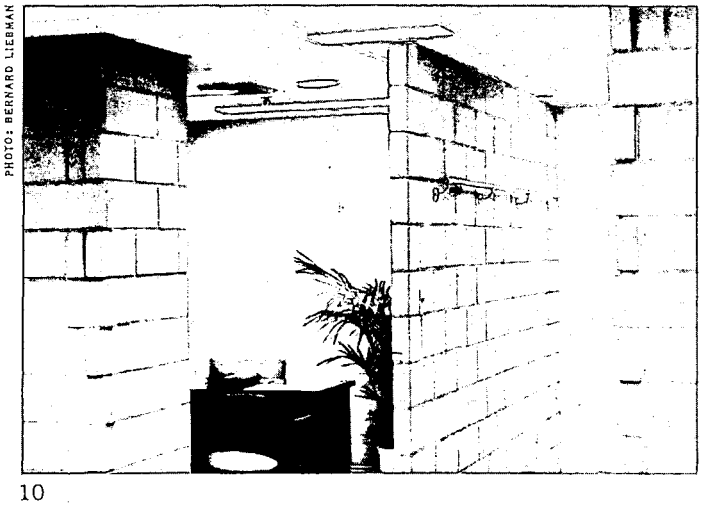

PHOTO: BERNARD LIEBMAN

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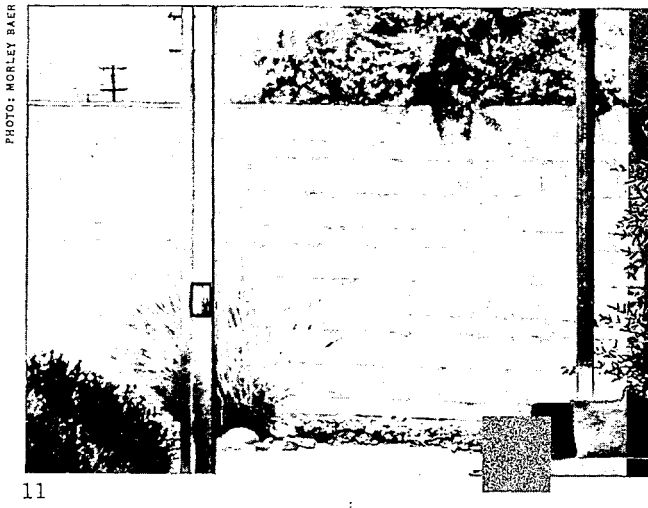

PHOTO: MORLEY BAER

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PHOTO: COURTESY HERB GREENE

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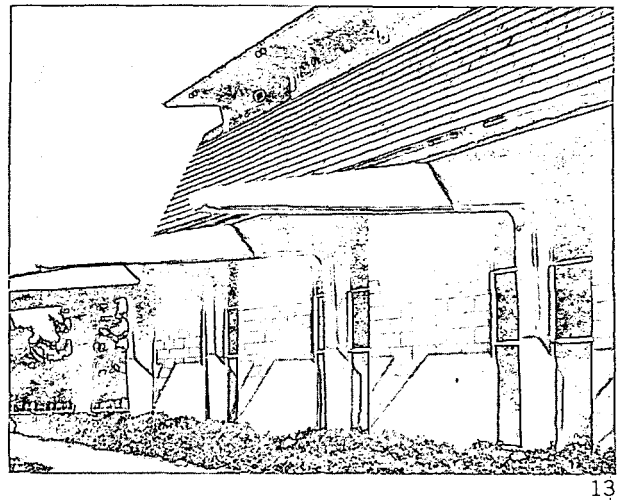

PHOTO: MORLEY BAER

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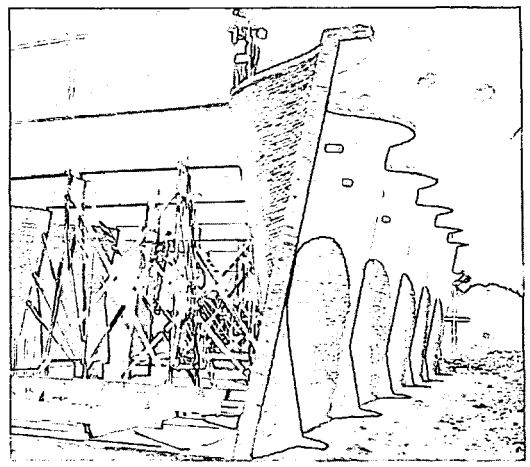


Wires attached to a wooden framework (left) *guided the construction of the undulating walls.*

Brick Shell Construction

CHURCH AT ATLANTIDA, URUGUAY • DIESTE & MONTANEZ, DESIGNERS & ENGINEERS

The feat of constructing a building entirely of brick has been achieved in this parish church near Montevideo. Its structural walls and vaults are of reinforced brick; all of its principal surfaces, inside and outside, are of brick. Yet any tendency toward monotony has been overcome by the excitement inherent in the structural forms and the variations of the surface pattern and texture.

The firm that designed and engineered this unusual building had developed its techniques of masonry construction in its work on industrial shops and gymnasiums, where economy was the overriding consideration. They found that with the proper choice of reinforcement and mortars they could build shapes in masonry that would not have been economically feasible in concrete. The final cost of this building, without furnishings, was only slightly higher than the usual cost of industrial construction in the area.

The walls and roof of the church function as a two-hinged shell with a mean span of 53 ft and a height of 23 ft (to the top of the wall). The intersection of the horizontal and vertical components along an undulating line gives the structure high resistance to transverse distortion.

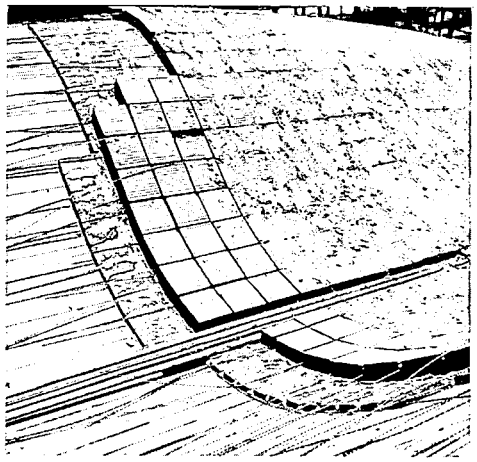
The walls are supported on closely spaced poured-in-place concrete piles, 6 in. in diameter and 16½ ft deep. The conoidal wall surfaces were generated by running steel wires from the straight line of the foundation to a directrix made up of parabolic curves, which was supported on a wooden framework at the intended height of the wall. The bricklayers merely had to follow these wires to execute the design.

The 1-ft-thick wall is reinforced with ⅛-in. round steel wire, weighing about 0.1 lb per sq ft. The cavity between the inner and outer layers of masonry was filled with waterproof mortar; there has been no detectable penetration of moisture, even in exceptionally rainy weather. Small glazed openings in the walls were distributed so that the plastic continuity of the structure was not disturbed. The wall is crowned with a border beam of mixed brick and concrete construction, which forms eaves and absorbs the thrust of the roof vault.

The vault itself was constructed of two layers of masonry, the inner one composed of 1¼-in.-thick bricks and the outer one of hollow tiles; a waterproof membrane and a layer of light, porous ceramic tile—with high insulating value—were then applied on the top.

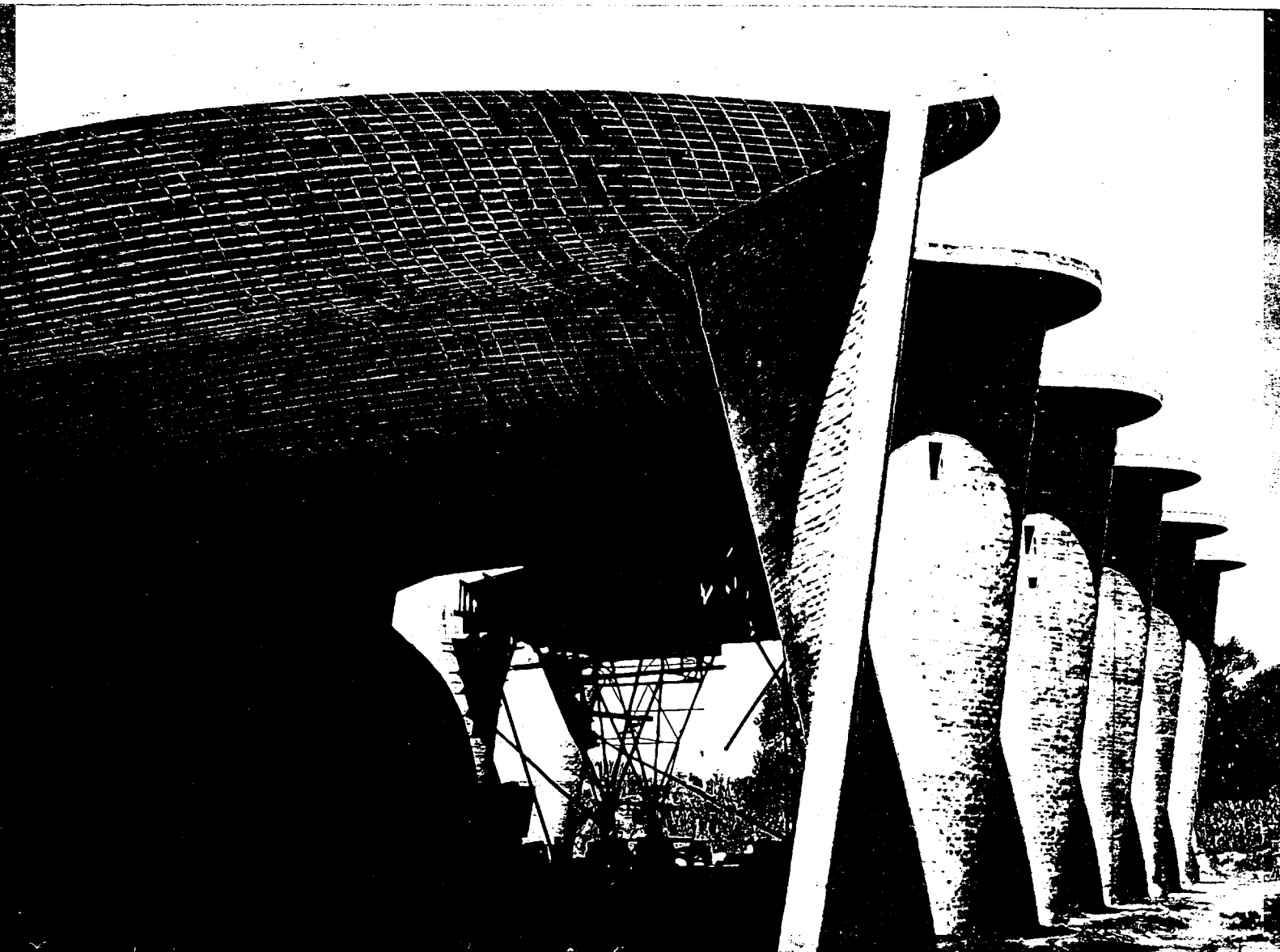
The cross-sections of the roof are antifunicular curves, with rises varying from 2¾ in. in the valleys to 58 in. at the peaks of the parabolic waves. Steel tension rods, which absorb the thrust, are located in the valleys and are anchored to the border beams. The vault reinforcing weighs about 0.4 lb per sq ft and was placed in the joints between the ceramic units.

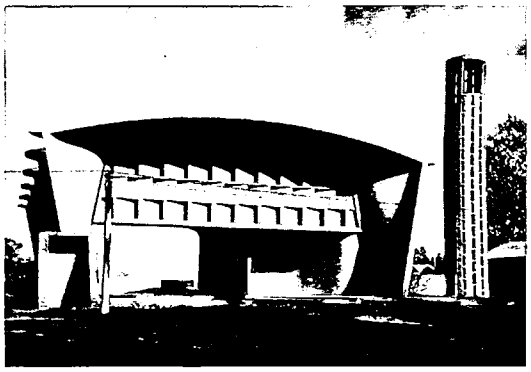
The roof was laid up on a 20-ft-wide

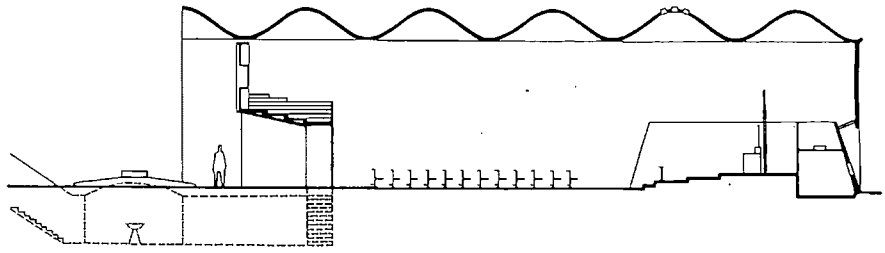


PHOTOS: M. SASSON, COURTESY DIESTE & MONTANEZ

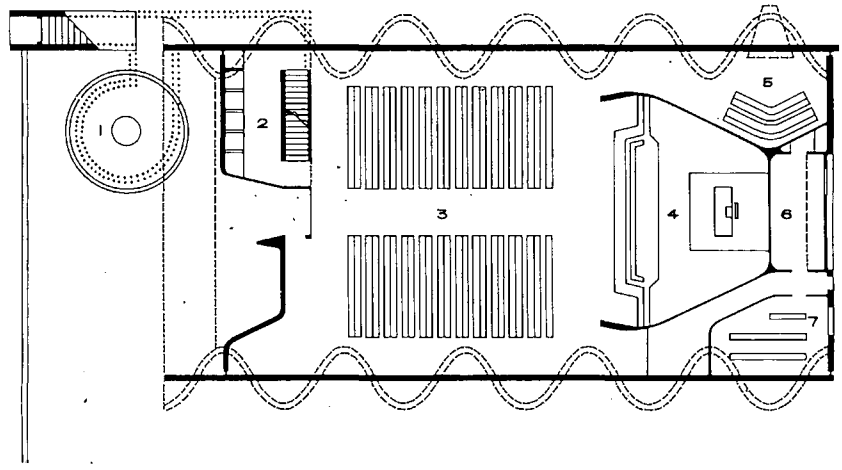
The vault is composed of brick and hollow tile, with steel wire reinforcement; tension rods in the valleys absorb the thrust.







LONGITUDINAL SECTION



PLAN

0 20'

1 *baptistery*
2 *confessionals*
3 *nave*
4 *sanctuary*
5 *chapel*
6 *sacristy*
7 *antesacristy*
8 *bell tower*

movable form, which was re-used six times. Stripping was performed only 14 hours after each section was completed and the forms were then used as platforms for workers cleaning the inner surface.

The front wall and the choir loft comprise an independent masonry construction standing within the shell of the church. The underside of the loft is composed of edge-laid bricks, which were placed on a wooden form. Mixed concrete-and-brick girders were poured on top of this surface and prefabricated joists of double-T shape, with stoneware tiles on the upper surface, were then placed across them to complete the structure and serve as the finished floor.

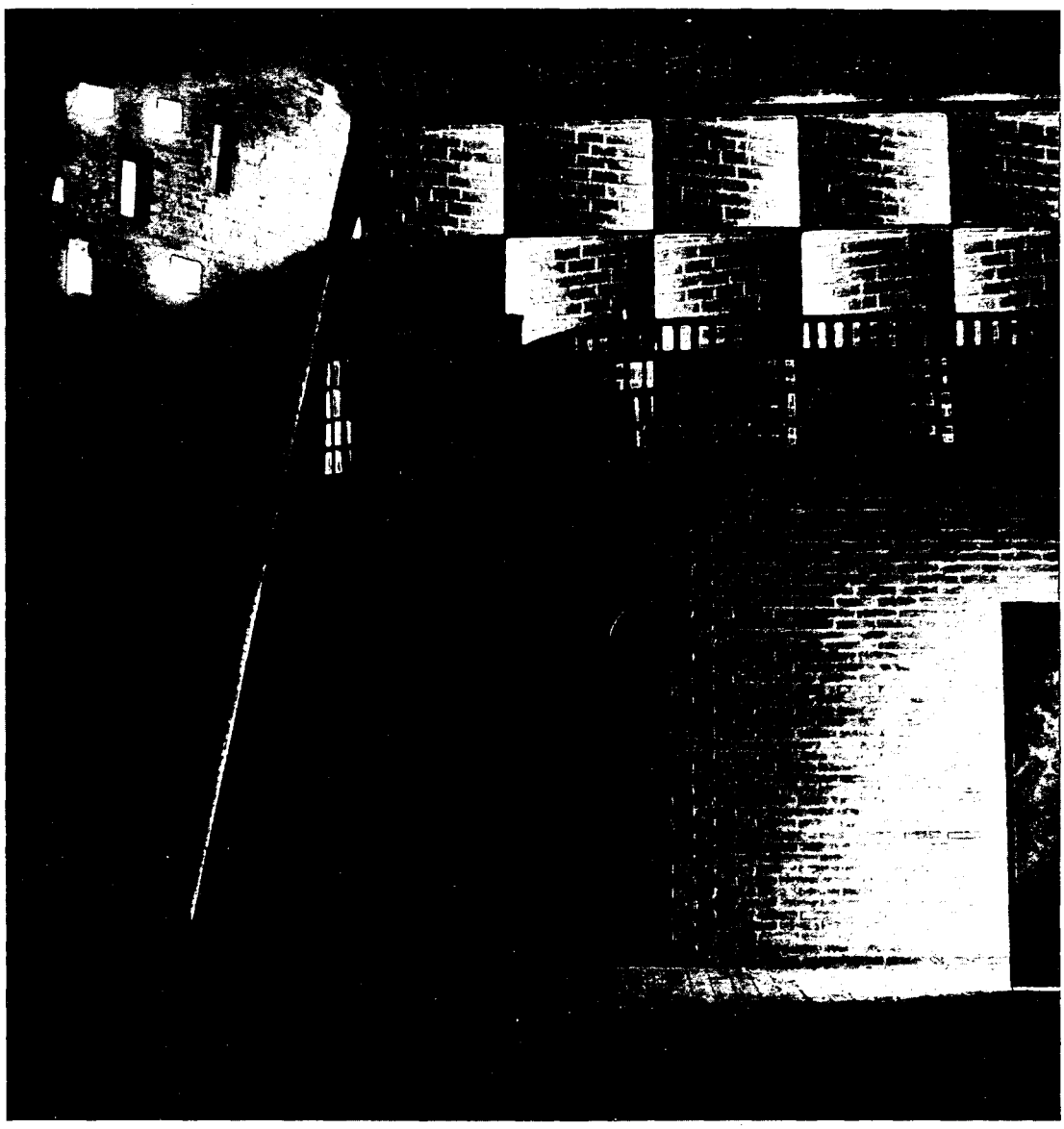
The church serves a parish composed largely of workmen and peasants in a rural area about 30 miles east of Montevideo. It normally accommodates about 300 worshippers, but aisles and other open spaces will permit a capacity of 500 for special occasions.

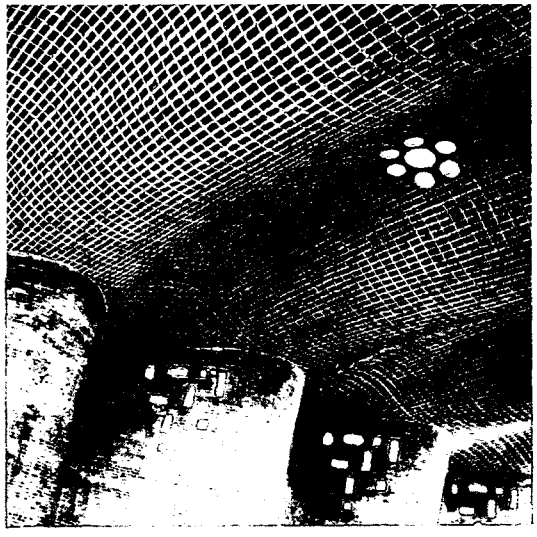
The proportions of the nave were intended to bring the congregation nearer the altar than usual so that they could, in the words of the designers, "experience a greater participation in the sacred mysteries." The consistent structural envelope gives a feeling of unity to the entire interior. Within this unified space, the special character of the sanctuary has been established by the low walls that surround it and the illumination from the skylight above it. The altar, which has not yet been installed, will be a massive block of rough-hewn stone, with only the top surface polished.

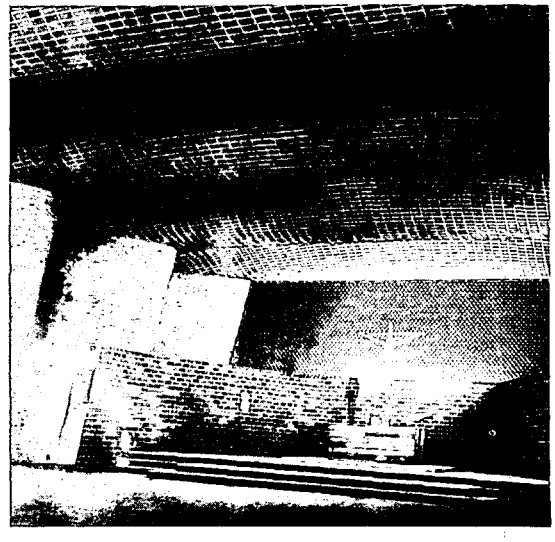
To one side of the sanctuary is a chapel dedicated to Our Lady of Lourdes, the patron saint of the parish. The image of the Virgin will be placed in a pyramidal niche penetrating the outer wall, against a background of translucent onyx.

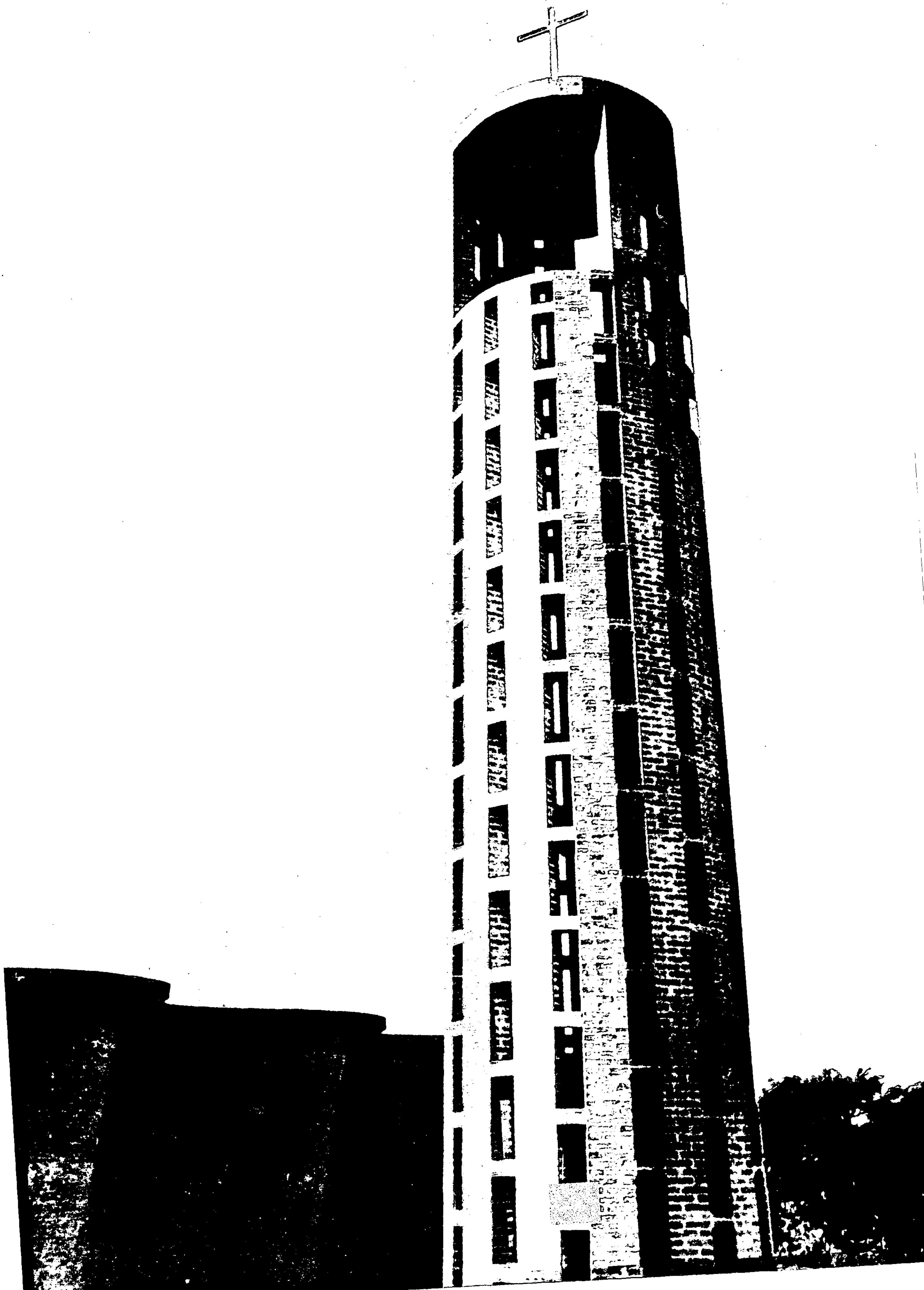
The sacristy behind the sanctuary is at a slightly lower elevation than the nave. Its tilted outside wall leaves room for a horizontal window that is used to ventilate the church. Light from this window illuminates the back wall, which is visible from the nave, high-lighting its denticulated pattern.

A 4-in. strip of onyx separates the front









wall from the shell of the church, emphasizing its structural independence and creating a halo effect. Light is admitted to the choir through panels of translucent onyx. Panels have been left out at the extreme ends of the wall to permit ventilation; the overhang and projecting walls protect these openings from wind and rain and limit the outward view.

Under the choir loft inside the church there are two secluded areas that are readily accessible from either the entrance or the nave. The larger space contains the confessionals, and the smaller one is set aside for meditation and for personal devotion to the crucifix in the traditional Spanish way. Here the designers plan to place a crucifix that is "less remote than the one above the altar, both in the sense of distance and in the expression of the carved figure."

Outside, there is a sheltered area beneath the choir, which will be sunny in winter and shaded in summer and protected from cold winds. A bench will be located there to encourage sociable gathering.

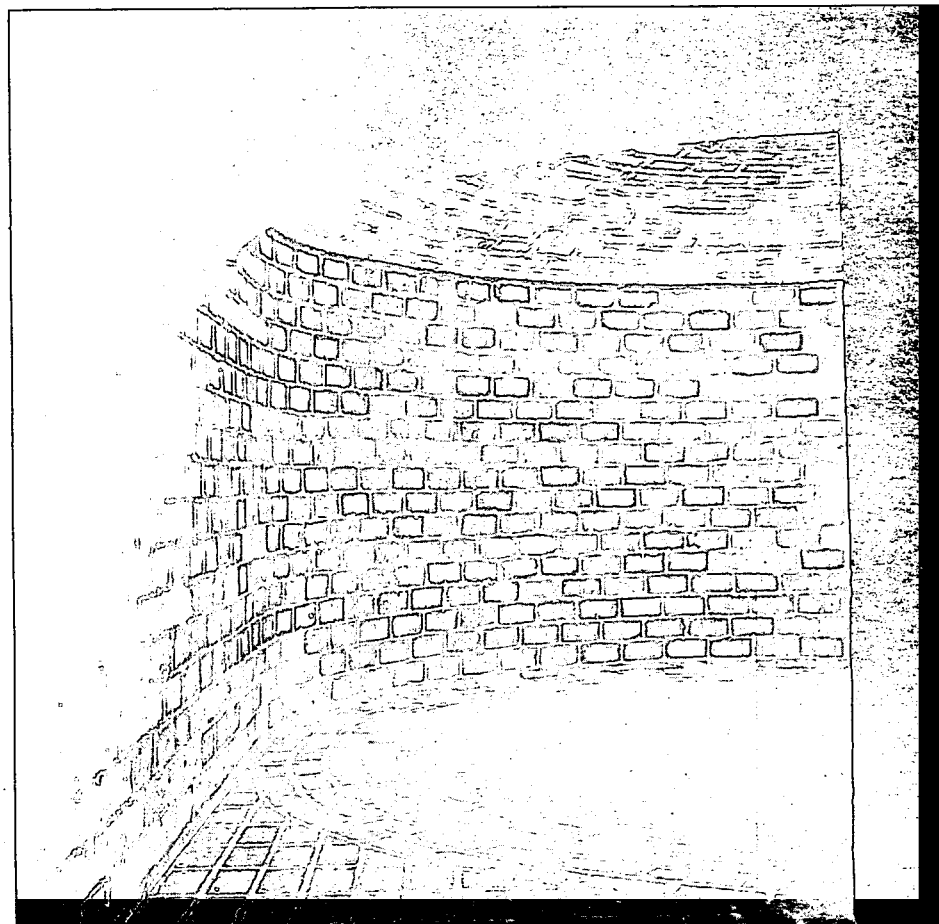
The baptistery was conceived as a separate crypt, "signifying at the same time death and resurrection." Its brick walls were constructed 6 in. inside the limits of the excavation, and the space between was filled with a waterproof mortar. Its roof vault is constructed of edge-laid brick; a round skylight covered with a sheet of onyx projects above the center. The passages to the baptistery are roofed with prefabricated brick slabs, in which skylights made from ordinary flower pots have been incorporated.

The church complex is completed by the bell tower, which will eventually be the focus of a plaza with other parish buildings around it. The brick tower, over 50 ft in height, was built with only 440 lbs of reinforcing steel. A platform was moved up the tower as it was built, so that no scaffolding was required. The prefabricated treads of the spiral stair are cantilevered from the outer wall.

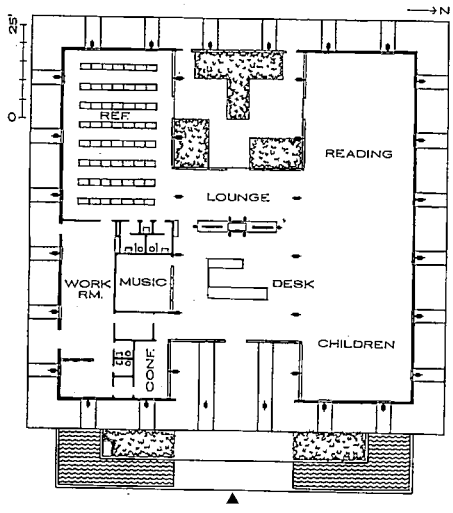
Discussing his application of masonry construction in this building, Designer Eladio Dieste says, "The materials and the way in which they are used in this construction are in themselves expressive. These materials are as humble as the congregation for which the church was built, but they have been used with all the care that these people deserve as a tribute to them."

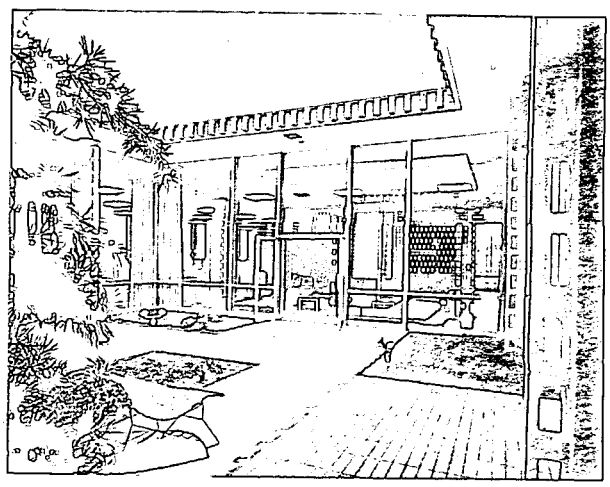
The cantilevered stairs of the bell tower were prefabricated of brick.

Brick patterns emphasize the circular form of the underground baptistery.



PHOTOS: JULIUS SHULMAN





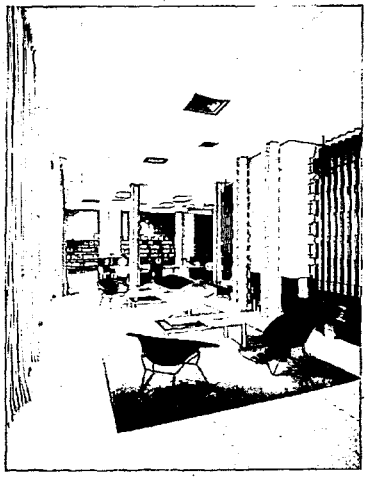
Concrete Units as Design Elements

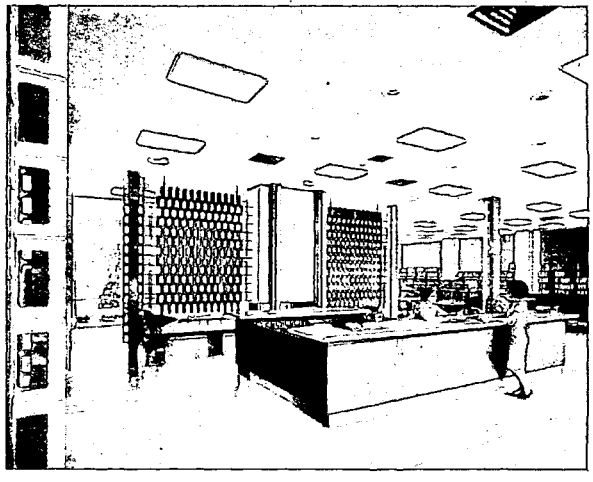
PUBLIC LIBRARY • SANTA FE SPRINGS, CALIFORNIA • WILLIAM L. PEREIRA & ASSOCIATES, ARCHITECTS • GIN D. WONG, PARTNER IN CHARGE

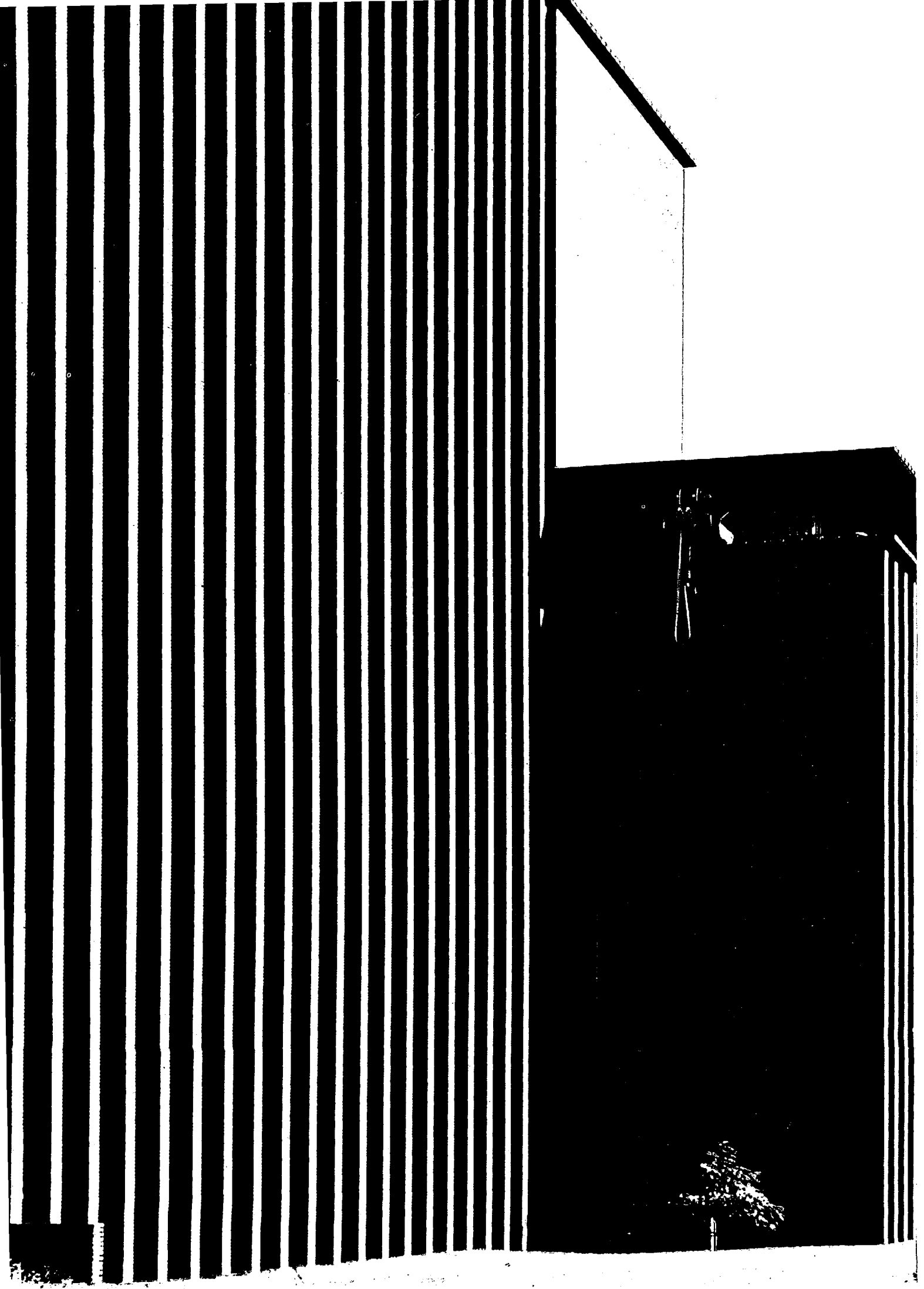
A peristyle of concrete block columns surrounds the square, symmetrical building, which was constructed as the first unit of a "town center" for a new community. Cubic blocks of buff-colored, lightweight concrete form the exterior walls and enclose the steel pipe columns. Smaller precast elements are used in an openwork pattern on the columns and fascias.

The solid exterior walls are interrupted by narrow windows that extend up to the 14-ft-high soffit. Free-standing columns located on the center-lines of these windows emphasize their slim proportions. Interior and exterior columns are identical and are laid out according to a consistent plan.

The roof is supported on wood joists and steel beams. The suspended acoustical plaster ceiling terminates in a light cove 3 ft inside the exterior walls. A screen of aluminum grating encloses the patio.







8-STORY MASONRY PIERS

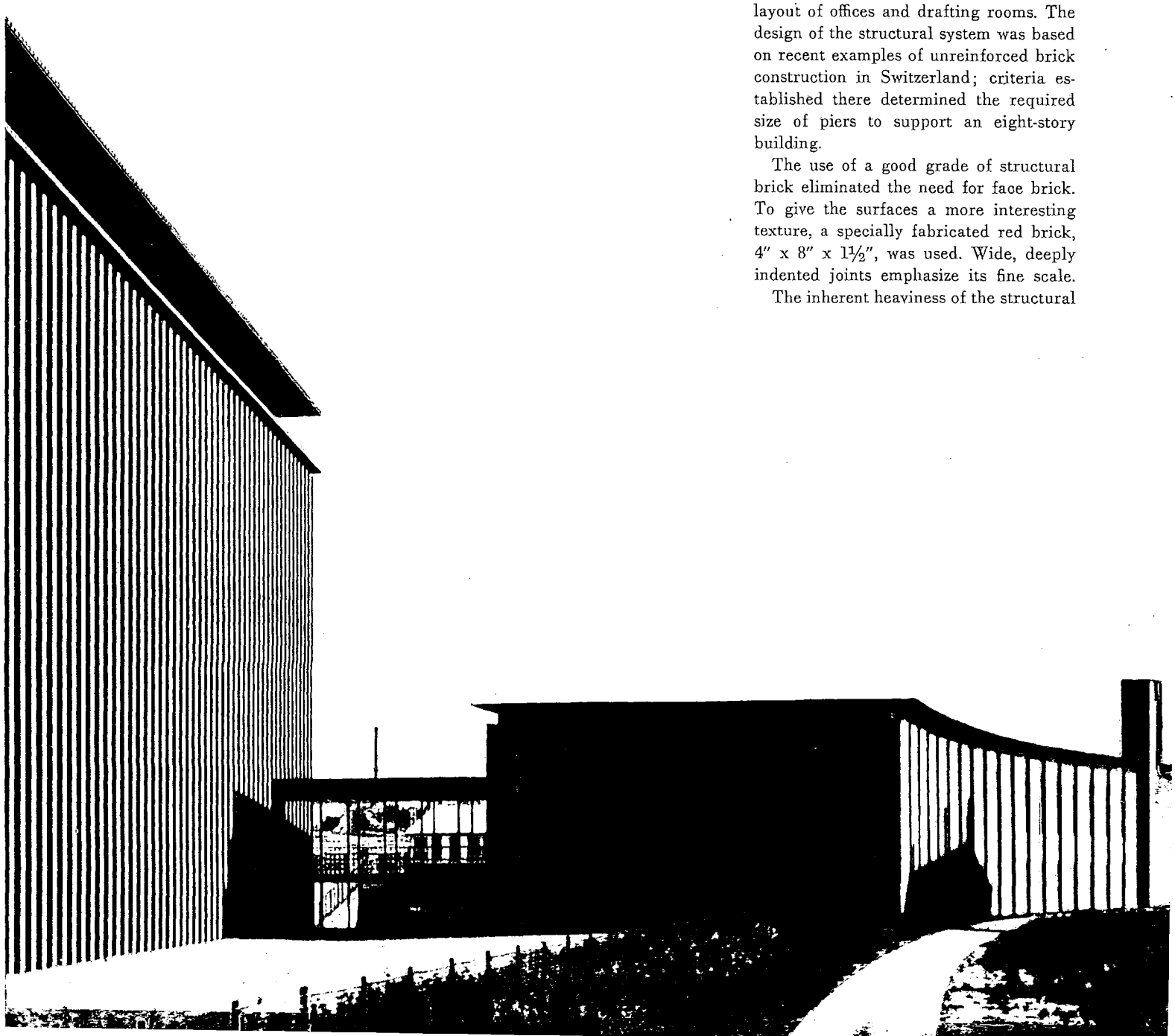
F. L. SMIDTH & COMPANY ADMINISTRATION BUILDING • COPENHAGEN, DENMARK • PALLE SUENSON, ARCHITECT

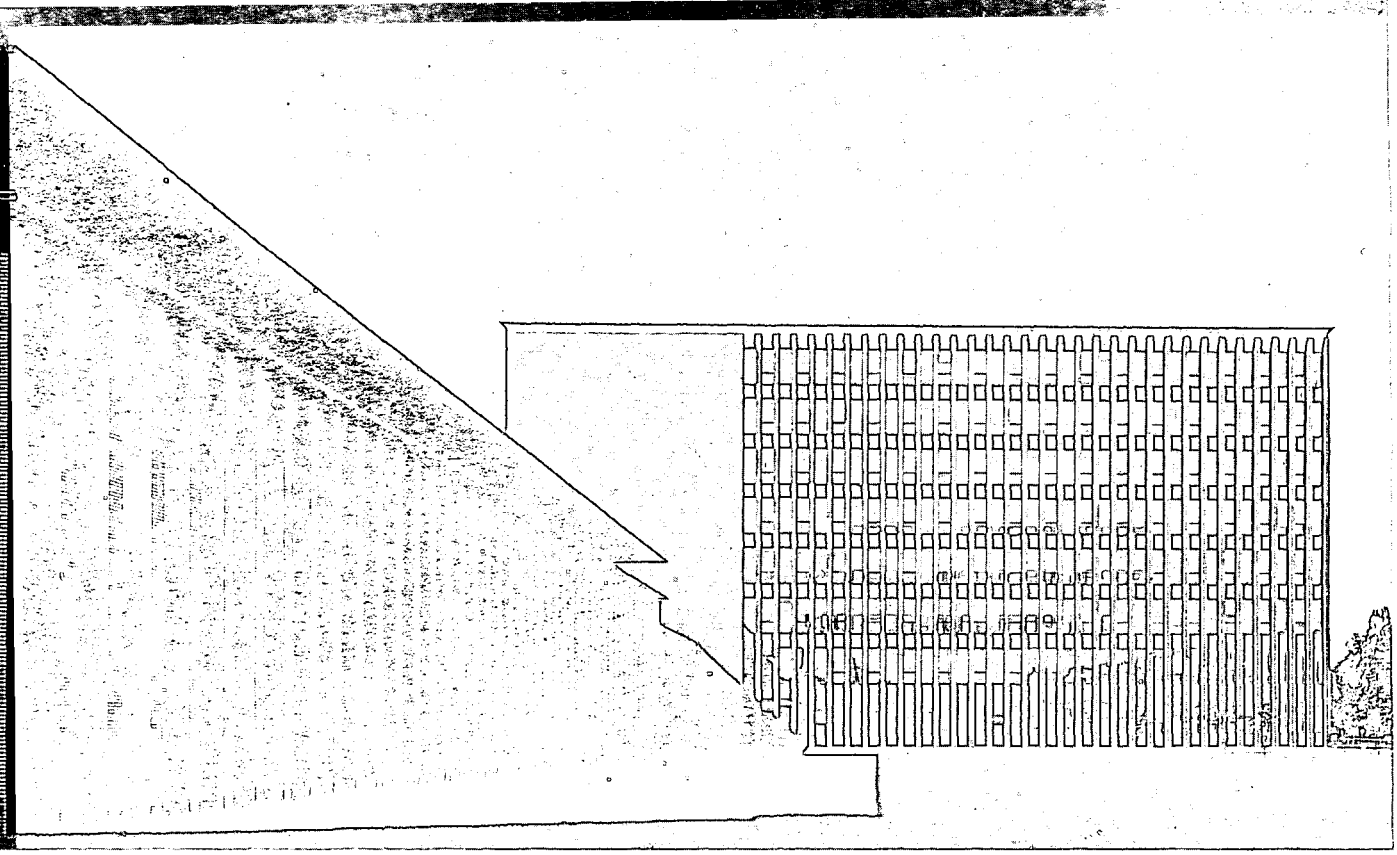
Brick and pure cement mortar are the only components of the exterior piers that rise as high as 90 ft above grade to support this building. Spaced 4 ft apart, these piers are approximately 12 in. wide and 30 in. deep. A single row of circular concrete columns running the length of each wing, slightly off-center, carries half the weight of the floor slabs and braces the entire structure against lateral forces.

The client's past experience indicated that a 4-ft module was ideal for efficient layout of offices and drafting rooms. The design of the structural system was based on recent examples of unreinforced brick construction in Switzerland; criteria established there determined the required size of piers to support an eight-story building.

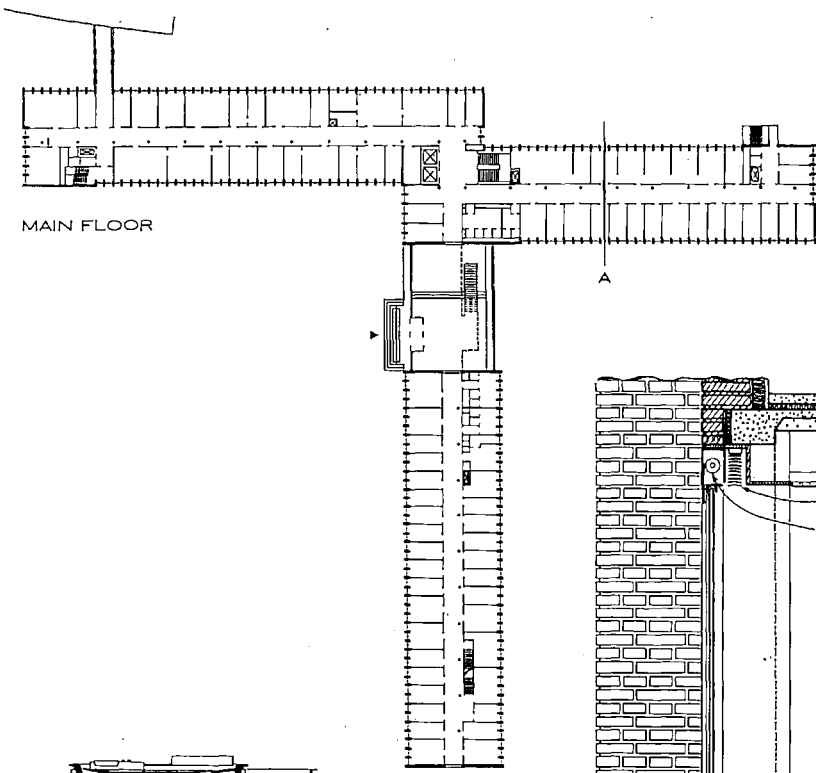
The use of a good grade of structural brick eliminated the need for face brick. To give the surfaces a more interesting texture, a specially fabricated red brick, 4″ x 8″ x 1½″, was used. Wide, deeply indented joints emphasize its fine scale.

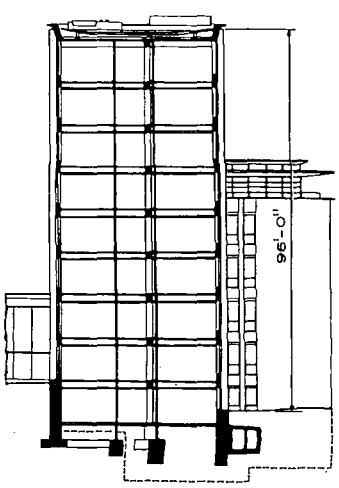
The inherent heaviness of the structural



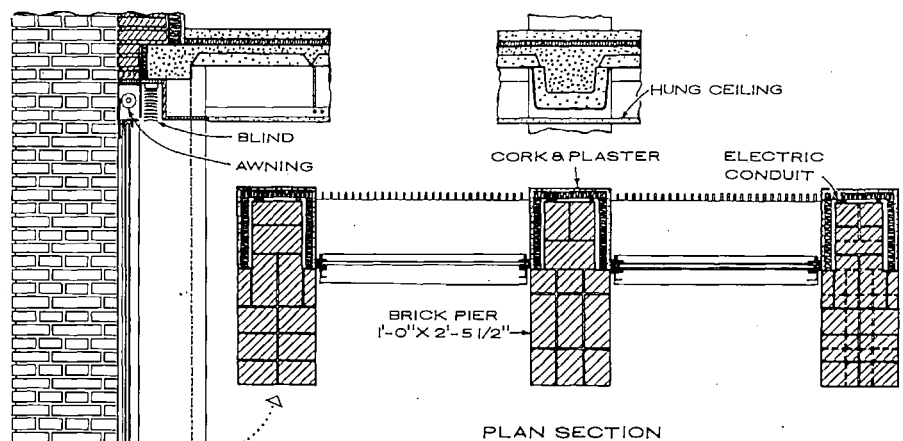


PHOTOS: K. HELMER-PETERSEN





SECTION A



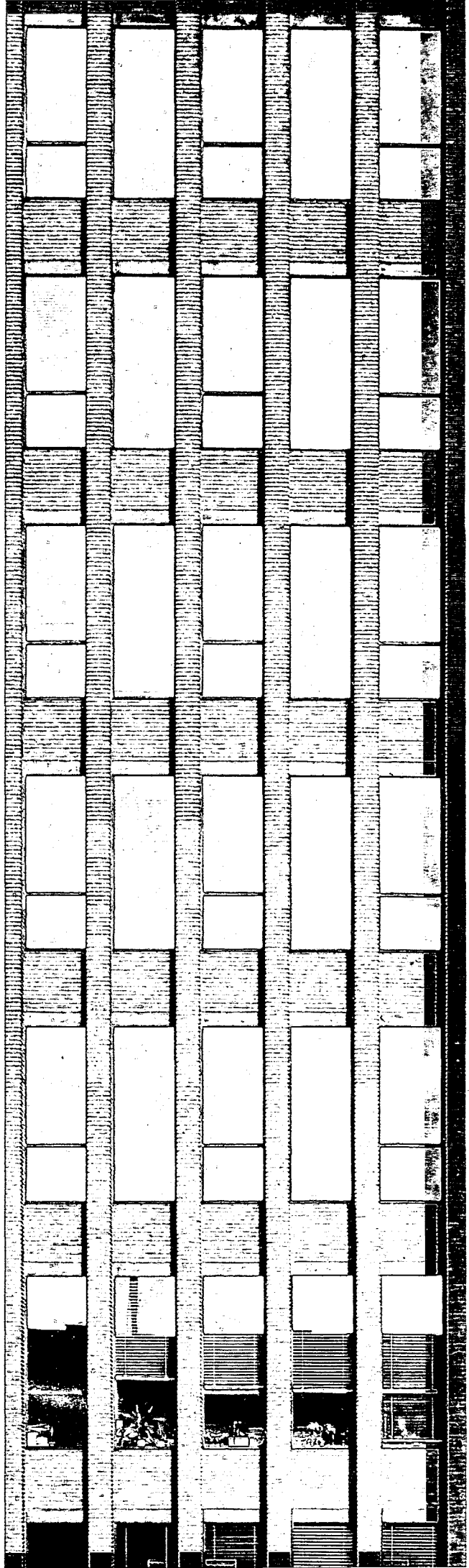
PLAN SECTION

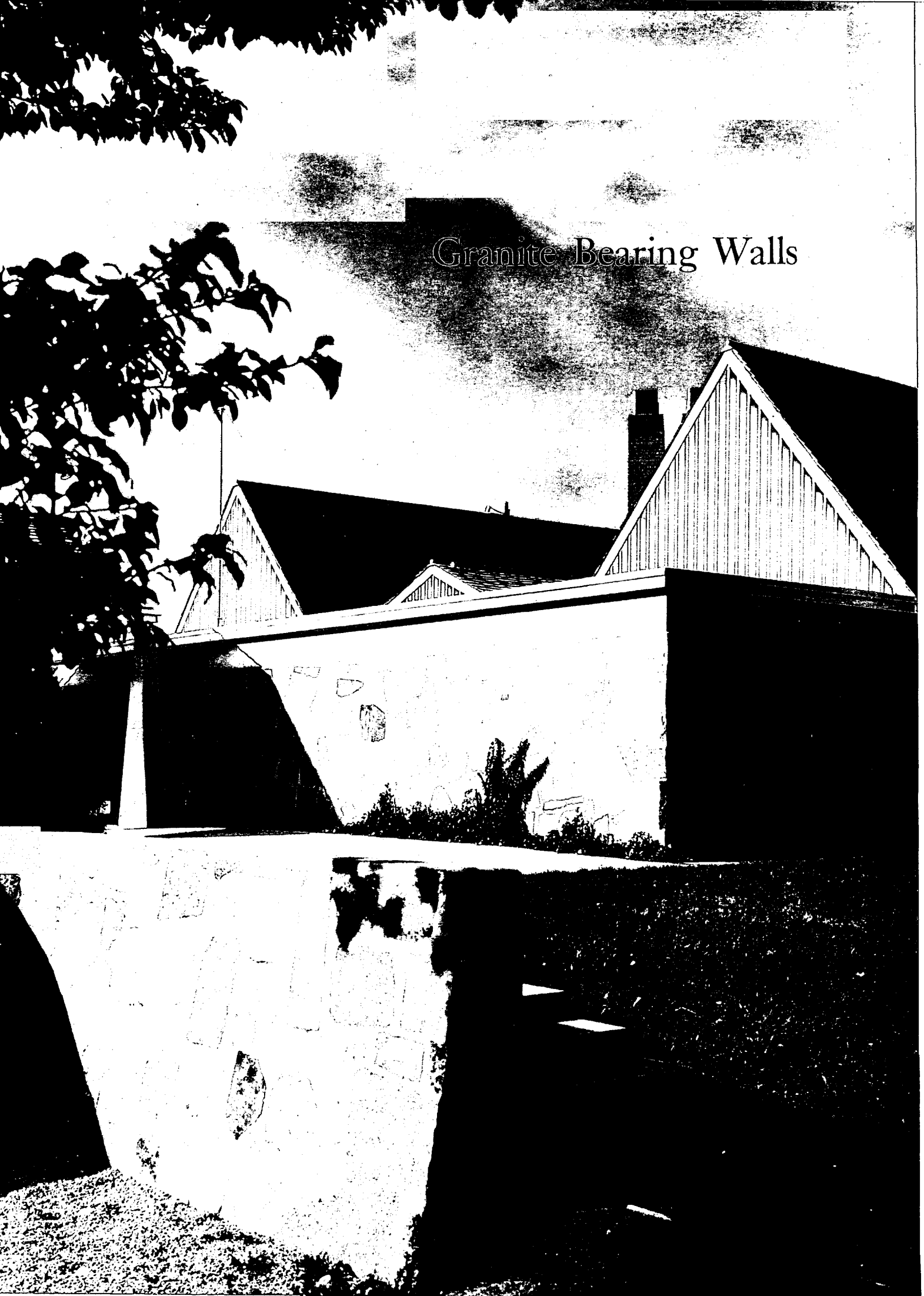
TYPICAL WALL SECTION

system has been emphasized in the exterior treatment. The building sits solidly on the ground; the piers project 18 in. beyond the brick spandrel panels to produce an almost monumental verticality. Cornices have been expressed as thin horizontal planes to dramatize the massiveness of the piers.

The location of the building in an area of heavy industry influenced the choice of exterior materials and made it necessary to air-condition the entire building. Tight-fitting windows were essential for the maintenance of positive air pressure on the interior. Every second window has an operable sash, in case natural ventilation should be needed. The panes of insulating glass have been set in frames of square steel tubing; the entire opening is framed in bronze.

The building is the headquarters of a company engaged in the engineering and construction of cement plants throughout the world and the manufacture of equipment for them. The executive offices occupy the low wing between two landscaped courts on the entrance side of the building. A two-story glazed lobby separates this wing from the eight-story block of engineering offices and drafting rooms. The third wing, five stories high, houses a variety of administrative functions and is linked to the curved laboratory and testing building by a glazed passage. The top floor of this wing, which has recessed glass walls, houses the cafeteria and employees' facilities.




Granite Bearing Walls

LINCOLN CENTER ICE SKATING RINK AND COMMUNITY BUILDING • COLUMBUS, INDIANA • HARRY WEESE & ASSOCIATES, ARCHITECTS AND ENGINEERS • BRUCE ADAMS, PROJECT MANAGER

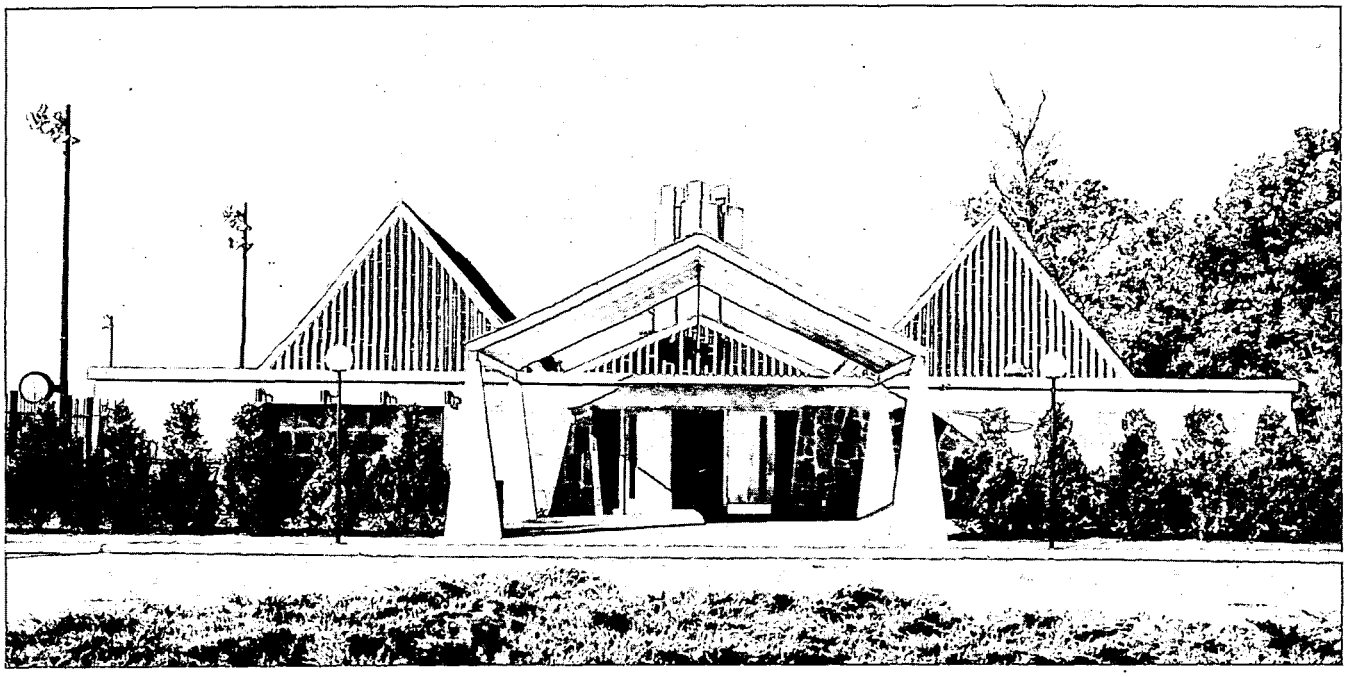
For the club house of a year-round skating rink, rough-hewn granite slabs were used to suggest the rugged atmosphere of a public sports area. Uncoursed rubble masonry of gray granite makes up the battered load-bearing walls of two rectangles, which contain skaters' facilities, offices, and a snack bar. Between the two blocks is a central recreation hall that looks out through glass walls onto the rink and onto a small walled terrace.

At first sight, because the entrance pierces the front rectangle, the front of the building reads as if the two rectangles ran along the sides from front to rear, each block covered by a tall gable roof, and as if the central hall were spanned only by the lower, center gable roof. Actually, the solid masonry rectangles are located across the front and rear of the building and are roofed with wood decks. The three pitched roofs, designed as a folded plate of 4 x 6 double tongue-and-groove western cedar, span the recreation hall with their ridges perpendicular to these blocks. Their glazed gables are set along the inner granite wall of each rectangle to function as a clerestory for the central hall; vertical, white-painted wood strips provide both decoration and sun control.

The floor of the recreation hall is covered with black rubber matting; the dovetail joints of the matting seem to complement the uncoursed masonry walls. In the center of the hall is a double fireplace of buff-colored brick, which makes the hall a comfortable "warming room" in winter. The stack extends above the roof line into a Tudor-like cluster of chimneys—two flues for the fireplace, one for an incinerator, and one for the boiler. The separation of the flues, beside breaking down the otherwise massive scale, also restates the lines of the piers supporting the entrance canopy and the batter of the granite bearing walls.

The building combines the masculine solidity of its masonry with a pavilion-like festivity, which, the architects feel, expresses an almost theatrical escape into another world of zestful locomotion.

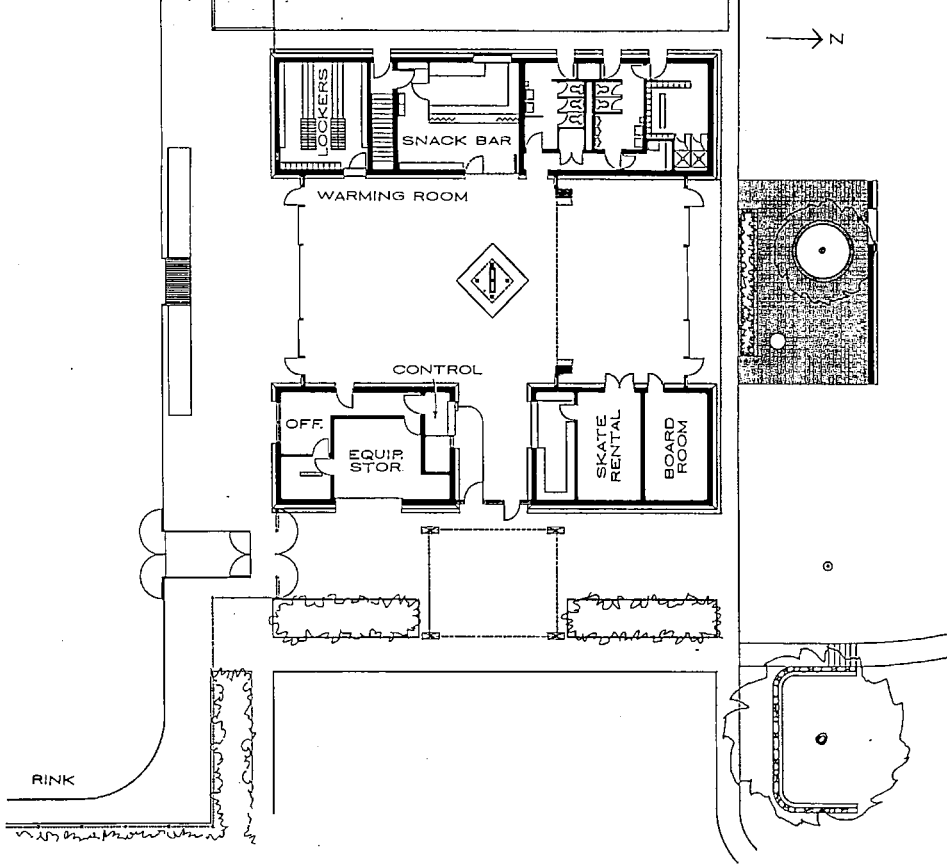
PHOTO: HUBE HENRY, HEDRICH-BLESSING

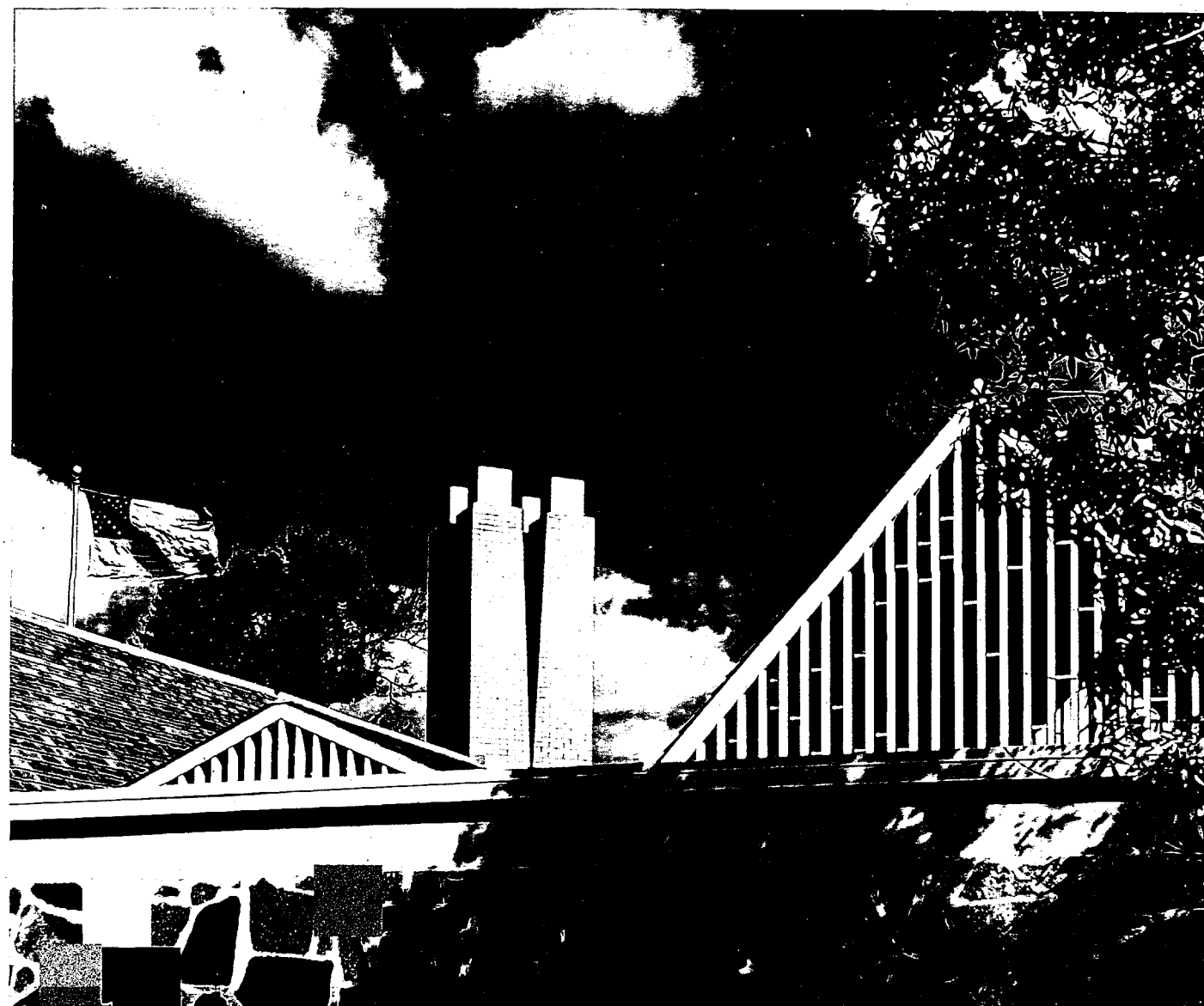


PHOTOS, EXCEPT AS NOTED: BALTAZAR KORAB

PHOTO: HUBE HENRY, HEDRICH-BLESSING

Except for the unobstructed view of the skating rink from the recreation hall, nearly all views out from the club house are interrupted (right) *either by plant material or, in the case of the terrace, by a stone wall. Other community facilities (not shown on plan) include a baseball diamond, tennis courts, and picnic tables covered by a pergola. An opening through the granite wall screening the terrace reveals one of the glass walls of the recreation hall* (facing page, top left). *Other details show the granite walls visible throughout the building.*





Polygonal Stone Facing

ADDITIONAL HOUSE OFFICE BUILDING • WASHINGTON, D. C. • J. GEORGE STEWART, ARCHITECT OF THE CAPITOL AND HARBESON, HOUGH, LIVINGSTON & LARSON, ASSOCIATE ARCHITECTS • DARWIN H. URFFER, PROJECT DESIGNER

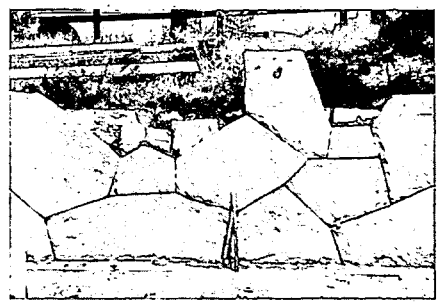
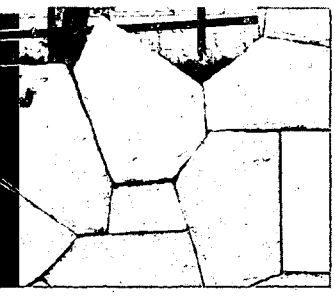
Until the recently announced "new look" at Government architecture, only limited opportunities for individual design were open to the architects of buildings on Capitol Hill. In designing the podium for another white marble structure in traditional Academic Survival style, the architects seized this small opportunity to produce a classic example of the stone mason's craft.

It was determined that the podium, which attains a height of 30 ft due to a change in grade and forms a 20-ft terrace around the building, should complement the color and texture of the building itself. Granite was selected as the proper complementary material and for its permanence. Inspiration for the masonry pattern was drawn from historical precedents, such as D'Espouy's illustration of the restored Temple of Castor and Pollux.

The enclosing walls of the terrace-podium are battered, single structural walls with granite polygonal masonry facing varying from 6 to 10 in. in thickness. Some of the facing stones are bonded into a rubble backup.

Several of the granite suppliers wanted to cut the stones in the shop to drawn layouts; this was rejected because it might look mechanical and show a monotonous repetition of forms. Other suppliers suggested shattering large slabs to produce natural-looking broken shapes; this, in turn, was rejected because it would create an uneconomical amount of wasted material. The contract went to a firm that delivered large slabs to the site, where masons shaped each stone to the

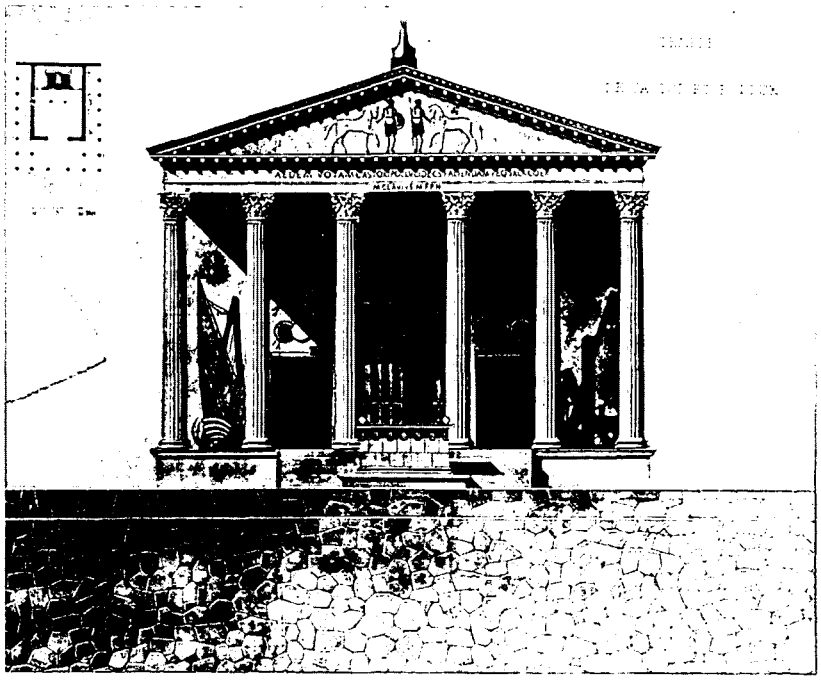


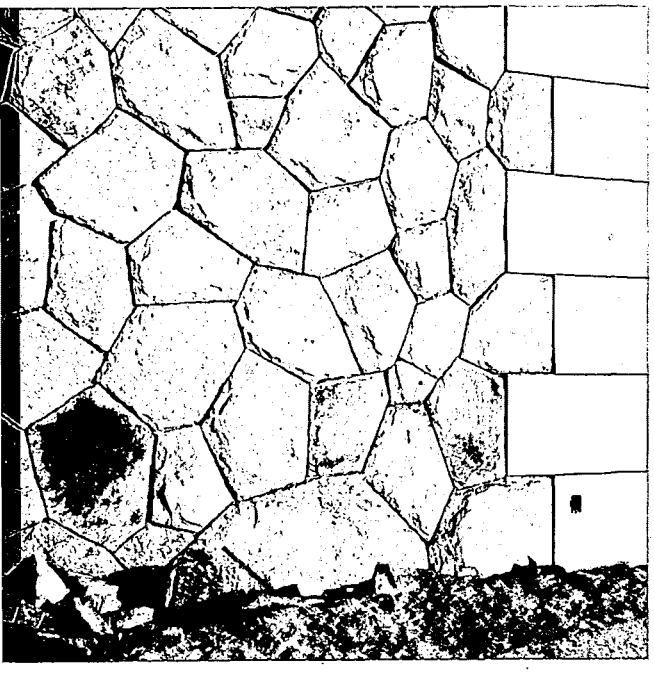




requirements of the stones it would abut.

A mock-up wall was built near the site to determine the manipulation of sizes and the shaping limitations of the stones, and to serve as the masons' sample for texture and joints. No examples of polygonal masonry were known to the Washington area, but stone masons of Italian and Spanish descent were located who had a feeling for the technique.

The polygonal stones have natural split face with no more than 1½-in. projections beyond the bed line, and with depressions of no more than ⅜ in. Stones vary between 1 and 10 sq ft, but not more than 10 per cent of the smaller stones are in any section of the wall. Joints have been kept to natural variations and to minimum widths, not exceeding 1½ in. The estimated cost of the installed polygonal masonry is between $12 and $16 per cu ft, a cost less than other forms of suitable cut stone work.

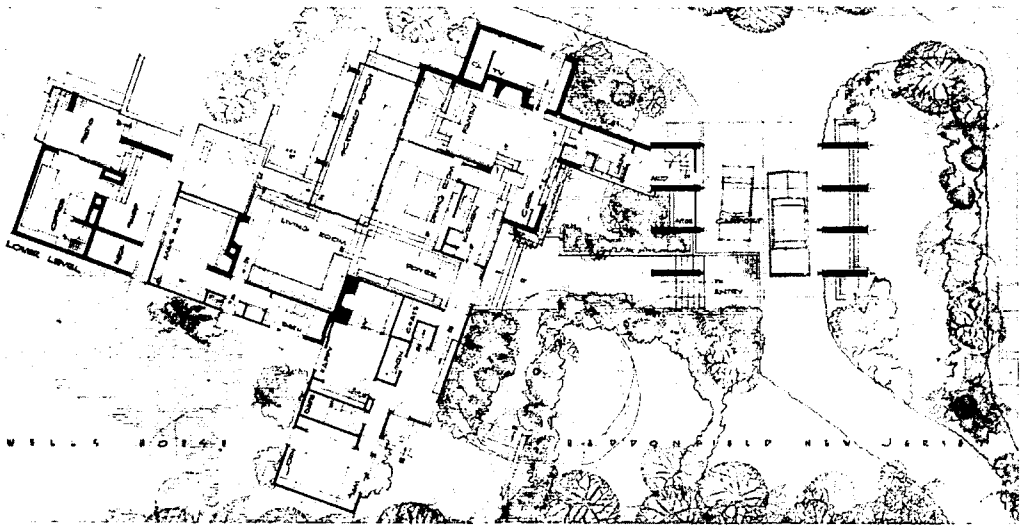




MASONRY INTERIORS

RESIDENCE • HADDONFIELD, NEW JERSEY •
MALCOLM B. WELLS, ARCHITECT

PHOTOS, EXCEPT AS NOTED: CORTLANDT V. D. HUBBARD



"This is probably the most added-to, altered, and redesigned house in New Jersey," says the owner-architect of the residence shown on these pages. "Starting with the little two-bedroom monstrosity of redwood I designed in 1949, we've added, changed, torn out, and expanded until nothing of the original house except its chimney top can be seen. It has just grown along with our family (three children)."

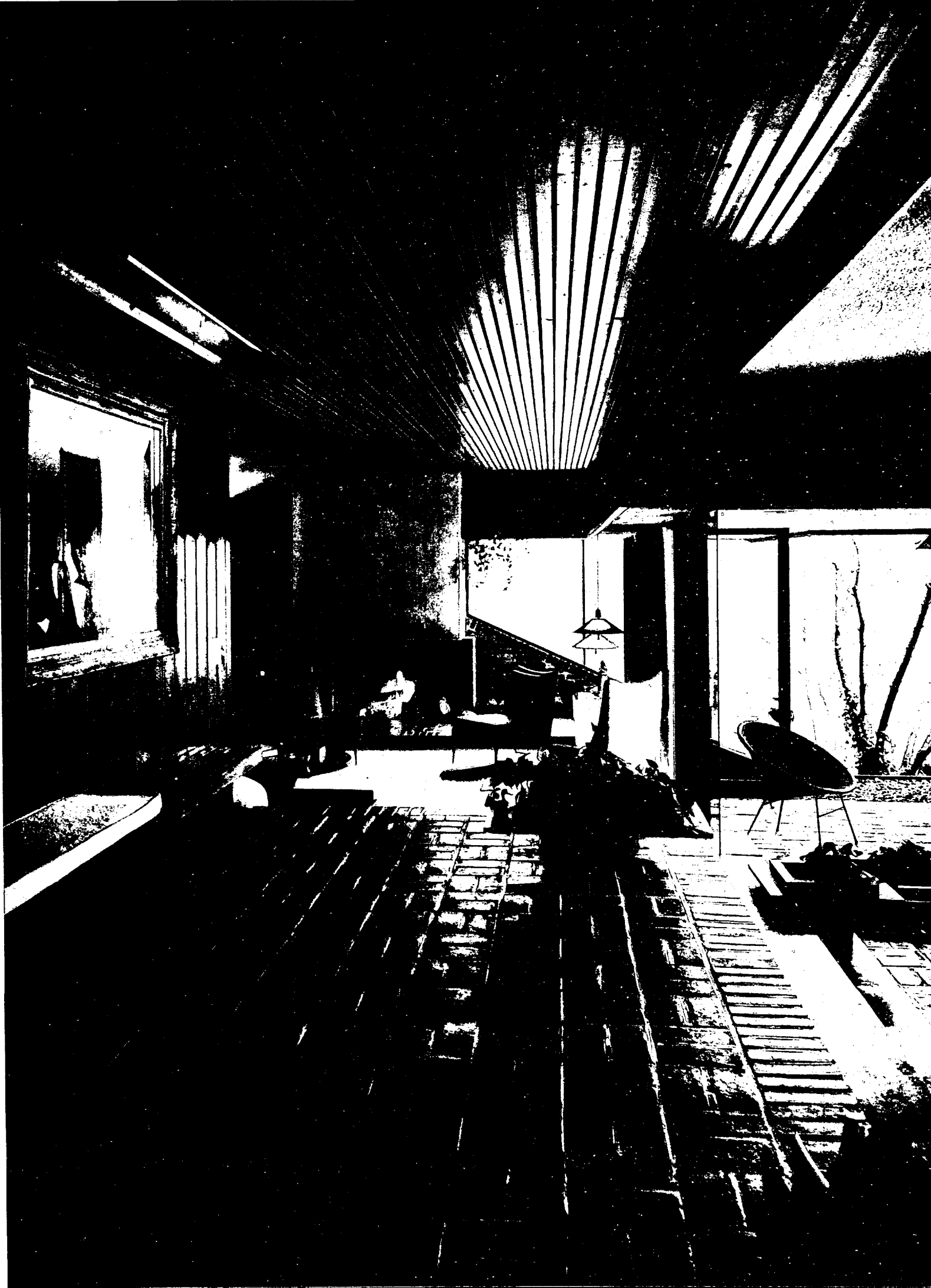
Only three materials can be seen, although many paints, stains, and sealers were used: the effect is that of old unfinished wood (pine, fir plywood, and split shingles), 100-year old brick (aged with a lamp-black wash), and rough white stucco —"all of which improve with age." None need ever be refinished. The house is practically maintenance free: "It doesn't show the dirt, and if we want to crack rocks on the table, nothing's damaged."

"Our aim," say Mr. and Mrs. Wells, "has been to make the house and its landscaping fit the slope and look as much as if it grew there as possible. The inside is a series of abstract spaces, which take on scale only with the appearance of people. We hope to fill the house with paintings, lose it with planting, and enjoy it."

"One aspect of the site planning is evident—fun. The long, curved driveway was designed for sledding. Of the 17 sets of steps, quite a few are big enough only for kids. There's a tunnel under the house that ends at a trap door beneath the piano. There are two secret rooms—tiny to be sure—but big enough to hold a gang of delighted gigglers now and then. And our low-swooping roofs have made the various ridges popular hangouts for dogs, cats, and teen-agers. Late night footsteps above our heads have long since ceased to disturb us."

A degree of unity can be seen in both indoor and outdoor treatments: in the lack of room divisions and in the continuity of surfacing materials throughout the house. "Even the kitchen and bath continue this harmony, a touch usually lacking in otherwise well-designed homes." In the case of the dining room tabletop, this consistency also provides an element of surprise. All interior design was executed by the owners.

PHOTO (FACING PAGE): LAWRENCE S. WILLIAMS



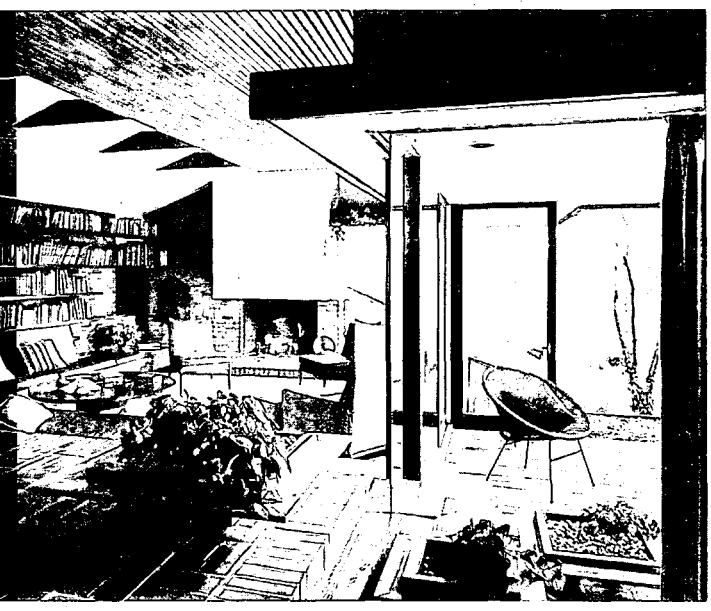


PHOTO: LAWRENCE S. WILLIAMS

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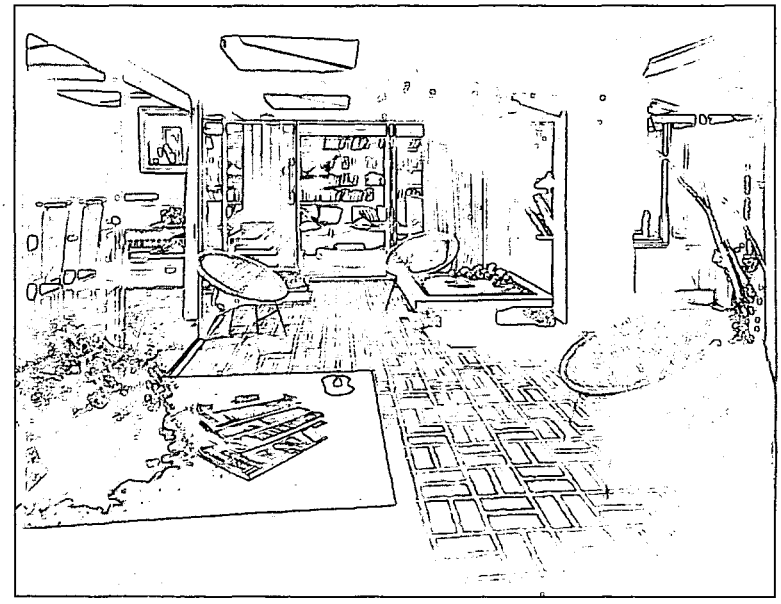

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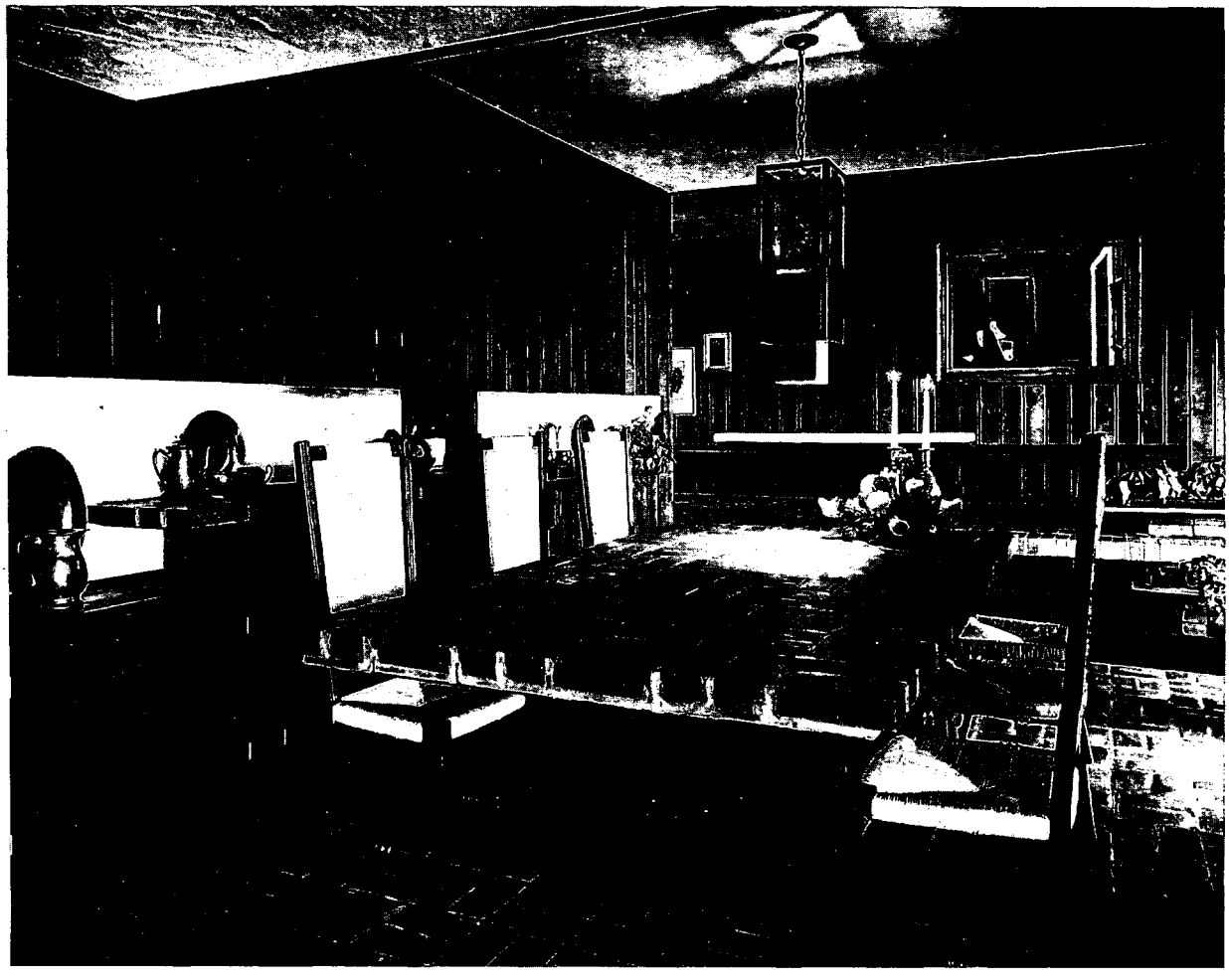

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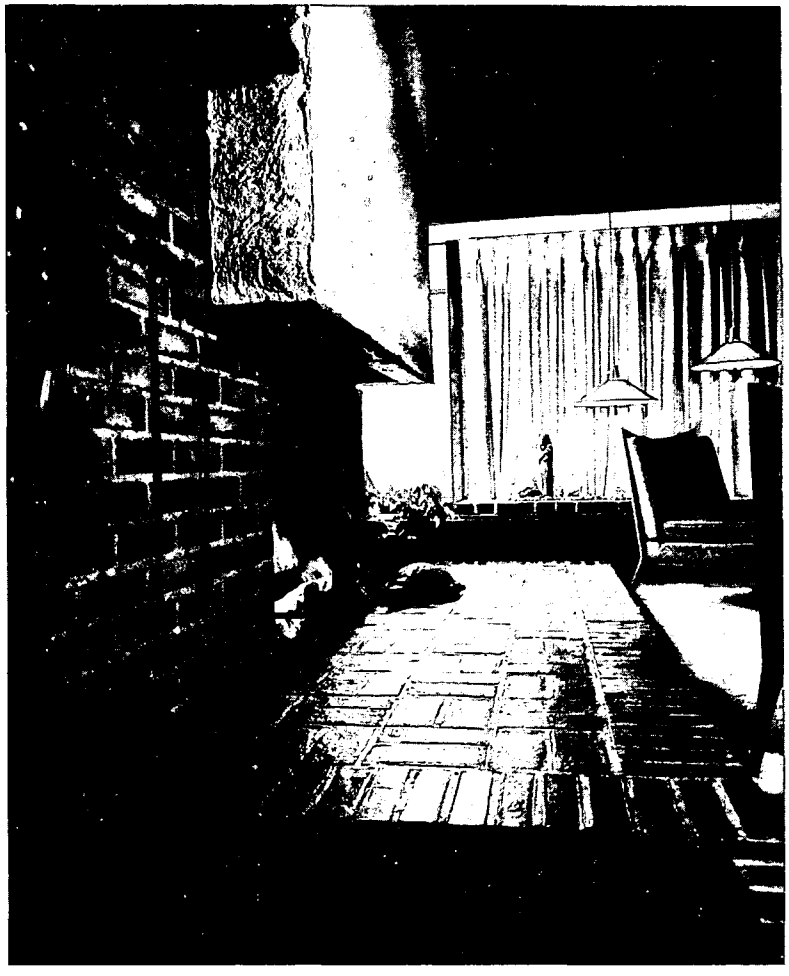
*View of the living room **(1)**, taken from between the foyer and dining room **(3)**, shows a corner of the screened terrace **(2)**. The scullery area of the kitchen **(4)** opens onto the family room. The fireplace in the living room **(7)** shares a chimney with the fireplace in the master bedroom behind it **(5)**. Continuity of design and materials is evident in the bathroom **(6)** and throughout the house.*

7



DATA: descriptions and sources of the major materials and furnishings shown.

LIVING ROOM-FOYER-DINING ROOM

Walls: red brick/flush-cut joints/lamp-black washed; rough plaster/painted white; pine boards. **Ceiling:** rough plaster/painted white; in dining room—acoustical plaster/matches rough plaster elsewhere; in foyer—2 x 2 slats/pine/spaced ¼". **Floors:** red brick/lamp-black washed. **Carpet:** chenille/dull gold. **Doors:** glass and aluminum/sliding/Arcadia. **Draperies:** panels of three materials/copper, pale gold, white/traverse. **Built-ins:** bookshelves/2 x 10s on pins projecting from brick; cabinets in dining room/old pine boards/spaced to match wall paneling/hinged doors/dark stained; sofa—wood frame/foam rubber/black-brown fabric/F. Schumacher & Co. **Lighting:** in living room—hanging/Lightolier; in dining room—hanging/pewter/copper, hammered glass/Wells-design/custom-made. **Furniture, Fabrics:** armchair, ottoman/light gold/Directional; side chairs/walnut/dull red tweed/Directional; coffee table/pine/custom-made; dining table/brick/steel plate/custom-made; dining chairs/Hariam-Garcia, Madrid. **Accessories:** sofa pillows/white, dull red, red-brown-gold stripe; painting/"Nuns in National Gallery"/black, white, dull gold background/by Albert Sandecki.

Specifications Seminar

BY HAROLD J. ROSEN

A seminar on masonry was held during the fall of 1961, sponsored jointly by the Metropolitan New York Chapter of the Construction Specifications Institute and the Structural Clay Products Institute. The final session, on specifications, consisted of a panel discussion by a representative group from the construction industry. The specifications writer was represented by Harold J. Rosen, Chief Specifications Writer of Kelly & Gruzen, Architects; the architect, by A. Gordon Lorimer, who heads his own firm and is Consultant to the Port of New York Authority; the owner, by Howard Phillips, Chief of Building Engineering, American Telephone & Telegraph Company; the mason contractor, by Edward F. Hagerty of John B. Kelly Company; and the manufacturer, by Harry C. Plummer, Director of Engineering & Technology, SCPI. Moderator was Edwin Weed of the architectural firm of Scofield & Weed. The following is a synopsis of the panel discussion.

ROSEN: How does one go about preparing specifications for clay-masonry construction? First, the materials to be used must be identified. Three of the more acceptable methods are the following: the use of standards (such as ASTM standards, Federal specifications, or trade-association specifications); the use of trade names; and the use of an allowance.

In public work, it is preferable to use ASTM or Federal specifications standards. These avoid the use of "or equal," and are sufficiently broad to give the kind of clay masonry that is desired. In private work, however, the use of trade names is quite acceptable. An allowance is used when the designer and owner are not able to arrive at a particular brick they want; if they know approximately how much they want to spend, they set up an allowance and determine later what brick they will buy with it.

No matter which of these three methods is used, there are certain other items that must appear in the specifications in order to communicate satisfactorily with the contractor and obtain the proper material. Among these are the size of the masonry unit, the color range, and the grade or type (if an ASTM standard is used). Sometimes there are further items that must be specified: if a smooth clay masonry unit is desired, or clay masonry that can take a plaster finish, that too should be specified. It is also necessary to indicate what tests will be performed and who will pay for them. (ASTM specifications for brick provide that the purchaser pays for a test when the material meets the specifications, and the seller pays for it when the material does not meet the specifications.)

The correct terms are a problem in writing specifications. If the names ascribed to certain materials on the drawings are not the same terms appearing in the specifications, the contractor may not realize that the terms refer to the same item. Since the specifications writer is more familiar with materials, he should instruct the job captain in the proper terminology to be used on drawings.

I would like to pose a few questions on nomenclature for SCPI to answer. First of all, is it a common brick or a building brick in ASTM C-62? Many people refer to it as a common brick; the ASTM spec calls it a building brick. Another: Is it a face brick or a facing brick in ASTM spec C-216? Or can one use a building brick and say that it be used as a facing brick? Another clay-masonry product that has many applications is the structural clay facing tile. It has been referred to as a glazed masonry unit, a structural facing unit, and a structural facing tile; and ASTM calls it a structural clay facing tile. Perhaps Harry Plummer will tell us which is the preferred nomenclature.

I have another bone to pick with SCPI, concerning certain discrepancies in their literature. Determining size of the unit is one example. In their instructions they indicate that specifying nominal sizes of clay-masonry units is not recommended. But apparently the person who prepared the SCPI specifications didn't follow the recommended procedures, and in his specifications he said, "Brick shall have nominal dimensions of . . ." The best way to handle this is to say that the brick shall be such-and-such a size, and in conformance with the requirements of the ASTM. The ASTM specifications permits certain tolerances, so the brick will be the actual size plus or minus these tolerances. Another area in which there is a discrepancy in the SCPI literature concerns the use of ASTM standards. The recommendation is not to excerpt material from ASTM specifications, but simply to cite the particular ASTM spec. In their masonry mortars, unfortunately, they give specifications, which, in addition to naming the ASTM spec for masonry mortar, repeats the different materials that are already contained in it, like portland cement, masonry cement, water, and lime. These materials are already accounted for when one simply specifies the ASTM spec for mortars.

Another area where agreement is needed concerns the kind of information that should be put into the specifications, and the kind that should go on the drawings. It seems to be fairly well recognized that the drawings should show locations of materials, and the specifications should amplify on the type of material that is intended for that location.

LORIMER: It has become more and more important to get a complete set of drawings, and to spend time during the drawing period with a clear definition of what one wants. The architect is then developing the project, making decisions, and implementing the design with a continuity of thought. It is much easier and more effective, and costs less time and less money, to get each decision fully implemented on the drawings so that it sticks once and for all. Later, during construction, if there are unsolved questions of masonry bonds, or co-ordination

problems, and the architect is called in to amplify information, it is difficult to go back to the original thinking. The results can then be costly, unsatisfactory, and in many ways unfair even to the contractor.

It is important at the beginning of the job to control the whole height of the building in some agreed coursing system. This is true even though the building may have large areas of panel walls and other combinations of materials that are non-standard and flexible in size. The element that really controls them—when one turns the corner and comes to another elevation —is the masonry wall. There is a great tendency to spend time on the more attractive design problems of co-ordinating windows and spandrels, getting wrapped up in them and doing a lot of detailing, only to find that some controlling point on another side wall, with a controlled masonry condition, fails to tie in with these details. It is much better practice to put the investment into a thoroughly co-ordinated set of coursing dimensions up through the total height of the building, in which each floor level and sill level is respected; established right at the beginning, these then become the doctrine from which everything else is detailed in the component parts.. Here is where the modular system of referencing is an enormous help in giving reference points so that one can start off at any different modular dimension. In this connection, I would like to ask Mr. Hagerty whether the masonry trades are recognizing modular dimensioning favorably under a normal bidding situation.

Also at an early point in the design stage comes the question of clearly establishing the character and nature of the bond, for the rhythm of the masonry, and so that the contractor can fairly bid on it and can actually build it without running into messy cutting in order to tie into other component parts of the building.

Conferences between the designer, job captain, and specifications writer—at the very earliest stage—will save endless troubles later. If there are special patterns involved in the masonry, they should be drawn to be indicative of the condition, even though it takes some extra drafting. Merely to draw a small piece of a pattern abstractly on a sheet, without exploring it against the other design components, can be deceptive and can cause subsequent arguments in the field.

There are many places where partitions to the ceiling, or to the original slab, are required for sound cut-offs, etc. There is lack of complete definition on drawings as to whether these partitions stop at the ceiling line, or go to the slab, or do both. This has been a source of extras, claims, and arguments. I can't find any way to clarify it except almost individually, on a partition-to-partition basis, by some symbol. Perhaps a mechanism could be devised that would simplify this and make it more uniform; contractors would get to know the symbol, and architects would use it on all drawings.

Another problem is that of conflict between masonry and steel, as one considers the height of a building. We are all apt to forget that the steel industry, of necessity, has a fairly significant tolerance permitted on plumbness of steel frames. Similarly, there are certain tolerances permitted on masonry products. When these two run out of coincidence, it is very easy to get more interference between the steel and the facing material as the building grows higher. This means cutting away some of the cells of the blocks, weakening them or weakening the brick. And when unsightly cracks appear in the building, it's a bad situation altogether, unhappy for the client and very unfair to the masonry contractor. Every draftsman should have on a corner of his working board a reminder sheet that the standard steel-institute tolerances are x fractions of an inch per story of increment of height of a building. And, as Ed Weed pointed out in our discussions prior to this meeting, the dynamic movements of a building are an added factor, and should be given some recognition in regard to masonry materials.

As for cavity walls, the problem of keeping the cavities clean has been generally indicated by rather fulsome descriptions in the specifications. I've come to the conclusion that the man on the scaffold never sees the specifications. We ought to put this right on the working drawings, in a large detail, so that the inspector can point it out to the man on the scaffold and say, "That's what you do to keep the cavity clean."

The architect, and the client, have been guilty of expecting a higher degree of uniformity of finish than the industry standards permit. We should either be realistic about this or set up another classification whereby we are willing to pay for further culling and superior workmanship on a premium basis, and show premium quality work only where it is of sufficient importance.

Terminology was mentioned by Rosen, and there has been a good deal of trouble with this. Slang terms come up from the drafting room, from generation to generation, and get on drawings, and are very often different from those terms that the specifications writer is using. I am happy to hear that CSI has begun work on a recommended standard for phraseology of normal standard components.

PHILLIPS: American Telephone & Telegraph is very much interested in masonry specifications because we build more than 1000 buildings a year, mostly masonry, and ranging in size from small radio-repeater buildings to large headquarters and switching-center buildings.

In checking with our building engineers to determine the most important problems they have with masonry specifications for these buildings, I find that the most frequently mentioned problem is that of workmanship. No matter how well these specifications are written, there is no assurance of the finished product that good specifications call for. Whether or not this is lack of inspection on our part, where we do the inspection,

or on the part of the architect, where he is engaged to do the inspection for us, it's still there. We feel this to be a most important problem: how to follow through on good specifications, and how to get a good finished product from these specifications.

The second item is a question of mortars. In a great many cases where we have architects designing a building for us, they prefer lime mortar rather than a masonry cement. I don't know whether this makes any difference with a structural-clay product that's a furring or lining for a switch-room; but where the mortar is used on the exterior to provide a watertight wall, many of our architects prefer the old-fashioned method of lime mortar.

Tied in with the matter of workmanship, there are problems on tooling, and the type of exposed joint. On an interior masonry surface, we have some complaints about the workmen rodding the joints so hard that the joints get permanent black spots. On exposed joints, a concave joint is generally preferred. Although occasionally an architect will want a weathered joint, or something else, for aesthetic reasons, it is felt that the concave joint compresses the mortar into the joint better and gives a more watertight job.

In many of our buildings where we use glazed tile on the interior switch-rooms, we frequently will specify a grade-B tile for economy; appearance is not important in an equipment room. In some cases this runs into trouble, specifying a grade-B material and wanting grade-A workmanship.

A comment from our building people on the West Coast, where earthquakes are a concern, emphasizes the use of monel metal ties; with other ties, one doesn't know whether or not the tie will be there, in a few years, when an earthquake comes along.

HAGERTY: The *Technical Notes on Brick and Tile Construction*, distributed by SCPI, don't stress methods of shipping, or the fact that all materials are subject to tolerances. Architects who specify masonry materials will insist that they be free from chips and other imperfections. But the materials must also conform to the requirements of the ASTM specifications. Our problems on the job are due to the fact that neither the architect's representative nor the owner knows that tolerances are permitted. On almost every job, I have to go over with the ASTM book under one arm and the SCPI specifications under the other, pointing out that a certain percentage of chippage is permitted; also a certain percentage of warpage. It would be very helpful to the contractor if the specifications writers would quote the tolerances.

Glazed tile, and glazed face brick, are usually shipped in cardboard cartons or shippers to avoid excessive chipping. But unglazed tiles and smooth-face brick are not shipped in cartons unless required by the specifications. It would eliminate a lot of trouble for the mason contractors if every specification required that any smooth clay-masonry material be shipped in cartons. There would then be the same basis in bidding, because it costs money to ship in cartons. The question is whether the cost of the cartons exceeds the cost of culling and cutting out chipped brick later.

The increase in cost of in-place glazed materials, resulting from ever-rising wage rates, forces owners and architects to revert to cheaper materials in lieu of glazed tile or plaster or other finished materials (for instance, building bricks or sand-lime brick for exterior facing, and exposed cinder or Waylite block for interior partitions). To meet budgets, the mason contractor is expected to produce a result on a par with the glazed-tile result. This cannot be obtained, either psychologically or economically. The bricklayer picking up a cheap piece of material is going to lay it up in kind, and there's nothing that can be done about it. The inspection on cheaper materials is much more stringent than on glazed tile, and we still have more trouble with it. After several jobs with cheaper materials, we have found that our labor costs are higher than on a job with expensive material. So it really is false economy; the owner and architect are unhappy, and the mason contractor is in the red.

Where exposed concrete blocks are substituted for glazed tile, or other finished materials, some thought should be given to increasing the thickness of partitions, to enable the conduits to be concealed without excessive cutting and ugly patching.

Specifications writers could help our industry considerably by standardizing mortar proportions. On occasion we find a 1:3:10 mortar specified for abbreviated panel-type walls and particularly for cavity-wall construction. We certainly do not recommend a 1:3:10 mortar, and in fact haven't used one in 25 years.

We could also use some help on cold-weather procedure and protection, particularly on how to maintain a 40-degree temperature for 48 hours on an exterior wall during freezing weather!

Now to answer some of the questions that were brought up. If all architects followed Lorimer's suggestions as to coursing of bricks, and so forth, our problems would certainly be minimized. And it certainly is reflected in our bidding if we see a set of plans where the architect has gone to the trouble of laying out every pier and every lintel to sill height, and selecting sash that will work with the brick coursing and brick size.

Common brick was known for many years as a 2¼" x 8" x 3¾" piece of clay material. But now, if you call a brickyard or a brick dealer in the New York area and ask for a load of brick, you're going to get a 2⅝" brick. It's no longer the common brick, it's a special brick; and I think this discrepancy should be taken care of by the specifications writer.

We recently finished a job where we had to go back—after the plaster ceiling had been installed—to carry partitions from the suspended ceiling up to the slab, and to remove the partitions from the concrete arch down to the suspended ceiling,

to permit ducts and plenums. It should have been covered.

Steel out of plumb. It can happen that on the second and third floor the brick is cut down to 2″, and up on the seventh and eighth floor the angles are shimmed out about 2″. It is quite a problem for the contractor to tailor-make the brickwork to fit the structure. What can be done—reframe the angles or have the angles shimmed out?

Keeping the cavity clean. Lorimer's suggestion is good here. Now if the cavity is detailed as a 2″ cavity, with a 2″ stick in there, and with the brick varying in bed dimension up to ¼″ and the backing material also varying in thickness, the contractor has to allow at least ½″ less than the cavity. And when a pier is topped out, the stick can't remain there; it is removed before the pier is topped out. The result is that the mortar from at least two bed joints must drop into that cavity. But I don't feel that those mortar droppings are too serious, if there is good protection by fabric waterproofing at the spandrel line.

As to joints, we highly recommend the concave joint. At the start of every job, we buy the jointer that produced the concave joint acceptable to the architect. By standardizing the jointer, it is possible to get a reasonably consistent mortar joint.

PLUMMER: There have been many questions directed at SCPI tonight, so I'll start out with these. Rosen uncovered some discrepancies in our publications. We publish *Technical Notes,* in which we recommend basic principles for writing specifications. When we undertook to write one, we seemed to vary somewhat. This is a case where the specifications and the plans were not well-coordinated—I've heard that this happens to others also. However, the specifications were taken under revision several months ago. [These are now available in *Technical Notes* 11, 11A, and 11B—ED.] We are now working with the newly created Technical Review Board of CSI on the development of a specification that we hope will eventually appear as the pink sheets in the *CSI Specifier.*

On terminology, and the question of common brick and face brick, it might be worthwhile to give some of the history of these terms. Back in the NRA days, prices were set on brick as well as on other products; there was a price on common brick, and a price on face brick. Then it was handed over to me to try to define a common brick and a face brick. Originally, these terms were based on methods of manufacture; the old common brick were made here on Hudson River (and other places) by the soft-mud process, burned in kiln. Then came the extrusion process, and a man named Fiske, in Philadelphia, developed what he called a face brick—it was textured. By the time the NRA came along, however, common-brick manufacturers, so-called, were using the extrusion process, and face-brick manufacturers were selling their culls as common brick. There wasn't any difference in the method of manufacture, so the only answer I could come up with was to base the definition on the use of the product. Facing brick is brick that is used for facing purposes, and the specifications have requirements as to color, texture, maximum chippage, and dimensional tolerances. Building brick is brick that is used for structural purposes, but has no requirements as to color and texture. This is the definition included in the ASTM specifications for the two types of brick. Building brick and facing brick are manufactured by the same methods; the difference is that one is selected for color and texture and minimum chippage.

Structural clay facing tile is the correct name for glazed or unglazed facing tile. Clay tile refers to thin tile. The Federal Trade Commission has authorized that definition for wall tile, floor tile, and so on. Structural facing tile is a unit that supports its own weight.

When it comes to size, there is still a misconception that there are standard sizes of brick. Only a few weeks ago, I read a specification that stated that face brick shall be standard size. There is no single standard size of face brick. Norman brick, 2⅔″ x 12″, is a standard size, just as is the smaller brick of 2⅔″ x 8″. Consequently, the size should be spelled out in the specifications, in inches, and I recommend that it be what we call the specified or manufacturing size. There are really three sizes that are used in talking about size of a brick. In terms of modular design, we speak of the *nominal* size, as I just did, say 2⅔″ x 12″; that's from center to center of mortar joint. The *specified* size is the size the manufacturer hits for, and is the nominal size less the mortar joint. If we were laying up a 2⅔″ x 12″ with a ⅜″ joint, the length would be 11⅝″, and the height would be approximately 2¼″. The *actual* size is just what the dictionary says it is—the measured size of a particular unit—and it varies from the specified size by the permissible tolerance in the ASTM specifications. If one is not concerned about the thickness of the mortar joint, whether it is ½″ or ⅜″ or ¼″, one can specify that the nominal size be 2⅔″ x 12″. But generally one is concerned about the thickness of the mortar joint, and we would then recommend that the manufacturing size be specified: the size the manufacturer hits for, or the nominal size less the thickness of the mortar joint.

There are several other things that should be borne in mind in specifying brick by any of the methods that Rosen outlined. In the allowance method, it is unfair to the contractor simply to allow, say, $50 a thousand for brick, without telling him what size the bricks are or what absorption they may have. If one is using brick with absorption anywhere from 2 to 6 per cent, the laying costs are probably going to be greater, especially in cold weather, than for a higher absorption brick. The contractor ought to be told whether it is a smooth brick or a rough-textured brick, because this will affect the cleaning costs of the wall. To give a realistic bid, the contractor must know these factors; if he doesn't know them, he can only bid on the

most unfavorable condition that is likely to occur.

When it comes to brand names, I would recommend that the ASTM specifications and the proper grade be included. Even with complete confidence in the suppliers that are named, it is good practice to provide for a check on the physical properties of the brick being specified.

In open specifications, the most difficult items to specify are color and texture. Certainly there should be one panel—and it is much better to have two panels—for a contractor to look at. A question can arise with specifications saying that brick shall be a reasonable match of brick by a certain manufacturer: Does this mean that only that manufacturer's brick are acceptable? I would think that unless there is some amplification of that statement in the specifications, it is up to the architect to say whether it is a reasonable match. Actually there are no two brick exactly alike, and unless there is some range of color and texture the contractor is limited to the single panel shown.

Concerning solid brick, ASTM specifications are somewhat ambiguous, and this confusion appears in building codes as well. Both state that any brick cored not in excess of 25 per cent is considered a solid unit, although this does not conform to the dictionary definition of the solid unit. Consequently, if one wants a brick without cores one should say so.

The question of workmanship is sometimes overemphasized. On some jobs, the design makes it impossible for any masonry contractor to build a watertight wall. For instance, an 8″ solid wall, with hollow-unit backup and brick headers is bound to leak under severe exposures. In my view, a great deal of the blame for leaky walls that is placed on workmanship is actually the fault of the design. One just can't build these walls—at least we haven't been able to do so in the laboratory—so that they won't leak. The matter of workmanship also depends to a great degree on the mortar used. I have seen specifications provide for mortar to be mixed with the minimum amount of water consistent with workability, and they try to enforce this as one would the water-cement ratio in concrete, by taking tests. A harsh mortar results; it is impossible to get a good bond, and an inherent weakness of the specifications is blamed on workmanship.

WEED: To open the question period, I would like to ask Mr. Phillips if, in his opinion, owners should be shown sample lay-ups of what is indicated on the drawings and spelled out in the specifications?

PHILLIPS: This would depend largely on the size of the job. On some small buildings, a sample lay-up cannot be justified, because in the end the owner pays for it in the cost of the building. But quite frequently it is done on medium-size and large buildings. We feel that this is a way of getting a measure of the quality of the brickwork that one will get on the job.

QUESTION: *Are there "real" advantages and disadvantages to the different types of joints?*

ROSEN: Yes, in a solid-masonry wall. Here one depends upon tooling the joint to close the surface between the mortar and the brick, and thus prevent any penetration of water back into the building. The joint that is most effective is the concave joint. This is normally done after the mortar has reached its initial set. By tooling the joint at this point, it is compressed and densified; actual contact is made between the mortar and the brick, and a weak point where water could penetrate between the mortar and the brick is reduced. With cavity walls, I don't think there is danger in any joint that may be selected, because the cavity wall is so designed that if water enters, it gets out through the weep holes.

WEED: But in interior tooling, the flush joint for glazed structural facing tile has a real advantage in being easily cleaned.

QUESTION: *What is the function of weeps in cavity walls?*

LORIMER: Their function is an obvious one; they provide a place to get the water out. I would recommend that they be not further apart than 2′, although some people go further than that with apparent success. I think the dual-height practice of the New York Housing Authority, putting them not only in one course but also in the next successive course above that, as an insurance against droppings and possible careless workmanship, is also a good practice. As to the actual medium that is used to create the weep hole, such as a rope to pull it out, I'd like to ask Mr. Hagerty what currently available materials are most successful.

HAGERTY: We've tried everything. Plastic straws are rather good. But the most successful method is to use a piece of reinforcing; after the mortar is fairly well set, the rod is pulled out and given a few turns to make sure that it's clear. The alternating weep-type is very good practice; we are putting them in every fourth brick cross-joint, alternating courses, so that there is a weep-hole every 16″ on the first and second mortar joint above the lintel, sloped from the top of one brick to the top of the course above.

QUESTION: *Does the use of calcium chloride in cold-weather mortar affect the efflorescence in a wall?*

PLUMMER: I know of no actual test data; however, the chemists I've talked to about this say that if one doesn't use more than about 2 per cent of the weight of the cement, there will be a chemical reaction there, and it will not add to the efflorescence tendency of the mortar.

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F S T C

Output Certification for A-C

BY WILLIAM J. McGUINNESS

Cooling capacities of air-conditioning equipment have been identified by various methods of rating: Btu/hr, tons, amperes, and horsepower. Efforts that have been made to standardize designations of output certifications are discussed by a practicing mechanical engineer.

This year marks the culmination of the second of two programs, both conceived in 1958, for clarification of the expressed ratings of unitary and room air conditioners, and for the consumers' assurance of output as expressed. One has only to find the proper seal on the purchased equipment to know that the product is manufactured by one of the participants in these programs, and that the unit will deliver the stated cooling capacity. In the case of unitary conditioners with capacities up to 135,000 Btu/hr, but not including room units, the seal is that of the Air Conditioning and Refrigeration Institute (ARI). For room units, including those of through-the-wall type, and having capacities not exceeding 36,000 Btu/hr, the second program, now fully operative in 1962, has the sponsorship of the National Electrical Manufacturers Association (NEMA). Approved room units will bear this seal. Under both seals, cooling capacities are rated in Btu/hr, now to be used as the official standard to override tons, amperes, or horsepower, which were often formerly used to identify the capacity.

The widespread increase of air conditioning in relatively smaller installations has made these new approvals and assurances most important. One may think of unitary conditioners as suitable for central air conditioning in large residences, or in small commercial or industrial buildings. These conditioners, together with room units, comprise the bracket of products that could be most subject to misrepresentation. In the largest commercial, industrial, and residential buildings, performance requirements are met because of the professional demands of architects and engineers. Although the services of these specialists often extend to smaller projects, it is not uncommon for smaller air-conditioning equipment purchases to be made by owners and builders with installation by air-conditioning contractors. Owners, as well as architects and engineers, can now feel confident about the equipment they use, while vendors and contractors can justify this confidence in tested and certified products.

The ARI program for unitary equipment operating in 1958 set high standards, but these were at that time optional, though they were formulated by ARI and also by the National Warm Air Heating and Air Conditioning Association. The new certification program has corrected the difficulties that formerly arose because of this optional subscription to recommended standards. Presently, 63 manufacturers, producing more than 90 per cent of all unitary equipment, participate in a tight scheme, compliance with which, by their own wishes, they cannot escape. All participants agree to the use of Btu/hr as the designation of cooling capacity and all submit to random testing, by an independent laboratory, of units selected by ARI from any distributor's warehouse. Manufacturers may challenge each other, with the cost of the testing being paid by the manufacturer of the unit if it does not comply, or by the challenger if it does. The public and Better Business Bureaus play an active part, since complaints to ARI may originate with them. Needless to say, the seal privilege is withdrawn promptly from erring or negligent manufacturers.

The seal of the National Electric Manufacturer's Association (NEMA) is used on room units that qualify under its program. The first quarterly directory, scheduled (at the time of this writing) to appear early in 1962, will list 806 models and 34 brand names. They comprise more than 85 per cent of such products now sold in the United States. At least 50 per cent of each manufacturer's products will undergo testing in accordance with NEMA Standard CN 1. Random testing and the participation of the 50-year-old National Better Business Bureau will strengthen the program. Nonmembers of NEMA may join the program if their equipment qualifies.

Both of the certifying organizations use the independent services of the Electrical Testing Laboratories, New York, which was organized 65 years ago to afford private verification of the performance of early electric bulbs. The laboratory continues to test incandescent, fluorescent, and mercury lighting devices and a great variety of other electrical apparatus to establish product quality. Extensive facilities for the testing and rating of air-conditioning equipment have been in use for six years. An enlarged special laboratory is available for the new certification work. On opposite sides of an 8″ barrier of rigid insulation, controlled climate chambers simulate critical outdoor conditions of temperature and humidity, and ideal indoor conditions of these qualities on a continuous basis. A unit is sealed for test in an opening in the 8″ wall. After six hours or more to establish stability within $\frac{1}{10}$ of 1 F, the test is made. Thermal balance on opposite sides of the barrier must agree within 2 per cent.

Directors of certified products are obtainable from the two sponsoring organizations: *Unit Air Conditioners* (to 135,000 Btu/hr), Air Conditioning and Refrigeration Institute, 1346 Connecticut Avenue, N.W., Washington 6, D.C.; *Room Air Conditioners* (to 36,000 Btu/hr), Secretary, Room Air Conditioner Section, National Electric Manufacturers Assn., 155 East 44th Street, New York 17, N.Y.

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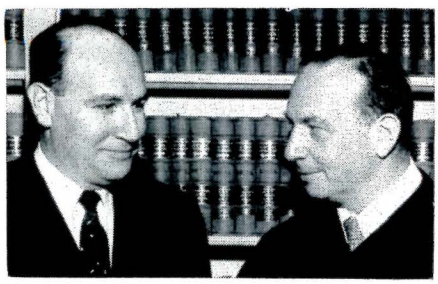

The Architect and the Developer

BY JUDGE BERNARD TOMSON AND NORMAN COPLAN

P/A's legal team discusses the ethical problems involved in the relationship between an architect and a real estate developer.

In discussing the law and its application to the practice of architecture, we have, in previous columns, pointed out several areas of architectural practice where ethical considerations pose particular problems. For example, we considered the question of whether an architect may employ a business solicitor who will be paid a percentage of the fee on any work he secures. We considered the question of whether it was equitable for an architect to act as the conclusive arbiter of all disputes between owner and contractor, including those disputes which relate to the adequacy and propriety of the architect's own plans and specifications.

One subject involving ethical considerations, which is presently of great interest to the profession, is the question of what constitutes the appropriate relationship between an architect and a real estate developer. Some members of the profession seem to feel that ethical guidelines for this and other related questions are needed, and that there is need for a more explicit statement than that now provided by the standards of professional practice issued by the American Institute of Architects.

When ethical principles of architectural practice are incorporated into a statute, the delineation of ethical standards for the guidance of the profession becomes a matter of urgent necessity. The penalty for statutory violation involves more serious consequences than violation of the standards of professional practice formulated by the Institute. In recent years, for example, the State of Massachusetts, in amending its architectural licensing law to limit the practice of architecture to those duly licensed, provided in this amendment that:

"No person engaged in the practice of architecture shall have any interest in any project or building prejudicial to or in conflict with his professional interest therein."

What constitutes an interest in a project which is prejudicial to the architect's professional interest? Does this mean a financial interest, or something broader? Since this statute has not been construed by the courts, Massachusetts architects have no interpretive guides upon which to rely. If this statute were construed in the terms of the standards of professional practice issued by the American Institute of Architects, there would still be an area of question or doubt as to its application, and as to the propriety and lawfulness of certain activities in which professional architects engage.

For example, what aspects of the relationship between a licensed architect and a real estate developer are lawful and ethical under this statute or the standards of professional practice of the American Institute of Architects? What aspects, if any, of that relationship would constitute an interest by the architect in a project in conflict with his professional interests? The only mandatory standards of the American Institute of Architects which seem to relate to this subject are the following:

"(6) An Architect shall not render architectural services to nonprofessional enterprises connected with the building industry, except when (a) He does not either directly or indirectly solicit orders for the said enterprises. (b) He is paid by salary, fee or royalty for his architectural services and does not participate in any profits of the aforesaid enterprises which would influence his professional integrity.

"(7) An Architect shall not engage in building contracting."

The two mandatory standards of professional practice quoted above are primarily directed toward the situation where there might be a conflict of interest in respect to the architect's duty toward his client. If, for example, under a contract between architect and client it is the architect's duty to supervise the contractor, he could not properly perform this duty if he had some connection, financial or otherwise, with the contractor. The underlying premise of these standards is that the architect shall take no action inconsistent with his professional status.

The foregoing ethical principle, as applied to the relationship between a real estate developer on the one hand and the architect on the other, would seem to prohibit a situation where the architect was rendering services to both the developer and the client involving the same project. However, where a real estate developer sells or leases completed real estate projects for which he has retained the services of an architect to furnish the plans and specifications to *him* (as distinguished from the client or customer), it is argued that there is no legal or ethical bar to the rendering of such services. It is contended that a developer would not be practicing law if he were to retain an attorney to close title or prepare leases in connection with the project; and similarly, he would not be practicing architecture if he were to retain an architect to furnish plans to him upon which he intended to, or did, construct a project for sale or lease. It is also pointed out that the ultimate customer in such transaction could rely upon his own architect, if he so desired, to check the plans and specifications.

Because of the absence of ethical guidelines in this area, many architects, particularly those who believe a "package deal" is an undesirable social and economic development, feel that any connection between the "package dealer" and an architect involves an unethical practice. It would seem, therefore, that some definitive statement in this area is required. In the absence of such a statement, the situation insofar as the ethical standards to be applied to the relationship of architect and real estate developer, must be considered vague and ambiguous.

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The cabin was designed by architect David Thorne, of Berkeley, who is widely known for his imaginative use of steel framing. Many architects agree with Thorne that steel is a logical choice for contemporary design, and can be combined with other materials —as shown here—with dramatic architectural effect.

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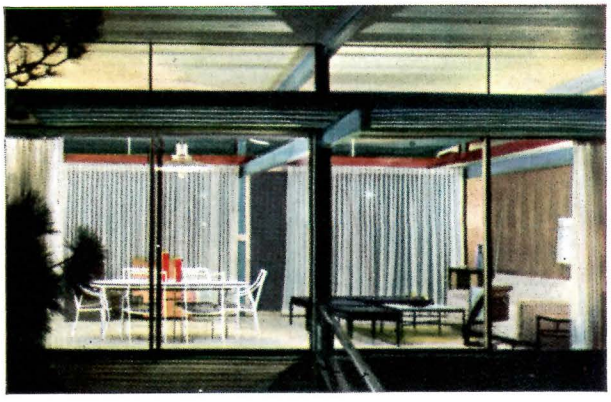

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Jane Jacobs' City

Dear Editor: I was very glad to read your "P.S." on "The Nature of Cities" [DECEMBER 1961 P/A]. I agree emphatically that one of the most important requirements of a city is to offer a chance for different kinds of people to live the way they want.

It would probably upset even Jane Jacobs if the citizens she has frightened with her cataloging of assault in the grass plots reacted only somewhat more arbitrarily than she by hanging city planners and architects and by cutting down all the trees in town, expecting thus to eliminate mugging.

Many of us agree with Mrs. Jacobs that our results to date are mostly mediocre or plain bad. However, I for one choose to go on believing that the best way to a better environment is by creation, not criticism.

CARL KOCH
Cambridge, Mass.

Dear Editor: I read with great interest your "P.S." in the December issue. You state very correctly, "The great contribution architects can make to the field of urban planning will be to advise ways for cities to work better."

The problem is not to devise one single recipe for the way the urban environment should look. Luckily people have different ideas of how they want to live; and you put your finger on this fact when you say that Jane Jacobs, in her book, *The Death and Life of Great American Cities*, describes only one type of city environment, which she happens to like but within which you, for example, would not be happy. There are multitudes of other types of urban living environment which are preferred by others. This apparent dilemma is really the key to the successful urban pattern. "Vive la difference!" should be the slogan of every urban designer, and from this slogan would spring the ideal city which would be successful as an expression of 20th-Century urbanism just because it would take into account the multitude of individual expressions and aims.

In order, however, to make cities work better—which must be the over-all aim of urban design if urban culture is to continue to exist—it is necessary to close the time gap which has existed over the last 50 years between scientific, technological, and sociological developments on the one hand and the shape and form of our cities on the other. The deterioration of our cities is due to the fact that we haven't been able to parallel the stormy development in science, technology, and sociology in the planning of cities.

This is reflected in the fact that we are committing two types of sins. I like to call them the sins of commission and the sins of omission in urban planning. The sins of commission are all the measures by which we try to separate from each other those urban elements which belong together. We are carefully separating residential areas from all other human activities like working quarters, commercial uses, cultural, civic and recreational activities. We are further separating within the residential use category various economic levels, carefully compartmentalizing them into living areas for lowest income groups, lower middle income, upper middle income, residential areas for the wealthy. We extricate from the urban fabric everything which is devoted to culture and the arts and concentrate these activities into sterile, removed compounds called cultural and art centers. We follow the same procedure with regard to buildings serving civic administration. We carefully separate these from the rest of the urban fabric, concentrating them into compounds for bureaucrats called "civic centers."

By engaging in this policy of separation and compartmentalization, we are depriving our cities of liveliness, variety, diversity, and we also are lengthening the distance from places of residence to places of work or cultural and recreational and artistic activities.

Our sins of omission work in paradoxical contrast to the sins of commission. We are neglecting to separate those functions which have a destructive influence on urban life from all of the above mentioned "human activities." These destructive functions can be described as utilitarian and mechanical.

Up to the beginning of the 20th Century, we clearly recognized that this separation of utilitarian and mechanical functions from human functions was one of the prerequisites of urban life. As urban civilization progressed, we separated utilitarian functions (like sewage, gas mains, water mains, electrical cables, telephone cables) by putting them underground. During the railroad age, we soon concluded that trains on Main Street were a disruptive influence within the urban body, and we removed them from the street surface. We also separated airports from densely built-up urban areas and moved them further and further away from core areas.

One development, however, surprised us with the suddenness and intensity of the attack. That is the utilization of gasoline-driven vehicles, automobiles, trucks, trailers, for some mass transportation of people and goods. The effective separation of this utilitarian and mechanical land use from human activity areas in continuance of all our other measures for urban order is a basic necessity for a better city.

The sins of omission are causally intimately connected. Our need for separating various human activities that logically should belong together is based on the fact that because of our neglect in separating utilitarian functions from human functions, we cannot operate them in the intimate framework in which they would be most beneficial.

People don't want to live near stores or office buildings because they are disturbed by the dangers, noises, and fumes which "traffic" intensified by them brings about. Thus, only if we can achieve an effective separation of disturbing functions of the utilitarian type from human functions will we be able again to bring about those qualities which make urban life desirable: compactness, variety, diversity.

Once this simple fact is recognized, it is then possible to design the framework of an urban structure which is workable, practical, and which will give us the basic guarantees necessary for the protection of physical and mental health within the urban organization.

Within this framework, there will then exist the possibility of expressing hundreds of varieties of urban design, presenting an opportunity for the largest number of individual expressions. Within such a framework, we will be able to create environments which will be to the taste of Jane Jacobs, others to your taste, and others still which will be most tempting to other temperaments. We will be able to create the type of city that will fulfill those functions which, since time immemorial, have been the main reason for the existence of cities—ease of human communication,

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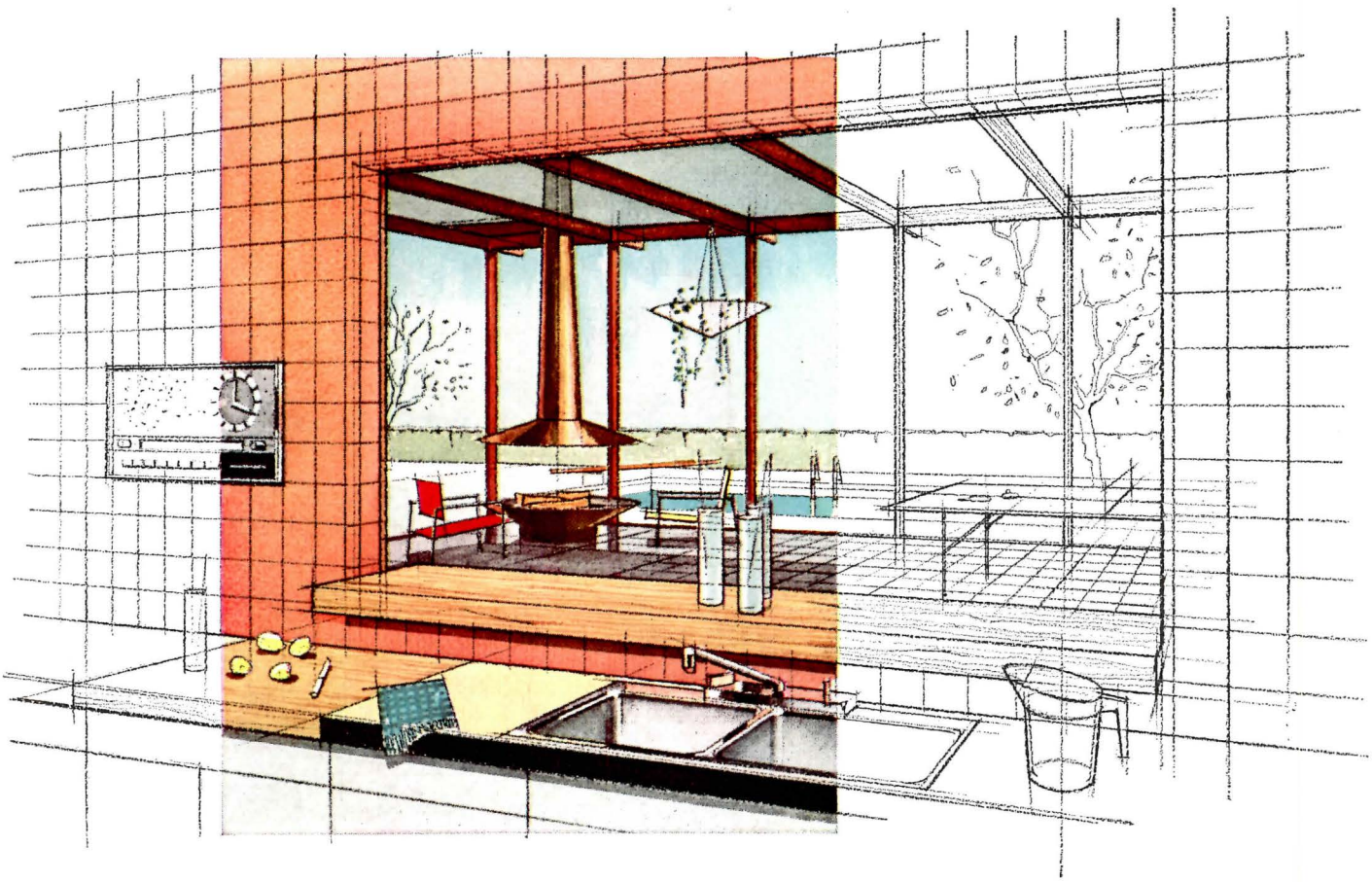

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ease of exchange of ideas and goods. And we will be able to bestow on our cities that quality which seems to me most important for urban life—a free choice for the urbanite at all times between sociability and gregariousness on the one hand and privacy on the other.

VICTOR GRUEN
New York, N.Y.

Dear Editor: I agree with you that the problem you outline in your December "P.S." is one that is not new to architectural design. All one has to do is to look at Park Avenue and the new buildings in most of our cities to see how extremely mediocre is the design of 99 per cent of these. The answer to the question "What is the nature of a city?" is that different cities have different natures; the attempt to make rules and regulations as to what *a* city is indicates the beginning of the wrong approach. Each city, and each segment of it, has to be studied architecturally with a view to a special solution for that particular city or aspect of it. Although there are certain generalizations that can be made about cities, the only way to solve any given problem is to allow the very objective facts and nature of that particular city to guide the solution; thus individuality and regional differences, which cannot be the result of one set of general rules, will be attained.

Although Jane Jacobs' views are of great interest and are constructive from the point of view of making us realize that there has not been any progress in city planning in the last generation, she nevertheless does not have any constructive approaches to solutions to suggest. It is true that redevelopment plans have begun to follow too much of a pattern, as you say, but not more so than the buildings and groups of buildings that are not a product of redevelopment at all—buildings like those on Park Avenue, for example, which are a product of lack of imagination, design similarity, and utter nonsensical mediocrity.

ROBERT ANSHEN
San Francisco, Calif.

Zuk's Simple Models

Dear Editor: I should like to commend Professor Zuk's lucid article on the use of models for structural analysis [MARCH 1962 P/A]. Although model analysis has been widely used in other countries, especially for dam and shell structures, in the United States this tool has been too rarely used (aside from soils engineering), in spite of the ease with which a whole structure may be evaluated, primarily with regard to special boundary conditions and elasto-plastic action.

The use of new materials in building is leading to broader uses of model testing. In the development of panels for all-glued buildings, we find it much easier and surer to test full-scale models than to evaluate numerically the various factors such as the combined modulus in the plastic range, bonding and shear deflections of plastic materials.

In Italy, the broad use of balconies, cantilevers, and curved beams results in the development of critical torsion stresses in many situations. So much so, that where there are no limitations on bond stresses in reinforcing steel, the requirements for torsion reinforcing are very rigid. Balcony structures in theatres are commonly supported on curved beams, so that torsion forces produced by the cantilever are balanced by those developed in the curved beam. The total torsional resistance of a beam system is often determined in the office, just as described by Professor Zuk.

Professor Nervi has used model analysis on most of his major projects, and, as a consequence, his computations for complex structures are rather straightforward. He also makes full-scale load tests on elements before they go into a structure, which allow architectural as well as structural improvements at the start of construction; extensiometer points are built into the finished structures so that they be "load tested" during actual use.

The use of folded plate—actually wrinkled plate roofs—is not uncommon in Italy, and its selection is usually based on simple table-top tests. Complex "wrinkle" patterns are folded up in ordinary paper, and then "finger loaded," showing the relative merits of each pattern and allowing the architect to make a balanced choice of design, which is then more accurately analyzed by either model or mathematical analysis.

The use of cardboard models as described by Professor Zuk for the analysis of arches and rigid frames is particularly helpful for preliminary designs; and although the column analogy method may be faster in some cases, models show the relative merits of different forms in a way that is more meaningful to architects. The use of wire models to determine support locations for continuous beams can be very useful in most of our structures. Model analysis allows the architect to evaluate how his ideal form functions, and thus leads him to more valid and honest forms without limiting his freedom of design.

DR. PAUL GUGLIOTTA
New York, N.Y.

Dear Editor: I have read Professor Zuk's article with great interest. In our office, we frequently become aware of the limitations of our structural analyses. Indeed, an architect cannot and should not be limited in the possibilities of defining spaces and realizing their form by tables, standard engineering technology, current practices, budgeting instructions, etc.

It is equally true that professional responsibility demands—production and economic considerations notwithstanding—that investigations of problems at the architectural level not be abandoned. Too often, in the process of design, conceptual ideas are not sufficiently explored at the structural, dimensional level, with results consequently being hurried and immature. Working with table-top models provides an architectural office with an important means of perfecting the necessary structural sensitivity.

We have been experimenting, in a limited way, with plastic and wire models, using fleximeters. In this way, we have been able to better evaluate various structural components that otherwise might not have been considered for future development.

Our experience leads us to make the following suggestion: Some architectural schools are now incorporating institutes for research; they could be equipped with facilities and testing equipment of a simple nature for the construction and testing of experimental models. They could also incorporate in their facilities simple computers capable of rapidly producing calculations necessary for a fair consideration of structural components. This could prove a great asset to the experience of architectural offices, since, by working in close contact with these institutes, they could benefit in terms of increased accuracy, competence, and saved time.

Dr. Zuk's explanation of his experiments encourages us to carry our procedures further for the analysis of structural components. The above suggestion is meant to complement Dr. Zuk's advice as to ways in which we can better fulfill our professional task.

R. GUIRGOLA
Philadelphia, Pa.

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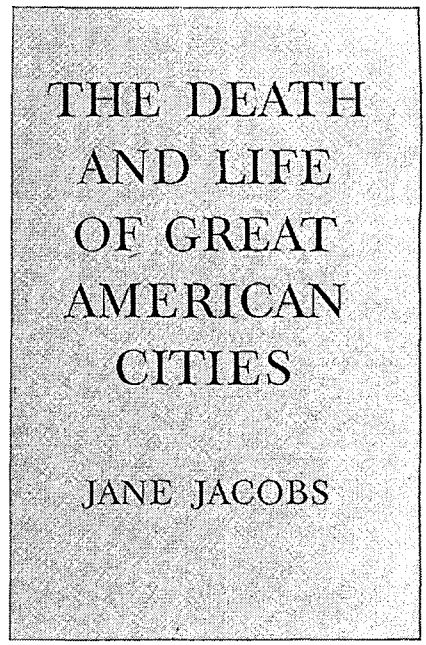
Abattoir for Sacred Cows



Because of the importance and impact of this controversial book, P/A has invited comments from a number of persons involved in planning and urban design. THE DEATH AND LIFE OF GREAT AMERICAN CITIES *by Jane Jacobs is published by Random House, 457 Madison Ave., New York 22, N.Y. (1961, 458 pp., $5.95)*

CHARLES ABRAMS, *Housing Consultant, Visiting Professor at MIT, and President of the National Committee against Discrimination in Housing:*

For years, the prevailing theme of city-planning theorists was that the big city was doomed, and that slums, high density, and disorder would bring it to its final convulsion. While it was still wincing and writhing in its agonies, the theorists were already baptizing its successors: the new town, the self-contained community that creates its own environment, the city beautiful, and the new neighborhood unit. As if to speed the city's demise, the Federal Government consigned virtually all Federal aids to suburban adventures, leaving the city to starve as well.

Despite Federal neglect, traffic strangulation, and the flight of the middle class, the city somehow has managed to survive. It has carried on as the situs of trade and education and has maintained its ancient role as a refuge for oppressed minorities as well as for the bored, the deviate, and the aging. All the indications are, in fact, that it will enjoy long life if for no other reason than that there are still people who see its values and are drawn to it by an indefinable magnetism that most suburbs have not yet been able to claim.

With fact and eloquence, Jane Jacobs has come to the big city's defense with an exposition that would make E. B. White, O. Henry, and Meyer Berger forever sing her praises. Whether one agrees with Frank Lloyd Wright that the city is "a menace to humanity" or with H. L. Mencken that "it is the icing on the pie called Christian civilization," Mrs. Jacobs sees her primate cities roaring with life and blazing with hope.

She has drawn the fire of the planners but it only lights up her torch. Having produced an abattoir for sacred cows, one should expect some beefing. She has been charged with bushfighting and inaccuracy, but what are a few technical errors when a writer defends stores in housing projects, the virtues of concentration, and the sidewalks of New York.

No doubt the very diversity she espouses needs Radburns as well as Hudson Streets, and suburbs for those who shun living inside the whale. Perhaps, too, some of the counts against Lewis Mumford and Catherine Bauer might be dismissed upon a full airing of the charges. But Jane Jacobs has launched at long last a new Ashcan School of Planning that will have as much impact on urban thinking as the Armory Show had on art. Through her creative ferment, one can see again the massive ensembles and the great perspectives without obliterating the small brick houses or the sweet incense from the city's flesh pots and espresso. And this is enough to make her book worthwhile and even memorable.

HENRY S. CHURCHILL, *Architect and Planner:*

Jane Jacobs says out loud what many of us have been saying under our bad breaths.

By the time this comment appears, the major reviews will have driven home the faults and virtues of this exceedingly important book. I need not repeat them.

The fact remains that the "planning process" has not been very successful. Broadly speaking, the planning of New Towns and satellites has not changed much since Letchworth and Radburn. More seriously, the planning (or re-planning) of existing urban centers is also based on concepts that have not been re-examined. Her attack on this blindness and rigidity constitutes the great merit of Mrs. Jacobs' book.

For surely it must be plain by now that the major "axioms" of planning need to be reviewed in the light of what has actually been accomplished in the last 50 years, particularly categorical zoning, the "comprehensive" plan, and destructive urban "renewal." It would be well to start looking at the successful elements of our cities, in terms of people, not theories. What makes a good CBD a good CBD? Something might be learned.

Our cities, lured by the fancied profits of huge real-estate speculation (one serious omission from the book is an exploration of the fantastic financial and fiscal abuses that surround renewal), have chosen the planners' method of surgery by hacksaw and butcher knife rather than the slow method of diagnosis and homeopathy. The "renewed" cities are bleeding copiously, and now the architects have been called in to try to stanch

Continued on page 200

Communications equipment built into wall of conference room at Panhandle Eastern Pipeline Co., Kansas City, Mo. Paneling is Weldwood Architectural Paldao. *Architect:* Earl D. Clark, Jr., Kansas City. *Designer:* Joseph A. Peretti, New York, N. Y.

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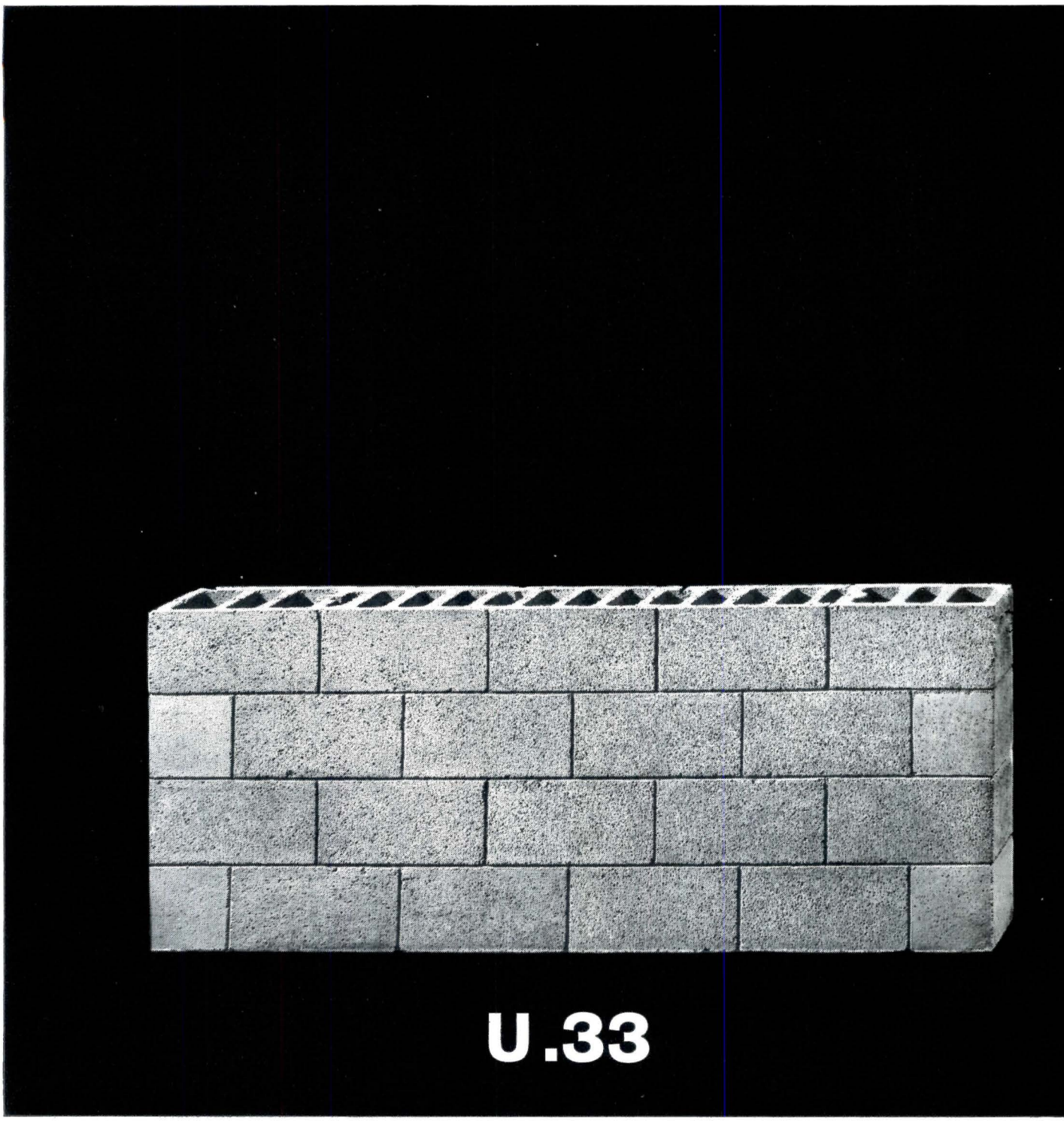

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the wound with aesthetic band-aids, sterile and easy to apply. They will not succeed.

LEONARD K. EATON, *Associate Professor of Architecture at the University of Michigan:*

Here is a curious book. The author, a passionate lover of large cities, has launched a forthright attack on contemporary planning practices, slum-clearance programs, and the entire set of ideas stemming from Ebenezer Howard, Patrick Geddes, and Lewis Mumford. The basis of her onslaught is a close observation of the actual operation of cities in terms of sidewalks, streets, parks, business and industrial districts, and so on. Viewing the city primarily as *process*, she has much that is valuable to say about the real—as opposed to the theoretical—functioning of all these elements.

As a long-time student of the urban park, I can report that I have rarely read anything more stimulating than her chapter on this subject. At the same time, I must say that she totally misconstrues 18th- and 19th-Century concepts of nature, which were at the bottom of so much American park development. The reason for this difficulty is easily seen. Mrs. Jacobs has written a classic example of the angry book; she is so carried away with her argument that time and again her emotions distort her judgments. Hence we have a volume crammed full of brilliant insights and wrong-headed notions. If used properly, however, her book will be a tonic to the planning profession everywhere, serving to make planners look much more carefully at the environments they are changing. In one respect, though, the book hardly seems to be aimed at architects: it contains not a single picture.

ROBERT L. GEDDES, *of Geddes-Brecher-Qualls & Cunningham, Architects:*

Jane Jacobs has put together a mixture of many things. The mixture does not allow for an easy assessment, because it contains both small and large, fair and unfair, valid and invalid. The book is too personal, too belligerent. Nonetheless, I believe that it will take its place as a landmark in the literature of architecture and urban design, beside the work of Ebenezer Howard, Lewis Mumford, and Le Corbusier. She has put forth a strong image of the world—as it really exists and as it can be built—that will profoundly affect the way we design.

For me, the central argument of the book is clear, although the parts are loosely assembled around it. The long-term importance of the book will be due to its many ways of establishing the following point:

"To see complex systems of functional order as order, and not as chaos, takes understanding. The leaves dropping from the trees in the autumn, the interior of an airplane engine, the entrails of a dissected rabbit, all appear to be chaos if they are seen without comprehension. Once they are understood as systems of order, they actually *look* different."

PERCIVAL GOODMAN, *Professor of Architecture at Columbia University:*

This is the kind of book that suggests discussion in two columns: one labeled right, one wrong. Jane Jacobs attacks city planners, architects, administrators, private enterprise, public works, reformers, utopians, bankers. She finds all city-planning theory of modern times in error, whether it favors garden cities, cities beautiful, skyscrapers, or detached single-story houses. She italicizes the sentence, "The city cannot be a work of art." The end result—in spite of excellent observations, reasonable recommendations, and a good heart—is that Jane Jacobs' book suggests we leave everything pretty much as it is except for painting the walls. And if we do not have

Continued on page 202

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Continued from page 200

the money to do it, the Government should lend it to us.

Jane Jacobs is no mere theorist: it was she who led the fight to "save" the West Village. But her position was stated when *The New York Times* reported her as saying that "in addition to a well-knit neighborhood organization, the Committee had been successful because it had refused to discuss any planning whatsoever with the Planning Commission." I would maintain that planning was omitted from discussion not because the single goal of the Committee was to remove the "blighted" description from the neighborhood, but rather because the existing plan, such as it is, is all the plan Mrs. Jacobs wants.

It is unfortunate that Jane Jacobs uses a bludgeon as her only weapon. It is equally unfortunate that she has no appreciation of the great figures in modern city-planning history and finds no difference between a Robert Moses and a Le Corbusier. When she is right, she is very, very right; but when she is wrong, it is horrid.

KEVIN LYNCH, *Associate Professor of City & Regional Planning at MIT:*
THE DEATH AND LIFE OF GREAT AMERICAN CITIES is a brilliant and distorted book. It is distorted because it creates an imaginary world of city planners whose opinions are pedantic beyond contempt, and because it campaigns for a very restricted kind of urban environment. It assumes that buildings and streets have a very singular power to change people's lives. It is brilliant precisely because this narrow view is a passionate view, and draws its substance from observation in detail and at first hand. The new insights that crowd the book are fresh contributions; the distortions will soon enough be beaten out in debate. A book with something new is much more useful than one that is correct.

EUGENE RASKIN, *Associate Professor of Architecture (on leave), Columbia University:*
Jane Jacobs has done the unforgiveable. With magnificent unconcern for the sacred mythology of planning expertise, she has dared to point a steady finger at reality. In so doing, she has, of course, placed herself in the company of those prophets and sages who all through the ages have been called dangerous, mad, or both. She will receive her share of such labels, and will wear them proudly, I am sure.

I have no fault to find with her rea-

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Continued from page 202

soning, which is brilliantly clear and inescapably sound. What I do wonder about is the capacity of our IBM-ridden culture, with its punched-out answers to taped questions, to produce enough dedicated, intelligent, imaginative, and sensitive planners to implement the processes Mrs. Jacobs sets forth. A world whose most intense endeavors are at the moment devoted to its own eradication is hardly fertile ground for such confidence.

Nevertheless, what Jane Jacobs says must be said, and I am filled with delighted admiration for her skill and courage. The appearance of her book should be the occasion for the only urban function she fails to mention—dancing in the streets.

CATHERINE BAUER WURSTER, *Department of City and Regional Planning, University of California:*

Jane Jacobs' book is a brilliant personal diatribe, extraordinarily perceptive and illuminating within her narrow range of concern. The dynamics of "diversity" in old central-city districts has never, I think, been analyzed more sharply or creatively. The case against carving up cities into specialized land-use enclaves is argued superbly in social, economic, and aesthetic terms of more general significance than her examples indicate. Her blanket indictment of current renewal programs is exaggerated but salutary, and some of her recommendations (e.g., for more flexible housing subsidies and for effective Governmental co-ordination at the district level) are excellent.

Her intense emotional bias, however, leads to fundamental fallacies in diagnosis. To blame everything she dislikes on the "planners" is demagogic nonsense, when what she is really battling are some basic trends and forces of our times which cannot be disposed of quite so easily.

She makes a splendid case against overstandardized, overspecialized "projects," for instance, but this trend is inherent in modern large-scale building operations and their accompanying bureaucratic procedures. The more sensitive planners have long been trying to counter the boring and brutal effects of these rigidities, and only welcome her able assistance.

She is also against the historic process of neighborhood succession and outward flight. Her primary concern is to stabilize and diversify certain districts whose occupants are already on the way up and capable of gradually "unslumming"

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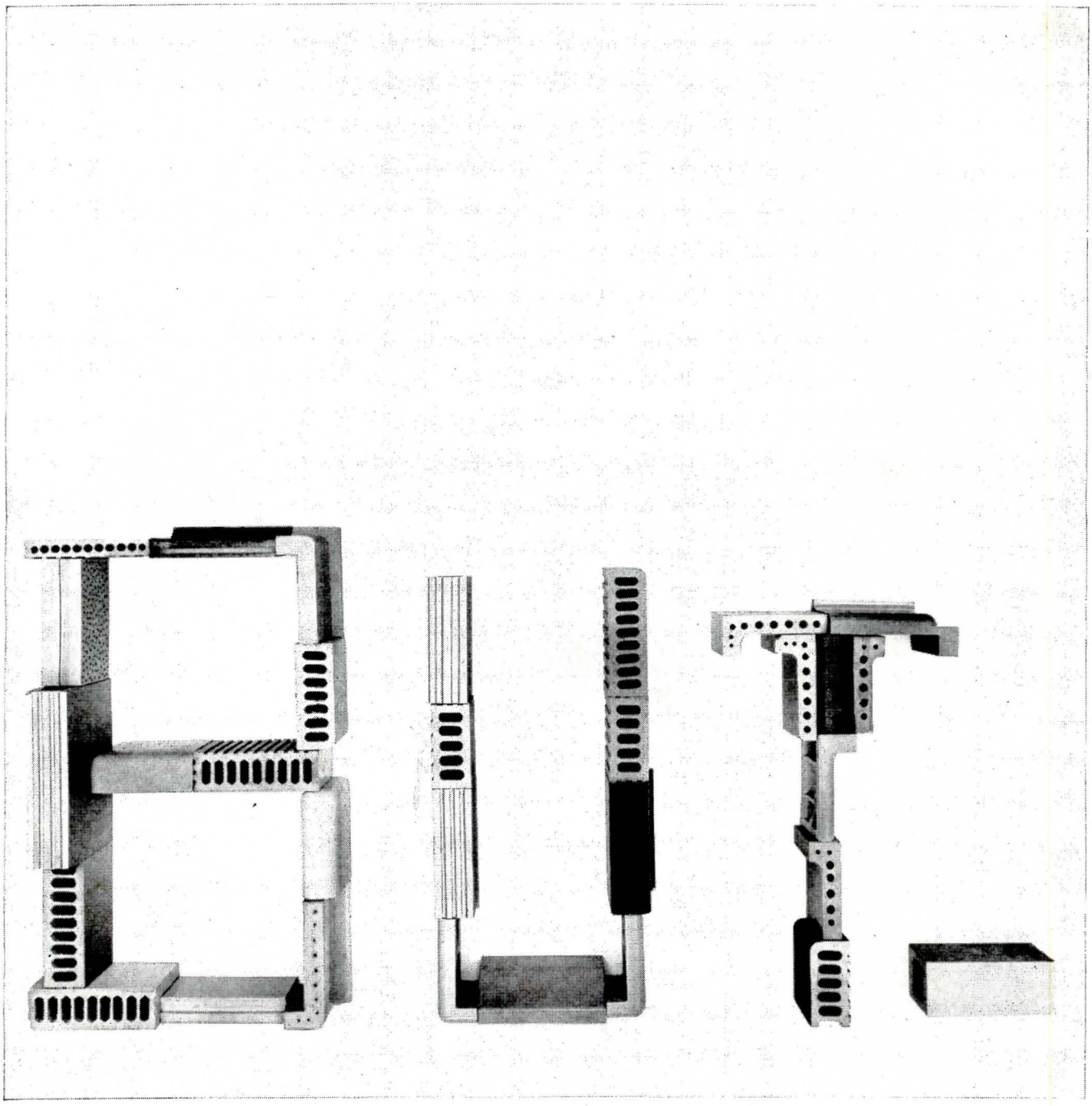

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themselves. The arguments are persuasive, but their application is very limited (even apart from the fact that her particular examples, Greenwich Village and Boston's North End, have rather special qualities for this purpose). With new and severely disadvantaged urbanites still pouring into the worst old districts, the crucial slum question is how to solve their difficulties of settlement, adjustment, and effective integration better and quicker than we have in the past. And her remedies will not solve this problem, any more than wholesale redevelopment now does.

Mrs. Jacobs' extreme pro-city bias is at the opposite pole from the equally narrow suburban *idolum*, and this gives the book its significance. But she simply disregards the entire gamut of middle-class values related to home and family life, and these are too strong and universal in our society to be successfully ignored. From this viewpoint, she has hardly glamorized the joys of high-density heterogeneous living in Great Cities, with her detailed argument that the primary principle for improving such areas must be safety from personal violence—mugging or worse. The need for such a stern and primeval planning doctrine is unlikely to persuade many families to exchange a suburban nest for the excitements of the wicked city.

There is also a strong measure of nostalgia in the new intellectual affinity for crowded old districts and urban diversity, a belated sentiment for Old World peasant cultures which are bound to die out, a romanticizing of what Herbert Gans calls "the street life of the deprived." Urban values must be regained, but in different terms, and in Suburbia itself as well as in central renewal schemes.

The Unvarnished Truth

FRANK LLOYD WRIGHT: A BIOGRAPHY *by Finis Farr. Published by Charles Scribner's Sons, 597 Fifth Ave., New York 17, N.Y. (1961, 293 pp., illus., $5.95)*

For those who followed Finis Farr's book in serial form last year in *The Saturday Evening Post*, the curious thing about the book is the change in the nature of the illustrations. The serialized version, in four installments, openly reveled in the irregularities of Wright's life and was embellished with streamer headlines from old Chicago newspapers, and vintage photographs (or candid snapshots)

Continued on page 210

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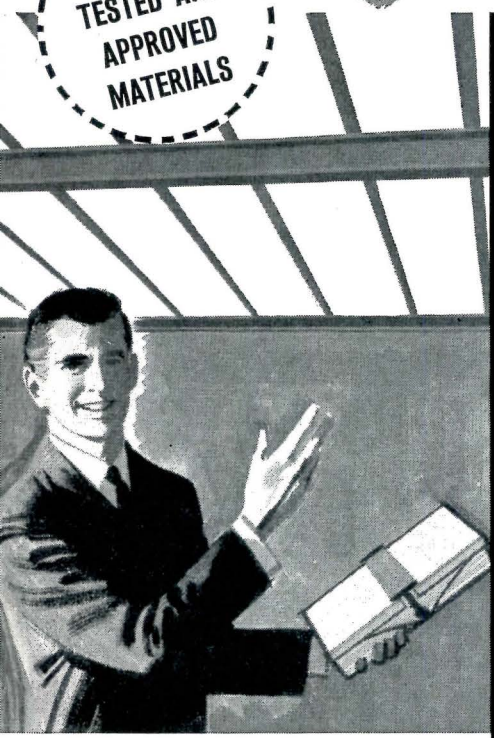

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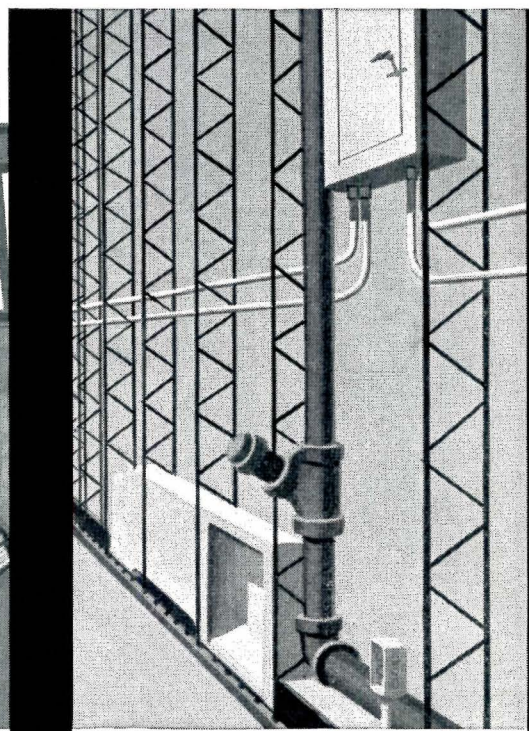

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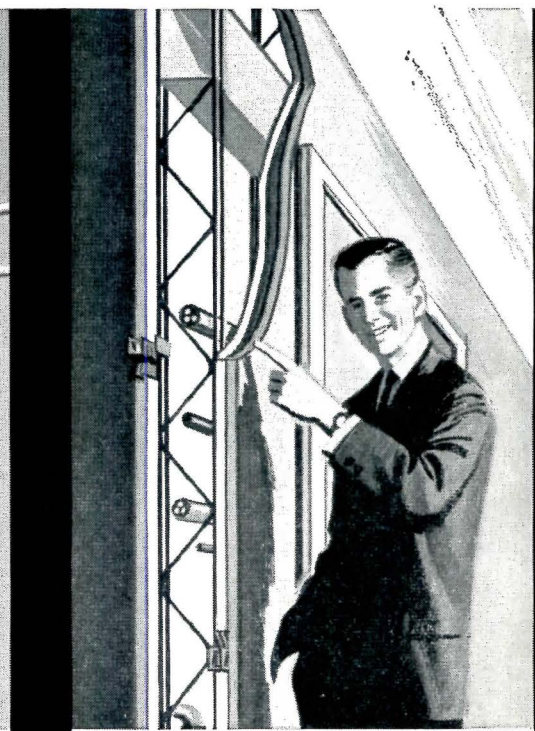

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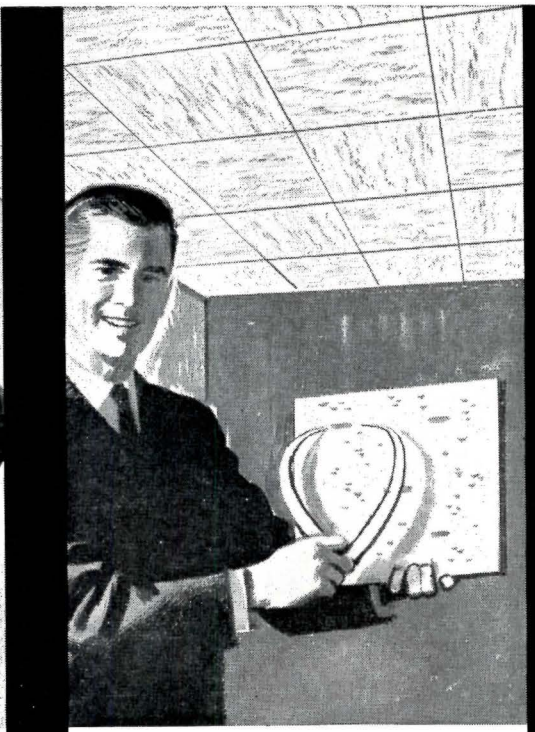

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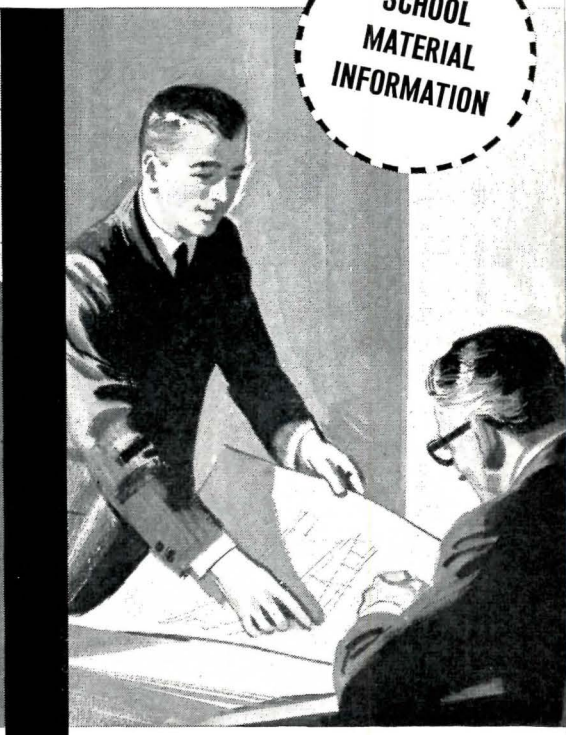

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Continued from page 206

of the celebrated cast of characters: Wright, the first Mrs. Wright, Mamah Borthwick Cheney, Miriam Noel Wright, the widow Olgivanna, and all the colorful entourage. The book, on the other hand, gives us one photograph of Wright as the frontispiece, and about 40 photographs of his architecture. Not one snapshot of Mamah, not a single headline. It therefore presents itself soberly as another of the series of analyses of Wright's work that has blossomed forth since his death. The reader then finds it is the same scandal-flavored, racy account—but in masquerade. Why was this done? Who could have thought that so superficial a disguise would have altered anything?

This is an important point. Farr's book is a biography, not a scholarly evaluation of Wright's art, and it is, furthermore, one that seeks to tell the unvarnished truth about his life. As such, it has a certain value in the accumulating literature about the Wizard of Taliesin. We are still grateful to Vasari for his accounts, highly colored as they may be, of the lives of many of the great artists of the Italian Renaissance. Facts are facts, and a later generation may well be grateful to Farr for his painstaking research into the more elusive and intimate aspects of the life of our own native genius. These things tend to fade rapidly into myth or nothingness, and here we have the hard facts marshaled and preserved in print. (When I read it in its serialized version, I was astonished and impressed by the quantity and apparent accuracy of its biographical detail.) And it is an almost incredible story of one man's vitality emerging time after time from a morass of error, spite, and vulgarity. What gives the tale a truly dramatic quality is the fact that the error and vulgarity were sometimes of Wright's own making.

Of course, the story is an old one, first told by Wright himself in his autobiography of 1932 and later embroidered in all the other books of reminiscence that he wrote. Naturally, this does not diminish Farr's accomplishment. We always need the objective view of the interested outsider, and it is fascinating to read the two books—the autobiography and the present biography—side by side, as it were. The picture sharpens and grows in detail, as if seen through a stereopticon. This increased comprehension of Wright's life is especially strong in those passages in each book having to do with the turgid complexities of

Continued on page 216

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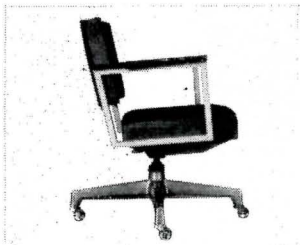

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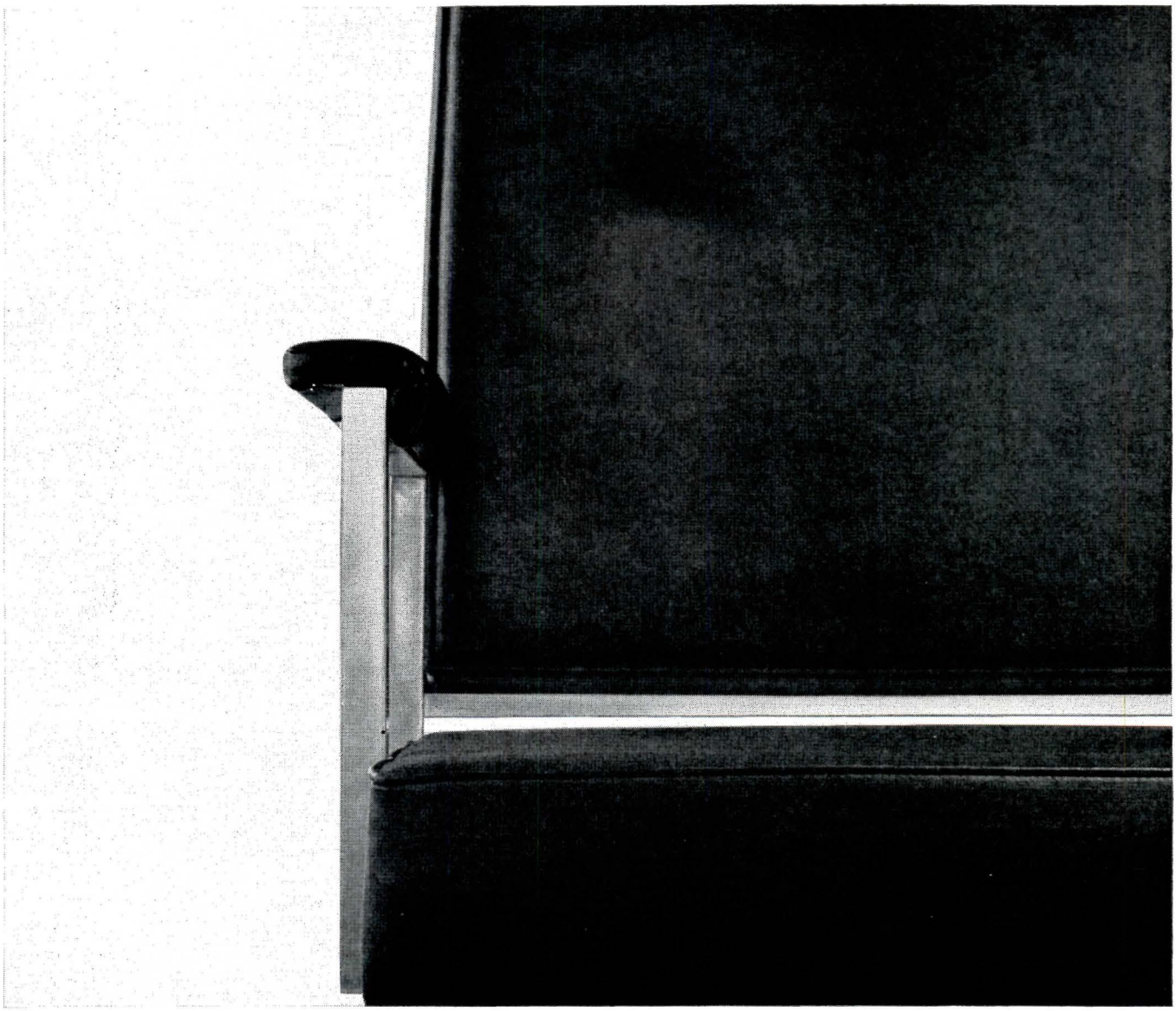

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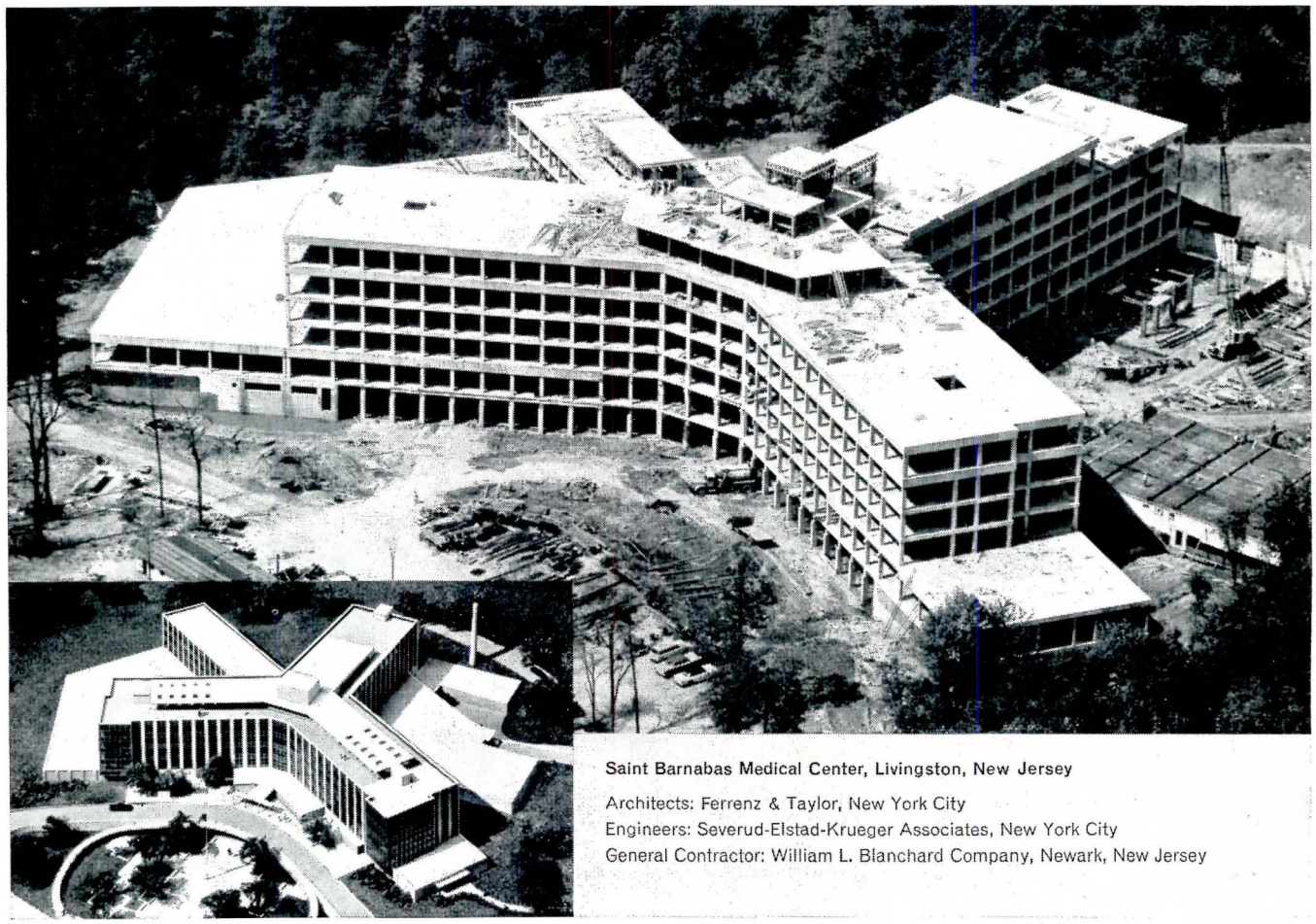

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Engineers: Severud-Elstad-Krueger Associates, New York City
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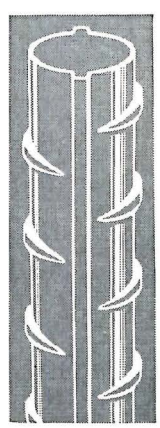

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OFFICE BUILDINGS

by LEONARD MANASSEH and ROGER CUNLIFFE

1962, 216 pages, 8¼ x 10¼,
approx. 200 illustrations, $12.75

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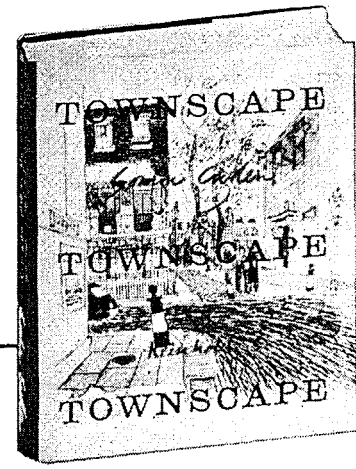

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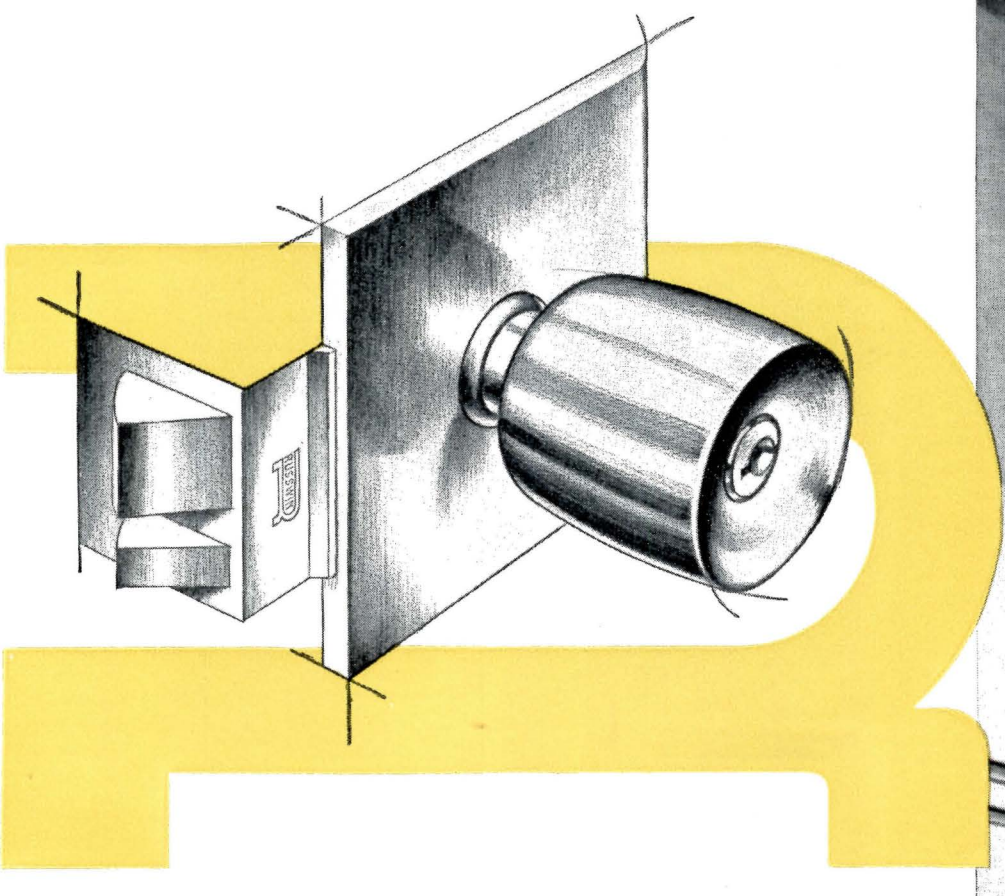

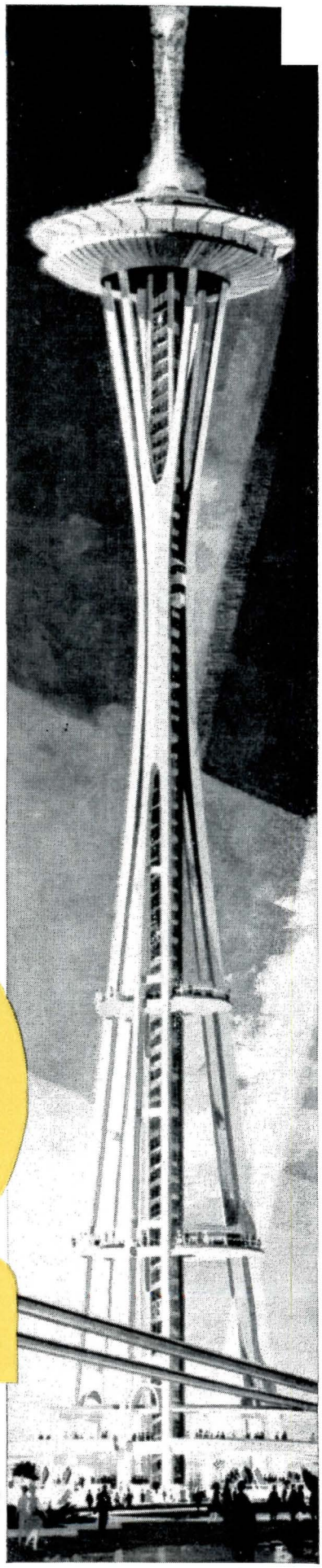

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Continued from page 210

Miriam Noel's long-drawn and masochistic vendetta. Wright gives it to us in impressionistic sentences. Farr lays it right on the table, episode by appalling episode, with the cold factuality of a police report.

Another segment of Wright's life is also clearer to me, thanks to Farr. I refer to those patrons and friends, especially Darwin Martin, who always appeared to stand by firmly when Wright was in trouble. How does an architect surround himself with such pillars of support, and precisely how do the pillars behave in times of crisis? Farr tells us. But in this respect he does not tell us enough. Indeed, he could not within the limits of this biography. But Wright's career, like Antoni Gaudi's, is so dependent upon the momentum given it right from the start by convinced and liberal patrons that, to understand him, it becomes vital to know not merely the logbook of his own life but the personalities and motivations of those like Darwin Martin who made his career, as well as his personal welfare, possible. We await the biographies of Martin, Edward Waller, William Winslow, Mrs. Avery Coonley, Aline Barnsdall, and the dozen others who had the courage and faith to invest their goodwill and energy in Frank Lloyd Wright.

To return to Farr's biography, its value, then, is its journalistic reality; it gives us Wright as he appears to a fascinated but thoroughly disillusioned city-room editor. I have no idea whether Farr ever functioned in this capacity, but it is significant that he is described on the dust jacket of the book as "a journalist." I have respect for the detailed comprehensiveness of his files, and a good deal of curiosity as to where he got some of his entries. He wisely avoids dependence upon reconstructed conversations that he could not possibly have heard, but when he does occasionally employ the device, it has the ring of truth. The day after the holocaust at Taliesin in 1914, Wright encounters, horribly, Edwin Cheney. Wright gropes for something to say. "It's all right, Frank," said Cheney. "Thank you, Ed." "Goodbye, Frank," said Cheney, and continued on his way. If this was not the actual dialogue, it is good artifice; if it was, where did it come from?

Good journalism. But one must not expect to find in Farr's biography any critical discussion of Wright's architecture. It is not there, because the author makes no effort to include it. One won-

Continued on page 222

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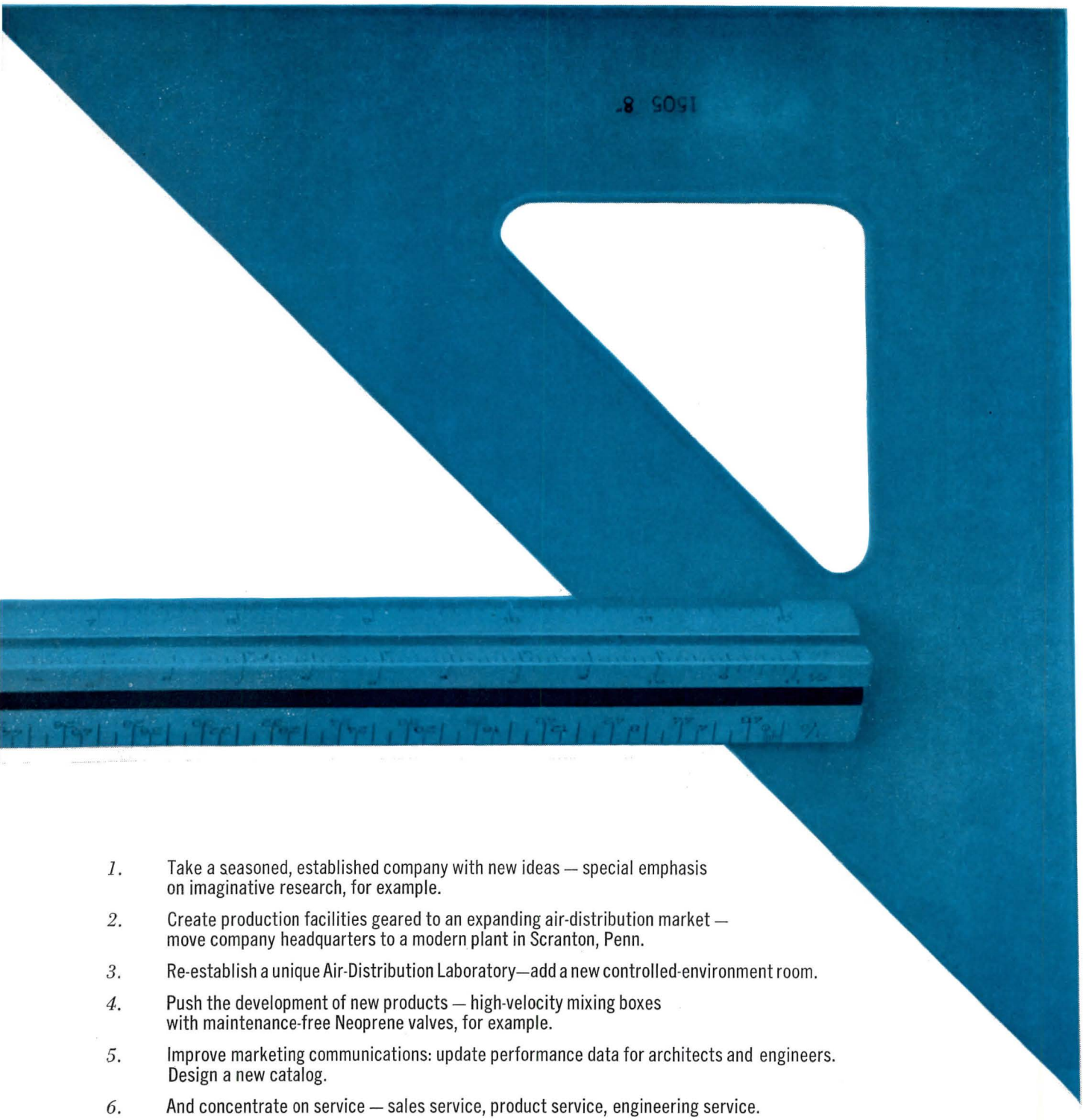

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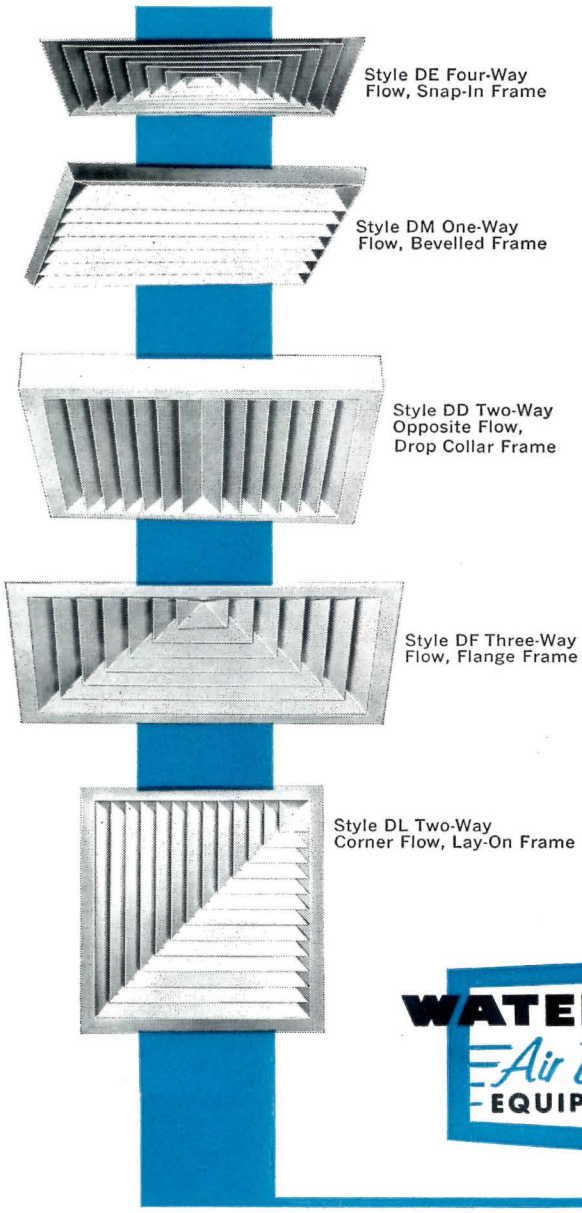

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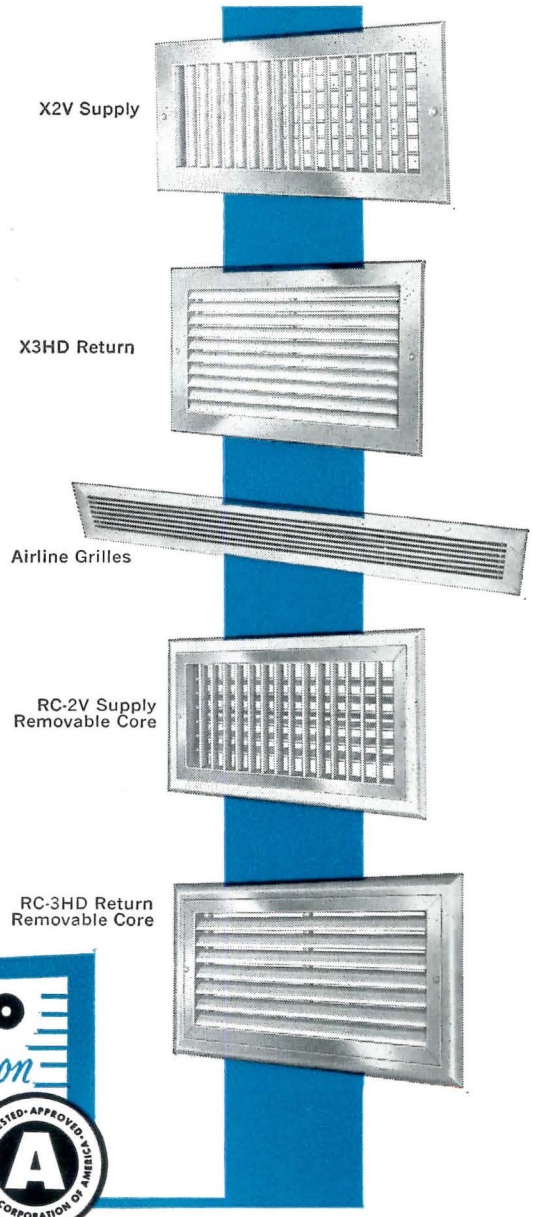

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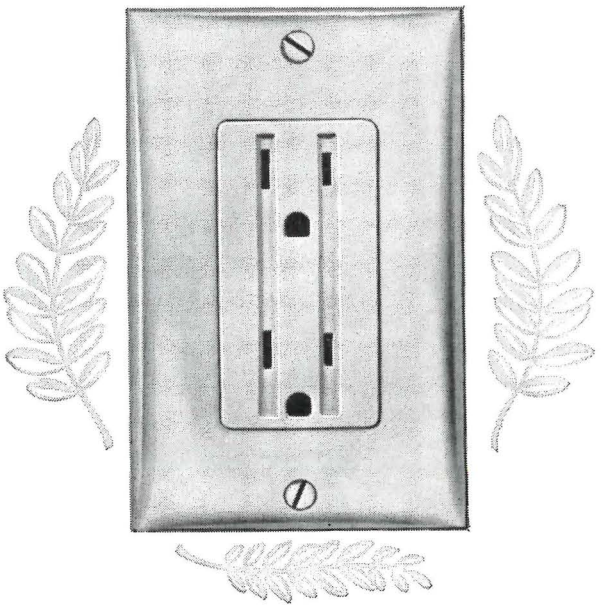

Continued from page 216

ders, then, why one is presented, *passim*, with some 40 illustrations of Wright's buildings and no pictures of all the people one is reading about. Turn again, then, to the four installments in *The Saturday Evening Post*, if you are lucky enough to have them, or know someone who has. There you will see a presentation which is scrupulously scandalous and completely absorbing and perfectly in harmony with the nature of Finis Farr's contribution to our knowledge of Wright.

GRANT MANSON
Professor of Architecture and Fine Arts
University of Southern California
Los Angeles, Calif.

Textile Book of Knowledge

AF ENCYCLOPEDIA OF TEXTILES *by the Editors of* American Fabrics Magazine. *Published by Prentice-Hall, Inc., Englewood Cliffs, N. J. (1960, 702 pp., illus., $39.50)*

This book assembles a tremendous amount of information concerning one of man's basic industries, which, nevertheless, seems unfathomable to almost any but those who have been actually involved in the creation of textiles. This is the only comprehensive single-volume source book for this diffuse field and is, indeed, of encyclopedic proportions; however, it is not arranged in the simple alphabetical format of the usual encyclopedia. Instead, directed as it is "to the men and women in this field . . . for every person concerned with the production and marketing of fibers and fabrics, for the professions of design and advertising which service the textile industry, for the teacher and for the student," the encyclopedia is divided into seven sections: (1) The Textile Fibers, (2) History and Origins, (3) Textile Design, (4) Manufacturing Processes, (5) Fabric Finishing, (6) Specialty Uses of Textiles, and (7) Textile Definitions.

Following many of the subsections of each of these major divisions is a glossary. For instance, after Man-Made Fibers, Cotton, Wool, and Silk—four of the subsections under "The Textile Fibers"—there is a glossary (several are called "lexicons") of terms pertaining to each fiber. Similarly, there are separate glossaries for "Spinning" and for "Weaving" under the major section devoted to Manufacturing Processes.

This arrangement should make the encyclopedia eminently helpful to manufacturers in planning a new line of

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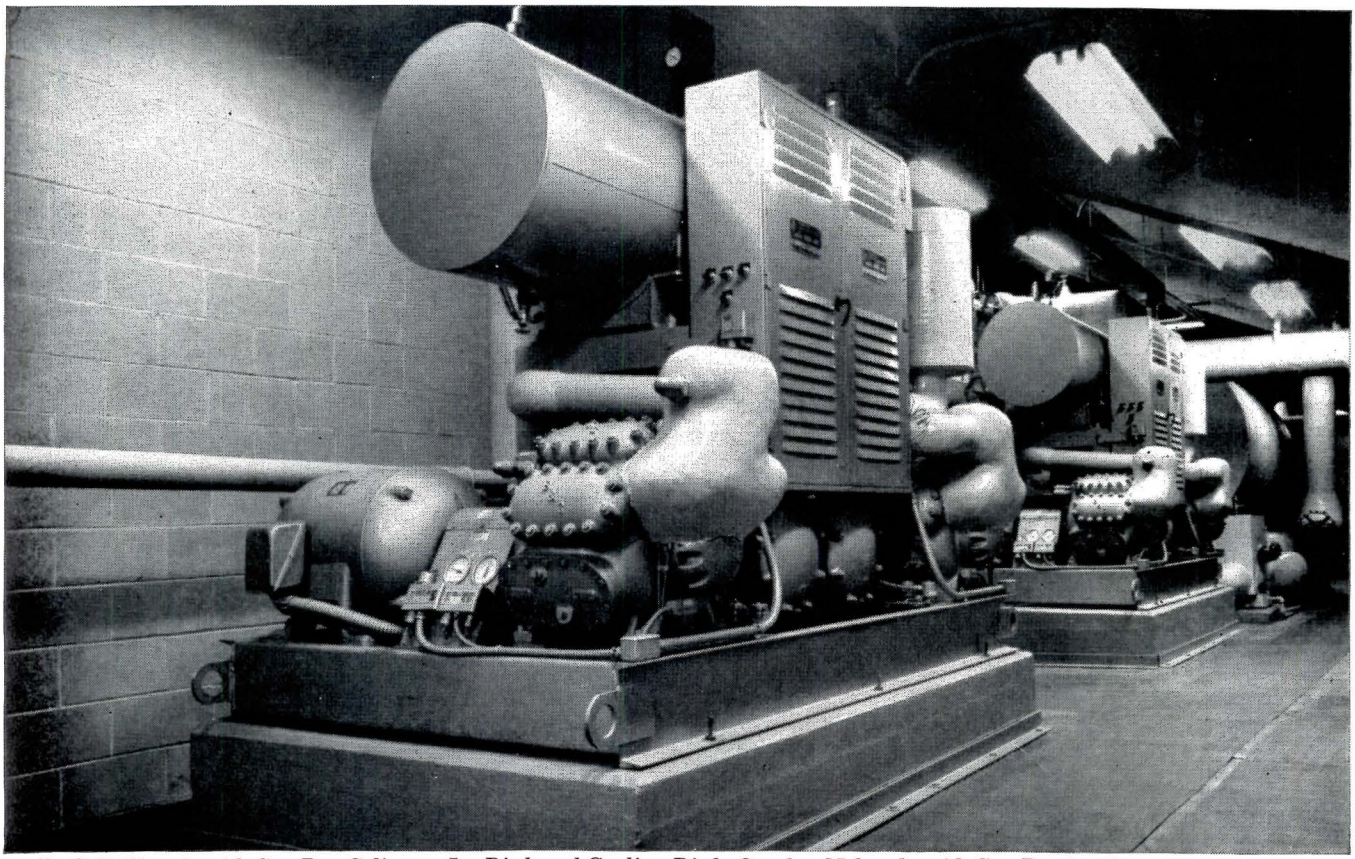

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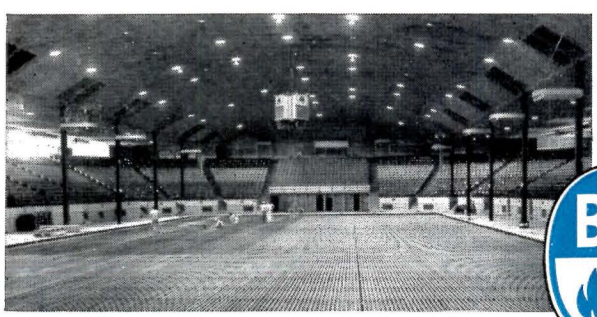

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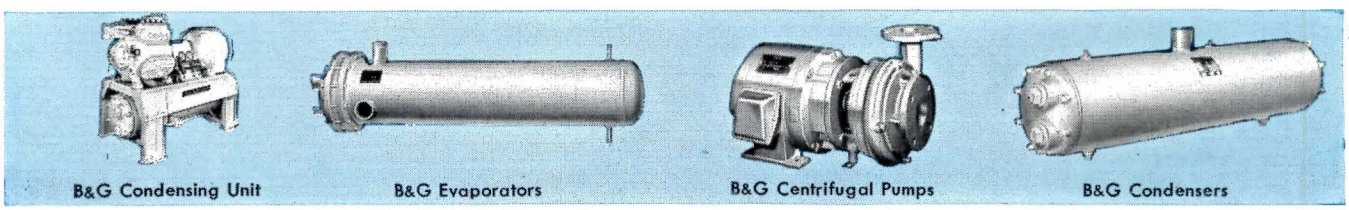

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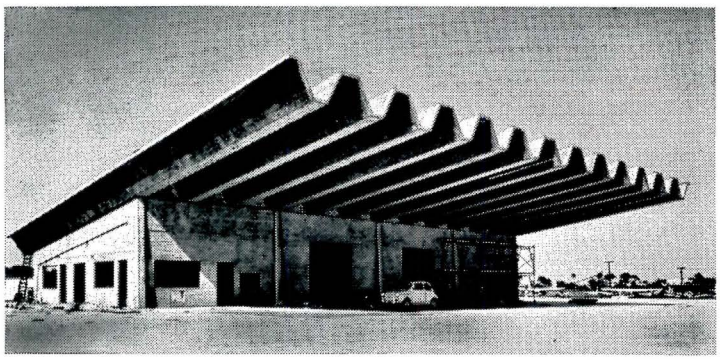


Concrete framing, masonry and the folded plates in just-completed condition before painting. Placing the plates required about 1 hour of labor per unit. Plates were anchored with weld plates and then tied together with poured concrete joints.

5. Foot Cantilev

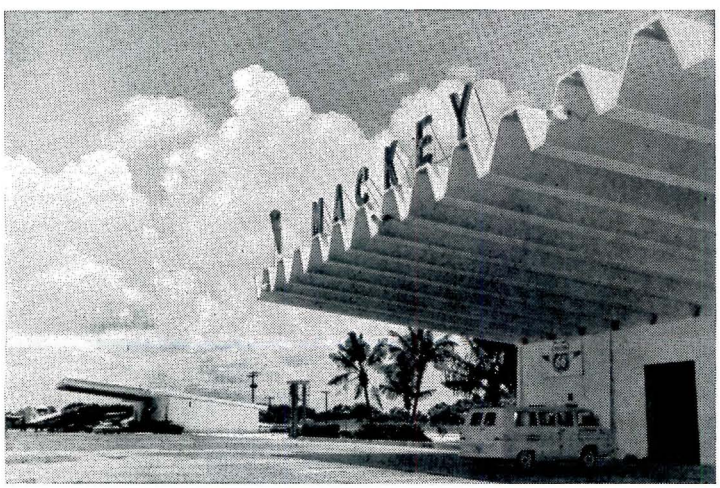
with Concrete Folded Plates

Cantilevered nearly half their 103′ length, giant precast concrete folded plates dominate Mackey Airlines' new service facilities at Broward Air Terminal. They provide unobstructed inside floor area as well as a large support-free canopy for outside aircraft maintenance.

In the manufacture of the folded plates, R. H. Wright, Inc., used Lehigh Early Strength Cement. Consistent use of this cement in their precasting operations helps them attain maximum production efficiency through early removal of units and quick re-use of forms.

This is typical of the advantages of Lehigh Early Strength Cement in modern concrete construction. Lehigh Portland Cement Company, Allentown, Pa.

A single mobile crane places one of the folded plates. The plates were cast at R. H. Wright's Deerfield plant and trucked to the job site. The concrete frames visible in this picture were cast at the site and raised into place. Beams between frames were cast in place.



There is a total of 25 plates in the two buildings. Each plate measures 103′ long, 8′ 1½″ wide, and 3′ 9⅛″ deep. Note plane being serviced under canopy of far building.

Architect: George Storrs
Engineer: Walter C. Harry & Associates
Manufacturer of Folded Plates: R. H. Wright, Inc., A Subsidiary of Houdaille Industries
Erection of Folded Plates: Erectors of Florida, Inc.
Concrete Units: Gillis Supply, Inc.
All of Ft. Lauderdale, Florida
Contractor: John B. Orr, Inc., Miami, Florida

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Continued from page 222

fabrics, and to students of textile design and of the industry. To those who do not want to use the book as a textbook or guide, however, the format is cumbersome: considerable thumbwork is involved in finding the information desired.

However, the *AF Encyclopedia of Textiles* offers a great variety of basic information that has never before been available in one volume. Nearly everything one might want to know about textiles is here—even listings of the important textile collections in American museums, and listings of the specialized textile schools in this country, with data concerning admission requirements and curricula.

For anyone who must specify fabrics for interior design, this volume provides a complete technical background that may have been lacking.

C. R. S.

OTHER BOOKS TO BE NOTED

AIA Building Products Register (1962 Edition). Edited by Robert Berne. American Institute of Architects, 1735 New York Ave., N.W., Washington 6, D.C., 1961. 427 pp. $25

To be reviewed.

Art Treasures for America: An Anthology of Paintings and Sculpture in the Samuel H. Kress Collection. Charles Seymour, Jr. Phaidon Publishers Inc., 1961. Distributed by New York Graphic Society, Greenwich, Conn. 242 pp., illus. $12.50

Representative works from the outstanding collection that has just been formally donated to 44 American museums and universities. Author is Professor of Art History at Yale.

The Best Remaining Seats: The story of the Golden Age of the Movie Palace. Ben M. Hall. Foreword by Bosley Crowther. Clarkson N. Potter Inc., 56 E. 66 St., New York 21, N.Y., 1961. 266 pp., illus. $15

To be reviewed.

Four Walking Tours of Modern Architecture in New York City. Ada Louise Huxtable. Museum of Modern Art and Municipal Art Society of New York, 11 W. 53 St., New York 19, N. Y., 1961. 72 pp. $0.95

The drama of Manhattan's skyline and street scene in vest-pocket size. Some 40 of midtown's most significant buildings—offices, residences, stores, and public structures—are decribed and located.

Pictorial Dictionary of Ancient Rome (Volume I). Ernest Nash. Frederick A. Praeger Inc., 64 University Place, New York 3, N. Y., 1961. 500 pp. illus. $35

First of two volumes surveying all ancient Roman monuments and buildings. Complete details on each work are included, and every extant work is illustrated. Extensive bibliography. Author is Director of the Photo Reference Collection for Roman Architecture at the American Academy in Rome.

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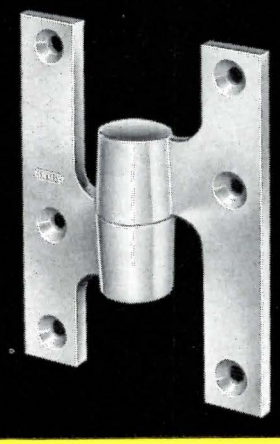

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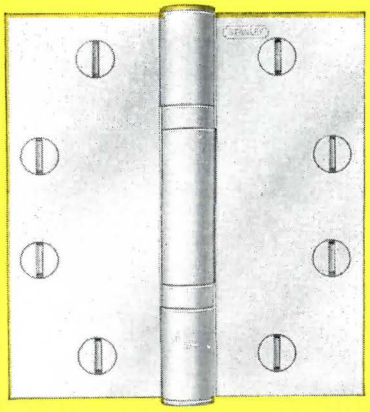

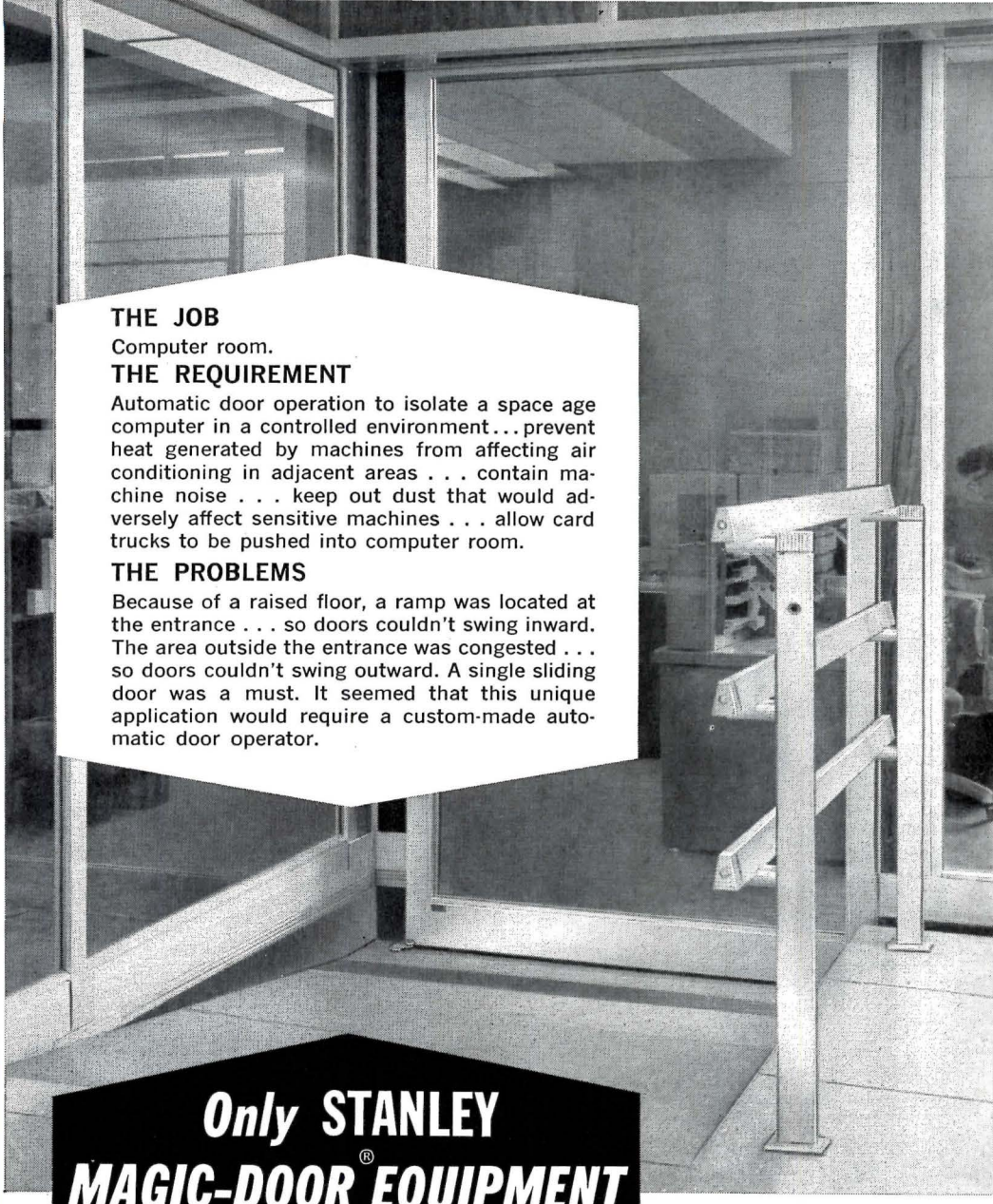

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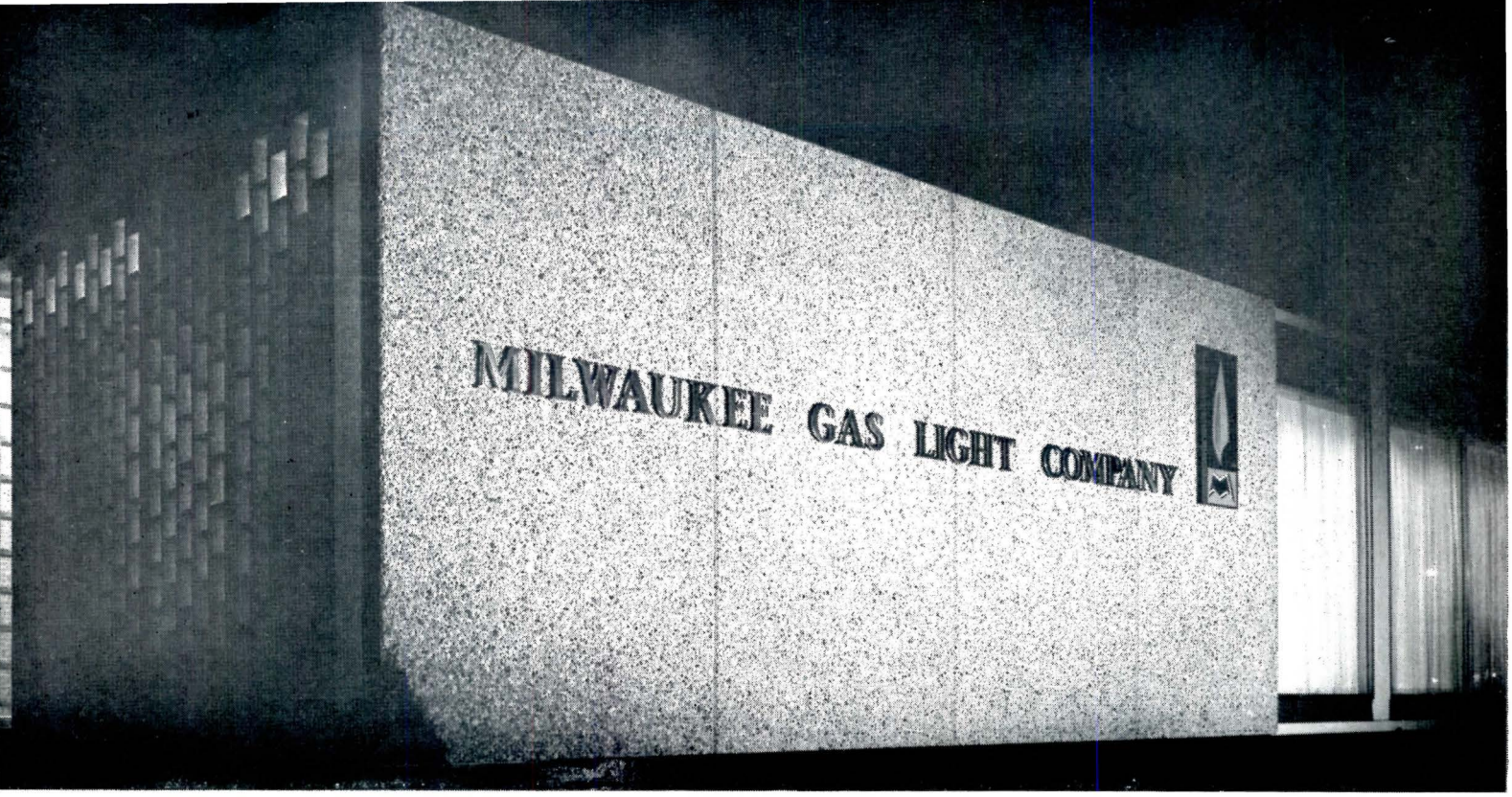

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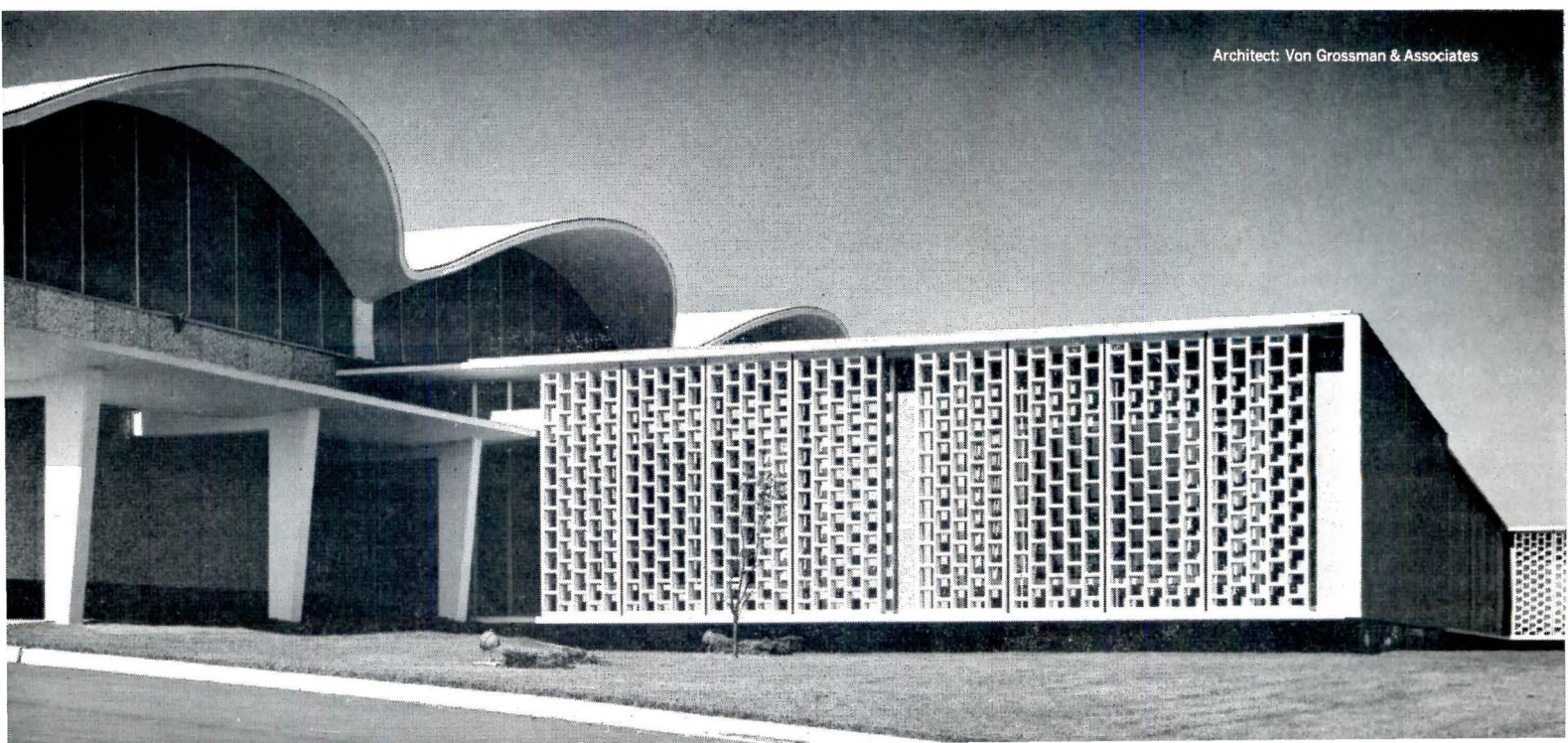

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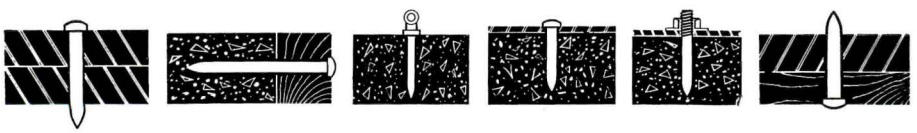

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New Branch Offices

EVERETT, ALVARE, HARKINS AND GILBOY, City-Planners and Engineers, 52 Exchange St., Binghamton, N.Y.

New Addresses

M. MILTON GLASS, Architect & Planner, 31 Union Square, W., New York 3, N.Y. JOSEPH PRAISSMAN, Architect, 428 Market St., Camden 2, N.J.

THE REDEVELOPMENT AUTHORITY of the City of Philadelphia, The Pennsylvania Lumbermens Building, Broad and Walnut Sts., Philadelphia 7, Pa.

New Firms

FERDINAND GOTTLIEB & ASSOCIATES, Architects, 125 Southlawn Ave., Dobbs Ferry, N.Y.

CHARLES J. GREIN, Architect, 7100 Van Nuys Boulevard, Suite 101, Van Nuys, Calif.

JOHN W. JICKLING, WILLIAM LYMAN, principals in firm of JICKLING AND LYMAN ARCHITECTS, 261 Daines, Birmingham, Mich.

MARTIN AND JEN, Architects, 2555 Poplar Ave., Memphis 12, Tenn.

RICHARD H. PEACOCK, Architect, 945 Marion Ave., Cincinnati, Ohio.

FRANCIS A. PISANI, Architect, 50 E. 42 St., Suite 402, New York 17, N.Y.

WARREN R. RICHARDSON, Architect and Engineer, 57 E. Washington Boulevard, Lombard, Ill.

New Partners, Associates

AARO J. ANNALA, C. DINO GAVRAS, EDGAR E. PARKS, elected Associates in firm of ALBERT KAHN ASSOCIATED ARCHITECTS AND ENGINEERS, INC., Detroit, Mich.

LEON BRAND, made Associate in firm of FREDERICK G. FROST, JR. & ASSOCIATES, Architects, New York, N.Y.

ALONZO CLARK, ROGER G. SPROSS, made Associates; HARRY TAYLOR GHERARDI, made Senior Associate; ROBERT S. LUNDBERG, FRANK J. WAEHLER, made Partners, in firm of VOORHEES WALKER SMITH SMITH & HAINES, Architects, New York, N.Y.

ELI JACK HELD, LEO KOMARIN, ARTHUR E. LEIBELL, NORMAN M. LIEBMAN, JEROME RUBIN, ARNOLD TEITELBAUM, named Assoicates in firm of MORRIS LAPIDUS, HARLE AND LIEBMAN, Architects, Miami Beach, Fla.

ROBERT E. MILLSAP, JR., GUSTAV H. ULLNER, C. ROBERT FARNSWORTH, appointed Associates in firm of ALBERT C. MARTIN AND ASSOCIATES, Architects and Engineers, Los Angeles, Calif.

L. SPENCER SMITH, appointed Associate in firm of DEAN L. GUSTAVSON ASSOCIATES, Architects, Salt Lake City, Utah.

Name Changes

GUNNAR EEMAN, P.E., made Partner in firm of FLING & EEMAN, INC., Consulting Structural Engineers, Columbus, Ohio. Formerly RUSSELL S. FLING AND ASSOCIATES.

ROBERT ALLAN CLASS, made Partner in firm of MARTIN, STEWART, NOBLE & CLASS, Architects, 1104 Architects Building, Philadelphia 3, Pa. Formerly MARTIN, STEWART & NOBLE, Architects.

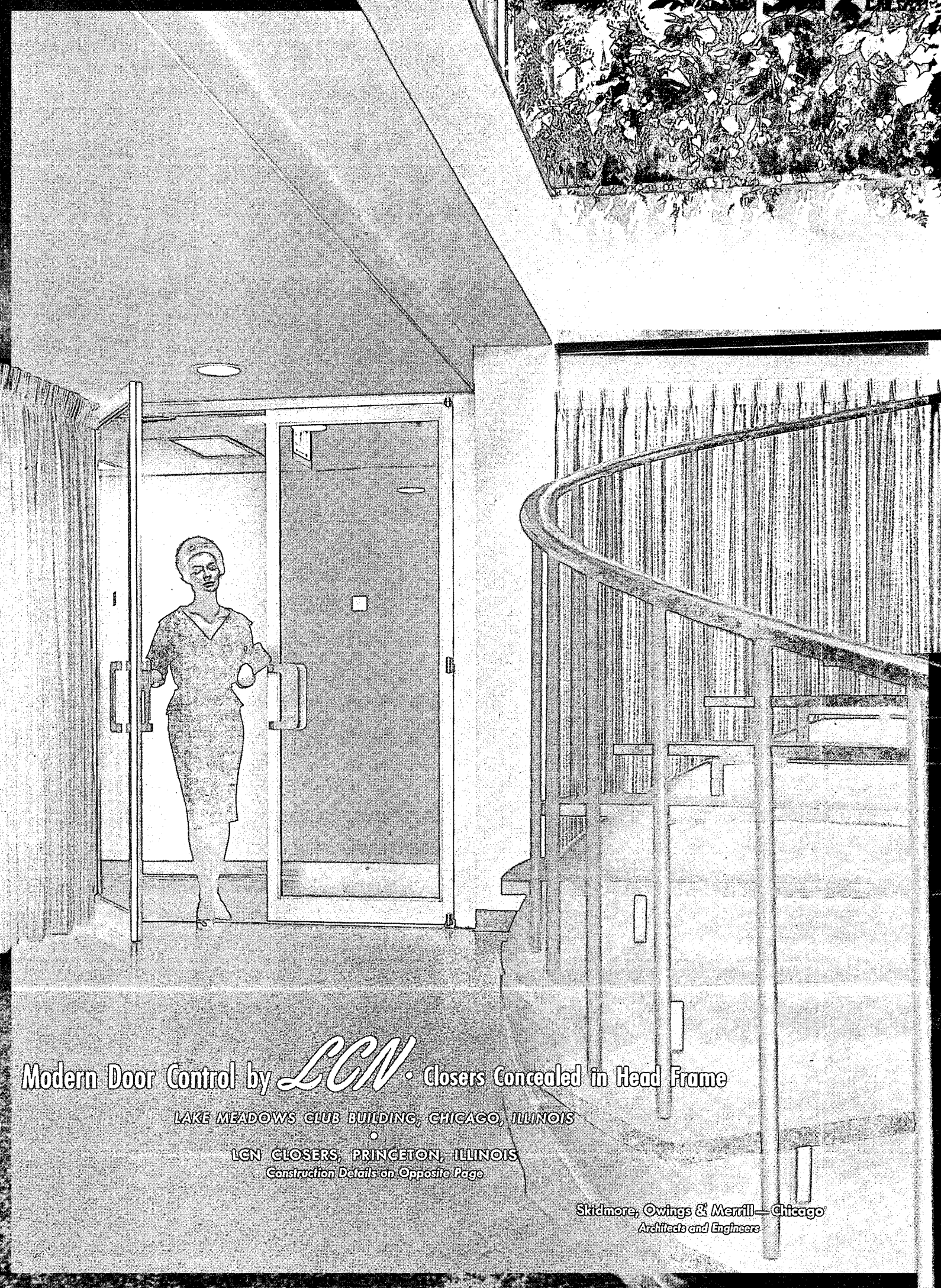
GIBBS, TOMBLINSON AND HARBURN, Architects, 5227 South Dort Highway, Flint 7, Mich. Formerly GIBBS & TOMBLINSON.

KARL R. GREENFIELD, made Associate in firm of GOLDBERG-EPSTEIN ASSOCIATES, 164 Montague St., Brooklyn 1, N.Y. Formerly ADOLPH GOLDBERG, AIA, AND HERBERT EPSTEIN, AIA.

C. F. MURPHY ASSOCIATES, Architects and Engineers, 224 S. Michigan Ave., Chicago, Ill. Formerly NAESS & MURPHY.

WILSON ASSOCIATES, Architects-Engineers, Suite 1616, Ala Moana Building,

Continued on page 234



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PRESENT VALUE OF ULTIMATE COSTS

50 Year Period
(per square foot of floor area)

	TERRAZZO	ASPHALT TILE	VINYL TILE
Initial cost	$ 1.45	$ .50	$ .75
Maintenance cost	35.30	56.48	43.77
Replacement costs	.05	.08	.14
Less speed erection credit	—0.00	—.20	—.20
Total	$36.80	$56.86	$44.46
Relative ultimate cost	100	154	121

For a free copy of the complete study of ultimate cost write: The National Terrazzo and Mosaic Association, 2000 K Street, N. W., Washington 5, D. C.

1. The Ultimate Cost Of Three Floor Finishes In Tax Exempt School Buildings, Clayford T. Grimm, P. E., Special Consultant, 1959.
2. Survey by Walter Gerson & Associates, Inc., marketing research and management consultant firm, December, 1959.
3. Present value: means of expressing future payments in terms of today's dollar.

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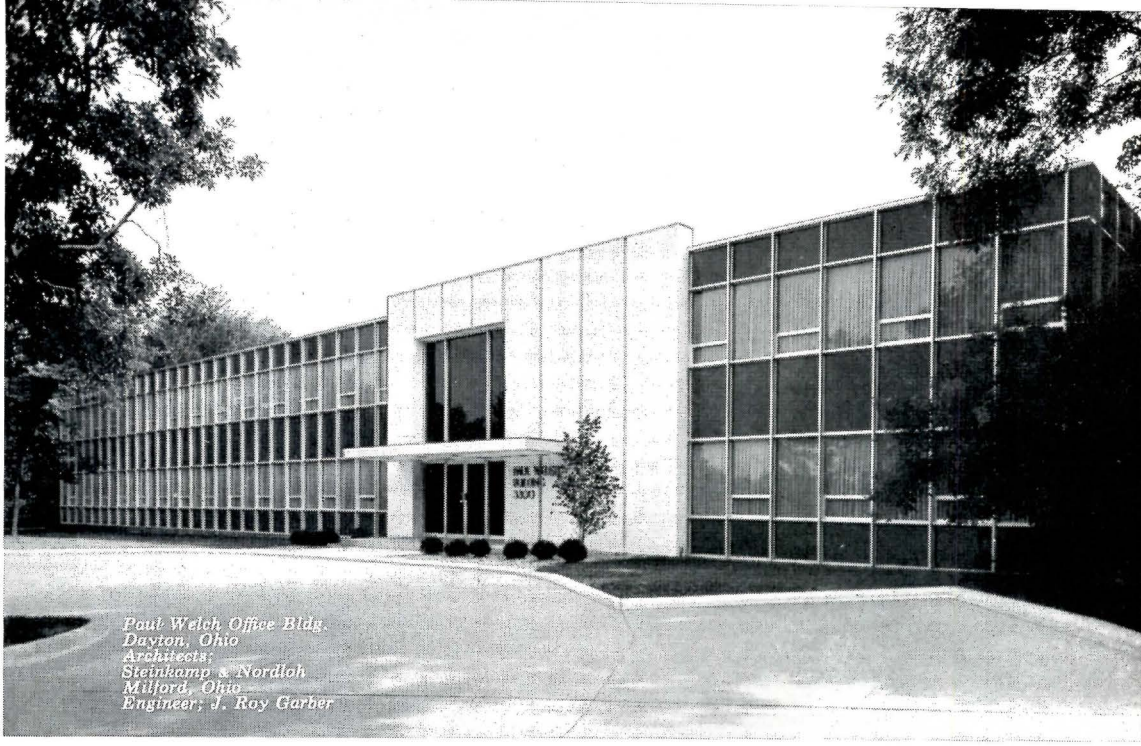
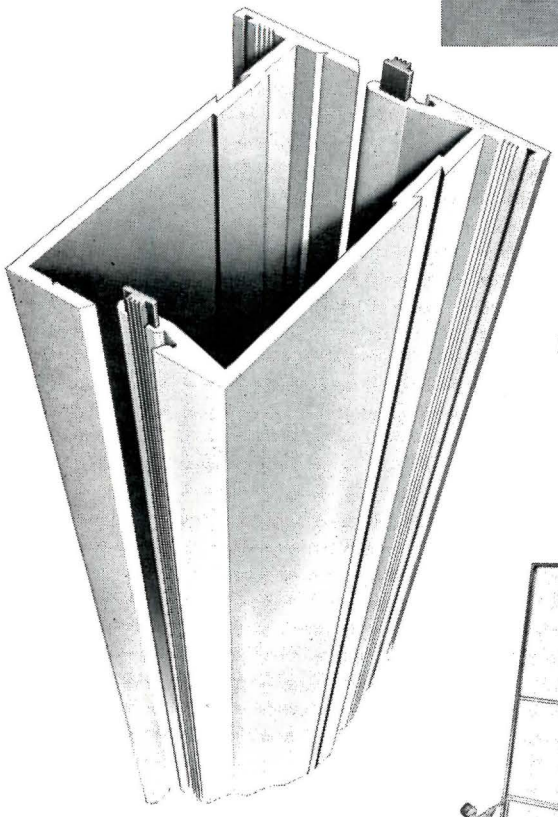


Paul Welch Office Bldg.
Dayton, Ohio
Architects:
Steinkamp & Nordloh
Milford, Ohio
Engineer: J. Roy Garber



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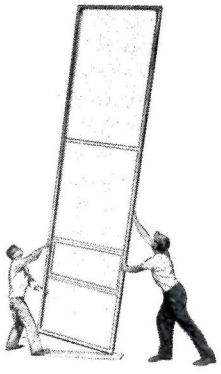

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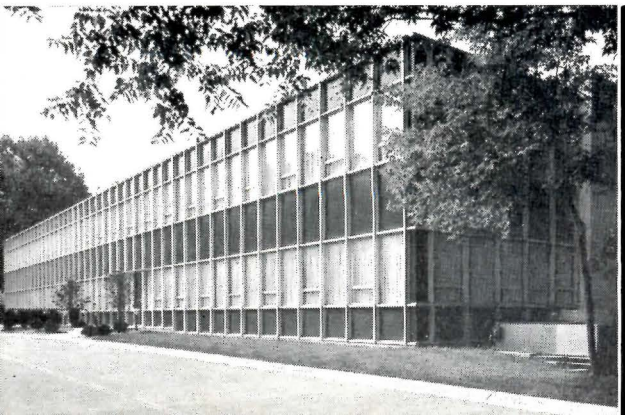
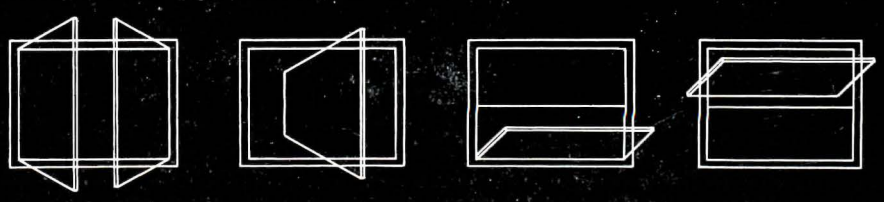


Choice of Operating Lites



CASEMENTS PIVOT TYPE HOPPER PROJECTED

Continued from page 230

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Expansion and Relocation

WILLIAM L. RUDOLPH, AIA, AND ASSOCIATES moved to new quarters at 2614 W. 7 St., Los Angeles, Calif. The firm has created a new division called "Architecture for Recreation" which will specialize in resorts, hotels, marinas, sports and public recreation centers, and restaurants. Other new facilities include a department for economic research, devoted to site studies and cost and income projection; a Food Service Planning Department; and an Interior Planning Display Room for graphics, fabrics, and materials.

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RONALD HIVELY appointed Sales Manager of Alliance Wall Products; GENE MARTIN appointed Assistant Sales Manager of AllianceWare Division in firm of CRANE CO.

MIKE GERBER, appointed Vice-President in Charge of National Sales; JIM WOLFSON, made National Sales Manager of architectural lighting division in firm of HALO LIGHTING PRODUCTS, INC.

J. W. GERMAN, appointed to newly created position as Market Manager, Commercial Construction of PITTSBURGH PLATE GLASS COMPANY.

STANLEY E. SOULE', named Executive Vice-President; KENNETH W. ARCHER, appointed to new post of General Manager of the architectural products division in firm of SOULE' STEEL COMPANY.

MARSHALL SPECTOR elected Vice-President and Sales Manager of Amtico Flooring Division of THE AMERICAN BILTRITE RUBBER COMPANY, INC.

EDWARD A. WHALEN appointed Sales Manager for HOMASOTE COMPANY.

PAUL B. WISHART elected Chairman of the Board and Chief Executive Office of MINNEAPOLIS - HONEYWELL REGULATOR COMPANY, succeeding HAROLD W. SWEATT who has been named Chairman of the Finance Committee.

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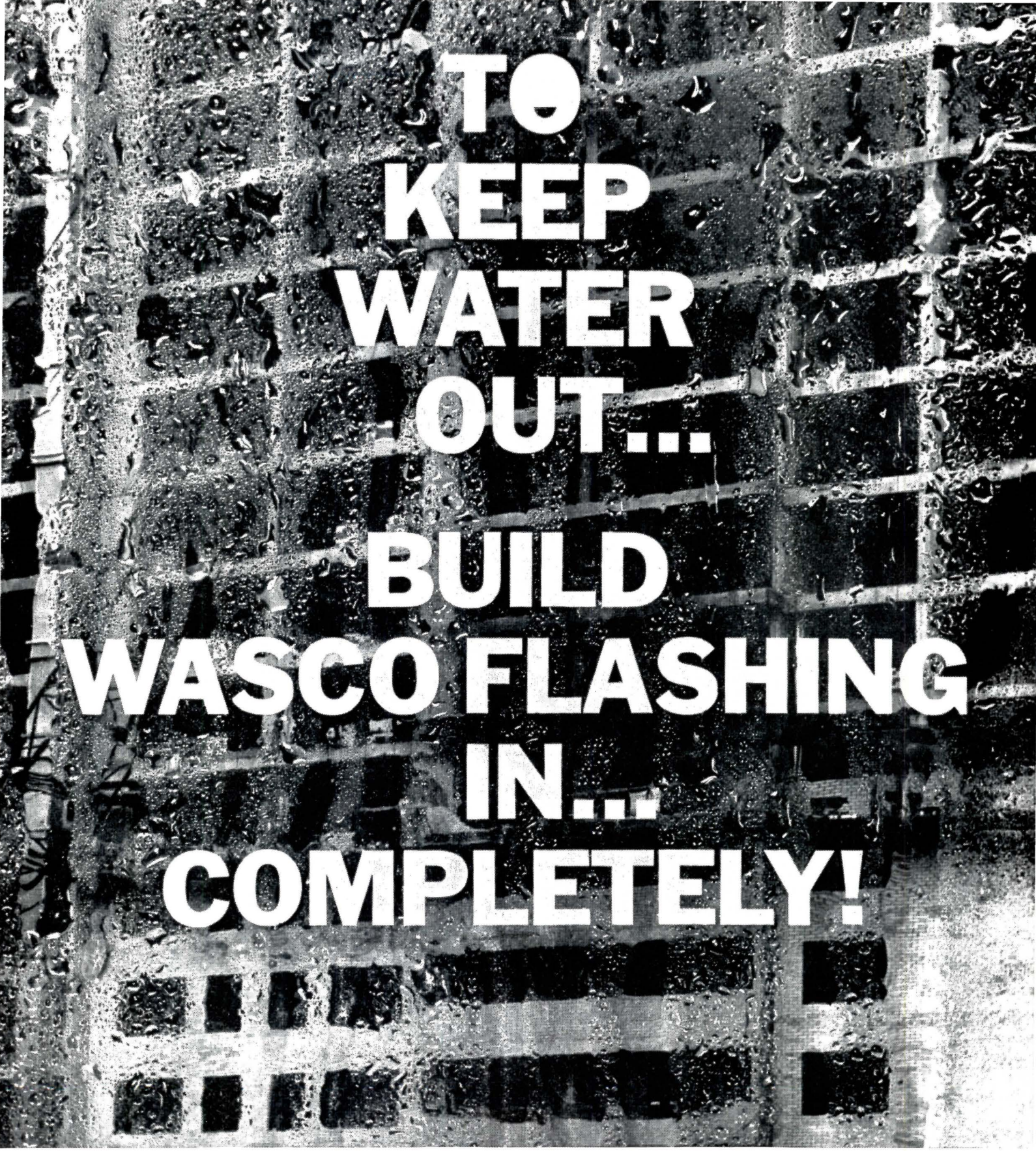

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Standard charge for each unit is Five Dollars, with a maximum of 50 words. In counting words, your complete address (any address) counts as five words, a box number as three words. Two units may be purchased for ten dollars, with a maximum of 100 words. Check or money order should accompany advertisement and be mailed to Jobs and Men, c/o Progressive Architecture, 430 Park Avenue, New York 22, N. Y. Insertions will be accepted not later than the 1st of the month preceding month of publication. Box number replies should be addressed as noted above with the box number placed in lower left hand corner of envelope.

GRADUATE MECHANICAL ENGINEER—With experience in design and estimating of heating, ventilating and air conditioning for permanent position in physical plant department. Should qualify for registration. Please send resume, salary requirements, and availability to W. C. Delaney, Planning & Engineering Dept. of Physical Plant, Purdue University, Lafayette, Indiana.

SENIOR DESIGNER/DRAFTSMAN—Small-medium, non-public work. N. J. resident, able/interested in handling most phases of small office practice excluding engineering and mechanical. Pleasant office easily accessible to parkway. Summarize education, experience and expectations. Leo L. Fischer, A.I.A., 2332 Morris Ave, Union, New Jersey.

STATE OF NEW JERSEY—New Jersey's Treasury Department has the following vacancies: SENIOR ARCHITECTURAL DRAFTSMAN, ARCHITECT & DESIGNERS. These are permanent Civil Service positions with fringe benefits. They require a college degree with specialization to the appropriate field as well as working experience. Salary open. Please send resume and salary requirements to Chief, Administrative Division, Department of the Treasury, State House, Trenton, New Jersey.

SITUATIONS WANTED

ARCHITECT—A.I.A., 35, B.S. Arch. Eng., 1951. Licensed 1957 by exam., 10 years general experience including 3 years private practice in unfortunate location. Will welcome any opportunity to keep untarnished aspirations alive in established architect's office. Will consider any location. Box #369, PROGRESSIVE ARCHITECTURE.

ARCHITECT—College instructor in a rural area with a limited practice desires to devote full effort to architectural work. Ten years broad experience in responsible positions. 35, married, children. Resume upon request. Box #370, PROGRESSIVE ARCHITECTURE.

ARCHITECT—Degree, A.I.A., NCARB certificate, age 40, 12 years practice in a partnership. Desire to move to location with more potential. Seek a responsible position with firm, possibly leading to association or partnership. Willing to invest. Box #371, PROGRESSIVE ARCHITECTURE.

ARCHITECT NOW IN EUROPE—Desires position with American architectural firm. American citizen, Harvard graduate, A.I.A., New York license, NCARB. Ten years experience all phases architectural work both sides of Atlantic. Fluent French. Box #372, PROGRESSIVE ARCHITECTURE.

Continued on page 240

Great new things are shaping up in concrete block

Conventional masonry goes original. Imaginative use of standard concrete masonry units leads to rich "custom" effects of texture and pattern at low cost. Here, standard 8x8x16 blocks are laid in running bond, with 2x8x12 slab block projecting 3″ at each joint. (The slab block also projects 1″ at back to provide a design for the interior wall surface.) Vertical joints are filled flush; horizontal joints are tooled to a depth of ⅜″. Ask your local block manufacturer. ■ To lay up concrete block in new, imaginative effects, ATLAS MASONRY CEMENT provides the right mortar. It gives weather-tight joints that are uniform in color. Complies with ASTM and Federal Specifications. For information on masonry cement, write Universal Atlas, 100 Park Avenue, New York 17, N. Y.

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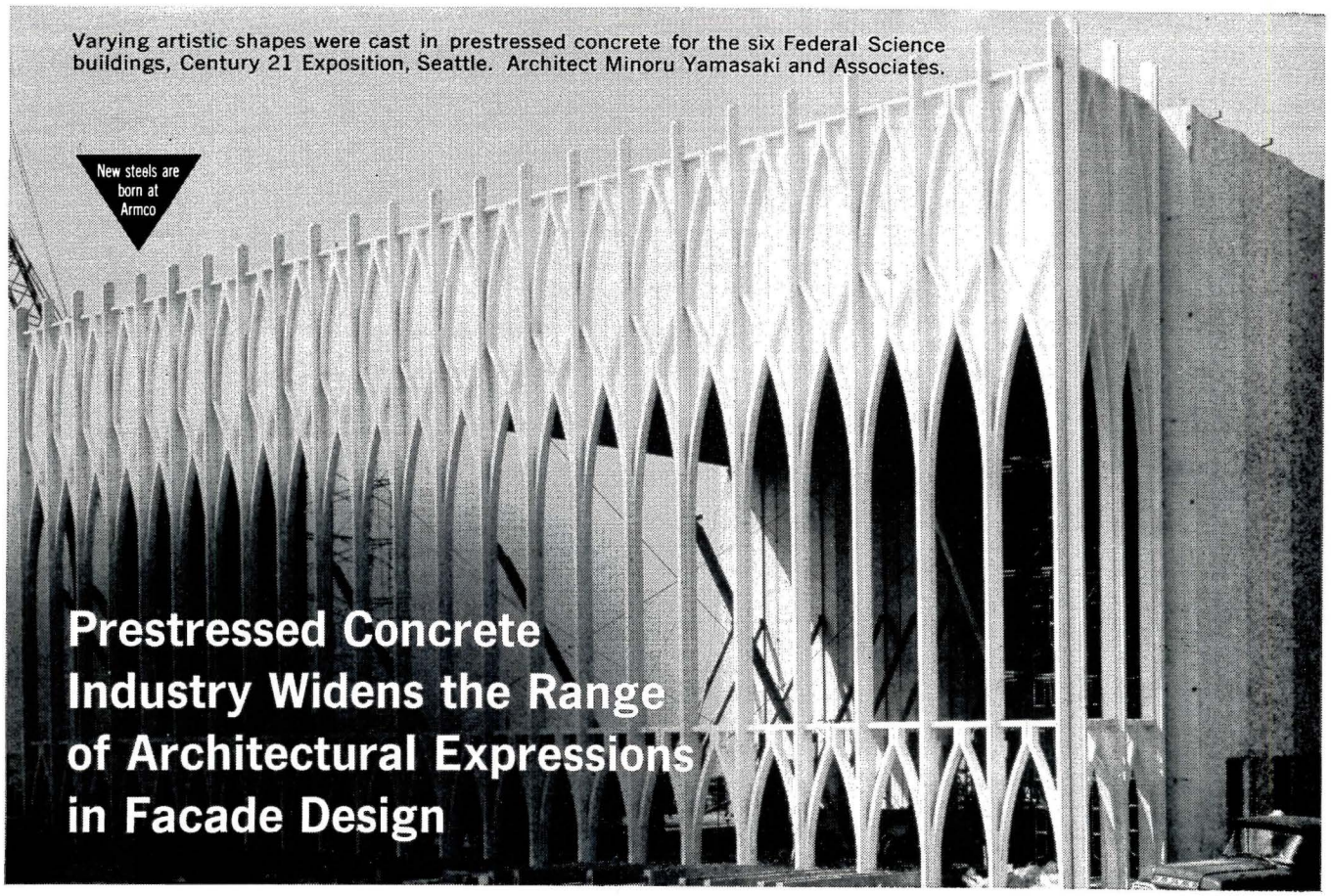


Varying artistic shapes were cast in prestressed concrete for the six Federal Science buildings, Century 21 Exposition, Seattle. Architect Minoru Yamasaki and Associates.

Prestressed Concrete Industry Widens the Range of Architectural Expressions in Facade Design

In your search for materials with which to put warmth, depth, and texture in building facades, have a look at prestressed concrete.

Relatively new developments in forming materials, such as fiberglass, enable the prestressed concrete industry to prestress wall panels into any shape and with many textures. These may be flat and used as curtain walls or shaped to double as wall-bearing members.

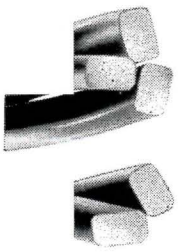
You can get away from the monotony and confining limitations imposed by conventional materials in many ways. Unique and striking architectural effects are sculptured in panels. Surface finishes may be textured, glossy smooth, or sheenless smooth. Colorful aggregate materials may be exposed. Almost limitless choice of colors may be integrated in the architectural concrete mix.

Surfaces are free of open air or water pockets. Since prestressed members remain crack-free, a maintenance-free building exterior is produced.

Have your prestressed concrete producer show you the possibilities of this new wall panel technique and its many economic advantages.

UNION Wire Rope

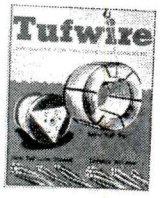
Increases Bond Strength 100% With New Tuf-Lock Strand



Union Wire Rope research developed this new strand to enable the industry to move still further ahead.

The superior ability of Tuf-Lock strand to transfer the stresses to the concrete has been proved in tests. 100% strand strength is developed by Tuf-Lock in one-half the length required by round wire strand.

Note the shape of the wires. A locking action takes place as the strand, in seeking release from tension, tends to orient itself. A gripping effect is set up in the concrete locking the strand all along the axial path of the shaped wires.



Write **Union Wire Rope, Sheffield Division, Armco Steel Corporation, 2314 Manchester Ave., Kansas City 26, Mo.,** for brochure on Tufwire Prestressing Products.

ARMCO **Union Wire Rope**

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P/A JOBS AND MEN

Continued from page 236

ARCHITECT—28, University of Illinois (highest honors), Indiana license. Associate of eight-man office, present responsibilities include chief draftsman and designer. Unhappy in present situation. Seeking permanent and responsible position providing chance to earn future partnership. Salary secondary. Anxious to show accomplishments in personal interview. Preferably mid-west. Box #373, PROGRESSIVE ARCHITECTURE.

ARCHITECT—36, NCARB, A.I.A., 10 years experience in all phases of general practice including extensive mechanical and electrical design. Wishes to discuss association or partnership with small firm. Eastern states preferred but will consider other areas. Resume upon request. Box #374, PROGRESSIVE ARCHITECTURE.

ARCHITECT—36; registered in Michigan; corporate A.I.A.,; 2 years Amherst College; B. of Arch. degree from the University of Michigan; 12 years complete, well rounded, experience includes client contact, programming, design, rendering working drawings, specification writing and supervision, gained from various offices, private practice and constant study; civic minded; family man; desires only work that offers opportunity for advancement to the top. Salary is of prime importance. Box #375, PROGRESSIVE ARCHITECTURE.

ARCHITECTURAL DESIGN DRAFTSMAN—Associate degree in Architecture. Married. Two years varied experience in architectural engineering office. Capable of handling the production phase of working drawings. Resourceful and seeks responsibility with growing contemporary architectural firm. Interested in relocating to California, Arizona or Colorado. Detailed resume upon request. Box #376, PROGRESSIVE ARCHITECTURE.

ARCHITECTURAL DRAWING INSTRUCTOR—Wishes to teach this fall. MA in Industrial Education, Doctorate started. Set up two Architectural drawing courses—one for light construction majors, one for hotel administration majors. Ten years experience on the board as job captain and checker, mostly industrial, commercial. Bertrand T. Weening, 26764 Midway, Dearborn 6, Michigan.

REGISTERED ARCHITECT—(Written examination), age 35. Bach. of Arch. Degree. 10 years experience in leading architects' offices. Desires permanent association or partnership in modern office. Willing to invest in partial or major firm interest and will consider location anywhere in U.S. Resume and photo on request. Box #380, PROGRESSIVE ARCHITECTURE.

SENIOR STRUCTURAL ENGINEER—With thorough supervisory experience with leading engineering and construction firms. Large industrials, power plants, waterfront structures, dams, airfields, bridges, etc. Excellent estimator and spec. writer. Sound client contact and negotiating experience. Desire position with architectural, consulting or industrial firm. Box #377, PROGRESSIVE ARCHITECTURE.

STRUCTURAL ENGINEER—Registered in California, desires association leading to a partnership in an established Architectural firm doing challenging work, or a consultant. Over ten years experience in designing and preparing structural drawings and specs. for all types of buildings in concrete, steel and wood. California location preferred, but may consider offers from other Western states. Box #378, PROGRESSIVE ARCHITECTURE.

SWISS ARCHITECT—25, varied and international experience of 3 years in Switzerland & Sweden, University of Winterthur degree, desires position in small or medium size office. Exchange with an American (coming to Switzerland Zurich office) possible. Can begin work September-December 1962.

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ARCHITECTURAL & DESIGN PERSONNEL AGENCY—A personalized placement service for top-level architects, designers, engineers, draftsmen, estimators and interior designers; selective contracts arranged in a confidential and professional manner. Interviews by appointment. 58 Park Avenue, New York. MUrray Hill 3-2523.

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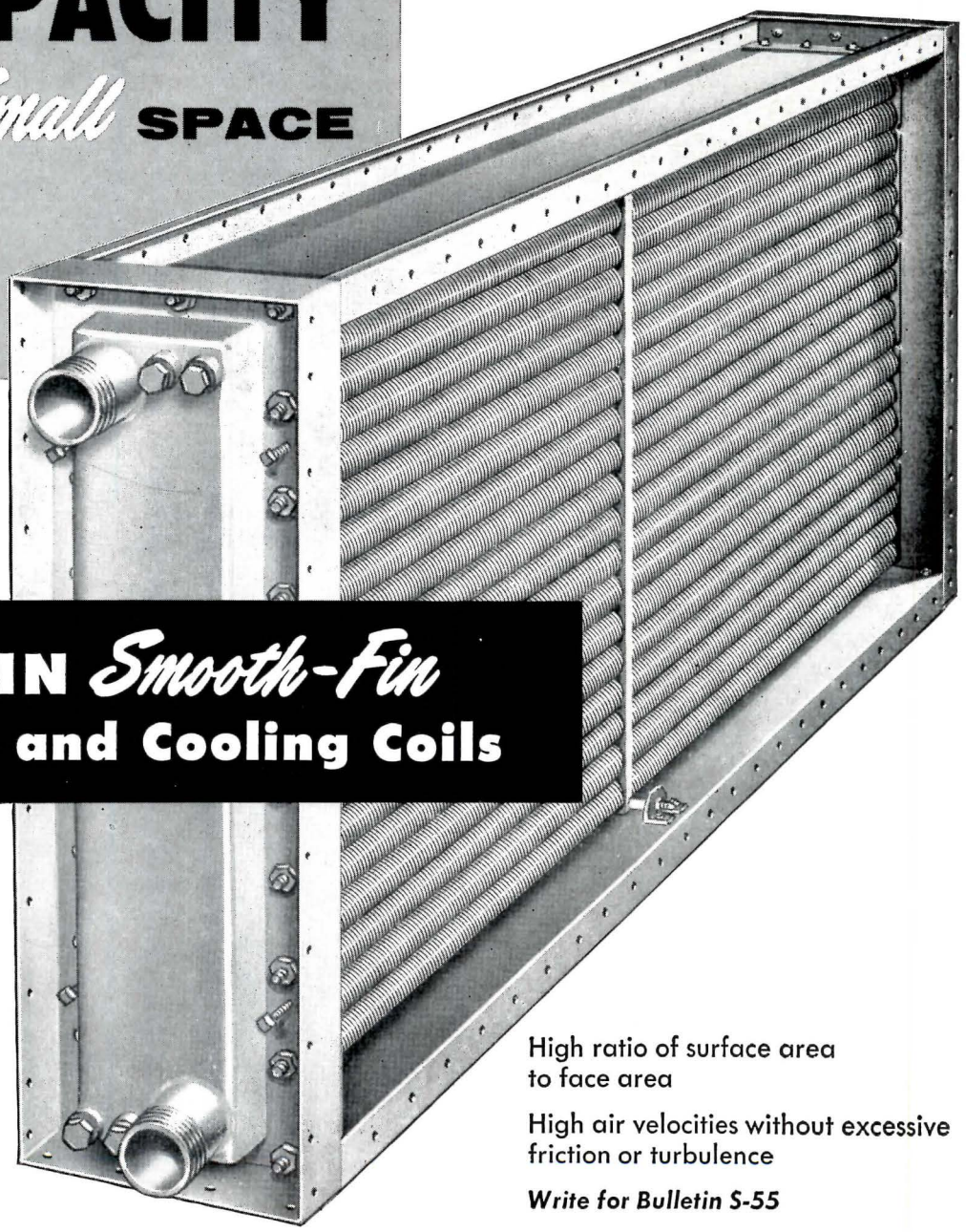

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P. P. S.

Reason for the "P.P.S." is to tell you there is no "P.S." page this month. Tom Creighton is hale and hearty and very much on the job. He even had another good idea for the April P.S. page but he thought there was no place for it in this issue.

The simple truth is that Tom was evicted temporarily. His many friends and readers will again find his trenchant criticism of the state of architecture and sage comments in the usual place in the May issue.

As I was the fellow responsible for pre-emption of Tom's spot, an explanation may be in order. I okayed two-page advertisements that will occupy the third cover and its facing page in April, August and October 1962 issues, so you can mark me down as the villain of the piece. Worse and more of it from Tom's viewpoint, the arrangement may be made permanent in 1963. P/A needs the revenue these pages will produce.

Evil scheme or no, if this is the way it develops, Tom will lose the distinctive label on his column but gain a new and much more prominent position in the front of P/A, one that will be easy for new readers as well as regular followers to locate and one more in keeping with the high caliber of this unique editorial page.

Brad Wilkin
Publisher

NEW AISC SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS

New AISC rules allow greater flexibility in steel design... increase economy of steel construction

Now the AISC has put its official stamp of approval on all six of the ASTM grades of construction steel. The new design rules are the result of extensive research and experimentation, and make available, under one cover, a wealth of easy-to-use information of importance to every architect, designer, and structural engineer. Check these highlights . . . then send for your copy.

HIGH-STRENGTH STEELS

Design rules for the new ASTM grades of steel permit the designer to select *more precisely* the appropriate tensile-strength steel for the load condition . . . reduce the tonnage required . . . offer substantial cost savings to the owner.

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Liberalized concept of composite design for buildings: steel beams and concrete floor slabs, joined into an integral unit, work together to support up to 35 per cent more load than conventional design.

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Also included in the new AISC Specification are provisions for new high-strength bolts . . . tubular steel members . . . more precise column design . . . and other areas of steel design that will bring about simpler, cleaner, more imaginative structures—achieved at lower cost.

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SERVICE FOR ARCHITECTS: *For complete specifications and samples of new Montina Vinyl Corlon, contact the Armstrong Architect-Builder Consultant in your area. He is ready to help you solve any flooring problems. He will gladly make on-the-job recommendations and, if you desire, will provide the assistance of technical and installation experts at Armstrong. Call him at your Armstrong District Office. Or write Armstrong, 304 Watson Street, Lancaster, Pennsylvania.*

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